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September 9, 2021 Project #: 26306

Eric Liljequist and Chris Kerr
City of Woodburn
270 Montgomery Street
Woodburn, OR 97071

RE: Project Basie Transportation Impact Analysis (Revised and expanded version from the original May 26, 2021 and subsequent revisions made/submitted on July 6, 2021, July 15, 2021, and August 17, 2021)

Dear Eric and Chris,

This Transportation Impact Analysis has been prepared to support development of a proposed fulfillment/distribution center (herein referred to as Project Basie) in Woodburn. As discussed herein, the following changes to the transportation system are identified for implementation in conjunction with site development, subject to City of Woodburn, Oregon Department of Transportation (ODOT), and Marion County approval:

- Realign the northern segment of Butteville Road to the east of Senecal Creek and its affiliated wetlands. This new alignment would be constructed to a symmetrical City of Woodburn Minor Arterial design section on both sides where it would be widened as necessary to fit the geometric design needs of a proposed roundabout at OR 219 (see next bullet).
- Construct a new double lane roundabout at the realigned Butteville Road intersection with OR 219 that is sized and designed to accommodate long-term projected traffic and heavy vehicle demands. East of the new roundabout, OR 219 should be widened to be consistent with and connected to the fully improved section that currently ends near the Willow Avenue intersection.
- Following completion of the Butteville Road realignment and roundabout intersection with OR 219, close the old Butteville Road connection with OR 219.
- Reconstruct and widen the southern segment of Butteville Road abutting the development site consistent with the Minor Arterial special design section agreed upon by the City of Woodburn and Marion County, with three twelve-foot travel lanes (one NB lane, one center turn lane, and one SB lane), a rural shoulder on the west side, six-foot bike lanes, and curb, landscape strip and a six-foot sidewalk on the east side. To facilitate left-turn movements at the three southernmost proposed site driveways, the widened section of Butteville Road should be striped with center turn lane striping. At the northernmost Site Access/Old Butteville Road intersection, provide northbound and southbound left-turn lane striping.

- Modify the existing I-5 southbound offramp to provide 250 feet of additional right-turn lane storage to better accommodate projected vehicular and freight demand. The exact extents of the right-turn lane lengthening and design will need to be determined through additional conversations with ODOT and City design staff.
- Install STOP (R1-1) signs at each of the four proposed site access driveway approaches to Butteville Road in accordance with County standards and the *Manual on Uniform Traffic Control Devices* (MUTCD).
- Work with ODOT and City of Woodburn staff to develop proportionate share contributions towards offsite improvements at the OR 214/Evergreen Road, OR 214/Boones Ferry Road/N Settlemier Avenue and OR 214/OR 211/OR 99E intersections.

Additional details of the methodology, findings and recommendations are provided herein.

INTRODUCTION

Trammell Crow Company is proposing to construct a five-story industrial building on approximately 88 acres of land[1] located southeast of the OR 219/Butteville Road intersection and west of the existing WinCo Foods distribution center. The site location and vicinity are shown in Figure 1. When complete, the building will contain approximately 3.849 million square feet of floor area accommodating package fulfillment activities supported by on-site access and circulation roadways, vehicle parking and fleet vehicle/trailer storage, landscaping, and stormwater management facilities. Multiple site access driveways are proposed along the site's Butteville Road frontage as shown in Figure 2. This figure also illustrates changes to the transportation system near the site frontage recommended as part of site development, including a proposed realignment of the north end of Butteville Road and a new roundabout intersection with OR 219. Additional details regarding these changes are documented later in this report. For the purposes of this analysis, it has been assumed that occupancy of the building will occur in the year 2023.

SCOPE OF THE REPORT

This report identifies the transportation-related impacts associated with the proposed Project Basie development. The study intersections and scope were selected to assess the anticipated local and regional transportation impacts and were identified in consultation with City, ODOT, and County staff

[1] The land use application package includes consolidation of lots and a land partition to reconfigure the 130-acre property to form the proposed development site (Parcel 2), dedicate right-of-way for the proposed realignment of Butteville Road, and create two remainder parcels (Parcels 1 and 3).

(see *Appendix A* for a copy of the scoping memorandum and jurisdictional responses)[2]. Per the scoping direction, operational analyses were performed at the following study intersections:

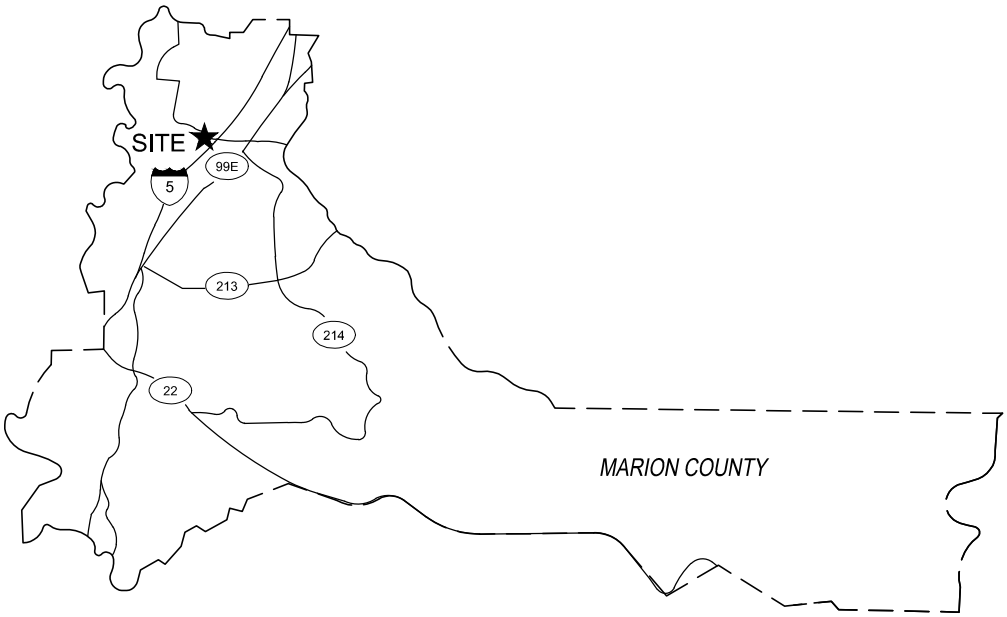
- OR 219/Arbor Grove Road
- OR 219/North Butteville Road
- OR 219/Butteville Road
- OR 219/Willow Avenue
- OR 219/Woodland Avenue
- OR 219/I-5 Southbound (SB) Ramp Terminal
- OR 219/I-5 Northbound (NB) Ramp Terminal
- OR 214/Evergreen Road
- OR 214/Settlemier Avenue/Boones Ferry Road
- OR 214/OR 211/OR 99E
- Butteville Road/LeBrun Road
- Butteville Road/Parr Road
- Butteville Road/proposed site driveways

This report evaluates the following transportation issues:

- Existing land use and transportation system conditions within the site vicinity during the following weekday AM and PM peak periods:
    - 6:30 – 7:30 AM: captures the anticipated peak arrival period for the proposed Project Basie dayshift
    - 7:00 - 8:00 AM: approximate existing system peak hour along the OR 219 study corridor from Butteville Road to the I-5 ramp terminals
    - 4:30 – 5:30 PM: approximate existing system peak hour along the OR 219 study corridor from Butteville Road to the I-5 ramp terminals
    - 5:30 – 6:30 PM: captures the anticipated peak dayshift departure and the peak nightshift arrival period for Project Basie

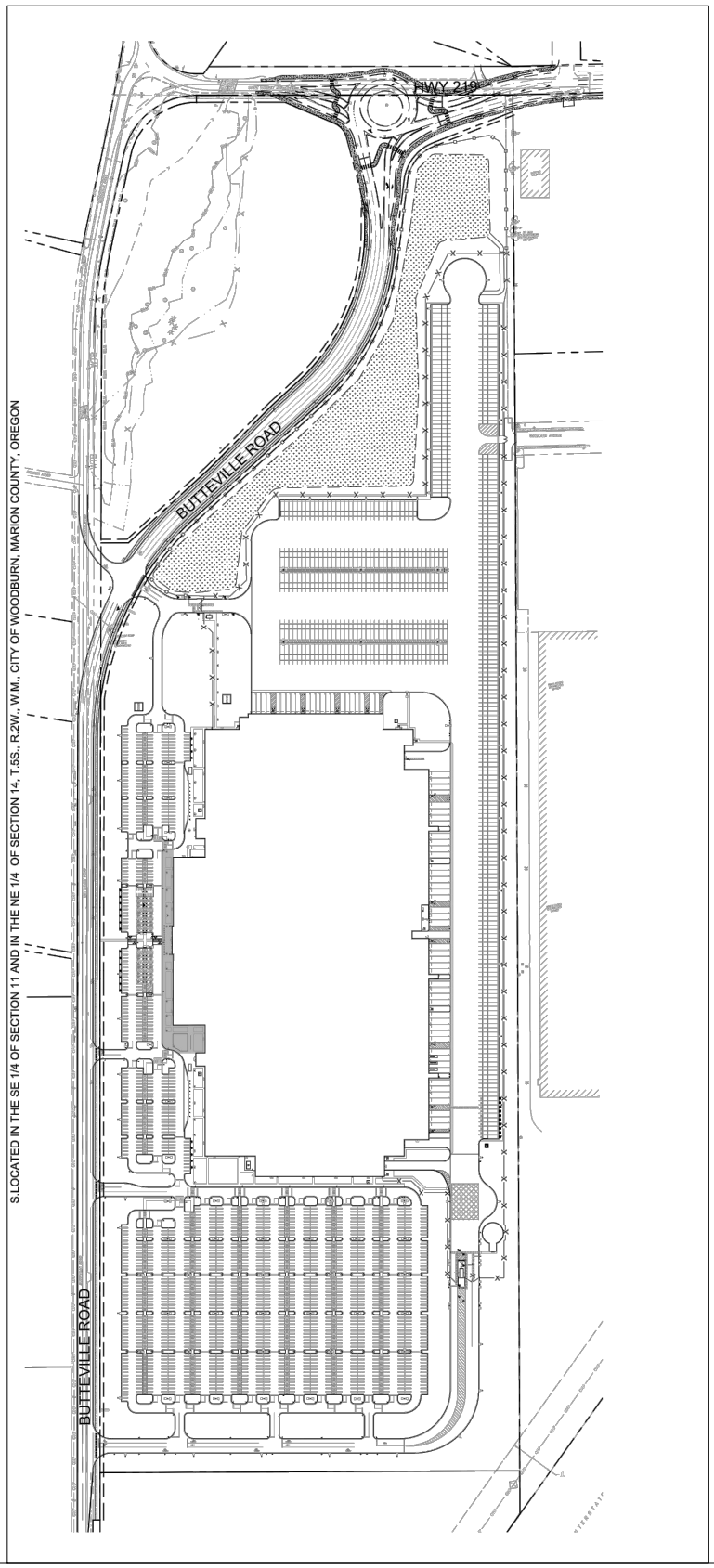
[2] As noted in the jurisdictional responses to the scoping memorandum, additional study intersections and microsimulation of the OR 219 study corridor was requested. This revised and expanded version of the TIA contains the requested study intersections and microsimulation results.

- Forecast year 2023 and 2040 background traffic conditions (without the proposed Project Basie development, but still considering other planned developments and local/regional growth) during the four identified weekday AM and PM peak periods;
- Development of a use-specific trip generation and traffic distribution pattern;
- Forecast year 2023 and 2040 total traffic conditions (with full buildout and occupancy of the proposed Project Basie development) during the four identified weekday AM and PM peak periods; and,
- Recommended changes to the transportation system.



Site Vicinity Map
Woodburn, Oregon

Figure
1



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Scale: 1" = 500'
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SITE PLAN PROVIDED BY MACKENZIE

Concept Site Plan
Woodburn, Oregon

Figure
2

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Analysis Methodology

The signalized and stop-controlled intersection operational analyses presented in this report were prepared following *Highway Capacity Manual* (HCM) 6th Edition analysis procedures using Synchro 10 software in accordance with the *ODOT Analysis Procedures Manual (APM)*. HCS 7 (incorporating HCM 6th Edition procedures) was used for all roundabout analyses. The observed peak hour factor was used for the existing and year 2023 background traffic analyses. For year 2040 conditions analyses, as well as the analyses of the peak period associated with the fulfillment center, the following minimum peak hour factors were applied to reflect peak hour spreading as traffic volumes increase:

- OR 219/I-5 Interchange Ramps: 0.95
- All other study intersections: 0.92

Right turns on red at signalized intersections were estimated based on field observations and projected growth in traffic volumes.

Performance Measures and Operating Standards

Intersection performance measures reported in this study include, but are not limited to, level of service (LOS), volume-to-capacity ratio (v/c), and delay. Intersection operating targets adopted by ODOT, City of Woodburn, and Marion County are summarized below.

ODOT Mobility Targets

ODOT uses volume-to-capacity (v/c) ratios to assess intersection operations. Table 6 of the Oregon Highway Plan (OHP) provides volume-to-capacity ratio targets for all signalized/roundabout and unsignalized intersections located outside the Portland metropolitan area. Based on the OHP, Table 1 summarizes the mobility target that will be used to assess intersection operations along the OR 219 study corridor. In addition, the *Oregon Highway Design Manual* standards (from Table 10-2) are identified for any intersections that are proposed to be substantially rebuilt or relocated as part of site development.

Table 1 – ODOT Mobility Targets

Intersection	OHP Mobility Target	Highway Design Manual 20-Year Design Mobility Standards
OR 219/Arbor Grove Road	V/C: 0.90 major approach/0.90 minor approach	0.70
OR 219/North Butteville Road	V/C: 0.90 major approach/0.90 minor approach	0.75
OR 219/Butteville Road	V/C: 0.90 major approach/0.90 minor approach	0.75
OR 219/Willow Avenue	V/C: 0.95 major approach/0.95 minor approach	0.80
OR 219/Woodland Avenue	V/C: 0.95	0.80
OR 219/I-5 SB Ramp Terminal	V/C: 0.80	0.70
OR 219/I-5 NB Ramp Terminal	V/C: 0.80	0.70
OR 214/Evergreen Road	V/C: 0.95	0.80
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	0.80
OR 214/OR 211/OR 99E	V/C: 0.90	0.75
Note: OR 219 and OR 214 are District Highways. OR 219 has a posted speed of 55 mph from Arbor Grove Road to Willow Avenue and 35 mph from Willow Avenue through the I-5 interchange ramps. OR 214 has a posted speed of30 mph east of I-5.		

ODOT's APM provides a methodology for estimating v/c at signalized intersections using Synchro HCM 6th Edition outputs based on the sum of the critical movements at the intersection.

City of Woodburn Operating Standards

The City of Woodburn's Transportation System Plan (TSP) has adopted the following mobility targets at city owned intersections. Although the City of Woodburn has no ownership or maintenance responsibility at any of the identified study intersections, the traffic impact study will account for these standards in the analysis.

- LOS E for signalized intersections
- 1.0 v/c for signalized intersections
- 0.90 v/c for the critical movements at unsignalized intersections

Marion County Mobility Standards

The County's policy and procedure for traffic impact analysis requirements specify the following mobility standards. For the purposes of this study, these standards will apply when evaluating traffic conditions along the Marion County owned and maintained Butteville Road.

- Signalized, All Way Stop Controlled (AWSC), or Roundabout intersections
    - LOS D (with all individual movements operating at LOS E or better) and a volume/capacity ratio of 0.85 or less.
- Unsignalized intersections
    - LOS E and a volume/capacity ratio of 0.90 for critical movements

EXISTING CONDITIONS

This section summarizes the existing characteristics of the transportation system and adjacent land uses in the vicinity of the proposed development, including an inventory of the existing multimodal transportation facilities and options, a summary of recent crash history, and an evaluation of existing intersection operations for motor vehicles at the study intersections.

Site Conditions and Adjacent Land Uses

The project site consists of approximately 88 acres located southeast of the OR 219/Butteville Road intersection. The site has historically been in agricultural use but is currently zoned for industrial use in Woodburn's Southwest Industrial Reserve (SWIR) overlay. Senecal Creek runs through the northwest corner of the site, flowing to the northeast under bridge crossings in Butteville Road and OR 219.

Like the subject property, land parcels to the south are currently used for agricultural use purposes but anticipated for future industrial development under Woodburn SWIR regulations. The WinCo Foods

distribution center is on the adjacent property to the east, in a Light Industrial (IL) zone. Lands to the west, across Butteville Road, are outside the Woodburn Urban Growth Boundary (UGB) and include a mix of farm, agriculture, and rural residential uses.

Transportation Facilities

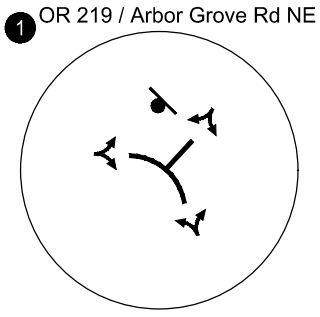
Table 2 provides a summary of transportation facilities in the site vicinity. Figure 3 illustrates the existing lane configurations and traffic control devices at the study intersections.

Table 2 - Existing Transportation Facilities and Roadway Designations

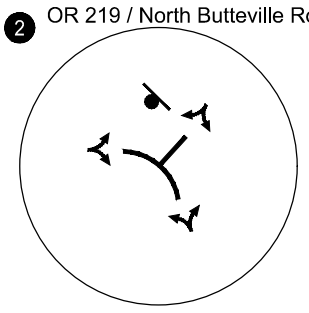
Roadway	Classification (bold indicates jurisdictional ownership)	Cross Section	Posted Speed (mph)	Sidewalks Present?	Bike Lanes Present?	On-Street Parking Allowed?
I-5	**Interstate Highway - ODOT**	4 lanes	65	No	No	No
OR 219 (Hillsboro-Silverton Highway No. 140)	**District/Local Interest Road – ODOT** Major Arterial – City of Woodburn	2-5 lanes	35/55[1]	Yes[2]	Yes	No
OR 214 (Hillsboro-Silverton Highway No. 140)	**District/Local Interest Road – ODOT** Major Arterial – City of Woodburn	3-4 lanes	30[3]	Yes	Yes	No
OR 211 (Hillsboro-Silverton Highway No. 140)	**District/Local Interest Road – ODOT** Major Arterial – City of Woodburn	2-3 lanes	35	On south side within City limits	Narrow striped shoulder within City limits	No
Woodland Avenue	**Access Street – City of Woodburn**	2 lanes	25	Yes	No	No
Willow Avenue	**Local Street – City of Woodburn**	2 lanes	25	No	No	Yes
Butteville Road	**Major Collector – Marion County** Minor Arterial – City of Woodburn	2 lanes	Not posted	No	Narrow striped shoulder	No
Parr Road	**Minor Collector – Marion County**	2 lanes	Not posted	No	No	No
Arbor Grove Road	**Local Road – Marion County**	2 lanes	Not posted	No	No	No
North Butteville Road	**Major Collector – Marion County** Minor Arterial – City of Woodburn	2 lanes	Not posted	No	Narrow striped shoulder	No
Evergreen Road	**Minor Arterial – City of Woodburn** (South of OR 214 only)	3 lanes	30 (north of OR 214)/ 25 (south of OR 214)	North of OR 214 only	North of OR 214 only	No
Settlemier Avenue/Boones Ferry Road	**Minor Arterial – City of Woodburn**	3 lanes	35 (north of OR 214)/ 25 (south of OR 214)[3]	Yes	North of OR 214 only	No
OR 99E (Pacific Highway East No. 81 / Woodburn-Estacada Highway No. 161)	**Regional Highway – ODOT** Major Arterial – City of Woodburn	4-5 lanes	35	Yes	Yes	No
LeBrun Road	**Local Road – Marion County**	2 lanes	Not Posted	No	No	No

[1] The posted speed on OR 219 is 35 mph from Willow Avenue to the I-5 ramp terminals. West of Willow Avenue, the posted speed is 55 mph.
[2] Sidewalks are present along both sides of OR 219 east of Willow Avenue. There are no sidewalks west of Willow Avenue.
[3] Posted school zone speed of 20 mph in effect school days 7am-5pm near Lincoln Elementary School/French Prairie Middle School

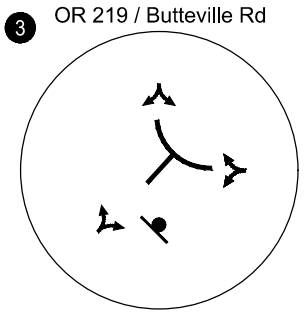
1 OR 219 / Arbor Grove Rd NE



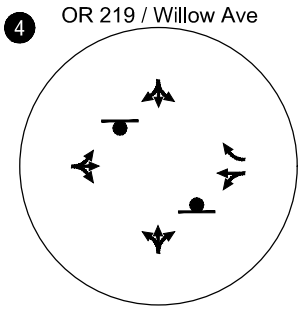
2 OR 219 / North Butteville Road NE



3 OR 219 / Butteville Rd

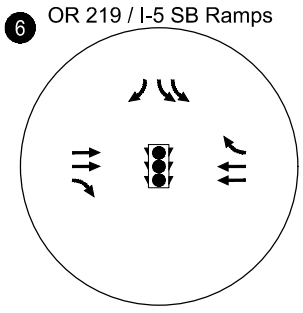


4 OR 219 / Willow Ave

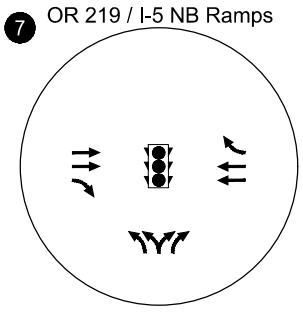


5 OR 219 / Woodland Ave

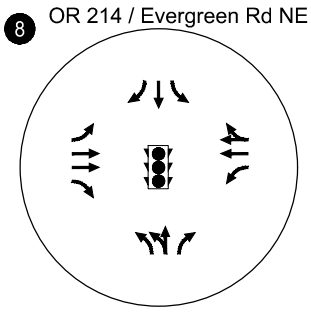
6 OR 219 / I-5 SB Ramps



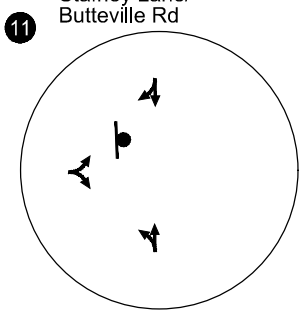
7 OR 219 / I-5 NB Ramps



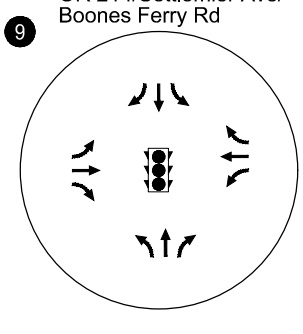
8 OR 214 / Evergreen Rd NE



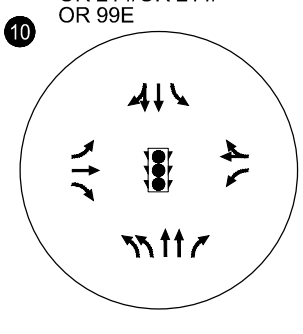
11 Stafney Lane/ Butteville Rd



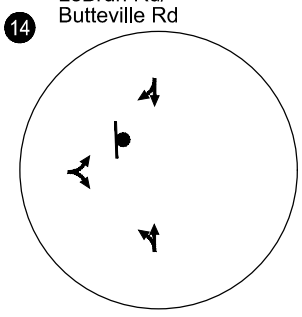
9 OR 214/Settlemier Ave/ Boones Ferry Rd



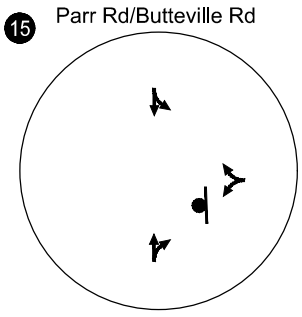
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd



- STOP SIGN

- TRAFFIC SIGNAL

Existing Lane Configurations And Traffic Control Devices Woodburn, OR

Figure **3**

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Traffic Volumes and Peak Hour Operations

Manual turning movement volumes were collected at the study intersections during the weekday morning (6:00 – 10:00 AM) and afternoon (3:00 – 7:00 PM) peak periods on April 14, 2021 (supplemental counts were also taken on May 25, 2021 for the additional intersections requested by Marion County, ODOT, and City staff). The following sections summarize how the volumes were adjusted to account for seasonality and the ongoing effects of COVID-19 on "typical traffic patterns."

Seasonal Adjustments

Per ODOT requirements, a seasonal factor was applied to the study intersections along the OR 219 corridor. To determine an appropriate seasonal factor, three methodologies were investigated per ODOT's APM: On-Site ATR Method, ATR Characteristic Table Method, and ATR Seasonal Trend Method.

On-Site ATR Method

The On-Site ATR Method is used when an Automatic Traffic Recorder (ATR) is within or near the project area. ATR #24-020 is the closest ATR station to Woodburn, located approximately 4.25 miles to the west on OR 219. However, the average annual daily traffic at this ATR site is not within ten percent of recent traffic volumes collected along OR 219 in the vicinity of the I-5 interchange (10 percent is the criteria cited by the ATM). As such and per the APM guidance, the On-Site ATR method was not utilized.

ATR Characteristics Table

The ATR Characteristic Table provides general characteristics for each ATR in Oregon and is typically used when there is not a nearby ATR within the immediate study area. A review of the Characteristic Table did not find an ATR that closely matches the conditions along OR 219 within the vicinity of the study site. As such and per the APM guidance, this methodology was not used.

ATR Seasonal Trend Method

The seasonal trend table is used when there is not an ATR nearby or in a representative area. This method averages seasonal trend groupings from the ATR Characteristics Table. For movements at intersections along OR 219, an average of the "commuter" and "summer" trends was deemed appropriate as it has been used and approved in other recent planning studies in the project vicinity. Table 3 identifies the seasonal trend adjustments.

Table 3 – ATR Seasonal Trend Method for Commuter and Summer Trends

	April Count Month (April 15)	May Count Month (June 1)	Seasonal Trend Peak Period Factor
Commuter	0.9759	0.9503	0.9355
Summer	1.0100	0.8976	0.8299

- The Commuter seasonal adjustment for the April 14, 2021 counts is 1.04 (i.e., 0.9759/0.9355), and the Summer seasonal adjustment is 1.22 (i.e., 1.0100/0.8299). As such, an average of the Commuter and Summer season adjustments is 1.13.

- The Commuter seasonal adjustment for the May 25, 2021 counts is 1.02 (0.9503/0.9355), and the Summer seasonal adjustment is 1.08 (0.8976/0.8299). As such, an average of the Commuter and Summer season adjustments is 1.05.

Per the APM, the average adjustment calculation of 1.13 was applied to existing traffic volumes at the locations counted in April 2021 (Butteville Road, Willow Avenue, Woodland Avenue, and the I-5 Ramps), and the average adjustment calculation of 1.05 was applied to existing traffic volumes at the locations counted in May 2021 (Arbor Grove Road, North Butteville Road, Evergreen Road, Settlemier Avenue, and OR 99E).

COVID-19 Volume Assessment

Considering the ongoing effect of the COVID-19 pandemic on area traffic volumes, the count data were compared with peak hour volumes collected in January 2016 and November 2020. Table 4 provides a comparison of the total entering volume (vehicles per hour) counted at study intersections in 2016, 2020, and 2021. The "System Peak Hour" identified in the table reflects the peak hour for the section of OR 219 extending from Butteville Road to the Interstate 5 (I-5) interchange.

Table 4 –Turning Movement Volume Comparison

Intersection	Volume Scenario	2016		2020		2021	
		7:05 to 8:05 AM	4:20 to 5:20 PM	7:10 to 8:10 AM	4:10 to 5:10 PM	7:00 to 8:00 AM	4:30 to 5:30 PM
OR 219/ Butteville Road	Total Entering Volume (vehicles per hour)	523	700	519	832	583	993
	Total Entering Volume (vehicles per hour) – Seasonally Adjusted[1]	607	812	607	973	659	1,122
OR 219/ Woodland Avenue	Total Entering Volume (vehicles per hour)	722	1,210	773	1,406	791	1,555
	Total Entering Volume (vehicles per hour) – Seasonally Adjusted[1]	838	1,404	904	1,645	894	1,757
OR 219/ I-5 SB Ramp Terminal	Total Entering Volume (vehicles per hour)	1,335	2,283	N/A	N/A	1,401	2,789
	Total Entering Volume (vehicles per hour) – Seasonally Adjusted[1]	1,549	2,648	N/A	N/A	1,583	3,152
OR 219/ I-5 NB Ramp Terminal	Total Entering Volume (vehicles per hour)	1,879	2,503	N/A	N/A	2,117	2,934
	Total Entering Volume (vehicles per hour) – Seasonally Adjusted[1]	2,180	2,903	N/A	N/A	2,392	3,315

[1] A seasonal adjustment factor of 1.16 was applied to the January 2016 counts, per the "Mahan Property Transportation Master Plan" dated December 22, 2016. A seasonal adjustment factor of 1.17 was applied to the November 2020 counts, per the "I5 Logistics Center Phase 1" Transportation Impact Analysis dated March 12, 2021. Seasonal traffic adjustments for the 2021 turning movement counts were developed and documented in the "Project Basie Traffic Impact Study Scoping" letter submitted to ODOT on April 16, 2021 (Attachment A). The seasonal adjustment factor for the April 2021 counts was calculated as 1.13.

ODOT's APM, *Appendix 3E*, provides traffic volume adjustments for disruptive events such as the COVID-19 pandemic (Reference 1). As shown in Table 4, the total entering volume at each intersection has increased since 2016, even accounting for seasonal differences in the count dates. Furthermore, traffic volumes at some of the intersections have increased since November 2020. Given that the 2021

counts are higher than 2020 volumes recorded during COVID-19 (and these volumes were approved for use by ODOT in the *I-5 Logistics Center Phase 1 TIA*), the 2021 count data were used for purposes of traffic volume development with no disruptive event adjustment. *Appendix B provides the traffic count worksheets used in this study*.[3]

Existing Intersection Operations

As will be described later in this report, Project Basie is proposed to be a fulfillment center operating 24-hours a day with employees working on day and night shifts. The transition times between these shift times and the peak hour of the adjacent transportation system overlaps by a half-hour in the weekday AM peak period but occurs during separate time periods in the weekday PM peak period. To identify potential changes to the transportation system associated with site development, the intersection operations analysis was evaluated during the following four weekday AM and PM time periods:

- 6:30 – 7:30 AM: captures the anticipated peak arrival period for the proposed dayshift for Project Basie
- 7:00 - 8:00 AM: approximate existing system peak hour along the OR 219 study corridor from Butteville Road to the I-5 ramp terminals
- 4:30 – 5:30 PM: approximate existing system peak hour along the OR 219 study corridor from Butteville Road to the I-5 ramp terminals
- 5:30 – 6:30 PM: captures the anticipated peak dayshift departure and the peak nightshift arrival period of Project Basie

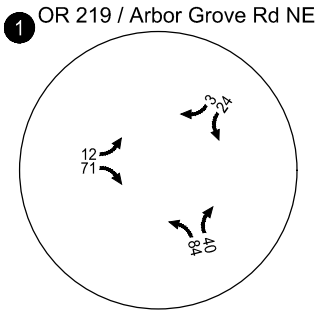
Figures 4-7 illustrate the resulting 2021 existing traffic volumes at the study intersection under all four AM and PM study hours while Table 5 summarizes the corresponding traffic operations. As shown in Table 5 and detailed in *Appendix C* (which includes the existing conditions operations analysis worksheets), the study intersection operations meet ODOT mobility targets and City and County operating standards during the four AM and PM study hours.

[3] Intersection turning movement counts at the Butteville Road/LeBrun Road intersection were provided and used with permission from the team working on the Port of Willamette Traffic Impact Study.

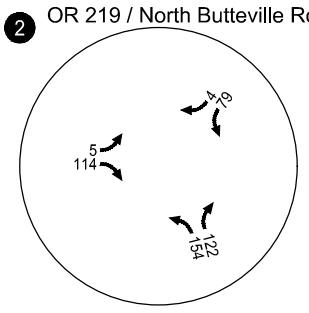
Table 5 – Existing Traffic Conditions

Intersection	Maximum Operating Standard/Target	Weekday 6:30-7:30 AM Peak Hour				Weekday 5:30-6:30 PM Peak Hour			
		Critical Approach/ Lane	LOS	Delay (sec)	V/C	Critical Approach/ Lane	LOS	Delay (sec)	V/C
OR 219/ Arbor Grove Road	V/C: 0.90 major/ 0.90 minor approach	SB	B	10.2	0.04	SB	B	10.0	0.05
OR 219/ North Butteville Road	V/C: 0.90 major/ 0.90 minor approach	SB	B	14.9	0.22	SB	B	12.2	0.22
OR 219/ Butteville Road	V/C: 0.90 major/ 0.90 minor approach	NB	C	15.6	0.43	NB	C	19.5	0.47
OR 219/ Willow Avenue	V/C: 0.95 major/ 0.95 minor approach	SB	B	14.8	0.14	SB	C	18.1	0.21
OR 219/Woodland Avenue	V/C: 0.95	-	B	13.1	0.34	-	B	16.6	0.51
OR 219/ I-5 SB Ramp Terminal	V/C: 0.80	-	B	12.2	0.26	-	B	15.8	0.45
OR 219/ I-5 NB Ramp Terminal	V/C: 0.80	-	B	14.4	0.36	-	A	7.4	0.44
OR 214/Evergreen Road	V/C: 0.95	-	C	28.7	0.51	-	C	31.2	0.47
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	-	C	27.7	0.70	-	C	32.4	0.46
OR 214/OR 211/OR 99E	V/C: 0.90	-	D	36.3	0.55	-	D	53.9	0.82
Butteville Road/ LeBrun Road	LOS E and V/C: 0.90	EB	A	9.8	<0.01	EB	B	10.0	0.01
Butteville Road/ Parr Road	LOS E and V/C: 0.90	WB	B	10.7	0.10	WB	B	11.2	0.13
Intersection	**Maximum Operating Standard/Target**	**Weekday 7:00-8:00 AM Peak Hour**				**Weekday 4:30-5:30 PM Peak Hour**			
		Critical Approach/ Lane	**LOS**	**Delay (sec)**	**V/C**	**Critical Approach/ Lane**	**LOS**	**Delay (sec)**	**V/C**
OR 219/ Arbor Grove Road	V/C: 0.90 major/ 0.90 minor approach	SB	A	9.9	0.04	SB	B	11.2	0.17
OR 219/ North Butteville Road	V/C: 0.90 major/ 0.90 minor approach	SB	B	13.2	0.19	SB	E	37.1	0.74
OR 219/ Butteville Road	V/C: 0.90 major/ 0.90 minor approach	NB	B	13.7	0.33	NB	D	31.7	0.57
OR 219/ Willow Avenue	V/C: 0.95 major/ 0.95 minor approach	SB	B	12.5	0.13	SB	C	19.6	0.20
OR 219/Woodland Avenue	V/C: 0.95	-	B	13.6	0.37	-	B	17.4	0.54
OR 219/ I-5 SB Ramp Terminal	V/C: 0.80	-	B	14.8	0.26	-	B	15.7	0.43
OR 219/ I-5 NB Ramp Terminal	V/C: 0.80	-	B	12.4	0.33	-	B	10.8	0.50
OR 214/Evergreen Road	V/C: 0.95	-	C	31.1	0.54	-	C	31.8	0.61
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	-	C	33.3	0.77	-	D	42.0	0.84
OR 214/OR 211/OR 99E	V/C: 0.90	-	D	43.9	0.64	-	E	58.1	0.88
Butteville Road/ LeBrun Road	LOS E and V/C: 0.90	EB	A	9.9	<0.01	EB	B	10.4	0.01
Butteville Road/ Parr Road	LOS E and V/C: 0.90	WB	B	10.4	0.07	WB	B	11.8	0.15

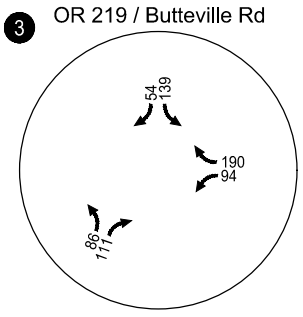
1 OR 219 / Arbor Grove Rd NE



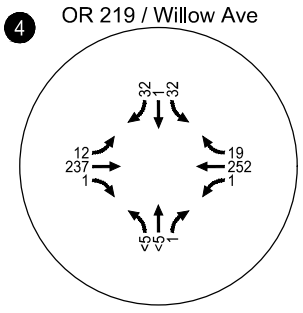
2 OR 219 / North Butteville Road NE



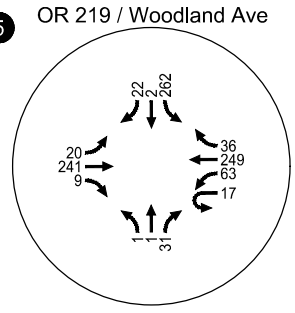
3 OR 219 / Butteville Rd



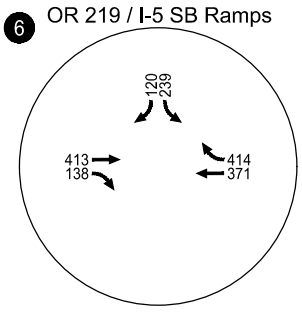
4 OR 219 / Willow Ave



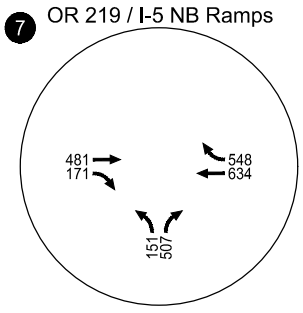
5 OR 219 / Woodland Ave



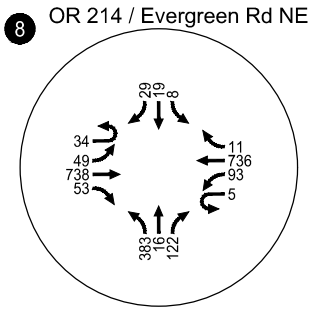
6 OR 219 / I-5 SB Ramps



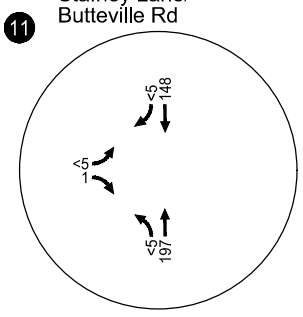
7 OR 219 / I-5 NB Ramps



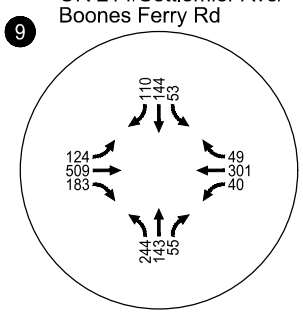
8 OR 214 / Evergreen Rd NE



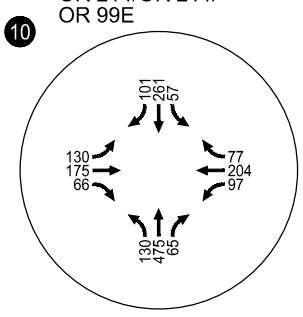
11 Stafney Lane/ Butteville Rd



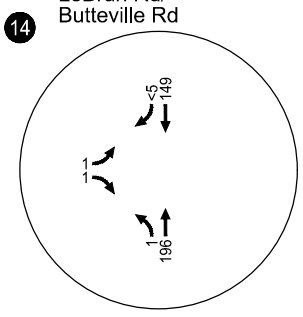
9 OR 214/Settlemier Ave/ Boones Ferry Rd



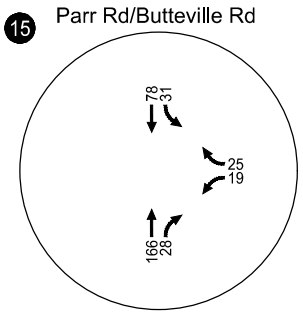
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd

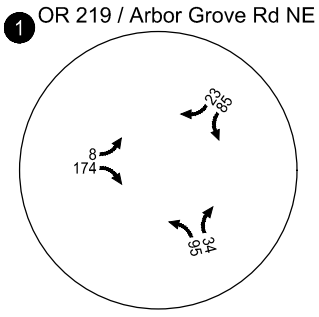


Existing Traffic Volumes
System Peak Hour (7:00 AM to 8:00 AM)
Woodburn, OR

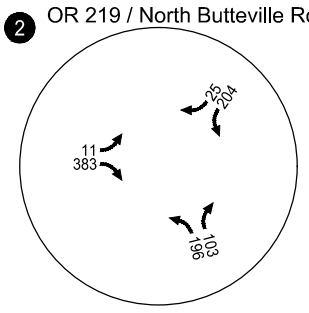
Figure **4**

KITTELSON & ASSOCIATES

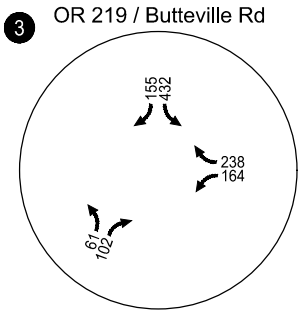
1 OR 219 / Arbor Grove Rd NE



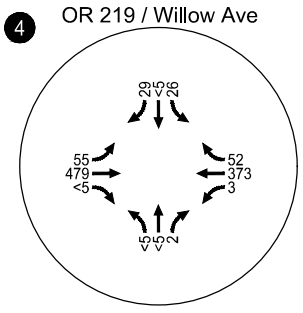
2 OR 219 / North Butteville Road NE



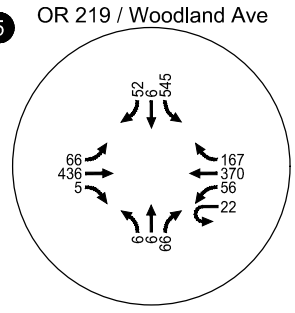
3 OR 219 / Butteville Rd



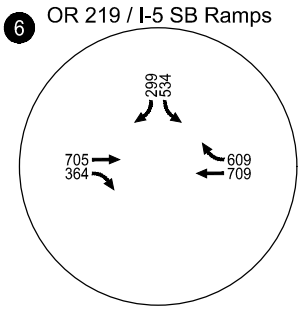
4 OR 219 / Willow Ave



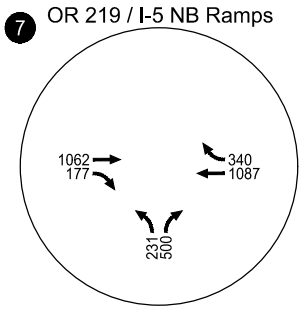
5 OR 219 / Woodland Ave



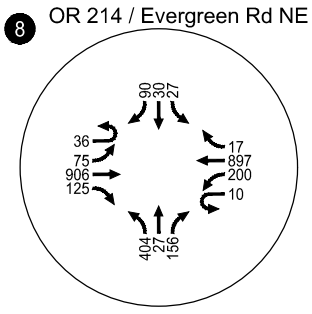
6 OR 219 / I-5 SB Ramps



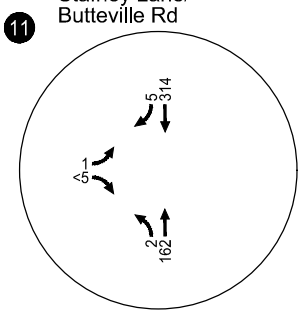
7 OR 219 / I-5 NB Ramps



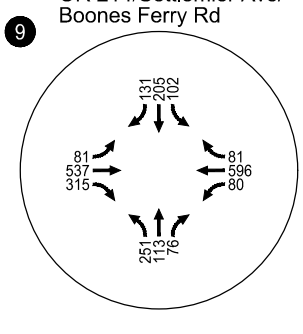
8 OR 214 / Evergreen Rd NE



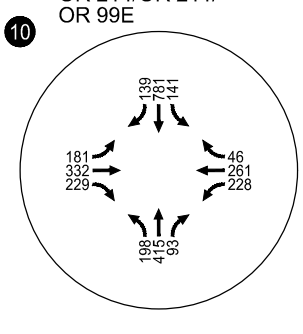
11 Stafney Lane/ Butteville Rd



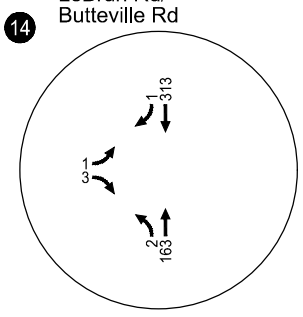
9 OR 214/Settlemier Ave/ Boones Ferry Rd



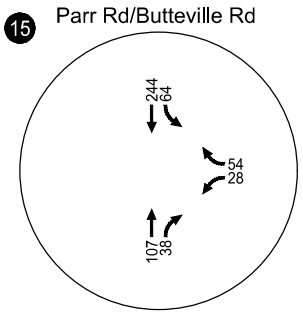
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd

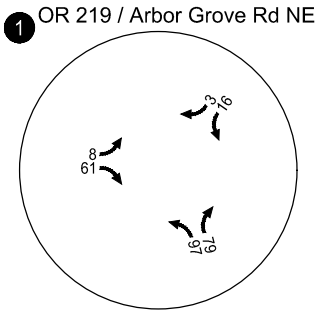


Existing Traffic Volumes
System Peak Hour (4:30 PM to 5:30 PM)
Woodburn, OR

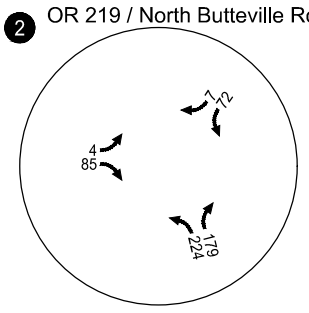
Figure **5**

KITTELSON & ASSOCIATES

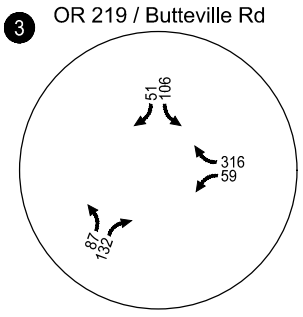
1 OR 219 / Arbor Grove Rd NE



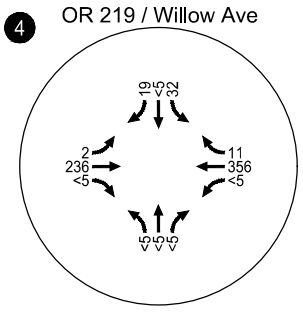
2 OR 219 / North Butteville Road NE



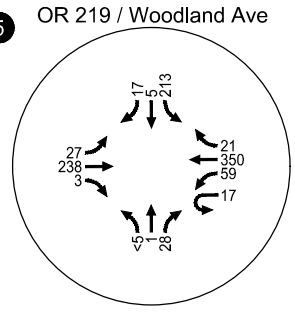
3 OR 219 / Butteville Rd



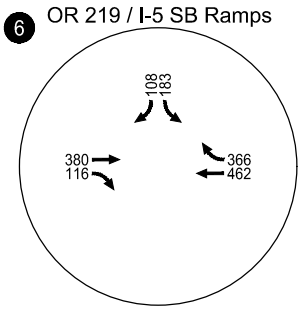
4 OR 219 / Willow Ave



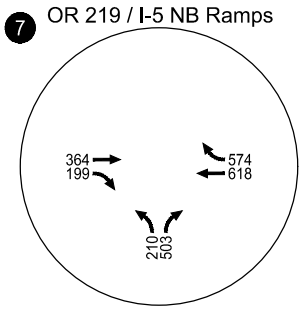
5 OR 219 / Woodland Ave



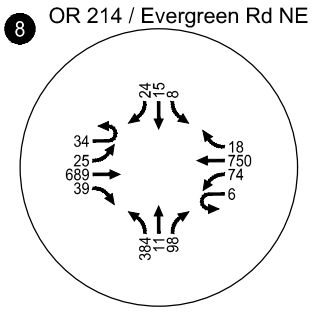
6 OR 219 / I-5 SB Ramps



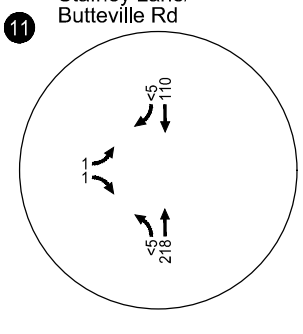
7 OR 219 / I-5 NB Ramps



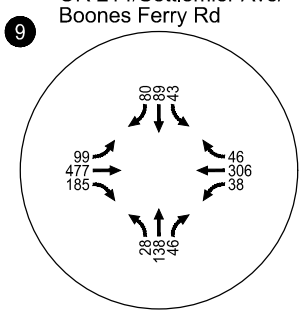
8 OR 214 / Evergreen Rd NE



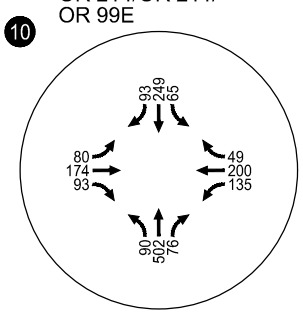
11 Stafney Lane/ Butteville Rd



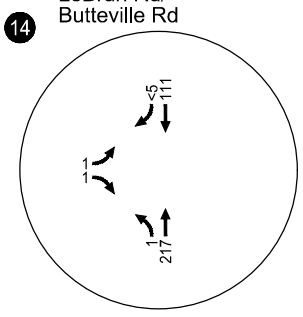
9 OR 214/Settlemier Ave/ Boones Ferry Rd



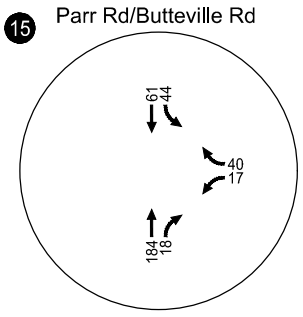
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd

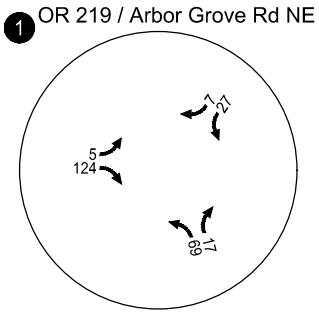


Existing Traffic Volumes
Peak Hour of Generator (6:30 AM to 7:30 AM)
Woodburn, OR

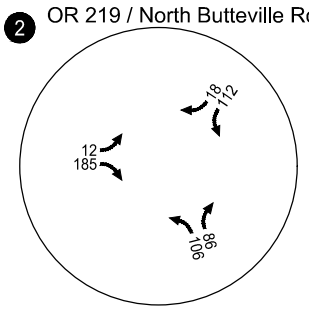
Figure **6**

KITTELSON & ASSOCIATES

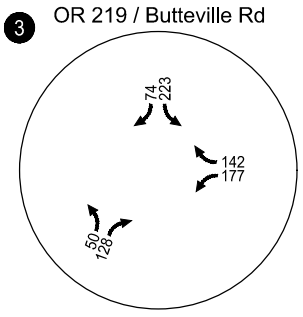
1 OR 219 / Arbor Grove Rd NE



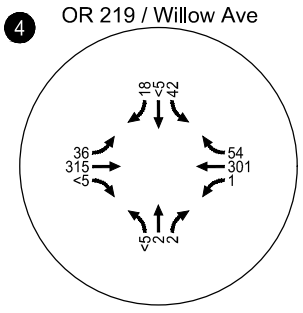
2 OR 219 / North Butteville Road NE



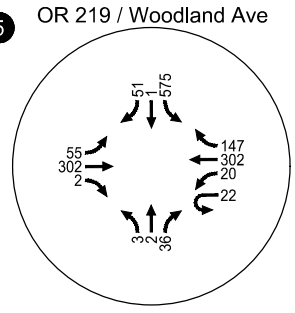
3 OR 219 / Butteville Rd



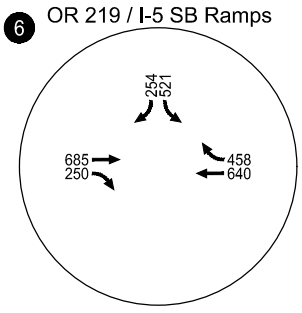
4 OR 219 / Willow Ave



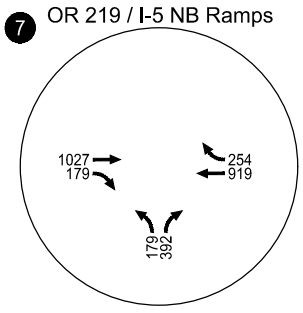
5 OR 219 / Woodland Ave



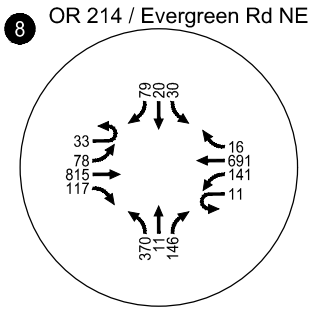
6 OR 219 / I-5 SB Ramps



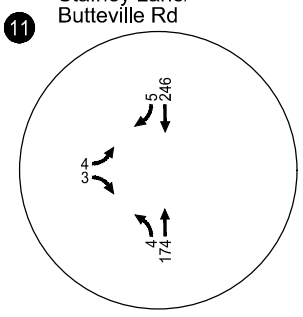
7 OR 219 / I-5 NB Ramps



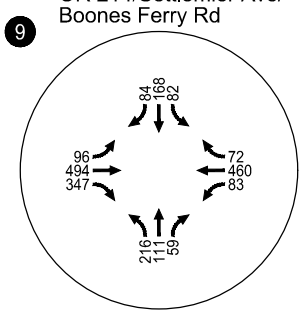
8 OR 214 / Evergreen Rd NE



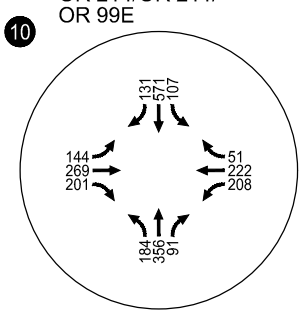
11 Stafney Lane/ Butteville Rd



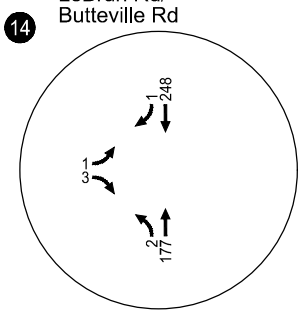
9 OR 214/Settlemier Ave/ Boones Ferry Rd



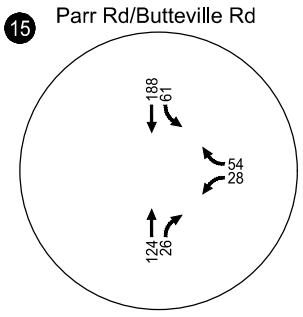
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd



Existing Traffic Volumes
Peak Hour of Generator (5:30 PM to 6:30 PM)
Woodburn, OR

Figure **7**

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Intersection Crash History

ODOT provided crash records at the study intersections for the period from January 1, 2015 through December 31, 2019[4]. The crash type classifications at each intersection were reviewed to assess whether crash patterns might be identifiable. *Appendix D provides the ODOT crash report which provides more details on the reported crashes*. Table 6 summarizes the ODOT crash data.

Table 6 - Reported Crash History (January 1, 2015 – December 31, 2019)

Study Intersection	Crash Type								Severity			Total
	Angle	Turn	Rear-End	Side Swipe	Fixed Object	Ped/ Bike	Head-On	Other	PDO[1]	Injury	Fatal	
OR 219/ Arbor Grove Road	0	1	0	0	0	0	0	0	0	1	0	1
OR 219/ North Butteville Road	0	2	1	0	1	0	0	0	3	1	0	4
OR 219/ Butteville Road	0	2	4	0	1	0	0	1	5	3	0	8
OR 219/ Willow Avenue	0	3	1	0	0	0	0	0	0	4	0	4
OR 219/ Woodland Avenue	1	4	1	0	0	1	0	0	3	4	0	7
OR 219/ I-5 SB Ramp Terminal	4	2	25	1	0	0	1	0	5	28	0	33
OR 219/ I-5 NB Ramp Terminal	2	21	10	0	0	0	0	3	16	20	0	36
OR 214/ Evergreen Road	7	42	11	1	2	0	0	0	26	37	0	63
OR 214/Settlemier Avenue/Boones Ferry Road	0	2	6	0	0	1	0	0	2	7	0	9
OR 214/OR 211/OR 99E	3	7	27	0	1	1	0	2	17	24	0	41
Butteville Road/ LeBrun Road	0	0	1	0	0	0	0	0	1	0	0	1
Butteville Road/ Parr Road	0	4	2	0	3	0	0	0	1	8	0	9

[1]PDO = Property damage only

In addition to the crash types, intersection crash rates were calculated and compared to statewide crash rate performance thresholds. For this analysis, the observed crash rate was calculated and compared with the 90th percentile crash rates for the appropriate rural/urban intersections by traffic control (3 versus 4-legged configurations as appropriate). The intersection crash rate assessment for the study intersections is summarized in Table 7.

[4] The previous May 2021 submittal of this TIA included crash data from an older five-year reporting period. This updated version includes data from the most recent 2015-2019 reporting period. As such, all of the study intersection crash data analysis has been updated resulting in new findings.

Table 7 - Intersection Crash Rate Assessment

Intersection	Total Crashes	Observed Crash Rate*	Lane Type / Traffic Control**	90th Percentile Crash Rate by Lane Type and Traffic Control*	Observed Crash Rate > 90th Percentile Crash Rate?
OR 219/ Arbor Grove Road	1	0.131	3ST	0.475	No
OR 219/ North Butteville Road	4	0.238	3ST	0.475	No
OR 219/ Butteville Road	8	0.381	3ST	0.475	No
OR 219/ Willow Avenue	4	0.215	4ST	0.408	No
OR 219/ Woodland Avenue	7	0.213	4SG	0.860	No
OR 219/ I-5 SB Ramp Terminal	33	0.562	3SG	0.509	Yes
OR 219/ I-5 NB Ramp Terminal	36	0.581	3SG	0.509	Yes
OR 214/ Evergreen Road	63	1.151	4SG	0.860	Yes
OR 214/Settlemier Avenue/Boones Ferry Road	9	0.192	4SG	0.860	No
OR 214/OR 211/ OR 99E	41	0.738	4SG	0.860	No
Butteville Road/ Parr Road	9	0.922	3ST	0.475	Yes
Butteville Road/ LeBrun Road	1	0.113	3ST	0.475	No

*Per million entering vehicles
**3ST = 3-leg, stop-controlled; 4ST = 4-leg, stop-controlled; 3SG = 3-leg, signalized; 4SG = 4-leg, signalized

Table 7 reveals that the observed crash rates at the OR 219/I-5 SB Ramp Terminal, OR 219/I-5 NB Ramp Terminal, OR 214/Evergreen Road, and Butteville Road/Parr Road intersections exceed the 90th percentile crash rates for similar observed intersections across the state. As such, a closer assessment of each intersection's crash data is provided below.

OR 219/I-5 SB Ramp Terminal

The OR 219/I-5 SB Ramp Terminal experienced 33 reported crashes over the most recent five-year reporting period. A closer inspection of the crash history revealed that 22 of these crashes occurred as rear-end collisions on the SB offramp. In most cases, the reported cause was either one vehicle following too closely or failing to avoid stopped vehicles ahead. No detail is provided in the summary reports that indicates if the rear-end collisions are occurring in the southbound left-turn or right-turn lanes. A review of the crash time period (time of day and month) and conditions (wet vs. dry) revealed no discernable patterns. As noted later in this report, improvements to the southbound right-turn lane are being recommended that may address some of the noted rear-end collisions.

OR 219/I-5 NB Ramp Terminal

The OR 219/I-5 NB Ramp Terminal experienced 36 reported crashes over the most recent five-year reporting period. A closer inspection of the crash history revealed a proportionately higher number of

turning movement crash types, however five of these crashes occurred in 2015 while the interchange was being reconstructed (with four of these crashes occurring on the eastbound left-turn movement which no longer exists post construction). The other predominate crash type was associated with the northbound left-turn movement from the offramp to OR 219 westbound. However, there are no discernable time period or roadway condition patterns noted amongst these crashes.

OR 214/Evergreen Road

The OR 214/Evergreen Road intersection experienced 63 reported crashes over the most recent five-year reporting period. However, of these crashes, 17 occurred in 2015 while the intersection was still experiencing reconstruction and widening interruptions. A closer inspection of the remaining crashes revealed a proportionately high number of westbound left-turn crashes (25) from OR 214 onto Evergreen Road southbound. Seven of these crashes occurred during the 2015 construction period, and of the remaining 18 crashes, 5 were attributed to the permissive flashing yellow arrow phase. While there are no discernable time period or roadway condition patterns, it is noted that this left-turn movement is turning across multiple opposing through lanes and a right-turn movement with a large radius. Based on this crash history, it is recommended that ODOT continue to monitor the intersection for any new emerging or continued crash patterns.

Butteville Road/Parr Road

The Butteville Road/Parr Road intersection experienced nine reported crashes over the most recent five-year reporting period. These crashes include a mix of fixed-object crashes, rear-end crashes, and turning movement crashes. Two particular crashes involved westbound left-turn movements. As noted in the Woodburn TSP, the existing Parr Avenue approach to Butteville Road has been identified as having some intersection sight distance limitations that are attributed to the vertical curvature of Butteville Road as it crosses over I-5. Given the small sample size and the limitations of the crash data summaries, there is no way to determine if these crashes were due to the sight distance limitations. As such, it is recommended that Marion County and the City of Woodburn continue to monitor the intersection for emerging or continued crash patterns.

TRANSPORTATION IMPACT ANALYSIS

The traffic impact analysis identifies how the study area's transportation system will operate in the year 2023 upon buildout of Project Basie as well as in the year 2040, consistent with the City's TSP.

2023 Background Traffic Conditions

The year 2023 background traffic operations analysis identifies how the study area's transportation system will operate if Project Basie is not developed. This analysis includes local and regional traffic but does not include traffic from the proposed fulfillment center.

A two percent linear annual growth rate was applied to the seasonally adjusted 2021 traffic volumes to account for general local and regional traffic growth. This rate is consistent with historical growth rates and rates used in other recent traffic impact studies in the local vicinity.

In addition to the local/regional growth, three in-process developments were identified that would directly impact the study intersections. The site trips associated with the following projects were incorporated in the 2023 background traffic volumes:

- Woodland Crossing Apartments
- Woodburn Senior Living Apartments
- Port of Willamette[5]

Background Intersection Operations

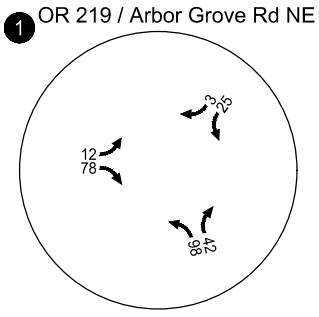
Figures 8-11 summarize the resulting 2023 background traffic volumes at the study intersection under all four AM and PM study periods, while Table 8 summarizes the corresponding traffic operations. As shown in Table 8, the study intersections are forecast to continue to satisfy applicable ODOT mobility targets and City and County operating standards during the four AM and PM study periods with the exception of the OR 214/OR 211/OR 99E intersection. During the weekday PM system peak hour, the intersection is forecast to operate at a v/c ratio of 0.92 which exceeds the 0.90 mobility target. Note that while all turning movement volumes and v/c ratios are projected to increase from 2021 to 2023, some intersections are projected to experience a small decrease in overall delay due to the actuated signal timing as modeled in Synchro. *Appendix E contains the year 2023 Background conditions operations worksheets*.

[5] As part of the Port of Willamette project, it is recognized that LeBrun Road is proposed to be relocated such that it will intersect Butteville Road approximately 1,100 feet to the north of its current location. For the purposes of this study, this relocation has been assumed as part of all 2023 and 2040 analysis scenarios and is reflected in all subsequent figures.

Table 8 – 2023 Background Traffic Conditions

Intersection	Maximum Operating Standard/Target	Weekday 6:30-7:30 AM Peak Generator Hour				Weekday 5:30-6:30 PM Peak Generator Hour			
		Critical Approach/ Lane	LOS	Delay (sec)	V/C	Critical Approach/ Lane	LOS	Delay (sec)	V/C
OR 219/ Arbor Grove Road	V/C: 0.90 major / 0.90 minor approach	SB	B	10.4	0.04	SB	B	10.2	0.06
OR 219/ North Butteville Road	V/C: 0.90 major / 0.90 minor approach	SB	C	16.4	0.27	SB	B	12.9	0.25
OR 219/ Butteville Road	V/C: 0.90 major / 0.90 minor approach	NB	C	18.6	0.53	NB	D	25.7	0.59
OR 219/ Willow Avenue	V/C: 0.95 major / 0.95 minor approach	SB	C	16.8	0.17	SB	C	21.3	0.25
OR 219/Woodland Avenue	V/C: 0.95	-	B	14.4	0.40	-	B	18.3	0.53
OR 219/ I-5 SB Ramp Terminal	V/C: 0.80	-	B	11.6	0.30	-	B	15.8	0.49
OR 219/ I-5 NB Ramp Terminal	V/C: 0.80	-	B	14.1	0.40	-	A	7.8	0.48
OR 214/Evergreen Road	V/C: 0.95	-	C	30.1	0.53	-	C	30.6	0.54
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	-	C	30.5	0.74	-	D	36.6	0.77
OR 214/OR 211/OR 99E	V/C: 0.90	-	D	42.1	0.57	-	E	56.6	0.86
Butteville Road/ LeBrun Road	LOS E and V/C: 0.90	EB	B	12.1	0.05	EB	B	13.0	0.06
Butteville Road/Parr Road	LOS E and V/C: 0.90	WB	B	11.0	0.11	WB	B	11.5	0.14
Intersection	**Maximum Operating Standard/Target**	**Weekday 7:00-8:00 AM System Peak Hour**				**Weekday 4:30-5:30 PM System Peak Hour**			
		Critical Approach/ Lane	LOS	Delay (sec)	V/C	Critical Approach/ Lane	LOS	Delay (sec)	V/C
OR 219/ Arbor Grove Road	V/C: 0.90 major / 0.90 minor approach	SB	B	10.0	0.04	SB	B	11.6	0.19
OR 219/ North Butteville Road	V/C: 0.90 major / 0.90 minor approach	SB	B	14.0	0.22	SB	F	>50.0	0.87
OR 219/ Butteville Road	V/C: 0.90 major / 0.90 minor approach	NB	C	15.2	0.39	NB	E	46.5	0.72
OR 219/ Willow Avenue	V/C: 0.95 major / 0.95 minor approach	SB	B	13.4	0.14	SB	C	22.6	0.23
OR 219/Woodland Avenue	V/C: 0.95	-	B	14.5	0.43	-	B	19.0	0.58
OR 219/ I-5 SB Ramp Terminal	V/C: 0.80	-	B	14.0	0.29	-	B	15.9	0.47
OR 219/ I-5 NB Ramp Terminal	V/C: 0.80	-	B	12.3	0.36	-	B	11.4	0.55
OR 214/Evergreen Road	V/C: 0.95	-	C	33.4	0.57	-	C	34.8	0.75
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	-	D	38.0	0.81	-	D	49.6	0.89
OR 214/OR 211/OR 99E	V/C: 0.90	-	D	46.4	0.67	-	E	62.9	0.92
Butteville Road/ LeBrun Road	LOS E and V/C: 0.90	EB	B	12.3	0.05	EB	B	13.7	0.06
Butteville Road/Parr Road	LOS E and V/C: 0.90	WB	B	10.6	0.07	WB	B	12.3	0.17

1 OR 219 / Arbor Grove Rd NE



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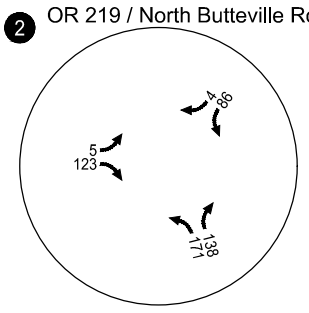

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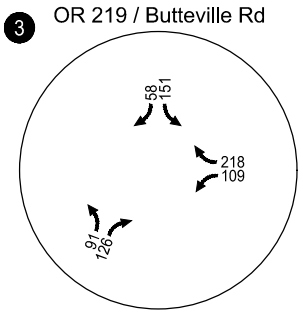

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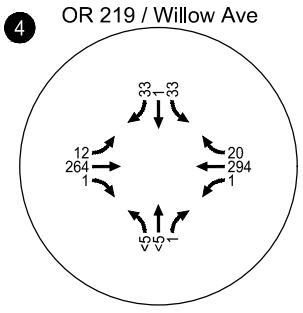

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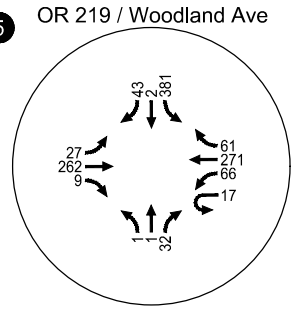
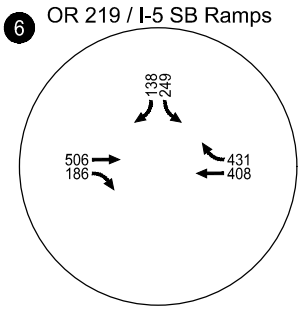


6 OR 219 / I-5 SB Ramps



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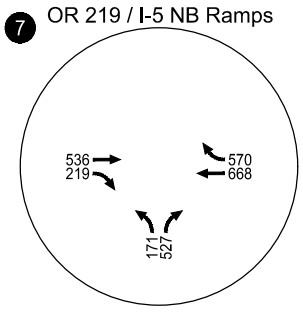

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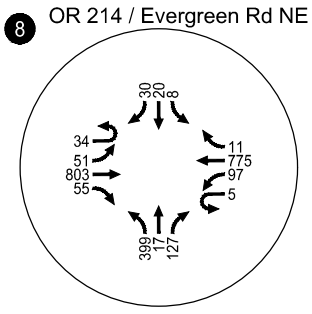

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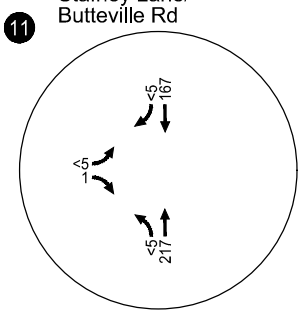
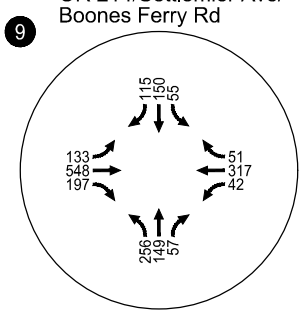
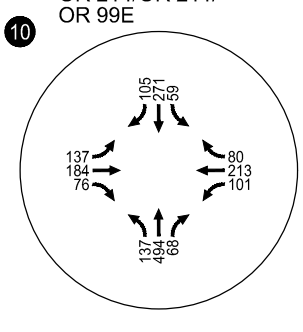


9 OR 214/Settlemier Ave/ Boones Ferry Rd



10 OR 214/OR 211/ OR 99E



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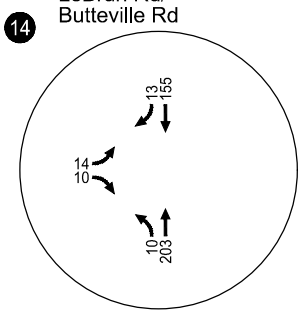
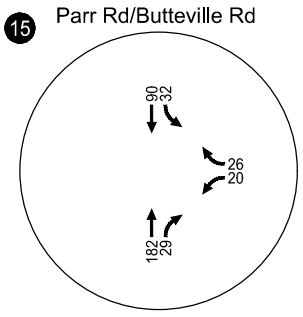


15 Parr Rd/Butteville Rd



2023 Background Traffic Volumes
System Peak Hour (7:00 AM to 8:00 AM)
Woodburn, OR

Figure **8**

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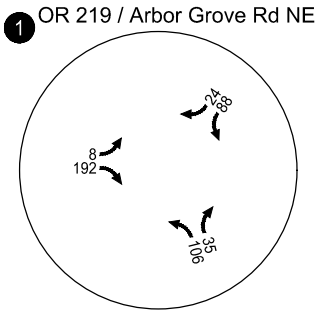
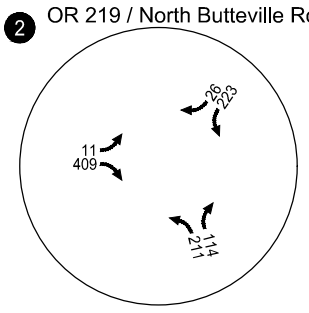
1 OR 219 / Arbor Grove Rd NE



2 OR 219 / North Butteville Road NE



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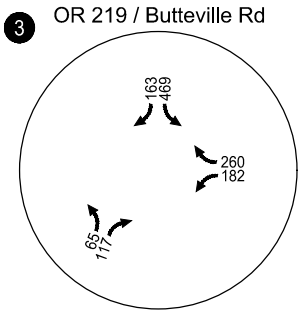
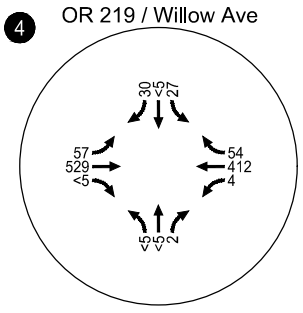


4 OR 219 / Willow Ave



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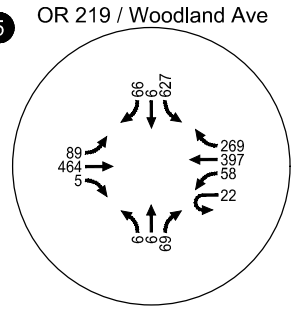
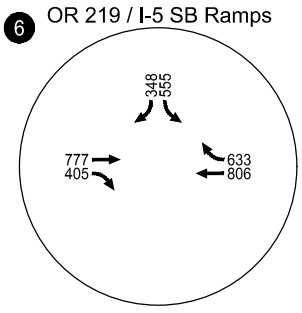
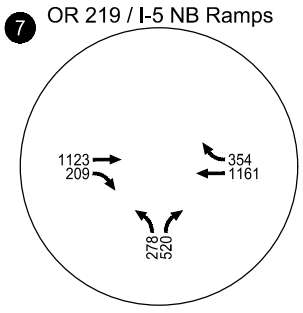


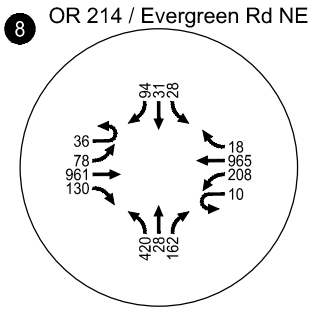
6 OR 219 / I-5 SB Ramps



7 OR 219 / I-5 NB Ramps



8 OR 214 / Evergreen Rd NE



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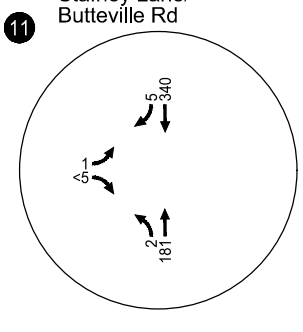

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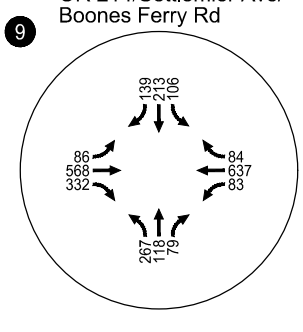
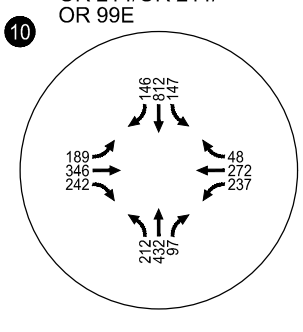


10 OR 214/OR 211/ OR 99E



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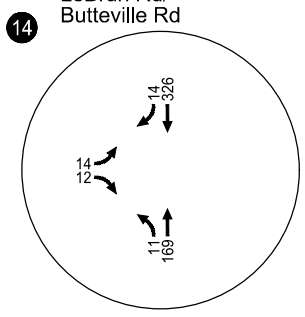

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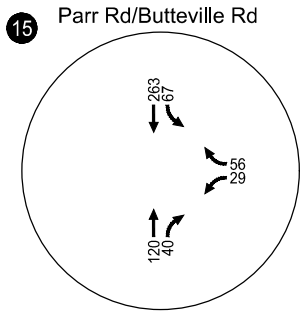

2023 Background Traffic Volumes
System Peak Hour (4:30 PM to 5:30 PM)
Woodburn, OR

Figure **9**

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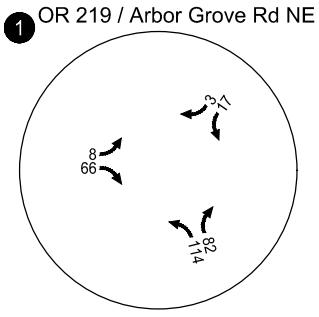
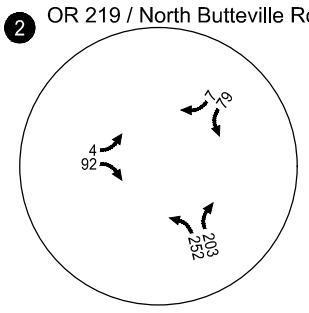
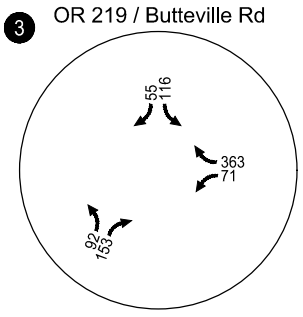
1 OR 219 / Arbor Grove Rd NE



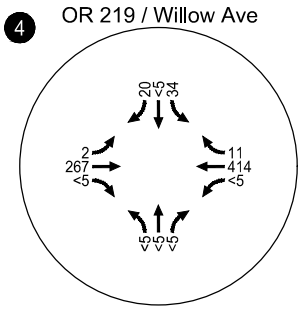
2 OR 219 / North Butteville Road NE



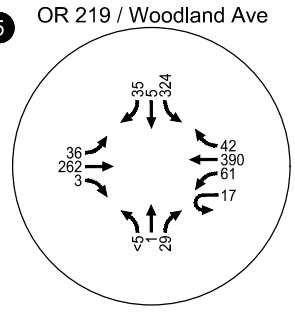
3 OR 219 / Butteville Rd



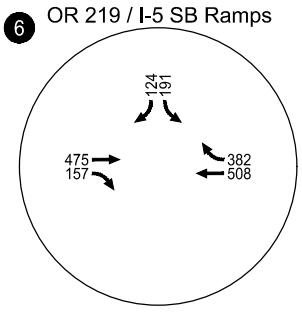
4 OR 219 / Willow Ave



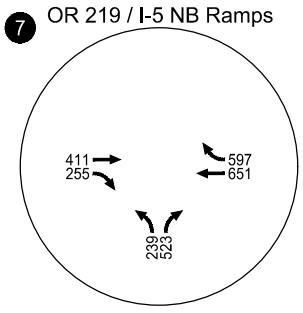
5 OR 219 / Woodland Ave



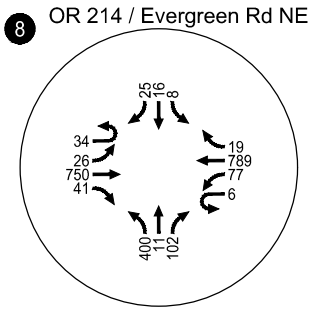
6 OR 219 / I-5 SB Ramps



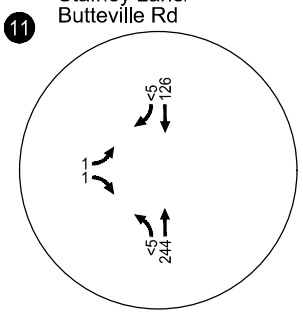
7 OR 219 / I-5 NB Ramps



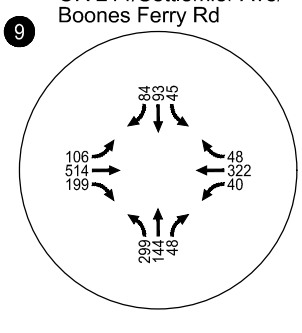
8 OR 214 / Evergreen Rd NE



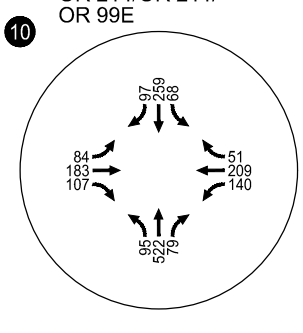
11 Stafney Lane/ Butteville Rd



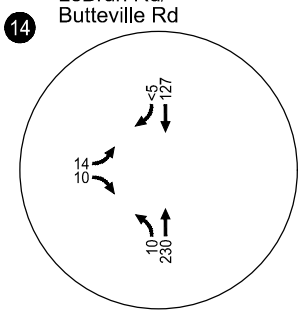
9 OR 214/Settlemier Ave/ Boones Ferry Rd



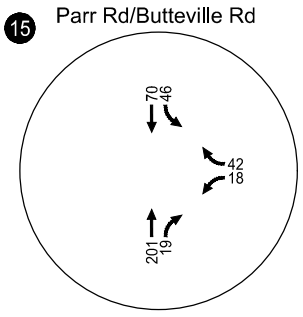
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd



2023 Background Traffic Volumes
Peak Hour of Generator (6:30 AM to 7:30 AM)
Woodburn, OR

Figure **10**

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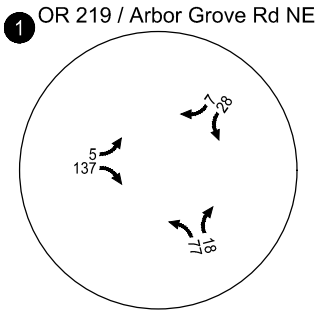
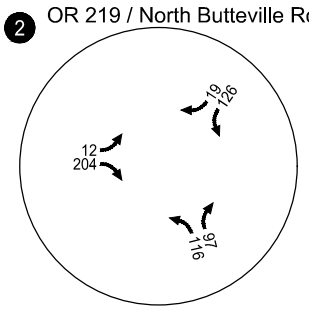
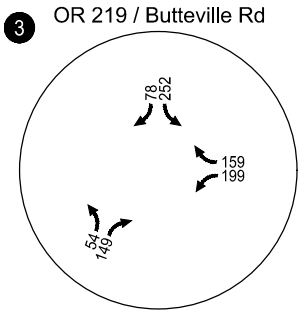
1 OR 219 / Arbor Grove Rd NE



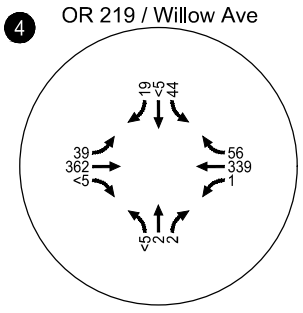
2 OR 219 / North Butteville Road NE



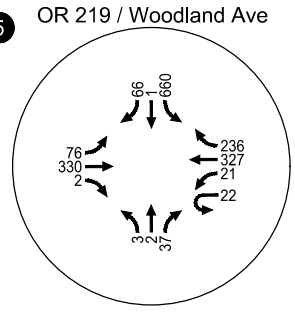
3 OR 219 / Butteville Rd



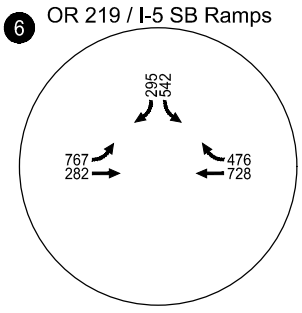
4 OR 219 / Willow Ave



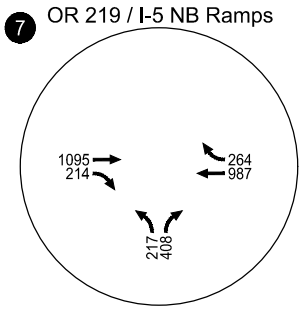
5 OR 219 / Woodland Ave



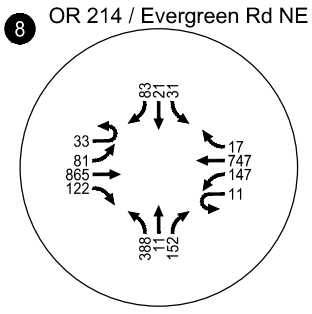
6 OR 219 / I-5 SB Ramps



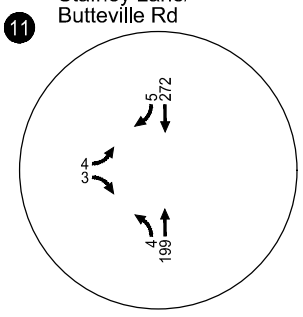
7 OR 219 / I-5 NB Ramps



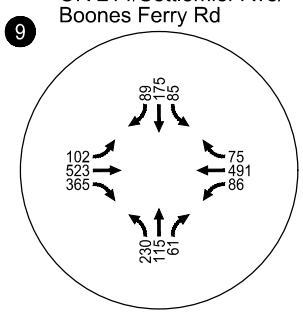
8 OR 214 / Evergreen Rd NE



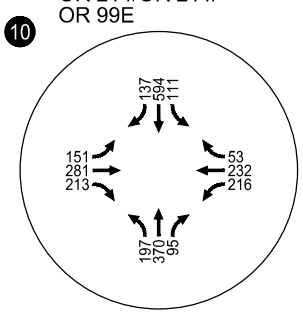
11 Stafney Lane/ Butteville Rd



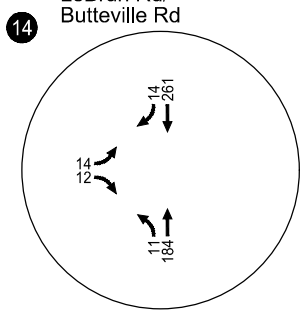
9 OR 214/Settlemier Ave/ Boones Ferry Rd



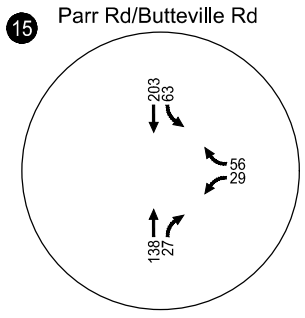
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd



2023 Background Traffic Volumes
Peak Hour of Generator (5:30 PM to 6:30 PM)
Woodburn, OR

Figure **11**

KITTELSON & ASSOCIATES

Proposed Fulfillment Center

Project Basie will consist of a five-story building housing approximately 3.849 million square feet for sortable parcel fulfillment. As shown in Figure 2, four site access driveways are proposed along the site's Butteville Road frontage. Of these driveways, the three northern driveways will primarily be used by employees accessing the site's parking areas and drop-off/pick-up zones. The southernmost driveway is the site's primary truck ingress and egress access but will also serve employee access.

To support the development, the following changes to the transportation system have been determined to be needed and are proposed to be constructed as part of the development:

- The southern segment of Butteville Road abutting the development site will be widened consistent with the special design section agreed upon by the City of Woodburn and Marion County, with three twelve-foot travel lanes (one NB lane, one center turn lane, and one SB lane), a rural shoulder on the west side, six-foot bike lanes, and curb, landscape strip and a six-foot sidewalk on the east side.
- In order to accommodate future industrial development in the SWIR, the City of Woodburn's TSP has identified the need for geometric and traffic control changes at the OR 219/Butteville Road intersection. However, a preliminary investigation of the intersection determined that widening/enhancement is constrained by the City's UGB on the west side, private property on the northeast side, wetlands on the southeast side, and a likely need to widen or replace the Senecal Creek bridge on the approaching east leg of OR 219. To avoid potential design and permitting challenges associated with the current location, Project Basie is proposing the following changes:
    - Realign the northern section of Butteville Road to the east of Senecal Creek and its affiliated wetlands. This new alignment would be constructed to a symmetrical City of Woodburn Collector facility where it would be widened as necessary to fit the geometric design needs of a proposed roundabout at OR 219 (see next bullet).
    - Construct a double lane roundabout at the new OR 219/Butteville Rd intersection. East of the new roundabout, OR 219 would be widened and connected to the fully improved section that currently ends near the Willow Avenue intersection.
    - Close the existing OR 219/Butteville Road intersection and provide a turnaround. For the purposes of this study, all traffic volumes using the intersection have been rerouted to the proposed roundabout and realigned Butteville Road.
    - Provide a connection to the old Butteville Road and the realigned Butteville Road.

Exhibits 1 and 2 illustrate detailed layouts of the proposed Butteville Road realignment and OR 219 roundabout which has been sized and designed to accommodate long-term projected traffic and heavy vehicle demands. Conceptual design details documenting the basic design parameters behind the detailed roundabout exhibits are provided in *Appendix F*. Figure 12 illustrates the proposed intersection and traffic control changes at the study intersections and site driveways.

Exhibit 1 - OR 219/Realigned Butteville Road Conceptual Layout

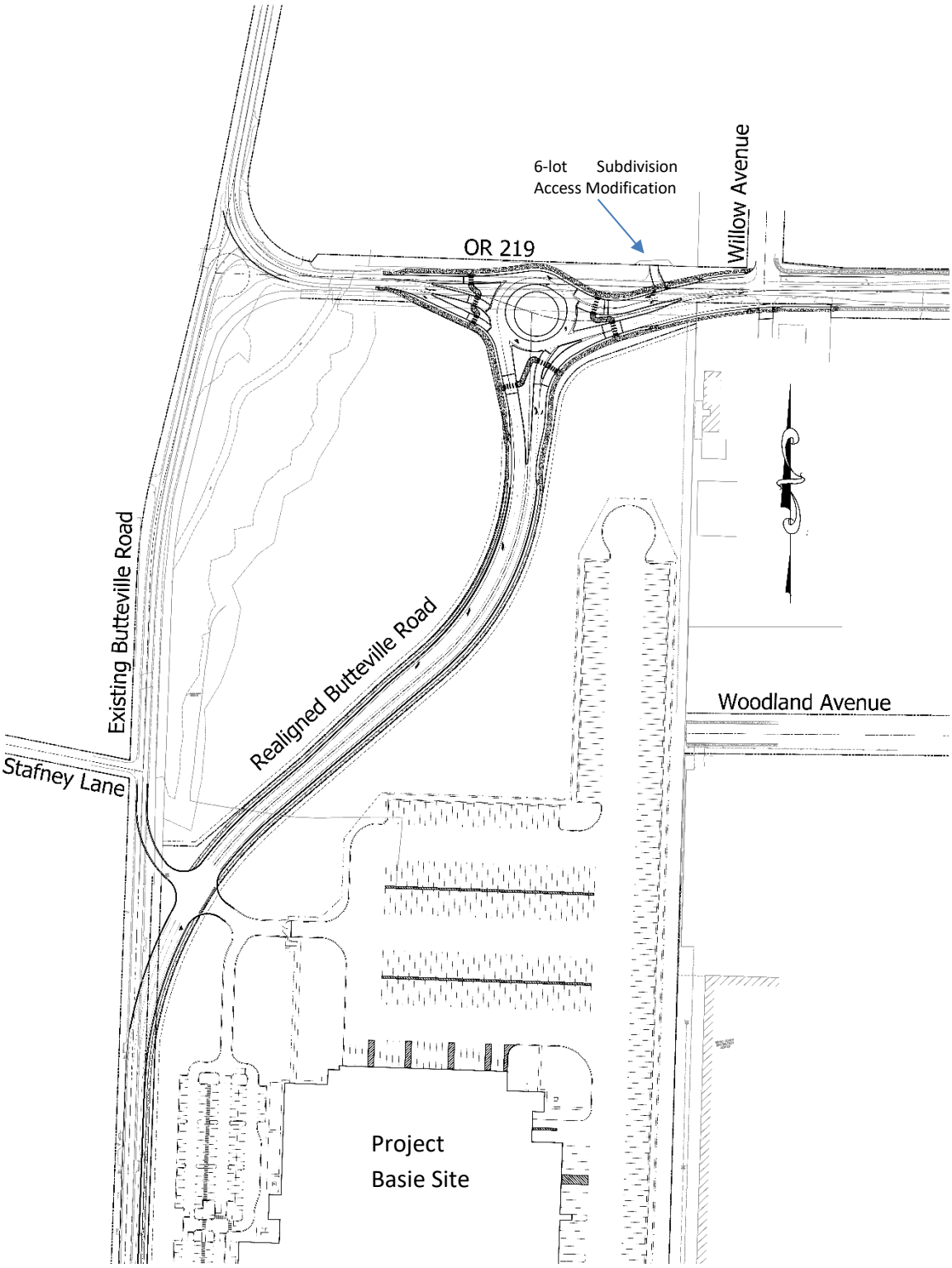
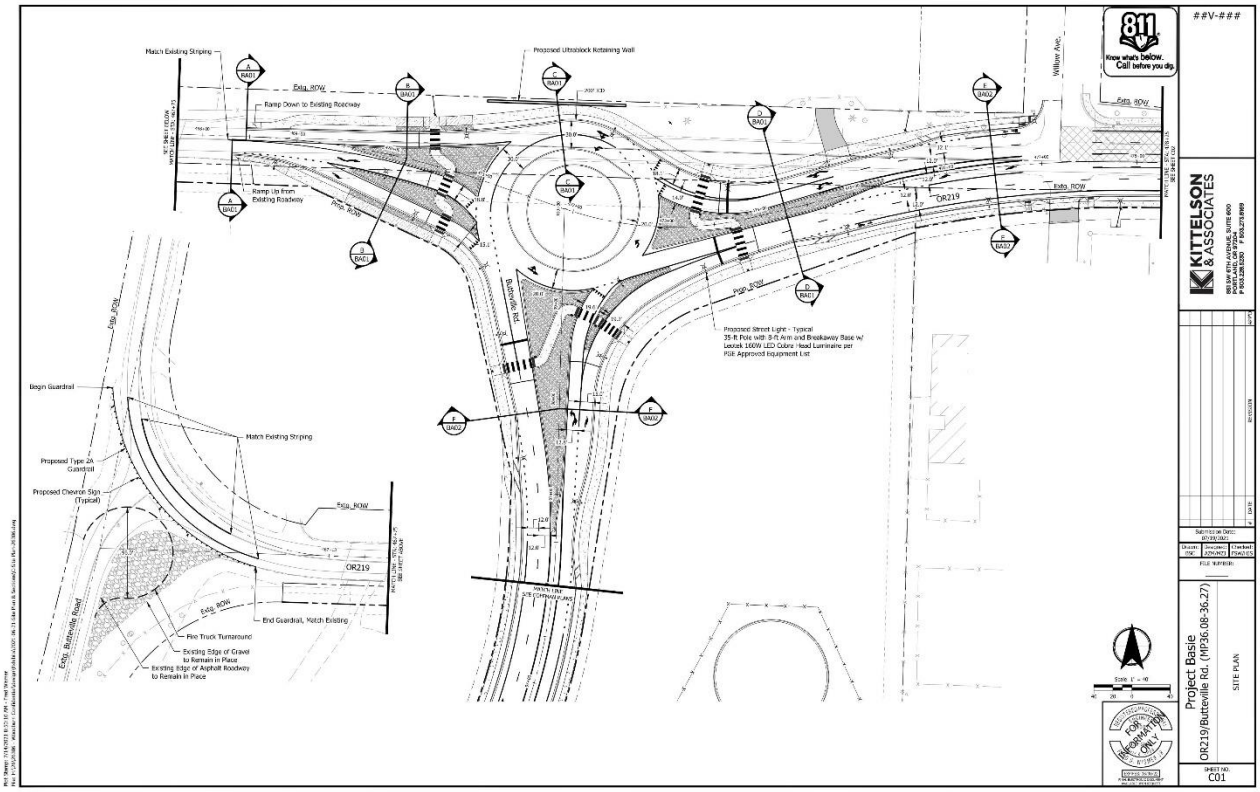
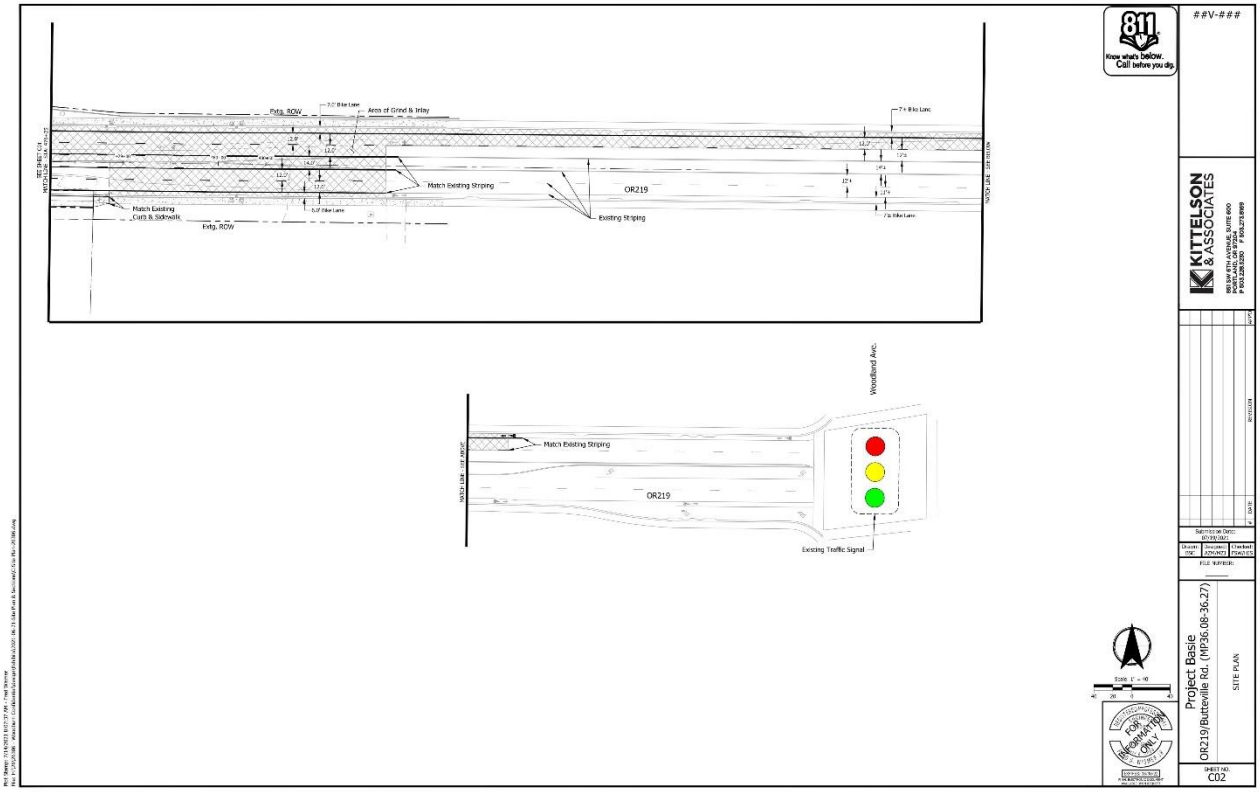
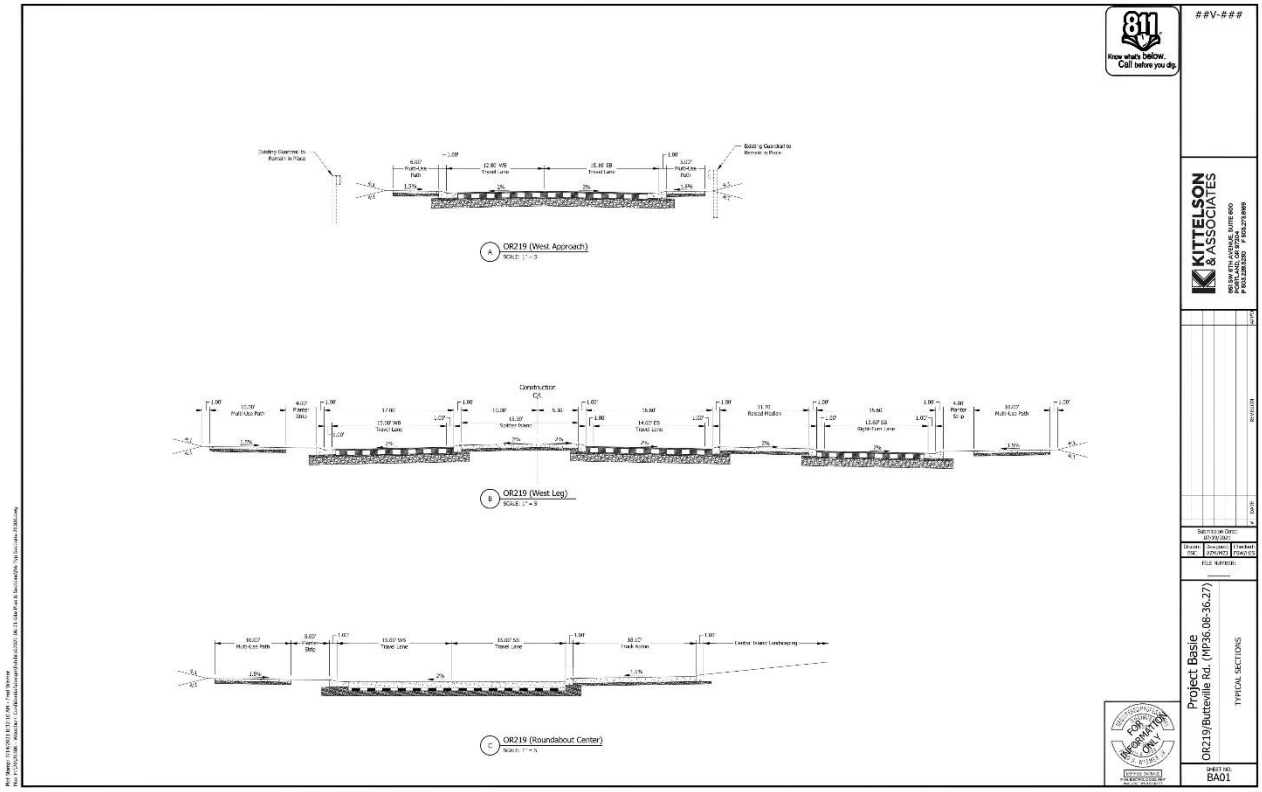
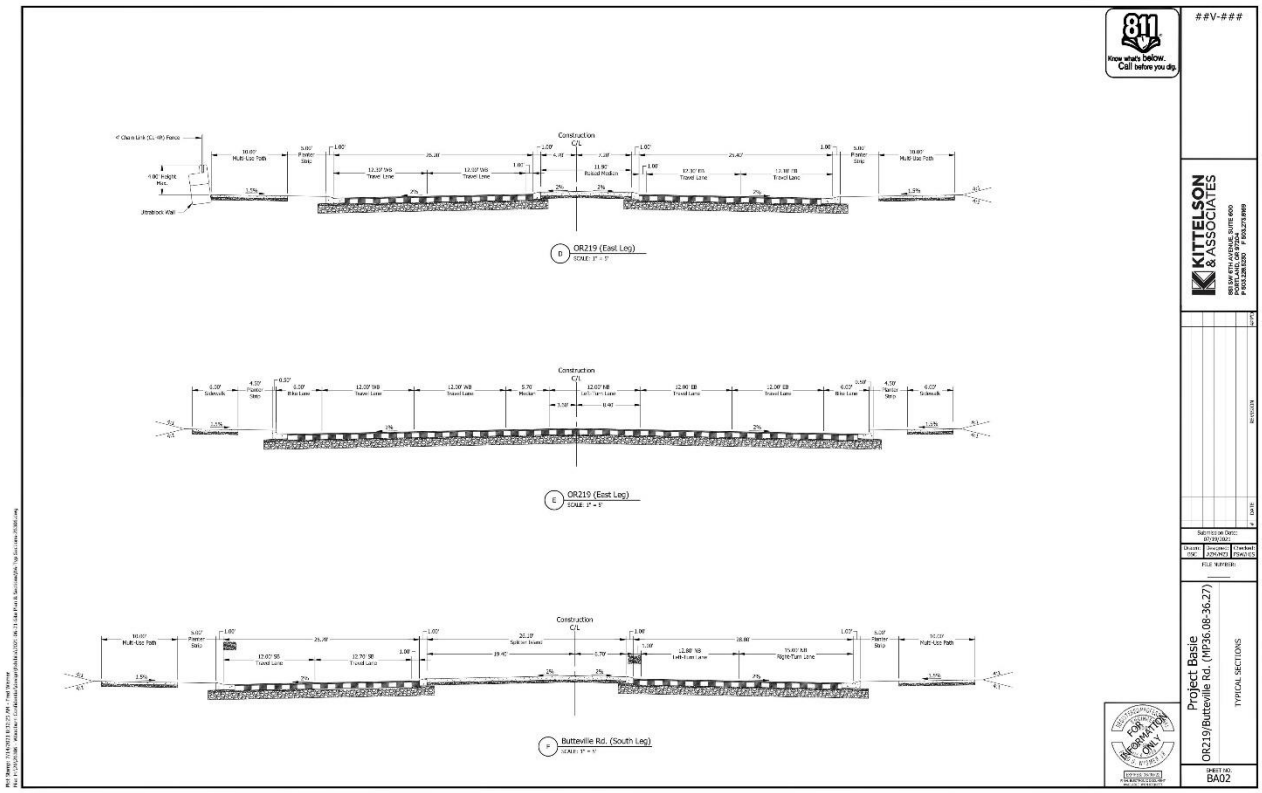


Exhibit 2 – Preliminary OR 219/Realigned Butteville Road Design, Cross Sections, Lighting, and Old Butteville Road Closure Details

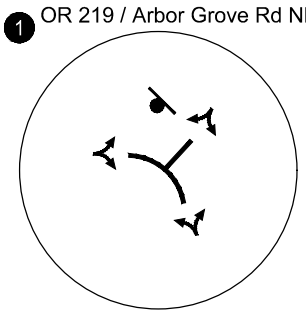




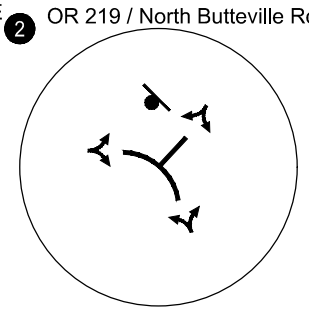

##V-###
Know what's below. Call before you dig.
KITTELSON & ASSOCIATES
Project Basie
OR219/Butteville Rd. (MP36.08-36.27)
TYPICAL SECTIONS
SHEET NO.
BA01
OR219 (West Approach)
OR219 (West Leg)
OR219 (Roundabout Center)


##V-###
Know what's below. Call before you dig.
KITTELSON & ASSOCIATES
Project Basie
OR219/Butteville Rd. (MP36.08-36.27)
TYPICAL SECTIONS
SHEET NO.
BA02
OR219 (East Leg)
OR219 (East Leg)
Butteville Rd. (South Leg)

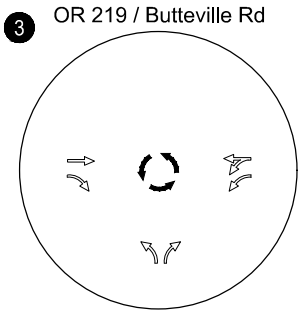
1 OR 219 / Arbor Grove Rd NE



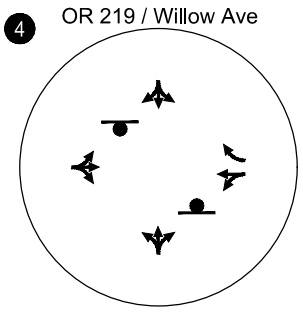
2 OR 219 / North Butteville Road NE



3 OR 219 / Butteville Rd

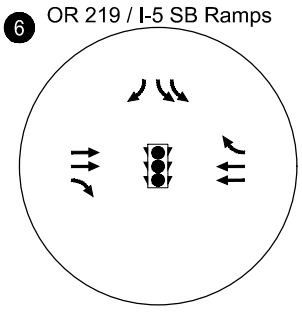


4 OR 219 / Willow Ave

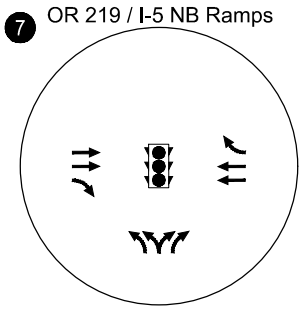


5 OR 219 / Woodland Ave

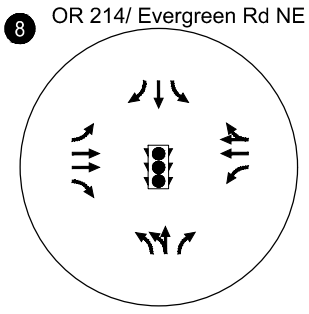
6 OR 219 / I-5 SB Ramps



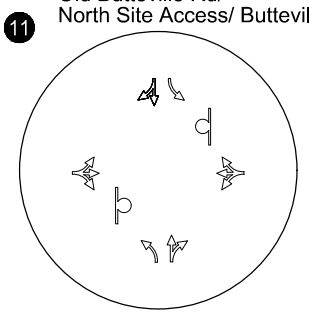
7 OR 219 / I-5 NB Ramps



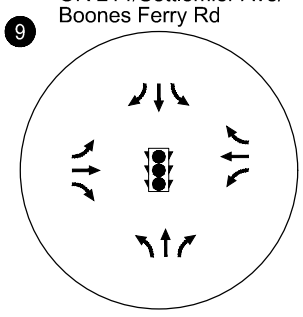
8 OR 214/ Evergreen Rd NE



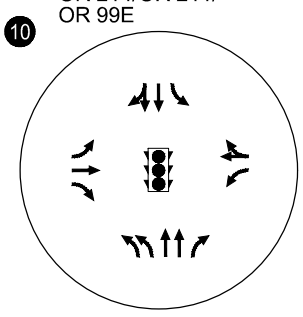
11 Old Butteville Rd/ North Site Access/ Butteville Rd



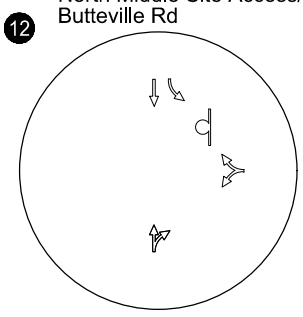
9 OR 214/Settlemier Ave/ Boones Ferry Rd



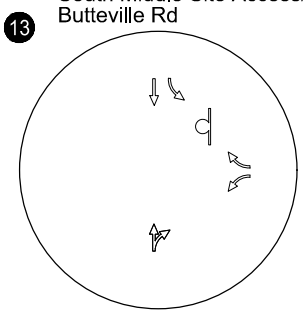
10 OR 214/OR 211/ OR 99E



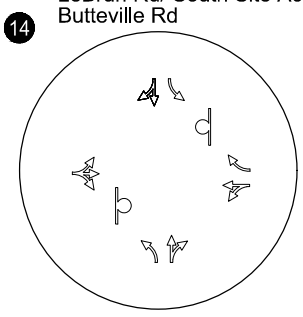
12 North Middle Site Access/ Butteville Rd



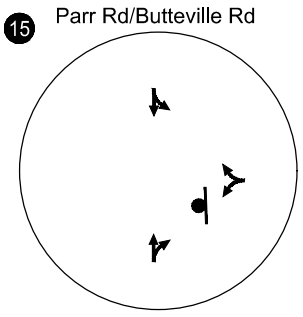
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd



- STOP SIGN
- TRAFFIC SIGNAL
- PROPOSED ROUNDABOUT
- PROPOSED STOP SIGN
- PROPOSED LANE CONFIGURATION

Proposed Lane Configurations And Traffic Control Devices Woodburn, OR

Figure **12**

KITTELSON & ASSOCIATES

Trip Generation Estimate

Trip generation estimates are typically based on data derived from *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE). Project Basie will be used for storage and consolidation of products prior to their larger regional and local distribution and would be considered a "sortable" facility. The ITE land use that most closely matches this function is "High-Cube Fulfillment Center Warehouse" (Land Use 155). Table 9 provides the estimated trip generation using ITE data.

Table 9 - Estimated Trip Generation (ITE) – High Cube Fulfillment Center (Sortable)

Land Use	ITE Code	Size	Weekday Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
High-Cube Fulfillment Center Warehouse	155	3,849,000 sq. ft.	23,640	1,705	853	852	3,959	1,980	1,979

In reviewing Table 9, it is important to note that these ITE rates are based on one or two study sites (depending on the analysis period) with a facility square footage that is significantly smaller than the proposed 3.849 million square foot Project Basie facility. In consultation with the Project Basie tenant, it was determined that the application of the Land Use 155 rates would significantly overestimate the daily and peak hour trip profile of the site.

Instead, the Project Basie tenant supplied a detailed employee and truck arrival/departure profile that was developed specifically for the proposed site, taking into consideration the size of the building, its geographic location and relation to other in-network distribution facilities, the finite processing capabilities of the facility, internal automation technology, anticipated employee levels, and site-specific work schedules. These variables are based on operational experience at other facilities with similar functions nationwide. A detailed summary of this profile is included in *Appendix G* along with additional trip generation information requested by City of Woodburn staff. As shown, the proposed site is anticipated to be a 24-hour facility with multiple shift change patterns. In particular, there are two key shift change periods that are anticipated to occur near the typical weekday AM and PM peak periods:

- 6:30-7:30 AM which accounts for the peak arrival period for the dayshift.
- 5:30-6:30 PM which accounts for peak dayshift departure period and the peak nightshift arrival period.

These shift change periods represent what ITE defines as "the Peak Hour of the Generator". The resulting trip profile is summarized in Table 10 below.

Table 10 - Project Basie - Peak Hour of the Generator Trip Generation Estimate

Land Use	Size	Trip Type	Weekday Daily Trips	Weekday AM Peak Hour of Generator Trips (6:30-7:30 AM)			Weekday PM Peak Hour of Generator Trips (5:30-6:30 PM)		
				Total	In	Out	Total	In	Out
Project Basie	937 employees per shift	Employees	3,558	676	648	28	1,156	573	583
		Trucks	612	26	13	13	20	10	10
		Total	**4,170**	**702**	**661**	**41**	**1,176**	**583**	**593**

Source: Tenet supplied employee and freight arrival/departure schedule. See *Appendix G.*
Note: The trip generation profile in Table 10 is consistent with the proposed 3.849 million square foot facility. The square footage identified in the 4/16/21 Scoping Memo was incorrectly stated.

In addition to the Peak Hour of the Generator, the traffic counts along the OR 219 study corridor revealed that Woodburn's street system has different peak time periods than reflected in Table 10. In particular, the weekday AM peak hour in Woodburn has been found to occur from 7:00-8:00 AM while the weekday PM system peak hour has been found to occur from 4:30-5:30 PM. The resulting trip profile for the proposed building during these times is shown in Table 11.

Table 11 - Project Basie - Peak Hour of the System Trip Generation Estimate

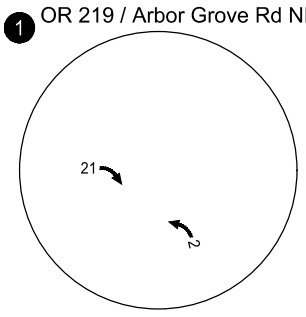
Land Use	Size	Trip Type	Weekday Daily Trips	Weekday AM Peak Hour of the System Trips (7:00-8:00 AM)			Weekday PM Peak Hour of the System Trips (4:30-5:30 PM)		
				Total	In	Out	Total	In	Out
Project Basie	937 employees per shift	Employees	3,558	427	404	23	154	93	61
		Trucks	612	30	15	15	22	11	11
		Total	**4,170**	**457**	**419**	**38**	**176**	**104**	**72**

Source: Tenet supplied employee and freight arrival/departure schedule. See *Appendix G.*
Note: The trip generation profile in Table 11 is consistent with the proposed 3.849 million square foot facility. The square footage identified in the 4/16/21 Scoping Memo was incorrectly stated.

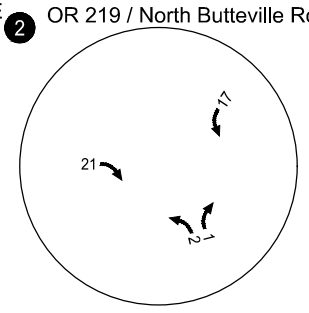
Site Trip Distribution/Trip Assignment

A trip distribution pattern was identified for the proposed fulfillment center, taking into consideration the number of anticipated jobs that will be provided by the development, the site's location with respect to both the city and other population centers in the Willamette Valley. In addition to these factors, US Census OnTheMap (https://onthemap.ces.census.gov/) data was consulted which identifies statistics about the origins of workers who are employed in the Woodburn area (see *Appendix H* for a more detailed summary of the census employee origin data for Woodburn). Using a combination of these factors and based on preliminary scoping feedback from City, County, and ODOT staff, a refined trip distribution pattern was developed for the site. The trip distribution pattern and resulting assignment of weekday AM and PM peak period site-generated trips to the study intersections and site driveways is illustrated in Figures 13-16.

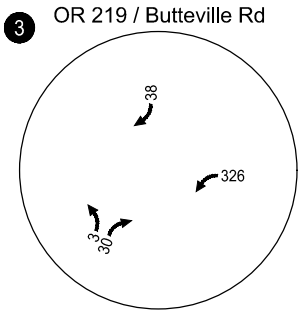
1 OR 219 / Arbor Grove Rd NE



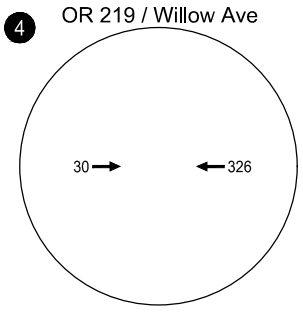
2 OR 219 / North Butteville Road NE



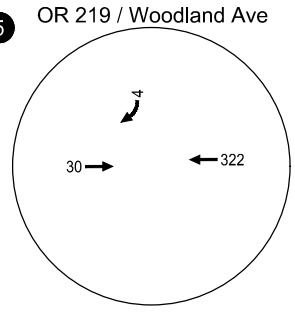
3 OR 219 / Butteville Rd



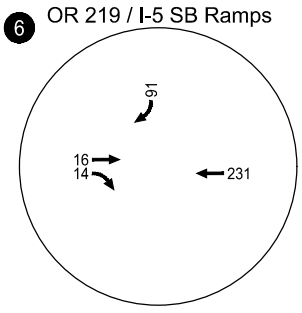
4 OR 219 / Willow Ave



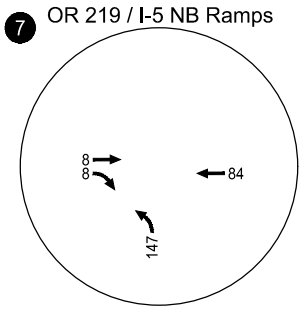
5 OR 219 / Woodland Ave



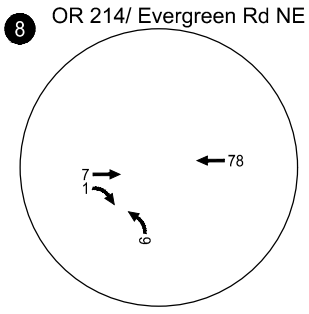
6 OR 219 / I-5 SB Ramps



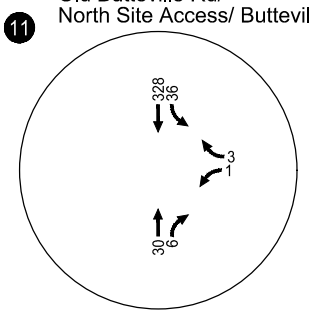
7 OR 219 / I-5 NB Ramps



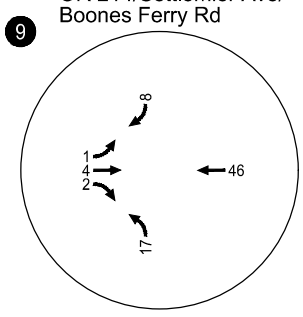
8 OR 214/ Evergreen Rd NE



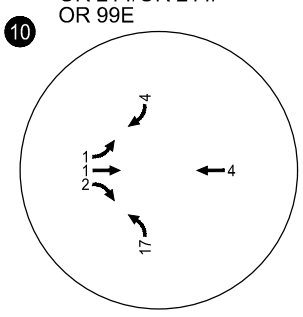
11 Old Butteville Rd/ North Site Access/ Butteville Rd



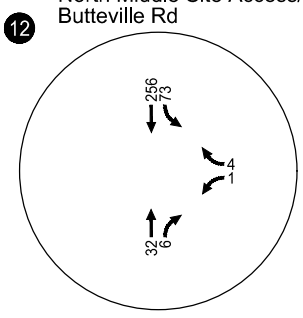
9 OR 214/Settlemier Ave/ Boones Ferry Rd



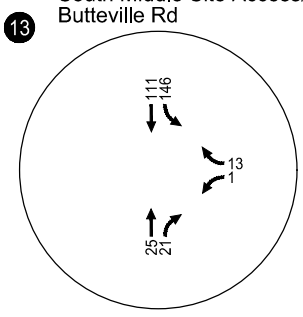
10 OR 214/OR 211/ OR 99E



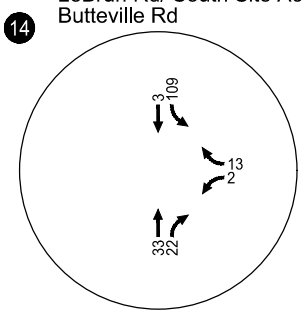
12 North Middle Site Access/ Butteville Rd



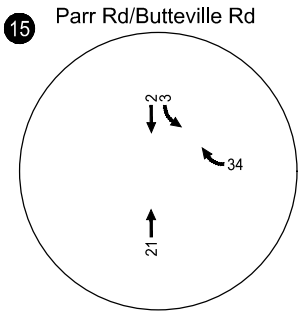
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd

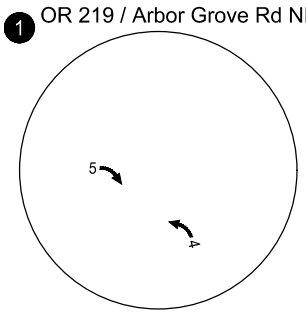


Site-Generated Trips
System Peak Hour (7:00 AM to 8:00 AM)
Woodburn, OR

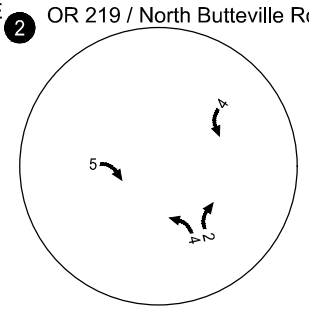
Figure **13**

KITTELSON & ASSOCIATES

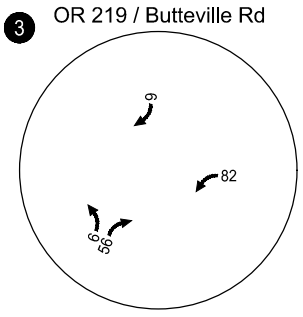
1 OR 219 / Arbor Grove Rd NE



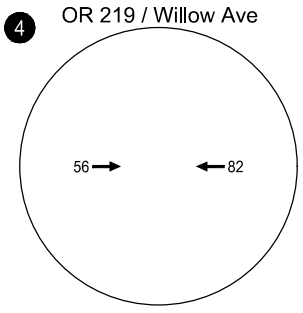
2 OR 219 / North Butteville Road NE



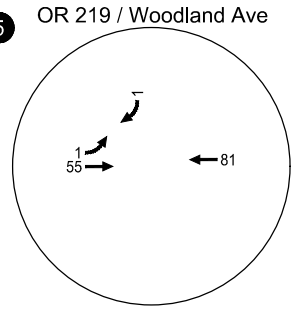
3 OR 219 / Butteville Rd



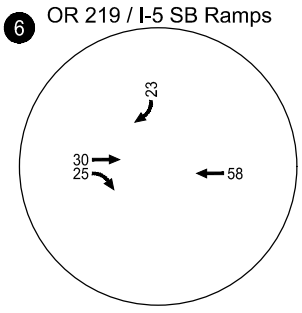
4 OR 219 / Willow Ave



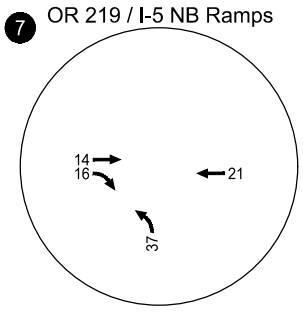
5 OR 219 / Woodland Ave



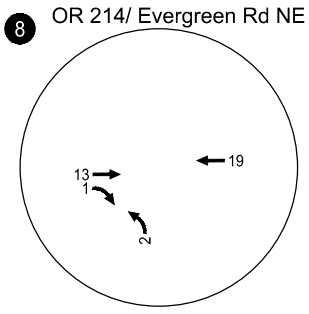
6 OR 219 / I-5 SB Ramps



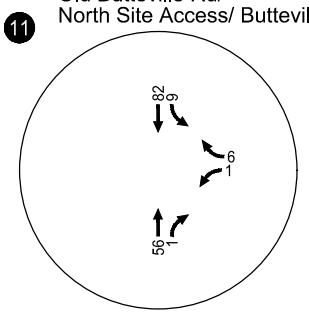
7 OR 219 / I-5 NB Ramps



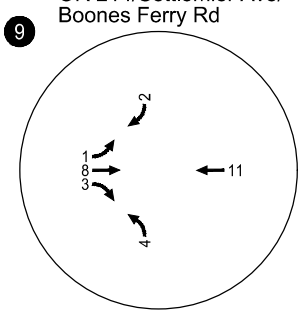
8 OR 214/ Evergreen Rd NE



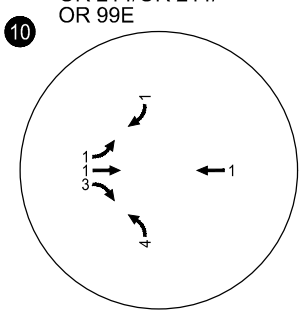
11 Old Butteville Rd/ North Site Access/ Butteville Rd



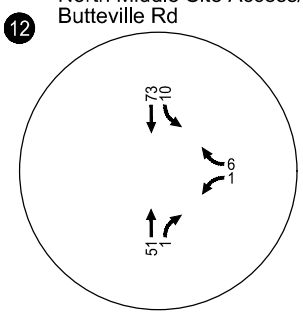
9 OR 214/Settlemier Ave/ Boones Ferry Rd



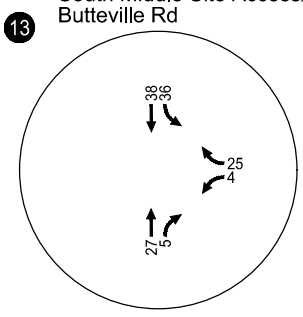
10 OR 214/OR 211/ OR 99E



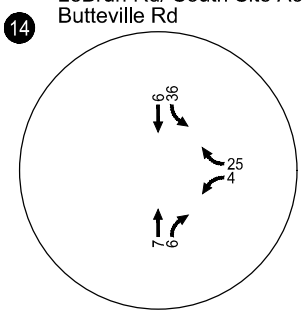
12 North Middle Site Access/ Butteville Rd



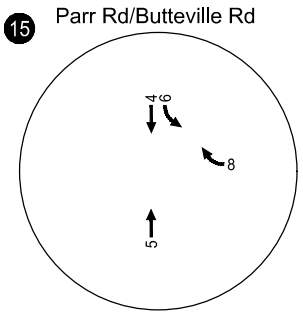
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd



Site-Generated Trips
System Peak Hour (4:30 PM to 5:30 PM)
Woodburn, OR

Figure
14

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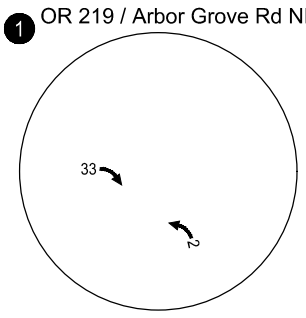
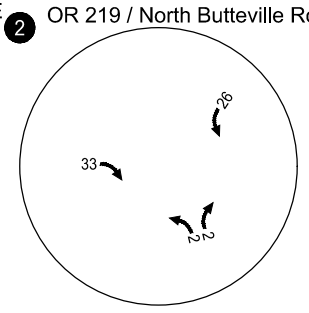
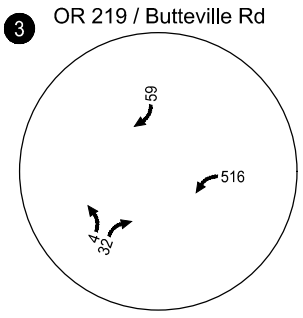
1 OR 219 / Arbor Grove Rd NE



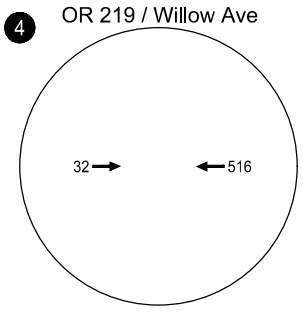
2 OR 219 / North Butteville Road NE



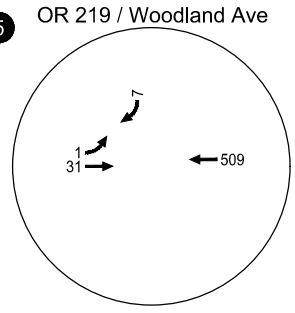
3 OR 219 / Butteville Rd



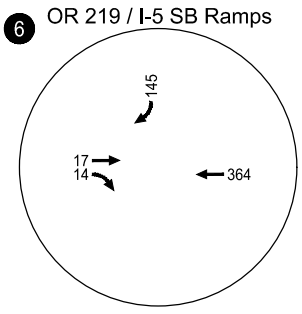
4 OR 219 / Willow Ave



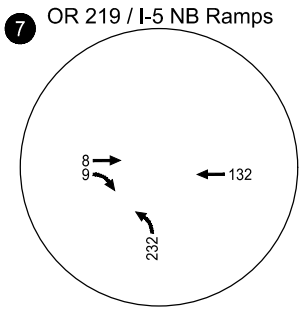
5 OR 219 / Woodland Ave



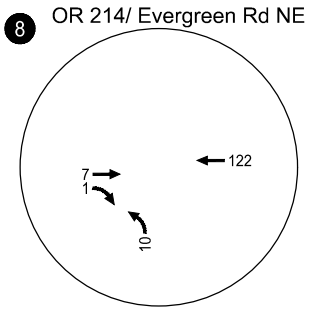
6 OR 219 / I-5 SB Ramps



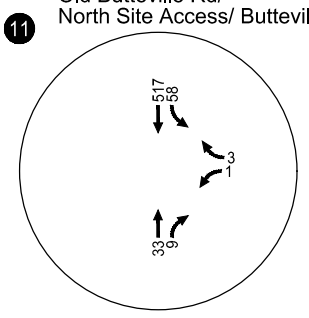
7 OR 219 / I-5 NB Ramps



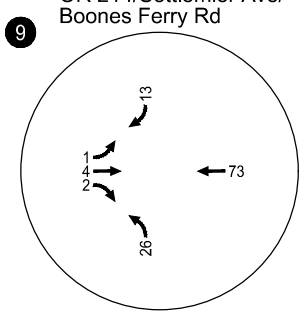
8 OR 214/ Evergreen Rd NE



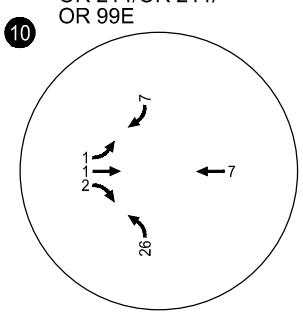
11 Old Butteville Rd/ North Site Access/ Butteville Rd



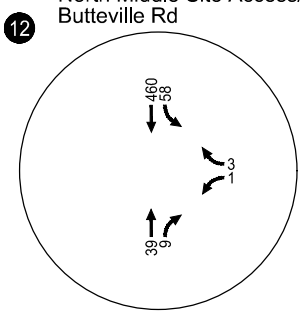
9 OR 214/Settlemier Ave/ Boones Ferry Rd



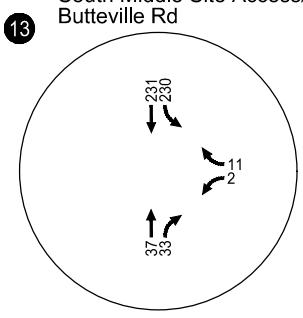
10 OR 214/OR 211/ OR 99E



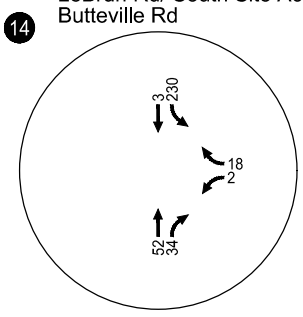
12 North Middle Site Access/ Butteville Rd



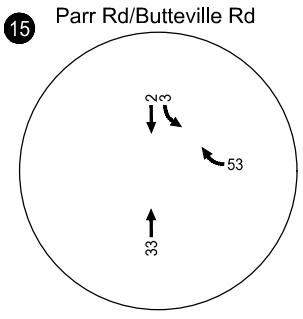
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd

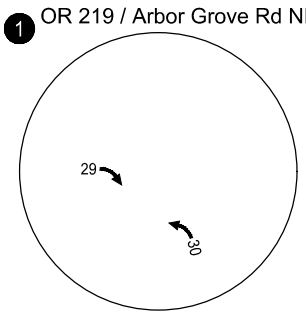


Site-Generated Trips
Peak Hour of Generator (6:30 AM to 7:30 AM)
Woodburn, OR

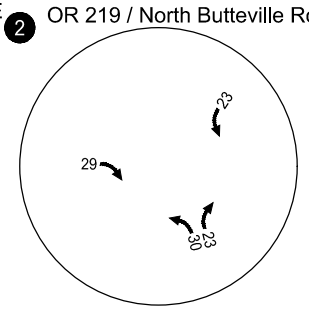
Figure **15**

KITTELSON & ASSOCIATES

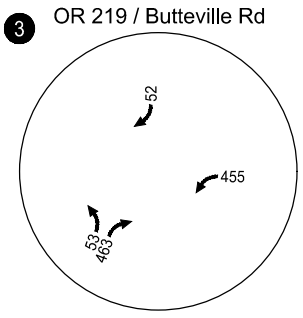
1 OR 219 / Arbor Grove Rd NE



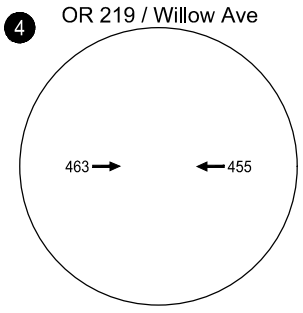
2 OR 219 / North Butteville Road NE



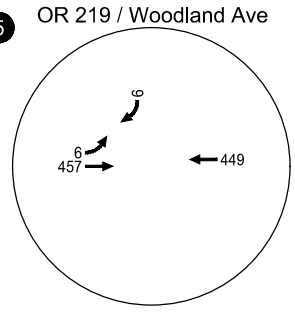
3 OR 219 / Butteville Rd



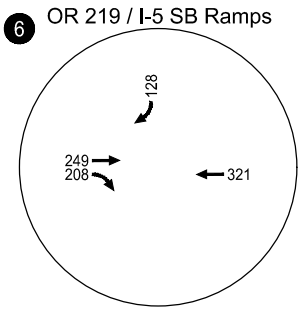
4 OR 219 / Willow Ave



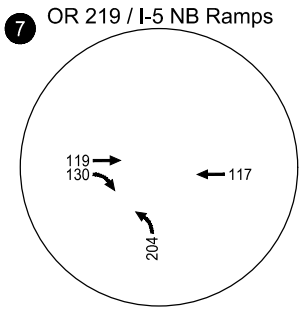
5 OR 219 / Woodland Ave



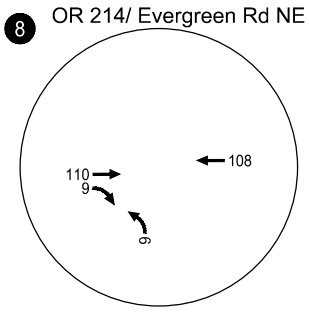
6 OR 219 / I-5 SB Ramps



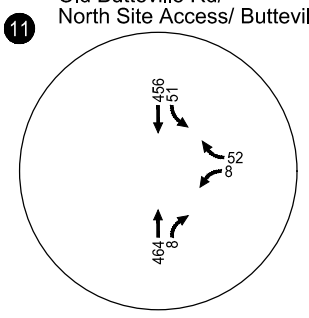
7 OR 219 / I-5 NB Ramps



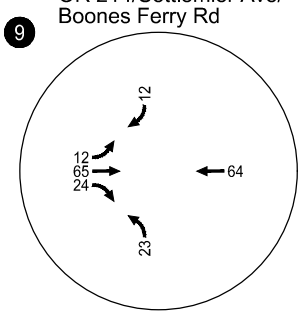
8 OR 214/ Evergreen Rd NE



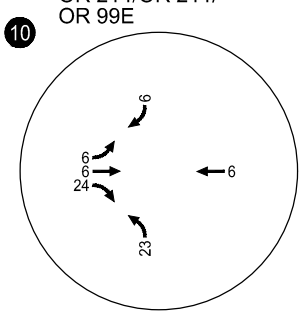
11 Old Butteville Rd/ North Site Access/ Butteville Rd



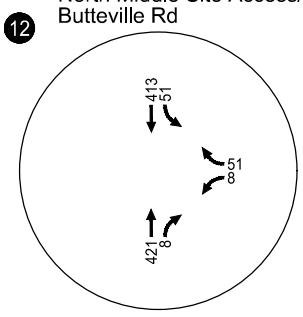
9 OR 214/Settlemier Ave/ Boones Ferry Rd



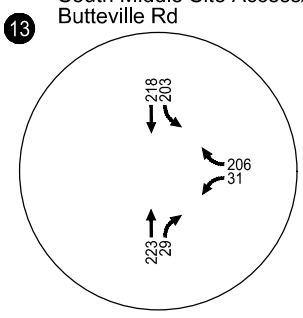
10 OR 214/OR 211/ OR 99E



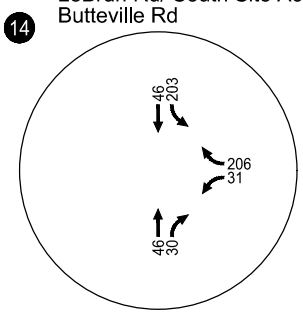
12 North Middle Site Access/ Butteville Rd



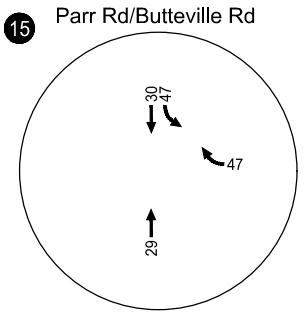
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd



Site-Generated Trips
Peak Hour of Generator (5:30 PM to 6:30 PM)
Woodburn, OR

Figure **16**

KITTELSON & ASSOCIATES

Year 2023 Total Traffic Conditions

The total traffic conditions analysis forecasts the operation of the study intersections with the inclusion of traffic generated by Project Basie. Total traffic conditions were determined by adding the estimated site-generated trips to the year 2023 background volumes.

Figures 17-20 illustrate the 2023 total traffic volumes while Table 12 and Table 13 (OR 219/Realigned Butteville Road roundabout) summarize the corresponding operational analysis for the weekday AM and PM peak periods. As shown, the study intersections and proposed site access driveways are forecast to continue to satisfy applicable ODOT mobility targets and City and County operating standards during the four AM and PM study periods with the exception of the OR 214/OR 211/OR 99E intersection and OR 219/Willow Avenue intersections. However, as noted below, no additional capacity-based changes to the transportation system are needed to accommodate Project Basie beyond the previously identified Butteville Road widening/realignment and roundabout intersection improvements. *Appendix H includes the 2023 total conditions operations analysis worksheets.*

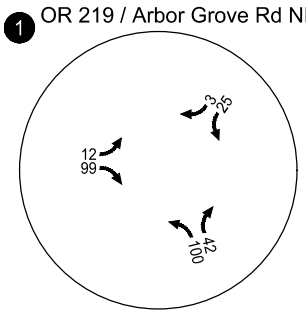
OR 219/Willow Avenue

As shown in Table 12, the southbound Willow Avenue approach (and in particular the southbound left-turn) to the OR 219/Willow Avenue intersection is forecast to experience increased delay during the 5:30-6:30 PM peak generator hour due to increased east-west travel on OR 219. Given the southbound left-turn movement has alternate means of access to OR 219 eastbound (the signalized OR 219/Woodland Avenue intersection by way of Myrtle Street or utilizing the proposed Butteville Road roundabout as a u-turn), it is anticipated that a combination of these movements will be utilized by local residents to adjust to the forecast delay increases.

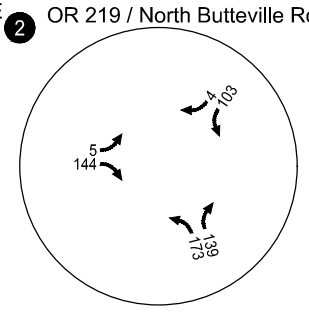
OR 214/OR 211/OR 99E

As shown in Table 12, the OR 214/OR 211/OR 99E intersection is forecast to operate at a v/c ratio of 0.93 during the weekday PM system peak hour. This represents a relatively small increase beyond the forecast v/c ratio of 0.92 during background system peak hour conditions. The Woodburn TSP has identified a long-term capacity enhancing improvement that includes widening for dual southbound left-turn lanes, widening of the east leg of the intersection, and signal timing enhancements. In recognition that the noted improvements are likely to be implemented as part of a future capital improvement project, it is anticipated that Project Basie will be required to contribute a proportionate share of funds toward a portion of the noted mitigation improvements.

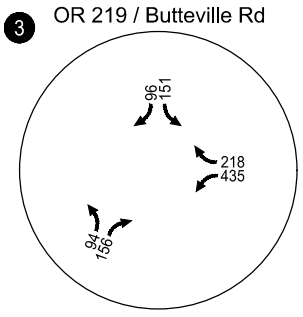
1 OR 219 / Arbor Grove Rd NE



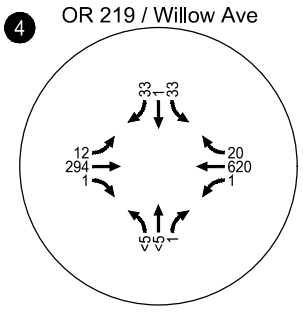
2 OR 219 / North Butteville Road NE



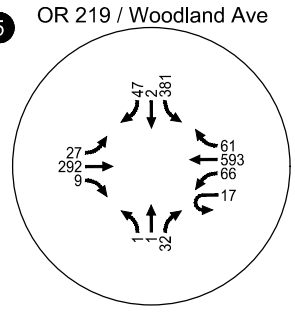
3 OR 219 / Butteville Rd



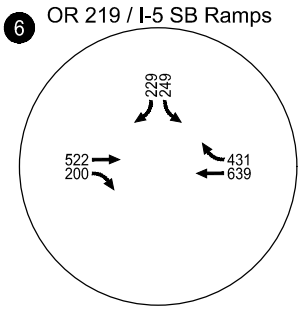
4 OR 219 / Willow Ave



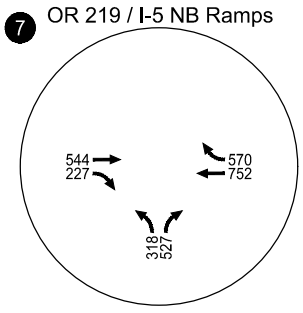
5 OR 219 / Woodland Ave



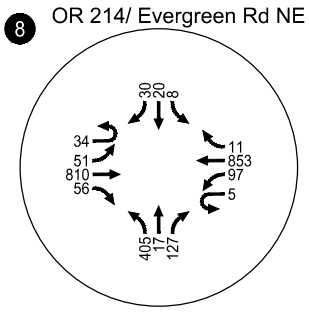
6 OR 219 / I-5 SB Ramps



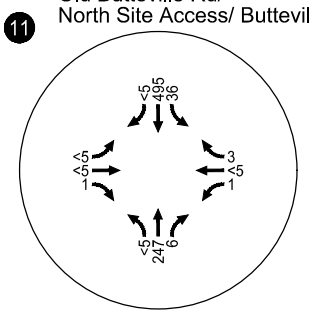
7 OR 219 / I-5 NB Ramps



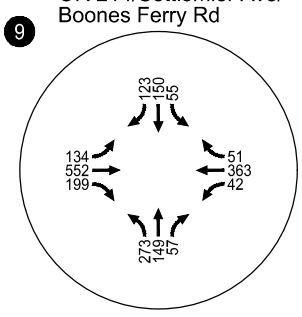
8 OR 214/ Evergreen Rd NE



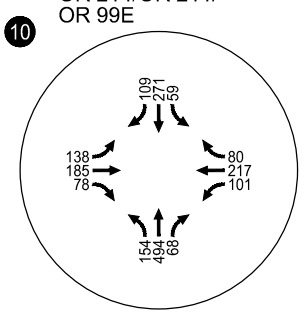
11 Old Butteville Rd/ North Site Access/ Butteville Rd



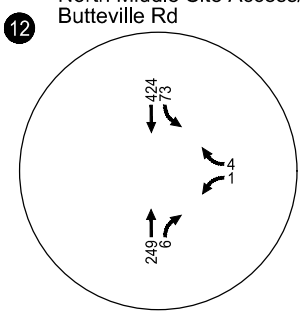
9 OR 214/Settlemier Ave/ Boones Ferry Rd



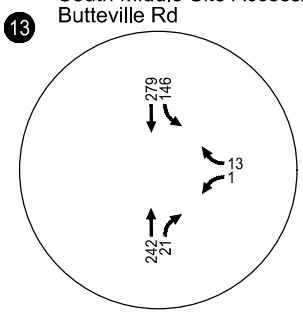
10 OR 214/OR 211/ OR 99E



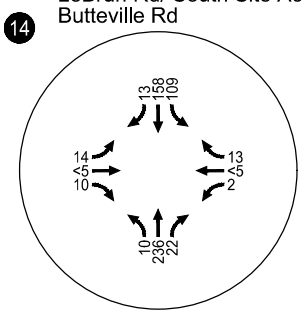
12 North Middle Site Access/ Butteville Rd



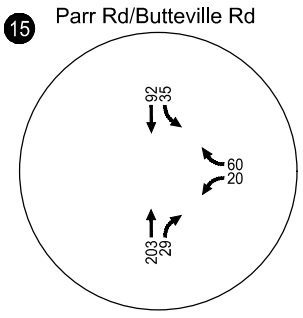
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd



2023 Total Traffic Volumes
System Peak Hour (7:00 AM to 8:00 AM)
Woodburn, OR

Figure **17**

KITTELSON & ASSOCIATES

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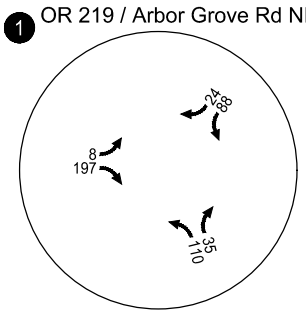
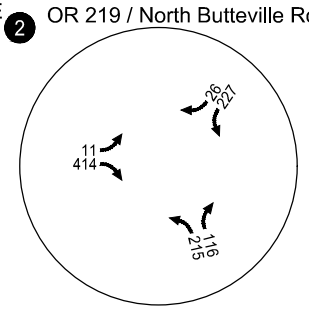
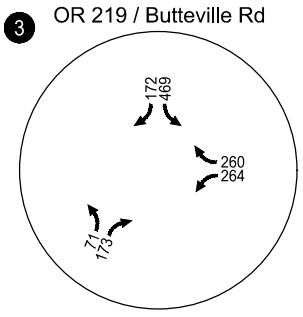


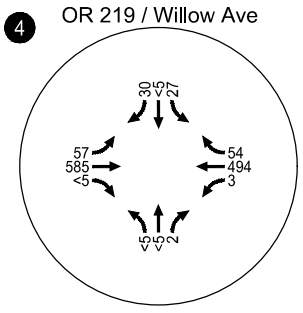
2 OR 219 / North Butteville Road NE



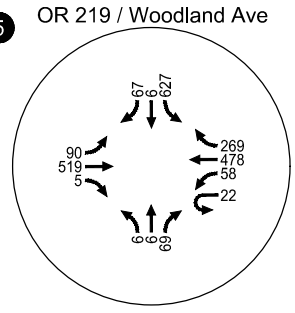
3 OR 219 / Butteville Rd



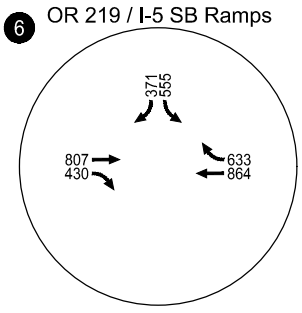
4 OR 219 / Willow Ave



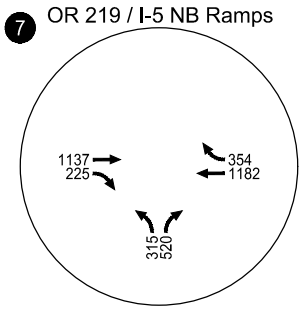
5 OR 219 / Woodland Ave



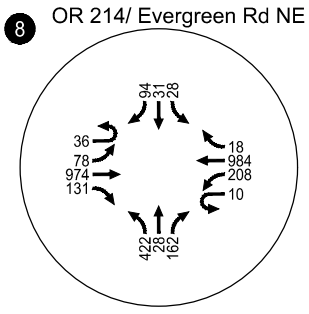
6 OR 219 / I-5 SB Ramps



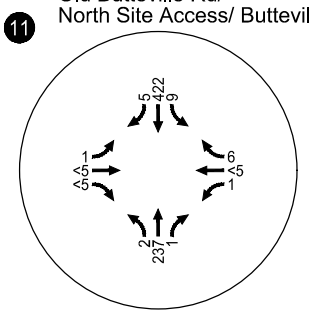
7 OR 219 / I-5 NB Ramps



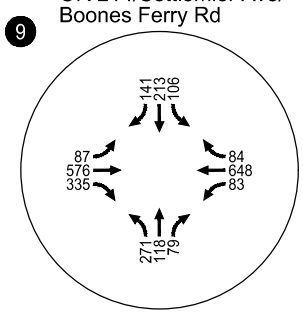
8 OR 214/ Evergreen Rd NE



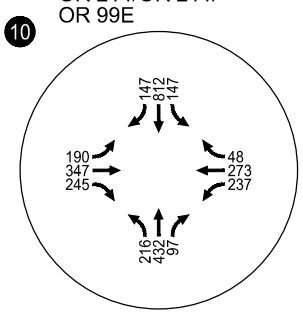
11 Old Butteville Rd/ North Site Access/ Butteville Rd



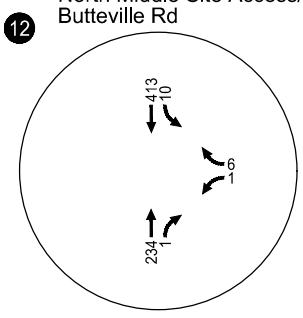
9 OR 214/Settlemier Ave/ Boones Ferry Rd



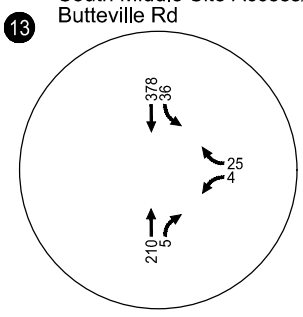
10 OR 214/OR 211/ OR 99E



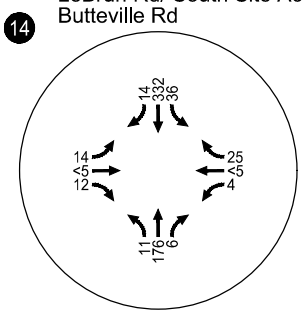
12 North Middle Site Access/ Butteville Rd



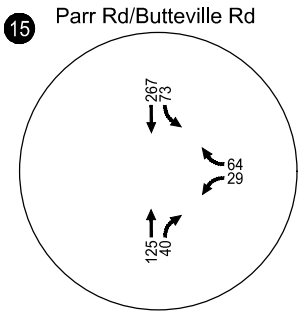
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd

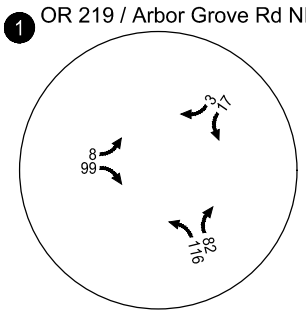


2023 Total Traffic Volumes
System Peak Hour (4:30 PM to 5:30 PM)
Woodburn, OR

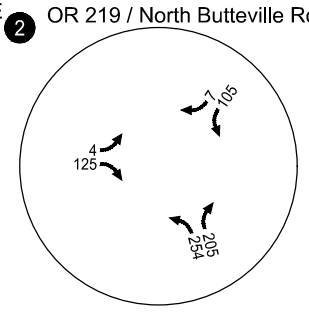
Figure **18**

KITTELSON & ASSOCIATES

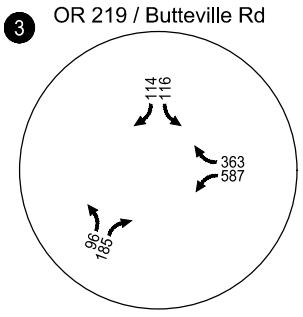
1 OR 219 / Arbor Grove Rd NE



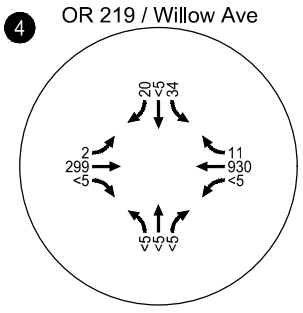
2 OR 219 / North Butteville Road NE



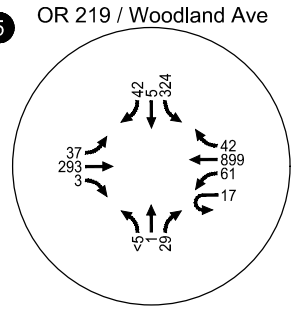
3 OR 219 / Butteville Rd



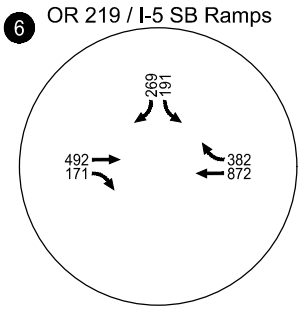
4 OR 219 / Willow Ave



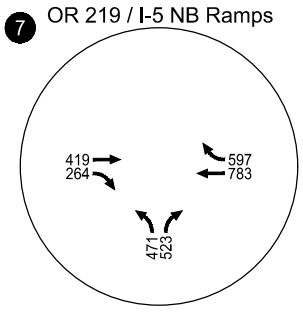
5 OR 219 / Woodland Ave



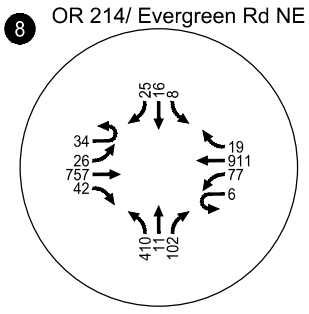
6 OR 219 / I-5 SB Ramps



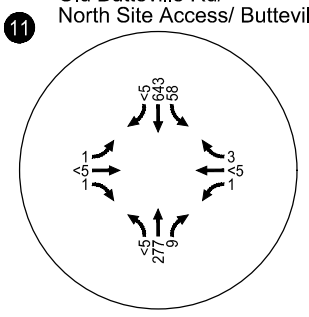
7 OR 219 / I-5 NB Ramps



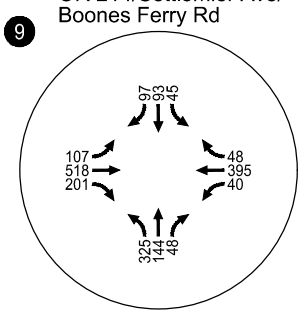
8 OR 214/ Evergreen Rd NE



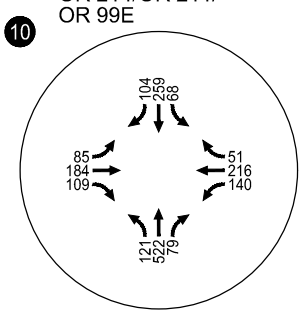
11 Old Butteville Rd/ North Site Access/ Butteville Rd



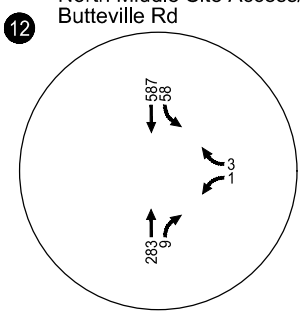
9 OR 214/Settlemier Ave/ Boones Ferry Rd



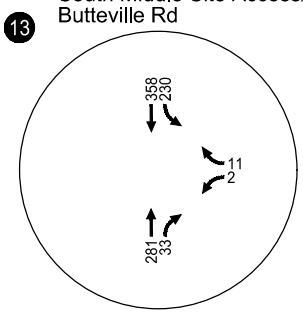
10 OR 214/OR 211/ OR 99E



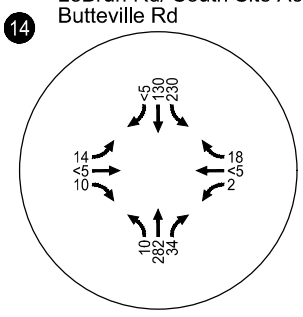
12 North Middle Site Access/ Butteville Rd



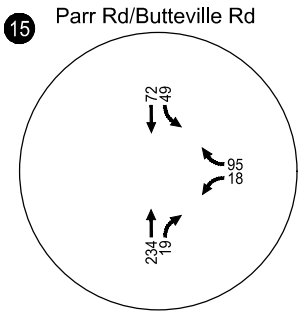
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd

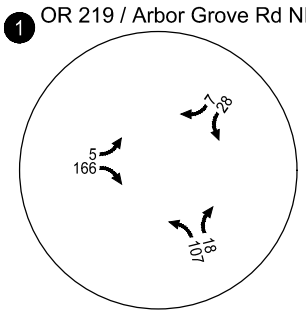


2023 Total Traffic Volumes
Peak Hour of Generator (6:30 AM to 7:30 AM)
Woodburn, OR

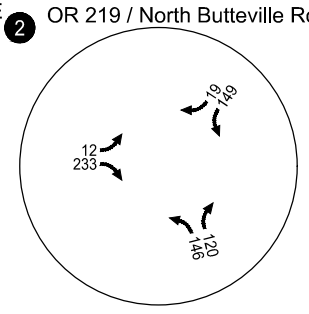
Figure **19**

KITTELSON & ASSOCIATES

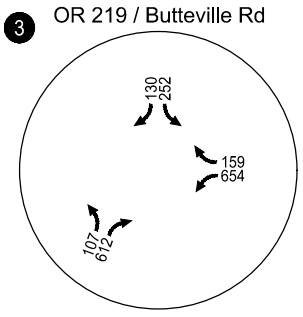
1 OR 219 / Arbor Grove Rd NE



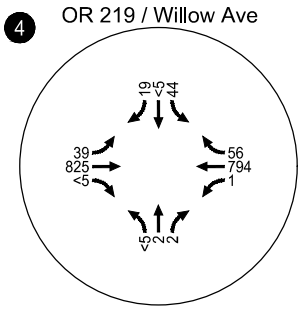
2 OR 219 / North Butteville Road NE



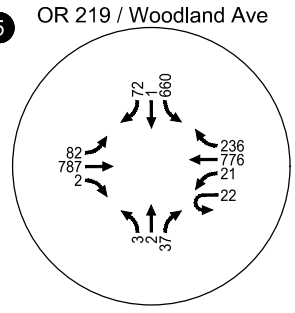
3 OR 219 / Butteville Rd



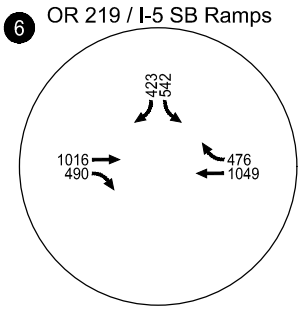
4 OR 219 / Willow Ave



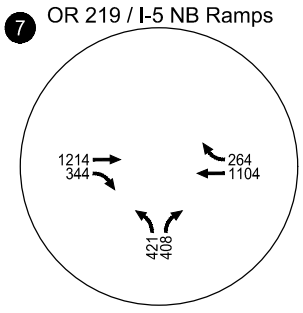
5 OR 219 / Woodland Ave



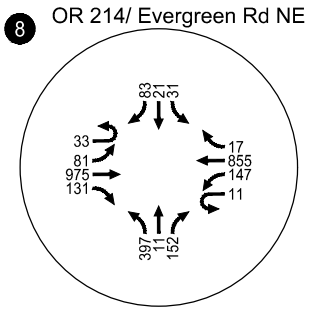
6 OR 219 / I-5 SB Ramps



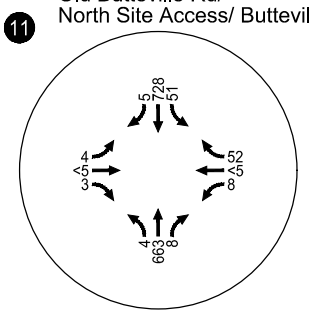
7 OR 219 / I-5 NB Ramps



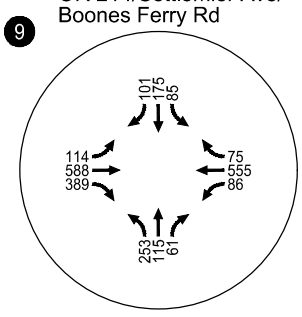
8 OR 214/ Evergreen Rd NE



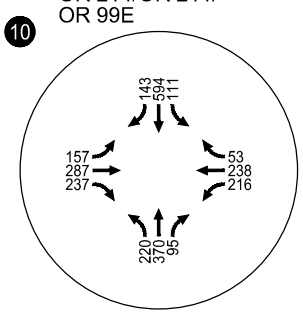
11 Old Butteville Rd/
North Site Access/ Butteville Rd



9 OR 214/Settlemier Ave/
Boones Ferry Rd



10 OR 214/OR 211/
OR 99E



12 North Middle Site Access/
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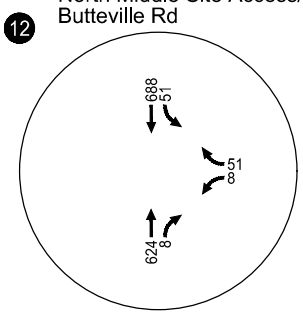

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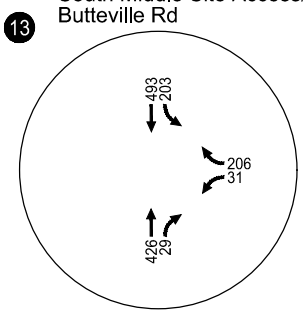
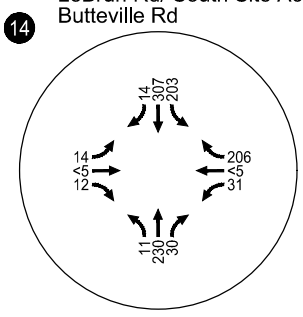
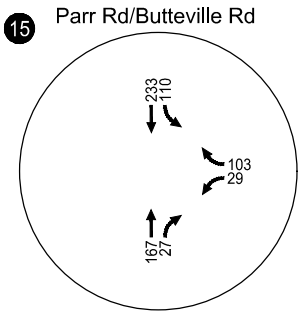


14 LeBrun Rd/ South Site Access/
Butteville Rd



15 Parr Rd/Butteville Rd



2023 Total Traffic Volumes
Peak Hour of Generator (5:30 PM to 6:30 PM)
Woodburn, OR

Figure **20**

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Table 12 – 2023 Total Traffic Conditions

Intersection	Maximum Operating Standard/Target	Weekday 6:30-7:30 AM Peak Generator Hour				Weekday 5:30-6:30 PM Peak Generator Hour			
		Critical Approach/ Lane	LOS	Delay (sec)	V/C	Critical Approach/ Lane	LOS	Delay (sec)	V/C
OR 219/ Arbor Grove Road	V/C: 0.90 major / 0.90 minor approach	SB	B	10.2	0.03	SB	B	10.4	0.05
OR 219/ North Butteville Road	V/C: 0.90 major / 0.90 minor approach	SB	C	15.4	0.26	SB	B	14.7	0.33
Relocated OR 219/ Butteville Road	V/C: 0.75 (per HDM)	See Table 13							
OR 219/ Willow Avenue	V/C: 0.95 major / 0.95 minor approach	SB	D	32.2	0.31	SB	F	>50.0	0.59
OR 219/Woodland Avenue	V/C: 0.95	-	B	17.2	0.36	-	C	22.7	0.65
OR 219/ I-5 SB Ramp Terminal	V/C: 0.80	-	B	12.0	0.56	-	B	15.0	0.63
OR 219/ I-5 NB Ramp Terminal	V/C: 0.80	-	C	21.9	0.54	-	B	11.6	0.59
OR 214/ Evergreen Road	V/C: 0.95	-	C	31.1	0.61	-	D	35.5	0.59
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	-	D	38.6	0.80	-	D	42.5	0.83
OR 214/OR 211/OR 99E	V/C: 0.90	-	D	38.8	0.61	-	D	52.1	0.78
Butteville Road/ Parr Road	LOS E and V/C: 0.90	WB	B	11.2	0.17	WB	B	12.6	0.23
Butteville Road/Old Butteville Road/ North Site Access	LOS E and V/C: 0.90	EB	C	21.2	0.01	EB	E	44.8	0.09
Butteville Road/ North Middle Site Access	LOS E and V/C: 0.90	WB	B	11.3	0.01	WB	C	15.4	0.16
Butteville Road/ South Middle Site Access	LOS E and V/C: 0.90	WBLT	C	18.8	0.01	WBLT	C	23.8	0.15
Butteville Road/LeBrun Road/South Site Access	LOS E and V/C: 0.90	EB	D	27.1	0.14	EB	E	38.4	0.20

Table 12 – 2023 Total Traffic Conditions (continued)

Intersection	Maximum Operating Standard/Target	Weekday 7:00-8:00 AM System Peak Hour				Weekday 4:30-5:30 System PM Peak Hour			
		Critical Approach/ Lane	LOS	Delay (sec)	V/C	Critical Approach/ Lane	LOS	Delay (sec)	V/C
OR 219/ Arbor Grove Road	V/C: 0.90 major / 0.90 minor approach	SB	B	10.2	0.05	SB	B	11.7	0.19
OR 219/ North Butteville Road	V/C: 0.90 major / 0.90 minor approach	SB	C	15.0	0.27	SB	F	>50.0	0.89
Relocated OR 219/ Butteville Road	V/C: 0.75 (per HDM)	See Table 13							
OR 219/ Willow Avenue	V/C: 0.95 major / 0.95 minor approach	SB	C	18.1	0.21	SB	C	20.4	0.21
OR 219/Woodland Avenue	V/C: 0.95	-	B	16.4	0.44	-	B	19.9	0.60
OR 219/ I-5 SB Ramp Terminal	V/C: 0.80	-	B	11.8	0.37	-	B	15.5	0.51
OR 219/ I-5 NB Ramp Terminal	V/C: 0.80	-	B	16.1	0.47	-	B	11.8	0.57
OR 214/Evergreen Road	V/C: 0.95	-	C	33.5	0.60	-	D	35.7	0.66
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	-	D	40.0	0.83	-	D	51.4	0.90
OR 214/OR 211/OR 99E	V/C: 0.90	-	D	47.2	0.67	-	E	63.5	0.93
Butteville Road/ Parr Road	LOS E and V/C: 0.90	WB	B	10.7	0.12	WB	B	12.4	0.18
Butteville Road/Old Butteville Road/ North Site Access	LOS E and V/C: 0.90	EB	c	20.5	0.02	EB	C	15.1	0.01
Butteville Road/ North Middle Site Access	LOS E and V/C: 0.90	WB	B	11.3	0.01	WB	B	10.2	0.01
Butteville Road/ South Middle Site Access	LOS E and V/C: 0.90	WBL	C	16.8	0.01	WBLT	B	12.9	0.01
Butteville Road/LeBrun Road/South Site Access	LOS E and V/C: 0.90	EB	C	17.6	0.09	EB	C	16.1	0.08

Table 13 – 2023 Total Traffic Operations (Proposed OR 219/Realigned Butteville Road Roundabout)

	Weekday 6:30-7:30 AM Peak Generator Hour						Weekday 5:30-6:30 PM Peak Generator Hour					
Movement	EB T	EB R	WB L/T	NB L	NB R	Overall	EB T	EB R	WB L/T	NB L	NB R	Overall
Delay (s)	8.0	7.3	7.3	3.8	0.0	6.2	10.8	6.8	6.3	4.9	0.0	4.8
LOS	A	A	A	A	A	A	A	A	A	A	A	A
v/c	0.19	0.18	0.45	0.09	0.00	-	0.40	0.19	0.38	0.12	0.00	-
Queue 95th % (ft)	25	25	75	25	0	-	50	25	50	25	0	-
	Weekday 7:00-8:00 AM System Peak Hour						**Weekday 4:30-5:30 System PM Peak Hour**					
Movement	EB T	EB R	WB L/T	NB L	NB R	Overall	EB T	EB R	WB L/T	NB L	NB R	Overall
Delay (s)	6.3	5.0	5.4	4.0	0.0	4.6	9.4	4.8	4.6	5.6	0.0	5.7
LOS	A	A	A	A	A	A	A	A	A	A	A	A
v/c	0.19	0.10	0.29	0.09	0.00	-	0.49	0.17	0.23	0.10	0.00	-
Queue 95th % (ft)	25	25	50	25	0	-	75	25	25	25	0	-

As shown in Table 13, each lane group at the proposed OR 219/Butteville roundabout is projected to meet ODOT's design mobility standards under year 2023 total traffic conditions. In addition, the placement of the roundabout is projected to provide adequate queue storage on the westbound OR 219 approach downstream of the intersection with Willow Avenue, as well as adequate queue storage on the eastbound OR 219 approach downstream of the Senecal Creek bridge.

Year 2023 Queuing Analysis

A 95th percentile vehicle queuing analysis was performed at the study intersections on OR 219 / OR 214 from Butteville Road to Evergreen Road using the VISSIM microsimulation tool. 95th percentile queues at all other study intersections were reported using Synchro HCM 6th Edition outputs. Summary tables documenting these outputs are included in *Appendix H*. Synchro-reported queues are rounded up to the next 25 feet (approximately one-vehicle length), while VISSIM-reported queues reflect a 95% confidence interval of the average maximum queue observed in 120-second intervals over 10 simulation runs, per ODOT APM requirements. *Appendix H* also contains the GEH statistic calculations used to document the VISSIM model calibration. Additional VISSIM calibration and other documentation was provided as a supplement to this report.

As shown, the 95th percentile queues under year 2023 total traffic conditions are projected to be accommodated within all existing and planned turn lane storage lengths under all four peak hours, with the following exceptions:

- The estimated 95th-percentile queue for the westbound right turn at the OR 219/Woodland Avenue intersection is projected to exceed the existing storage length by 10-50 feet under year 2023 background and total conditions during both weekday PM peak hours. This queue is projected to be accommodated within the existing taper length but may periodically spill

back into the westbound bike lane. Project Basie is not projected to add any trips to this movement or result in any substantial change in queuing for this movement as a result of site development. Therefore no mitigation is recommended at this location as a result of site development.

- The estimated 95th-percentile queue for the northbound left turn/through movement at the OR 214/Evergreen Road intersection is projected to exceed the existing storage length by 10-30 feet under year 2023 background and total conditions during both weekday AM peak hours. This queue is projected to be accommodated within the existing taper length. Therefore no mitigation is recommended at this location as a result of site development.
- The 95th-percentile queue for the eastbound left turn on OR 214 at OR 99E is forecast to exceed the storage length by approximately 25 feet during the weekday PM system peak hour under year 2023 background and total conditions. This queue is projected to be accommodated within the existing taper length. Therefore no mitigation is recommended at this location as a result of site development.
- The 95th-percentile queue for the westbound left turn on OR 211 at OR 99E is forecast to exceed the storage length by approximately 125-150 feet during both weekday PM peak hours under year 2023 background and total conditions. Project Basie is not projected to add any trips to this movement or result in any substantial change in queuing for this movement as a result of site development. Therefore no mitigation is recommended at this location as a result of site development.

In addition to these detailed queuing analyses, the project team has taken a close look at the existing I-5 southbound off ramp. While there are no near-term queuing impacts anticipated under normal travel conditions, it is recognized that there can be instances of increased travel demand generated by nearby retail establishments at certain times of the year. To better accommodate these instances and serve increased employee and freight traffic generated by Project Basie, it is recommended that the project be responsible for adding up to 250 feet of additional right-turn lane storage to the existing I-5 southbound offramp right-turn lane. The exact extents of the right-turn lane lengthening and design will need to be determined through additional conversations with ODOT and City design staff.

Review of Site Access Locations

As documented in the preceding sections, the proposed site accesses along Butteville Road will be designed and spaced in order to provide adequate queue storage for vehicle movements into/out of the site and along Butteville Road. The proposed driveway approaches are all projected to meet City and County level of service standards during all four peak hours under year 2023 total conditions. Projected 95th-percentile queues at the site accesses are forecast to be a maximum of two vehicles in most cases and fit within available storage area.

Year 2040 Background Traffic Conditions

The year 2040 background traffic operations analysis identifies how the study area's transportation system will operate during the local planning horizon year (2040). This horizon year is consistent with ODOT long-term study year requirements for development projects with greater than 500 peak hour trips. This analysis includes traffic growth due to continued local and regional growth but does not include traffic from the proposed fulfillment center. Year 2040 background traffic volumes were derived from projected traffic demands forecast for the study area from the recent Woodburn TSP update. Specifically, the projected 2040 PM turning movement volumes from the TSP were adjusted by removing any projected traffic from the TAZ encompassing Project Basie and were extrapolated to the AM peak hour by taking reciprocal movement volumes. The TSP volumes were also extrapolated to the peak hour of generator time periods by considering the ratio of the existing turning movement volumes during the system and generator peak hours for each individual turning movement, and the volumes at intersections where no TSP data were available (the OR 219/Arbor Grove Road and OR 219/North Butteville Road intersections) were estimated by balancing with adjacent intersections.

Figures 21-24 illustrate the resulting 2040 background traffic volumes at the study intersection under all four AM and PM study periods, while Table 14 summarizes the corresponding traffic operations. As shown in Table 14, the study intersections are forecast to continue to satisfy applicable ODOT performance targets and City and County operating standards during the four AM and PM study periods, with the following exceptions:

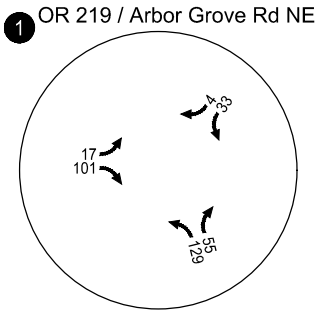
- The southbound stop-controlled movement at the OR 219/North Butteville Road intersection is projected to exceed capacity under year 2040 background conditions during the weekday 4:30 – 5:30 PM system peak hour. No previous mitigations measures have been identified for this intersection in the Marion County TSP.
- The northbound Butteville Road approach at the OR 219/Butteville Road intersection is forecast to operate over capacity under 2040 background conditions, assuming the intersection is not upgraded beyond its existing configuration.
- The OR 214/Settlemier Avenue/Boones Ferry Road and OR 214/OR 211/OR 99E intersections are forecast to exceed the ODOT mobility target or operate over capacity depending on the various weekday AM and PM peak hour analysis scenarios. These findings are consistent with the analysis used to prepare the Woodburn TSP update. To mitigate these conditions, the TSP has identified a series of corridor widening improvements (a roughly 1-mile segment of the OR 214 corridor) and intersection capacity enhancements. These improvements will be discussed further in the 2040 total traffic analysis.

Appendix I contains the year 2040 background conditions operations worksheets.

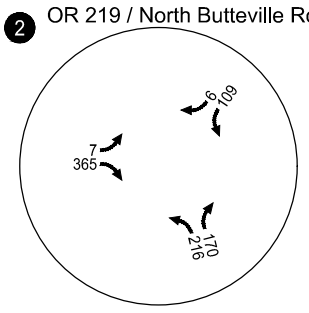
Table 14 – 2040 Background Traffic Conditions

Intersection	Maximum Operating Standard/Target	Weekday 6:30-7:30 AM Peak Generator Hour				Weekday 5:30-6:30 PM Peak Generator Hour			
		Critical Approach/ Lane	LOS	Delay (sec)	V/C	Critical Approach/ Lane	LOS	Delay (sec)	V/C
OR 219/ Arbor Grove Road	V/C: 0.90 major / 0.90 minor approach	SB	B	10.6	0.04	SB	B	10.5	0.07
OR 219/ North Butteville Road	V/C: 0.90 major / 0.90 minor approach	SB	C	21.3	0.33	SB	C	16.2	0.36
OR 219/ Butteville Road	V/C: 0.90 major / 0.90 minor approach	NB	F	>50.0	1.13	NB	F	>50.0	1.21
OR 219/ Willow Avenue	V/C: 0.95 major / 0.95 minor approach	SB	D	33.7	0.39	SB	D	33.1	0.42
OR 219/Woodland Avenue	V/C: 0.95	-	B	16.8	0.55	-	C	21.6	0.59
OR 219/ I-5 SB Ramp Terminal	V/C: 0.80	-	B	14.2	0.44	-	B	18.0	0.61
OR 219/ I-5 NB Ramp Terminal	V/C: 0.80	-	C	27.8	0.63	-	B	14.3	0.62
OR 214/Evergreen Road	V/C: 0.95	-	E	62.8	0.71	-	F	>80.0	0.71
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	-	F	>80.0	0.99	-	E	76.8	1.01
OR 214/OR 211/OR 99E	V/C: 0.90	-	F	>80.0	1.03	-	E	>80.0	1.00
Butteville Road/ LeBrun Road	LOS E and V/C: 0.90	EB	B	13.7	0.10	EB	B	13.9	0.09
Butteville Road/Parr Road	LOS E and V/C: 0.90	WB	B	14.3	0.18	WB	C	15.6	0.27
Intersection	**Maximum Operating Standard/Target**	**Weekday 7:00-8:00 AM System Peak Hour**				**Weekday 4:30-5:30 PM System Peak Hour**			
		Critical Approach/ Lane	**LOS**	**Delay (sec)**	**V/C**	**Critical Approach/ Lane**	**LOS**	**Delay (sec)**	**V/C**
OR 219/ Arbor Grove Road	V/C: 0.90 major / 0.90 minor approach	SB	B	10.5	0.06	SB	B	13.1	0.27
OR 219/ North Butteville Road	V/C: 0.90 major / 0.90 minor approach	SB	C	20.6	0.35	SB	F	>50.0	1.26
OR 219/ Butteville Road	V/C: 0.90 major / 0.90 minor approach	NB	F	>50.0	0.96	NB	F	>50.0	2.87
OR 219/ Willow Avenue	V/C: 0.95 major / 0.95 minor approach	SB	C	22.9	0.32	SB	F	>50.0	0.56
OR 219/Woodland Avenue	V/C: 0.95	-	B	18.5	0.57	-	C	25.2	0.69
OR 219/ I-5 SB Ramp Terminal	V/C: 0.80	-	B	16.4	0.41	-	B	17.6	0.61
OR 219/ I-5 NB Ramp Terminal	V/C: 0.80	-	C	21.4	0.55	-	C	22.2	0.73
OR 214/Evergreen Road	V/C: 0.95	-	F	>80.0	0.75	-	F	>80.0	0.85
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	-	F	>80.0	1.10	-	F	>80.0	1.18
OR 214/OR 211/OR 99E	V/C: 0.90	-	F	>80.0	1.22	-	F	>80.0	1.21
Butteville Road/ LeBrun Road	LOS E and V/C: 0.90	EB	B	14.2	0.10	EB	C	15.9	0.11
Butteville Road/Parr Road	LOS E and V/C: 0.90	WB	B	14.2	0.14	WB	C	16.0	0.28

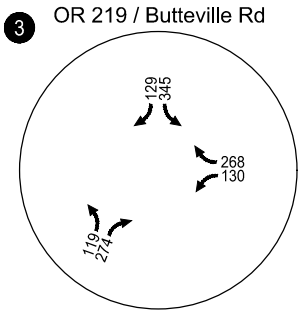
1 OR 219 / Arbor Grove Rd NE



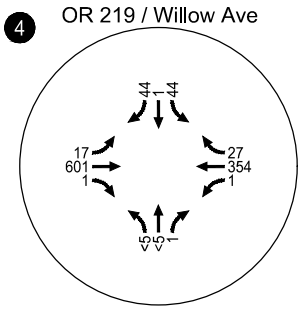
2 OR 219 / North Butteville Road NE



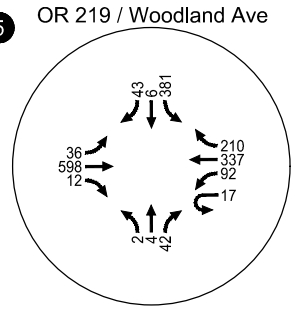
3 OR 219 / Butteville Rd



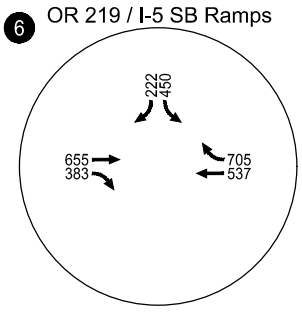
4 OR 219 / Willow Ave



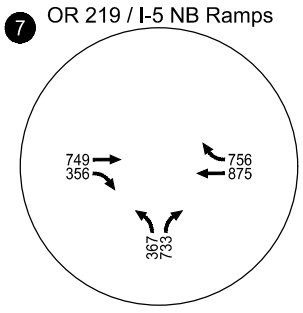
5 OR 219 / Woodland Ave



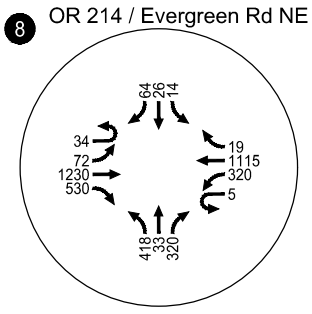
6 OR 219 / I-5 SB Ramps



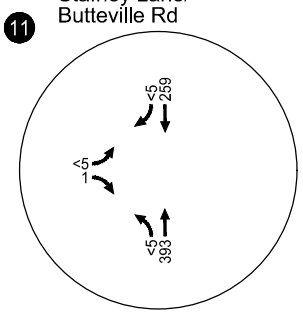
7 OR 219 / I-5 NB Ramps



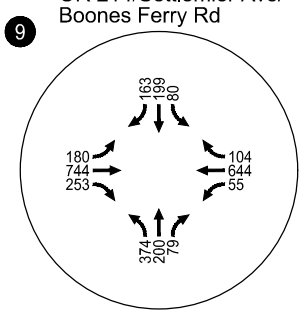
8 OR 214 / Evergreen Rd NE



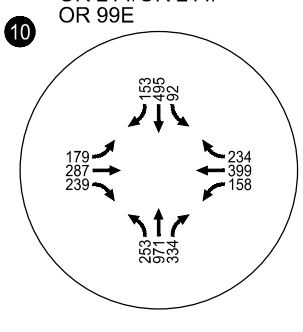
11 Stafney Lane/ Butteville Rd



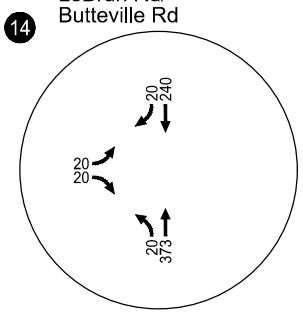
9 OR 214/Settlemier Ave/ Boones Ferry Rd



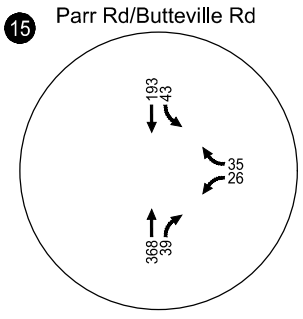
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd

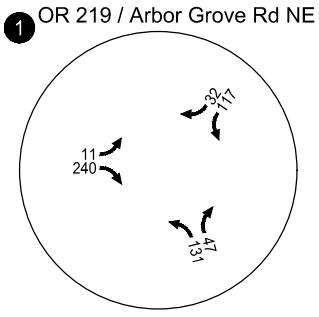


2040 Background Traffic Volumes
System Peak Hour (7:00 AM to 8:00 AM)
Woodburn, OR

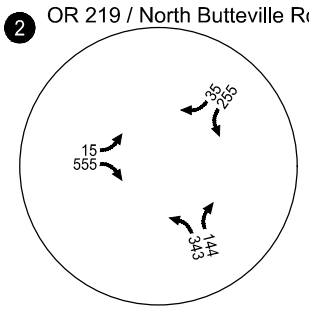
Figure **21**

KITTELSON & ASSOCIATES

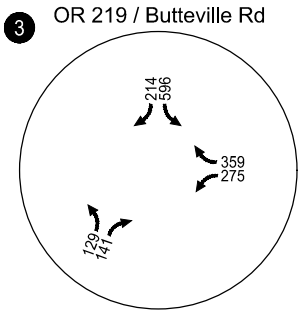
1 OR 219 / Arbor Grove Rd NE



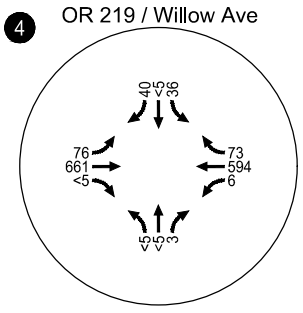
2 OR 219 / North Butteville Road NE



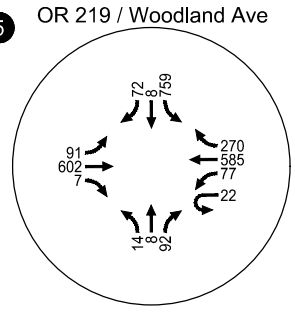
3 OR 219 / Butteville Rd



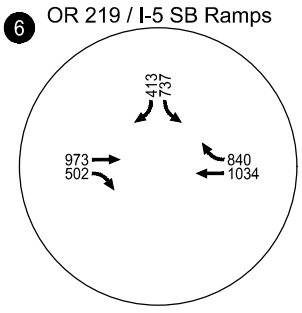
4 OR 219 / Willow Ave



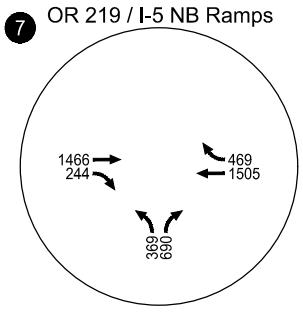
5 OR 219 / Woodland Ave



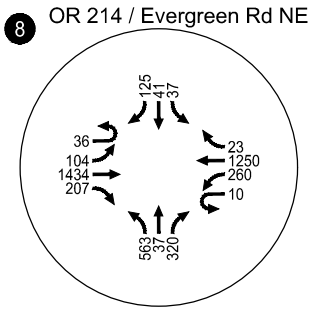
6 OR 219 / I-5 SB Ramps



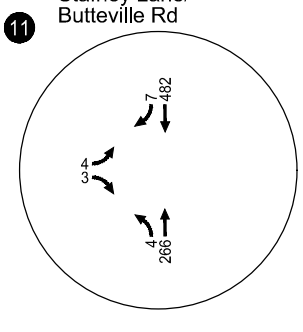
7 OR 219 / I-5 NB Ramps



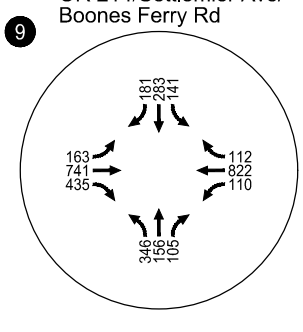
8 OR 214 / Evergreen Rd NE



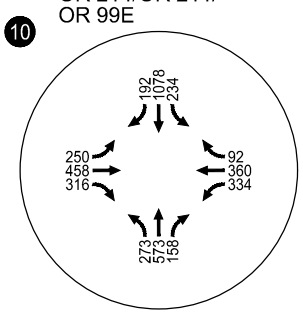
11 Stafney Lane/ Butteville Rd



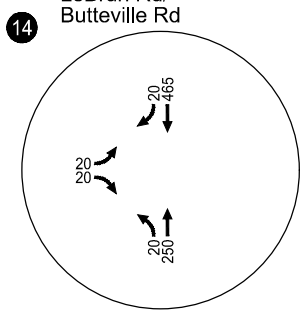
9 OR 214/Settlemier Ave/ Boones Ferry Rd



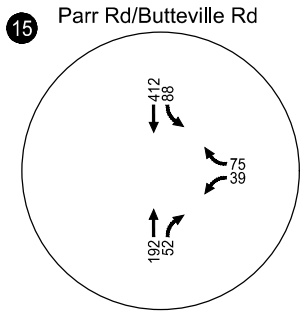
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd

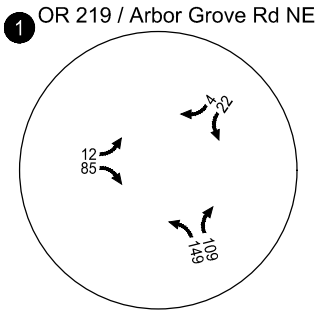


2040 Background Traffic Volumes
System Peak Hour (4:30 PM to 5:30 PM)
Woodburn, OR

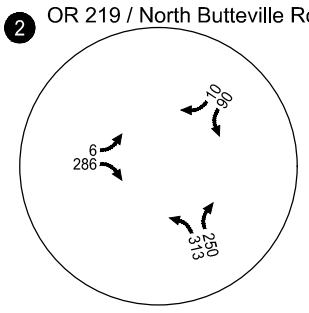
Figure **22**

KITTELSON & ASSOCIATES

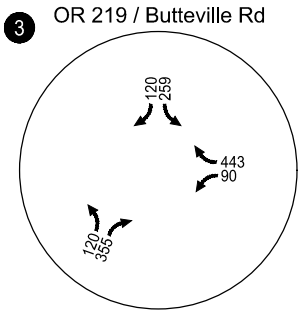
1 OR 219 / Arbor Grove Rd NE



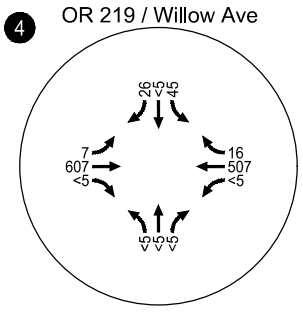
2 OR 219 / North Butteville Road NE



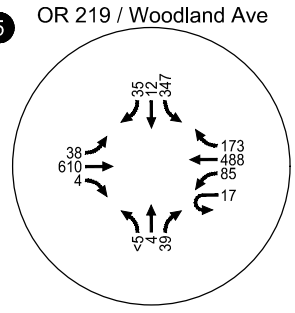
3 OR 219 / Butteville Rd



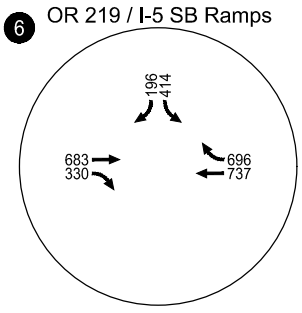
4 OR 219 / Willow Ave



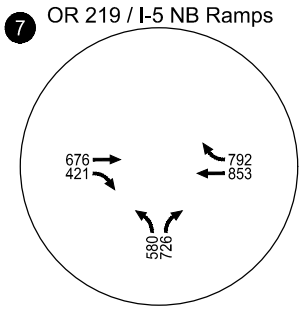
5 OR 219 / Woodland Ave



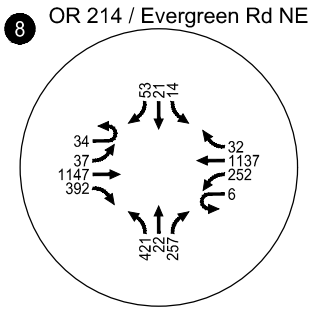
6 OR 219 / I-5 SB Ramps



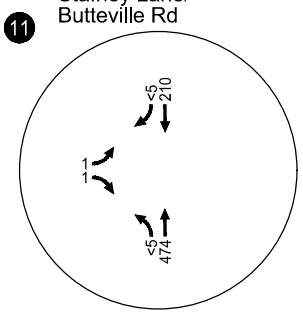
7 OR 219 / I-5 NB Ramps



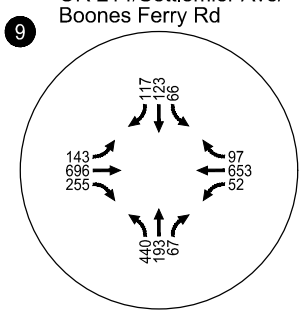
8 OR 214 / Evergreen Rd NE



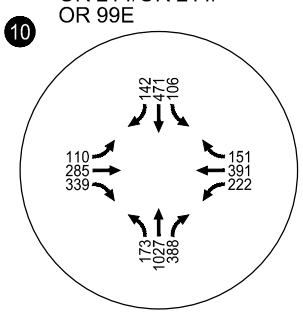
11 Stafney Lane/ Butteville Rd



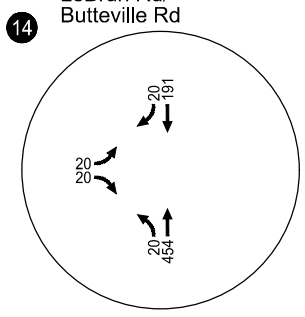
9 OR 214/Settlemier Ave/ Boones Ferry Rd



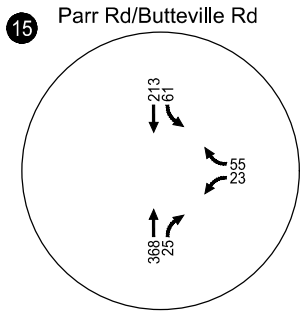
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd

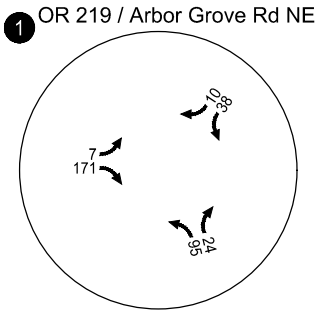


2040 Background Traffic Volumes
Peak Hour of Generator (6:30 AM to 7:30 AM)
Woodburn, OR

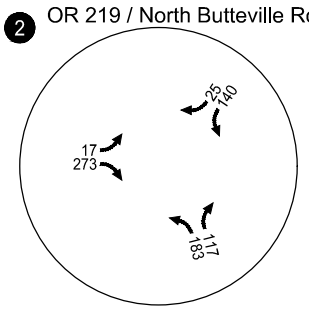
Figure **23**

KITTELSON & ASSOCIATES

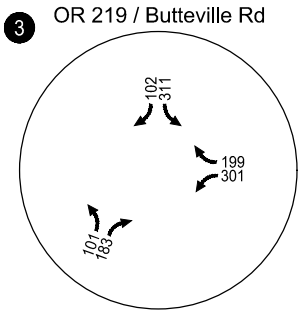
1 OR 219 / Arbor Grove Rd NE



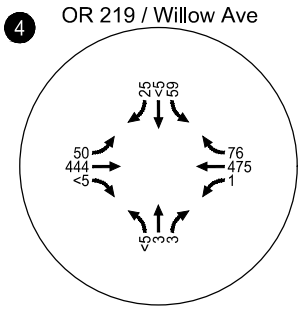
2 OR 219 / North Butteville Road NE



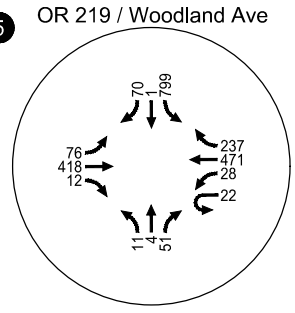
3 OR 219 / Butteville Rd



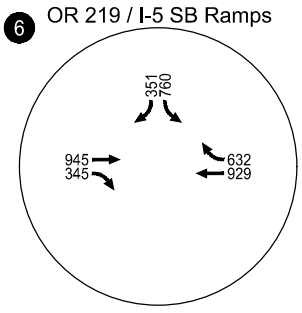
4 OR 219 / Willow Ave



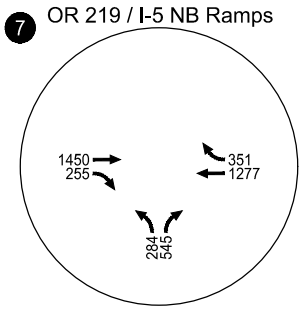
5 OR 219 / Woodland Ave



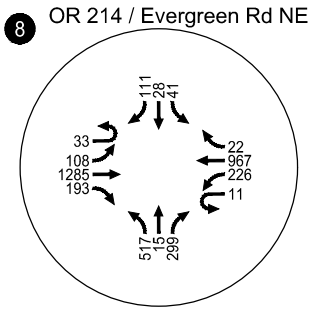
6 OR 219 / I-5 SB Ramps



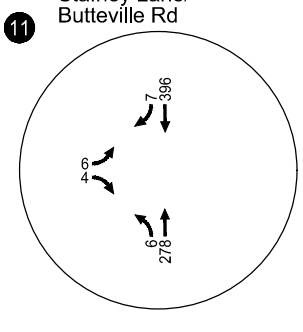
7 OR 219 / I-5 NB Ramps



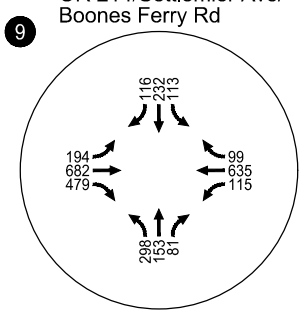
8 OR 214 / Evergreen Rd NE



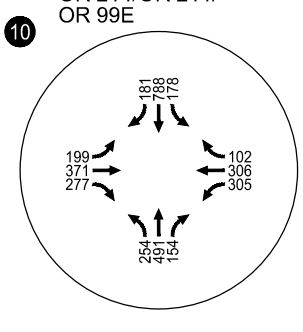
11 Stafney Lane/ Butteville Rd



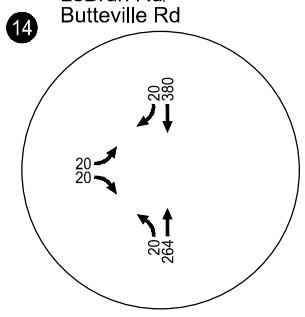
9 OR 214/Settlemier Ave/ Boones Ferry Rd



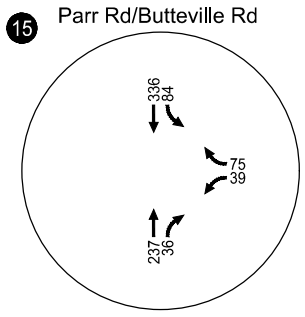
10 OR 214/OR 211/ OR 99E



14 LeBrun Rd/ Butteville Rd



15 Parr Rd/Butteville Rd



2040 Background Traffic Volumes
Peak Hour of Generator (5:30 PM to 6:30 PM)
Woodburn, OR

Figure **24**

KITTELSON & ASSOCIATES

Year 2040 Total Traffic Conditions

The year 2040 total traffic conditions analysis forecasts the operation of the study intersections with the inclusion of traffic generated by Project Basie over the duration of the long-term planning horizon. Total traffic conditions were determined by adding the estimated site-generated trips to the year 2040 background volumes.

Figures 25-28 illustrate the 2040 total traffic volumes, while Table 15 and Table 16 (OR 219/Realigned Butteville Road roundabout) summarize the corresponding operational analysis for the weekday AM and PM peak periods. As shown, all study intersections are forecast to continue meeting ODOT, City, and County standards, with the following exceptions:

- The southbound stop-controlled movement at the OR 219/North Butteville Road intersection is projected to continue to operate over capacity during the weekday 4:30 – 5:30 PM system peak hour. The v/c ratio for the southbound critical movement is projected to increase from 1.13 in 2040 background conditions to 1.17 in 2040 total traffic conditions. Despite this small degradation in operations, no project-based mitigation is recommended for the following reasons:
    - The impact of Project Basie at this intersection during this time period is projected to be minimal in comparison to long-term regional traffic growth; Project Basie is projected to add only four trips to the critical southbound movement during the weekday 4:30 – 5:30 PM system peak hour.
    - There is no recently reported crash history suggesting safety-based measures are needed at the intersection.
    - The model volumes used to project the 2040 traffic volumes in the TSP are long-term in nature, and the deficiency identified at this intersection is a horizon-year failure resulting from anticipated regional traffic growth. As such, ODOT, Marion County, and the City should continue to monitor the intersection for potential geometric and/or traffic control treatments over time.
- As with 2040 Background conditions, the OR 214/Settlemier Avenue/Boones Ferry Road and OR 214/OR 211/OR 99E intersections are forecast to exceed the ODOT mobility target or operate over capacity depending on the various weekday AM and PM peak hour analysis scenarios. Considering these are long-term impacts and that the identified corridor-based improvements in the Woodburn TSP are beyond the mitigation capabilities of any one development project, it is anticipated that Project Basie will be required to contribute a proportionate share of funds toward a portion of the larger mitigation improvements identified in the TSP.

Appendix J includes the 2040 total conditions operations analysis worksheets.

Table 15 – 2040 Total Traffic Conditions

Intersection	Maximum Operating Standard/Target	Weekday 6:30-7:30 AM Peak Generator Hour				Weekday 5:30-6:30 PM Peak Generator Hour			
		Critical Approach/ Lane	LOS	Delay (sec)	V/C	Critical Approach/ Lane	LOS	Delay (sec)	V/C
OR 219/ Arbor Grove Road	V/C: 0.90 major / 0.90 minor approach	SB	B	10.8	0.04	SB	B	11.0	0.08
OR 219/ North Butteville Road	V/C: 0.90 major / 0.90 minor approach	SB	C	25.7	0.44	SB	C	19.5	0.45
Relocated OR 219/ Butteville Road	V/C: 0.75 (per HDM)	See Table 16							
OR 219/ Willow Avenue	V/C: 0.95 major / 0.95 minor approach	SB	C	21.9	0.14	SB	F*	>50.0	0.44
OR 219/Woodland Avenue	V/C: 0.95	-	B	18.9	0.55	-	C	33.1	0.75
OR 219/ I-5 SB Ramp Terminal	V/C: 0.80	-	B	14.4	0.71	-	B	18.1	0.75
OR 219/ I-5 NB Ramp Terminal	V/C: 0.80	-	D	37.8	0.78	-	C	20.6	0.74
OR 214/ Evergreen Road	V/C: 0.95	-	E	63.3	0.76	-	F	>80.0	0.76
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	-	F	>80.0	1.01	-	F	>80.0	1.08
OR 214/OR 211/OR 99E	V/C: 0.90	-	F	>80.0	1.04	-	E	79.8	1.02
Butteville Road/ Parr Road	LOS E and V/C: 0.90	WB	C	15.2	0.29	WB	C	18.9	0.41
Butteville Road/Old Butteville Road/ North Site Access	LOS E and V/C: 0.90	EB	D	30.8	0.02	EB	F	>50.0	0.18
Butteville Road/ North Middle Site Access	LOS E and V/C: 0.90	WB	B	13.5	0.01	WB	C	17.1	0.18
Butteville Road/ South Middle Site Access	LOS E and V/C: 0.90	WBLT	C	22.7	0.01	WBLT	D	28.3	0.18
Butteville Road/LeBrun Road/South Site Access	LOS E and V/C: 0.90	WBLT	E	41.5	0.03	EB	E	49.2	0.34

*Projected traffic volume on the southbound Willow Avenue approach at OR 219 is forecast to experience increased delay during the peak hours of generator (6:30 – 7:30 AM and 5:30 – 6:30 PM) due to increasing east-west volumes on OR 219. As a result, it was assumed that the southbound left-turn demand would reroute from this movement to the southbound left turn movement at Woodland Avenue/OR 219 due to excess capacity at the OR 219/Woodland Avenue intersection and the negligible additional travel distance. It is also anticipated, but not modeled that some trips might utilize the new proposed roundabout as a u-turn.

Table 15 – 2040 Total Traffic Conditions (continued)

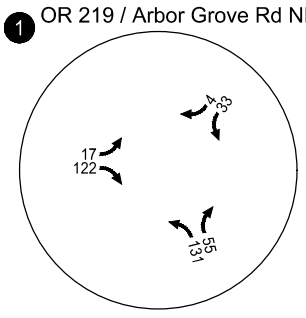
Intersection	Maximum Operating Standard/Target	Weekday 7:00-8:00 AM System Peak Hour				Weekday 4:30-5:30 PM System Peak Hour			
		Critical Approach/ Lane	LOS	Delay (sec)	V/C	Critical Approach/ Lane	LOS	Delay (sec)	V/C
OR 219/ Arbor Grove Road	V/C: 0.90 major / 0.90 minor approach	SB	B	10.7	0.06	SB	B	13.2	0.27
OR 219/ North Butteville Road	V/C: 0.90 major / 0.90 minor approach	SB	C	23.0	0.42	SB	F	>50.0	1.29
Relocated OR 219/ Butteville Road	V/C: 0.75 (per HDM)	See Table 16							
OR 219/ Willow Avenue	V/C: 0.95 major / 0.95 minor approach	SB	D	29.4	0.40	SB	E	40.4	0.45
OR 219/Woodland Avenue	V/C: 0.95	-	B	17.1	0.59	-	C	26.8	0.71
OR 219/ I-5 SB Ramp Terminal	V/C: 0.80	-	B	14.6	0.48	-	B	17.9	0.64
OR 219/ I-5 NB Ramp Terminal	V/C: 0.80	-	C	26.6	0.67	-	C	22.7	0.74
OR 214/ Evergreen Road	V/C: 0.95	-	F	>80.0	0.79	-	F	>80.0	0.86
OR 214/Settlemier Avenue/Boones Ferry Road	V/C: 0.95	-	F	>80.0	1.11	-	F	>80.0	1.19
OR 214/OR 211/OR 99E	V/C: 0.90	-	F	>80.0	1.22	-	F	>80.0	1.21
Butteville Road/ Parr Road	LOS E and V/C: 0.90	WB	B	14.4	0.21	WB	C	16.2	0.29
Butteville Road/Old Butteville Road/ North Site Access	LOS E and V/C: 0.90	EB	c	21.8	0.02	EB	C	18.2	0.03
Butteville Road/ North Middle Site Access	LOS E and V/C: 0.90	WB	B	12.1	0.01	WB	B	10.8	0.01
Butteville Road/ South Middle Site Access	LOS E and V/C: 0.90	WBLT	C	16.9	<0.01	WBLT	B	14.3	0.01
Butteville Road/LeBrun Road/South Site Access	LOS E and V/C: 0.90	WBLT	C	24.0	0.02	WBLT	C	19.7	0.02

Table 16 – 2040 Total Traffic Operations (Proposed OR 219/Realigned Butteville Road Roundabout)

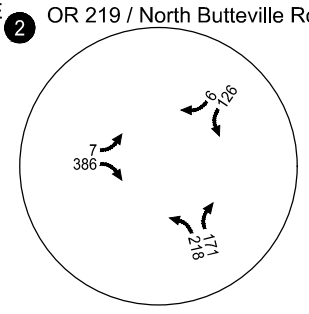
	Weekday 6:30-7:30 AM Peak Generator Hour						Weekday 5:30-6:30 PM Peak Generator Hour					
Movement	EB T	EB R	WB L/T	NB L	NB R	Overall	EB T	EB R	WB L/T	NB L	NB R	Overall
Delay (s)	12.5	8.9	8.3	5.0	0.0	7.1	15.6	8.1	7.6	5.9	0.0	6.5
LOS	B	A	A	A	A	A	C	A	A	A	A	A
v/c	0.44	0.30	0.51	0.14	0.00	-	0.55	0.24	0.47	0.19	0.00	-
Queue 95th % (ft)	75	50	75	25	0	-	100	25	75	50	0	-
	Weekday 7:00-8:00 AM System Peak Hour						**Weekday 4:30-5:30 System PM Peak Hour**					
Movement	EB T	EB R	WB L/T	NB L	NB R	Overall	EB T	EB R	WB L/T	NB L	NB R	Overall
Delay (s)	10.3	6.0	5.9	5.4	0.0	5.7	15.4	5.9	5.9	7.9	0.0	8.5
LOS	B	A	A	A	A	A	C	A	A	A	A	A
v/c	0.45	0.19	0.33	0.14	0.00	-	0.69	0.23	0.33	0.21	0.00	-
Queue 95th % (ft)	75	25	50	25	0	-	150	25	50	25	0	-

As shown in Table 16, each lane group at the proposed OR 219/Butteville roundabout is projected to meet ODOT's design mobility standards under year 2040 total traffic conditions. In addition, the placement of the roundabout is projected to provide adequate queue storage on the westbound OR 219 approach downstream of the intersection with Willow Avenue, as well as adequate queue storage on the eastbound OR 219 approach downstream of the Senecal Creek bridge.

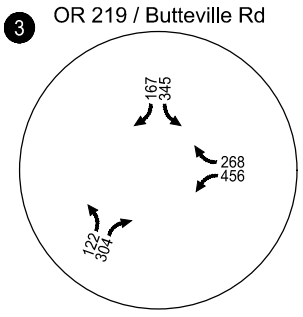
1 OR 219 / Arbor Grove Rd NE



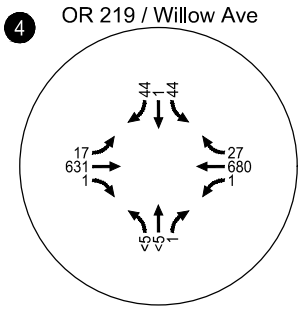
2 OR 219 / North Butteville Road NE



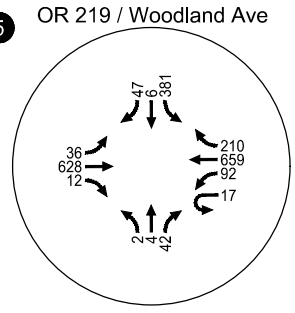
3 OR 219 / Butteville Rd



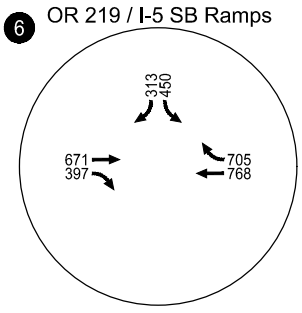
4 OR 219 / Willow Ave



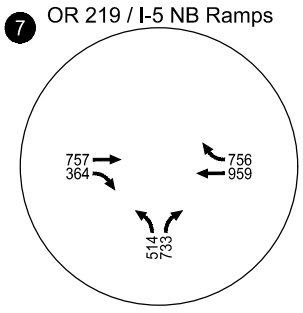
5 OR 219 / Woodland Ave



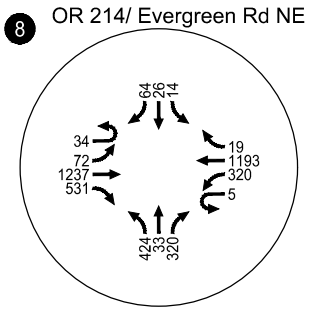
6 OR 219 / I-5 SB Ramps



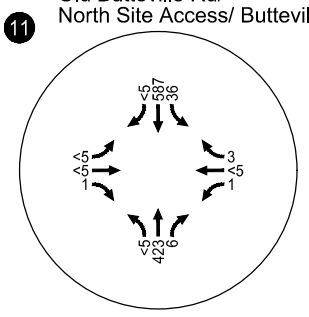
7 OR 219 / I-5 NB Ramps



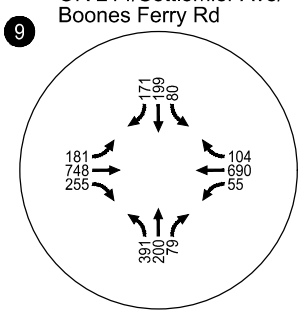
8 OR 214/ Evergreen Rd NE



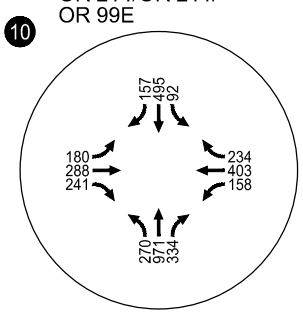
11 Old Butteville Rd/ North Site Access/ Butteville Rd



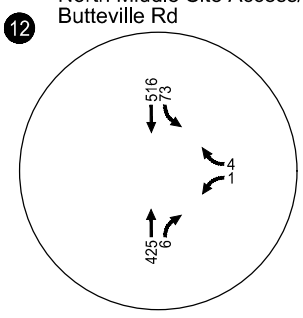
9 OR 214/Settlemier Ave/ Boones Ferry Rd



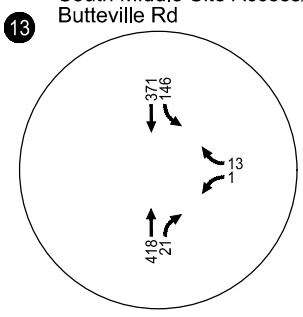
10 OR 214/OR 211/ OR 99E



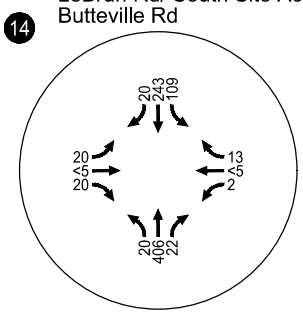
12 North Middle Site Access/ Butteville Rd



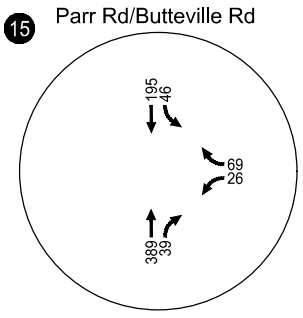
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd

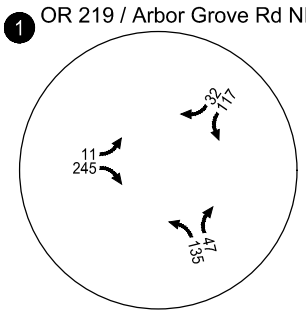


2040 Total Traffic Volumes
System Peak Hour (7:00 AM to 8:00 AM)
Woodburn, OR

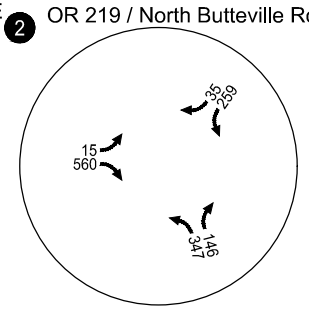
Figure **25**

KITTELSON & ASSOCIATES

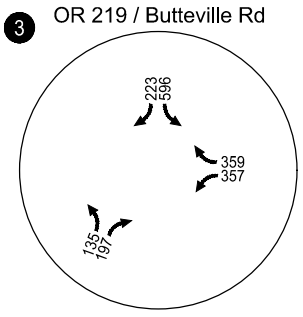
1 OR 219 / Arbor Grove Rd NE



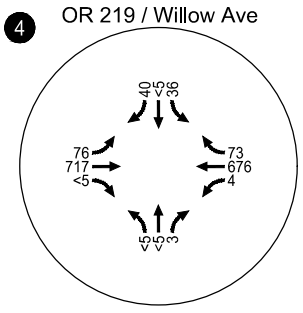
2 OR 219 / North Butteville Road NE



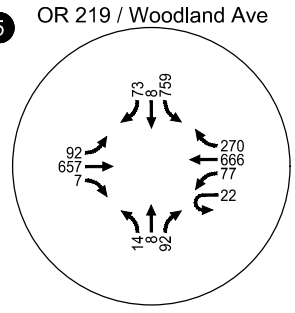
3 OR 219 / Butteville Rd



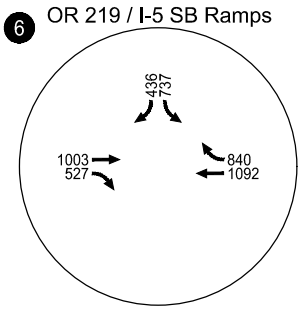
4 OR 219 / Willow Ave



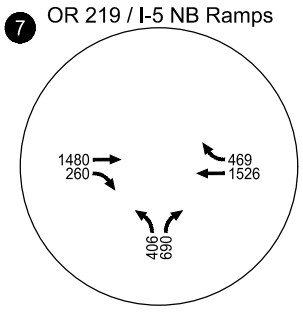
5 OR 219 / Woodland Ave



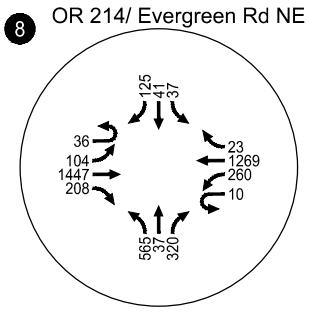
6 OR 219 / I-5 SB Ramps



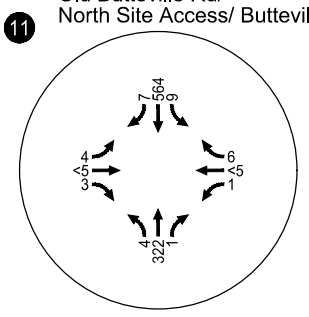
7 OR 219 / I-5 NB Ramps



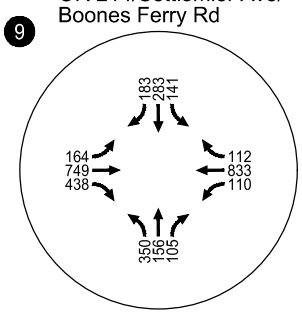
8 OR 214/ Evergreen Rd NE



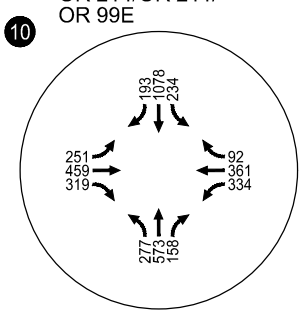
11 Old Butteville Rd/ North Site Access/ Butteville Rd



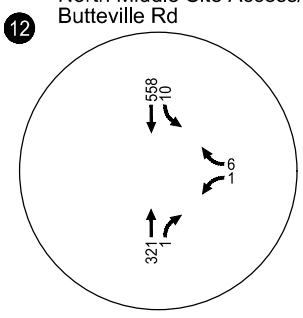
9 OR 214/Settlemier Ave/ Boones Ferry Rd



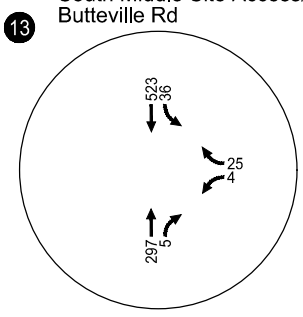
10 OR 214/OR 211/ OR 99E



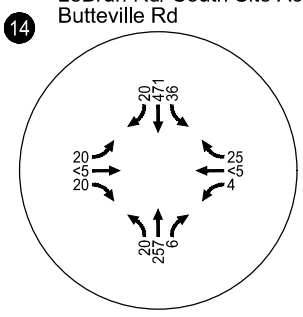
12 North Middle Site Access/ Butteville Rd



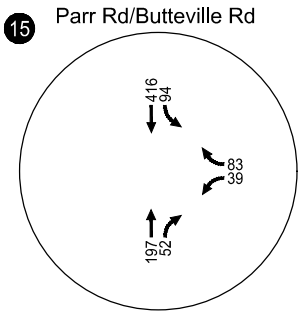
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd

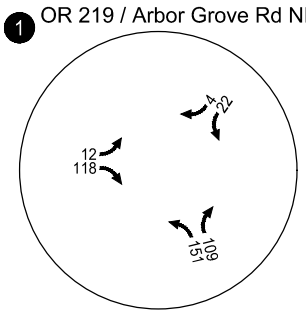


2040 Total Traffic Volumes
System Peak Hour (4:30 PM to 5:30 PM)
Woodburn, OR

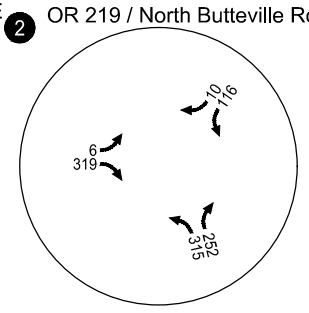
Figure **26**

KITTELSON & ASSOCIATES

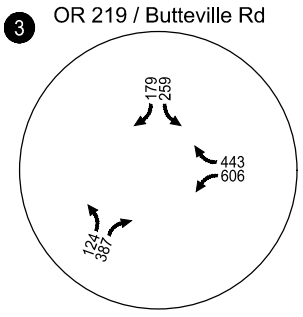
1 OR 219 / Arbor Grove Rd NE



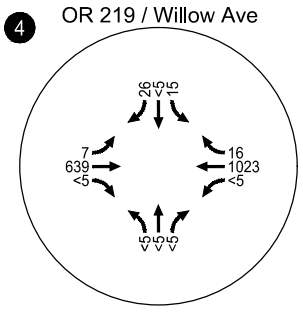
2 OR 219 / North Butteville Road NE



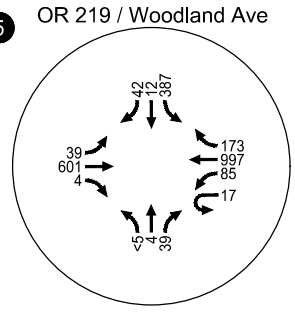
3 OR 219 / Butteville Rd



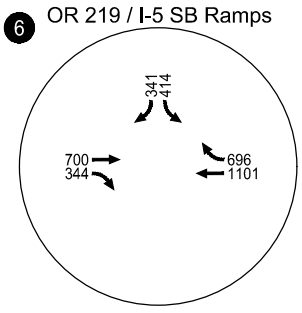
4 OR 219 / Willow Ave



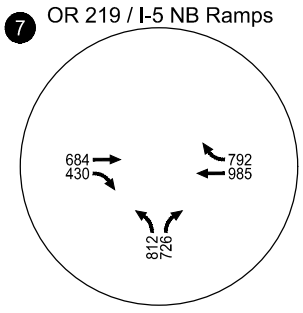
5 OR 219 / Woodland Ave



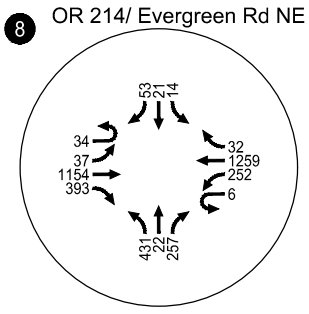
6 OR 219 / I-5 SB Ramps



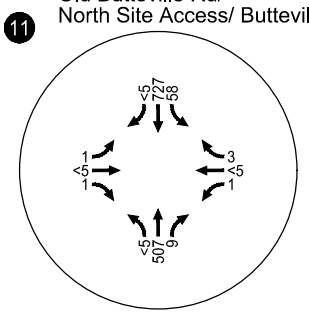
7 OR 219 / I-5 NB Ramps



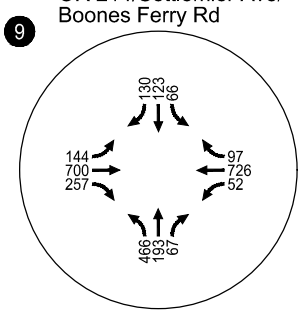
8 OR 214/ Evergreen Rd NE



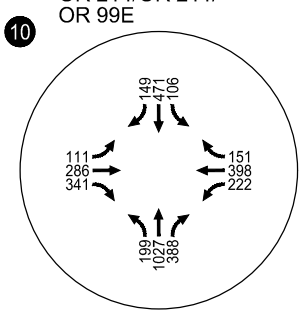
11 Old Butteville Rd/ North Site Access/ Butteville Rd



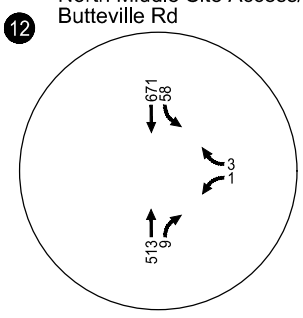
9 OR 214/Settlemier Ave/ Boones Ferry Rd



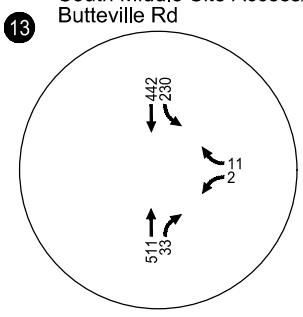
10 OR 214/OR 211/ OR 99E



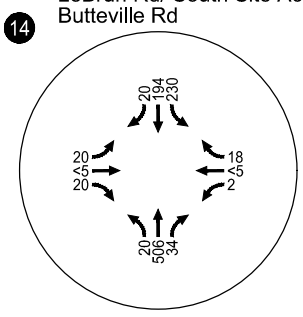
12 North Middle Site Access/ Butteville Rd



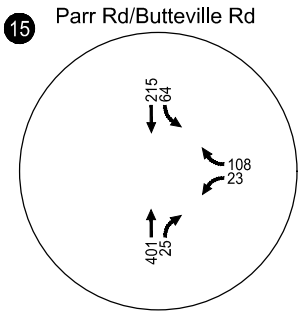
13 South Middle Site Access/ Butteville Rd



14 LeBrun Rd/ South Site Access/ Butteville Rd



15 Parr Rd/Butteville Rd

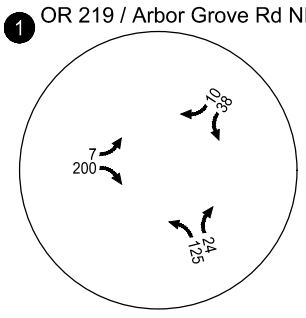


2040 Total Traffic Volumes
Peak Hour of Generator (6:30 AM to 7:30 AM)
Woodburn, OR

Figure **27**

KITTELSON & ASSOCIATES

1 OR 219 / Arbor Grove Rd NE



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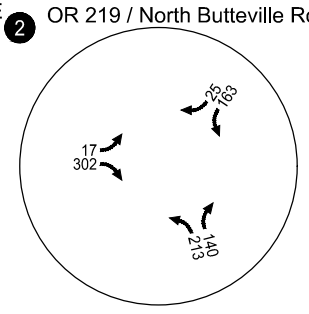
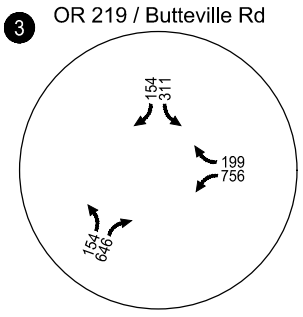
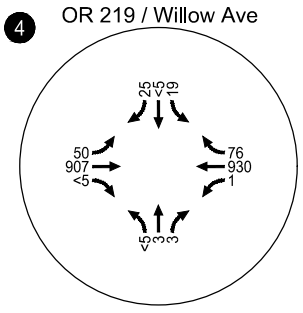


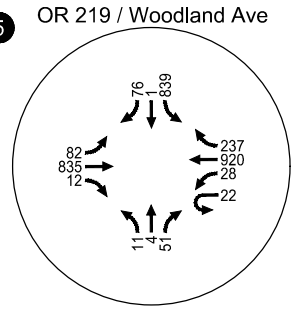
3 OR 219 / Butteville Rd



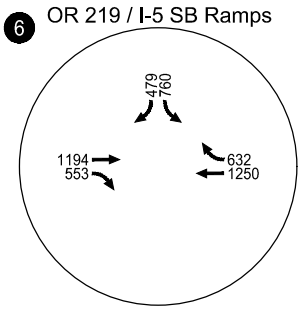
4 OR 219 / Willow Ave



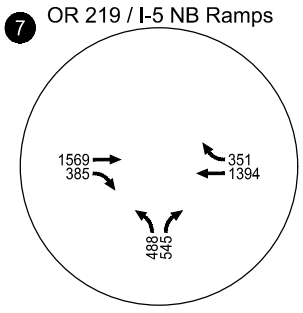
5 OR 219 / Woodland Ave



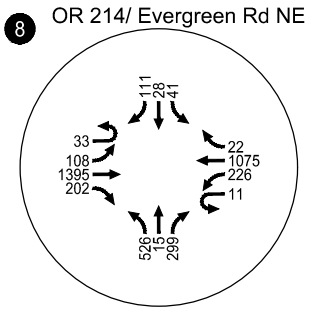
6 OR 219 / I-5 SB Ramps



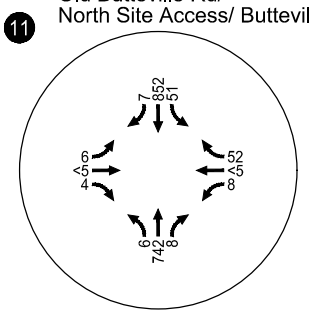
7 OR 219 / I-5 NB Ramps



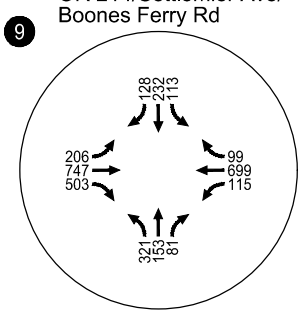
8 OR 214/ Evergreen Rd NE



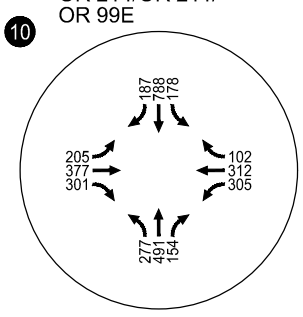
11 Old Butteville Rd/ North Site Access/ Butteville Rd



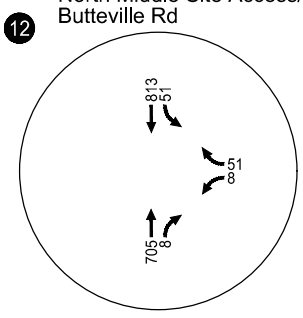
9 OR 214/Settlemier Ave/ Boones Ferry Rd



10 OR 214/OR 211/ OR 99E



12 North Middle Site Access/ Butteville Rd



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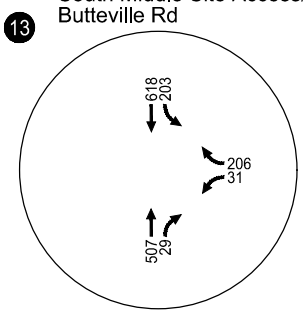

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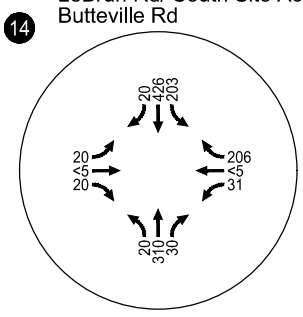
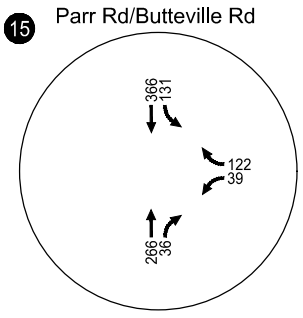


15 Parr Rd/Butteville Rd



2040 Total Traffic Volumes
Peak Hour of Generator (5:30 PM to 6:30 PM)
Woodburn, OR

Figure **28**

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Year 2040 Queuing Analysis

A 95th percentile vehicle queuing analysis was performed at the study intersections on OR 219 / OR 214 from Butteville Road to Evergreen Road using the VISSIM microsimulation tool. 95th percentile queues at all other study intersections were reported using Synchro HCM 6th Edition outputs. Summary tables documenting these outputs are included in *Appendix J*. Synchro-reported queues are rounded up to the next 25 feet (approximately one-vehicle length), while VISSIM-reported queues reflect a 95% confidence interval of the average maximum queue observed in 120-second intervals over 10 simulation runs, per ODOT APM requirements. *Appendix J* also contains the GEH statistic calculations used to document the VISSIM model calibration. Additional VISSIM calibration and other documentation was provided as a supplement to this report.

As shown, the 95th percentile queues under year 2040 total traffic conditions are projected to be accommodated within all existing and planned turn lane storage lengths under all four peak hours, with the exception of several intersections that are either the subject of proposed mitigation measures (OR 219/realigned Butteville Road, OR 219/SB Ramp Terminal) and intersections that are projected to operate beyond acceptable operational targets under 2040 background conditions (OR 214/Evergreen Road, OR 214/Settlemier Avenue, and OR 214/OR 211/OR 99E. :

Proposed Site Driveway Sight Distance Review

Intersection sight distance was preliminarily evaluated at the proposed site driveways on Butteville Road. For this assessment, sight distance measurements were evaluated based on an eye height of 3.5 feet, and an observation point located 14.5 feet from the edge of the cross-street travel lane.

The speeds along Butteville Road were conservatively assumed to be 55 mph in a post development setting. As noted in *A Policy on Geometric Design of Highways and Streets* (published by the American Association of State Highway and Transportation Officials, AASHTO in 2018), the minimum intersection sight distance requirement for passenger cars on a 55 mph cross street is 650 feet (left-turn from stop crossing the equivalent of two lanes) and 530 feet (right-turn from stop). The minimum intersection sight distance requirement for combination trucks on a 55 mph cross street is 990 feet (left-turn from stop crossing the equivalent of two lanes) and 850 feet (right-turn from stop).

Considering the lack of any significant vertical curvature on Butteville Road, each of the four proposed site access driveways are preliminarily estimated to have in excess of 1,000 feet of intersection sight distance which would meet the minimum requirements under all turn and vehicle-type scenarios. A final sight distance evaluation should be performed post construction and prior to site occupancy to ensure that adequate intersection sight distance is provided at each of the proposed site driveways.

OR 219/BUTTEVILLE ROAD INTERSECTION CONTROL EVALUATION

On February 17, 2021, Harper Houg Peterson Righellis, Inc. and DKS Associates prepared the OR 219/Butteville Road Intersection Improvements Design Concepts report. This analysis was prepared for the City of Woodburn in association with representatives from Marion County and the Oregon Department of Transportation (ODOT). The goal of the report was to document the viability of multiple intersection improvement concepts for the OR 219/Butteville Road intersection. These concepts included signalization of the intersection (in its current location and assuming realignment to the north), conversion of the intersection to a roundabout, and realignment of Butteville Road. Based on the results of the analysis, it was concluded that signalization (at the current intersection location) or a roundabout would provide the greatest amount of long-term capacity for the intersection with the roundabout offering a greater safety benefit. While Project Basie diverted from the findings of this earlier study and concluded that a realigned Butteville Road coupled with a roundabout at OR 219 would provide the best long-term operational and safety benefit, it is included in *Appendix K* of this TIA as it provides foundational analysis for a roundabout design treatment that can be used by ODOT in lieu of the traditional Intersection Control Evaluation (ICE) report.

WOODLAND AVENUE EXTENSION

The Woodburn TSP shows a planned extension of Woodland Avenue from its current western terminus to Butteville Road. This extension is identified to follow the parcel line between Tax Lots 400 and 500 (Lots 1 and 2 of I5 Logistics Center subdivision) and connect to Butteville Road across from the existing Stafney Lane intersection. This extension is intended to: 1) to increase overall east-west connectivity south of OR 219 and serve future development in the SWIR, and 2) ensure that future potential

development of Tax Lot 400 (I5LC Lot 1) would have reasonable site access, something that would be difficult to achieve considering ODOT's access management requirements along the limited OR 219 frontage to the north, the lack of direct frontage to Butteville Road created by the Senecal Creek/wetland barrier to the west, and established private property to the east.

As shown in Figure 2, this planned extension of Woodland Avenue is not being incorporated into the proposed site plan, which represents a major deviation from the TSP. The proposed modification of the planned transportation network is warranted for the following reasons:

- Project Basie spans Tax Lots 400 and 500, so there is no longer a need to provide an individual access opportunity to Tax Lot 400. Furthermore, the full incorporation of Tax Lot 400 into the proposed site layout will ensure that it will not need future individual site access.
- The proposed realignment of Butteville Road and a new roundabout intersection at OR 219 represents a major circulation and capacity enhancing change that was not envisioned when the Woodburn TSP was developed. In particular, the proposed OR 219/Butteville Road roundabout is being designed and sized to meet not only the needs of Project Basie but also future development in the larger SWIR. The proposed realignment offers further benefits in the form of reduced impacts on the Senecal Creek drainageway and wetlands, which would have been significantly impacted by expansion and reconstruction of the OR 219/Butteville Road intersection at its current location.
- All of the Project Basie site access driveways are proposed along Butteville Road. These driveways, as well as projected future background traffic growth, can be fully accommodated by the proposed infrastructure improvements; neither the site nor the street system are reliant on a Woodland Avenue extension to support use and functionality.
- As a result of the observations above and in the context of the proposed roundabout traffic solution, the extension of Woodland Avenue is no longer needed from a capacity and circulation enhancing perspective.

In addition to these justifications, additional analysis was provided to test the operational impacts of not providing the Woodland Avenue connection. To accomplish this, the modeling work from the 2018/2019 Woodburn TSP Update was revisited where analysis scenarios were generated both with and without the extension of Woodland Avenue. A review of these scenarios revealed the following:

- With the assumed extension of Woodland Avenue as an Access Street, the travel demand model did not recognize it as a significant roadway connection that would measurably accommodate regional through trips or serve as a significant alternative to the existing OR 219 and Butteville Road corridors.
- The forecast operations at the OR 219/Woodland Avenue intersection did not measurably change with or without the Woodland Avenue extension.

These findings are consistent with the notion that the Woodland Avenue extension has been planned in the TSP more for local access to potential future SWIR properties (in particular Tax Lot 400) than as a regional capacity and circulation enhancing facility.

TRANSPORTATION DEMAND MANAGEMENT

As noted in this study, Project Basie is located in a largely undeveloped part of the City with minimal transportation infrastructure. To address this, the development is proposing to significantly enhance the transportation infrastructure (Butteville Road widening with sidewalk and bicycle lanes, a new realigned segment of Butteville Road with sidewalks and bicycle lanes, and an extension of the full-width/configuration improvements in OR 219 to a new roundabout intersection with complete multi-modal accommodations). These improvements will fully connect the site to the City of Woodburn's established multi-modal infrastructure and increase accessibility of the site for all modes. These substantial improvements are in recognition that Project Basie is a significant trip generator that will draw employment from a larger regional area. As such, it will also be important to establish a formal Transportation Demand Management (TDM) plan that will encourage/empower the use of alternative modes, help form carpooling/ridesharing programs, and promote other similar efforts aimed at reducing single occupant vehicle trips on the local/regional transportation network.

Based on discussions with the Project Basie tenant, they are fully committed to working with the City of Woodburn, Marion County, ODOT, and other regional travel providers on the formation of a site-specific Transportation Demand Management Plan. Given that the project has not yet received land use approval, a potential buildout/occupancy year wouldn't occur until at least early 2023, and many operational details that are yet to be worked out, a site-specific TDM plan is premature at this point. In lieu of a formal TDM plan, the Project Basie tenant has provided a preliminary list of TDM and Transportation Management Plan (TMP) strategies/practices in *Appendix L* that will be considered for the Project Basie site. These strategies/practices are consistent with programs used at other sites owned by the tenant and will be refined in coordination with the City of Woodburn, Marion County, ODOT, and other local/regional transportation providers. It is recommended that the City consider a condition of approval requiring the tenant to provide a fully refined and jointly approved TDM plan at a future date closer to occupancy and operations.

INTERCHANGE MANAGEMENT AREA OVERLAY DISTRICT

Section 2.05.02 of the Woodburn Development Ordinance (WDO) applies a trip budget for select parcels located within the Interchange Management Area Overlay District. This budget is allocated to specific parcels identified in Table 2.05A of the WDO on a first-developed basis.

Ownership of Project Basie includes Subareas A and B in the SWIR as shown in Exhibit 3. Subarea A has 968 trips and Subarea B has 242 trips for a total of 1,210 trips. Per Table 10, Project Basie will generate approximately 1,176 trips during the weekday PM peak hour, which is within the combined Subarea A/B trip budget.

Exhibit 3 – SWIR Interchange Management Area Boundary and Subareas

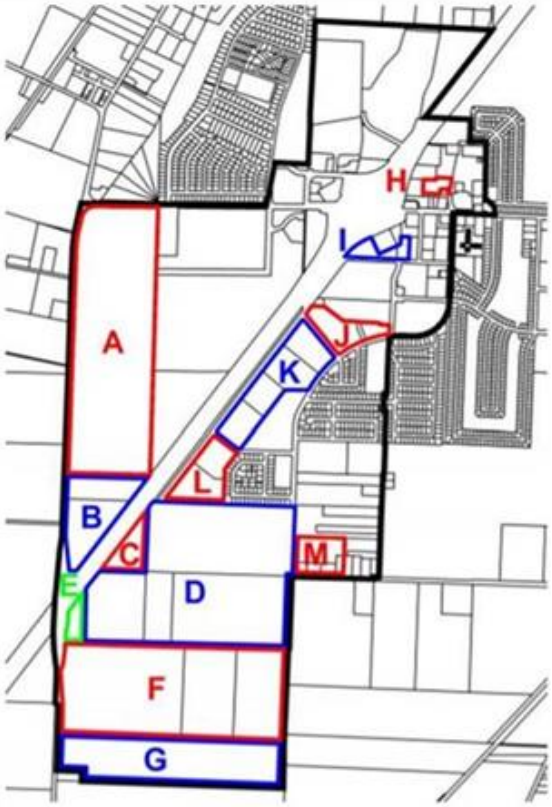

Figure 2.05B – Interchange Management Area Boundary and Subareas

IMPACTS TO DRIVEWAYS ALONG OR 219

The proposed OR 219/Realigned Butteville Road roundabout and associated widening/modifications to the OR 219 corridor are anticipated to impact one driveway serving a small six lot subdivision. The access serving this subdivision is located approximately 220 west of the OR 219/Willow Avenue intersection. With the proposed highway modification and roundabout, this access would need to be restricted to right-in/right-out movements as shown in Exhibits 1 and 2.

RECOMMENDATIONS

Subject to the applicable City of Woodburn, Oregon Department of Transportation (ODOT), and Marion County approval process, Project Basie should:

- Realign the northern segment of Butteville Road to the east of Senecal Creek and its affiliated wetlands. This new alignment would be constructed to a symmetrical City of Woodburn Minor Arterial design section on both sides where it would be widened as necessary to fit the geometric design needs of a proposed roundabout at OR 219 (see next bullet).
- Construct a new double lane roundabout at the realigned Butteville Road intersection with OR 219 that is sized and designed to accommodate long-term projected traffic and heavy vehicle demands. East of the new roundabout, OR 219 should be widened to be consistent with and connected to the fully improved section that currently ends near the Willow Avenue intersection.
- Following completion of the Butteville Road realignment and roundabout intersection with OR 219, close the old Butteville Road connection with OR 219.
- Reconstruct and widen the southern segment of Butteville Road abutting the development site consistent with the Minor Arterial special design section agreed upon by the City of Woodburn and Marion County, with three twelve-foot travel lanes (one NB lane, one center turn lane, and one SB lane), a rural shoulder on the west side, six-foot bike lanes, and curb, landscape strip and a six-foot sidewalk on the east side. To facilitate left-turn movements at the three southernmost proposed site driveways, the widened section of Butteville Road should be striped with center turn lane striping. At the northernmost Site Access/Old Butteville Road intersection, provide northbound and southbound left-turn lane striping.
- Modify the existing I-5 southbound offramp to provide 250 feet of additional right-turn lane storage to better accommodate projected vehicular and freight demand. The exact extents of the right-turn lane lengthening and design will need to be determined through additional conversations with ODOT and City design staff.
- Install STOP (R1-1) signs at each of the four proposed site access driveway approaches to Butteville Road in accordance with County standards and the *Manual on Uniform Traffic Control Devices* (MUTCD).
- Work with ODOT and City of Woodburn staff to develop proportionate share contributions towards offsite improvements at the OR 214/Evergreen Road, OR 214/Boones Ferry Road/N Settlemier Avenue and OR 214/OR 211/OR 99E intersections.

We trust that this letter adequately addresses the traffic and circulation impacts associated with the proposed Project Basie development. Please let us know if you have any questions regarding our analyses or need additional information.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Matt Hughart, AICP
Principal Planner

Zachary Bugg, Ph.D
Senior Engineer

Julia Kuhn, P.E.
Senior Principal Engineer

Appendix A TIA Scoping Memorandum and Jurisdictional Responses

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P 503.228.5230 F 503.273.8169

April 16, 2021 Project #: 26306

Eric Liljequist and Dago Garcia, City of Woodburn
Casey Knecht and Arielle Ferber, Oregon Department of Transportation
Jenelle Shanahan, Marion County

Cc: Tom Nieswander, Trammell Crow Company

RE: Project Basie Traffic Impact Study Scoping Letter

Dear Eric, Dago, Casey, Arielle, and Jenelle:

Kittelson & Associates, Inc. has prepared the following Traffic Impact Study scoping memorandum for the proposed Project Basie development in Woodburn, Oregon. This document outlines a proposed scope of work, study intersections, analysis time periods, and assumptions for your review and consideration.

PROJECT AND SITE OVERVIEW

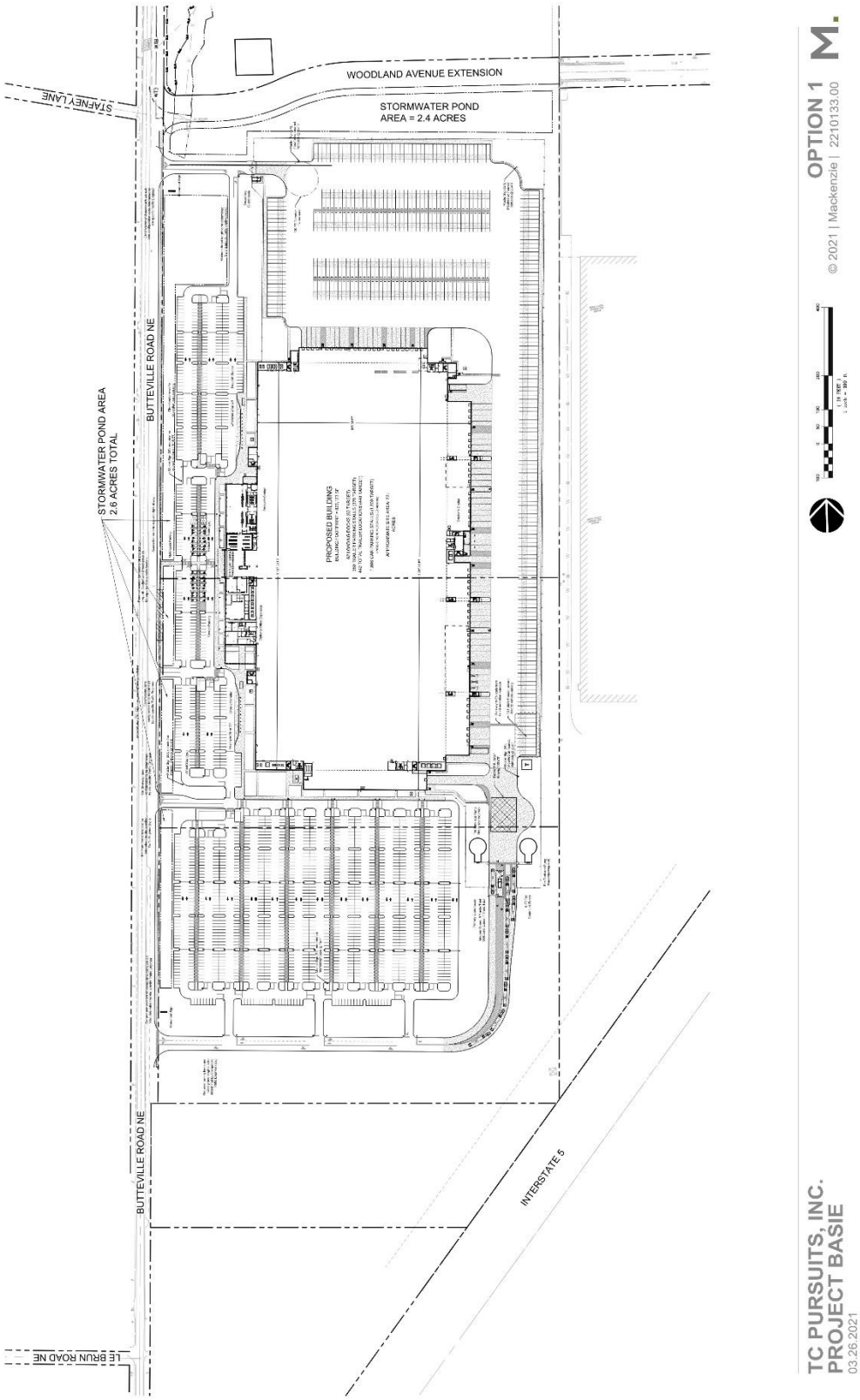
Project Basie is a single five story industrial building that will contain approximately 2.89 million square feet of floor area. The building is anticipated to house package distribution and fulfillment center activities and will be supported by on-site access and circulation, vehicle parking and fleet vehicle/trailer storage, landscaping, stormwater management facilities, and lighting.

The project site consists of approximately 106 acres located southeast of the OR 219/Butteville Road intersection. The site has historically been in agricultural use but is currently zoned for industrial use in Woodburn's Southwest Industrial Reserve Area overlay. Senecal Creek runs through the northwest corner of the site, flowing to the northeast under bridge crossings in Butteville Road and OR 219. A preliminary site layout (subject to further refinement) is included in Figure 1.

Like the subject property, land parcels to the south are in agricultural use pending industrial development under Woodburn SWIR regulations. Lands to the west, across Butteville Road, are outside the Woodburn Urban Growth Boundary (UGB) and support a mix of agricultural and rural residential uses. The WinCo Foods distribution center is on the adjacent property to the east, in the Light Industrial (IL) zone.

In order to support the development application, a formal Traffic Impact Study (TIS) will be prepared and submitted for review to the City of Woodburn, ODOT, and Marion County. The proposed scope of work and study assumptions are outlined in the following sections.

Figure 1 – Preliminary Site Plan (Subject to further refinement)

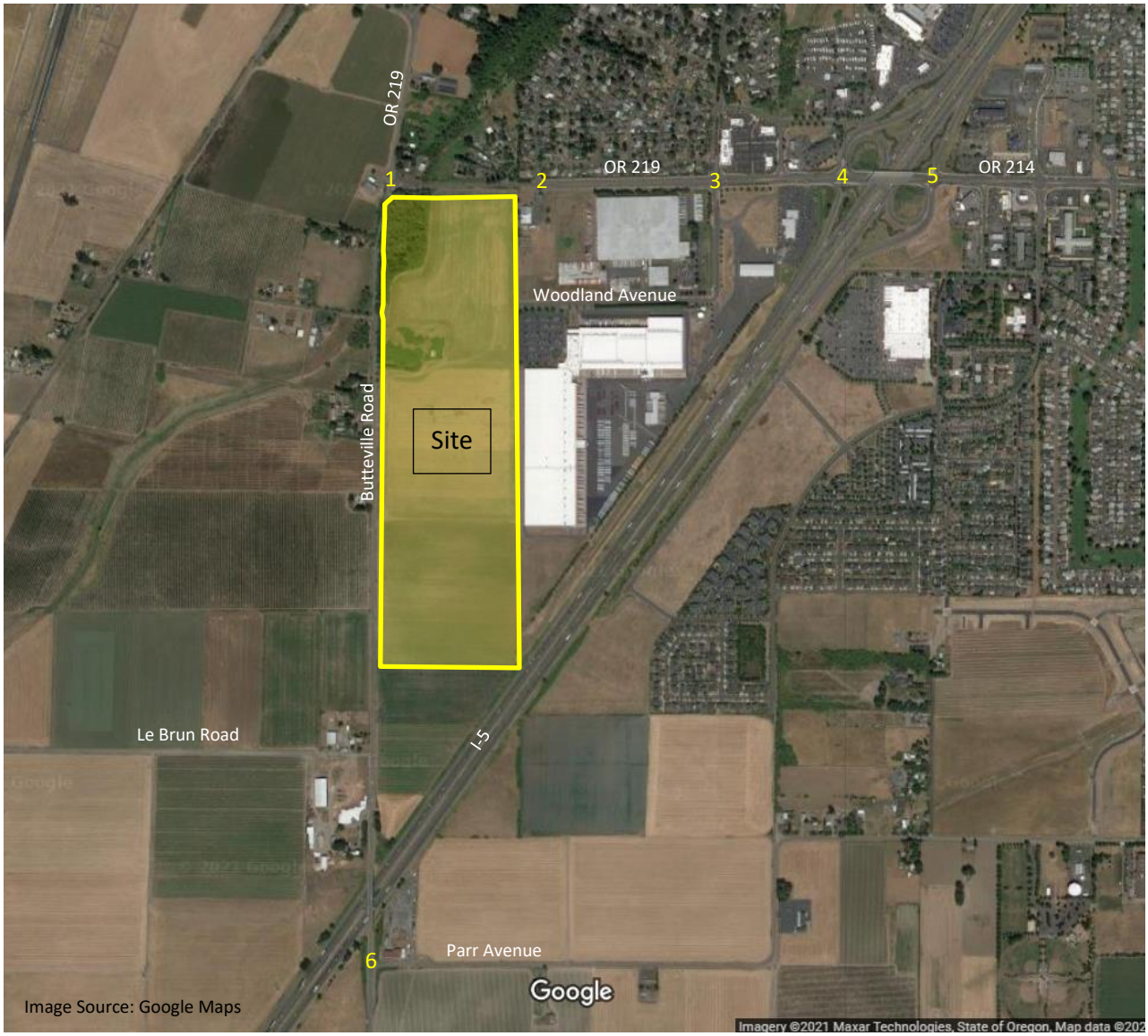


PROPOSED STUDY AREA

Based on the size and the anticipated trip generation profile of the proposed development, the study area is illustrated in Exhibit 1 below. As shown, the affected intersections are proposed to include:

1. OR 219/Butteville Road
2. OR 219/Willow Avenue
3. OR 219/Woodland Avenue
4. OR 219/I-5 SB Ramps
5. OR 219/I-5 NB Ramps
6. Parr Road NE/Butteville Road

Exhibit 1 – Study Area Map



TRIP GENERATION

Trip generation estimates are typically based on data derived from *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE). The proposed warehouse/distribution center will be used for storage and consolidation of products prior to their larger regional distribution and would be considered a "sortable" facility. The ITE land use that most closely matches this function is "High-Cube Fulfillment Center Warehouse" (Land Use 155). Table 1 provides the estimated trip generation using this ITE land use.

Table 1. Estimated Trip Generation (ITE) – High Cube Fulfillment Center (Sortable)

Land Use	ITE Code	Size	Weekday Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
High-Cube Fulfillment Center Warehouse	155	2,890,000 sq. ft.	18,612	2,514	2,036	478	3,468	1,353	2,115

In reviewing Table 1, it is important to note that the ITE rates are based on one or two study sites (depending on the analysis period) with a facility size that was much less than what is being proposed. In these cases, the ITE manual encourages caution and suggests local or other data be applied instead. For these reasons, we obtained information from the potential Project Basie tenant including detailed employee and truck arrival/departure profiles specific to this site that take into consideration the size of the building, its specific purpose, anticipated employment levels, and work schedules modeled after other similar facilities. A detailed summary of this profile is included in *Attachment A*. As shown, the proposed site is anticipated to be a 24-hour facility with multiple shift change patterns. In particular, there are two key shift change periods that are anticipated to occur near the typical weekday AM and PM peak periods:

- 6:30-7:30 AM which accounts for the peak arrival period for the dayshift.
- 5:30-6:30 PM which accounts for peak dayshift departure period and the peak nightshift arrival period.

These shift change periods represent what ITE defines as "the Peak Hour of the Generator". The resulting trip profile is summarized in Table 2 below.

Table 2: Project Basie - Peak Hour of the Generator Trip Generation Estimate

Land Use	Size	Weekday Daily Trips	Weekday AM Peak Hour of Generator Trips (6:30-7:30 AM)			Weekday PM Peak Hour of Generator Trips (5:30-6:30 PM)		
			Total	In	Out	Total	In	Out
Project Basie	937 employees per shift	4,170	703	661	41	1,176	583	593

Source: Tenet supplied employee and freight arrival/departure schedule. See Appendix A.

In addition to the Peak Hour of the Generator, previously collected traffic counts at many of the major intersections within the study area have revealed that Woodburn's street system has different peak time periods than reflected in Table 2. In particular, the weekday AM peak hour in Woodburn has been found to occur from 7:00-8:00 AM while the weekday PM system peak hour has been found to occur from 4:00-5:00 PM. The resulting trip profile for the proposed building during these times is shown in Table 3.

Table 3: Project Basie - Peak Hour of the System Trip Generation Estimate

Land Use	Size	Weekday Daily Trips	Weekday AM System Peak Hour Trips (6:30-7:30 AM)			Weekday PM System Peak Hour Trips (5:30-6:30 PM)		
			Total	In	Out	Total	In	Out
Project Basie	937 employees per shift	4,170	457	419	38	96	54	42

Source: Tenet supplied employee and freight arrival/departure schedule. See Appendix A.

Given the significance of the trip generation profiles reflected in both Tables 2 and 3, we propose to evaluate the transportation impacts during the Peak Hours of the Generator and during the Peak Hours of the System.

ANALYSIS TIME PERIODS

To address the impacts of Project Basie and meet the various study requirements of the reviewing agencies, the Traffic Impact Study will assess the following analysis years during the weekday AM (generator and system peak hour) and PM (generator and system peak hour) time periods:

- Existing (year 2021) traffic conditions.
- Year 2022 background traffic conditions (one year of area growth projections and approved in-process developments, but not including any traffic from Project Basie).
- Year 2022 total traffic conditions (one year of area growth projections, approved in-process developments, and traffic estimates from Project Basie).
- Year 2040 Planning Horizon background traffic conditions.
- Year 2040 Planning Horizon total traffic conditions

TRIP DISTRIBUTION

Based on the anticipated number of jobs at the site, the site's location with respect to Woodburn, and Woodburn's location with respect to the larger population centers in the Willamette Valley, the following preliminary trip distribution pattern was developed:

- I-5 to/from the north: 40%
- I-5 to/from the south: 35%

- OR 219/OR 214 to/from the east of I-5: 15%
- OR 219 to/from the west: 5%
- Butteville Road to/from the south: 5%

These preliminary distribution patterns will be confirmed through a select zone assignment using Woodburn's Travel Demand Model and additional jurisdictional feedback.

EXISTING TRAFFIC VOLUMES

Existing traffic volumes will be determined from manual turn movement counts collected at the study intersections on a typical weekday during the morning and evening peak periods in April 2021. As previously discussed in the Trip Generation section, intersection turning movement counts will be collected from 6:00 AM – 10:00 AM and from 3:00 PM – 7:00 PM in order to fully capture the larger array of peak time period site-generated traffic volumes.

COVID-19 Adjustments

In recognition of the fact that traffic volumes on many Oregon streets and highways are still being affected by reduced work-based commuting travel, various degrees of virtual learning, and reduced in-door dining capacity at restaurants, previously collected traffic counts available at many of the proposed study intersections will be reviewed and appropriate factors will be developed and applied as necessary. This factoring method and results (if necessary) will be shared with City of Woodburn, ODOT, and Marion County staff for review and approval prior to finalizing any intersection analyses.

Seasonal Adjustments

Per ODOT requirements, a seasonal factor will be applied to the study intersections along the OR 219 corridor. To determine an appropriate seasonal factor, three methodologies were investigated as outlined in ODOT's Analysis Procedures Manual (APM): On-Site ATR Method, ATR Characteristic Table Method, ATR Seasonal Trend Method.

On-Site ATR Method

The On-Site ATR Method is used when an Automatic Traffic Recorder (ATR) is within or near the project area. ATR #24-020 is the closest ATR station to Woodburn, located approximately 4.25 miles to the west on OR 219. However, the average annual daily traffic at this ATR site is not within ten percent of recent historical traffic volumes found along OR 219 in the vicinity of the I-5 interchange (10 percent is the criteria cited by the ATM). As such, the On-Site ATR method was not utilized.

ATR Characteristics Table

The ATR Characteristic Table provides general characteristics for each ATR in Oregon and is typically used when there is not a nearby ATR within the immediate study area. A review of the Characteristic Table did not find an ATR that closely matches the conditions along OR 219 within the vicinity of the study site. As such, the ATR Seasonal Trend Method was evaluated as described in the following section.

ATR Seasonal Trend Method

The seasonal trend table is used when there is not an ATR nearby or in a representative area. This method averages seasonal trend groupings from the ATR Characteristics Table. For movements at intersections along OR 219, an average of the "commuter" and "summer" trends was deemed appropriate as it has been used and approved in other recent planning studies in the project vicinity.

Table 4 – ATR Seasonal Trend Method for Commuter and Summer Trends

	April Count Month (April 15)	Seasonal Trend Peak Period Factor
Commuter	0.9759	0.9355
Summer	1.0100	0.8299

- Based on Table 4, the Commuter seasonal adjustment is 1.04 (i.e., 0.9759/0.9355) and the Summer seasonal adjustment is 1.22 (i.e., 1.0100/0.8299). As such, an average of the Commuter and Summer season adjustments is **1.13**.

For the purposes of this analysis, a seasonal factor of 1.13 will be applied to existing traffic volumes.

PERFORMANCE MEASURES & OPERATING STANDARDS

Intersection operating targets adopted by the City of Woodburn, ODOT, and Marion County are summarized below.

ODOT Mobility Targets

ODOT uses volume-to-capacity (v/c) ratios to assess intersection operations. Table 6 of the Oregon Highway Plan (OHP) provides volume-to-capacity ratio targets for all signalized/roundabout and unsignalized intersections located outside the Portland metropolitan area. Based on the OHP, Table 5 summarizes the v/c ratio that will be used to identify the existing/future operational issues at all study intersections along the OR 219 study corridor. In addition, the Oregon Highway Design Manual standards (from Table 10-2) are identified for any intersections that may require mitigation.

Table 5 – ODOT Mobility Targets

Intersection	OHP Mobility Target	Highway Design Manual 20-Year Design Mobility Standards
OR 219/Butteville Road	V/C: 0.95 major approach/0.95 minor approach	0.80
OR 219/Willow Avenue	V/C: 0.95 major approach/0.95 minor approach	0.80

OR 219/Woodland Avenue	V/C: 0.95	0.80
OR 219/I-5 SB Ramp Terminal	V/C: 0.85	0.80
OR 21/I-5 NB Ramp Terminal	V/C: 0.85	0.80

Note: OR 219 is a District Highway with a posted speed of 35 mph through the study intersections.

City of Woodburn Operating Standards

The City of Woodburn's Transportation System Plan (TSP) has adopted the following mobility targets for intersections within the City. While the City of Woodburn has no ownership or maintenance control at any of the identified study intersections, the traffic impact study will account for these standards in the analysis.

- LOS E for signalized intersections
- 1.0 v/c for signalized intersections
- 0.90 v/c for the critical movements at unsignalized intersections

Marion County Mobility Standards

The County's policy and Procedure for traffic impact study requirements specify the following mobility standards. For the purposes of this study, these standards will apply when evaluating traffic conditions along the Marion County owned and maintained Butteville Road.

- LOS D for signalized and all-way stop-control (AWSC) intersections
- LOS E for all individual movements
- 0.85 v/c for all individual movements
- LOS E for unsignalized intersections (LOS F is acceptable for relatively low volumes)

NEXT STEPS

Please review the project scope at your earliest convenience. If you have any questions or comments, please contact us at 503.535.7425.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Matt Hughart, AICP
Principal Planner

Julia Kuhn, P.E.
Senior Principal Engineer

AR Sortable 640K FC - Non-Peak Season

Headcount

	Total
Headcount - Day Shift	937
Headcount - Night Shift	937

Shift Structure

	Start	End
Day Shift - Inbound Employees	7:00:00 AM	5:30:00 PM
Day Shift - Outbound Employees	7:30:00 AM	6:00:00 PM
Night Shift - Inbound Employees	6:00:00 PM	4:30:00 AM
Night Shift - Outbound Employees	6:30:00 PM	5:00:00 AM

Net Cars Factor 95%

Traffic Schedule

Cars
Average Weekday

Time	In	Out	Total
00:00	3	6	9
01:00	1	4	5
02:00	5	14	19
03:00	8	14	22
04:00	17	179	196
05:00	37	475	512
06:00	28	16	44
06:15	73	17	90
06:30	127	10	137
06:45	170	7	177
07:00	168	9	177
07:15	218	4	222
07:30	32	6	38
07:45	7	5	12
08:00	25	18	43
09:00	16	10	26
10:00	20	17	37
11:00	38	41	79
12:00	11	17	28
13:00	13	14	27
14:00	11	25	36
15:00	29	37	66
16:00	45	32	77
17:00	26	33	59
17:15	50	15	65
17:30	110	128	238
17:45	143	74	217
18:00	178	246	424
18:15	172	166	338
18:30	23	111	134
18:45	5	41	46
19:00	18	35	53
20:00	8	8	16
21:00	15	15	30
22:00	17	21	38
23:00	3	5	8
	1,874	1,874	3,745

Trucks
Average Weekday

Time	In	Out	Total
00:00	11	11	23
01:00	19	19	38
02:00	8	8	15
03:00	15	15	30
04:00	8	8	15
05:00	11	11	23
06:00	3	3	5
06:15	3	3	5
06:30	3	3	5
06:45	3	3	5
07:00	4	4	8
07:15	4	4	8
07:30	4	4	8
07:45	4	4	8
08:00	15	15	30
09:00	27	27	53
10:00	15	15	30
11:00	16	16	33
12:00	16	16	33
13:00	10	10	20
14:00	10	10	20
15:00	10	10	20
16:00	11	11	23
17:00	3	3	5
17:15	3	3	5
17:30	3	3	5
17:45	3	3	5
18:00	3	3	5
18:15	3	3	5
18:30	3	3	5
18:45	3	3	5
19:00	9	9	18
20:00	14	14	28
21:00	10	10	20
22:00	14	14	28
23:00	10	10	20
	306	306	611

Total Vehicles
Cars + Trucks Average Weekday

	In	Out	Total
00:00	14	17	31
01:00	20	23	43
02:00	12	21	33
03:00	23	28	51
04:00	24	178	201
05:00	47	463	509
06:00	29	18	47
06:15	72	19	91
06:30	123	12	135
06:45	164	9	173
07:00	163	12	176
07:15	211	8	218
07:30	34	9	44
07:45	10	9	19
08:00	39	32	71
09:00	42	36	78
10:00	34	31	65
11:00	53	55	108
12:00	27	33	59
13:00	22	23	46
14:00	21	34	54
15:00	38	45	83
16:00	54	42	96
17:00	27	34	61
17:15	50	17	67
17:30	107	124	231
17:45	138	73	211
18:00	172	236	408
18:15	166	160	326
18:30	24	108	132
18:45	7	41	49
19:00	26	42	68
20:00	21	21	43
21:00	24	24	49
22:00	30	34	64
23:00	13	15	28
	2,082	2,087	4,169

Morning Peak Hour of Generator			
	Enter	Exit	Total
06:30-07:30	661	41	703

Evening Peak Hour of Generator			
	Enter	Exit	Total
17:30-18:30	583	593	1,176

City of Woodburn

Community Development Dept.

Memorandum

270 Montgomery Street *Woodburn, Oregon 97071* *Phone (503) 982-5246* *Fax (503) 982-5244*

Date: April 30, 2021

To: Matt Hughart, Principal Planner, Kittelson & Associates, Inc.

From: Chris Kerr, Community Development Director

Cc: Eric Liljequist, Public Works, City of Woodburn
Chuck Green, OTAK
Casey Knecht, ODOT
Arielle Ferber, ODOT
Tom Nieswander, Trammel Crow

Subject: Project Basie transportation scoping letter response

Please find below and attached comments in response to the April 16, 2021 memorandum from Matt Hughart of Kittelson and Associates entitled "Project Basie Traffic Impact Study Scoping Letter". Included below are comments, findings and recommendations from City staff, prepared by Chuck Green, consultant for the City. Oregon Department of Transportation Region 2 Traffic staff (Arielle Ferber and Casey Knecht) provided a separate review memo on April 29, 2021, which is attached. Marion County Transportation Planning Staff (Janelle Shanahan) provided Marion County's comments, embedded in the Kittelson document, directly to Matt Hughart under a separate email.

The TIA scoping memo was reviewed with input from the following documents:

- Oregon Department of Transportation (ODOT) Analysis Procedures Manual (APM), Version 2 as Revised, November 2020 with new Appendix 3E, "Traffic Volume Development During Disruptive Events" including the effects of the COVID-19 Pandemic
- City of Woodburn's Comprehensive Plan (September 2019)
- City of Woodburn's Transportation System Plan (September 2019)
- City of Woodburn's Transit Plan Update (November 2010)
- Woodburn Development Ordinance, update version June 2019
- Recent development traffic impact analyses in the site vicinity.

Summary of Findings

The review of the developer's proposed Traffic Impact Analysis scope has the following findings and recommendations:

- Site plan concept and Butteville Road and Oregon 219 alignments: the adopted Transportation Systems Plan contains an extension of Woodland Avenue west from its current stub over to Butteville Road as a "Future Access Street". The current site plan narrative (MacKenzie Engineering, also dated April 16, 2021) indicates the Applicant plans to not build this extension of Woodland Avenue; that site plan pushes the site to the north to be contiguous with OR 219. The TIA scoping memo includes a map showing "Option 1" which pushes the site to the south, and includes the Woodland Avenue extension on the north side of the site proposal. A new road option was emailed to Jamie Johnk, Woodburn's Economic Development Director on Friday, April 23 which shows Option 1 with a new, realigned Butteville Road and a new roundabout to be built along OR 219 east of the current Butteville/OR 219 intersection. We are unclear as to which site plan option and which roadway system option will be incorporated into the TIA; this should be clarified before starting the TIA work.

- Additionally, the site will have an impact on the Butteville Road/OR 219 intersection which likely impacts the intersection type of control (signal vs. roundabout). The new alignment concept shared on April 23 indicates a roundabout as the preferred intersection traffic control. Due to the nature of traffic interactions and operations, especially approaching and within the roundabout and queuing in both directions along OR 219, the traffic impact study should assess both AM and PM peaks, and should include both AM and PM traffic simulations of an appropriate platform such as VISSIM (instead of Synchro/SimTraffic).

- Kittelson proposes to use ODOT's Seasonal Adjustment factors, but they are proposing to use an ATR (Automated Traffic Recording) station several miles to the west of the site along OR 219. OR 219 and the I-5 interchange vicinity have a very high Holiday peak in November or December, which this ATR may not capture. Kittelson should provide a methodology showing the proposed seasonal adjustment factor more relevant to the vicinity of this site, including proximity to I-5. Our meeting with ODOT raised this seasonal adjustment question and subsequent to that meeting, ODOT provided the following comment: "The City had a review comment regarding the seasonal factor and how the chosen ATR would not reflect the Holiday peak experienced in the study area. There is no existing ATR within the area that would capture this Holiday peak, so I did a review of ATRs across the state to try and identify any which would give a good representation. Unfortunately I wasn't able to find a perfect fit with ATRs #34-008 (Tigard) and #26-018 (Yamhill) being the best as they are located on either I-5 or I-205 very close to retail centers. Both of these ATRs experience their peak months during summer. I believe the method chosen by the applicant (which averages the commuter and summer seasonal trends) will give an appropriate seasonal factor with the data available to us at this time." If Kittelson cannot locate traffic data that would provide a more appropriate seasonal adjustment factor, the method proposed in the scoping memo appears to be acceptable to ODOT.

- Based on a review of the current situation and the proposed use, the trip distribution assumptions need some modification, as shown below. ODOT's and Marion County's review concurs with this request to adjust the percentages. ODOT suggested using a select zone analysis in the area travel demand model. If that is not available or applicable to this specific analysis, the proposed modifications are:
    - Increase the trip percentage to the west on OR 219 from the proposed 5% to 10%
    - Increase the trip percentage on OR 214/219 east of I-5 from the proposed 15% to 20%
    - Reduce the trip distribution rates on I-5 both north and south accordingly to balance to 100% of the trips.

- The Study Area proposed is limited to the immediate vicinity of the site. It does not go west toward Newberg along OR 219, nor does it go east of I-5. The study area should be expanded based on the traffic impacts of intersections and roadway segments both east and west along OR 219 and OR 214. ODOT provided some feedback as well about the extent of the study area and I concur with their approach.

- The site has different peaking characteristics (peak hour of generator) compared to the surrounding system (peak hour of system). Kittelson is proposing a modified trip generation based on a trip profile pattern attached at the end of the scoping memo which accounts for the overlap between the site's peak and the system's peak. While the approach seems reasonable, looking at the car vs. truck trip generation, it appears the truck trip generation rates may be low. However, we have no information on the distribution patterns of the shipped goods to and from the Fulfillment center. Kittelson should provide more details on the trip distribution patterns – types of trucks (van, single-unit, multi-unit) and inbound vs. outbound trucks and profile.

- Kittelson is proposing to incorporate a COVID-19 adjustment to "existing conditions" counts for the analysis. However, there are no details shared on the methodology nor how this will be consistent with the ODOT APM Appendix 3E methodology with this regard.

- Future planning year for the analysis is 2040, which will be approximately 19 years after site buildout. At the meeting with ODOT, they agreed this seemed reasonable but would provide final comments after their completed review of the scoping memo.

- Kittelson should confirm the current mobility standards to be applied for all agencies. Besides the Woodburn and ODOT standards or targets referenced in the scoping memo, Marion County's Mobility Standards are LOS E and v/c ratio below 0.85 for signalized and all-way stop controlled intersections, and LOS D and 0.90 for other unsignalized intersections. ODOT also commented about correcting the mobility thresholds for the TIA. The mobility standard for a roundabout should also be confirmed.

- In-process development trips, including the Port of Willamette, will need to be incorporated into the existing plus background growth plus in-process trips for the without-site scenario.

Attachment: ODOT *TIA Scoping Review Comments* prepared April 29, 2021

Oregon
Kate Brown, Governor

Department of Transportation
Region 2 Tech Center
455 Airport Road SE, Building A
Salem, Oregon 97301-5397
Telephone (503) 986-2990
Fax (503) 986-2839

DATE: April 29, 2021

TO: Casey Knecht, PE
Development Review Coordinator

FROM: Arielle Ferber, PE
Traffic Analysis Engineer

SUBJECT: Project Basie (Woodburn) – Outright Use
TIA Scoping Review Comments

ODOT Region 2 Traffic has completed our review of the submitted traffic impact analysis scoping memorandum (dated April 2021) to address traffic impacts due to development on the southeast quadrant of Butteville Road and Stafney Lane in the city of Woodburn, with respect to consistency and compliance with ODOT's Analysis Procedures Manual, Version 2 (APM). The APM was most recently updated in October 2020. The current version is published online at: http://www.oregon.gov/ODOT/TD/TP/Pages/APM.aspx. As a result, we submit the following comments for the City's consideration:

Recommended analysis items to be addressed:

1. ODOT recommends (or requires when we have the authority) the applicant study all state highway intersections that may be anticipated to see an increase in either 50 peak hour trips and/or 300 ADT. Therefore, using the provided trip distribution ODOT recommends the applicant study the following intersections, in addition to the proposed study area intersections:
    - Both OR 219 at Butteville Road intersections
    - OR 214 at Evergreen Road
    - OR 214 at N Boones Ferry Road/N Settlemiere Avenue
    - OR 214 at OR 99E
2. Our review identified multiple trip generation errors.
    - Table 1, which estimated trip generation using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, does not correspond to Land Use Code 155 (High-Cube Fulfillment Center Warehouse) trips using 2.89 million sf.
    - Table 2 and Table 3 show trip generation estimates using developer provided data contained in Appendix A. However, Appendix A appears to contain some errors as follows:
        - The Trucks columns have several intervals where trips In and Out of the site do not add to the Total (ex 6:30 AM should have 6 total trips, not 5 total trips)

- The Cars and Trucks columns do not add to the Total Vehicles columns. This would increase trip generation to a total of 741 trips in the AM peak hour and 1,241 trips in the PM peak hour.

3. As the majority of trips during the AM and PM peak hours are projected to be employees of the development the trip distribution values for the OR 219 to/from the west and Butteville Road to/from the south appear low and may need to be increased. ODOT recommends that the applicant refine their trip distribution using a select zone assignment, as noted in the scoping memo. In addition, should the trip distribution change the applicant should review for intersections which may meet the ODOT recommended thresholds as noted in comment #1.
4. ODOT concurs with the applicant determining if a COVID-19 adjustment factor may be needed. Please see APM, Appendix 3E for recommended methodology.
5. The *Oregon Highway Plan* (*OHP*) v/c mobility target for the OR 219 at Butteville intersection (district highway, within UGB, non-MPO, 55 MPH) is 0.90, not 0.95. The OR 219 at I-5 SB Ramp Terminal and OR 219 at I-5 NB Ramp Terminal intersections (interstate, within UGB, non-MPO) have an *OPH* v/c mobility target of 0.80, not 0.85. In addition, *Highway Design Manual* (*HDM*) mobility targets are not typically used for development review and *OHP* v/c mobility targets should be used for comparing operation results in the build conditions, even with mitigation.
6. ODOT recommends a simulation-based queueing analysis be conducted in accordance with Chapter 15 of the APM for all study area intersections for all time periods analyzed.
7. ODOT recommends a crash analysis be conducted in accordance with Chapter 4 of ODOT's APM.

Thank you for the opportunity to review this traffic impact analysis scoping memo. Should the City determine any of the above comments merit the need for an update scoping memo, we would be willing and able to assist with a second round of review. If there are any questions regarding these comments, please contact me at (503) 986-2857 or Arielle.Ferber@ODOT.state.or.us

KITTELSON & ASSOCIATES
851 SW 6th AVENUE, SUITE 600
PORTLAND, OR 97204
P 503.228.5230 F 503.273.8169

April 16, 2021 Project #: 26306

Eric Liljequist and Dago Garcia, City of Woodburn
Casey Knecht and Arielle Ferber, Oregon Department of Transportation
Jenelle Shanahan, Marion County

Cc: Tom Nieswander, Trammell Crow Company

RE: Project Basie Traffic Impact Study Scoping Letter

Dear Eric, Dago, Casey, Arielle, and Jenelle:

Kittelson & Associates, Inc. has prepared the following Traffic Impact Study scoping memorandum for the proposed Project Basie development in Woodburn, Oregon. This document outlines a proposed scope of work, study intersections, analysis time periods, and assumptions for your review and consideration.

PROJECT AND SITE OVERVIEW

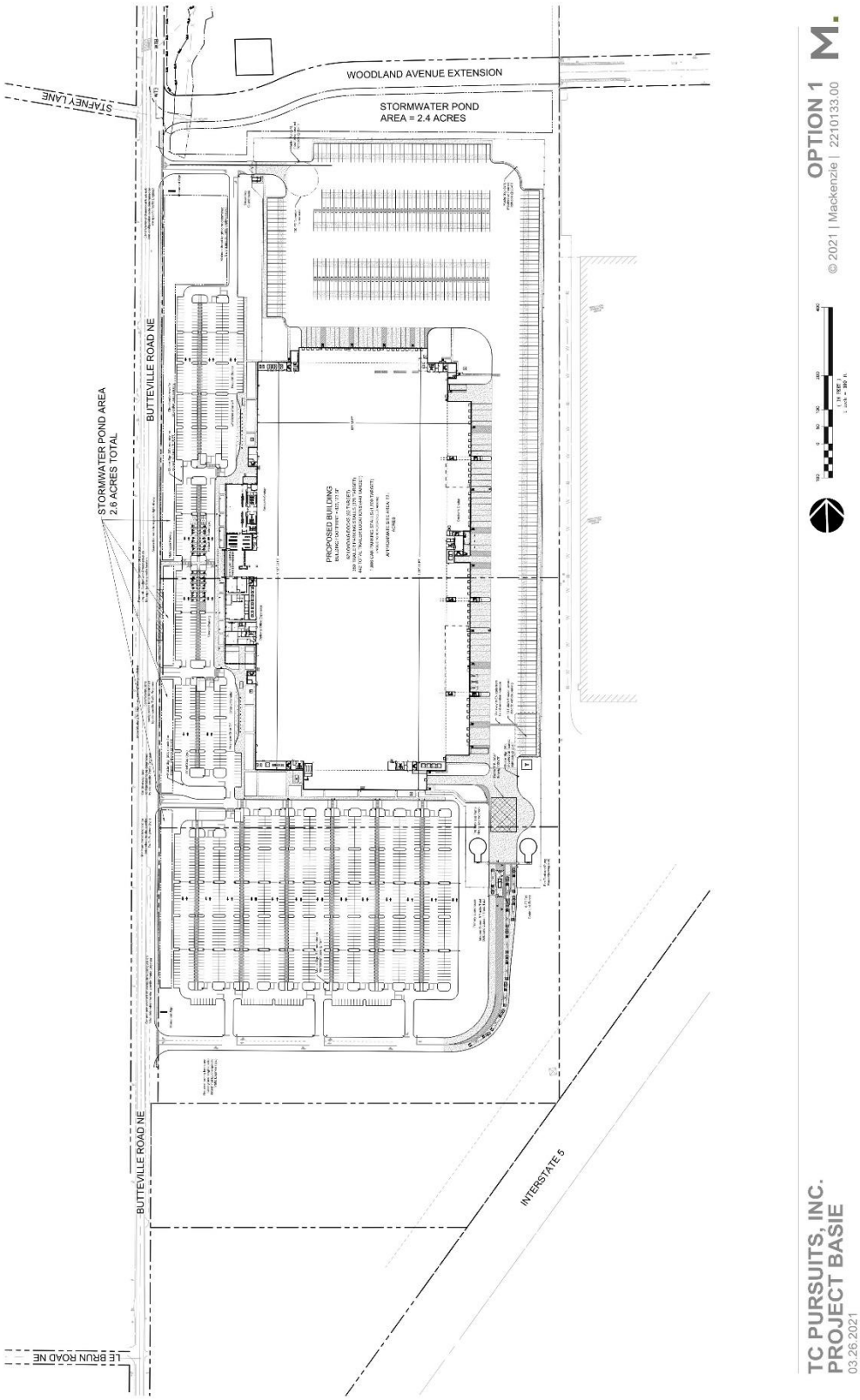
Project Basie is a single five story industrial building that will contain approximately 2.89 million square feet of floor area. The building is anticipated to house package distribution and fulfillment center activities and will be supported by on-site access and circulation, vehicle parking and fleet vehicle/trailer storage, landscaping, stormwater management facilities, and lighting.

The project site consists of approximately 106 acres located southeast of the OR 219/Butteville Road intersection. The site has historically been in agricultural use but is currently zoned for industrial use in Woodburn's Southwest Industrial Reserve Area overlay. Senecal Creek runs through the northwest corner of the site, flowing to the northeast under bridge crossings in Butteville Road and OR 219. A preliminary site layout (subject to further refinement) is included in Figure 1.

Like the subject property, land parcels to the south are in agricultural use pending industrial development under Woodburn SWIR regulations. Lands to the west, across Butteville Road, are outside the Woodburn Urban Growth Boundary (UGB) and support a mix of agricultural and rural residential uses. The WinCo Foods distribution center is on the adjacent property to the east, in the Light Industrial (IL) zone.

In order to support the development application, a formal Traffic Impact Study (TIS) will be prepared and submitted for review to the City of Woodburn, ODOT, and Marion County. The proposed scope of work and study assumptions are outlined in the following sections.

Figure 1 – Preliminary Site Plan (Subject to further refinement)

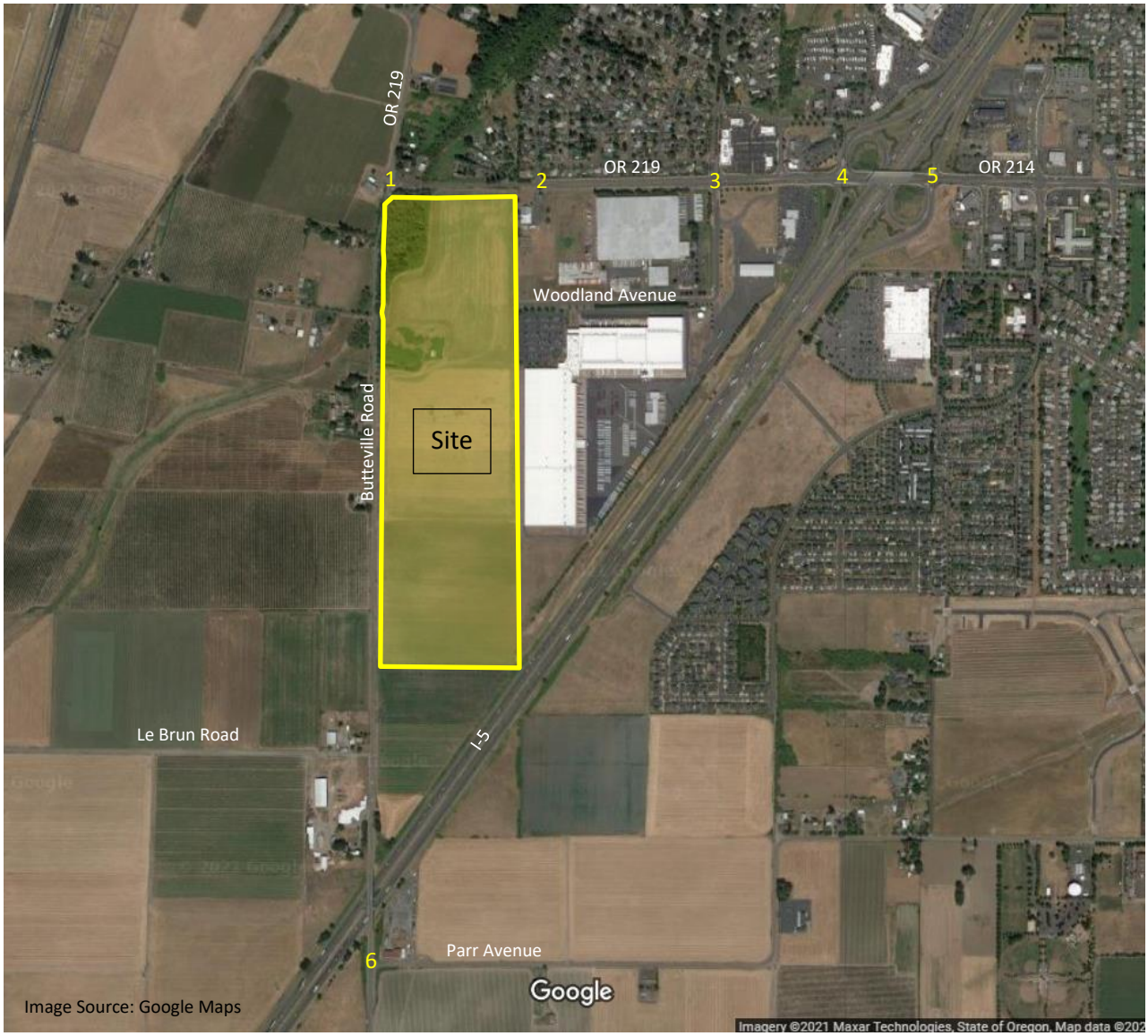


PROPOSED STUDY AREA

Based on the size and the anticipated trip generation profile of the proposed development, the study area is illustrated in Exhibit 1 below. As shown, the affected intersections are proposed to include:

1. OR 219/Butteville Road
2. OR 219/Willow Avenue
3. OR 219/Woodland Avenue
4. OR 219/I-5 SB Ramps
5. OR 219/I-5 NB Ramps
6. Parr Road NE/Butteville Road

Exhibit 1 – Study Area Map



TRIP GENERATION

Trip generation estimates are typically based on data derived from *Trip Generation, 10th Edition*, published by the Institute of Transportation Engineers (ITE). The proposed warehouse/distribution center will be used for storage and consolidation of products prior to their larger regional distribution and would be considered a "sortable" facility. The ITE land use that most closely matches this function is "High-Cube Fulfillment Center Warehouse" (Land Use 155). Table 1 provides the estimated trip generation using this ITE land use.

Table 1. Estimated Trip Generation (ITE) – High Cube Fulfillment Center (Sortable)

Land Use	ITE Code	Size	Weekday Trips	Weekday AM Peak Hour Trips			Weekday PM Peak Hour Trips		
				Total	In	Out	Total	In	Out
High-Cube Fulfillment Center Warehouse	155	2,890,000 sq. ft.	18,612	2,514	2,036	478	3,468	1,353	2,115

In reviewing Table 1, it is important to note that the ITE rates are based on one or two study sites (depending on the analysis period) with a facility size that was much less than what is being proposed. In these cases, the ITE manual encourages caution and suggests local or other data be applied instead. For these reasons, we obtained information from the potential Project Basie tenant including detailed employee and truck arrival/departure profiles specific to this site that take into consideration the size of the building, its specific purpose, anticipated employment levels, and work schedules modeled after other similar facilities. A detailed summary of this profile is included in *Attachment A*. As shown, the proposed site is anticipated to be a 24-hour facility with multiple shift change patterns. In particular, there are two key shift change periods that are anticipated to occur near the typical weekday AM and PM peak periods:

- 6:30-7:30 AM which accounts for the peak arrival period for the dayshift.
- 5:30-6:30 PM which accounts for peak dayshift departure period and the peak nightshift arrival period.

These shift change periods represent what ITE defines as "the Peak Hour of the Generator". The resulting trip profile is summarized in Table 2 below.

Table 2: Project Basie - Peak Hour of the Generator Trip Generation Estimate

Land Use	Size	Weekday Daily Trips	Weekday AM Peak Hour of Generator Trips (6:30-7:30 AM)			Weekday PM Peak Hour of Generator Trips (5:30-6:30 PM)		
			Total	In	Out	Total	In	Out
Project Basie	937 employees per shift	4,170	703	661	41	1,176	583	593

Source: Tenet supplied employee and freight arrival/departure schedule. See Appendix A.

In addition to the Peak Hour of the Generator, previously collected traffic counts at many of the major intersections within the study area have revealed that Woodburn's street system has different peak time periods than reflected in Table 2. In particular, the weekday AM peak hour in Woodburn has been found to occur from 7:00-8:00 AM while the weekday PM system peak hour has been found to occur from 4:00-5:00 PM. The resulting trip profile for the proposed building during these times is shown in Table 3.

Table 3: Project Basie - Peak Hour of the System Trip Generation Estimate

Land Use	Size	Weekday Daily Trips	Weekday AM System Peak Hour Trips (6:30-7:30 AM)			Weekday PM System Peak Hour Trips (5:30-6:30 PM)		
			Total	In	Out	Total	In	Out
Project Basie	937 employees per shift	4,170	457	419	38	96	54	42

Source: Tenet supplied employee and freight arrival/departure schedule. See Appendix A.

Given the significance of the trip generation profiles reflected in both Tables 2 and 3, we propose to evaluate the transportation impacts during the Peak Hours of the Generator and during the Peak Hours of the System.

ANALYSIS TIME PERIODS

To address the impacts of Project Basie and meet the various study requirements of the reviewing agencies, the Traffic Impact Study will assess the following analysis years during the weekday AM (generator and system peak hour) and PM (generator and system peak hour) time periods:

- Existing (year 2021) traffic conditions.
- Year 2022 background traffic conditions (one year of area growth projections and approved in-process developments, but not including any traffic from Project Basie).
- Year 2022 total traffic conditions (one year of area growth projections, approved in-process developments, and traffic estimates from Project Basie).
- Year 2040 Planning Horizon background traffic conditions.
- Year 2040 Planning Horizon total traffic conditions

TRIP DISTRIBUTION

Based on the anticipated number of jobs at the site, the site's location with respect to Woodburn, and Woodburn's location with respect to the larger population centers in the Willamette Valley, the following preliminary trip distribution pattern was developed:

- I-5 to/from the north: 40%
- I-5 to/from the south: 35%

- OR 219/OR 214 to/from the east of I-5: 15%
- OR 219 to/from the west: 5%
- Butteville Road to/from the south: 5%

These preliminary distribution patterns will be confirmed through a select zone assignment using Woodburn's Travel Demand Model and additional jurisdictional feedback.

EXISTING TRAFFIC VOLUMES

Existing traffic volumes will be determined from manual turn movement counts collected at the study intersections on a typical weekday during the morning and evening peak periods in April 2021. As previously discussed in the Trip Generation section, intersection turning movement counts will be collected from 6:00 AM – 10:00 AM and from 3:00 PM – 7:00 PM in order to fully capture the larger array of peak time period site-generated traffic volumes.

COVID-19 Adjustments

In recognition of the fact that traffic volumes on many Oregon streets and highways are still being affected by reduced work-based commuting travel, various degrees of virtual learning, and reduced in-door dining capacity at restaurants, previously collected traffic counts available at many of the proposed study intersections will be reviewed and appropriate factors will be developed and applied as necessary. This factoring method and results (if necessary) will be shared with City of Woodburn, ODOT, and Marion County staff for review and approval prior to finalizing any intersection analyses.

Seasonal Adjustments

Per ODOT requirements, a seasonal factor will be applied to the study intersections along the OR 219 corridor. To determine an appropriate seasonal factor, three methodologies were investigated as outlined in ODOT's Analysis Procedures Manual (APM): On-Site ATR Method, ATR Characteristic Table Method, ATR Seasonal Trend Method.

On-Site ATR Method

The On-Site ATR Method is used when an Automatic Traffic Recorder (ATR) is within or near the project area. ATR #24-020 is the closest ATR station to Woodburn, located approximately 4.25 miles to the west on OR 219. However, the average annual daily traffic at this ATR site is not within ten percent of recent historical traffic volumes found along OR 219 in the vicinity of the I-5 interchange (10 percent is the criteria cited by the ATM). As such, the On-Site ATR method was not utilized.

ATR Characteristics Table

The ATR Characteristic Table provides general characteristics for each ATR in Oregon and is typically used when there is not a nearby ATR within the immediate study area. A review of the Characteristic Table did not find an ATR that closely matches the conditions along OR 219 within the vicinity of the study site. As such, the ATR Seasonal Trend Method was evaluated as described in the following section.

ATR Seasonal Trend Method

The seasonal trend table is used when there is not an ATR nearby or in a representative area. This method averages seasonal trend groupings from the ATR Characteristics Table. For movements at intersections along OR 219, an average of the "commuter" and "summer" trends was deemed appropriate as it has been used and approved in other recent planning studies in the project vicinity.

Table 4 – ATR Seasonal Trend Method for Commuter and Summer Trends

	April Count Month (April 15)	Seasonal Trend Peak Period Factor
Commuter	0.9759	0.9355
Summer	1.0100	0.8299

- Based on Table 4, the Commuter seasonal adjustment is 1.04 (i.e., 0.9759/0.9355) and the Summer seasonal adjustment is 1.22 (i.e., 1.0100/0.8299). As such, an average of the Commuter and Summer season adjustments is **1.13**.

For the purposes of this analysis, a seasonal factor of 1.13 will be applied to existing traffic volumes.

PERFORMANCE MEASURES & OPERATING STANDARDS

Intersection operating targets adopted by the City of Woodburn, ODOT, and Marion County are summarized below.

ODOT Mobility Targets

ODOT uses volume-to-capacity (v/c) ratios to assess intersection operations. Table 6 of the Oregon Highway Plan (OHP) provides volume-to-capacity ratio targets for all signalized/roundabout and unsignalized intersections located outside the Portland metropolitan area. Based on the OHP, Table 5 summarizes the v/c ratio that will be used to identify the existing/future operational issues at all study intersections along the OR 219 study corridor. In addition, the Oregon Highway Design Manual standards (from Table 10-2) are identified for any intersections that may require mitigation.

Table 5 – ODOT Mobility Targets

Intersection	OHP Mobility Target	Highway Design Manual 20-Year Design Mobility Standards
OR 219/Butteville Road	V/C: 0.95 major approach/0.95 minor approach	0.80
OR 219/Willow Avenue	V/C: 0.95 major approach/0.95 minor approach	0.80

OR 219/Woodland Avenue	V/C: 0.95	0.80
OR 219/I-5 SB Ramp Terminal	V/C: 0.85	0.80
OR 21/I-5 NB Ramp Terminal	V/C: 0.85	0.80

Note: OR 219 is a District Highway with a posted speed of 35 mph through the study intersections.

City of Woodburn Operating Standards

The City of Woodburn's Transportation System Plan (TSP) has adopted the following mobility targets for intersections within the City. While the City of Woodburn has no ownership or maintenance control at any of the identified study intersections, the traffic impact study will account for these standards in the analysis.

- LOS E for signalized intersections
- 1.0 v/c for signalized intersections
- 0.90 v/c for the critical movements at unsignalized intersections

Marion County Mobility Standards

The County's policy and Procedure for traffic impact study requirements specify the following mobility standards. For the purposes of this study, these standards will apply when evaluating traffic conditions along the Marion County owned and maintained Butteville Road.

- LOS D for signalized and all-way stop-control (AWSC) intersections
- LOS E for all individual movements
- 0.85 v/c for all individual movements
- LOS E for unsignalized intersections (LOS F is acceptable for relatively low volumes)

NEXT STEPS

Please review the project scope at your earliest convenience. If you have any questions or comments, please contact us at 503.535.7425.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Matt Hughart, AICP
Principal Planner

Julia Kuhn, P.E.
Senior Principal Engineer

AR Sortable 640K FC - Non-Peak Season

Headcount

	Total
Headcount - Day Shift	937
Headcount - Night Shift	937

Shift Structure

	Start	End
Day Shift - Inbound Employees	7:00:00 AM	5:30:00 PM
Day Shift - Outbound Employees	7:30:00 AM	6:00:00 PM
Night Shift - Inbound Employees	6:00:00 PM	4:30:00 AM
Night Shift - Outbound Employees	6:30:00 PM	5:00:00 AM

Net Cars Factor 95%

Traffic Schedule

Cars
Average Weekday

Time	In	Out	Total
00:00	3	6	9
01:00	1	4	5
02:00	5	14	19
03:00	8	14	22
04:00	17	179	196
05:00	37	475	512
06:00	28	16	44
06:15	73	17	90
06:30	127	10	137
06:45	170	7	177
07:00	168	9	177
07:15	218	4	222
07:30	32	6	38
07:45	7	5	12
08:00	25	18	43
09:00	16	10	26
10:00	20	17	37
11:00	38	41	79
12:00	11	17	28
13:00	13	14	27
14:00	11	25	36
15:00	29	37	66
16:00	45	32	77
17:00	26	33	59
17:15	50	15	65
17:30	110	128	238
17:45	143	74	217
18:00	178	246	424
18:15	172	166	338
18:30	23	111	134
18:45	5	41	46
19:00	18	35	53
20:00	8	8	16
21:00	15	15	30
22:00	17	21	38
23:00	3	5	8
	1,874	1,874	3,745

Trucks
Average Weekday

Time	In	Out	Total
00:00	11	11	23
01:00	19	19	38
02:00	8	8	15
03:00	15	15	30
04:00	8	8	15
05:00	11	11	23
06:00	3	3	5
06:15	3	3	5
06:30	3	3	5
06:45	3	3	5
07:00	4	4	8
07:15	4	4	8
07:30	4	4	8
07:45	4	4	8
08:00	15	15	30
09:00	27	27	53
10:00	15	15	30
11:00	16	16	33
12:00	16	16	33
13:00	10	10	20
14:00	10	10	20
15:00	10	10	20
16:00	11	11	23
17:00	3	3	5
17:15	3	3	5
17:30	3	3	5
17:45	3	3	5
18:00	3	3	5
18:15	3	3	5
18:30	3	3	5
18:45	3	3	5
19:00	9	9	18
20:00	14	14	28
21:00	10	10	20
22:00	14	14	28
23:00	10	10	20
	306	306	611

Total Vehicles
Cars + Trucks Average Weekday

	In	Out	Total
00:00	14	17	31
01:00	20	23	43
02:00	12	21	33
03:00	23	28	51
04:00	24	178	201
05:00	47	463	509
06:00	29	18	47
06:15	72	19	91
06:30	123	12	135
06:45	164	9	173
07:00	163	12	176
07:15	211	8	218
07:30	34	9	44
07:45	10	9	19
08:00	39	32	71
09:00	42	36	78
10:00	34	31	65
11:00	53	55	108
12:00	27	33	59
13:00	22	23	46
14:00	21	34	54
15:00	38	45	83
16:00	54	42	96
17:00	27	34	61
17:15	50	17	67
17:30	107	124	231
17:45	138	73	211
18:00	172	236	408
18:15	166	160	326
18:30	24	108	132
18:45	7	41	49
19:00	26	42	68
20:00	21	21	43
21:00	24	24	49
22:00	30	34	64
23:00	13	15	28
	2,082	2,087	4,169

Morning Peak Hour of Generator			
	Enter	Exit	Total
06:30-07:30	661	41	703

Evening Peak Hour of Generator			
	Enter	Exit	Total
17:30-18:30	583	593	1,176

Appendix B Traffic Count Summary Worksheets

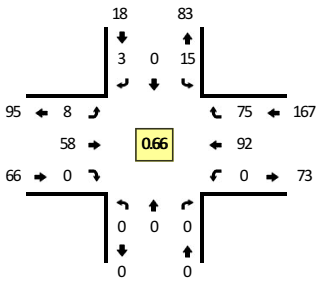
Type of peak hour being reported: User-Defined

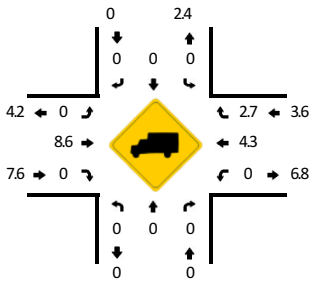
Method for determining peak hour: Total Entering Volume

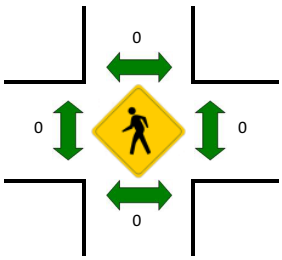
LOCATION: Arbor Grove Rd NE (north leg of Arbor Grove) -- OR 219
CITY/STATE: Marion, OR

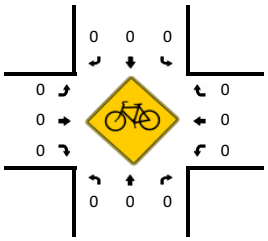
QC JOB #: 15462401
DATE: Tue, May 25 2021

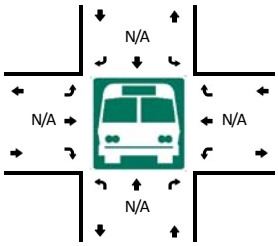
Peak-Hour: 6:30 AM -- 7:30 AM
Peak 15-Min: 6:40 AM -- 6:55 AM

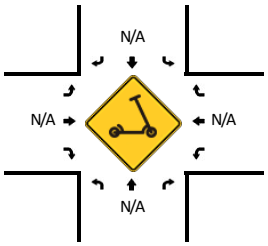












5-Min Count Period Beginning At	Arbor Grove Rd NE (north leg of Arbor Grove) (Northbound)				Arbor Grove Rd NE (north leg of Arbor Grove) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	2	0	7	
6:05 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	4	4	0	10	
6:10 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	5	1	0	9	
6:15 AM	0	0	0	0	1	0	0	0	1	4	0	0	0	7	4	0	17	
6:20 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	7	1	0	11	
6:25 AM	0	0	0	0	2	0	0	0	0	3	0	0	0	7	6	0	18	
6:30 AM	0	0	0	0	0	0	0	0	1	4	0	0	0	6	4	0	15	
6:35 AM	0	0	0	0	3	0	0	0	1	3	0	0	0	11	2	0	20	
6:40 AM	0	0	0	0	0	0	1	0	1	1	0	0	0	12	16	0	31	
6:45 AM	0	0	0	0	2	0	1	0	1	6	0	0	0	12	13	0	35	
6:50 AM	0	0	0	0	1	0	0	0	0	10	0	0	0	7	11	0	29	
6:55 AM	0	0	0	0	0	0	1	0	1	2	0	0	0	10	8	0	22	224
7:00 AM	0	0	0	0	2	0	0	0	1	3	0	0	0	4	0	0	10	227
7:05 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	7	3	0	15	232
7:10 AM	0	0	0	0	3	0	0	0	0	9	0	0	0	7	1	0	20	243
7:15 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	5	3	0	12	238
7:20 AM	0	0	0	0	2	0	0	0	0	8	0	0	0	3	6	0	19	246
7:25 AM	0	0	0	0	1	0	0	0	2	4	0	0	0	8	8	0	23	251
7:30 AM	0	0	0	0	3	0	0	0	2	7	0	0	0	4	3	0	19	255
7:35 AM	0	0	0	0	1	0	1	0	1	3	0	0	0	7	2	0	15	250
7:40 AM	0	0	0	0	4	0	0	0	4	6	0	0	0	11	1	0	26	245
7:45 AM	0	0	0	0	3	0	0	0	0	5	0	0	0	10	3	0	21	231
7:50 AM	0	0	0	0	2	0	1	0	0	9	0	0	0	9	3	0	24	226
7:55 AM	0	0	0	0	1	0	1	0	1	6	0	0	0	5	5	0	19	223
8:00 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	3	1	0	10	223
8:05 AM	0	0	0	0	1	0	0	0	3	2	0	0	0	7	3	0	16	224
8:10 AM	0	0	0	0	4	0	0	0	0	3	0	0	0	4	3	0	14	218
8:15 AM	0	0	0	0	4	0	0	0	0	4	0	0	0	3	1	0	12	218
8:20 AM	0	0	0	0	1	0	2	0	1	5	0	0	0	8	3	0	20	219
8:25 AM	0	0	0	0	2	0	0	0	0	6	0	0	0	8	4	0	20	216
8:30 AM	0	0	0	0	3	0	0	0	1	4	0	0	0	5	3	0	16	213
8:35 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	6	2	0	12	210
8:40 AM	0	0	0	0	2	0	1	0	1	4	0	0	0	11	2	0	21	205
8:45 AM	0	0	0	0	1	0	0	0	0	6	0	0	0	5	5	0	17	201
8:50 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	5	4	0	13	190
8:55 AM	0	0	0	0	1	0	0	0	1	2	0	0	0	3	5	0	12	183
9:00 AM	0	0	0	0	1	0	1	0	1	4	0	0	0	3	1	0	11	184

5-Min Count Period Beginning At	Arbor Grove Rd NE (north leg of Arbor Grove) (Northbound)				Arbor Grove Rd NE (north leg of Arbor Grove) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:05 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	7	0	0	9	177
9:10 AM	0	0	0	0	3	0	0	0	0	6	0	0	0	2	0	0	11	174
9:15 AM	0	0	0	0	1	0	3	0	0	6	0	0	0	8	0	0	18	180
9:20 AM	0	0	0	0	2	0	0	0	0	5	0	0	0	3	1	0	11	171
9:25 AM	0	0	0	0	3	0	0	0	1	1	0	0	0	2	3	0	10	161
9:30 AM	0	0	0	0	2	0	0	0	0	6	0	0	0	4	4	0	16	161
9:35 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	6	4	0	16	165
9:40 AM	0	0	0	0	0	0	0	0	1	5	0	0	0	2	2	0	10	154
9:45 AM	0	0	0	0	1	0	1	0	1	2	0	0	0	5	0	0	10	147
9:50 AM	0	0	0	0	1	0	0	0	0	4	0	0	0	5	4	0	14	148
9:55 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5	141

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	12	0	8	0	8	68	0	0	0	124	160	0	380
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	4	4		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 7:33 AM

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: Butteville Rd NE (north leg of Butteville Rd) -- OR 219

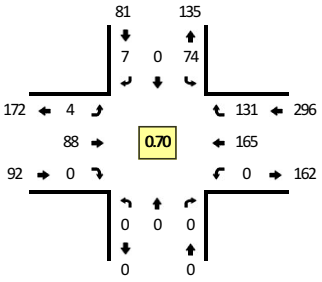
CITY/STATE: Marion, OR

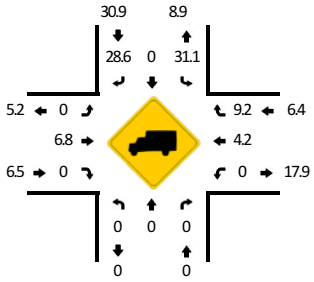
QC JOB #: 15462403

DATE: Tue, May 25 2021

Peak-Hour: 6:30 AM -- 7:30 AM

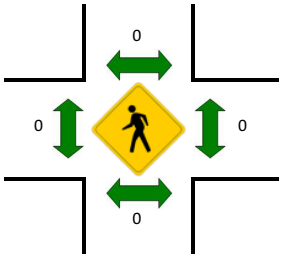
Peak 15-Min: 6:40 AM -- 6:55 AM

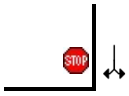


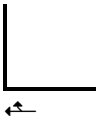


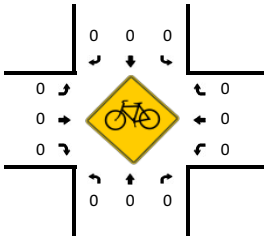
Quality Counts

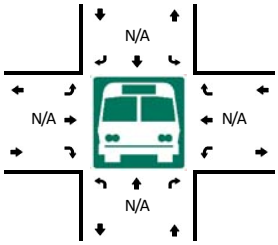
DATA THAT DRIVES COMMUNITIES

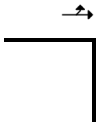


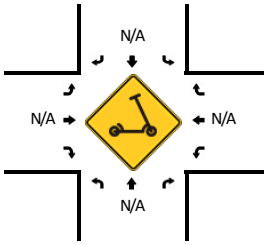












5-Min Count Period Beginning At	Butteville Rd NE (north leg of Butteville Rd) (Northbound)				Butteville Rd NE (north leg of Butteville Rd) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	3	0	0	0	0	4	0	0	0	7	8	0	22	
6:05 AM	0	0	0	0	0	0	0	0	1	4	0	0	0	7	6	0	18	
6:10 AM	0	0	0	0	3	0	0	0	0	1	0	0	0	9	15	0	28	
6:15 AM	0	0	0	0	2	0	1	0	1	4	0	0	0	13	16	0	37	
6:20 AM	0	0	0	0	7	0	0	0	0	4	0	0	0	7	10	0	28	
6:25 AM	0	0	0	0	6	0	0	0	2	2	0	0	0	11	13	0	34	
6:30 AM	0	0	0	0	5	0	1	0	0	7	0	0	0	17	20	0	50	
6:35 AM	0	0	0	0	10	0	0	0	0	5	0	0	0	11	14	0	40	
6:40 AM	0	0	0	0	4	0	2	0	0	10	0	0	0	27	22	0	65	
6:45 AM	0	0	0	0	9	0	0	0	2	6	0	0	0	27	13	0	57	
6:50 AM	0	0	0	0	2	0	1	0	0	10	0	0	0	16	16	0	45	
6:55 AM	0	0	0	0	7	0	1	0	0	6	0	0	0	15	10	0	39	463
7:00 AM	0	0	0	0	5	0	0	0	0	6	0	0	0	7	7	0	25	466
7:05 AM	0	0	0	0	9	0	0	0	0	7	0	0	0	7	5	0	28	476
7:10 AM	0	0	0	0	3	0	0	0	1	9	0	0	0	5	1	0	19	467
7:15 AM	0	0	0	0	9	0	0	0	0	7	0	0	0	10	5	0	31	461
7:20 AM	0	0	0	0	8	0	1	0	0	8	0	0	0	8	9	0	34	467
7:25 AM	0	0	0	0	3	0	1	0	1	7	0	0	0	15	9	0	36	469
7:30 AM	0	0	0	0	3	0	0	0	0	9	0	0	0	10	8	0	30	449
7:35 AM	0	0	0	0	2	0	0	0	0	6	0	0	0	12	8	0	28	437
7:40 AM	0	0	0	0	6	0	1	0	1	9	0	0	0	16	6	0	39	411
7:45 AM	0	0	0	0	4	0	0	0	2	9	0	0	0	9	16	0	40	394
7:50 AM	0	0	0	0	1	0	1	0	0	10	0	0	0	11	10	0	33	382
7:55 AM	0	0	0	0	16	0	0	0	0	11	0	0	0	11	11	0	49	392
8:00 AM	0	0	0	0	6	0	0	0	1	8	0	0	0	7	7	0	29	396
8:05 AM	0	0	0	0	7	0	1	0	0	5	0	0	0	8	6	0	27	395
8:10 AM	0	0	0	0	4	0	1	0	1	5	0	0	0	3	4	0	18	394
8:15 AM	0	0	0	0	4	0	0	0	1	7	0	0	0	8	3	0	23	386
8:20 AM	0	0	0	0	2	0	0	0	0	6	0	0	0	9	4	0	21	373
8:25 AM	0	0	0	0	5	0	0	0	0	8	0	0	0	11	4	0	28	365
8:30 AM	0	0	0	0	5	0	0	0	1	11	0	0	0	7	5	0	29	364
8:35 AM	0	0	0	0	6	0	0	0	0	5	0	0	0	13	6	0	30	366
8:40 AM	0	0	0	0	5	0	1	0	1	8	0	0	0	5	7	0	27	354
8:45 AM	0	0	0	0	2	0	0	0	0	8	0	0	0	9	9	0	28	342
8:50 AM	0	0	0	0	3	0	2	0	0	7	0	0	0	10	1	0	23	332
8:55 AM	0	0	0	0	8	0	0	0	1	3	0	0	0	8	6	0	26	309
9:00 AM	0	0	0	0	4	0	1	0	0	5	0	0	0	8	4	0	22	302

5-Min Count Period Beginning At	Butteville Rd NE (north leg of Butteville Rd) (Northbound)				Butteville Rd NE (north leg of Butteville Rd) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:05 AM	0	0	0	0	6	0	1	0	1	6	0	0	0	4	6	0	24	299
9:10 AM	0	0	0	0	5	0	1	0	2	3	0	0	0	5	9	0	25	306
9:15 AM	0	0	0	0	7	0	2	0	0	7	0	0	0	6	4	0	26	309
9:20 AM	0	0	0	0	6	0	0	0	1	11	0	0	0	5	4	0	27	315
9:25 AM	0	0	0	0	8	0	0	0	0	7	0	0	0	5	5	0	25	312
9:30 AM	0	0	0	0	5	0	0	0	0	4	0	0	0	10	9	0	28	311
9:35 AM	0	0	0	0	5	0	0	0	0	7	0	0	0	8	9	0	29	310
9:40 AM	0	0	0	0	4	0	2	0	2	8	0	0	0	5	2	1	24	307
9:45 AM	0	0	0	0	2	0	1	0	0	6	0	0	0	6	7	0	22	301
9:50 AM	0	0	0	0	7	0	0	0	0	1	0	0	0	6	6	0	20	298
9:55 AM	0	0	0	0	6	0	1	0	1	5	0	0	0	5	6	0	24	296

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	60	0	12	0	8	104	0	0	0	280	204	0	668
Heavy Trucks	0	0	0		16	0	4		0	0	0		0	4	12		36
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 7:33 AM

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

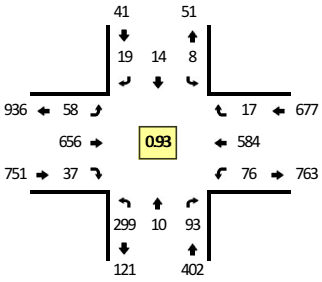
Type of peak hour being reported: User-Defined

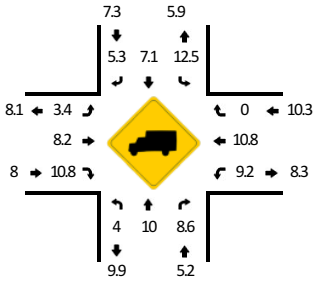
Method for determining peak hour: Total Entering Volume

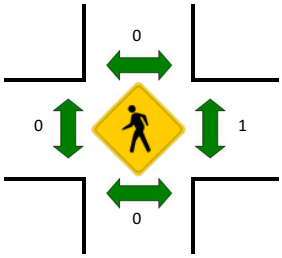
LOCATION: Evergreen Rd -- OR 214
CITY/STATE: Woodburn, OR

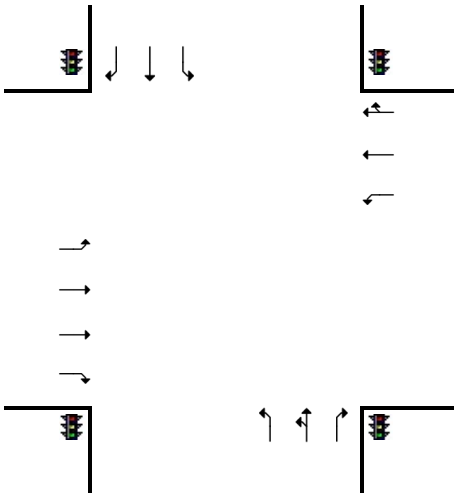
QC JOB #: 15462405
DATE: Tue, May 25 2021

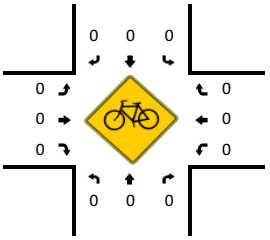
Peak-Hour: 6:30 AM -- 7:30 AM
Peak 15-Min: 7:05 AM -- 7:20 AM

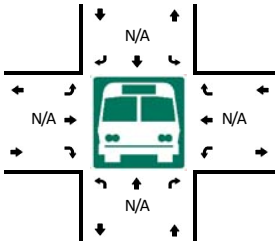


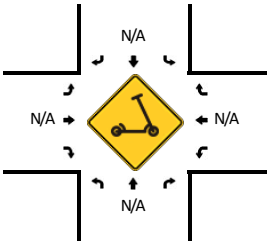












5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	26	0	5	0	1	0	1	0	2	37	4	2	5	51	0	0	134	
6:05 AM	26	1	4	0	0	1	4	0	4	29	2	5	4	37	2	1	120	
6:10 AM	19	0	3	0	2	0	2	0	2	22	0	3	6	53	1	0	113	
6:15 AM	19	0	6	0	0	0	2	1	6	30	2	3	4	50	2	0	125	
6:20 AM	24	0	5	0	2	2	4	0	2	37	1	4	7	50	2	0	140	
6:25 AM	31	1	8	0	1	2	2	0	2	37	0	4	0	56	0	1	145	
6:30 AM	32	0	6	0	0	0	1	0	2	46	1	4	3	52	3	1	151	
6:35 AM	23	0	5	0	2	1	2	0	0	41	2	4	3	45	2	1	131	
6:40 AM	23	0	5	0	1	0	1	0	3	51	2	3	11	63	2	0	165	
6:45 AM	24	1	8	0	0	0	3	0	1	59	2	1	5	51	1	1	157	
6:50 AM	29	0	10	0	1	1	1	0	1	55	3	0	5	42	2	0	150	
6:55 AM	24	4	4	0	1	0	1	0	2	62	4	3	7	46	1	1	160	1691
7:00 AM	24	0	6	0	0	3	0	0	1	51	4	1	3	46	0	0	139	1696
7:05 AM	22	1	11	0	0	2	3	0	1	63	3	2	8	45	1	1	163	1739
7:10 AM	32	0	13	0	1	2	1	0	2	56	6	3	4	48	2	0	170	1796
7:15 AM	22	1	10	0	0	1	2	0	3	58	3	4	11	54	2	1	172	1843
7:20 AM	25	2	9	0	1	1	3	0	5	53	2	3	5	38	0	0	147	1850
7:25 AM	19	1	6	0	1	3	1	0	3	61	5	6	5	54	1	0	166	1871
7:30 AM	23	2	10	0	2	0	0	0	1	45	1	4	8	63	2	0	161	1881
7:35 AM	35	0	13	0	1	2	2	0	3	50	1	1	6	50	0	0	164	1914
7:40 AM	17	2	10	0	1	1	3	0	4	65	7	4	9	46	1	1	171	1920
7:45 AM	34	2	13	0	0	2	3	0	10	67	3	2	3	45	0	0	184	1947
7:50 AM	22	3	7	0	0	0	0	0	5	69	5	2	15	33	0	2	163	1960
7:55 AM	23	1	8	0	1	1	5	0	9	65	10	2	12	50	1	0	188	1988
8:00 AM	26	4	9	0	2	0	5	0	3	32	3	4	12	46	2	0	148	1997
8:05 AM	22	0	7	0	1	2	6	0	2	50	4	5	8	32	2	0	141	1975
8:10 AM	20	1	11	0	0	2	4	0	3	40	1	0	6	49	1	0	138	1943
8:15 AM	17	2	6	0	0	2	6	0	3	36	4	4	2	47	0	0	129	1900
8:20 AM	15	3	11	0	0	0	3	0	3	54	5	5	7	45	1	1	153	1906
8:25 AM	17	1	3	0	0	0	1	0	2	34	9	2	9	35	2	1	116	1856
8:30 AM	20	0	10	0	1	0	5	0	5	35	7	4	14	33	1	0	135	1830
8:35 AM	25	1	12	0	0	0	3	0	7	40	2	1	7	40	1	1	140	1806
8:40 AM	21	0	12	0	0	0	4	0	5	43	3	4	12	41	2	1	148	1783
8:45 AM	16	1	9	0	2	2	1	0	8	37	6	3	6	41	1	0	133	1732
8:50 AM	22	4	6	0	1	1	6	0	2	39	6	2	11	31	2	0	133	1702
8:55 AM	19	1	11	0	1	0	2	0	6	36	3	1	13	25	4	1	123	1637
9:00 AM	13	4	3	0	0	0	2	0	4	48	3	1	7	36	2	0	123	1612
9:05 AM	18	1	5	0	2	0	1	0	2	28	6	2	10	39	1	1	116	1587

5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	16	1	12	0	1	5	3	0	4	36	2	4	7	41	0	0	132	1581
9:15 AM	7	3	6	0	1	0	3	0	0	30	3	1	13	27	1	0	95	1547
9:20 AM	11	1	6	0	1	1	0	0	1	36	5	1	13	61	1	0	138	1532
9:25 AM	22	2	10	0	2	1	1	0	2	32	4	3	7	31	0	0	117	1533
9:30 AM	23	1	8	0	4	3	5	0	1	42	7	4	5	37	1	0	141	1539
9:35 AM	14	1	9	0	1	3	4	0	11	40	2	2	11	36	1	0	135	1534
9:40 AM	24	0	11	0	3	3	6	0	4	54	4	4	6	46	2	0	167	1553
9:45 AM	22	1	9	0	2	3	2	0	5	33	1	0	7	32	0	1	118	1538
9:50 AM	10	3	9	0	2	0	3	0	4	49	4	2	13	36	0	1	136	1541
9:55 AM	13	2	14	0	1	3	3	0	5	44	3	2	10	44	1	0	145	1563

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	304	8	136	0	4	20	24	0	24	708	48	36	92	588	20	8	2020
Heavy Trucks	4	0	20		0	0	4		0	88	12		8	68	0		204
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 7:33 AM

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: N Boones Ferry Rd/N Settlemier Ave -- OR 214

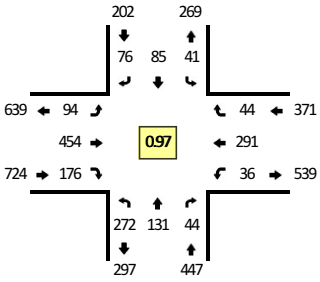
QC JOB #: 15462407

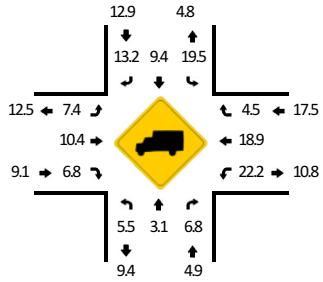
CITY/STATE: Woodburn, OR

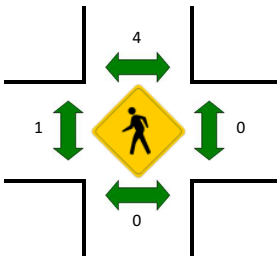
DATE: Tue, May 25 2021

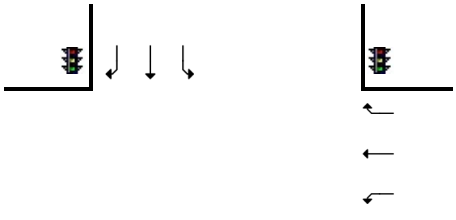
Peak-Hour: 6:30 AM -- 7:30 AM

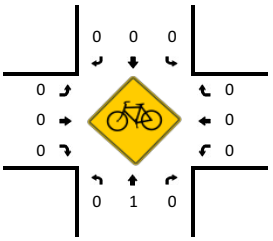
Peak 15-Min: 7:15 AM -- 7:30 AM

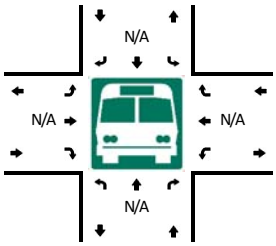


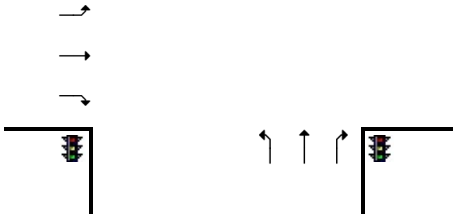


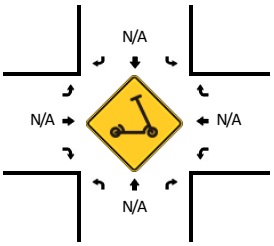












5-Min Count Period Beginning At	N Boones Ferry Rd/N Settlemier Ave (Northbound)				N Boones Ferry Rd/N Settlemier Ave (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	23	7	3	0	2	4	6	0	2	28	13	0	4	16	0	0	108	
6:05 AM	21	9	4	0	0	2	3	0	3	23	7	0	1	20	3	0	96	
6:10 AM	19	7	0	0	1	3	2	0	0	22	4	0	0	33	0	0	91	
6:15 AM	22	5	0	0	0	2	5	0	4	19	8	0	2	32	2	0	101	
6:20 AM	20	3	3	0	1	5	8	0	5	27	4	0	2	18	4	0	100	
6:25 AM	26	6	2	0	1	1	5	0	5	42	9	0	1	28	0	0	126	
6:30 AM	28	17	3	0	3	3	7	0	4	36	8	0	2	22	1	0	134	
6:35 AM	33	15	3	0	1	4	2	0	4	28	10	0	2	19	5	0	126	
6:40 AM	25	7	5	0	3	4	4	0	14	35	15	0	4	37	6	0	159	
6:45 AM	23	12	6	0	1	4	3	0	6	40	12	0	6	33	4	0	150	
6:50 AM	24	10	4	0	5	0	5	0	7	39	18	0	1	16	2	0	131	
6:55 AM	20	14	4	0	3	7	4	0	9	47	15	0	2	22	4	0	151	1473
7:00 AM	17	14	2	0	3	12	4	0	10	38	16	0	3	26	6	0	151	1516
7:05 AM	22	13	2	0	3	11	6	0	12	36	13	0	6	19	3	0	146	1566
7:10 AM	26	5	1	0	3	9	8	0	3	33	20	0	6	28	5	0	147	1622
7:15 AM	15	4	6	0	4	11	11	0	13	37	20	0	1	17	4	0	143	1664
7:20 AM	13	9	4	0	1	11	10	0	5	48	10	0	0	26	2	0	139	1703
7:25 AM	26	11	4	0	11	9	12	0	7	37	19	0	3	26	2	0	167	1744
7:30 AM	14	16	6	0	1	13	9	0	7	35	13	0	4	31	5	0	154	1764
7:35 AM	17	14	2	0	3	11	8	0	4	41	12	0	2	20	4	0	138	1776
7:40 AM	24	14	4	0	8	18	10	0	17	33	11	0	3	25	4	0	171	1788
7:45 AM	17	13	8	0	4	13	9	0	12	41	12	0	6	23	4	0	162	1800
7:50 AM	26	9	5	0	6	8	8	0	10	55	14	0	2	24	5	0	172	1841
7:55 AM	15	14	8	0	3	11	10	0	18	51	14	0	2	22	3	0	171	1861
8:00 AM	25	10	6	0	12	6	11	0	7	34	6	0	4	25	9	0	155	1865
8:05 AM	19	14	6	0	3	7	4	0	10	31	10	0	4	12	3	0	123	1842
8:10 AM	16	7	8	0	9	14	12	0	4	32	9	0	1	24	5	0	141	1836
8:15 AM	23	10	4	0	9	8	10	0	10	28	12	0	3	26	3	0	146	1839
8:20 AM	6	11	9	0	8	11	3	0	10	30	4	0	6	28	6	0	132	1832
8:25 AM	19	12	7	0	17	12	7	0	2	29	5	0	3	30	7	0	150	1815
8:30 AM	6	6	6	0	4	9	12	0	4	27	16	0	9	22	4	0	125	1786
8:35 AM	18	12	12	0	5	9	7	0	7	25	11	0	2	29	9	0	146	1794
8:40 AM	9	10	8	0	9	11	8	0	10	31	13	0	5	29	7	0	150	1773
8:45 AM	20	6	9	0	7	4	7	0	1	40	8	0	4	29	5	0	140	1751
8:50 AM	6	5	4	0	13	6	7	0	6	24	12	0	3	26	2	0	114	1693
8:55 AM	13	8	5	0	4	5	6	0	3	26	9	0	2	25	1	0	107	1629
9:00 AM	6	6	1	0	2	1	7	0	5	35	12	0	2	25	0	0	102	1576

5-Min Count Period Beginning At	N Boones Ferry Rd/N Settlemier Ave (Northbound)				N Boones Ferry Rd/N Settlemier Ave (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:05 AM	14	4	8	0	6	4	4	0	2	29	4	0	3	35	1	0	114	1567
9:10 AM	10	6	5	0	11	7	6	0	5	27	4	0	1	23	4	0	109	1535
9:15 AM	13	5	4	0	5	5	5	0	4	25	11	0	2	31	3	0	113	1502
9:20 AM	11	3	3	0	5	8	6	0	3	33	11	0	5	43	2	0	133	1503
9:25 AM	14	4	1	0	5	2	2	0	2	25	4	0	6	29	2	0	96	1449
9:30 AM	11	5	1	0	7	6	3	0	3	34	10	0	1	20	5	0	106	1430
9:35 AM	10	5	4	0	6	3	5	0	7	28	6	0	7	40	6	0	127	1411
9:40 AM	13	2	3	0	9	2	6	0	11	43	11	0	1	34	0	0	135	1396
9:45 AM	11	12	5	0	7	7	3	0	3	37	12	0	4	35	2	0	138	1394
9:50 AM	16	7	8	0	7	9	7	0	4	42	12	0	3	25	5	0	145	1425
9:55 AM	18	3	6	0	5	3	4	0	7	39	9	0	3	46	6	0	149	1467

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	216	96	56	0	64	124	132	0	100	488	196	0	16	276	32	0	1796
Heavy Trucks	20	0	8		20	24	20		8	68	12		4	48	0		232
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 7:33 AM

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

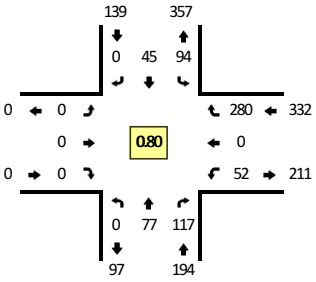
Type of peak hour being reported: User-Defined

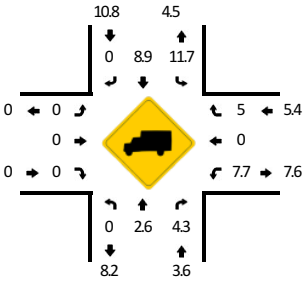
Method for determining peak hour: Total Entering Volume

LOCATION: Butteville Rd NE -- OR-219
CITY/STATE: Woodburn, OR

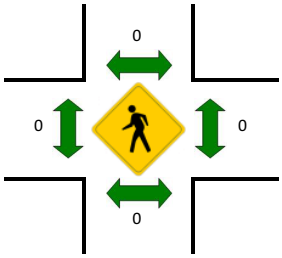
QC JOB #: 15405708
DATE: Wed, Apr 14 2021

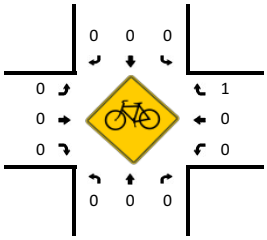
Peak-Hour: 6:30 AM -- 7:30 AM
Peak 15-Min: 6:40 AM -- 6:55 AM

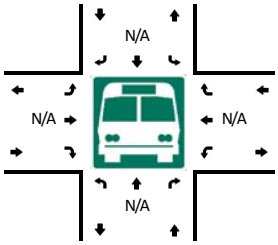


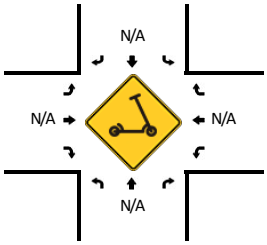


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	1	12	0	5	1	0	0	0	0	0	0	3	0	7	0	29	
6:05 AM	0	3	10	0	5	1	0	0	0	0	0	0	2	0	15	0	36	
6:10 AM	0	5	8	0	3	2	0	0	0	0	0	0	3	0	20	0	41	
6:15 AM	0	5	9	0	5	1	0	0	0	0	0	0	0	0	21	0	41	
6:20 AM	0	9	5	0	7	4	0	0	0	0	0	0	4	0	17	0	46	
6:25 AM	0	9	8	0	11	2	0	0	0	0	0	0	5	0	17	0	52	
6:30 AM	0	5	16	0	7	7	0	0	0	0	0	0	3	0	23	0	61	
6:35 AM	0	4	9	0	8	4	0	0	0	0	0	0	3	0	29	0	57	
6:40 AM	0	18	10	0	4	2	0	0	0	0	0	0	1	0	42	0	77	
6:45 AM	0	10	11	0	2	2	0	0	0	0	0	0	5	0	40	0	70	
6:50 AM	0	4	9	0	4	3	0	0	0	0	0	0	8	0	34	0	62	
6:55 AM	0	5	11	0	8	3	0	0	0	0	0	0	5	0	22	0	54	626
7:00 AM	0	7	6	0	7	5	0	0	0	0	0	0	2	0	20	0	47	644
7:05 AM	0	7	8	0	10	3	0	0	0	0	0	0	4	0	16	0	48	656
7:10 AM	0	5	9	0	13	2	0	0	0	0	0	0	1	0	11	0	41	656
7:15 AM	0	4	11	0	9	3	0	0	0	0	0	0	7	0	9	0	43	658
7:20 AM	0	5	10	0	5	5	0	0	0	0	0	0	10	0	16	0	51	663
7:25 AM	0	3	7	0	17	6	0	0	0	0	0	0	3	0	18	0	54	665
7:30 AM	0	12	9	0	9	1	0	0	0	0	0	0	6	0	17	0	54	658
7:35 AM	0	6	4	0	9	5	0	0	0	0	0	0	4	0	16	0	44	645
7:40 AM	0	6	7	0	9	5	0	0	0	0	0	0	8	0	15	0	50	618
7:45 AM	0	4	10	0	9	6	0	0	0	0	0	0	1	0	14	0	44	592
7:50 AM	0	11	11	0	15	4	0	0	0	0	0	0	7	0	16	0	64	594
7:55 AM	0	6	4	0	11	3	0	0	0	0	0	0	4	0	15	0	43	583
8:00 AM	0	4	7	0	20	4	0	0	0	0	0	0	4	0	12	0	51	587
8:05 AM	0	4	4	0	8	4	0	0	0	0	0	0	2	0	9	0	31	570
8:10 AM	0	1	9	0	8	2	0	0	0	0	0	0	3	0	7	0	30	559
8:15 AM	0	1	5	0	17	2	0	0	0	0	0	0	3	0	11	0	39	555
8:20 AM	0	4	8	0	8	1	0	0	0	0	0	0	2	0	4	0	27	531
8:25 AM	0	2	6	0	14	7	0	1	0	0	0	0	10	0	8	0	48	525
8:30 AM	0	2	5	0	10	4	0	0	0	0	0	0	9	0	7	0	37	508
8:35 AM	0	1	7	0	17	5	0	0	0	0	0	0	6	0	10	0	46	510
8:40 AM	0	6	12	0	8	3	0	0	0	0	0	0	3	0	18	0	50	510
8:45 AM	0	3	7	0	19	3	0	0	0	0	0	0	4	0	9	0	45	511
8:50 AM	0	5	6	0	16	1	0	0	0	0	0	0	5	0	10	0	43	490
8:55 AM	0	3	6	0	7	2	0	0	0	0	0	0	4	0	7	0	29	476
9:00 AM	0	5	8	0	1	3	0	0	0	0	0	0	6	0	10	0	33	458
9:05 AM	0	1	5	0	10	0	0	0	0	0	0	0	4	0	14	0	34	461

5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	0	3	4	0	13	0	0	0	0	0	0	0	1	0	11	0	32	463
9:15 AM	0	2	6	0	5	2	0	0	0	0	0	0	3	0	4	0	22	446
9:20 AM	0	3	7	0	7	0	0	0	0	0	0	0	4	0	16	0	37	456
9:25 AM	0	3	10	0	9	2	0	0	0	0	0	0	5	0	8	0	37	445
9:30 AM	0	1	4	0	15	1	0	0	0	0	0	0	2	0	3	0	26	434
9:35 AM	0	1	12	0	10	3	0	0	0	0	0	0	4	0	9	0	39	427
9:40 AM	0	2	6	0	4	1	0	0	0	0	0	0	5	0	4	0	22	399
9:45 AM	0	1	3	0	9	0	0	0	0	0	0	0	7	0	8	0	28	382
9:50 AM	0	6	8	0	7	1	0	0	0	0	0	0	3	0	7	0	32	371
9:55 AM	0	3	3	0	12	5	0	0	0	0	0	0	7	0	16	0	46	388

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	128	120	0	40	28	0	0	0	0	0	0	56	0	464	0	836
Heavy Trucks	0	0	4		4	0	0		0	0	0		8	0	8		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	4		4
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

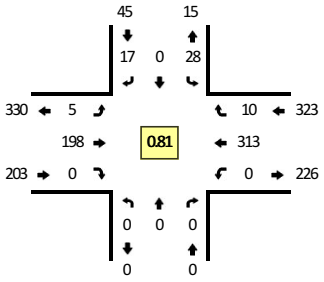
Type of peak hour being reported: User-Defined

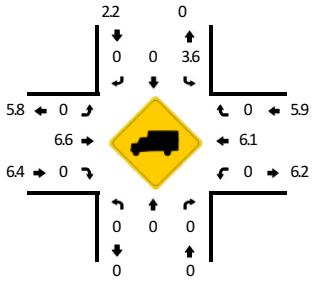
Method for determining peak hour: Total Entering Volume

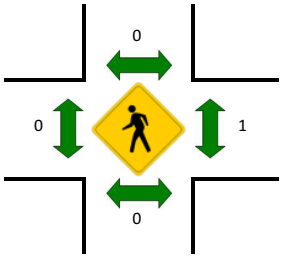
LOCATION: Willow Ave -- OR-219
CITY/STATE: Woodburn, OR

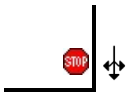
QC JOB #: 15405710
DATE: Wed, Apr 14 2021

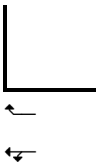
Peak-Hour: 6:30 AM -- 7:30 AM
Peak 15-Min: 6:35 AM -- 6:50 AM

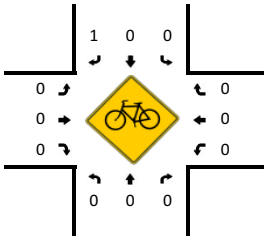


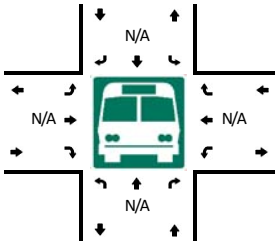


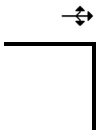


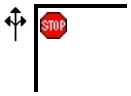


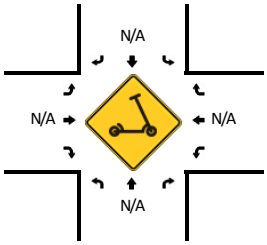












5-Min Count Period Beginning At	Willow Ave (Northbound)				Willow Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	4	0	2	0	0	17	0	0	0	9	1	0	33	
6:05 AM	0	0	0	0	1	0	1	0	0	13	0	0	0	17	0	0	32	
6:10 AM	0	0	0	0	1	0	2	0	1	11	0	0	0	21	1	0	37	
6:15 AM	0	0	0	0	1	0	2	0	0	12	0	0	0	18	0	0	33	
6:20 AM	0	0	0	0	2	0	3	0	0	13	0	0	0	20	0	0	38	
6:25 AM	0	0	0	0	6	0	1	0	0	20	0	0	0	18	1	0	46	
6:30 AM	0	0	0	0	1	0	1	0	1	19	0	0	0	27	1	0	50	
6:35 AM	0	0	0	0	4	0	1	0	0	18	0	0	0	30	0	0	53	
6:40 AM	0	0	0	0	2	0	1	0	0	16	0	0	0	41	2	0	62	
6:45 AM	0	0	0	0	2	0	2	0	0	11	0	0	0	47	0	0	62	
6:50 AM	0	0	0	0	1	0	4	0	0	13	0	0	0	35	0	0	53	
6:55 AM	0	0	0	0	2	0	1	0	2	16	0	0	0	24	2	0	47	546
7:00 AM	0	0	0	0	1	0	1	0	1	13	0	0	0	21	1	0	38	551
7:05 AM	0	0	0	0	5	0	4	0	0	16	0	0	0	16	0	0	41	560
7:10 AM	0	0	0	0	3	0	0	0	0	20	0	0	0	12	0	0	35	558
7:15 AM	0	0	0	0	1	0	1	0	0	16	0	0	0	16	3	0	37	562
7:20 AM	0	0	0	0	5	0	1	0	0	20	0	0	0	25	1	0	52	576
7:25 AM	0	0	0	0	1	0	0	0	1	20	0	0	0	19	0	0	41	571
7:30 AM	0	0	0	0	1	0	3	0	1	18	0	0	0	18	2	0	43	564
7:35 AM	0	0	0	0	1	0	1	0	0	14	0	0	0	21	0	1	38	549
7:40 AM	0	0	0	0	0	0	4	0	0	14	0	0	0	19	0	0	37	524
7:45 AM	0	0	0	0	1	0	2	0	0	20	0	0	0	17	0	0	40	502
7:50 AM	0	0	0	0	0	0	3	0	0	26	0	0	1	20	0	0	50	499
7:55 AM	0	0	1	0	0	0	0	0	0	12	1	0	0	17	0	0	31	483
8:00 AM	0	0	0	0	2	0	0	0	0	29	0	0	0	16	0	0	47	492
8:05 AM	0	0	0	0	0	0	0	0	0	12	0	0	1	10	0	0	23	474
8:10 AM	0	0	0	0	0	0	0	0	0	18	0	0	1	11	0	0	30	469
8:15 AM	0	0	0	0	0	0	0	0	0	22	0	0	1	12	0	0	35	467
8:20 AM	0	0	1	0	1	0	2	0	0	16	0	0	1	6	0	0	27	442
8:25 AM	0	0	0	0	0	0	3	0	1	19	0	0	0	16	0	0	39	440
8:30 AM	0	0	0	0	0	0	4	0	0	14	0	0	0	13	1	0	32	429
8:35 AM	0	0	0	0	1	0	1	0	2	24	0	0	0	15	1	0	44	435
8:40 AM	0	0	0	0	2	1	1	0	1	15	0	0	0	18	3	0	41	439
8:45 AM	0	0	0	0	2	0	1	0	0	29	0	0	0	12	2	0	46	445
8:50 AM	0	0	0	0	0	0	1	0	0	21	0	0	0	11	0	0	33	428
8:55 AM	0	0	0	0	4	0	0	0	2	10	0	0	0	13	1	0	30	427
9:00 AM	0	0	0	0	1	0	0	0	2	9	0	0	0	27	1	0	40	420
9:05 AM	0	0	0	0	2	0	0	0	0	15	0	0	0	15	1	0	33	430

5-Min Count Period Beginning At	Willow Ave (Northbound)				Willow Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	0	0	0	0	1	0	2	0	2	14	0	0	0	10	1	0	30	430
9:15 AM	0	0	0	0	3	0	0	0	0	13	0	0	0	8	1	0	25	420
9:20 AM	0	0	1	0	1	0	0	0	1	13	0	0	0	22	2	0	40	433
9:25 AM	0	0	0	0	2	0	0	0	0	18	0	0	0	11	2	0	33	427
9:30 AM	0	0	0	0	1	0	0	0	1	17	0	0	0	4	0	0	23	418
9:35 AM	0	0	0	0	1	0	0	0	1	22	0	0	0	15	3	0	42	416
9:40 AM	0	0	0	0	3	0	0	0	2	12	0	0	0	8	4	0	29	404
9:45 AM	0	0	0	0	2	0	0	0	0	13	0	0	0	13	3	1	32	390
9:50 AM	0	0	0	0	1	0	0	0	0	14	0	0	0	14	1	0	30	387
9:55 AM	0	0	0	0	2	0	0	0	1	11	0	0	0	19	1	0	34	391

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	32	0	16	0	0	180	0	0	0	472	8	0	708
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	16	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	4		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

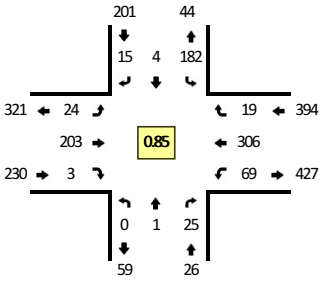
Type of peak hour being reported: User-Defined

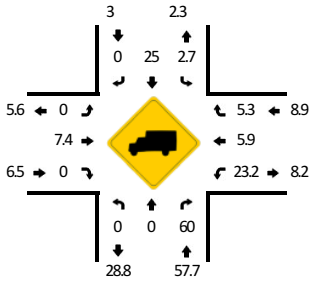
Method for determining peak hour: Total Entering Volume

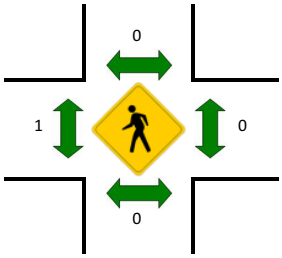
LOCATION: S Woodland Ave -- OR-219
CITY/STATE: Woodburn, OR

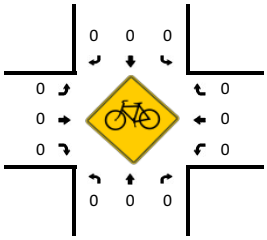
QC JOB #: 15405712
DATE: Wed, Apr 14 2021

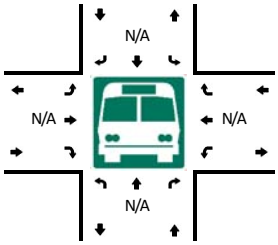
Peak-Hour: 6:30 AM -- 7:30 AM
Peak 15-Min: 6:35 AM -- 6:50 AM

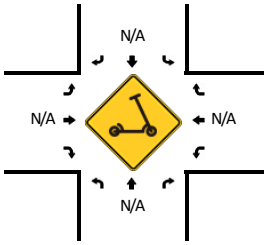












5-Min Count Period Beginning At	S Woodland Ave (Northbound)				S Woodland Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	3	0	13	0	0	0	3	18	0	0	3	10	1	0	51	
6:05 AM	0	0	15	0	12	0	1	0	0	13	0	0	4	18	3	0	66	
6:10 AM	2	0	8	0	12	0	1	1	1	13	0	0	4	18	1	0	61	
6:15 AM	0	0	5	0	16	0	0	0	0	13	0	0	4	19	1	1	59	
6:20 AM	0	0	6	0	8	0	2	0	1	12	0	0	3	19	2	2	55	
6:25 AM	0	0	1	0	17	0	0	0	2	22	0	0	2	21	2	0	67	
6:30 AM	0	0	1	0	13	0	1	0	1	22	1	0	2	23	2	0	66	
6:35 AM	0	1	1	0	10	2	1	0	1	20	0	0	3	31	3	3	76	
6:40 AM	0	0	1	0	17	0	2	0	3	16	0	0	6	47	1	2	95	
6:45 AM	0	0	3	0	14	0	0	0	2	11	0	0	2	46	1	1	80	
6:50 AM	0	0	3	0	13	0	2	0	1	13	0	0	5	28	3	1	69	
6:55 AM	0	0	1	0	13	1	1	0	4	16	0	0	7	24	0	0	67	812
7:00 AM	0	0	4	0	15	0	0	0	1	13	0	0	5	20	3	5	66	827
7:05 AM	0	0	1	0	20	0	2	0	0	20	1	0	0	17	1	0	62	823
7:10 AM	0	0	2	0	13	1	1	0	3	22	0	0	3	7	0	1	53	815
7:15 AM	0	0	3	0	12	0	0	0	2	18	0	0	4	25	0	3	67	823
7:20 AM	0	0	3	0	26	0	2	0	3	15	1	0	9	20	1	1	81	849
7:25 AM	0	0	2	0	16	0	3	0	3	17	0	0	6	18	4	0	69	851
7:30 AM	0	0	4	0	23	0	1	1	1	15	1	0	3	18	2	2	71	856
7:35 AM	0	0	1	0	16	0	4	0	0	14	0	0	3	20	2	1	61	841
7:40 AM	0	0	2	0	22	0	1	0	3	13	1	0	4	16	1	1	64	810
7:45 AM	0	1	2	0	18	1	1	0	1	21	2	0	5	15	4	0	71	801
7:50 AM	1	0	2	0	10	0	1	0	3	19	1	0	9	18	3	2	69	801
7:55 AM	0	0	1	0	13	0	3	0	2	13	0	0	5	17	2	1	57	791
8:00 AM	1	1	0	0	16	0	2	0	3	27	1	0	3	9	2	2	67	792
8:05 AM	0	0	1	0	15	0	1	0	1	14	0	0	9	10	1	1	53	783
8:10 AM	0	0	1	0	13	0	0	0	3	14	0	0	6	12	1	3	53	783
8:15 AM	0	0	1	0	14	0	0	0	2	20	0	0	1	12	3	1	54	770
8:20 AM	0	1	1	0	19	0	1	0	0	18	0	0	2	9	1	4	56	745
8:25 AM	0	1	2	0	13	0	1	0	2	17	0	0	3	12	3	0	54	730
8:30 AM	0	0	5	0	14	1	1	0	0	13	0	0	3	12	4	4	57	716
8:35 AM	0	0	2	0	12	0	2	0	2	23	0	0	3	15	1	1	61	716
8:40 AM	0	0	4	0	16	0	3	0	2	11	0	0	4	19	7	4	70	722
8:45 AM	1	0	1	0	17	0	1	0	2	31	0	0	1	15	2	1	72	723
8:50 AM	0	0	7	0	13	2	1	0	6	15	2	0	2	10	3	1	62	716
8:55 AM	0	0	4	0	8	0	0	0	2	13	0	0	4	13	4	2	50	709
9:00 AM	2	2	4	0	18	0	2	0	1	10	1	0	1	21	5	1	68	710
9:05 AM	0	0	1	0	16	1	2	0	1	15	0	0	4	15	2	1	58	715

5-Min Count Period Beginning At	S Woodland Ave (Northbound)				S Woodland Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	0	0	3	0	14	0	2	0	2	10	0	0	0	9	1	2	43	705
9:15 AM	0	0	2	0	16	0	0	0	2	11	0	0	3	8	1	2	45	696
9:20 AM	0	0	4	0	20	1	1	0	0	16	0	0	1	24	1	3	71	711
9:25 AM	0	0	1	0	15	1	0	0	5	14	0	0	3	12	1	0	52	709
9:30 AM	0	0	4	0	16	0	0	0	4	18	0	0	4	4	6	0	56	708
9:35 AM	1	1	3	0	22	1	0	0	2	18	1	0	2	16	4	2	73	720
9:40 AM	0	0	4	0	11	0	3	0	1	13	1	0	5	10	2	0	50	700
9:45 AM	0	0	2	0	15	0	0	0	4	14	0	0	3	18	4	3	63	691
9:50 AM	1	1	4	0	27	1	2	1	1	12	0	0	3	11	2	2	68	697
9:55 AM	0	0	4	0	17	0	0	0	1	12	0	0	7	21	6	0	68	715

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	4	20	0	164	8	12	0	24	188	0	0	44	496	20	24	1004
Heavy Trucks	0	0	8		0	0	0		0	4	0		4	16	0		32
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

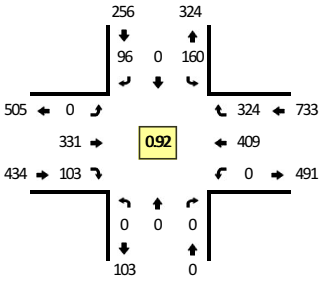
Type of peak hour being reported: User-Defined

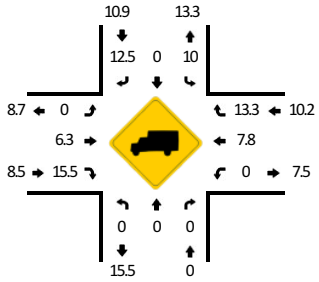
Method for determining peak hour: Total Entering Volume

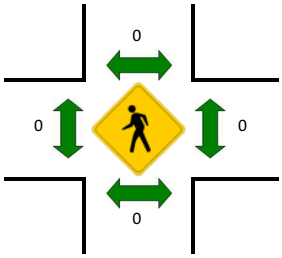
LOCATION: I-5 SB Ramps -- OR-219
CITY/STATE: Woodburn, OR

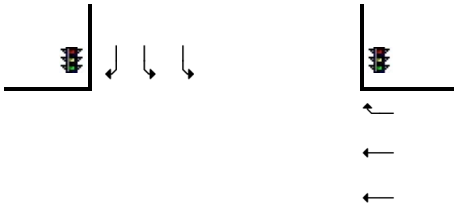
QC JOB #: 15405714
DATE: Wed, Apr 14 2021

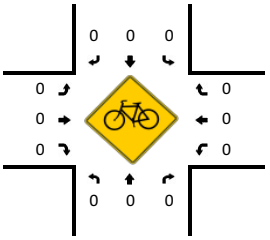
Peak-Hour: 6:30 AM -- 7:30 AM
Peak 15-Min: 6:35 AM -- 6:50 AM

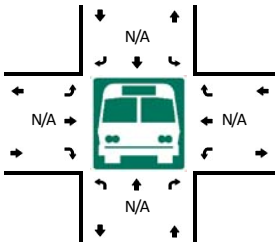


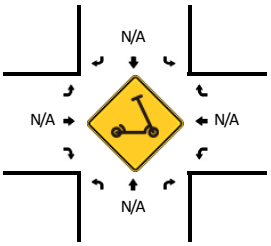












5-Min Count Period Beginning At	I-5 SB Ramps (Northbound)				I-5 SB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	7	0	2	0	0	24	5	0	0	15	23	0	76	
6:05 AM	0	0	0	0	5	0	6	0	0	26	14	0	0	24	27	0	102	
6:10 AM	0	0	0	0	12	0	7	0	0	22	11	0	0	25	23	0	100	
6:15 AM	0	0	0	0	5	0	6	0	0	29	6	0	0	24	26	0	96	
6:20 AM	0	0	0	0	8	0	8	0	0	19	8	0	0	19	24	0	86	
6:25 AM	0	0	0	0	8	0	7	0	0	24	11	0	0	27	20	0	97	
6:30 AM	0	0	0	0	15	0	11	0	0	29	11	0	0	32	28	0	126	
6:35 AM	0	0	0	0	9	0	8	0	0	26	5	0	0	41	36	0	125	
6:40 AM	0	0	0	0	15	0	1	0	0	30	8	0	0	50	25	0	129	
6:45 AM	0	0	0	0	19	0	8	0	0	27	6	0	0	55	19	0	134	
6:50 AM	0	0	0	0	12	0	11	0	0	24	4	0	0	41	22	0	114	
6:55 AM	0	0	0	0	19	0	7	0	0	24	8	0	0	35	26	0	119	1304
7:00 AM	0	0	0	0	13	0	7	0	0	24	11	0	0	27	22	0	104	1332
7:05 AM	0	0	0	0	8	0	13	0	0	32	7	0	0	23	33	0	116	1346
7:10 AM	0	0	0	0	15	0	6	0	0	26	14	0	0	13	31	0	105	1351
7:15 AM	0	0	0	0	8	0	9	0	0	26	11	0	0	35	24	0	113	1368
7:20 AM	0	0	0	0	14	0	7	0	0	30	11	0	0	32	29	0	123	1405
7:25 AM	0	0	0	0	13	0	8	0	0	33	7	0	0	25	29	0	115	1423
7:30 AM	0	0	0	0	18	0	10	0	0	34	9	0	0	21	34	0	126	1423
7:35 AM	0	0	0	0	18	0	10	0	0	22	11	0	0	34	50	0	145	1443
7:40 AM	0	0	0	0	11	0	10	0	0	20	15	0	0	25	34	0	115	1429
7:45 AM	0	0	0	0	23	0	7	0	0	31	11	0	0	30	20	0	122	1417
7:50 AM	0	0	0	0	19	0	13	0	0	27	8	0	0	35	15	0	117	1420
7:55 AM	0	0	0	0	15	0	6	0	0	23	6	0	0	25	25	0	100	1401
8:00 AM	0	0	0	0	18	0	8	0	0	31	10	0	0	19	23	0	109	1406
8:05 AM	0	0	0	0	16	0	9	0	0	18	15	0	0	23	26	0	107	1397
8:10 AM	0	0	0	0	20	0	13	0	0	19	11	0	0	20	19	0	102	1394
8:15 AM	0	0	0	0	15	0	7	0	0	28	7	0	0	22	29	0	108	1389
8:20 AM	0	0	0	0	14	0	10	0	0	30	11	0	0	17	23	0	105	1371
8:25 AM	0	0	0	0	20	0	6	0	0	20	11	0	0	17	27	1	102	1358
8:30 AM	0	0	0	0	19	0	7	0	0	22	14	0	0	25	32	0	119	1351
8:35 AM	0	0	0	0	20	0	11	0	0	30	9	0	0	22	29	0	121	1327
8:40 AM	0	0	0	0	18	0	10	0	0	19	15	0	0	32	33	0	127	1339
8:45 AM	0	0	0	0	21	0	9	0	0	36	15	0	0	23	15	0	119	1336
8:50 AM	0	0	0	0	20	0	9	0	0	26	10	0	0	19	25	0	109	1328
8:55 AM	0	0	0	0	14	0	8	0	0	24	6	0	0	38	18	0	108	1336
9:00 AM	0	0	0	0	15	0	10	0	0	22	6	0	0	18	21	0	92	1319
9:05 AM	0	0	0	0	19	0	12	0	0	28	6	0	0	19	18	0	102	1314

5-Min Count Period Beginning At	I-5 SB Ramps (Northbound)				I-5 SB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	0	0	0	0	21	0	7	0	0	21	11	0	0	20	25	0	105	1317
9:15 AM	0	0	0	0	25	0	9	0	0	16	11	0	0	24	23	0	108	1317
9:20 AM	0	0	0	0	20	0	11	0	0	30	13	0	0	26	25	0	125	1337
9:25 AM	0	0	0	0	17	0	4	0	0	21	8	0	0	20	18	0	88	1323
9:30 AM	0	0	0	0	20	0	12	0	0	27	8	0	0	23	19	0	109	1313
9:35 AM	0	0	0	0	17	0	9	0	0	37	8	0	0	36	23	0	130	1322
9:40 AM	0	0	0	0	14	0	16	0	0	25	7	0	0	27	17	0	106	1301
9:45 AM	0	0	0	0	31	0	13	0	0	25	8	0	0	27	19	0	123	1305
9:50 AM	0	0	0	0	26	0	12	0	0	36	7	0	0	26	22	0	129	1325
9:55 AM	0	0	0	0	23	0	15	0	0	27	9	0	0	39	19	0	132	1349

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	172	0	68	0	0	332	76	0	0	584	320	0	1552
Heavy Trucks	0	0	0		16	0	0		0	16	0		0	12	60		104
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

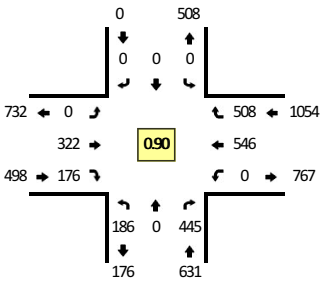
Type of peak hour being reported: User-Defined

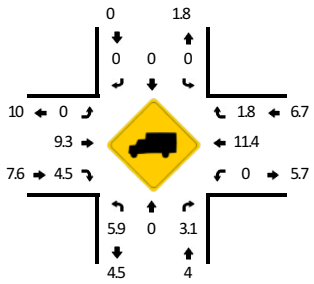
Method for determining peak hour: Total Entering Volume

LOCATION: I-5 NB Ramps -- OR-219
CITY/STATE: Woodburn, OR

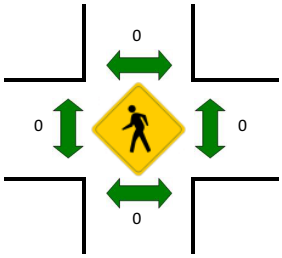
QC JOB #: 15405716
DATE: Wed, Apr 14 2021

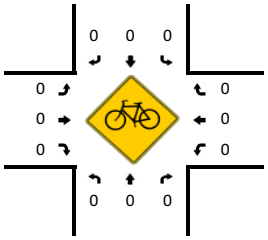
Peak-Hour: 6:30 AM -- 7:30 AM
Peak 15-Min: 6:40 AM -- 6:55 AM

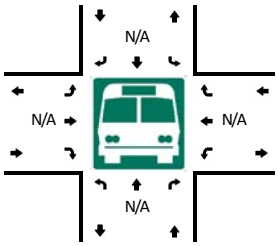


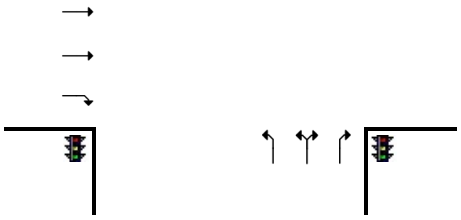


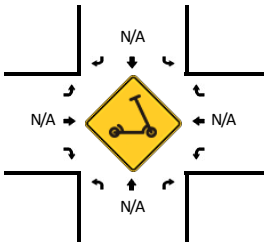
Quality Counts
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	I-5 NB Ramps (Northbound)				I-5 NB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	7	0	23	0	0	0	0	0	0	19	14	0	0	29	53	1	146	
6:05 AM	4	0	21	0	0	0	0	0	0	15	14	0	0	47	53	0	154	
6:10 AM	11	0	23	0	0	0	0	0	0	14	19	0	0	38	47	0	152	
6:15 AM	12	0	20	0	0	0	0	0	0	15	21	0	0	42	40	0	150	
6:20 AM	8	0	23	0	0	0	0	0	0	14	11	0	0	35	55	0	146	
6:25 AM	15	0	34	0	0	0	0	0	0	14	16	0	0	30	48	0	157	
6:30 AM	14	0	31	0	0	0	0	0	0	30	14	0	0	49	44	0	182	
6:35 AM	19	0	33	0	0	0	0	0	0	24	13	0	0	57	37	0	183	
6:40 AM	25	0	43	0	0	0	0	0	0	27	18	0	0	51	49	0	213	
6:45 AM	32	0	46	0	0	0	0	0	0	23	13	0	0	35	44	0	193	
6:50 AM	20	0	49	0	0	0	0	0	0	33	13	0	0	45	38	0	198	
6:55 AM	22	0	30	0	0	0	0	0	0	30	14	0	0	38	41	0	175	2049
7:00 AM	10	0	36	0	0	0	0	0	0	25	11	0	0	40	50	0	172	2075
7:05 AM	6	0	27	0	0	0	0	0	0	26	14	0	0	51	43	0	167	2088
7:10 AM	9	0	37	0	0	0	0	0	0	23	19	0	0	29	44	0	161	2097
7:15 AM	9	0	25	0	0	0	0	0	0	21	10	0	0	52	38	0	155	2102
7:20 AM	14	0	41	0	0	0	0	0	0	28	18	0	0	49	36	0	186	2142
7:25 AM	6	0	47	0	0	0	0	0	0	32	19	0	0	50	44	0	198	2183
7:30 AM	9	0	34	0	0	0	0	0	0	37	17	0	0	48	42	0	187	2188
7:35 AM	14	0	40	0	0	0	0	0	0	33	8	0	0	68	53	0	216	2221
7:40 AM	11	0	36	0	0	0	0	0	0	23	5	0	0	50	32	0	157	2165
7:45 AM	15	0	54	0	0	0	0	0	0	36	16	0	0	34	38	0	193	2165
7:50 AM	15	0	36	0	0	0	0	0	0	37	9	0	0	38	35	0	170	2137
7:55 AM	8	0	36	0	0	0	0	0	0	35	4	0	0	42	30	0	155	2117
8:00 AM	5	0	31	0	0	0	0	0	0	36	10	0	0	39	32	0	153	2098
8:05 AM	7	0	40	0	0	0	0	0	0	26	6	0	0	37	36	0	152	2083
8:10 AM	7	0	29	0	0	0	0	0	0	36	7	0	0	34	33	0	146	2068
8:15 AM	6	0	29	0	0	0	0	0	0	33	10	0	0	45	34	1	158	2071
8:20 AM	9	0	33	0	0	0	0	0	0	29	15	0	0	34	25	0	145	2030
8:25 AM	4	0	32	0	0	0	0	0	0	35	4	0	0	42	28	0	145	1977
8:30 AM	9	0	33	0	0	0	0	0	0	33	11	0	0	50	15	0	151	1941
8:35 AM	12	0	24	0	0	0	0	0	0	41	10	0	0	38	27	0	152	1877
8:40 AM	5	0	19	0	0	0	0	0	0	31	7	0	0	60	31	0	153	1873
8:45 AM	5	0	31	0	0	0	0	0	0	41	14	0	0	33	26	0	150	1830
8:50 AM	9	0	29	0	0	0	0	0	0	43	5	0	0	37	12	0	135	1795
8:55 AM	11	0	30	0	0	0	0	0	0	32	6	0	0	39	19	0	137	1777
9:00 AM	8	0	27	0	0	0	0	0	0	22	11	0	0	35	21	0	124	1748
9:05 AM	7	0	21	0	0	0	0	0	0	32	14	0	0	30	23	0	127	1723

5-Min Count Period Beginning At	I-5 NB Ramps (Northbound)				I-5 NB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	5	0	21	0	0	0	0	0	0	36	5	0	0	37	25	0	129	1706
9:15 AM	11	0	25	0	0	0	0	0	0	28	8	0	0	36	29	0	137	1685
9:20 AM	10	0	19	0	0	0	0	0	0	39	10	0	0	41	17	0	136	1676
9:25 AM	6	0	28	0	0	0	0	0	0	35	7	0	0	33	28	0	137	1668
9:30 AM	9	0	31	0	0	0	0	0	0	36	13	0	0	32	22	0	143	1660
9:35 AM	15	0	24	0	0	0	0	0	0	39	12	0	0	45	35	0	170	1678
9:40 AM	11	0	32	0	0	0	0	0	0	31	6	0	0	30	25	0	135	1660
9:45 AM	14	0	36	0	0	0	0	0	0	43	12	0	0	40	17	0	162	1672
9:50 AM	10	0	37	0	0	0	0	0	0	47	5	0	0	33	24	0	156	1693
9:55 AM	11	0	24	0	0	0	0	0	0	51	6	0	0	49	24	0	165	1721

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	308	0	552	0	0	0	0	0	0	332	176	0	0	524	524	0	2416
Heavy Trucks	12	0	20		0	0	0		0	24	8		0	64	16		144
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

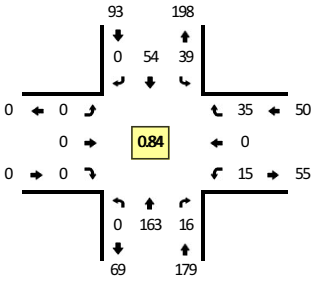
Type of peak hour being reported: User-Defined

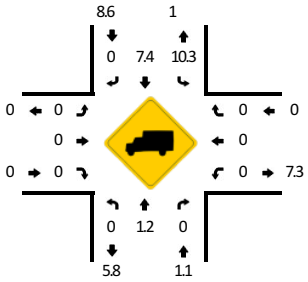
Method for determining peak hour: Total Entering Volume

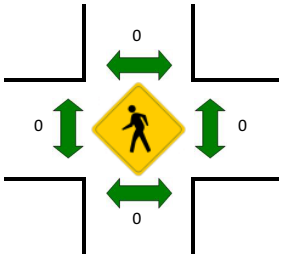
LOCATION: Butteville Rd NE -- Parr Rd NE
CITY/STATE: Woodburn, OR

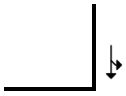
QC JOB #: 15405718
DATE: Wed, Apr 14 2021

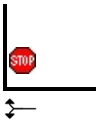
Peak-Hour: 6:30 AM -- 7:30 AM
Peak 15-Min: 6:30 AM -- 6:45 AM

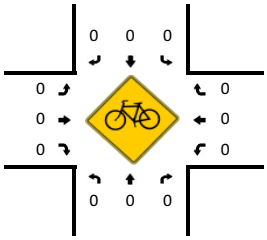


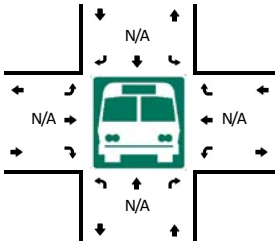


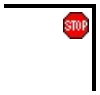


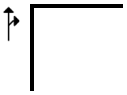


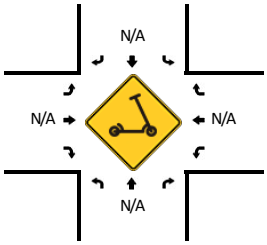












5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				Parr Rd NE (Eastbound)				Parr Rd NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	9	0	0	1	0	0	0	0	0	0	0	0	0	2	0	12	
6:05 AM	0	12	1	0	2	1	0	0	0	0	0	0	1	0	1	0	18	
6:10 AM	0	12	0	0	3	0	0	0	0	0	0	0	1	0	1	0	17	
6:15 AM	0	11	0	0	0	3	0	0	0	0	0	0	3	0	4	0	21	
6:20 AM	0	14	0	0	1	5	0	0	0	0	0	0	3	0	2	0	25	
6:25 AM	0	14	0	0	1	8	0	0	0	0	0	0	0	0	3	0	26	
6:30 AM	0	16	0	0	3	4	0	0	0	0	0	0	1	0	4	0	28	
6:35 AM	0	17	1	0	3	4	0	0	0	0	0	0	2	0	4	0	31	
6:40 AM	0	16	0	0	4	4	0	0	0	0	0	0	2	0	11	0	37	
6:45 AM	0	13	0	0	3	3	0	0	0	0	0	0	0	0	2	0	21	
6:50 AM	0	14	1	0	5	5	0	0	0	0	0	0	1	0	2	0	28	
6:55 AM	0	10	1	0	6	3	0	0	0	0	0	0	1	0	3	0	24	288
7:00 AM	0	8	1	0	1	4	0	0	0	0	0	0	0	0	1	0	15	291
7:05 AM	0	18	4	0	1	4	0	0	0	0	0	0	0	0	3	0	30	303
7:10 AM	0	14	3	0	3	2	0	0	0	0	0	0	4	0	0	0	26	312
7:15 AM	0	11	3	0	5	5	0	0	0	0	0	0	1	0	1	0	26	317
7:20 AM	0	12	2	0	3	9	0	0	0	0	0	0	1	0	2	0	29	321
7:25 AM	0	14	0	0	2	7	0	0	0	0	0	0	2	0	2	0	27	322
7:30 AM	0	11	0	0	2	6	0	0	0	0	0	0	3	0	3	0	25	319
7:35 AM	0	10	2	0	4	1	0	0	0	0	0	0	1	0	0	0	18	306
7:40 AM	0	15	1	0	0	11	0	0	0	0	0	0	1	0	1	0	29	298
7:45 AM	0	15	3	0	2	8	0	0	0	0	0	0	2	0	4	0	34	311
7:50 AM	0	11	2	0	1	4	0	0	0	0	0	0	1	0	3	0	22	305
7:55 AM	0	8	4	0	3	8	0	0	0	0	0	0	1	0	2	0	26	307
8:00 AM	0	8	2	0	1	2	0	0	0	0	0	0	1	0	3	0	17	309
8:05 AM	0	8	1	0	4	5	0	0	0	0	0	0	0	0	2	0	20	299
8:10 AM	0	10	2	0	2	5	0	0	0	0	0	0	2	0	0	0	21	294
8:15 AM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	1	0	6	274
8:20 AM	0	9	3	0	3	3	0	0	0	0	0	0	0	0	1	0	19	264
8:25 AM	0	7	1	0	2	11	0	0	0	0	0	0	0	0	0	0	21	258
8:30 AM	0	8	0	0	7	8	0	0	0	0	0	0	0	0	2	0	25	258
8:35 AM	0	9	3	0	0	9	0	0	0	0	0	0	1	0	1	0	23	263
8:40 AM	0	11	1	0	1	7	0	0	0	0	0	0	1	0	7	0	28	262
8:45 AM	0	9	0	0	1	7	0	0	0	0	0	0	1	0	3	0	21	249
8:50 AM	0	11	3	0	1	4	0	0	0	0	0	0	0	0	2	0	21	248
8:55 AM	0	6	0	0	4	4	0	0	0	0	0	0	3	0	0	0	17	239
9:00 AM	0	10	1	0	3	3	0	0	0	0	0	0	1	0	2	0	20	242
9:05 AM	0	7	3	0	3	4	0	0	0	0	0	0	1	0	0	0	18	240

5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				Parr Rd NE (Eastbound)				Parr Rd NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	0	6	0	0	0	1	0	0	0	0	0	0	0	0	5	0	12	231
9:15 AM	0	8	5	0	1	4	0	0	0	0	0	0	0	0	1	0	19	244
9:20 AM	0	6	0	0	2	1	0	0	0	0	0	0	3	0	1	0	13	238
9:25 AM	0	5	0	0	3	4	0	0	0	0	0	0	1	0	6	0	19	236
9:30 AM	0	7	2	0	1	3	0	0	0	0	0	0	1	0	3	0	17	228
9:35 AM	0	9	0	0	1	6	0	0	0	0	0	0	1	0	3	0	20	225
9:40 AM	0	5	2	0	1	3	0	0	0	0	0	0	2	0	2	0	15	212
9:45 AM	0	2	1	0	2	7	0	0	0	0	0	0	0	0	1	0	13	204
9:50 AM	0	12	2	0	1	2	0	0	0	0	0	0	1	0	1	0	19	202
9:55 AM	0	8	2	0	0	12	0	0	0	0	0	0	1	0	0	0	23	208

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	196	4	0	40	48	0	0	0	0	0	0	20	0	76	0	384
Heavy Trucks	0	8	0		12	4	0		0	0	0		0	0	0		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

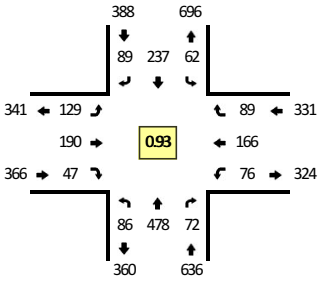
Type of peak hour being reported: User-Defined

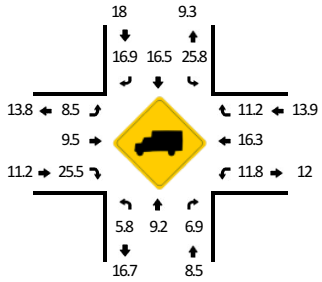
Method for determining peak hour: Total Entering Volume

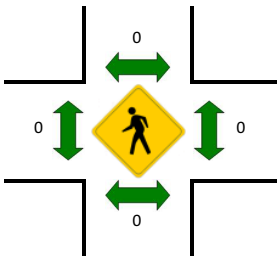
LOCATION: OR 99E -- OR 214
CITY/STATE: Woodburn, OR

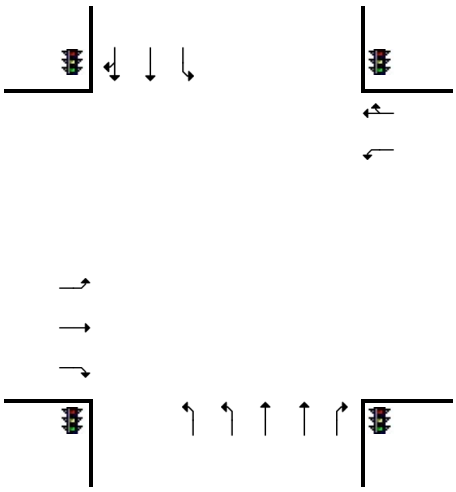
QC JOB #: 15462409
DATE: Tue, May 25 2021

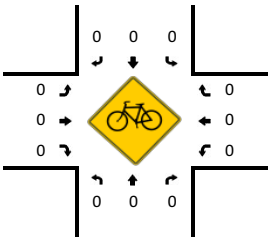
Peak-Hour: 6:30 AM -- 7:30 AM
Peak 15-Min: 6:40 AM -- 6:55 AM

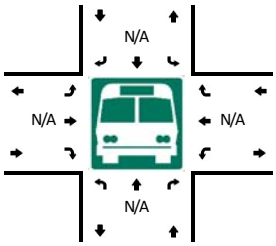


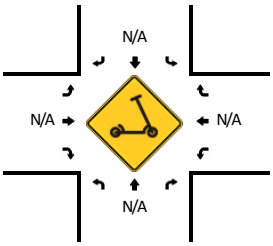












5-Min Count Period Beginning At	OR 99E (Northbound)				OR 99E (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	44	9	0	1	18	4	0	11	8	5	0	4	5	3	0	114	
6:05 AM	3	34	10	0	1	15	7	0	9	12	4	0	0	16	6	0	117	
6:10 AM	2	43	13	0	3	11	2	0	10	13	3	0	5	10	6	0	121	
6:15 AM	5	46	5	0	2	7	3	0	7	18	4	0	2	17	8	0	124	
6:20 AM	4	29	4	0	1	17	5	0	11	12	2	0	2	20	4	0	111	
6:25 AM	5	41	10	0	5	19	3	0	13	21	5	0	1	15	5	0	143	
6:30 AM	2	40	8	0	4	13	8	0	9	17	7	0	7	12	10	0	137	
6:35 AM	2	56	3	0	2	17	8	0	7	22	6	0	5	20	6	0	154	
6:40 AM	1	50	10	0	8	29	5	0	8	9	2	0	4	12	7	0	145	
6:45 AM	10	35	7	0	5	24	5	0	15	22	1	0	8	20	8	0	160	
6:50 AM	9	42	6	0	6	24	10	0	16	15	3	0	6	13	8	0	158	
6:55 AM	6	44	8	0	6	14	2	0	7	13	3	0	4	11	7	0	125	1609
7:00 AM	12	28	4	0	7	19	10	0	8	20	9	0	5	16	13	0	151	1646
7:05 AM	8	42	6	0	3	14	5	0	10	12	2	0	5	14	7	0	128	1657
7:10 AM	7	41	4	0	3	17	7	0	9	14	3	0	3	12	2	0	122	1658
7:15 AM	6	29	7	0	6	16	6	0	15	12	4	0	15	12	9	0	137	1671
7:20 AM	10	37	5	0	5	30	12	0	11	17	4	0	6	11	5	0	153	1713
7:25 AM	13	34	4	0	7	20	11	0	14	17	3	0	8	13	7	0	151	1721
7:30 AM	8	45	5	0	3	20	6	0	11	20	5	0	9	22	0	0	154	1738
7:35 AM	6	28	7	0	9	22	9	0	5	10	4	0	7	15	6	0	128	1712
7:40 AM	11	42	3	0	0	20	5	0	13	15	4	0	11	21	8	0	153	1720
7:45 AM	11	42	5	0	6	23	8	0	7	16	9	0	7	25	7	0	166	1726
7:50 AM	17	45	11	0	1	22	12	0	7	7	9	0	10	19	6	0	166	1734
7:55 AM	15	39	1	0	4	26	5	0	14	7	7	0	6	14	3	0	141	1750
8:00 AM	11	33	4	0	2	17	6	0	11	12	8	0	15	18	7	0	144	1743
8:05 AM	13	34	5	0	5	13	6	0	7	9	12	0	13	19	7	0	143	1758
8:10 AM	5	31	3	0	1	16	10	1	8	13	6	0	6	12	4	0	116	1752
8:15 AM	7	15	7	0	9	18	9	0	8	18	8	0	3	19	4	0	125	1740
8:20 AM	11	39	6	0	5	11	5	0	7	12	6	0	11	22	4	0	139	1726
8:25 AM	13	23	4	0	5	14	8	0	9	6	10	0	11	15	5	0	123	1698
8:30 AM	12	28	7	0	3	24	10	0	8	8	10	0	13	10	4	0	137	1681
8:35 AM	15	22	5	0	6	22	5	0	9	15	9	0	11	13	8	0	140	1693
8:40 AM	5	24	5	0	3	25	10	0	8	14	11	0	8	14	6	0	133	1673
8:45 AM	12	17	9	0	4	11	9	0	9	13	18	0	11	13	5	0	131	1638
8:50 AM	7	28	7	0	4	30	9	0	12	7	7	0	12	15	1	0	139	1611
8:55 AM	9	19	4	0	5	19	5	0	9	13	10	0	10	18	4	0	125	1595
9:00 AM	14	30	9	0	4	21	11	0	5	7	11	0	6	21	5	0	144	1595
9:05 AM	13	22	8	0	7	23	9	0	8	16	11	0	13	18	5	0	153	1605

5-Min Count Period Beginning At	OR 99E (Northbound)				OR 99E (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	17	24	2	0	4	18	10	0	12	11	12	0	9	15	2	0	136	1625
9:15 AM	12	29	8	0	3	19	14	0	6	18	12	0	6	8	6	0	141	1641
9:20 AM	17	20	5	0	6	22	9	0	7	16	16	0	1	10	1	0	130	1632
9:25 AM	12	28	2	0	6	26	13	0	5	12	16	0	15	14	5	0	154	1663
9:30 AM	13	22	4	0	4	18	8	0	11	17	7	0	9	16	4	0	133	1659
9:35 AM	15	17	4	0	5	23	17	0	6	11	13	0	7	21	5	0	144	1663
9:40 AM	19	29	6	0	5	13	10	0	5	19	22	0	5	9	5	0	147	1677
9:45 AM	10	18	3	0	8	23	12	0	14	25	15	0	9	17	5	0	159	1705
9:50 AM	17	25	4	0	2	26	15	1	6	19	16	0	9	17	9	0	166	1732
9:55 AM	9	14	2	0	5	30	12	0	13	19	12	0	11	10	4	0	141	1748

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	80	508	92	0	76	308	80	0	156	184	24	0	72	180	92	0	1852
Heavy Trucks	4	20	0		16	56	8		16	0	0		8	24	12		164
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 7/14/2021 8:13 AM

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

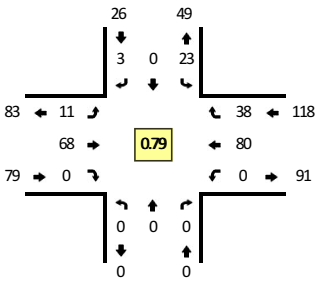
Type of peak hour being reported: User-Defined

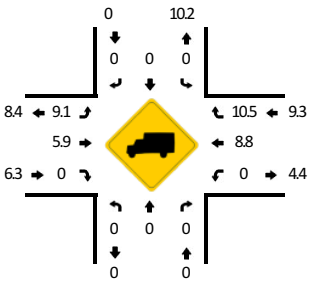
Method for determining peak hour: Total Entering Volume

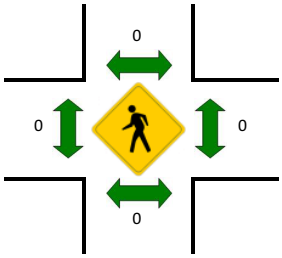
LOCATION: Arbor Grove Rd NE (north leg of Arbor Grove) -- OR 219
CITY/STATE: Marion, OR

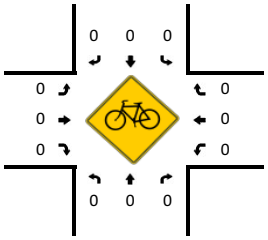
QC JOB #: 15462401
DATE: Tue, May 25 2021

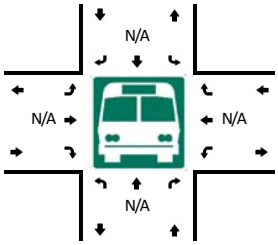
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

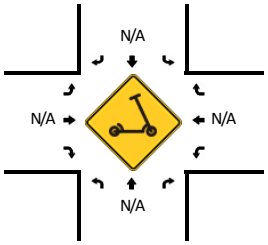












5-Min Count Period Beginning At	Arbor Grove Rd NE (north leg of Arbor Grove) (Northbound)				Arbor Grove Rd NE (north leg of Arbor Grove) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	2	0	7	
6:05 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	4	4	0	10	
6:10 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	5	1	0	9	
6:15 AM	0	0	0	0	1	0	0	0	1	4	0	0	0	7	4	0	17	
6:20 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	7	1	0	11	
6:25 AM	0	0	0	0	2	0	0	0	0	3	0	0	0	7	6	0	18	
6:30 AM	0	0	0	0	0	0	0	0	1	4	0	0	0	6	4	0	15	
6:35 AM	0	0	0	0	3	0	0	0	1	3	0	0	0	11	2	0	20	
6:40 AM	0	0	0	0	0	0	1	0	1	1	0	0	0	12	16	0	31	
6:45 AM	0	0	0	0	2	0	1	0	1	6	0	0	0	12	13	0	35	
6:50 AM	0	0	0	0	1	0	0	0	0	10	0	0	0	7	11	0	29	
6:55 AM	0	0	0	0	0	0	1	0	1	2	0	0	0	10	8	0	22	224
7:00 AM	0	0	0	0	2	0	0	0	1	3	0	0	0	4	0	0	10	227
7:05 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	7	3	0	15	232
7:10 AM	0	0	0	0	3	0	0	0	0	9	0	0	0	7	1	0	20	243
7:15 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	5	3	0	12	238
7:20 AM	0	0	0	0	2	0	0	0	0	8	0	0	0	3	6	0	19	246
7:25 AM	0	0	0	0	1	0	0	0	2	4	0	0	0	8	8	0	23	251
7:30 AM	0	0	0	0	3	0	0	0	2	7	0	0	0	4	3	0	19	255
7:35 AM	0	0	0	0	1	0	1	0	1	3	0	0	0	7	2	0	15	250
7:40 AM	0	0	0	0	4	0	0	0	4	6	0	0	0	11	1	0	26	245
7:45 AM	0	0	0	0	3	0	0	0	0	5	0	0	0	10	3	0	21	231
7:50 AM	0	0	0	0	2	0	1	0	0	9	0	0	0	9	3	0	24	226
7:55 AM	0	0	0	0	1	0	1	0	1	6	0	0	0	5	5	0	19	223
8:00 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	3	1	0	10	223
8:05 AM	0	0	0	0	1	0	0	0	3	2	0	0	0	7	3	0	16	224
8:10 AM	0	0	0	0	4	0	0	0	0	3	0	0	0	4	3	0	14	218
8:15 AM	0	0	0	0	4	0	0	0	0	4	0	0	0	3	1	0	12	218
8:20 AM	0	0	0	0	1	0	2	0	1	5	0	0	0	8	3	0	20	219
8:25 AM	0	0	0	0	2	0	0	0	0	6	0	0	0	8	4	0	20	216
8:30 AM	0	0	0	0	3	0	0	0	1	4	0	0	0	5	3	0	16	213
8:35 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	6	2	0	12	210
8:40 AM	0	0	0	0	2	0	1	0	1	4	0	0	0	11	2	0	21	205
8:45 AM	0	0	0	0	1	0	0	0	0	6	0	0	0	5	5	0	17	201
8:50 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	5	4	0	13	190
8:55 AM	0	0	0	0	1	0	0	0	1	2	0	0	0	3	5	0	12	183
9:00 AM	0	0	0	0	1	0	1	0	1	4	0	0	0	3	1	0	11	184

5-Min Count Period Beginning At	Arbor Grove Rd NE (north leg of Arbor Grove) (Northbound)				Arbor Grove Rd NE (north leg of Arbor Grove) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:05 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	7	0	0	9	177
9:10 AM	0	0	0	0	3	0	0	0	0	6	0	0	0	2	0	0	11	174
9:15 AM	0	0	0	0	1	0	3	0	0	6	0	0	0	8	0	0	18	180
9:20 AM	0	0	0	0	2	0	0	0	0	5	0	0	0	3	1	0	11	171
9:25 AM	0	0	0	0	3	0	0	0	1	1	0	0	0	2	3	0	10	161
9:30 AM	0	0	0	0	2	0	0	0	0	6	0	0	0	4	4	0	16	161
9:35 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	6	4	0	16	165
9:40 AM	0	0	0	0	0	0	0	0	1	5	0	0	0	2	2	0	10	154
9:45 AM	0	0	0	0	1	0	1	0	1	2	0	0	0	5	0	0	10	147
9:50 AM	0	0	0	0	1	0	0	0	0	4	0	0	0	5	4	0	14	148
9:55 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5	141

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	36	0	4	0	16	80	0	0	0	120	28	0	284
Heavy Trucks	0	0	0		0	0	0		4	4	0		0	20	0		28
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 6:55 AM

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: Butteville Rd NE (north leg of Butteville Rd) -- OR 219

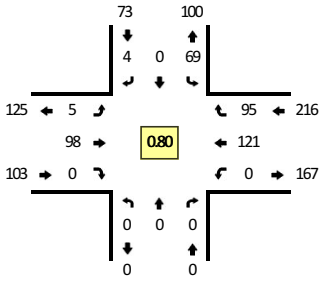
QC JOB #: 15462403

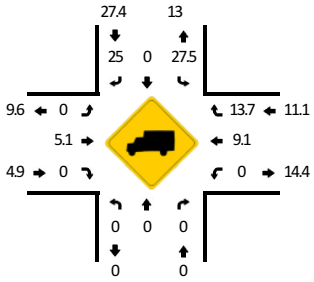
CITY/STATE: Marion, OR

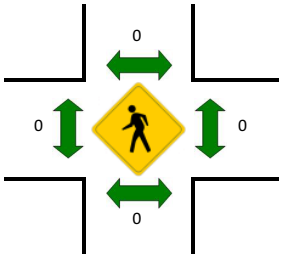
DATE: Tue, May 25 2021

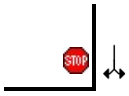
Peak-Hour: 7:00 AM -- 8:00 AM

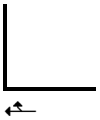
Peak 15-Min: 7:45 AM -- 8:00 AM

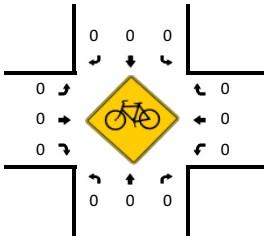


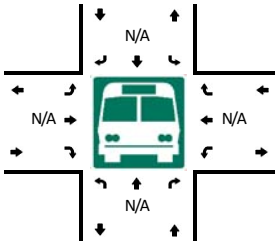


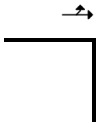


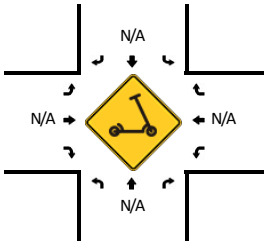












5-Min Count Period Beginning At	Butteville Rd NE (north leg of Butteville Rd) (Northbound)				Butteville Rd NE (north leg of Butteville Rd) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	3	0	0	0	0	4	0	0	0	7	8	0	22	
6:05 AM	0	0	0	0	0	0	0	0	1	4	0	0	0	7	6	0	18	
6:10 AM	0	0	0	0	3	0	0	0	0	1	0	0	0	9	15	0	28	
6:15 AM	0	0	0	0	2	0	1	0	1	4	0	0	0	13	16	0	37	
6:20 AM	0	0	0	0	7	0	0	0	0	4	0	0	0	7	10	0	28	
6:25 AM	0	0	0	0	6	0	0	0	2	2	0	0	0	11	13	0	34	
6:30 AM	0	0	0	0	5	0	1	0	0	7	0	0	0	17	20	0	50	
6:35 AM	0	0	0	0	10	0	0	0	0	5	0	0	0	11	14	0	40	
6:40 AM	0	0	0	0	4	0	2	0	0	10	0	0	0	27	22	0	65	
6:45 AM	0	0	0	0	9	0	0	0	2	6	0	0	0	27	13	0	57	
6:50 AM	0	0	0	0	2	0	1	0	0	10	0	0	0	16	16	0	45	
6:55 AM	0	0	0	0	7	0	1	0	0	6	0	0	0	15	10	0	39	463
7:00 AM	0	0	0	0	5	0	0	0	0	6	0	0	0	7	7	0	25	466
7:05 AM	0	0	0	0	9	0	0	0	0	7	0	0	0	7	5	0	28	476
7:10 AM	0	0	0	0	3	0	0	0	1	9	0	0	0	5	1	0	19	467
7:15 AM	0	0	0	0	9	0	0	0	0	7	0	0	0	10	5	0	31	461
7:20 AM	0	0	0	0	8	0	1	0	0	8	0	0	0	8	9	0	34	467
7:25 AM	0	0	0	0	3	0	1	0	1	7	0	0	0	15	9	0	36	469
7:30 AM	0	0	0	0	3	0	0	0	0	9	0	0	0	10	8	0	30	449
7:35 AM	0	0	0	0	2	0	0	0	0	6	0	0	0	12	8	0	28	437
7:40 AM	0	0	0	0	6	0	1	0	1	9	0	0	0	16	6	0	39	411
7:45 AM	0	0	0	0	4	0	0	0	2	9	0	0	0	9	16	0	40	394
7:50 AM	0	0	0	0	1	0	1	0	0	10	0	0	0	11	10	0	33	382
7:55 AM	0	0	0	0	16	0	0	0	0	11	0	0	0	11	11	0	49	392
8:00 AM	0	0	0	0	6	0	0	0	1	8	0	0	0	7	7	0	29	396
8:05 AM	0	0	0	0	7	0	1	0	0	5	0	0	0	8	6	0	27	395
8:10 AM	0	0	0	0	4	0	1	0	1	5	0	0	0	3	4	0	18	394
8:15 AM	0	0	0	0	4	0	0	0	1	7	0	0	0	8	3	0	23	386
8:20 AM	0	0	0	0	2	0	0	0	0	6	0	0	0	9	4	0	21	373
8:25 AM	0	0	0	0	5	0	0	0	0	8	0	0	0	11	4	0	28	365
8:30 AM	0	0	0	0	5	0	0	0	1	11	0	0	0	7	5	0	29	364
8:35 AM	0	0	0	0	6	0	0	0	0	5	0	0	0	13	6	0	30	366
8:40 AM	0	0	0	0	5	0	1	0	1	8	0	0	0	5	7	0	27	354
8:45 AM	0	0	0	0	2	0	0	0	0	8	0	0	0	9	9	0	28	342
8:50 AM	0	0	0	0	3	0	2	0	0	7	0	0	0	10	1	0	23	332
8:55 AM	0	0	0	0	8	0	0	0	1	3	0	0	0	8	6	0	26	309
9:00 AM	0	0	0	0	4	0	1	0	0	5	0	0	0	8	4	0	22	302

5-Min Count Period Beginning At	Butteville Rd NE (north leg of Butteville Rd) (Northbound)				Butteville Rd NE (north leg of Butteville Rd) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:05 AM	0	0	0	0	6	0	1	0	1	6	0	0	0	4	6	0	24	299
9:10 AM	0	0	0	0	5	0	1	0	2	3	0	0	0	5	9	0	25	306
9:15 AM	0	0	0	0	7	0	2	0	0	7	0	0	0	6	4	0	26	309
9:20 AM	0	0	0	0	6	0	0	0	1	11	0	0	0	5	4	0	27	315
9:25 AM	0	0	0	0	8	0	0	0	0	7	0	0	0	5	5	0	25	312
9:30 AM	0	0	0	0	5	0	0	0	0	4	0	0	0	10	9	0	28	311
9:35 AM	0	0	0	0	5	0	0	0	0	7	0	0	0	8	9	0	29	310
9:40 AM	0	0	0	0	4	0	2	0	2	8	0	0	0	5	2	1	24	307
9:45 AM	0	0	0	0	2	0	1	0	0	6	0	0	0	6	7	0	22	301
9:50 AM	0	0	0	0	7	0	0	0	0	1	0	0	0	6	6	0	20	298
9:55 AM	0	0	0	0	6	0	1	0	1	5	0	0	0	5	6	0	24	296

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	84	0	4	0	8	120	0	0	0	124	148	0	488
Heavy Trucks	0	0	0		12	0	0		0	4	0		0	12	20		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 6:55 AM

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

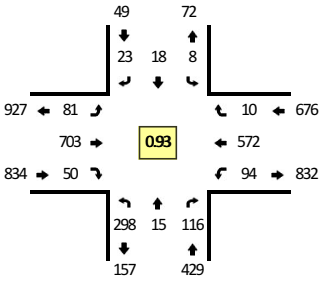
Type of peak hour being reported: User-Defined

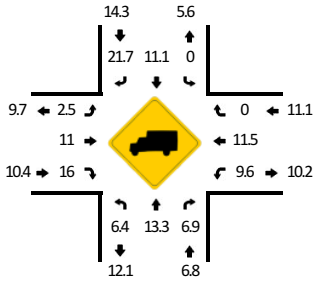
Method for determining peak hour: Total Entering Volume

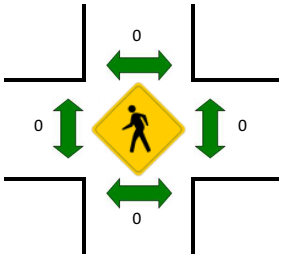
LOCATION: Evergreen Rd -- OR 214
CITY/STATE: Woodburn, OR

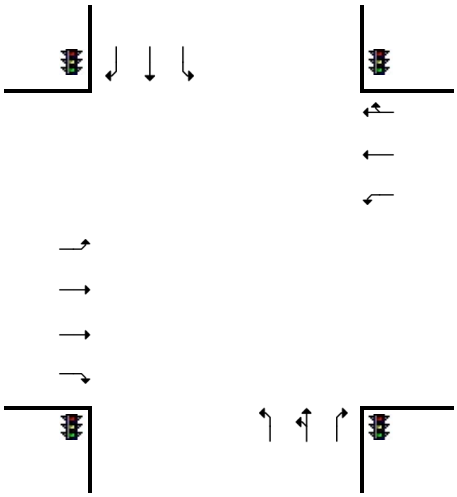
QC JOB #: 15462405
DATE: Tue, May 25 2021

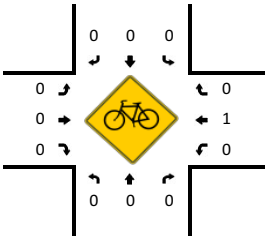
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

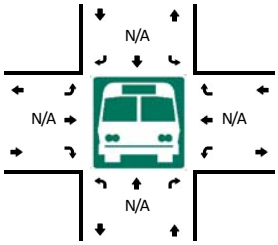


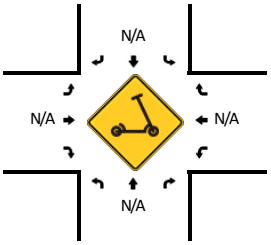












5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	26	0	5	0	1	0	1	0	2	37	4	2	5	51	0	0	134	
6:05 AM	26	1	4	0	0	1	4	0	4	29	2	5	4	37	2	1	120	
6:10 AM	19	0	3	0	2	0	2	0	2	22	0	3	6	53	1	0	113	
6:15 AM	19	0	6	0	0	0	2	1	6	30	2	3	4	50	2	0	125	
6:20 AM	24	0	5	0	2	2	4	0	2	37	1	4	7	50	2	0	140	
6:25 AM	31	1	8	0	1	2	2	0	2	37	0	4	0	56	0	1	145	
6:30 AM	32	0	6	0	0	0	1	0	2	46	1	4	3	52	3	1	151	
6:35 AM	23	0	5	0	2	1	2	0	0	41	2	4	3	45	2	1	131	
6:40 AM	23	0	5	0	1	0	1	0	3	51	2	3	11	63	2	0	165	
6:45 AM	24	1	8	0	0	0	3	0	1	59	2	1	5	51	1	1	157	
6:50 AM	29	0	10	0	1	1	1	0	1	55	3	0	5	42	2	0	150	
6:55 AM	24	4	4	0	1	0	1	0	2	62	4	3	7	46	1	1	160	1691
7:00 AM	24	0	6	0	0	3	0	0	1	51	4	1	3	46	0	0	139	1696
7:05 AM	22	1	11	0	0	2	3	0	1	63	3	2	8	45	1	1	163	1739
7:10 AM	32	0	13	0	1	2	1	0	2	56	6	3	4	48	2	0	170	1796
7:15 AM	22	1	10	0	0	1	2	0	3	58	3	4	11	54	2	1	172	1843
7:20 AM	25	2	9	0	1	1	3	0	5	53	2	3	5	38	0	0	147	1850
7:25 AM	19	1	6	0	1	3	1	0	3	61	5	6	5	54	1	0	166	1871
7:30 AM	23	2	10	0	2	0	0	0	1	45	1	4	8	63	2	0	161	1881
7:35 AM	35	0	13	0	1	2	2	0	3	50	1	1	6	50	0	0	164	1914
7:40 AM	17	2	10	0	1	1	3	0	4	65	7	4	9	46	1	1	171	1920
7:45 AM	34	2	13	0	0	2	3	0	10	67	3	2	3	45	0	0	184	1947
7:50 AM	22	3	7	0	0	0	0	0	5	69	5	2	15	33	0	2	163	1960
7:55 AM	23	1	8	0	1	1	5	0	9	65	10	2	12	50	1	0	188	1988
8:00 AM	26	4	9	0	2	0	5	0	3	32	3	4	12	46	2	0	148	1997
8:05 AM	22	0	7	0	1	2	6	0	2	50	4	5	8	32	2	0	141	1975
8:10 AM	20	1	11	0	0	2	4	0	3	40	1	0	6	49	1	0	138	1943
8:15 AM	17	2	6	0	0	2	6	0	3	36	4	4	2	47	0	0	129	1900
8:20 AM	15	3	11	0	0	0	3	0	3	54	5	5	7	45	1	1	153	1906
8:25 AM	17	1	3	0	0	0	1	0	2	34	9	2	9	35	2	1	116	1856
8:30 AM	20	0	10	0	1	0	5	0	5	35	7	4	14	33	1	0	135	1830
8:35 AM	25	1	12	0	0	0	3	0	7	40	2	1	7	40	1	1	140	1806
8:40 AM	21	0	12	0	0	0	4	0	5	43	3	4	12	41	2	1	148	1783
8:45 AM	16	1	9	0	2	2	1	0	8	37	6	3	6	41	1	0	133	1732
8:50 AM	22	4	6	0	1	1	6	0	2	39	6	2	11	31	2	0	133	1702
8:55 AM	19	1	11	0	1	0	2	0	6	36	3	1	13	25	4	1	123	1637
9:00 AM	13	4	3	0	0	0	2	0	4	48	3	1	7	36	2	0	123	1612
9:05 AM	18	1	5	0	2	0	1	0	2	28	6	2	10	39	1	1	116	1587

5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	16	1	12	0	1	5	3	0	4	36	2	4	7	41	0	0	132	1581
9:15 AM	7	3	6	0	1	0	3	0	0	30	3	1	13	27	1	0	95	1547
9:20 AM	11	1	6	0	1	1	0	0	1	36	5	1	13	61	1	0	138	1532
9:25 AM	22	2	10	0	2	1	1	0	2	32	4	3	7	31	0	0	117	1533
9:30 AM	23	1	8	0	4	3	5	0	1	42	7	4	5	37	1	0	141	1539
9:35 AM	14	1	9	0	1	3	4	0	11	40	2	2	11	36	1	0	135	1534
9:40 AM	24	0	11	0	3	3	6	0	4	54	4	4	6	46	2	0	167	1553
9:45 AM	22	1	9	0	2	3	2	0	5	33	1	0	7	32	0	1	118	1538
9:50 AM	10	3	9	0	2	0	3	0	4	49	4	2	13	36	0	1	136	1541
9:55 AM	13	2	14	0	1	3	3	0	5	44	3	2	10	44	1	0	145	1563

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	316	24	112	0	4	12	32	0	96	804	72	24	120	512	4	8	2140
Heavy Trucks	36	4	8		0	0	12		4	72	12		8	72	0		228
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 6:55 AM

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: N Boones Ferry Rd/N Settlemier Ave -- OR 214

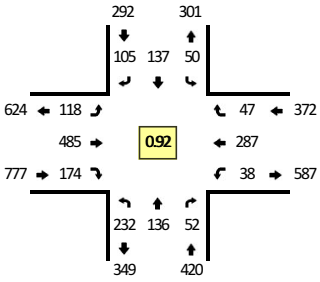
CITY/STATE: Woodburn, OR

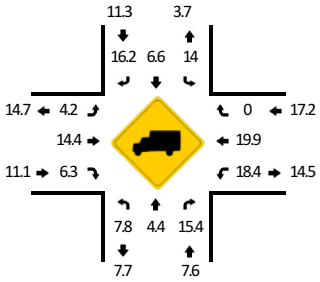
QC JOB #: 15462407

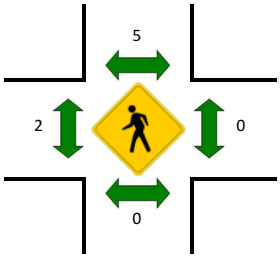
DATE: Tue, May 25 2021

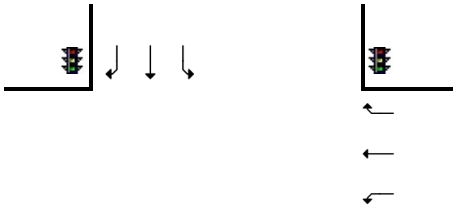
Peak-Hour: 7:00 AM -- 8:00 AM

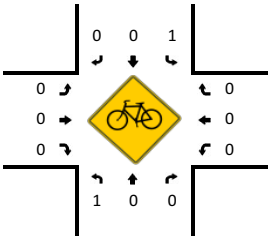
Peak 15-Min: 7:40 AM -- 7:55 AM

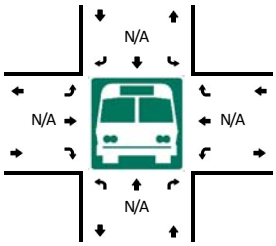


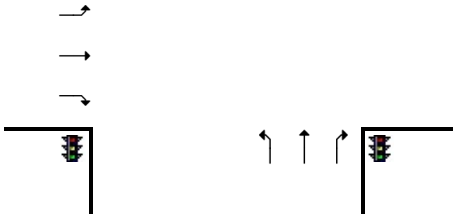


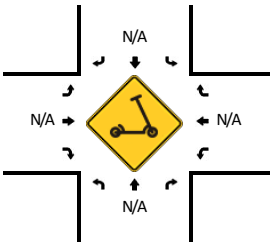












5-Min Count Period Beginning At	N Boones Ferry Rd/N Settlemier Ave (Northbound)				N Boones Ferry Rd/N Settlemier Ave (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	23	7	3	0	2	4	6	0	2	28	13	0	4	16	0	0	108	
6:05 AM	21	9	4	0	0	2	3	0	3	23	7	0	1	20	3	0	96	
6:10 AM	19	7	0	0	1	3	2	0	0	22	4	0	0	33	0	0	91	
6:15 AM	22	5	0	0	0	2	5	0	4	19	8	0	2	32	2	0	101	
6:20 AM	20	3	3	0	1	5	8	0	5	27	4	0	2	18	4	0	100	
6:25 AM	26	6	2	0	1	1	5	0	5	42	9	0	1	28	0	0	126	
6:30 AM	28	17	3	0	3	3	7	0	4	36	8	0	2	22	1	0	134	
6:35 AM	33	15	3	0	1	4	2	0	4	28	10	0	2	19	5	0	126	
6:40 AM	25	7	5	0	3	4	4	0	14	35	15	0	4	37	6	0	159	
6:45 AM	23	12	6	0	1	4	3	0	6	40	12	0	6	33	4	0	150	
6:50 AM	24	10	4	0	5	0	5	0	7	39	18	0	1	16	2	0	131	
6:55 AM	20	14	4	0	3	7	4	0	9	47	15	0	2	22	4	0	151	1473
7:00 AM	17	14	2	0	3	12	4	0	10	38	16	0	3	26	6	0	151	1516
7:05 AM	22	13	2	0	3	11	6	0	12	36	13	0	6	19	3	0	146	1566
7:10 AM	26	5	1	0	3	9	8	0	3	33	20	0	6	28	5	0	147	1622
7:15 AM	15	4	6	0	4	11	11	0	13	37	20	0	1	17	4	0	143	1664
7:20 AM	13	9	4	0	1	11	10	0	5	48	10	0	0	26	2	0	139	1703
7:25 AM	26	11	4	0	11	9	12	0	7	37	19	0	3	26	2	0	167	1744
7:30 AM	14	16	6	0	1	13	9	0	7	35	13	0	4	31	5	0	154	1764
7:35 AM	17	14	2	0	3	11	8	0	4	41	12	0	2	20	4	0	138	1776
7:40 AM	24	14	4	0	8	18	10	0	17	33	11	0	3	25	4	0	171	1788
7:45 AM	17	13	8	0	4	13	9	0	12	41	12	0	6	23	4	0	162	1800
7:50 AM	26	9	5	0	6	8	8	0	10	55	14	0	2	24	5	0	172	1841
7:55 AM	15	14	8	0	3	11	10	0	18	51	14	0	2	22	3	0	171	1861
8:00 AM	25	10	6	0	12	6	11	0	7	34	6	0	4	25	9	0	155	1865
8:05 AM	19	14	6	0	3	7	4	0	10	31	10	0	4	12	3	0	123	1842
8:10 AM	16	7	8	0	9	14	12	0	4	32	9	0	1	24	5	0	141	1836
8:15 AM	23	10	4	0	9	8	10	0	10	28	12	0	3	26	3	0	146	1839
8:20 AM	6	11	9	0	8	11	3	0	10	30	4	0	6	28	6	0	132	1832
8:25 AM	19	12	7	0	17	12	7	0	2	29	5	0	3	30	7	0	150	1815
8:30 AM	6	6	6	0	4	9	12	0	4	27	16	0	9	22	4	0	125	1786
8:35 AM	18	12	12	0	5	9	7	0	7	25	11	0	2	29	9	0	146	1794
8:40 AM	9	10	8	0	9	11	8	0	10	31	13	0	5	29	7	0	150	1773
8:45 AM	20	6	9	0	7	4	7	0	1	40	8	0	4	29	5	0	140	1751
8:50 AM	6	5	4	0	13	6	7	0	6	24	12	0	3	26	2	0	114	1693
8:55 AM	13	8	5	0	4	5	6	0	3	26	9	0	2	25	1	0	107	1629
9:00 AM	6	6	1	0	2	1	7	0	5	35	12	0	2	25	0	0	102	1576

5-Min Count Period Beginning At	N Boones Ferry Rd/N Settlemier Ave (Northbound)				N Boones Ferry Rd/N Settlemier Ave (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:05 AM	14	4	8	0	6	4	4	0	2	29	4	0	3	35	1	0	114	1567
9:10 AM	10	6	5	0	11	7	6	0	5	27	4	0	1	23	4	0	109	1535
9:15 AM	13	5	4	0	5	5	5	0	4	25	11	0	2	31	3	0	113	1502
9:20 AM	11	3	3	0	5	8	6	0	3	33	11	0	5	43	2	0	133	1503
9:25 AM	14	4	1	0	5	2	2	0	2	25	4	0	6	29	2	0	96	1449
9:30 AM	11	5	1	0	7	6	3	0	3	34	10	0	1	20	5	0	106	1430
9:35 AM	10	5	4	0	6	3	5	0	7	28	6	0	7	40	6	0	127	1411
9:40 AM	13	2	3	0	9	2	6	0	11	43	11	0	1	34	0	0	135	1396
9:45 AM	11	12	5	0	7	7	3	0	3	37	12	0	4	35	2	0	138	1394
9:50 AM	16	7	8	0	7	9	7	0	4	42	12	0	3	25	5	0	145	1425
9:55 AM	18	3	6	0	5	3	4	0	7	39	9	0	3	46	6	0	149	1467

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	268	144	68	0	72	156	108	0	156	516	148	0	44	288	52	0	2020
Heavy Trucks	20	4	4		4	0	36		8	64	8		8	64	0		220
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		4	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 6/24/2021 6:55 AM

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

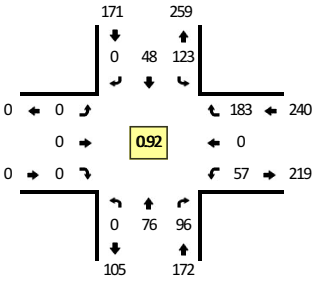
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

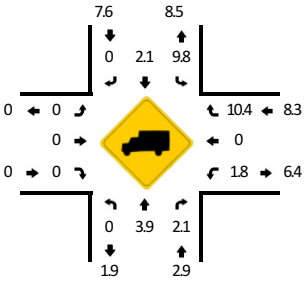
LOCATION: Butteville Rd NE -- OR-219
CITY/STATE: Woodburn, OR

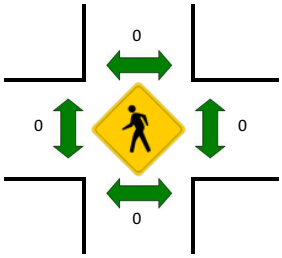
QC JOB #: 15405708
DATE: Wed, Apr 14 2021

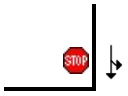
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

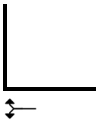


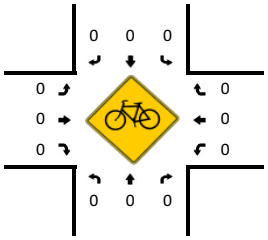
Quality Counts
DATA THAT DRIVES COMMUNITIES

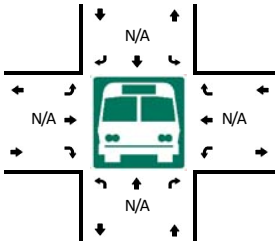


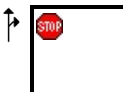


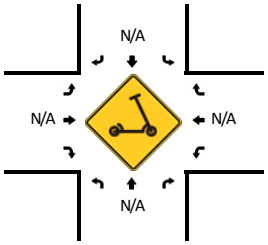












5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	1	12	0	5	1	0	0	0	0	0	0	3	0	7	0	29	
6:05 AM	0	3	10	0	5	1	0	0	0	0	0	0	2	0	15	0	36	
6:10 AM	0	5	8	0	3	2	0	0	0	0	0	0	3	0	20	0	41	
6:15 AM	0	5	9	0	5	1	0	0	0	0	0	0	0	0	21	0	41	
6:20 AM	0	9	5	0	7	4	0	0	0	0	0	0	4	0	17	0	46	
6:25 AM	0	9	8	0	11	2	0	0	0	0	0	0	5	0	17	0	52	
6:30 AM	0	5	16	0	7	7	0	0	0	0	0	0	3	0	23	0	61	
6:35 AM	0	4	9	0	8	4	0	0	0	0	0	0	3	0	29	0	57	
6:40 AM	0	18	10	0	4	2	0	0	0	0	0	0	1	0	42	0	77	
6:45 AM	0	10	11	0	2	2	0	0	0	0	0	0	5	0	40	0	70	
6:50 AM	0	4	9	0	4	3	0	0	0	0	0	0	8	0	34	0	62	
6:55 AM	0	5	11	0	8	3	0	0	0	0	0	0	5	0	22	0	54	626
7:00 AM	0	7	6	0	7	5	0	0	0	0	0	0	2	0	20	0	47	644
7:05 AM	0	7	8	0	10	3	0	0	0	0	0	0	4	0	16	0	48	656
7:10 AM	0	5	9	0	13	2	0	0	0	0	0	0	1	0	11	0	41	656
7:15 AM	0	4	11	0	9	3	0	0	0	0	0	0	7	0	9	0	43	658
7:20 AM	0	5	10	0	5	5	0	0	0	0	0	0	10	0	16	0	51	663
7:25 AM	0	3	7	0	17	6	0	0	0	0	0	0	3	0	18	0	54	665
7:30 AM	0	12	9	0	9	1	0	0	0	0	0	0	6	0	17	0	54	658
7:35 AM	0	6	4	0	9	5	0	0	0	0	0	0	4	0	16	0	44	645
7:40 AM	0	6	7	0	9	5	0	0	0	0	0	0	8	0	15	0	50	618
7:45 AM	0	4	10	0	9	6	0	0	0	0	0	0	1	0	14	0	44	592
7:50 AM	0	11	11	0	15	4	0	0	0	0	0	0	7	0	16	0	64	594
7:55 AM	0	6	4	0	11	3	0	0	0	0	0	0	4	0	15	0	43	583
8:00 AM	0	4	7	0	20	4	0	0	0	0	0	0	4	0	12	0	51	587
8:05 AM	0	4	4	0	8	4	0	0	0	0	0	0	2	0	9	0	31	570
8:10 AM	0	1	9	0	8	2	0	0	0	0	0	0	3	0	7	0	30	559
8:15 AM	0	1	5	0	17	2	0	0	0	0	0	0	3	0	11	0	39	555
8:20 AM	0	4	8	0	8	1	0	0	0	0	0	0	2	0	4	0	27	531
8:25 AM	0	2	6	0	14	7	0	1	0	0	0	0	10	0	8	0	48	525
8:30 AM	0	2	5	0	10	4	0	0	0	0	0	0	9	0	7	0	37	508
8:35 AM	0	1	7	0	17	5	0	0	0	0	0	0	6	0	10	0	46	510
8:40 AM	0	6	12	0	8	3	0	0	0	0	0	0	3	0	18	0	50	510
8:45 AM	0	3	7	0	19	3	0	0	0	0	0	0	4	0	9	0	45	511
8:50 AM	0	5	6	0	16	1	0	0	0	0	0	0	5	0	10	0	43	490
8:55 AM	0	3	6	0	7	2	0	0	0	0	0	0	4	0	7	0	29	476
9:00 AM	0	5	8	0	1	3	0	0	0	0	0	0	6	0	10	0	33	458
9:05 AM	0	1	5	0	10	0	0	0	0	0	0	0	4	0	14	0	34	461

5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	0	3	4	0	13	0	0	0	0	0	0	0	1	0	11	0	32	463
9:15 AM	0	2	6	0	5	2	0	0	0	0	0	0	3	0	4	0	22	446
9:20 AM	0	3	7	0	7	0	0	0	0	0	0	0	4	0	16	0	37	456
9:25 AM	0	3	10	0	9	2	0	0	0	0	0	0	5	0	8	0	37	445
9:30 AM	0	1	4	0	15	1	0	0	0	0	0	0	2	0	3	0	26	434
9:35 AM	0	1	12	0	10	3	0	0	0	0	0	0	4	0	9	0	39	427
9:40 AM	0	2	6	0	4	1	0	0	0	0	0	0	5	0	4	0	22	399
9:45 AM	0	1	3	0	9	0	0	0	0	0	0	0	7	0	8	0	28	382
9:50 AM	0	6	8	0	7	1	0	0	0	0	0	0	3	0	7	0	32	371
9:55 AM	0	3	3	0	12	5	0	0	0	0	0	0	7	0	16	0	46	388

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	80	104	0	124	48	0	0	0	0	0	0	76	0	204	0	636
Heavy Trucks	0	8	4		8	4	0		0	0	0		0	0	24		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

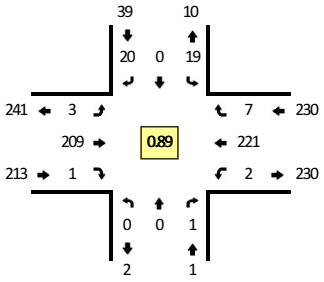
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

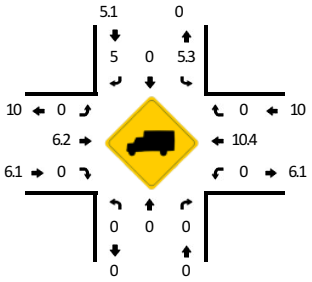
LOCATION: Willow Ave -- OR-219
CITY/STATE: Woodburn, OR

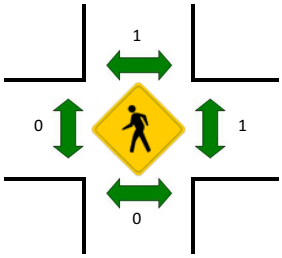
QC JOB #: 15405710
DATE: Wed, Apr 14 2021

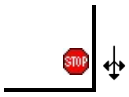
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

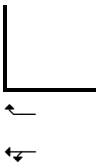


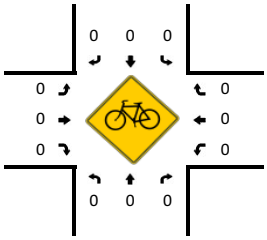
Quality Counts
DATA THAT DRIVES COMMUNITIES

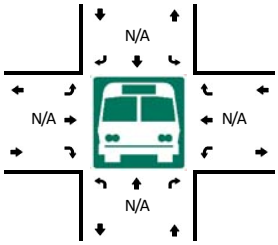


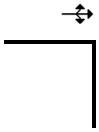


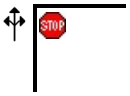


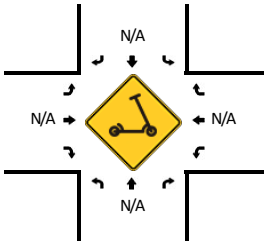












5-Min Count Period Beginning At	Willow Ave (Northbound)				Willow Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	4	0	2	0	0	17	0	0	0	9	1	0	33	
6:05 AM	0	0	0	0	1	0	1	0	0	13	0	0	0	17	0	0	32	
6:10 AM	0	0	0	0	1	0	2	0	1	11	0	0	0	21	1	0	37	
6:15 AM	0	0	0	0	1	0	2	0	0	12	0	0	0	18	0	0	33	
6:20 AM	0	0	0	0	2	0	3	0	0	13	0	0	0	20	0	0	38	
6:25 AM	0	0	0	0	6	0	1	0	0	20	0	0	0	18	1	0	46	
6:30 AM	0	0	0	0	1	0	1	0	1	19	0	0	0	27	1	0	50	
6:35 AM	0	0	0	0	4	0	1	0	0	18	0	0	0	30	0	0	53	
6:40 AM	0	0	0	0	2	0	1	0	0	16	0	0	0	41	2	0	62	
6:45 AM	0	0	0	0	2	0	2	0	0	11	0	0	0	47	0	0	62	
6:50 AM	0	0	0	0	1	0	4	0	0	13	0	0	0	35	0	0	53	
6:55 AM	0	0	0	0	2	0	1	0	2	16	0	0	0	24	2	0	47	546
7:00 AM	0	0	0	0	1	0	1	0	1	13	0	0	0	21	1	0	38	551
7:05 AM	0	0	0	0	5	0	4	0	0	16	0	0	0	16	0	0	41	560
7:10 AM	0	0	0	0	3	0	0	0	0	20	0	0	0	12	0	0	35	558
7:15 AM	0	0	0	0	1	0	1	0	0	16	0	0	0	16	3	0	37	562
7:20 AM	0	0	0	0	5	0	1	0	0	20	0	0	0	25	1	0	52	576
7:25 AM	0	0	0	0	1	0	0	0	1	20	0	0	0	19	0	0	41	571
7:30 AM	0	0	0	0	1	0	3	0	1	18	0	0	0	18	2	0	43	564
7:35 AM	0	0	0	0	1	0	1	0	0	14	0	0	0	21	0	1	38	549
7:40 AM	0	0	0	0	0	0	4	0	0	14	0	0	0	19	0	0	37	524
7:45 AM	0	0	0	0	1	0	2	0	0	20	0	0	0	17	0	0	40	502
7:50 AM	0	0	0	0	0	0	3	0	0	26	0	0	1	20	0	0	50	499
7:55 AM	0	0	1	0	0	0	0	0	0	12	1	0	0	17	0	0	31	483
8:00 AM	0	0	0	0	2	0	0	0	0	29	0	0	0	16	0	0	47	492
8:05 AM	0	0	0	0	0	0	0	0	0	12	0	0	1	10	0	0	23	474
8:10 AM	0	0	0	0	0	0	0	0	0	18	0	0	1	11	0	0	30	469
8:15 AM	0	0	0	0	0	0	0	0	0	22	0	0	1	12	0	0	35	467
8:20 AM	0	0	1	0	1	0	2	0	0	16	0	0	1	6	0	0	27	442
8:25 AM	0	0	0	0	0	0	3	0	1	19	0	0	0	16	0	0	39	440
8:30 AM	0	0	0	0	0	0	4	0	0	14	0	0	0	13	1	0	32	429
8:35 AM	0	0	0	0	1	0	1	0	2	24	0	0	0	15	1	0	44	435
8:40 AM	0	0	0	0	2	1	1	0	1	15	0	0	0	18	3	0	41	439
8:45 AM	0	0	0	0	2	0	1	0	0	29	0	0	0	12	2	0	46	445
8:50 AM	0	0	0	0	0	0	1	0	0	21	0	0	0	11	0	0	33	428
8:55 AM	0	0	0	0	4	0	0	0	2	10	0	0	0	13	1	0	30	427
9:00 AM	0	0	0	0	1	0	0	0	2	9	0	0	0	27	1	0	40	420
9:05 AM	0	0	0	0	2	0	0	0	0	15	0	0	0	15	1	0	33	430

5-Min Count Period Beginning At	Willow Ave (Northbound)				Willow Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	0	0	0	0	1	0	2	0	2	14	0	0	0	10	1	0	30	430
9:15 AM	0	0	0	0	3	0	0	0	0	13	0	0	0	8	1	0	25	420
9:20 AM	0	0	1	0	1	0	0	0	1	13	0	0	0	22	2	0	40	433
9:25 AM	0	0	0	0	2	0	0	0	0	18	0	0	0	11	2	0	33	427
9:30 AM	0	0	0	0	1	0	0	0	1	17	0	0	0	4	0	0	23	418
9:35 AM	0	0	0	0	1	0	0	0	1	22	0	0	0	15	3	0	42	416
9:40 AM	0	0	0	0	3	0	0	0	2	12	0	0	0	8	4	0	29	404
9:45 AM	0	0	0	0	2	0	0	0	0	13	0	0	0	13	3	1	32	390
9:50 AM	0	0	0	0	1	0	0	0	0	14	0	0	0	14	1	0	30	387
9:55 AM	0	0	0	0	2	0	0	0	1	11	0	0	0	19	1	0	34	391

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	28	0	16	0	8	232	0	0	0	248	12	0	544
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	24	0		36
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

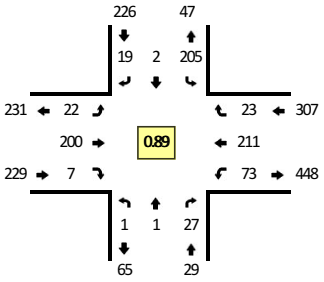
Type of peak hour being reported: User-Defined

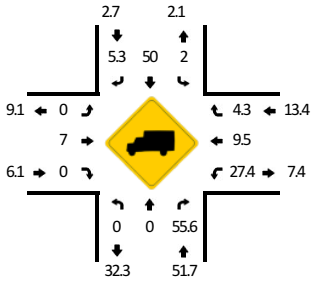
Method for determining peak hour: Total Entering Volume

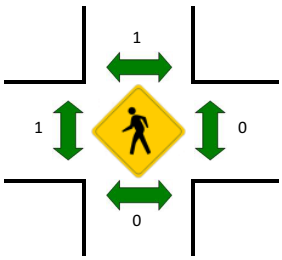
LOCATION: S Woodland Ave -- OR-219
CITY/STATE: Woodburn, OR

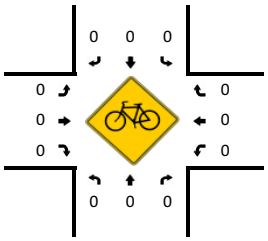
QC JOB #: 15405712
DATE: Wed, Apr 14 2021

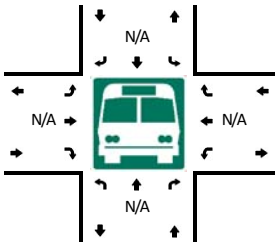
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:20 AM -- 7:35 AM

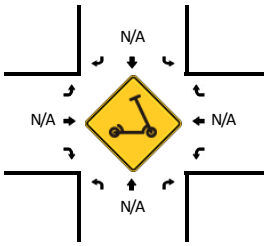












5-Min Count Period Beginning At	S Woodland Ave (Northbound)				S Woodland Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	3	0	13	0	0	0	3	18	0	0	3	10	1	0	51	
6:05 AM	0	0	15	0	12	0	1	0	0	13	0	0	4	18	3	0	66	
6:10 AM	2	0	8	0	12	0	1	1	1	13	0	0	4	18	1	0	61	
6:15 AM	0	0	5	0	16	0	0	0	0	13	0	0	4	19	1	1	59	
6:20 AM	0	0	6	0	8	0	2	0	1	12	0	0	3	19	2	2	55	
6:25 AM	0	0	1	0	17	0	0	0	2	22	0	0	2	21	2	0	67	
6:30 AM	0	0	1	0	13	0	1	0	1	22	1	0	2	23	2	0	66	
6:35 AM	0	1	1	0	10	2	1	0	1	20	0	0	3	31	3	3	76	
6:40 AM	0	0	1	0	17	0	2	0	3	16	0	0	6	47	1	2	95	
6:45 AM	0	0	3	0	14	0	0	0	2	11	0	0	2	46	1	1	80	
6:50 AM	0	0	3	0	13	0	2	0	1	13	0	0	5	28	3	1	69	
6:55 AM	0	0	1	0	13	1	1	0	4	16	0	0	7	24	0	0	67	812
7:00 AM	0	0	4	0	15	0	0	0	1	13	0	0	5	20	3	5	66	827
7:05 AM	0	0	1	0	20	0	2	0	0	20	1	0	0	17	1	0	62	823
7:10 AM	0	0	2	0	13	1	1	0	3	22	0	0	3	7	0	1	53	815
7:15 AM	0	0	3	0	12	0	0	0	2	18	0	0	4	25	0	3	67	823
7:20 AM	0	0	3	0	26	0	2	0	3	15	1	0	9	20	1	1	81	849
7:25 AM	0	0	2	0	16	0	3	0	3	17	0	0	6	18	4	0	69	851
7:30 AM	0	0	4	0	23	0	1	1	1	15	1	0	3	18	2	2	71	856
7:35 AM	0	0	1	0	16	0	4	0	0	14	0	0	3	20	2	1	61	841
7:40 AM	0	0	2	0	22	0	1	0	3	13	1	0	4	16	1	1	64	810
7:45 AM	0	1	2	0	18	1	1	0	1	21	2	0	5	15	4	0	71	801
7:50 AM	1	0	2	0	10	0	1	0	3	19	1	0	9	18	3	2	69	801
7:55 AM	0	0	1	0	13	0	3	0	2	13	0	0	5	17	2	1	57	791
8:00 AM	1	1	0	0	16	0	2	0	3	27	1	0	3	9	2	2	67	792
8:05 AM	0	0	1	0	15	0	1	0	1	14	0	0	9	10	1	1	53	783
8:10 AM	0	0	1	0	13	0	0	0	3	14	0	0	6	12	1	3	53	783
8:15 AM	0	0	1	0	14	0	0	0	2	20	0	0	1	12	3	1	54	770
8:20 AM	0	1	1	0	19	0	1	0	0	18	0	0	2	9	1	4	56	745
8:25 AM	0	1	2	0	13	0	1	0	2	17	0	0	3	12	3	0	54	730
8:30 AM	0	0	5	0	14	1	1	0	0	13	0	0	3	12	4	4	57	716
8:35 AM	0	0	2	0	12	0	2	0	2	23	0	0	3	15	1	1	61	716
8:40 AM	0	0	4	0	16	0	3	0	2	11	0	0	4	19	7	4	70	722
8:45 AM	1	0	1	0	17	0	1	0	2	31	0	0	1	15	2	1	72	723
8:50 AM	0	0	7	0	13	2	1	0	6	15	2	0	2	10	3	1	62	716
8:55 AM	0	0	4	0	8	0	0	0	2	13	0	0	4	13	4	2	50	709
9:00 AM	2	2	4	0	18	0	2	0	1	10	1	0	1	21	5	1	68	710
9:05 AM	0	0	1	0	16	1	2	0	1	15	0	0	4	15	2	1	58	715

5-Min Count Period Beginning At	S Woodland Ave (Northbound)				S Woodland Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	0	0	3	0	14	0	2	0	2	10	0	0	0	9	1	2	43	705
9:15 AM	0	0	2	0	16	0	0	0	2	11	0	0	3	8	1	2	45	696
9:20 AM	0	0	4	0	20	1	1	0	0	16	0	0	1	24	1	3	71	711
9:25 AM	0	0	1	0	15	1	0	0	5	14	0	0	3	12	1	0	52	709
9:30 AM	0	0	4	0	16	0	0	0	4	18	0	0	4	4	6	0	56	708
9:35 AM	1	1	3	0	22	1	0	0	2	18	1	0	2	16	4	2	73	720
9:40 AM	0	0	4	0	11	0	3	0	1	13	1	0	5	10	2	0	50	700
9:45 AM	0	0	2	0	15	0	0	0	4	14	0	0	3	18	4	3	63	691
9:50 AM	1	1	4	0	27	1	2	1	1	12	0	0	3	11	2	2	68	697
9:55 AM	0	0	4	0	17	0	0	0	1	12	0	0	7	21	6	0	68	715

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	36	0	260	0	24	4	28	188	8	0	72	224	28	12	884
Heavy Trucks	0	0	28		12	0	0		0	12	0		24	20	0		96
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

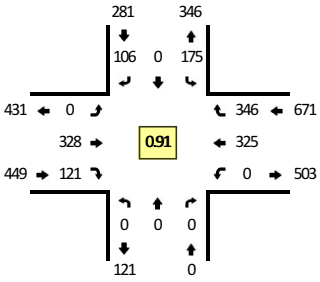
Type of peak hour being reported: User-Defined

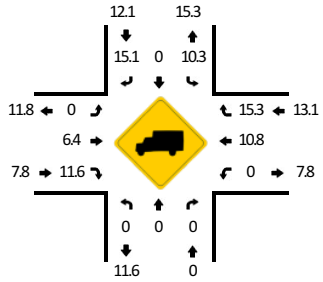
Method for determining peak hour: Total Entering Volume

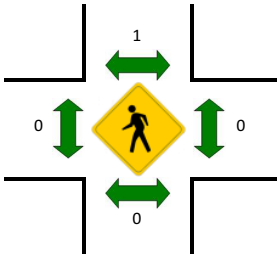
LOCATION: I-5 SB Ramps -- OR-219
CITY/STATE: Woodburn, OR

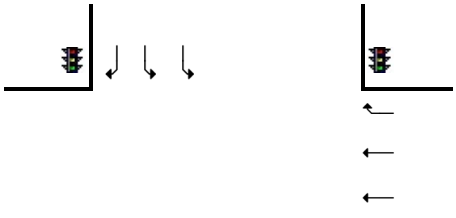
QC JOB #: 15405714
DATE: Wed, Apr 14 2021

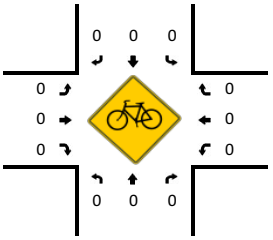
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:25 AM -- 7:40 AM

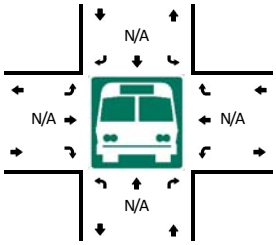


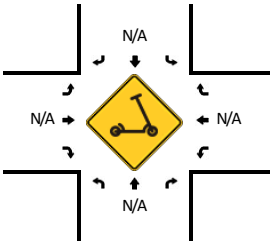












5-Min Count Period Beginning At	I-5 SB Ramps (Northbound)				I-5 SB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	7	0	2	0	0	24	5	0	0	15	23	0	76	
6:05 AM	0	0	0	0	5	0	6	0	0	26	14	0	0	24	27	0	102	
6:10 AM	0	0	0	0	12	0	7	0	0	22	11	0	0	25	23	0	100	
6:15 AM	0	0	0	0	5	0	6	0	0	29	6	0	0	24	26	0	96	
6:20 AM	0	0	0	0	8	0	8	0	0	19	8	0	0	19	24	0	86	
6:25 AM	0	0	0	0	8	0	7	0	0	24	11	0	0	27	20	0	97	
6:30 AM	0	0	0	0	15	0	11	0	0	29	11	0	0	32	28	0	126	
6:35 AM	0	0	0	0	9	0	8	0	0	26	5	0	0	41	36	0	125	
6:40 AM	0	0	0	0	15	0	1	0	0	30	8	0	0	50	25	0	129	
6:45 AM	0	0	0	0	19	0	8	0	0	27	6	0	0	55	19	0	134	
6:50 AM	0	0	0	0	12	0	11	0	0	24	4	0	0	41	22	0	114	
6:55 AM	0	0	0	0	19	0	7	0	0	24	8	0	0	35	26	0	119	1304
7:00 AM	0	0	0	0	13	0	7	0	0	24	11	0	0	27	22	0	104	1332
7:05 AM	0	0	0	0	8	0	13	0	0	32	7	0	0	23	33	0	116	1346
7:10 AM	0	0	0	0	15	0	6	0	0	26	14	0	0	13	31	0	105	1351
7:15 AM	0	0	0	0	8	0	9	0	0	26	11	0	0	35	24	0	113	1368
7:20 AM	0	0	0	0	14	0	7	0	0	30	11	0	0	32	29	0	123	1405
7:25 AM	0	0	0	0	13	0	8	0	0	33	7	0	0	25	29	0	115	1423
7:30 AM	0	0	0	0	18	0	10	0	0	34	9	0	0	21	34	0	126	1423
7:35 AM	0	0	0	0	18	0	10	0	0	22	11	0	0	34	50	0	145	1443
7:40 AM	0	0	0	0	11	0	10	0	0	20	15	0	0	25	34	0	115	1429
7:45 AM	0	0	0	0	23	0	7	0	0	31	11	0	0	30	20	0	122	1417
7:50 AM	0	0	0	0	19	0	13	0	0	27	8	0	0	35	15	0	117	1420
7:55 AM	0	0	0	0	15	0	6	0	0	23	6	0	0	25	25	0	100	1401
8:00 AM	0	0	0	0	18	0	8	0	0	31	10	0	0	19	23	0	109	1406
8:05 AM	0	0	0	0	16	0	9	0	0	18	15	0	0	23	26	0	107	1397
8:10 AM	0	0	0	0	20	0	13	0	0	19	11	0	0	20	19	0	102	1394
8:15 AM	0	0	0	0	15	0	7	0	0	28	7	0	0	22	29	0	108	1389
8:20 AM	0	0	0	0	14	0	10	0	0	30	11	0	0	17	23	0	105	1371
8:25 AM	0	0	0	0	20	0	6	0	0	20	11	0	0	17	27	1	102	1358
8:30 AM	0	0	0	0	19	0	7	0	0	22	14	0	0	25	32	0	119	1351
8:35 AM	0	0	0	0	20	0	11	0	0	30	9	0	0	22	29	0	121	1327
8:40 AM	0	0	0	0	18	0	10	0	0	19	15	0	0	32	33	0	127	1339
8:45 AM	0	0	0	0	21	0	9	0	0	36	15	0	0	23	15	0	119	1336
8:50 AM	0	0	0	0	20	0	9	0	0	26	10	0	0	19	25	0	109	1328
8:55 AM	0	0	0	0	14	0	8	0	0	24	6	0	0	38	18	0	108	1336
9:00 AM	0	0	0	0	15	0	10	0	0	22	6	0	0	18	21	0	92	1319
9:05 AM	0	0	0	0	19	0	12	0	0	28	6	0	0	19	18	0	102	1314

5-Min Count Period Beginning At	I-5 SB Ramps (Northbound)				I-5 SB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	0	0	0	0	21	0	7	0	0	21	11	0	0	20	25	0	105	1317
9:15 AM	0	0	0	0	25	0	9	0	0	16	11	0	0	24	23	0	108	1317
9:20 AM	0	0	0	0	20	0	11	0	0	30	13	0	0	26	25	0	125	1337
9:25 AM	0	0	0	0	17	0	4	0	0	21	8	0	0	20	18	0	88	1323
9:30 AM	0	0	0	0	20	0	12	0	0	27	8	0	0	23	19	0	109	1313
9:35 AM	0	0	0	0	17	0	9	0	0	37	8	0	0	36	23	0	130	1322
9:40 AM	0	0	0	0	14	0	16	0	0	25	7	0	0	27	17	0	106	1301
9:45 AM	0	0	0	0	31	0	13	0	0	25	8	0	0	27	19	0	123	1305
9:50 AM	0	0	0	0	26	0	12	0	0	36	7	0	0	26	22	0	129	1325
9:55 AM	0	0	0	0	23	0	15	0	0	27	9	0	0	39	19	0	132	1349

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	196	0	112	0	0	356	108	0	0	320	452	0	1544
Heavy Trucks	0	0	0		24	0	12		0	24	16		0	36	56		168
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

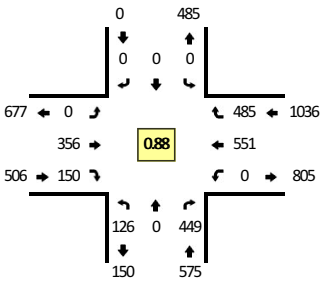
Type of peak hour being reported: User-Defined

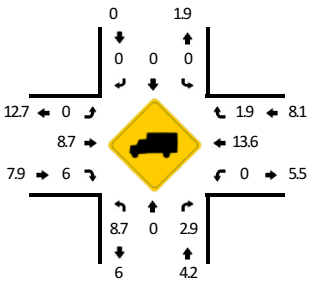
Method for determining peak hour: Total Entering Volume

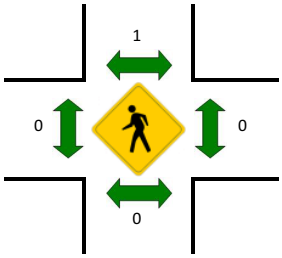
LOCATION: I-5 NB Ramps -- OR-219
CITY/STATE: Woodburn, OR

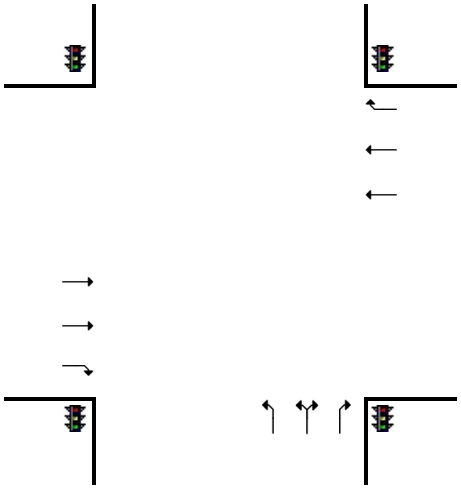
QC JOB #: 15405716
DATE: Wed, Apr 14 2021

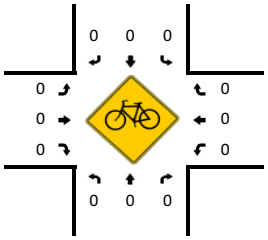
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:25 AM -- 7:40 AM

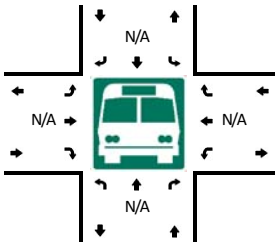


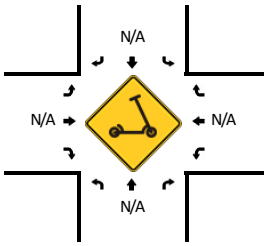












5-Min Count Period Beginning At	I-5 NB Ramps (Northbound)				I-5 NB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	7	0	23	0	0	0	0	0	0	19	14	0	0	29	53	1	146	
6:05 AM	4	0	21	0	0	0	0	0	0	15	14	0	0	47	53	0	154	
6:10 AM	11	0	23	0	0	0	0	0	0	14	19	0	0	38	47	0	152	
6:15 AM	12	0	20	0	0	0	0	0	0	15	21	0	0	42	40	0	150	
6:20 AM	8	0	23	0	0	0	0	0	0	14	11	0	0	35	55	0	146	
6:25 AM	15	0	34	0	0	0	0	0	0	14	16	0	0	30	48	0	157	
6:30 AM	14	0	31	0	0	0	0	0	0	30	14	0	0	49	44	0	182	
6:35 AM	19	0	33	0	0	0	0	0	0	24	13	0	0	57	37	0	183	
6:40 AM	25	0	43	0	0	0	0	0	0	27	18	0	0	51	49	0	213	
6:45 AM	32	0	46	0	0	0	0	0	0	23	13	0	0	35	44	0	193	
6:50 AM	20	0	49	0	0	0	0	0	0	33	13	0	0	45	38	0	198	
6:55 AM	22	0	30	0	0	0	0	0	0	30	14	0	0	38	41	0	175	2049
7:00 AM	10	0	36	0	0	0	0	0	0	25	11	0	0	40	50	0	172	2075
7:05 AM	6	0	27	0	0	0	0	0	0	26	14	0	0	51	43	0	167	2088
7:10 AM	9	0	37	0	0	0	0	0	0	23	19	0	0	29	44	0	161	2097
7:15 AM	9	0	25	0	0	0	0	0	0	21	10	0	0	52	38	0	155	2102
7:20 AM	14	0	41	0	0	0	0	0	0	28	18	0	0	49	36	0	186	2142
7:25 AM	6	0	47	0	0	0	0	0	0	32	19	0	0	50	44	0	198	2183
7:30 AM	9	0	34	0	0	0	0	0	0	37	17	0	0	48	42	0	187	2188
7:35 AM	14	0	40	0	0	0	0	0	0	33	8	0	0	68	53	0	216	2221
7:40 AM	11	0	36	0	0	0	0	0	0	23	5	0	0	50	32	0	157	2165
7:45 AM	15	0	54	0	0	0	0	0	0	36	16	0	0	34	38	0	193	2165
7:50 AM	15	0	36	0	0	0	0	0	0	37	9	0	0	38	35	0	170	2137
7:55 AM	8	0	36	0	0	0	0	0	0	35	4	0	0	42	30	0	155	2117
8:00 AM	5	0	31	0	0	0	0	0	0	36	10	0	0	39	32	0	153	2098
8:05 AM	7	0	40	0	0	0	0	0	0	26	6	0	0	37	36	0	152	2083
8:10 AM	7	0	29	0	0	0	0	0	0	36	7	0	0	34	33	0	146	2068
8:15 AM	6	0	29	0	0	0	0	0	0	33	10	0	0	45	34	1	158	2071
8:20 AM	9	0	33	0	0	0	0	0	0	29	15	0	0	34	25	0	145	2030
8:25 AM	4	0	32	0	0	0	0	0	0	35	4	0	0	42	28	0	145	1977
8:30 AM	9	0	33	0	0	0	0	0	0	33	11	0	0	50	15	0	151	1941
8:35 AM	12	0	24	0	0	0	0	0	0	41	10	0	0	38	27	0	152	1877
8:40 AM	5	0	19	0	0	0	0	0	0	31	7	0	0	60	31	0	153	1873
8:45 AM	5	0	31	0	0	0	0	0	0	41	14	0	0	33	26	0	150	1830
8:50 AM	9	0	29	0	0	0	0	0	0	43	5	0	0	37	12	0	135	1795
8:55 AM	11	0	30	0	0	0	0	0	0	32	6	0	0	39	19	0	137	1777
9:00 AM	8	0	27	0	0	0	0	0	0	22	11	0	0	35	21	0	124	1748
9:05 AM	7	0	21	0	0	0	0	0	0	32	14	0	0	30	23	0	127	1723

5-Min Count Period Beginning At	I-5 NB Ramps (Northbound)				I-5 NB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	5	0	21	0	0	0	0	0	0	36	5	0	0	37	25	0	129	1706
9:15 AM	11	0	25	0	0	0	0	0	0	28	8	0	0	36	29	0	137	1685
9:20 AM	10	0	19	0	0	0	0	0	0	39	10	0	0	41	17	0	136	1676
9:25 AM	6	0	28	0	0	0	0	0	0	35	7	0	0	33	28	0	137	1668
9:30 AM	9	0	31	0	0	0	0	0	0	36	13	0	0	32	22	0	143	1660
9:35 AM	15	0	24	0	0	0	0	0	0	39	12	0	0	45	35	0	170	1678
9:40 AM	11	0	32	0	0	0	0	0	0	31	6	0	0	30	25	0	135	1660
9:45 AM	14	0	36	0	0	0	0	0	0	43	12	0	0	40	17	0	162	1672
9:50 AM	10	0	37	0	0	0	0	0	0	47	5	0	0	33	24	0	156	1693
9:55 AM	11	0	24	0	0	0	0	0	0	51	6	0	0	49	24	0	165	1721

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	116	0	484	0	0	0	0	0	0	408	176	0	0	664	556	0	2404
Heavy Trucks	12	0	12		0	0	0		0	40	12		0	80	4		160
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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: Butteville Rd NE -- Parr Rd NE

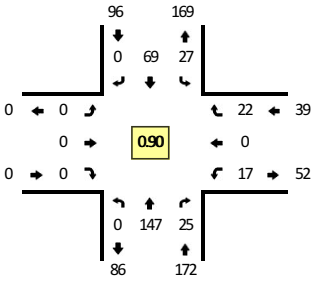
QC JOB #: 15405718

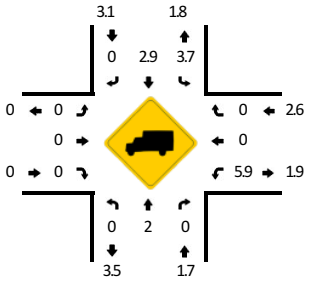
CITY/STATE: Woodburn, OR

DATE: Wed, Apr 14 2021

Peak-Hour: 7:00 AM -- 8:00 AM

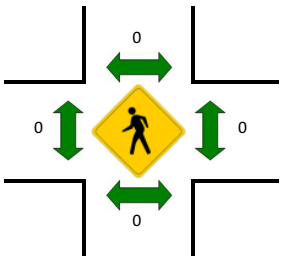
Peak 15-Min: 7:40 AM -- 7:55 AM

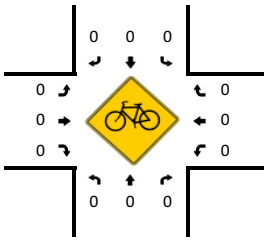


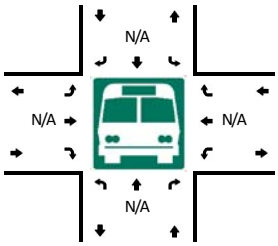


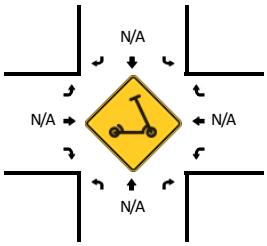
Quality Counts

DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				Parr Rd NE (Eastbound)				Parr Rd NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	9	0	0	1	0	0	0	0	0	0	0	0	0	2	0	12	
6:05 AM	0	12	1	0	2	1	0	0	0	0	0	0	1	0	1	0	18	
6:10 AM	0	12	0	0	3	0	0	0	0	0	0	0	1	0	1	0	17	
6:15 AM	0	11	0	0	0	3	0	0	0	0	0	0	3	0	4	0	21	
6:20 AM	0	14	0	0	1	5	0	0	0	0	0	0	3	0	2	0	25	
6:25 AM	0	14	0	0	1	8	0	0	0	0	0	0	0	0	3	0	26	
6:30 AM	0	16	0	0	3	4	0	0	0	0	0	0	1	0	4	0	28	
6:35 AM	0	17	1	0	3	4	0	0	0	0	0	0	2	0	4	0	31	
6:40 AM	0	16	0	0	4	4	0	0	0	0	0	0	2	0	11	0	37	
6:45 AM	0	13	0	0	3	3	0	0	0	0	0	0	0	0	2	0	21	
6:50 AM	0	14	1	0	5	5	0	0	0	0	0	0	1	0	2	0	28	
6:55 AM	0	10	1	0	6	3	0	0	0	0	0	0	1	0	3	0	24	288
7:00 AM	0	8	1	0	1	4	0	0	0	0	0	0	0	0	1	0	15	291
7:05 AM	0	18	4	0	1	4	0	0	0	0	0	0	0	0	3	0	30	303
7:10 AM	0	14	3	0	3	2	0	0	0	0	0	0	4	0	0	0	26	312
7:15 AM	0	11	3	0	5	5	0	0	0	0	0	0	1	0	1	0	26	317
7:20 AM	0	12	2	0	3	9	0	0	0	0	0	0	1	0	2	0	29	321
7:25 AM	0	14	0	0	2	7	0	0	0	0	0	0	2	0	2	0	27	322
7:30 AM	0	11	0	0	2	6	0	0	0	0	0	0	3	0	3	0	25	319
7:35 AM	0	10	2	0	4	1	0	0	0	0	0	0	1	0	0	0	18	306
7:40 AM	0	15	1	0	0	11	0	0	0	0	0	0	1	0	1	0	29	298
7:45 AM	0	15	3	0	2	8	0	0	0	0	0	0	2	0	4	0	34	311
7:50 AM	0	11	2	0	1	4	0	0	0	0	0	0	1	0	3	0	22	305
7:55 AM	0	8	4	0	3	8	0	0	0	0	0	0	1	0	2	0	26	307
8:00 AM	0	8	2	0	1	2	0	0	0	0	0	0	1	0	3	0	17	309
8:05 AM	0	8	1	0	4	5	0	0	0	0	0	0	0	0	2	0	20	299
8:10 AM	0	10	2	0	2	5	0	0	0	0	0	0	2	0	0	0	21	294
8:15 AM	0	3	0	0	0	2	0	0	0	0	0	0	0	0	1	0	6	274
8:20 AM	0	9	3	0	3	3	0	0	0	0	0	0	0	0	1	0	19	264
8:25 AM	0	7	1	0	2	11	0	0	0	0	0	0	0	0	0	0	21	258
8:30 AM	0	8	0	0	7	8	0	0	0	0	0	0	0	0	2	0	25	258
8:35 AM	0	9	3	0	0	9	0	0	0	0	0	0	1	0	1	0	23	263
8:40 AM	0	11	1	0	1	7	0	0	0	0	0	0	1	0	7	0	28	262
8:45 AM	0	9	0	0	1	7	0	0	0	0	0	0	1	0	3	0	21	249
8:50 AM	0	11	3	0	1	4	0	0	0	0	0	0	0	0	2	0	21	248
8:55 AM	0	6	0	0	4	4	0	0	0	0	0	0	3	0	0	0	17	239
9:00 AM	0	10	1	0	3	3	0	0	0	0	0	0	1	0	2	0	20	242
9:05 AM	0	7	3	0	3	4	0	0	0	0	0	0	1	0	0	0	18	240

5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				Parr Rd NE (Eastbound)				Parr Rd NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	0	6	0	0	0	1	0	0	0	0	0	0	0	0	5	0	12	231
9:15 AM	0	8	5	0	1	4	0	0	0	0	0	0	0	0	1	0	19	244
9:20 AM	0	6	0	0	2	1	0	0	0	0	0	0	3	0	1	0	13	238
9:25 AM	0	5	0	0	3	4	0	0	0	0	0	0	1	0	6	0	19	236
9:30 AM	0	7	2	0	1	3	0	0	0	0	0	0	1	0	3	0	17	228
9:35 AM	0	9	0	0	1	6	0	0	0	0	0	0	1	0	3	0	20	225
9:40 AM	0	5	2	0	1	3	0	0	0	0	0	0	2	0	2	0	15	212
9:45 AM	0	2	1	0	2	7	0	0	0	0	0	0	0	0	1	0	13	204
9:50 AM	0	12	2	0	1	2	0	0	0	0	0	0	1	0	1	0	19	202
9:55 AM	0	8	2	0	0	12	0	0	0	0	0	0	1	0	0	0	23	208

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	164	24	0	12	92	0	0	0	0	0	0	16	0	32	0	340
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

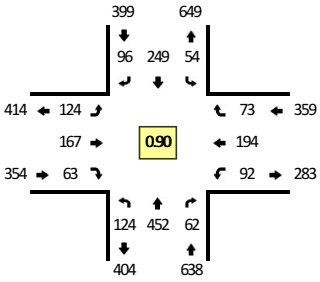
Type of peak hour being reported: User-Defined

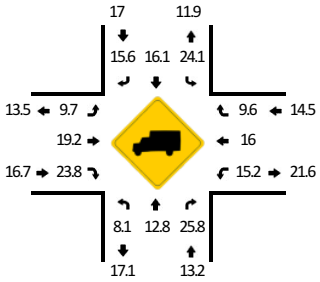
Method for determining peak hour: Total Entering Volume

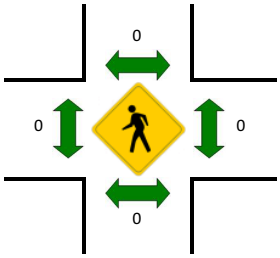
LOCATION: OR 99E -- OR 214
CITY/STATE: Woodburn, OR

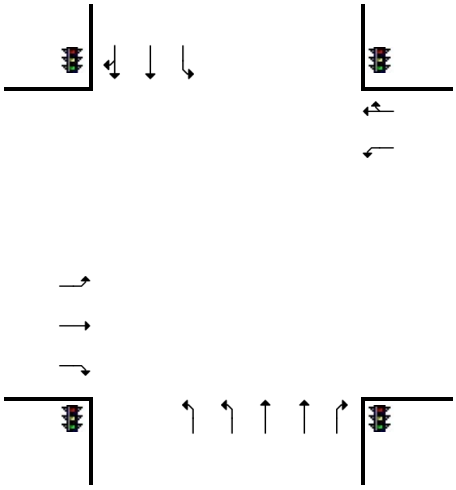
QC JOB #: 15462409
DATE: Tue, May 25 2021

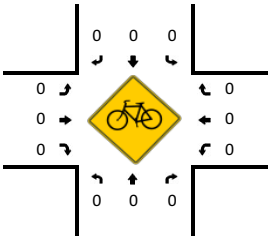
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

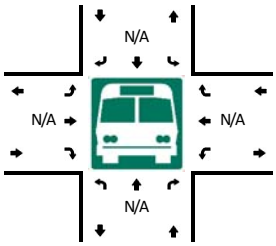


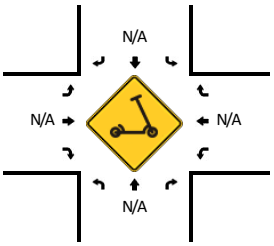












5-Min Count Period Beginning At	OR 99E (Northbound)				OR 99E (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	2	44	9	0	1	18	4	0	11	8	5	0	4	5	3	0	114	
6:05 AM	3	34	10	0	1	15	7	0	9	12	4	0	0	16	6	0	117	
6:10 AM	2	43	13	0	3	11	2	0	10	13	3	0	5	10	6	0	121	
6:15 AM	5	46	5	0	2	7	3	0	7	18	4	0	2	17	8	0	124	
6:20 AM	4	29	4	0	1	17	5	0	11	12	2	0	2	20	4	0	111	
6:25 AM	5	41	10	0	5	19	3	0	13	21	5	0	1	15	5	0	143	
6:30 AM	2	40	8	0	4	13	8	0	9	17	7	0	7	12	10	0	137	
6:35 AM	2	56	3	0	2	17	8	0	7	22	6	0	5	20	6	0	154	
6:40 AM	1	50	10	0	8	29	5	0	8	9	2	0	4	12	7	0	145	
6:45 AM	10	35	7	0	5	24	5	0	15	22	1	0	8	20	8	0	160	
6:50 AM	9	42	6	0	6	24	10	0	16	15	3	0	6	13	8	0	158	
6:55 AM	6	44	8	0	6	14	2	0	7	13	3	0	4	11	7	0	125	1609
7:00 AM	12	28	4	0	7	19	10	0	8	20	9	0	5	16	13	0	151	1646
7:05 AM	8	42	6	0	3	14	5	0	10	12	2	0	5	14	7	0	128	1657
7:10 AM	7	41	4	0	3	17	7	0	9	14	3	0	3	12	2	0	122	1658
7:15 AM	6	29	7	0	6	16	6	0	15	12	4	0	15	12	9	0	137	1671
7:20 AM	10	37	5	0	5	30	12	0	11	17	4	0	6	11	5	0	153	1713
7:25 AM	13	34	4	0	7	20	11	0	14	17	3	0	8	13	7	0	151	1721
7:30 AM	8	45	5	0	3	20	6	0	11	20	5	0	9	22	0	0	154	1738
7:35 AM	6	28	7	0	9	22	9	0	5	10	4	0	7	15	6	0	128	1712
7:40 AM	11	42	3	0	0	20	5	0	13	15	4	0	11	21	8	0	153	1720
7:45 AM	11	42	5	0	6	23	8	0	7	16	9	0	7	25	7	0	166	1726
7:50 AM	17	45	11	0	1	22	12	0	7	7	9	0	10	19	6	0	166	1734
7:55 AM	15	39	1	0	4	26	5	0	14	7	7	0	6	14	3	0	141	1750
8:00 AM	11	33	4	0	2	17	6	0	11	12	8	0	15	18	7	0	144	1743
8:05 AM	13	34	5	0	5	13	6	0	7	9	12	0	13	19	7	0	143	1758
8:10 AM	5	31	3	0	1	16	10	1	8	13	6	0	6	12	4	0	116	1752
8:15 AM	7	15	7	0	9	18	9	0	8	18	8	0	3	19	4	0	125	1740
8:20 AM	11	39	6	0	5	11	5	0	7	12	6	0	11	22	4	0	139	1726
8:25 AM	13	23	4	0	5	14	8	0	9	6	10	0	11	15	5	0	123	1698
8:30 AM	12	28	7	0	3	24	10	0	8	8	10	0	13	10	4	0	137	1681
8:35 AM	15	22	5	0	6	22	5	0	9	15	9	0	11	13	8	0	140	1693
8:40 AM	5	24	5	0	3	25	10	0	8	14	11	0	8	14	6	0	133	1673
8:45 AM	12	17	9	0	4	11	9	0	9	13	18	0	11	13	5	0	131	1638
8:50 AM	7	28	7	0	4	30	9	0	12	7	7	0	12	15	1	0	139	1611
8:55 AM	9	19	4	0	5	19	5	0	9	13	10	0	10	18	4	0	125	1595
9:00 AM	14	30	9	0	4	21	11	0	5	7	11	0	6	21	5	0	144	1595
9:05 AM	13	22	8	0	7	23	9	0	8	16	11	0	13	18	5	0	153	1605

5-Min Count Period Beginning At	OR 99E (Northbound)				OR 99E (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
9:10 AM	17	24	2	0	4	18	10	0	12	11	12	0	9	15	2	0	136	1625
9:15 AM	12	29	8	0	3	19	14	0	6	18	12	0	6	8	6	0	141	1641
9:20 AM	17	20	5	0	6	22	9	0	7	16	16	0	1	10	1	0	130	1632
9:25 AM	12	28	2	0	6	26	13	0	5	12	16	0	15	14	5	0	154	1663
9:30 AM	13	22	4	0	4	18	8	0	11	17	7	0	9	16	4	0	133	1659
9:35 AM	15	17	4	0	5	23	17	0	6	11	13	0	7	21	5	0	144	1663
9:40 AM	19	29	6	0	5	13	10	0	5	19	22	0	5	9	5	0	147	1677
9:45 AM	10	18	3	0	8	23	12	0	14	25	15	0	9	17	5	0	159	1705
9:50 AM	17	25	4	0	2	26	15	1	6	19	16	0	9	17	9	0	166	1732
9:55 AM	9	14	2	0	5	30	12	0	13	19	12	0	11	10	4	0	141	1748

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	156	516	76	0	28	260	100	0	108	152	88	0	112	260	84	0	1940
Heavy Trucks	4	76	28		4	72	12		8	32	20		20	36	8		320
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 7/14/2021 8:13 AM

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: Arbor Grove Rd NE (north leg of Arbor Grove) -- OR 219

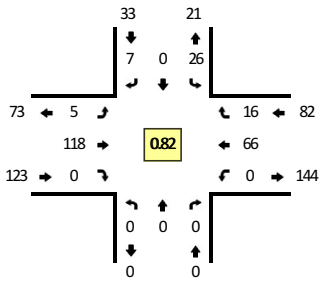
QC JOB #: 15462402

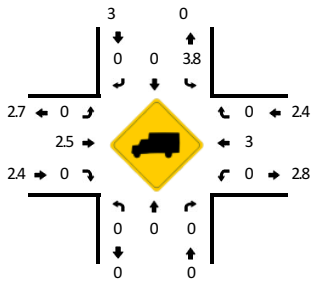
CITY/STATE: Marion, OR

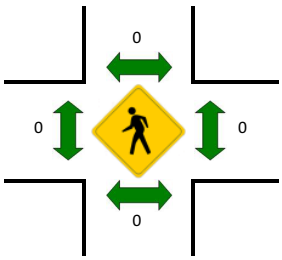
DATE: Tue, May 25 2021

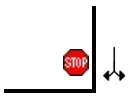
Peak-Hour: 5:30 PM -- 6:30 PM

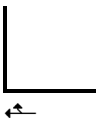
Peak 15-Min: 5:30 PM -- 5:45 PM

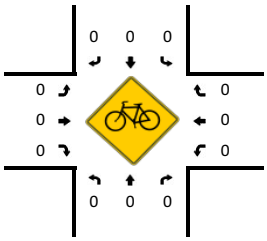


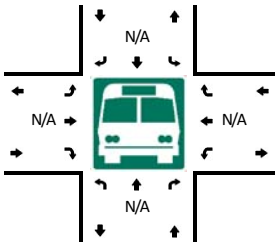


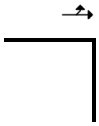


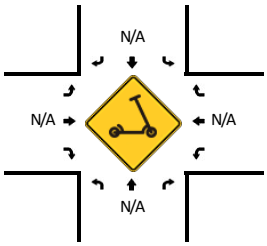












5-Min Count Period Beginning At	Arbor Grove Rd NE (north leg of Arbor Grove) (Northbound)				Arbor Grove Rd NE (north leg of Arbor Grove) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	2	0	0	0	0	7	0	0	0	8	1	0	18	
3:05 PM	0	0	0	0	0	0	0	0	0	8	0	0	0	2	0	0	10	
3:10 PM	0	0	0	0	2	0	0	0	0	9	0	0	0	5	5	0	21	
3:15 PM	0	0	0	0	3	0	1	0	0	7	0	0	0	4	3	0	18	
3:20 PM	0	0	0	0	3	0	0	0	1	9	0	0	0	4	3	0	20	
3:25 PM	0	0	0	0	2	0	0	0	0	7	0	0	0	8	1	0	18	
3:30 PM	0	0	0	0	3	0	1	0	0	7	0	0	0	7	0	0	18	
3:35 PM	0	0	0	0	5	0	1	0	0	3	0	0	0	3	4	0	16	
3:40 PM	0	0	0	0	7	0	0	0	0	4	0	0	0	10	1	0	22	
3:45 PM	0	0	0	0	3	0	0	0	0	7	0	0	0	8	5	0	23	
3:50 PM	0	0	0	0	3	0	1	0	1	12	0	0	0	14	3	0	34	
3:55 PM	0	0	0	0	4	0	1	0	0	8	0	0	0	5	3	0	21	239
4:00 PM	0	0	0	0	4	0	0	0	1	13	0	0	0	4	2	0	24	245
4:05 PM	0	0	0	0	7	0	0	0	2	11	0	0	0	6	2	0	28	263
4:10 PM	0	0	0	0	5	0	1	0	0	15	0	0	0	5	1	0	27	269
4:15 PM	0	0	0	0	6	0	2	0	1	11	0	0	0	11	1	0	32	283
4:20 PM	0	0	0	0	5	0	2	0	2	8	0	0	0	10	3	0	30	293
4:25 PM	0	0	0	0	3	0	2	0	0	15	0	0	0	4	0	0	24	299
4:30 PM	0	0	0	0	6	0	4	0	1	10	0	0	0	8	2	0	31	312
4:35 PM	0	0	0	0	19	0	2	0	0	18	0	0	0	5	3	0	47	343
4:40 PM	0	0	0	0	12	0	2	0	1	10	0	0	0	6	2	0	33	354
4:45 PM	0	0	0	0	5	0	2	0	0	15	0	0	0	9	3	0	34	365
4:50 PM	0	0	0	0	8	0	2	0	1	8	0	0	0	8	2	0	29	360
4:55 PM	0	0	0	0	1	0	3	0	0	15	0	0	0	7	1	0	27	366
5:00 PM	0	0	0	0	9	0	2	0	1	8	0	0	0	7	4	0	31	373
5:05 PM	0	0	0	0	4	0	1	0	0	17	0	0	0	11	5	0	38	383
5:10 PM	0	0	0	0	7	0	0	0	0	13	0	0	0	12	4	0	36	392
5:15 PM	0	0	0	0	5	0	1	0	2	19	0	0	0	9	3	0	39	399
5:20 PM	0	0	0	0	3	0	1	0	1	20	0	0	0	4	2	0	31	400
5:25 PM	0	0	0	0	2	0	2	0	1	13	0	0	0	4	1	0	23	399
5:30 PM	0	0	0	0	2	0	1	0	0	10	0	0	0	10	3	0	26	394
5:35 PM	0	0	0	0	2	0	1	0	0	14	0	0	0	5	4	0	26	373
5:40 PM	0	0	0	0	2	0	1	0	2	13	0	0	0	3	0	0	21	361
5:45 PM	0	0	0	0	3	0	1	0	0	4	0	0	0	6	1	0	15	342
5:50 PM	0	0	0	0	4	0	0	0	0	14	0	0	0	7	2	0	27	340
5:55 PM	0	0	0	0	2	0	0	0	1	5	0	0	0	5	0	0	13	326
6:00 PM	0	0	0	0	2	0	0	0	0	13	0	0	0	5	1	0	21	316

5-Min Count Period Beginning At	Arbor Grove Rd NE (north leg of Arbor Grove) (Northbound)				Arbor Grove Rd NE (north leg of Arbor Grove) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:05 PM	0	0	0	0	2	0	0	0	0	11	0	0	0	2	3	0	18	296
6:10 PM	0	0	0	0	3	0	0	0	2	8	0	0	0	9	1	0	23	283
6:15 PM	0	0	0	0	3	0	1	0	0	9	0	0	0	3	0	0	16	260
6:20 PM	0	0	0	0	1	0	0	0	0	9	0	0	0	5	0	0	15	244
6:25 PM	0	0	0	0	0	0	2	0	0	8	0	0	0	6	1	0	17	238
6:30 PM	0	0	0	0	2	0	0	0	1	8	0	0	0	6	1	0	18	230
6:35 PM	0	0	0	0	3	0	0	0	1	1	0	0	0	2	3	0	10	214
6:40 PM	0	0	0	0	0	0	0	1	1	9	0	0	0	6	1	0	18	211
6:45 PM	0	0	0	0	1	0	0	0	1	4	0	0	0	4	1	0	11	207
6:50 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	2	1	0	9	189
6:55 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	5	1	0	10	186

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	24	0	12	0	8	148	0	0	0	72	28	0	292
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	8	0		8
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 7:34 AM

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

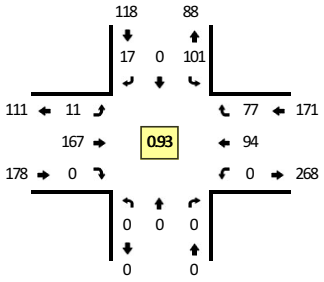
Type of peak hour being reported: User-Defined | Method for determining peak hour: Total Entering Volume

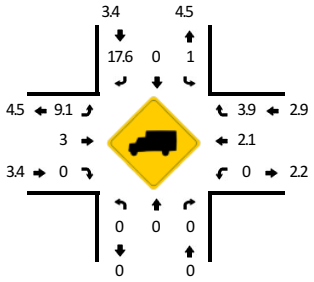
LOCATION: Butteville Rd NE (north leg of Butteville Rd) -- OR 219 | **QC JOB #:** 15462404

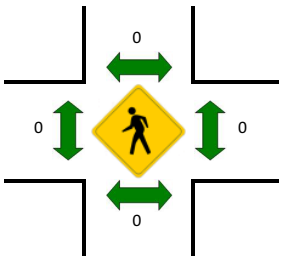
CITY/STATE: Marion, OR | **DATE:** Tue, May 25 2021

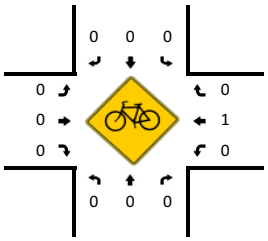
Peak-Hour: 5:30 PM -- 6:30 PM

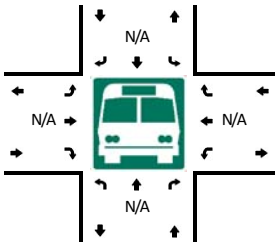
Peak 15-Min: 6:05 PM -- 6:20 PM

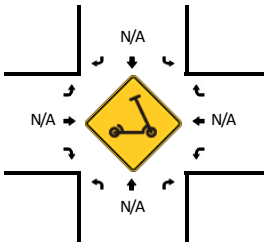












5-Min Count Period Beginning At	Butteville Rd NE (north leg of Butteville Rd) (Northbound)				Butteville Rd NE (north leg of Butteville Rd) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	11	0	2	0	2	11	0	0	0	6	8	0	40	
3:05 PM	0	0	0	0	6	0	1	0	2	9	0	0	0	6	5	0	29	
3:10 PM	0	0	0	0	5	0	1	0	1	5	0	0	0	9	6	0	27	
3:15 PM	0	0	0	0	5	0	0	0	0	6	0	0	0	10	8	0	29	
3:20 PM	0	0	0	0	10	0	2	0	0	19	0	0	0	11	5	0	47	
3:25 PM	0	0	0	0	5	0	3	0	1	4	0	0	0	12	13	0	38	
3:30 PM	0	0	0	0	12	0	3	0	1	11	0	0	0	6	9	0	42	
3:35 PM	0	0	0	0	8	0	0	0	2	12	0	0	0	13	9	0	44	
3:40 PM	0	0	0	0	16	0	1	0	0	10	0	0	0	13	7	0	47	
3:45 PM	0	0	0	0	20	0	1	0	1	14	0	0	0	20	8	0	64	
3:50 PM	0	0	0	0	14	0	2	0	0	10	0	0	0	13	7	0	46	
3:55 PM	0	0	0	0	15	0	1	0	3	17	0	0	0	11	6	0	53	506
4:00 PM	0	0	0	0	15	0	2	0	1	12	0	0	0	8	3	0	41	507
4:05 PM	0	0	0	0	5	0	2	0	1	15	0	0	0	11	5	0	39	517
4:10 PM	0	0	0	0	16	0	3	0	2	18	0	0	0	9	9	0	57	547
4:15 PM	0	0	0	0	5	0	3	0	0	20	0	0	0	11	4	0	43	561
4:20 PM	0	0	0	0	10	0	3	0	2	13	0	0	0	13	1	0	42	556
4:25 PM	0	0	0	0	8	0	1	0	0	18	0	0	0	7	9	0	43	561
4:30 PM	0	0	0	0	9	0	1	0	2	21	0	0	0	9	5	0	47	566
4:35 PM	0	0	0	0	15	0	3	0	3	25	0	0	0	9	7	0	62	584
4:40 PM	0	0	0	0	13	0	3	0	0	33	0	0	0	16	10	0	75	612
4:45 PM	0	0	0	0	19	0	0	0	0	21	0	0	0	9	7	0	56	604
4:50 PM	0	0	0	0	20	0	0	0	1	18	0	0	0	9	10	0	58	616
4:55 PM	0	0	0	0	14	0	5	0	0	19	0	0	0	11	5	0	54	617
5:00 PM	0	0	0	0	14	0	1	0	1	13	0	0	0	8	5	0	42	618
5:05 PM	0	0	0	0	26	0	4	0	0	25	0	0	0	19	9	0	83	662
5:10 PM	0	0	0	0	32	0	3	0	1	26	0	0	0	22	5	0	89	694
5:15 PM	0	0	0	0	12	0	3	0	2	17	0	0	0	10	1	0	45	696
5:20 PM	0	0	0	0	11	0	0	0	0	30	0	0	0	8	5	0	54	708
5:25 PM	0	0	0	0	9	0	1	0	0	20	0	0	0	13	6	0	49	714
5:30 PM	0	0	0	0	10	0	3	0	4	10	0	0	0	16	7	0	50	717
5:35 PM	0	0	0	0	8	0	1	0	0	18	0	0	0	8	4	0	39	694
5:40 PM	0	0	0	0	9	0	1	0	1	12	0	0	0	4	7	0	34	653
5:45 PM	0	0	0	0	7	0	2	0	0	17	0	0	0	9	7	0	42	639
5:50 PM	0	0	0	0	10	0	2	0	2	14	0	0	0	11	6	0	45	626
5:55 PM	0	0	0	0	11	0	0	0	0	14	0	0	0	6	6	0	37	609
6:00 PM	0	0	0	0	8	0	1	0	1	11	0	0	0	6	5	0	32	599

5-Min Count Period Beginning At	Butteville Rd NE (north leg of Butteville Rd) (Northbound)				Butteville Rd NE (north leg of Butteville Rd) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:05 PM	0	0	0	0	12	0	1	0	0	15	0	0	0	11	6	0	45	561
6:10 PM	0	0	0	0	6	0	3	0	1	21	0	0	0	7	9	0	47	519
6:15 PM	0	0	0	0	12	0	2	0	0	12	0	0	0	3	5	0	34	508
6:20 PM	0	0	0	0	4	0	0	0	1	15	0	0	0	6	8	0	34	488
6:25 PM	0	0	0	0	4	0	1	0	1	8	0	0	0	7	7	0	28	467
6:30 PM	0	0	0	0	7	0	1	0	1	12	0	0	0	11	5	0	37	454
6:35 PM	0	0	0	0	3	0	0	0	1	3	0	0	0	11	3	0	21	436
6:40 PM	0	0	0	0	6	0	0	0	1	13	0	0	0	7	4	0	31	433
6:45 PM	0	0	0	0	6	0	1	0	0	7	0	0	0	5	6	0	25	416
6:50 PM	0	0	0	0	6	0	0	0	0	7	0	0	0	10	6	0	29	400
6:55 PM	0	0	0	0	7	0	0	0	1	8	0	0	0	7	7	0	30	393

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	120	0	24	0	4	192	0	0	0	84	80	0	504
Heavy Trucks	0	0	0		4	0	0		0	12	0		0	0	4		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 6/24/2021 7:34 AM

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

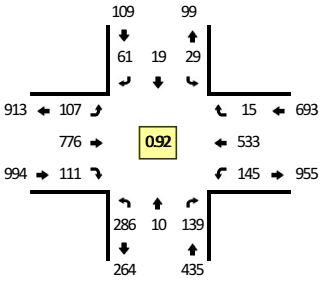
Type of peak hour being reported: User-Defined

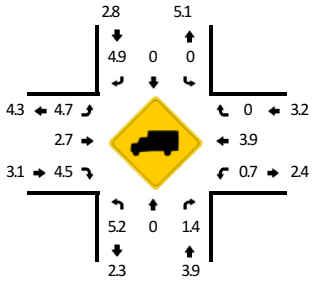
Method for determining peak hour: Total Entering Volume

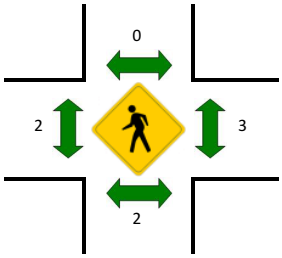
LOCATION: Evergreen Rd -- OR 214
CITY/STATE: Woodburn, OR

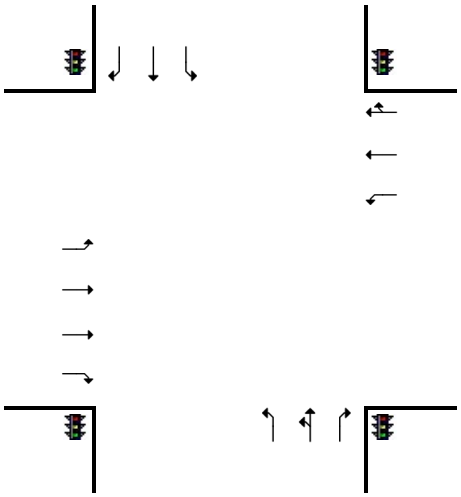
QC JOB #: 15462406
DATE: Tue, May 25 2021

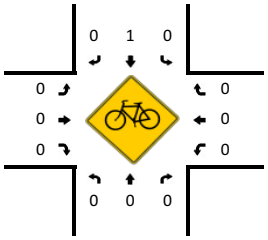
Peak-Hour: 5:30 PM -- 6:30 PM
Peak 15-Min: 5:35 PM -- 5:50 PM

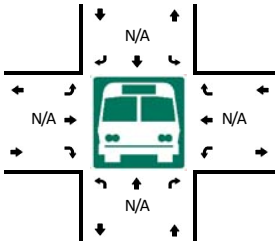


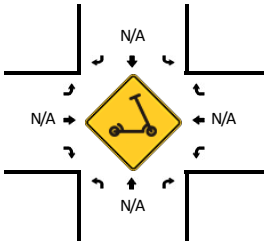












5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	27	3	13	0	1	2	2	0	7	49	8	5	18	60	1	3	199	
3:05 PM	26	4	12	0	4	2	11	0	5	59	7	1	12	46	0	0	189	
3:10 PM	27	3	11	0	0	3	3	0	2	54	5	2	13	65	1	0	189	
3:15 PM	16	0	16	0	3	2	12	0	6	66	8	2	9	54	1	0	195	
3:20 PM	22	3	15	0	2	3	5	0	5	77	9	4	10	46	0	1	202	
3:25 PM	30	4	16	0	1	2	8	0	9	69	9	1	8	53	1	1	212	
3:30 PM	25	3	10	0	4	1	5	0	3	81	6	3	9	52	3	0	205	
3:35 PM	32	2	9	0	8	3	4	0	3	67	11	3	15	57	0	1	215	
3:40 PM	28	2	15	0	0	3	8	0	4	74	8	6	14	60	0	2	224	
3:45 PM	18	2	16	0	2	6	4	0	10	68	8	4	15	48	2	3	206	
3:50 PM	26	2	12	0	4	1	4	0	8	75	10	4	11	70	2	1	230	
3:55 PM	32	5	16	0	4	1	3	0	10	58	15	3	9	55	2	1	214	2480
4:00 PM	26	3	11	0	1	3	5	0	6	73	13	1	18	53	2	1	216	2497
4:05 PM	33	1	11	0	4	4	9	0	10	70	9	3	9	69	2	1	235	2543
4:10 PM	34	2	5	0	4	2	9	0	8	76	11	2	13	61	0	0	227	2581
4:15 PM	22	4	10	0	0	1	4	0	3	58	11	1	7	61	1	2	185	2571
4:20 PM	31	3	11	0	4	3	7	0	6	69	5	6	18	53	3	1	220	2589
4:25 PM	17	2	10	0	1	5	7	0	5	53	6	3	18	54	4	1	186	2563
4:30 PM	26	2	16	0	1	5	5	0	5	64	10	5	12	49	4	0	204	2562
4:35 PM	34	2	15	0	6	2	4	0	5	76	10	6	13	57	2	1	233	2580
4:40 PM	33	2	13	0	1	3	6	0	5	74	12	1	17	73	2	1	243	2599
4:45 PM	29	0	17	0	4	3	7	0	6	79	8	1	19	59	1	0	233	2626
4:50 PM	27	4	13	0	0	1	7	0	8	71	14	2	18	51	1	2	219	2615
4:55 PM	18	0	5	0	1	3	3	0	6	73	12	5	18	46	1	1	192	2593
5:00 PM	25	2	10	0	1	1	6	0	6	68	9	0	12	52	2	0	194	2571
5:05 PM	18	3	10	0	2	4	12	0	5	57	7	2	14	70	0	2	206	2542
5:10 PM	33	2	11	0	2	2	4	0	5	71	7	2	16	74	0	0	229	2544
5:15 PM	18	2	11	0	3	3	8	0	9	86	9	4	21	58	1	1	234	2593
5:20 PM	31	3	12	0	3	0	5	0	6	70	11	1	13	50	2	1	208	2581
5:25 PM	24	4	16	0	2	2	3	0	5	74	10	7	17	64	0	1	229	2624
5:30 PM	14	1	10	0	2	0	7	0	5	69	6	6	5	40	1	1	167	2587
5:35 PM	25	1	17	0	3	2	5	0	7	72	8	1	11	63	1	3	219	2573
5:40 PM	30	1	13	0	3	2	7	0	4	59	8	1	17	50	3	2	200	2530
5:45 PM	20	1	16	0	0	1	5	0	5	76	13	0	11	39	0	0	187	2484
5:50 PM	27	1	8	0	4	0	2	0	7	64	16	4	14	44	2	0	193	2458
5:55 PM	30	0	12	0	5	0	8	0	3	63	14	5	9	35	1	1	186	2452
6:00 PM	36	1	13	0	1	0	6	0	8	59	6	5	8	39	0	0	182	2440
6:05 PM	16	1	8	0	2	0	5	0	5	72	6	0	12	52	3	0	182	2416

5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	21	1	14	0	2	2	2	0	9	57	10	1	16	47	0	3	185	2372
6:15 PM	23	0	8	0	2	3	5	0	4	69	12	4	10	40	1	0	181	2319
6:20 PM	25	1	8	0	2	7	3	0	7	65	6	3	10	39	0	1	177	2288
6:25 PM	19	1	12	0	3	2	6	0	10	51	6	3	11	45	3	0	172	2231
6:30 PM	18	3	8	0	3	0	3	0	1	58	7	2	14	50	1	0	168	2232
6:35 PM	27	1	7	0	1	3	2	0	5	58	4	2	20	38	1	2	171	2184
6:40 PM	12	5	12	0	2	1	5	0	6	51	5	1	11	39	2	0	152	2136
6:45 PM	18	2	18	0	2	0	1	0	3	40	3	4	12	32	0	1	136	2085
6:50 PM	20	1	5	0	3	2	1	0	5	42	7	0	11	25	0	0	122	2014
6:55 PM	21	0	19	0	0	2	2	0	3	41	7	0	21	32	0	4	152	1980

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	300	12	184	0	24	20	68	0	64	828	116	8	156	608	16	20	2424
Heavy Trucks	12	0	4		0	0	4		8	16	8		4	20	0		76
Buses																	
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 7:34 AM

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: N Boones Ferry Rd/N Settlemier Ave -- OR 214

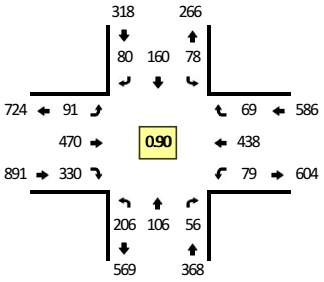
QC JOB #: 15462408

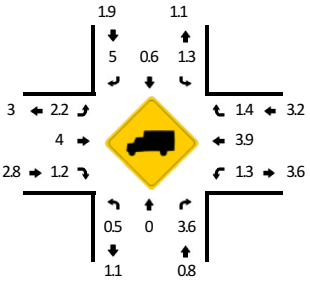
CITY/STATE: Woodburn, OR

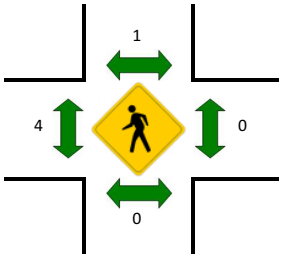
DATE: Tue, May 25 2021

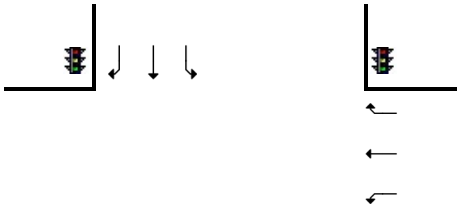
Peak-Hour: 5:30 PM -- 6:30 PM

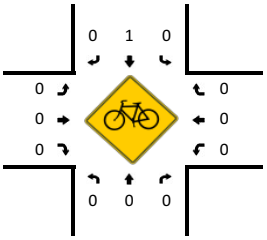
Peak 15-Min: 5:30 PM -- 5:45 PM

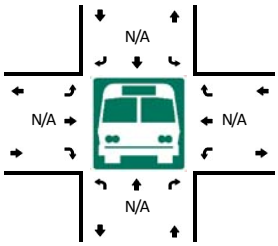


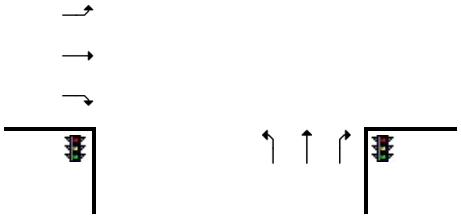


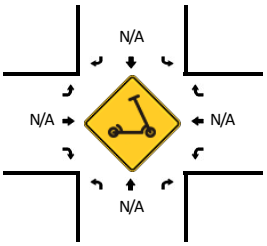












5-Min Count Period Beginning At	N Boones Ferry Rd/N Settlemier Ave (Northbound)				N Boones Ferry Rd/N Settlemier Ave (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	30	8	2	0	10	5	8	0	10	34	15	0	6	42	9	0	179	
3:05 PM	15	6	7	0	6	10	8	0	2	37	16	0	4	51	8	0	170	
3:10 PM	20	8	9	0	10	12	14	0	8	31	14	0	3	36	5	0	170	
3:15 PM	13	3	9	0	7	11	5	0	6	57	18	0	8	51	6	0	194	
3:20 PM	6	3	5	0	6	7	6	0	5	55	19	0	6	46	6	0	170	
3:25 PM	20	16	9	0	8	14	4	0	10	47	22	0	14	44	6	0	214	
3:30 PM	17	11	8	0	8	17	10	0	13	39	20	0	7	53	7	0	210	
3:35 PM	29	7	5	0	16	11	9	0	4	42	37	0	9	46	8	0	223	
3:40 PM	17	11	9	0	12	19	8	0	3	48	18	0	6	60	4	0	215	
3:45 PM	29	12	10	0	13	16	8	0	8	44	26	0	6	51	7	0	230	
3:50 PM	19	12	8	0	6	16	14	0	8	46	30	0	9	48	6	0	222	
3:55 PM	18	12	4	0	5	12	10	0	5	45	24	0	6	51	3	0	195	2392
4:00 PM	16	11	7	0	10	15	11	0	5	44	27	0	14	59	4	0	223	2436
4:05 PM	14	8	7	0	4	22	6	0	6	49	29	0	4	53	5	0	207	2473
4:10 PM	16	5	6	0	13	11	16	0	3	37	26	0	8	53	8	0	202	2505
4:15 PM	6	11	8	0	10	16	6	0	12	41	21	0	16	51	4	0	202	2513
4:20 PM	18	8	2	0	6	9	14	0	7	51	25	0	3	51	6	0	200	2543
4:25 PM	14	10	4	0	10	13	11	0	4	29	15	0	13	44	4	0	171	2500
4:30 PM	20	9	6	0	4	16	9	0	5	39	17	0	7	53	5	0	190	2480
4:35 PM	25	12	4	0	9	15	10	0	6	37	27	0	6	48	6	0	205	2462
4:40 PM	18	14	3	0	5	21	10	0	5	49	18	0	5	50	4	0	202	2449
4:45 PM	21	11	3	0	4	7	13	0	8	48	27	0	7	59	6	0	214	2433
4:50 PM	20	4	6	0	9	16	17	0	10	49	19	0	7	38	4	0	199	2410
4:55 PM	21	9	6	0	9	12	5	0	6	35	22	0	6	41	10	0	182	2397
5:00 PM	15	9	9	0	9	23	17	0	6	43	32	0	9	40	9	0	221	2395
5:05 PM	23	5	6	0	6	13	12	0	8	44	23	0	7	58	3	0	208	2396
5:10 PM	23	10	5	0	10	19	13	0	5	37	25	0	3	51	12	0	213	2407
5:15 PM	18	11	7	0	11	23	6	0	9	34	34	0	7	41	5	0	206	2411
5:20 PM	15	6	8	0	10	14	7	0	5	53	31	0	2	51	4	0	206	2417
5:25 PM	20	8	9	0	11	16	6	0	4	43	25	0	10	38	9	0	199	2445
5:30 PM	26	17	9	0	20	14	7	0	7	39	36	0	4	28	4	0	211	2466
5:35 PM	18	6	5	0	7	12	7	0	14	56	17	0	8	49	7	0	206	2467
5:40 PM	17	8	1	0	3	14	7	0	10	42	32	0	2	40	5	0	181	2446
5:45 PM	12	5	4	0	6	9	3	0	8	33	25	0	12	46	7	0	170	2402
5:50 PM	18	12	1	0	4	16	6	0	6	38	27	0	6	32	7	0	173	2376
5:55 PM	17	6	9	0	5	11	6	0	4	39	31	0	4	28	2	0	162	2356
6:00 PM	20	8	5	0	4	14	8	0	6	34	34	0	10	26	8	0	177	2312

5-Min Count Period Beginning At	N Boones Ferry Rd/N Settlemier Ave (Northbound)				N Boones Ferry Rd/N Settlemier Ave (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:05 PM	12	8	3	0	4	14	10	0	7	47	21	0	6	48	9	0	189	2293
6:10 PM	23	8	4	0	5	16	10	0	10	40	35	0	9	41	9	0	210	2290
6:15 PM	18	15	8	0	9	17	7	0	7	34	26	0	4	28	4	0	177	2261
6:20 PM	15	9	5	0	9	10	6	0	3	38	24	0	10	26	6	0	161	2216
6:25 PM	10	4	2	0	2	13	3	0	9	30	22	0	4	46	1	0	146	2163
6:30 PM	15	8	4	0	6	6	5	0	5	36	30	0	3	33	3	0	154	2106
6:35 PM	24	2	4	0	5	10	3	0	4	38	18	0	3	40	4	0	155	2055
6:40 PM	17	2	6	0	3	8	6	0	1	30	25	0	5	35	2	0	140	2014
6:45 PM	24	9	2	0	5	11	2	0	5	31	13	0	5	17	5	0	129	1973
6:50 PM	12	9	4	0	6	8	5	0	3	34	13	0	4	29	6	0	133	1933
6:55 PM	11	10	3	0	7	8	5	0	4	20	16	0	3	35	4	0	126	1897

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	244	124	60	0	120	160	84	0	124	548	340	0	56	468	64	0	2392
Heavy Trucks	0	0	4		0	4	0		0	24	0		4	24	0		60
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 7:34 AM

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

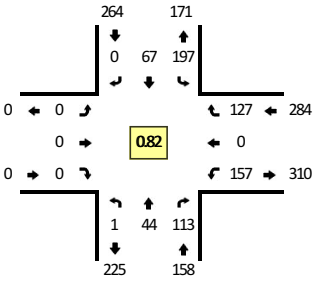
Type of peak hour being reported: User-Defined

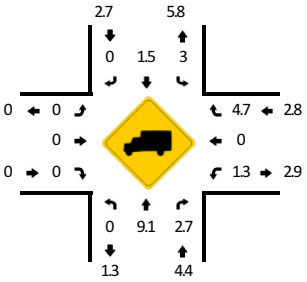
Method for determining peak hour: Total Entering Volume

LOCATION: Butteville Rd NE -- OR-219
CITY/STATE: Woodburn, OR

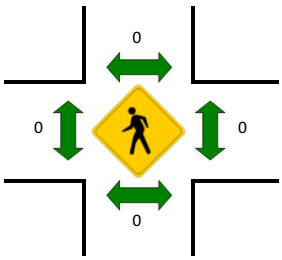
QC JOB #: 15405709
DATE: Wed, Apr 14 2021

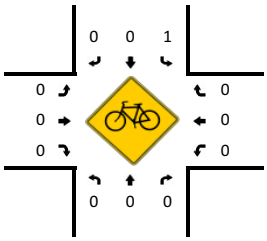
Peak-Hour: 5:30 PM -- 6:30 PM
Peak 15-Min: 5:35 PM -- 5:50 PM

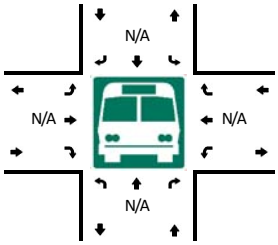


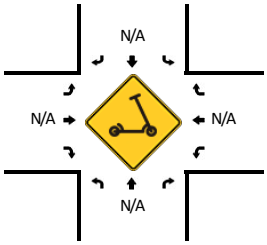


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	2	0	9	3	0	0	0	0	0	0	9	0	16	0	39	
3:05 PM	0	1	12	0	15	4	0	0	0	0	0	0	8	0	19	0	59	
3:10 PM	0	5	8	0	18	4	0	0	0	0	0	0	9	0	10	0	54	
3:15 PM	0	3	5	0	20	4	0	0	0	0	0	0	17	0	21	0	70	
3:20 PM	0	6	5	0	15	5	0	0	0	0	0	0	10	0	6	0	47	
3:25 PM	0	2	10	0	13	7	0	0	0	0	0	0	20	0	21	0	73	
3:30 PM	0	4	10	0	14	3	0	0	0	0	0	0	13	0	15	0	59	
3:35 PM	0	4	8	0	23	5	0	0	0	0	0	0	11	0	14	0	65	
3:40 PM	0	1	14	0	28	6	0	0	0	0	0	0	11	0	15	0	75	
3:45 PM	0	4	11	0	19	6	0	0	0	0	0	0	12	0	18	0	70	
3:50 PM	0	1	5	0	29	6	0	0	0	0	0	0	14	0	23	0	78	
3:55 PM	0	4	9	0	22	5	0	1	0	0	0	0	13	0	6	0	60	749
4:00 PM	0	5	6	1	18	5	0	0	0	0	0	0	12	0	18	0	65	775
4:05 PM	0	7	6	0	16	5	0	0	0	0	0	0	6	0	17	0	57	773
4:10 PM	0	3	11	0	31	5	0	0	0	0	0	0	14	0	16	0	80	799
4:15 PM	0	3	8	0	21	10	0	0	0	0	0	0	11	0	16	0	69	798
4:20 PM	0	10	8	0	24	6	0	0	0	0	0	0	15	0	16	0	79	830
4:25 PM	0	4	4	0	19	7	0	0	0	0	0	0	16	0	12	0	62	819
4:30 PM	0	7	12	0	19	11	0	0	0	0	0	0	19	0	18	0	86	846
4:35 PM	0	8	4	0	41	9	0	0	0	0	0	0	7	0	11	0	80	861
4:40 PM	0	3	5	0	46	11	0	0	0	0	0	0	12	0	19	0	96	882
4:45 PM	0	3	9	0	33	12	0	0	0	0	0	0	12	0	23	0	92	904
4:50 PM	0	3	10	0	40	17	0	0	0	0	0	0	9	0	13	0	92	918
4:55 PM	0	5	8	0	20	7	0	0	0	0	0	0	12	0	17	0	69	927
5:00 PM	0	3	3	0	21	8	0	0	0	0	0	0	15	0	18	0	68	930
5:05 PM	0	8	6	0	28	11	0	0	0	0	0	0	12	0	28	0	93	966
5:10 PM	0	1	9	0	37	12	0	0	0	0	0	0	11	0	16	1	87	973
5:15 PM	0	3	7	0	23	14	0	0	0	0	0	0	8	0	16	0	71	975
5:20 PM	0	3	5	0	27	14	0	0	0	0	0	0	19	0	11	0	79	975
5:25 PM	0	7	12	0	21	11	0	0	0	0	0	0	8	0	21	0	80	993
5:30 PM	0	5	10	0	21	7	0	0	0	0	0	0	15	0	13	0	71	978
5:35 PM	0	7	8	0	25	4	0	0	0	0	0	0	15	0	13	0	72	970
5:40 PM	0	7	17	0	12	7	0	0	0	0	0	0	12	0	14	0	69	943
5:45 PM	0	1	13	0	20	7	0	0	0	0	0	0	14	0	18	0	73	924
5:50 PM	0	2	7	0	24	6	0	0	0	0	0	0	10	0	8	0	57	889
5:55 PM	0	3	4	0	14	8	0	0	0	0	0	0	17	0	7	0	53	873
6:00 PM	0	4	19	0	15	6	0	0	0	0	0	0	6	0	5	0	55	860
6:05 PM	0	1	7	0	9	3	0	0	0	0	0	0	8	0	15	0	43	810

5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	0	5	7	0	13	5	0	0	0	0	0	0	14	0	13	0	57	780
6:15 PM	0	4	5	1	15	5	0	0	0	0	0	0	12	0	8	0	50	759
6:20 PM	0	2	8	0	18	3	0	0	0	0	0	0	21	0	8	0	60	740
6:25 PM	0	3	8	0	11	6	0	0	0	0	0	0	13	0	5	0	46	706
6:30 PM	0	4	10	0	19	4	0	0	0	0	0	0	9	0	11	0	57	692
6:35 PM	0	3	11	0	11	4	0	0	0	0	0	0	11	0	9	0	49	669
6:40 PM	0	3	9	0	10	5	0	0	0	0	0	0	8	0	9	0	44	644
6:45 PM	0	0	5	0	14	9	0	0	0	0	0	0	12	0	14	0	54	625
6:50 PM	0	6	4	0	10	5	0	0	0	0	0	0	11	0	8	0	44	612
6:55 PM	0	2	8	0	12	6	0	0	0	0	0	0	9	0	6	0	43	602

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	60	152	0	228	72	0	0	0	0	0	0	164	0	180	0	856
Heavy Trucks	0	12	4		12	4	0		0	0	0		0	0	12		44
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		4	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 5/21/2021 10:54 AM

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

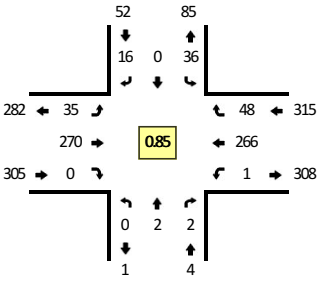
Type of peak hour being reported: User-Defined

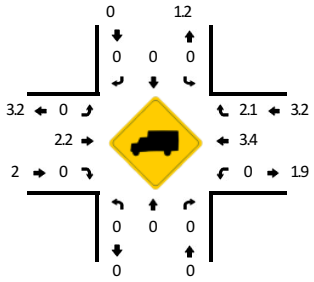
Method for determining peak hour: Total Entering Volume

LOCATION: Willow Ave -- OR-219
CITY/STATE: Woodburn, OR

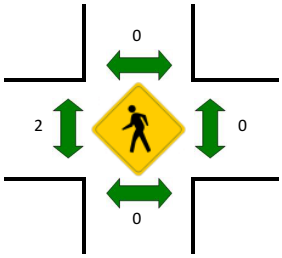
QC JOB #: 15405711
DATE: Wed, Apr 14 2021

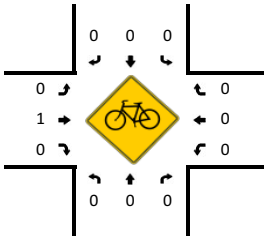
Peak-Hour: 5:30 PM -- 6:30 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

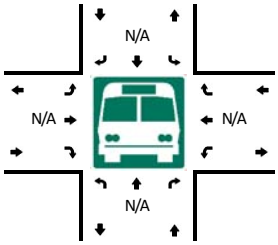


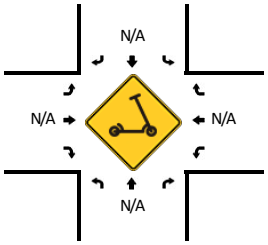


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	Willow Ave (Northbound)				Willow Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	2	0	0	0	0	11	0	0	0	22	3	0	38	
3:05 PM	0	0	0	0	0	0	3	0	1	25	0	0	0	24	3	0	56	
3:10 PM	0	0	0	0	4	0	1	0	3	22	0	0	0	20	3	0	53	
3:15 PM	0	0	0	0	1	1	1	0	2	22	0	0	0	36	4	0	67	
3:20 PM	0	0	0	0	0	0	0	0	4	18	0	0	0	16	2	0	40	
3:25 PM	0	0	0	0	1	0	2	0	1	19	0	0	0	41	3	0	67	
3:30 PM	0	1	0	0	3	0	2	0	2	22	0	0	0	22	4	0	56	
3:35 PM	0	0	0	0	4	0	2	0	1	29	0	0	0	27	6	0	69	
3:40 PM	0	0	0	0	3	0	1	0	2	42	1	0	0	22	2	0	73	
3:45 PM	0	0	1	0	2	0	0	0	1	31	0	0	0	30	3	0	68	
3:50 PM	0	0	0	0	0	0	2	0	2	30	0	0	0	36	4	0	74	
3:55 PM	0	0	0	0	3	1	1	0	4	27	0	0	0	18	2	0	56	717
4:00 PM	0	0	0	0	0	0	2	0	2	21	0	0	0	27	9	0	61	740
4:05 PM	0	0	1	0	0	0	1	0	1	22	0	0	0	22	6	0	53	737
4:10 PM	0	0	0	0	0	0	2	0	1	40	0	0	0	27	7	0	77	761
4:15 PM	0	0	0	0	4	0	0	0	2	31	0	0	0	29	0	0	66	760
4:20 PM	0	0	0	0	3	0	1	0	5	25	0	0	0	31	2	0	67	787
4:25 PM	0	0	0	0	3	0	1	0	2	19	0	0	0	29	3	0	57	777
4:30 PM	0	0	0	0	1	0	2	0	1	33	0	0	0	30	6	0	73	794
4:35 PM	0	0	0	0	2	0	3	0	2	42	0	0	1	20	4	0	74	799
4:40 PM	0	0	0	0	1	0	2	0	3	47	0	0	0	28	2	0	83	809
4:45 PM	0	0	0	0	1	0	3	0	2	41	0	0	0	27	7	0	81	822
4:50 PM	0	0	0	0	1	0	2	0	2	45	1	0	0	21	2	0	74	822
4:55 PM	0	0	1	0	1	0	0	0	5	26	0	0	0	31	3	0	67	833
5:00 PM	0	0	0	0	2	0	2	0	3	21	0	0	0	30	4	0	62	834
5:05 PM	0	0	0	0	6	0	0	0	2	31	0	0	0	37	1	0	77	858
5:10 PM	0	0	0	0	3	0	1	0	0	45	0	0	0	26	3	0	78	859
5:15 PM	0	0	0	0	0	0	1	0	1	29	0	0	0	27	3	0	61	854
5:20 PM	0	0	1	0	1	0	1	0	4	28	1	0	1	25	5	0	67	854
5:25 PM	0	0	0	0	3	0	0	0	2	32	0	0	1	28	2	0	68	865
5:30 PM	0	2	1	0	3	0	1	0	2	30	0	0	1	27	6	0	73	865
5:35 PM	0	0	0	0	2	0	2	0	2	28	0	0	0	25	3	0	62	853
5:40 PM	0	0	0	0	5	0	1	0	2	26	0	0	0	26	3	0	63	833
5:45 PM	0	0	0	0	1	0	4	0	5	27	0	0	0	24	9	0	70	822
5:50 PM	0	0	0	0	2	0	3	0	4	27	0	0	0	17	2	0	55	803
5:55 PM	0	0	0	0	5	0	3	0	2	18	0	0	0	19	4	0	51	787
6:00 PM	0	0	0	0	3	0	0	0	4	29	0	0	0	16	3	0	55	780
6:05 PM	0	0	0	0	4	0	0	0	3	13	0	0	0	20	5	0	45	748

5-Min Count Period Beginning At	Willow Ave (Northbound)				Willow Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	0	0	1	0	3	0	1	0	0	17	0	0	0	26	2	0	50	720
6:15 PM	0	0	0	0	1	0	0	0	2	18	0	0	0	22	5	0	48	707
6:20 PM	0	0	0	0	4	0	1	0	5	20	0	0	0	25	4	0	59	699
6:25 PM	0	0	0	0	3	0	0	0	4	17	0	0	0	19	2	0	45	676
6:30 PM	0	0	0	0	2	0	0	0	2	25	0	0	0	19	3	0	51	654
6:35 PM	0	0	0	0	4	0	2	0	3	19	0	0	0	19	3	0	50	642
6:40 PM	0	0	0	0	0	0	1	0	5	15	0	0	0	16	1	0	38	617
6:45 PM	0	0	0	0	2	1	1	0	3	16	0	0	0	25	5	0	53	600
6:50 PM	0	1	0	0	1	0	2	1	0	12	0	0	0	18	5	0	40	585
6:55 PM	0	0	0	0	3	1	1	0	2	18	0	0	0	16	1	0	42	576

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	8	4	0	40	0	16	0	24	336	0	0	4	312	48	0	792
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	4	0		12
Buses																	
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 5/21/2021 10:54 AM

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

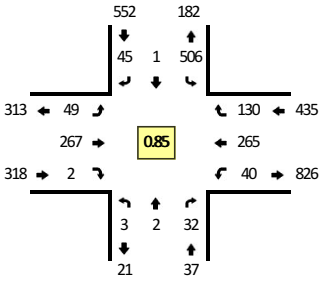
Type of peak hour being reported: User-Defined

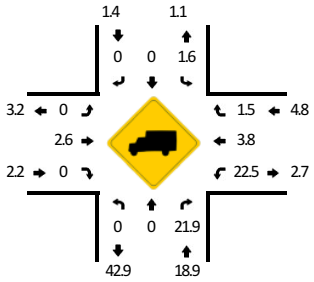
Method for determining peak hour: Total Entering Volume

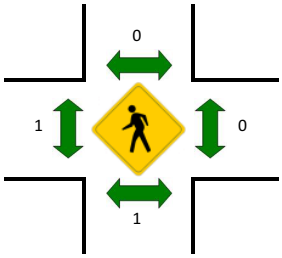
LOCATION: S Woodland Ave -- OR-219
CITY/STATE: Woodburn, OR

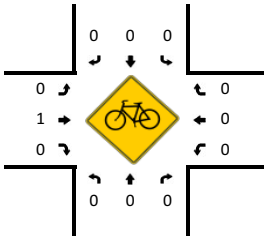
QC JOB #: 15405713
DATE: Wed, Apr 14 2021

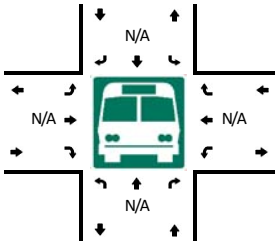
Peak-Hour: 5:30 PM -- 6:30 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

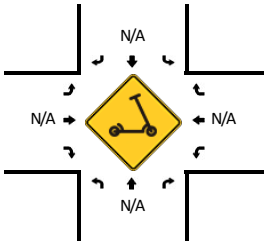


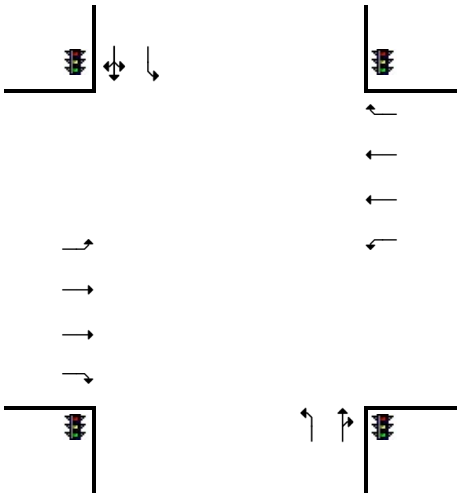












5-Min Count Period Beginning At	S Woodland Ave (Northbound)				S Woodland Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	6	0	46	0	3	0	1	12	0	0	1	26	9	2	106	
3:05 PM	0	0	6	0	51	0	2	1	5	17	0	0	5	27	4	2	120	
3:10 PM	0	0	2	0	46	1	3	0	4	24	0	0	3	24	6	1	114	
3:15 PM	0	1	13	0	49	0	2	0	4	18	0	0	3	31	8	2	131	
3:20 PM	0	0	7	0	47	1	2	0	4	15	0	0	1	17	10	4	108	
3:25 PM	2	1	7	0	38	0	4	0	3	18	0	0	4	37	2	1	117	
3:30 PM	0	0	3	0	53	0	4	0	3	19	0	0	0	27	10	2	121	
3:35 PM	1	0	4	0	49	0	4	0	4	27	0	0	2	25	11	1	128	
3:40 PM	0	0	4	0	39	0	1	0	6	37	1	0	2	26	5	0	121	
3:45 PM	1	0	7	0	37	0	0	0	11	29	0	0	0	27	11	2	125	
3:50 PM	2	0	2	0	42	0	4	0	3	26	0	0	3	39	10	0	131	
3:55 PM	0	0	4	0	56	0	1	0	7	19	0	0	5	18	6	2	118	1440
4:00 PM	2	0	23	0	42	0	7	0	2	20	0	0	0	25	5	6	132	1466
4:05 PM	2	0	6	0	45	0	4	0	2	23	0	0	6	21	8	5	122	1468
4:10 PM	0	0	7	0	46	0	2	0	5	32	0	0	6	33	4	4	139	1493
4:15 PM	2	0	8	0	43	0	6	0	4	26	0	0	2	29	3	5	128	1490
4:20 PM	0	2	5	0	38	0	5	0	1	34	0	0	2	24	10	2	123	1505
4:25 PM	0	0	1	0	42	0	1	0	5	14	0	0	1	28	10	7	109	1497
4:30 PM	0	0	3	0	42	0	3	0	7	25	0	0	3	36	6	0	125	1501
4:35 PM	0	1	3	0	46	0	1	0	8	37	0	0	2	21	11	2	132	1505
4:40 PM	0	0	2	0	35	0	4	1	4	39	0	0	3	27	9	3	127	1511
4:45 PM	1	0	3	0	38	1	2	0	2	44	0	0	4	30	10	5	140	1526
4:50 PM	0	0	5	0	31	1	4	0	6	39	0	0	2	19	23	4	134	1529
4:55 PM	0	0	6	0	32	1	3	0	4	25	0	0	4	31	12	0	118	1529
5:00 PM	1	0	10	0	34	0	5	0	2	23	0	0	3	25	10	2	115	1512
5:05 PM	2	2	5	0	50	0	9	0	4	24	0	0	0	29	12	1	138	1528
5:10 PM	0	0	12	0	43	1	2	0	8	41	0	0	3	29	11	1	151	1540
5:15 PM	0	0	2	0	39	1	6	0	5	28	1	0	4	24	13	1	124	1536
5:20 PM	0	0	4	0	42	0	5	0	2	26	0	0	1	25	17	0	122	1535
5:25 PM	0	0	3	0	49	0	2	0	5	26	0	0	0	27	14	3	129	1555
5:30 PM	0	0	2	0	34	0	1	0	4	39	0	0	4	33	12	3	132	1562
5:35 PM	0	0	3	0	47	0	6	0	5	23	0	0	3	23	11	1	122	1552
5:40 PM	1	0	2	0	53	0	3	1	7	22	1	0	0	26	21	2	139	1564
5:45 PM	0	0	4	0	39	0	5	0	3	26	0	0	2	26	11	2	118	1542
5:50 PM	0	0	1	0	37	0	2	0	5	22	0	0	2	16	9	4	98	1506
5:55 PM	0	0	5	0	39	0	4	0	6	18	0	0	1	18	13	2	106	1494
6:00 PM	1	0	7	0	38	0	4	0	8	26	0	0	1	15	8	0	108	1487
6:05 PM	1	0	5	0	50	0	2	0	1	15	0	0	1	20	11	2	108	1457

5-Min Count Period Beginning At	S Woodland Ave (Northbound)				S Woodland Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	0	0	1	0	48	1	7	0	2	17	0	0	1	25	9	3	114	1420
6:15 PM	0	2	0	0	36	0	3	0	2	19	0	0	1	25	9	1	98	1394
6:20 PM	0	0	1	0	48	0	4	0	3	23	1	0	1	21	5	1	108	1380
6:25 PM	0	0	1	0	36	0	4	0	3	17	0	0	1	17	11	1	91	1342
6:30 PM	0	0	5	0	35	1	4	0	3	19	1	0	2	17	6	4	97	1307
6:35 PM	0	1	2	0	43	0	4	0	2	21	0	0	1	20	5	2	101	1286
6:40 PM	0	0	0	0	42	0	2	0	5	15	0	0	0	13	8	3	88	1235
6:45 PM	0	0	1	0	31	0	5	0	3	13	0	0	2	29	6	6	96	1213
6:50 PM	0	1	3	0	35	0	2	0	1	12	0	0	5	16	8	2	85	1200
6:55 PM	0	0	1	0	53	0	2	0	2	20	0	0	2	16	10	3	109	1203

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	4	0	28	0	536	0	40	4	64	336	4	0	28	328	176	24	1572
Heavy Trucks	0	0	16		12	0	0		0	12	0		20	4	0		64
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 5/21/2021 10:54 AM

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

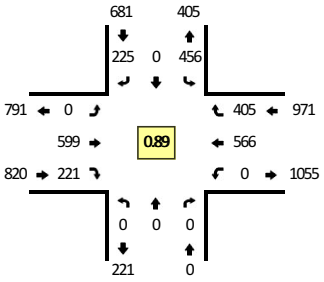
Type of peak hour being reported: User-Defined

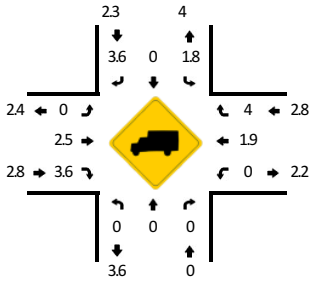
Method for determining peak hour: Total Entering Volume

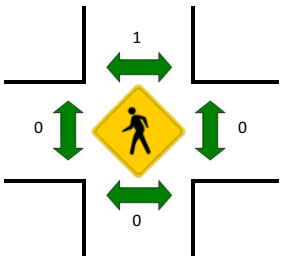
LOCATION: I-5 SB Ramps -- OR-219
CITY/STATE: Woodburn, OR

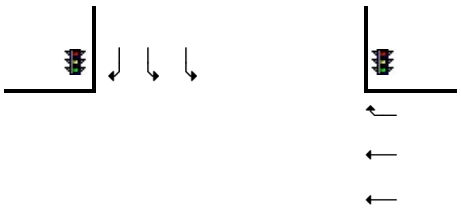
QC JOB #: 15405715
DATE: Wed, Apr 14 2021

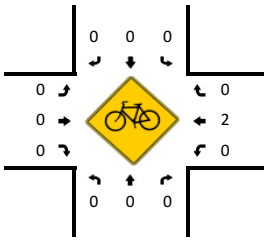
Peak-Hour: 5:30 PM -- 6:30 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

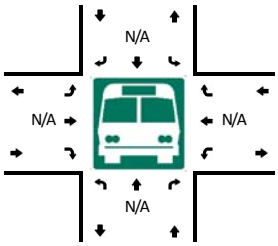


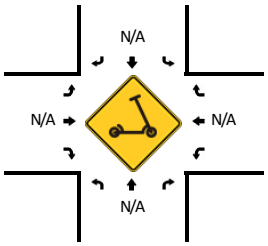












5-Min Count Period Beginning At	I-5 SB Ramps (Northbound)				I-5 SB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	33	0	23	0	0	43	27	0	0	46	38	0	210	
3:05 PM	0	0	0	0	32	0	19	0	0	48	26	0	0	53	38	0	216	
3:10 PM	0	0	0	0	33	0	18	0	0	55	20	0	0	30	31	0	187	
3:15 PM	0	0	0	0	28	0	30	0	0	56	19	0	0	64	44	0	241	
3:20 PM	0	0	0	0	34	0	12	0	0	52	24	0	0	41	31	0	194	
3:25 PM	0	0	0	0	35	0	22	0	0	40	23	0	0	58	34	0	212	
3:30 PM	0	0	0	0	31	0	17	0	0	58	18	0	0	51	35	0	210	
3:35 PM	0	0	0	0	28	0	19	0	0	49	29	0	0	46	49	0	220	
3:40 PM	0	0	0	0	20	0	22	0	0	49	29	0	0	45	31	0	196	
3:45 PM	0	0	0	0	31	0	21	0	0	52	28	0	0	53	46	0	231	
3:50 PM	0	0	0	0	36	0	21	0	0	42	27	0	0	63	28	0	217	
3:55 PM	0	0	0	0	29	0	29	0	0	57	26	0	0	37	33	0	211	2545
4:00 PM	0	0	0	0	40	0	17	0	0	53	35	0	0	56	32	0	233	2568
4:05 PM	0	0	0	0	43	0	16	0	0	45	32	0	0	46	39	0	221	2573
4:10 PM	0	0	0	0	40	0	22	0	0	49	41	0	0	49	37	0	238	2624
4:15 PM	0	0	0	0	43	0	19	0	0	50	32	0	0	55	47	0	246	2629
4:20 PM	0	0	0	0	28	0	13	0	0	62	24	0	0	48	45	0	220	2655
4:25 PM	0	0	0	0	22	0	24	0	0	38	23	0	0	53	54	0	214	2657
4:30 PM	0	0	0	0	30	0	26	0	0	47	26	0	0	42	49	0	220	2667
4:35 PM	0	0	0	0	38	0	14	0	0	53	31	0	0	55	50	0	241	2688
4:40 PM	0	0	0	0	34	0	17	0	0	59	27	0	0	58	35	0	230	2722
4:45 PM	0	0	0	0	31	0	21	0	0	54	25	0	0	64	38	0	233	2724
4:50 PM	0	0	0	0	43	0	28	0	0	58	30	0	0	58	46	0	263	2770
4:55 PM	0	0	0	0	22	0	24	0	0	43	19	0	0	52	48	0	208	2767
5:00 PM	0	0	0	0	43	0	24	0	0	45	22	0	0	45	44	0	223	2757
5:05 PM	0	0	0	0	33	0	24	0	0	50	27	0	0	59	57	0	250	2786
5:10 PM	0	0	0	0	36	0	20	0	0	60	31	0	0	44	46	0	237	2785
5:15 PM	0	0	0	0	39	0	18	0	0	48	23	0	0	57	43	0	228	2767
5:20 PM	0	0	0	0	41	0	34	0	0	46	31	0	0	40	38	0	230	2777
5:25 PM	0	0	0	0	45	0	15	0	0	51	24	0	0	49	42	0	226	2789
5:30 PM	0	0	0	0	38	0	22	0	0	65	18	0	0	65	42	0	250	2819
5:35 PM	0	0	0	0	44	0	17	0	0	45	21	0	0	49	28	0	204	2782
5:40 PM	0	0	0	0	38	0	23	0	0	62	26	0	0	47	45	0	241	2793
5:45 PM	0	0	0	0	49	0	17	0	0	49	18	0	0	49	42	0	224	2784
5:50 PM	0	0	0	0	46	0	15	0	0	41	17	0	0	46	45	0	210	2731
5:55 PM	0	0	0	0	32	0	20	0	0	50	17	0	0	50	28	0	197	2720
6:00 PM	0	0	0	0	44	0	20	0	0	51	20	0	0	41	25	0	201	2698
6:05 PM	0	0	0	0	35	0	17	0	0	51	11	0	0	46	31	0	191	2639

5-Min Count Period Beginning At	I-5 SB Ramps (Northbound)				I-5 SB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	0	0	0	0	33	0	12	0	0	49	21	0	0	46	36	0	197	2599
6:15 PM	0	0	0	0	34	0	26	0	0	47	17	0	0	47	30	0	201	2572
6:20 PM	0	0	0	0	36	0	14	0	0	48	17	0	0	40	29	0	184	2526
6:25 PM	0	0	0	0	27	0	22	0	0	41	18	0	0	40	24	0	172	2472
6:30 PM	0	0	0	0	27	0	20	0	0	50	12	0	0	39	32	0	180	2402
6:35 PM	0	0	0	0	45	0	19	0	0	52	17	0	0	31	23	0	187	2385
6:40 PM	0	0	0	0	45	0	12	0	0	46	16	0	0	31	25	0	175	2319
6:45 PM	0	0	0	0	30	0	13	0	0	36	15	0	0	41	27	0	162	2257
6:50 PM	0	0	0	0	13	0	17	0	0	35	20	0	0	26	22	0	133	2180
6:55 PM	0	0	0	0	20	0	12	0	0	59	16	0	0	34	30	0	171	2154

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	480	0	248	0	0	688	260	0	0	644	460	0	2780
Heavy Trucks	0	0	0		8	0	16		0	28	16		0	8	20		96
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:54 AM

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: I-5 NB Ramps -- OR-219

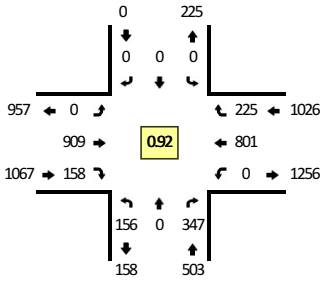
CITY/STATE: Woodburn, OR

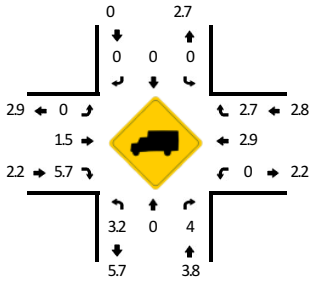
QC JOB #: 15405717

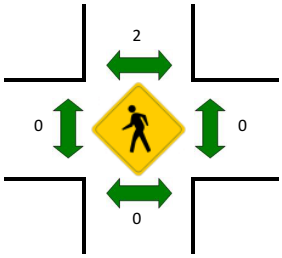
DATE: Wed, Apr 14 2021

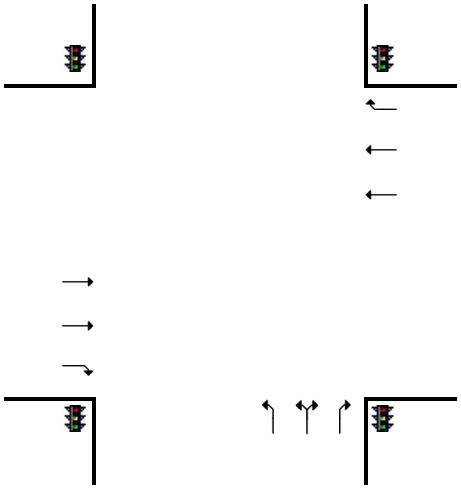
Peak-Hour: 5:30 PM -- 6:30 PM

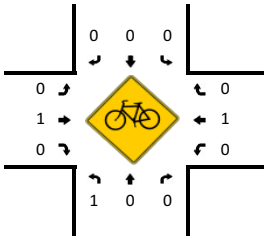
Peak 15-Min: 5:30 PM -- 5:45 PM

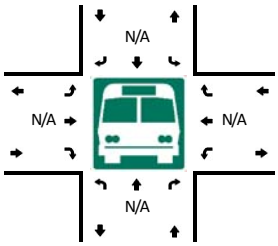


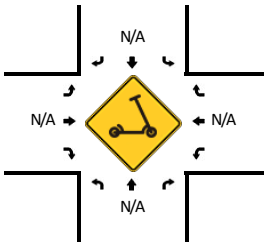












5-Min Count Period Beginning At	I-5 NB Ramps (Northbound)				I-5 NB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	17	0	30	0	0	0	0	0	0	54	19	0	0	63	29	0	212	
3:05 PM	16	0	21	0	0	0	0	0	0	61	13	0	0	72	30	1	214	
3:10 PM	12	0	33	0	0	0	0	0	0	73	21	0	0	43	22	0	204	
3:15 PM	20	0	39	0	0	0	0	0	0	57	18	0	0	90	18	0	242	
3:20 PM	22	0	21	0	0	0	0	0	0	71	22	0	0	55	22	0	213	
3:25 PM	18	0	38	0	0	0	0	0	0	63	12	0	0	82	39	0	252	
3:30 PM	17	0	33	0	0	0	0	0	0	59	14	0	0	63	19	0	205	
3:35 PM	12	0	31	0	0	0	0	0	0	80	17	0	0	86	29	0	255	
3:40 PM	15	0	33	0	0	0	0	0	0	46	15	0	0	57	27	0	193	
3:45 PM	18	0	27	0	0	0	0	0	0	67	19	0	0	80	32	0	243	
3:50 PM	18	0	34	0	0	0	0	0	0	68	19	0	0	81	24	0	244	
3:55 PM	12	0	46	0	0	0	0	0	0	51	22	0	0	51	18	0	200	2677
4:00 PM	19	0	43	0	0	0	0	0	0	77	20	0	0	71	24	0	254	2719
4:05 PM	11	0	34	0	0	0	0	0	0	68	12	0	0	71	34	0	230	2735
4:10 PM	22	0	38	0	0	0	0	0	0	82	19	0	0	68	31	0	260	2791
4:15 PM	21	0	42	0	0	0	0	0	0	61	18	0	0	82	17	0	241	2790
4:20 PM	12	0	42	0	0	0	0	0	0	88	24	0	0	78	27	0	271	2848
4:25 PM	27	0	41	0	0	0	0	0	0	47	12	0	0	76	23	0	226	2822
4:30 PM	10	0	32	0	0	0	0	0	0	70	8	0	0	85	17	0	222	2839
4:35 PM	13	0	40	0	0	0	0	0	0	71	14	0	0	93	32	0	263	2847
4:40 PM	23	0	40	0	0	0	0	0	0	84	5	0	0	68	27	0	247	2901
4:45 PM	20	0	40	0	0	0	0	0	0	73	8	0	0	81	20	0	242	2900
4:50 PM	23	0	35	0	0	0	0	0	0	93	9	0	0	81	26	0	267	2923
4:55 PM	17	0	38	0	0	0	0	0	0	60	11	0	0	85	17	0	228	2951
5:00 PM	11	0	28	0	0	0	0	0	0	80	14	0	0	93	25	0	251	2948
5:05 PM	17	0	39	0	0	0	0	0	0	57	17	0	0	93	22	0	245	2963
5:10 PM	20	0	26	0	0	0	0	0	0	85	18	0	0	68	37	0	254	2957
5:15 PM	19	0	34	0	0	0	0	0	0	76	13	0	0	80	30	0	252	2968
5:20 PM	12	0	44	0	0	0	0	0	0	71	9	0	0	61	27	0	224	2921
5:25 PM	19	0	39	0	0	0	0	0	0	69	17	0	0	74	21	0	239	2934
5:30 PM	12	0	22	0	0	0	0	0	0	94	19	0	0	90	16	0	253	2965
5:35 PM	13	0	41	0	0	0	0	0	0	77	12	0	0	71	19	0	233	2935
5:40 PM	22	0	28	0	0	0	0	0	0	80	15	0	0	59	13	0	217	2905
5:45 PM	17	0	29	0	0	0	0	0	0	85	10	0	0	82	24	0	247	2910
5:50 PM	14	0	35	0	0	0	0	0	0	72	12	0	0	79	20	0	232	2875
5:55 PM	13	0	34	0	0	0	0	0	0	80	10	0	0	60	16	0	213	2860
6:00 PM	15	0	23	0	0	0	0	0	0	79	16	0	0	49	19	0	201	2810
6:05 PM	11	0	28	0	0	0	0	0	0	60	15	0	0	67	14	0	195	2760

5-Min Count Period Beginning At	I-5 NB Ramps (Northbound)				I-5 NB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	8	0	13	0	0	0	0	0	0	84	15	0	0	76	17	0	213	2719
6:15 PM	12	0	28	0	0	0	0	0	0	68	14	0	0	62	23	0	207	2674
6:20 PM	7	0	29	0	0	0	0	0	0	74	10	0	0	55	27	0	202	2652
6:25 PM	12	0	37	0	0	0	0	0	0	56	10	0	0	51	17	0	183	2596
6:30 PM	9	0	21	0	0	0	0	0	0	59	12	0	0	61	10	0	172	2515
6:35 PM	5	0	25	0	0	0	0	0	0	76	13	0	0	56	19	0	194	2476
6:40 PM	12	0	25	0	0	0	0	0	0	90	8	0	0	42	17	0	194	2453
6:45 PM	8	0	25	0	0	0	0	0	0	57	8	0	0	59	17	0	174	2380
6:50 PM	4	0	28	0	0	0	0	0	0	45	7	0	0	46	15	0	145	2293
6:55 PM	8	0	29	0	0	0	0	0	0	61	14	0	0	54	24	0	190	2270

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	188	0	364	0	0	0	0	0	0	1004	184	0	0	880	192	0	2812
Heavy Trucks	8	0	8		0	0	0		0	16	20		0	24	12		88
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	4	0		0	0	0		4
Scooters																	

Comments:

Report generated on 5/21/2021 10:54 AM

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: Butteville Rd NE -- Parr Rd NE

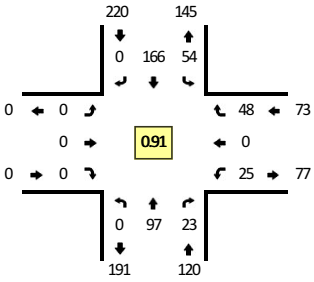
CITY/STATE: Woodburn, OR

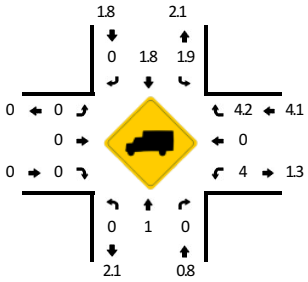
QC JOB #: 15405719

DATE: Wed, Apr 14 2021

Peak-Hour: 5:30 PM -- 6:30 PM

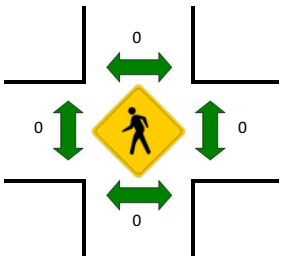
Peak 15-Min: 5:30 PM -- 5:45 PM

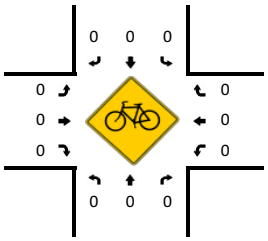


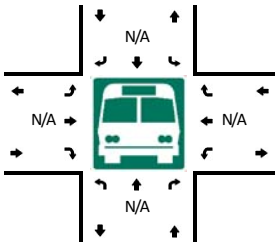


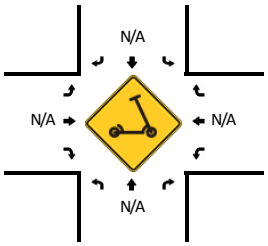
Quality Counts

DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				Parr Rd NE (Eastbound)				Parr Rd NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	5	2	0	2	12	0	0	0	0	0	0	2	0	0	0	23	
3:05 PM	0	9	1	0	0	12	0	0	0	0	0	0	2	0	1	0	25	
3:10 PM	0	8	1	0	2	12	0	0	0	0	0	0	0	0	6	0	29	
3:15 PM	0	5	2	0	0	16	0	0	0	0	0	0	0	0	1	0	24	
3:20 PM	0	5	1	0	5	10	0	0	0	0	0	0	3	0	4	0	28	
3:25 PM	0	12	1	0	3	16	0	0	0	0	0	0	0	0	1	0	33	
3:30 PM	0	6	2	0	6	18	0	0	0	0	0	0	2	0	3	0	37	
3:35 PM	0	8	2	1	2	10	0	0	0	0	0	0	0	0	3	0	26	
3:40 PM	0	13	0	0	5	13	0	0	0	0	0	0	0	0	8	0	39	
3:45 PM	0	4	0	0	6	12	0	0	0	0	0	0	2	0	2	0	26	
3:50 PM	0	9	1	0	2	16	0	0	0	0	0	0	0	0	5	0	33	
3:55 PM	0	7	2	0	2	17	0	0	0	0	0	0	3	0	0	0	31	354
4:00 PM	0	10	2	0	2	14	0	0	0	0	0	0	1	0	3	0	32	363
4:05 PM	0	8	2	0	2	9	0	0	0	0	0	0	0	0	4	0	25	363
4:10 PM	0	8	5	0	3	9	0	0	0	0	0	0	3	0	2	0	30	364
4:15 PM	0	14	1	0	7	17	0	0	0	0	0	0	1	0	3	0	43	383
4:20 PM	0	7	2	0	8	15	0	0	0	0	0	0	1	0	1	0	34	389
4:25 PM	0	8	1	0	2	19	0	0	0	0	0	0	1	0	2	0	33	389
4:30 PM	0	11	2	0	4	22	0	0	0	0	0	0	1	0	8	0	48	400
4:35 PM	0	7	4	0	3	14	0	0	0	0	0	0	0	0	5	0	33	407
4:40 PM	0	8	3	0	2	16	0	0	0	0	0	0	1	0	1	0	31	399
4:45 PM	0	6	3	0	6	23	0	0	0	0	0	0	1	0	6	0	45	418
4:50 PM	0	10	3	0	7	12	0	0	0	0	0	0	1	0	4	0	37	422
4:55 PM	0	4	1	0	3	16	0	0	0	0	0	0	3	0	3	0	30	421
5:00 PM	0	10	3	0	2	20	0	0	0	0	0	0	2	0	0	0	37	426
5:05 PM	0	7	4	0	5	14	0	0	0	0	0	0	2	0	5	0	37	438
5:10 PM	0	8	0	0	5	19	0	0	0	0	0	0	3	0	3	0	38	446
5:15 PM	0	7	3	0	6	18	0	0	0	0	0	0	3	0	3	0	40	443
5:20 PM	0	5	6	0	6	20	0	0	0	0	0	0	6	0	5	0	48	457
5:25 PM	0	12	2	0	8	22	0	0	0	0	0	0	2	0	5	0	51	475
5:30 PM	0	9	2	0	5	14	0	0	0	0	0	0	0	0	6	0	36	463
5:35 PM	0	9	1	0	2	17	0	0	0	0	0	0	3	0	5	0	37	467
5:40 PM	0	11	1	0	4	15	0	0	0	0	0	0	4	0	6	0	41	477
5:45 PM	0	4	3	0	6	12	0	0	0	0	0	0	3	0	4	0	32	464
5:50 PM	0	9	3	0	5	13	0	0	0	0	0	0	3	0	2	0	35	462
5:55 PM	0	12	3	0	3	17	0	0	0	0	0	0	2	0	2	0	39	471
6:00 PM	0	8	1	0	5	14	0	0	0	0	0	0	0	0	4	0	32	466
6:05 PM	0	4	2	0	4	8	0	0	0	0	0	0	3	0	5	0	26	455

5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				Parr Rd NE (Eastbound)				Parr Rd NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	0	10	2	0	4	11	0	0	0	0	0	0	4	0	4	0	35	452
6:15 PM	0	5	2	0	4	17	0	0	0	0	0	0	1	0	1	0	30	442
6:20 PM	0	10	1	0	6	12	0	0	0	0	0	0	0	0	6	0	35	429
6:25 PM	0	6	2	0	6	16	0	0	0	0	0	0	2	0	3	0	35	413
6:30 PM	0	10	3	0	5	9	0	0	0	0	0	0	3	0	3	0	33	410
6:35 PM	0	10	6	0	3	10	0	0	0	0	0	0	0	0	7	0	36	409
6:40 PM	0	7	4	0	4	12	0	0	0	0	0	0	2	0	3	0	32	400
6:45 PM	0	2	3	0	6	14	0	0	0	0	0	0	1	0	2	0	28	396
6:50 PM	0	13	2	0	8	8	0	0	0	0	0	0	1	0	2	0	34	395
6:55 PM	0	5	9	0	8	7	0	0	0	0	0	0	4	0	1	0	34	390

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	116	16	0	44	184	0	0	0	0	0	0	28	0	68	0	456
Heavy Trucks	0	0	0		4	4	0		0	0	0		0	0	4		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:54 AM

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

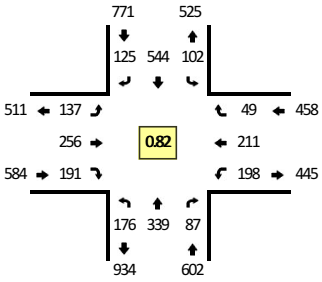
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

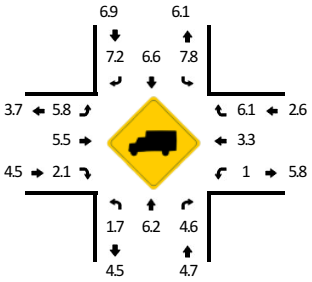
LOCATION: OR 99E -- OR 214
CITY/STATE: Woodburn, OR

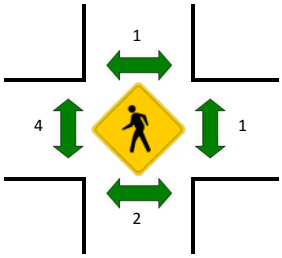
QC JOB #: 15462410
DATE: Tue, May 25 2021

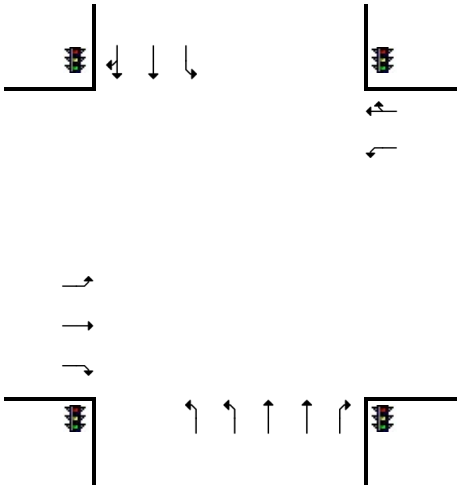
Peak-Hour: 5:30 PM -- 6:30 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

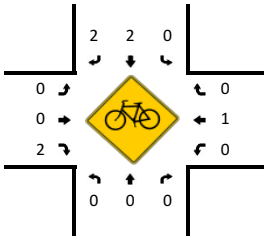


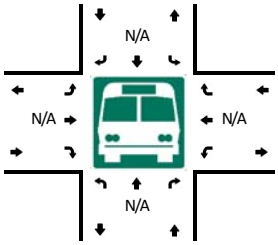
Quality Counts
DATA THAT DRIVES COMMUNITIES

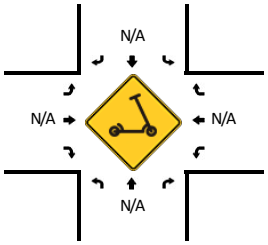












5-Min Count Period Beginning At	OR 99E (Northbound)				OR 99E (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	21	35	5	0	12	47	16	0	12	21	22	0	14	16	6	0	227	
3:05 PM	12	24	9	0	2	45	12	0	7	21	18	0	11	17	3	0	181	
3:10 PM	15	24	6	0	8	37	9	1	19	24	15	0	16	16	1	0	191	
3:15 PM	27	37	8	0	5	60	15	0	10	10	26	0	11	14	5	0	228	
3:20 PM	21	31	7	0	6	38	10	0	19	31	19	0	16	25	4	0	227	
3:25 PM	11	30	3	0	15	34	7	0	15	24	18	0	13	26	3	0	199	
3:30 PM	18	50	9	0	10	62	15	0	7	28	25	0	8	20	5	0	257	
3:35 PM	18	23	8	1	22	48	12	0	21	26	20	0	16	15	7	0	237	
3:40 PM	16	31	10	0	10	80	20	0	14	25	20	0	12	18	4	0	260	
3:45 PM	14	20	11	0	13	44	15	0	14	30	26	0	24	22	3	0	236	
3:50 PM	18	22	8	0	17	47	12	0	19	29	26	0	18	19	7	0	242	
3:55 PM	18	44	7	0	16	66	16	0	9	25	27	0	16	26	4	0	274	2759
4:00 PM	21	26	6	0	12	58	7	0	20	30	21	0	28	22	5	0	256	2788
4:05 PM	19	40	9	0	10	76	20	0	12	23	15	0	11	20	4	0	259	2866
4:10 PM	14	32	10	1	6	58	6	0	17	26	24	0	23	28	5	0	250	2925
4:15 PM	14	47	5	0	13	71	14	0	15	21	17	0	19	27	2	0	265	2962
4:20 PM	17	31	6	0	11	46	15	0	6	31	22	0	11	20	2	0	218	2953
4:25 PM	27	33	4	0	14	45	9	0	7	27	19	0	23	17	4	0	229	2983
4:30 PM	13	32	9	1	11	84	13	0	17	24	25	0	18	17	5	0	269	2995
4:35 PM	21	28	15	0	7	51	14	0	14	31	21	0	26	25	5	0	258	3016
4:40 PM	22	31	8	0	20	74	15	0	16	22	15	0	16	21	4	0	264	3020
4:45 PM	19	39	5	0	7	74	6	0	11	28	19	0	18	23	4	0	253	3037
4:50 PM	24	32	7	0	9	46	11	0	18	28	21	0	24	18	5	0	243	3038
4:55 PM	18	43	7	0	9	86	18	0	11	23	11	0	14	12	1	0	253	3017
5:00 PM	14	21	7	0	8	62	9	0	9	31	17	0	14	30	5	0	227	2988
5:05 PM	13	42	9	0	17	68	9	0	14	23	20	0	12	16	1	0	244	2973
5:10 PM	5	24	4	0	16	51	12	0	19	35	17	0	15	30	7	0	235	2958
5:15 PM	25	24	5	0	11	44	5	0	20	24	19	0	23	18	1	0	219	2912
5:20 PM	6	59	5	0	13	61	11	0	12	19	20	0	18	18	4	0	246	2940
5:25 PM	9	20	8	0	6	43	9	0	11	28	13	0	19	21	2	0	189	2900
5:30 PM	23	43	9	1	12	51	14	0	18	18	27	0	17	16	3	0	252	2883
5:35 PM	17	39	8	0	8	52	11	0	13	35	11	0	20	25	6	0	245	2870
5:40 PM	27	29	7	0	11	37	14	0	14	30	22	0	24	15	6	0	236	2842
5:45 PM	18	35	12	0	8	58	10	0	13	14	14	0	15	17	1	0	215	2804
5:50 PM	5	23	6	0	6	47	11	0	7	24	12	0	11	24	6	0	182	2743
5:55 PM	17	35	8	0	18	41	8	0	5	10	15	0	12	14	5	0	188	2678
6:00 PM	10	21	9	0	7	32	5	0	8	22	18	0	20	26	7	0	185	2636
6:05 PM	13	26	6	0	8	52	12	0	14	16	17	0	19	16	1	0	200	2592

5-Min Count Period Beginning At	OR 99E (Northbound)				OR 99E (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	11	18	8	0	5	64	7	0	11	21	16	0	16	11	4	0	192	2549
6:15 PM	11	23	9	0	7	43	12	0	16	32	11	0	14	14	4	0	196	2526
6:20 PM	16	26	4	0	8	39	13	0	7	19	14	0	13	16	3	0	178	2458
6:25 PM	7	21	1	0	4	28	8	0	11	15	14	0	17	17	3	0	146	2415
6:30 PM	9	19	11	0	11	29	12	0	10	21	16	0	15	14	2	0	169	2332
6:35 PM	14	22	6	0	8	48	15	0	7	16	16	0	16	12	3	0	183	2270
6:40 PM	17	20	2	0	9	31	7	0	9	17	15	0	18	17	2	0	164	2198
6:45 PM	14	24	2	0	3	35	6	0	4	13	9	0	15	18	6	0	149	2132
6:50 PM	3	21	0	0	6	28	9	0	7	22	12	0	8	14	3	0	133	2083
6:55 PM	13	22	6	0	8	14	5	0	14	10	11	0	17	10	5	0	135	2030

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	268	444	96	4	124	560	156	0	180	332	240	0	244	224	60	0	2932
Heavy Trucks	4	28	0		16	24	16		16	28	4		4	8	8		156
Buses																	
Pedestrians		4				0				4				0			8
Bicycles	0	0	0		0	4	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 7/14/2021 8:14 AM

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: Arbor Grove Rd NE (north leg of Arbor Grove) -- OR 219

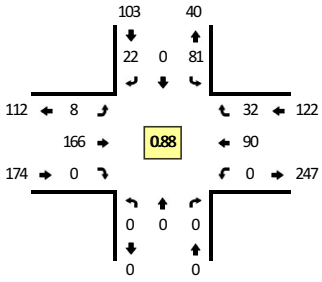
QC JOB #: 15462402

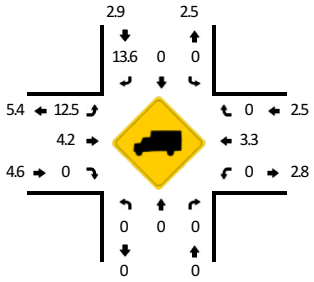
CITY/STATE: Marion, OR

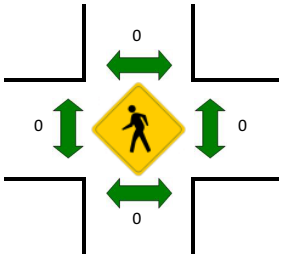
DATE: Tue, May 25 2021

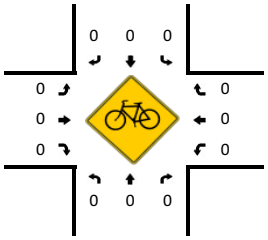
Peak-Hour: 4:30 PM -- 5:30 PM

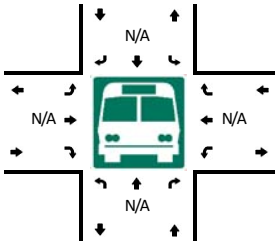
Peak 15-Min: 4:35 PM -- 4:50 PM

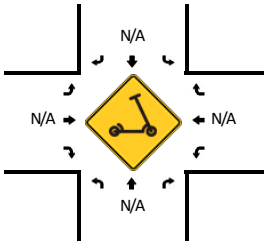












5-Min Count Period Beginning At	Arbor Grove Rd NE (north leg of Arbor Grove) (Northbound)				Arbor Grove Rd NE (north leg of Arbor Grove) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	2	0	0	0	0	7	0	0	0	8	1	0	18	
3:05 PM	0	0	0	0	0	0	0	0	0	8	0	0	0	2	0	0	10	
3:10 PM	0	0	0	0	2	0	0	0	0	9	0	0	0	5	5	0	21	
3:15 PM	0	0	0	0	3	0	1	0	0	7	0	0	0	4	3	0	18	
3:20 PM	0	0	0	0	3	0	0	0	1	9	0	0	0	4	3	0	20	
3:25 PM	0	0	0	0	2	0	0	0	0	7	0	0	0	8	1	0	18	
3:30 PM	0	0	0	0	3	0	1	0	0	7	0	0	0	7	0	0	18	
3:35 PM	0	0	0	0	5	0	1	0	0	3	0	0	0	3	4	0	16	
3:40 PM	0	0	0	0	7	0	0	0	0	4	0	0	0	10	1	0	22	
3:45 PM	0	0	0	0	3	0	0	0	0	7	0	0	0	8	5	0	23	
3:50 PM	0	0	0	0	3	0	1	0	1	12	0	0	0	14	3	0	34	
3:55 PM	0	0	0	0	4	0	1	0	0	8	0	0	0	5	3	0	21	239
4:00 PM	0	0	0	0	4	0	0	0	1	13	0	0	0	4	2	0	24	245
4:05 PM	0	0	0	0	7	0	0	0	2	11	0	0	0	6	2	0	28	263
4:10 PM	0	0	0	0	5	0	1	0	0	15	0	0	0	5	1	0	27	269
4:15 PM	0	0	0	0	6	0	2	0	1	11	0	0	0	11	1	0	32	283
4:20 PM	0	0	0	0	5	0	2	0	2	8	0	0	0	10	3	0	30	293
4:25 PM	0	0	0	0	3	0	2	0	0	15	0	0	0	4	0	0	24	299
4:30 PM	0	0	0	0	6	0	4	0	1	10	0	0	0	8	2	0	31	312
4:35 PM	0	0	0	0	19	0	2	0	0	18	0	0	0	5	3	0	47	343
4:40 PM	0	0	0	0	12	0	2	0	1	10	0	0	0	6	2	0	33	354
4:45 PM	0	0	0	0	5	0	2	0	0	15	0	0	0	9	3	0	34	365
4:50 PM	0	0	0	0	8	0	2	0	1	8	0	0	0	8	2	0	29	360
4:55 PM	0	0	0	0	1	0	3	0	0	15	0	0	0	7	1	0	27	366
5:00 PM	0	0	0	0	9	0	2	0	1	8	0	0	0	7	4	0	31	373
5:05 PM	0	0	0	0	4	0	1	0	0	17	0	0	0	11	5	0	38	383
5:10 PM	0	0	0	0	7	0	0	0	0	13	0	0	0	12	4	0	36	392
5:15 PM	0	0	0	0	5	0	1	0	2	19	0	0	0	9	3	0	39	399
5:20 PM	0	0	0	0	3	0	1	0	1	20	0	0	0	4	2	0	31	400
5:25 PM	0	0	0	0	2	0	2	0	1	13	0	0	0	4	1	0	23	399
5:30 PM	0	0	0	0	2	0	1	0	0	10	0	0	0	10	3	0	26	394
5:35 PM	0	0	0	0	2	0	1	0	0	14	0	0	0	5	4	0	26	373
5:40 PM	0	0	0	0	2	0	1	0	2	13	0	0	0	3	0	0	21	361
5:45 PM	0	0	0	0	3	0	1	0	0	4	0	0	0	6	1	0	15	342
5:50 PM	0	0	0	0	4	0	0	0	0	14	0	0	0	7	2	0	27	340
5:55 PM	0	0	0	0	2	0	0	0	1	5	0	0	0	5	0	0	13	326
6:00 PM	0	0	0	0	2	0	0	0	0	13	0	0	0	5	1	0	21	316

5-Min Count Period Beginning At	Arbor Grove Rd NE (north leg of Arbor Grove) (Northbound)				Arbor Grove Rd NE (north leg of Arbor Grove) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:05 PM	0	0	0	0	2	0	0	0	0	11	0	0	0	2	3	0	18	296
6:10 PM	0	0	0	0	3	0	0	0	2	8	0	0	0	9	1	0	23	283
6:15 PM	0	0	0	0	3	0	1	0	0	9	0	0	0	3	0	0	16	260
6:20 PM	0	0	0	0	1	0	0	0	0	9	0	0	0	5	0	0	15	244
6:25 PM	0	0	0	0	0	0	2	0	0	8	0	0	0	6	1	0	17	238
6:30 PM	0	0	0	0	2	0	0	0	1	8	0	0	0	6	1	0	18	230
6:35 PM	0	0	0	0	3	0	0	0	1	1	0	0	0	2	3	0	10	214
6:40 PM	0	0	0	0	0	0	0	1	1	9	0	0	0	6	1	0	18	211
6:45 PM	0	0	0	0	1	0	0	0	1	4	0	0	0	4	1	0	11	207
6:50 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	2	1	0	9	189
6:55 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	5	1	0	10	186

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	144	0	24	0	4	172	0	0	0	80	32	0	456
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	8	0		20
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/24/2021 7:34 AM

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: Butteville Rd NE (north leg of Butteville Rd) -- OR 219

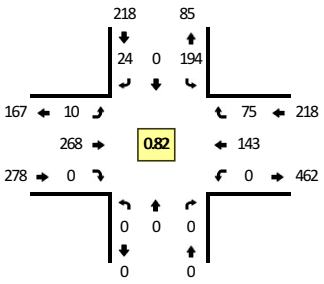
QC JOB #: 15462404

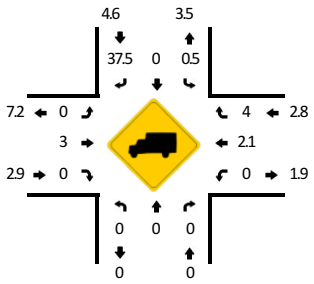
CITY/STATE: Marion, OR

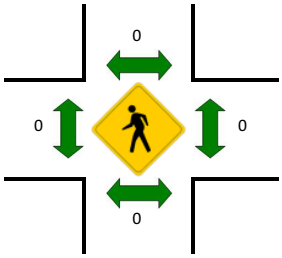
DATE: Tue, May 25 2021

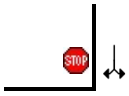
Peak-Hour: 4:30 PM -- 5:30 PM

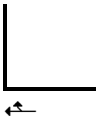
Peak 15-Min: 5:05 PM -- 5:20 PM

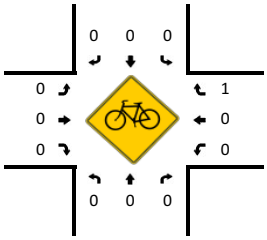


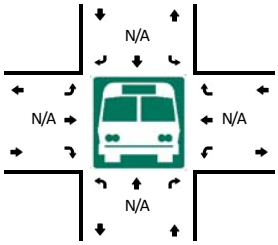


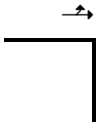


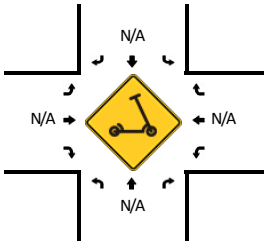












5-Min Count Period Beginning At	Butteville Rd NE (north leg of Butteville Rd) (Northbound)				Butteville Rd NE (north leg of Butteville Rd) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	11	0	2	0	2	11	0	0	0	6	8	0	40	
3:05 PM	0	0	0	0	6	0	1	0	2	9	0	0	0	6	5	0	29	
3:10 PM	0	0	0	0	5	0	1	0	1	5	0	0	0	9	6	0	27	
3:15 PM	0	0	0	0	5	0	0	0	0	6	0	0	0	10	8	0	29	
3:20 PM	0	0	0	0	10	0	2	0	0	19	0	0	0	11	5	0	47	
3:25 PM	0	0	0	0	5	0	3	0	1	4	0	0	0	12	13	0	38	
3:30 PM	0	0	0	0	12	0	3	0	1	11	0	0	0	6	9	0	42	
3:35 PM	0	0	0	0	8	0	0	0	2	12	0	0	0	13	9	0	44	
3:40 PM	0	0	0	0	16	0	1	0	0	10	0	0	0	13	7	0	47	
3:45 PM	0	0	0	0	20	0	1	0	1	14	0	0	0	20	8	0	64	
3:50 PM	0	0	0	0	14	0	2	0	0	10	0	0	0	13	7	0	46	
3:55 PM	0	0	0	0	15	0	1	0	3	17	0	0	0	11	6	0	53	506
4:00 PM	0	0	0	0	15	0	2	0	1	12	0	0	0	8	3	0	41	507
4:05 PM	0	0	0	0	5	0	2	0	1	15	0	0	0	11	5	0	39	517
4:10 PM	0	0	0	0	16	0	3	0	2	18	0	0	0	9	9	0	57	547
4:15 PM	0	0	0	0	5	0	3	0	0	20	0	0	0	11	4	0	43	561
4:20 PM	0	0	0	0	10	0	3	0	2	13	0	0	0	13	1	0	42	556
4:25 PM	0	0	0	0	8	0	1	0	0	18	0	0	0	7	9	0	43	561
4:30 PM	0	0	0	0	9	0	1	0	2	21	0	0	0	9	5	0	47	566
4:35 PM	0	0	0	0	15	0	3	0	3	25	0	0	0	9	7	0	62	584
4:40 PM	0	0	0	0	13	0	3	0	0	33	0	0	0	16	10	0	75	612
4:45 PM	0	0	0	0	19	0	0	0	0	21	0	0	0	9	7	0	56	604
4:50 PM	0	0	0	0	20	0	0	0	1	18	0	0	0	9	10	0	58	616
4:55 PM	0	0	0	0	14	0	5	0	0	19	0	0	0	11	5	0	54	617
5:00 PM	0	0	0	0	14	0	1	0	1	13	0	0	0	8	5	0	42	618
5:05 PM	0	0	0	0	26	0	4	0	0	25	0	0	0	19	9	0	83	662
5:10 PM	0	0	0	0	32	0	3	0	1	26	0	0	0	22	5	0	89	694
5:15 PM	0	0	0	0	12	0	3	0	2	17	0	0	0	10	1	0	45	696
5:20 PM	0	0	0	0	11	0	0	0	0	30	0	0	0	8	5	0	54	708
5:25 PM	0	0	0	0	9	0	1	0	0	20	0	0	0	13	6	0	49	714
5:30 PM	0	0	0	0	10	0	3	0	4	10	0	0	0	16	7	0	50	717
5:35 PM	0	0	0	0	8	0	1	0	0	18	0	0	0	8	4	0	39	694
5:40 PM	0	0	0	0	9	0	1	0	1	12	0	0	0	4	7	0	34	653
5:45 PM	0	0	0	0	7	0	2	0	0	17	0	0	0	9	7	0	42	639
5:50 PM	0	0	0	0	10	0	2	0	2	14	0	0	0	11	6	0	45	626
5:55 PM	0	0	0	0	11	0	0	0	0	14	0	0	0	6	6	0	37	609
6:00 PM	0	0	0	0	8	0	1	0	1	11	0	0	0	6	5	0	32	599

5-Min Count Period Beginning At	Butteville Rd NE (north leg of Butteville Rd) (Northbound)				Butteville Rd NE (north leg of Butteville Rd) (Southbound)				OR 219 (Eastbound)				OR 219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:05 PM	0	0	0	0	12	0	1	0	0	15	0	0	0	11	6	0	45	561
6:10 PM	0	0	0	0	6	0	3	0	1	21	0	0	0	7	9	0	47	519
6:15 PM	0	0	0	0	12	0	2	0	0	12	0	0	0	3	5	0	34	508
6:20 PM	0	0	0	0	4	0	0	0	1	15	0	0	0	6	8	0	34	488
6:25 PM	0	0	0	0	4	0	1	0	1	8	0	0	0	7	7	0	28	467
6:30 PM	0	0	0	0	7	0	1	0	1	12	0	0	0	11	5	0	37	454
6:35 PM	0	0	0	0	3	0	0	0	1	3	0	0	0	11	3	0	21	436
6:40 PM	0	0	0	0	6	0	0	0	1	13	0	0	0	7	4	0	31	433
6:45 PM	0	0	0	0	6	0	1	0	0	7	0	0	0	5	6	0	25	416
6:50 PM	0	0	0	0	6	0	0	0	0	7	0	0	0	10	6	0	29	400
6:55 PM	0	0	0	0	7	0	0	0	1	8	0	0	0	7	7	0	30	393

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	280	0	40	0	12	272	0	0	0	204	60	0	868
Heavy Trucks	0	0	0		0	0	16		0	8	0		0	0	0		24
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	4		4
Scooters																	

Comments:

Report generated on 6/24/2021 7:34 AM

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

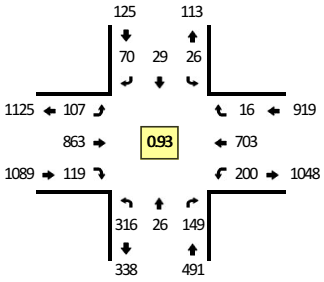
Type of peak hour being reported: User-Defined

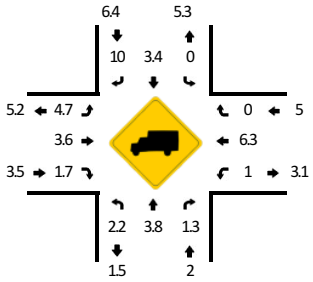
Method for determining peak hour: Total Entering Volume

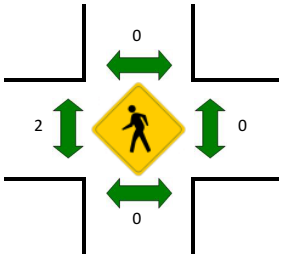
LOCATION: Evergreen Rd -- OR 214
CITY/STATE: Woodburn, OR

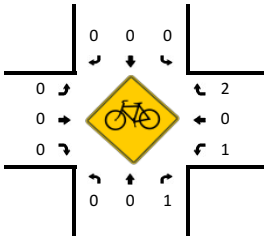
QC JOB #: 15462406
DATE: Tue, May 25 2021

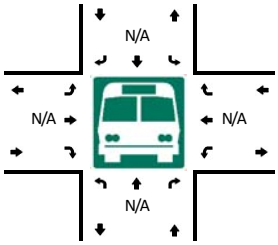
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

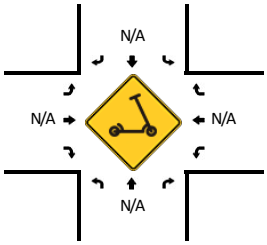


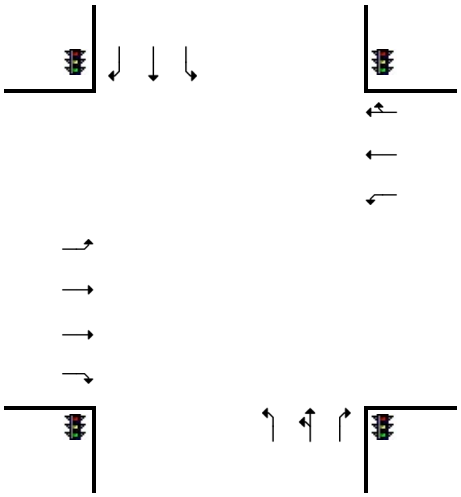












5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	27	3	13	0	1	2	2	0	7	49	8	5	18	60	1	3	199	
3:05 PM	26	4	12	0	4	2	11	0	5	59	7	1	12	46	0	0	189	
3:10 PM	27	3	11	0	0	3	3	0	2	54	5	2	13	65	1	0	189	
3:15 PM	16	0	16	0	3	2	12	0	6	66	8	2	9	54	1	0	195	
3:20 PM	22	3	15	0	2	3	5	0	5	77	9	4	10	46	0	1	202	
3:25 PM	30	4	16	0	1	2	8	0	9	69	9	1	8	53	1	1	212	
3:30 PM	25	3	10	0	4	1	5	0	3	81	6	3	9	52	3	0	205	
3:35 PM	32	2	9	0	8	3	4	0	3	67	11	3	15	57	0	1	215	
3:40 PM	28	2	15	0	0	3	8	0	4	74	8	6	14	60	0	2	224	
3:45 PM	18	2	16	0	2	6	4	0	10	68	8	4	15	48	2	3	206	
3:50 PM	26	2	12	0	4	1	4	0	8	75	10	4	11	70	2	1	230	
3:55 PM	32	5	16	0	4	1	3	0	10	58	15	3	9	55	2	1	214	2480
4:00 PM	26	3	11	0	1	3	5	0	6	73	13	1	18	53	2	1	216	2497
4:05 PM	33	1	11	0	4	4	9	0	10	70	9	3	9	69	2	1	235	2543
4:10 PM	34	2	5	0	4	2	9	0	8	76	11	2	13	61	0	0	227	2581
4:15 PM	22	4	10	0	0	1	4	0	3	58	11	1	7	61	1	2	185	2571
4:20 PM	31	3	11	0	4	3	7	0	6	69	5	6	18	53	3	1	220	2589
4:25 PM	17	2	10	0	1	5	7	0	5	53	6	3	18	54	4	1	186	2563
4:30 PM	26	2	16	0	1	5	5	0	5	64	10	5	12	49	4	0	204	2562
4:35 PM	34	2	15	0	6	2	4	0	5	76	10	6	13	57	2	1	233	2580
4:40 PM	33	2	13	0	1	3	6	0	5	74	12	1	17	73	2	1	243	2599
4:45 PM	29	0	17	0	4	3	7	0	6	79	8	1	19	59	1	0	233	2626
4:50 PM	27	4	13	0	0	1	7	0	8	71	14	2	18	51	1	2	219	2615
4:55 PM	18	0	5	0	1	3	3	0	6	73	12	5	18	46	1	1	192	2593
5:00 PM	25	2	10	0	1	1	6	0	6	68	9	0	12	52	2	0	194	2571
5:05 PM	18	3	10	0	2	4	12	0	5	57	7	2	14	70	0	2	206	2542
5:10 PM	33	2	11	0	2	2	4	0	5	71	7	2	16	74	0	0	229	2544
5:15 PM	18	2	11	0	3	3	8	0	9	86	9	4	21	58	1	1	234	2593
5:20 PM	31	3	12	0	3	0	5	0	6	70	11	1	13	50	2	1	208	2581
5:25 PM	24	4	16	0	2	2	3	0	5	74	10	7	17	64	0	1	229	2624
5:30 PM	14	1	10	0	2	0	7	0	5	69	6	6	5	40	1	1	167	2587
5:35 PM	25	1	17	0	3	2	5	0	7	72	8	1	11	63	1	3	219	2573
5:40 PM	30	1	13	0	3	2	7	0	4	59	8	1	17	50	3	2	200	2530
5:45 PM	20	1	16	0	0	1	5	0	5	76	13	0	11	39	0	0	187	2484
5:50 PM	27	1	8	0	4	0	2	0	7	64	16	4	14	44	2	0	193	2458
5:55 PM	30	0	12	0	5	0	8	0	3	63	14	5	9	35	1	1	186	2452
6:00 PM	36	1	13	0	1	0	6	0	8	59	6	5	8	39	0	0	182	2440
6:05 PM	16	1	8	0	2	0	5	0	5	72	6	0	12	52	3	0	182	2416

5-Min Count Period Beginning At	Evergreen Rd (Northbound)				Evergreen Rd (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	21	1	14	0	2	2	2	0	9	57	10	1	16	47	0	3	185	2372
6:15 PM	23	0	8	0	2	3	5	0	4	69	12	4	10	40	1	0	181	2319
6:20 PM	25	1	8	0	2	7	3	0	7	65	6	3	10	39	0	1	177	2288
6:25 PM	19	1	12	0	3	2	6	0	10	51	6	3	11	45	3	0	172	2231
6:30 PM	18	3	8	0	3	0	3	0	1	58	7	2	14	50	1	0	168	2232
6:35 PM	27	1	7	0	1	3	2	0	5	58	4	2	20	38	1	2	171	2184
6:40 PM	12	5	12	0	2	1	5	0	6	51	5	1	11	39	2	0	152	2136
6:45 PM	18	2	18	0	2	0	1	0	3	40	3	4	12	32	0	1	136	2085
6:50 PM	20	1	5	0	3	2	1	0	5	42	7	0	11	25	0	0	122	2014
6:55 PM	21	0	19	0	0	2	2	0	3	41	7	0	21	32	0	4	152	1980

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	384	16	180	0	44	32	68	0	64	916	120	32	196	756	20	8	2836
Heavy Trucks	8	0	4		0	4	8		8	36	0		4	32	0		104
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	4		4
Scooters																	

Comments:

Report generated on 6/24/2021 7:34 AM

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: N Boones Ferry Rd/N Settlemier Ave -- OR 214

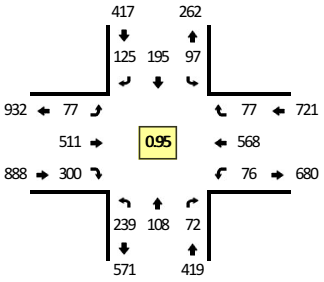
QC JOB #: 15462408

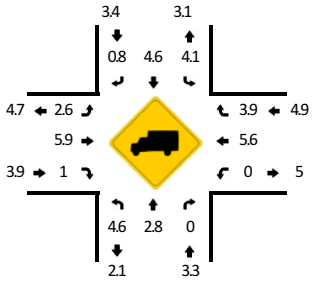
CITY/STATE: Woodburn, OR

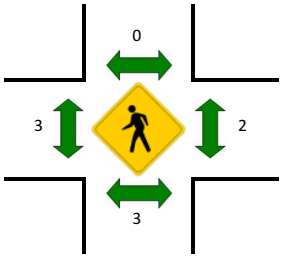
DATE: Tue, May 25 2021

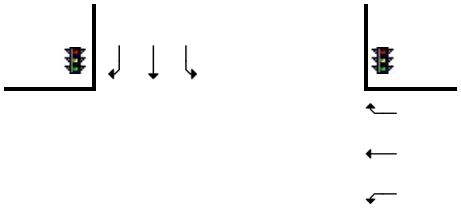
Peak-Hour: 4:30 PM -- 5:30 PM

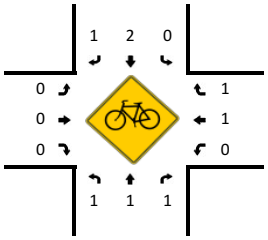
Peak 15-Min: 5:00 PM -- 5:15 PM

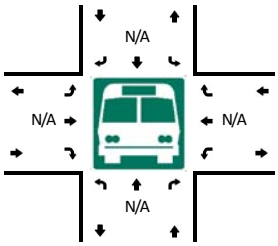


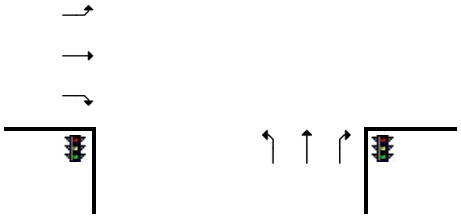


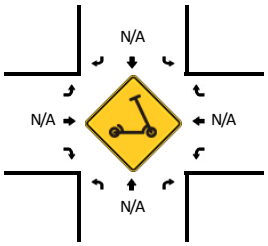












5-Min Count Period Beginning At	N Boones Ferry Rd/N Settlemier Ave (Northbound)				N Boones Ferry Rd/N Settlemier Ave (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	30	8	2	0	10	5	8	0	10	34	15	0	6	42	9	0	179	
3:05 PM	15	6	7	0	6	10	8	0	2	37	16	0	4	51	8	0	170	
3:10 PM	20	8	9	0	10	12	14	0	8	31	14	0	3	36	5	0	170	
3:15 PM	13	3	9	0	7	11	5	0	6	57	18	0	8	51	6	0	194	
3:20 PM	6	3	5	0	6	7	6	0	5	55	19	0	6	46	6	0	170	
3:25 PM	20	16	9	0	8	14	4	0	10	47	22	0	14	44	6	0	214	
3:30 PM	17	11	8	0	8	17	10	0	13	39	20	0	7	53	7	0	210	
3:35 PM	29	7	5	0	16	11	9	0	4	42	37	0	9	46	8	0	223	
3:40 PM	17	11	9	0	12	19	8	0	3	48	18	0	6	60	4	0	215	
3:45 PM	29	12	10	0	13	16	8	0	8	44	26	0	6	51	7	0	230	
3:50 PM	19	12	8	0	6	16	14	0	8	46	30	0	9	48	6	0	222	
3:55 PM	18	12	4	0	5	12	10	0	5	45	24	0	6	51	3	0	195	2392
4:00 PM	16	11	7	0	10	15	11	0	5	44	27	0	14	59	4	0	223	2436
4:05 PM	14	8	7	0	4	22	6	0	6	49	29	0	4	53	5	0	207	2473
4:10 PM	16	5	6	0	13	11	16	0	3	37	26	0	8	53	8	0	202	2505
4:15 PM	6	11	8	0	10	16	6	0	12	41	21	0	16	51	4	0	202	2513
4:20 PM	18	8	2	0	6	9	14	0	7	51	25	0	3	51	6	0	200	2543
4:25 PM	14	10	4	0	10	13	11	0	4	29	15	0	13	44	4	0	171	2500
4:30 PM	20	9	6	0	4	16	9	0	5	39	17	0	7	53	5	0	190	2480
4:35 PM	25	12	4	0	9	15	10	0	6	37	27	0	6	48	6	0	205	2462
4:40 PM	18	14	3	0	5	21	10	0	5	49	18	0	5	50	4	0	202	2449
4:45 PM	21	11	3	0	4	7	13	0	8	48	27	0	7	59	6	0	214	2433
4:50 PM	20	4	6	0	9	16	17	0	10	49	19	0	7	38	4	0	199	2410
4:55 PM	21	9	6	0	9	12	5	0	6	35	22	0	6	41	10	0	182	2397
5:00 PM	15	9	9	0	9	23	17	0	6	43	32	0	9	40	9	0	221	2395
5:05 PM	23	5	6	0	6	13	12	0	8	44	23	0	7	58	3	0	208	2396
5:10 PM	23	10	5	0	10	19	13	0	5	37	25	0	3	51	12	0	213	2407
5:15 PM	18	11	7	0	11	23	6	0	9	34	34	0	7	41	5	0	206	2411
5:20 PM	15	6	8	0	10	14	7	0	5	53	31	0	2	51	4	0	206	2417
5:25 PM	20	8	9	0	11	16	6	0	4	43	25	0	10	38	9	0	199	2445
5:30 PM	26	17	9	0	20	14	7	0	7	39	36	0	4	28	4	0	211	2466
5:35 PM	18	6	5	0	7	12	7	0	14	56	17	0	8	49	7	0	206	2467
5:40 PM	17	8	1	0	3	14	7	0	10	42	32	0	2	40	5	0	181	2446
5:45 PM	12	5	4	0	6	9	3	0	8	33	25	0	12	46	7	0	170	2402
5:50 PM	18	12	1	0	4	16	6	0	6	38	27	0	6	32	7	0	173	2376
5:55 PM	17	6	9	0	5	11	6	0	4	39	31	0	4	28	2	0	162	2356
6:00 PM	20	8	5	0	4	14	8	0	6	34	34	0	10	26	8	0	177	2312

5-Min Count Period Beginning At	N Boones Ferry Rd/N Settlemier Ave (Northbound)				N Boones Ferry Rd/N Settlemier Ave (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:05 PM	12	8	3	0	4	14	10	0	7	47	21	0	6	48	9	0	189	2293
6:10 PM	23	8	4	0	5	16	10	0	10	40	35	0	9	41	9	0	210	2290
6:15 PM	18	15	8	0	9	17	7	0	7	34	26	0	4	28	4	0	177	2261
6:20 PM	15	9	5	0	9	10	6	0	3	38	24	0	10	26	6	0	161	2216
6:25 PM	10	4	2	0	2	13	3	0	9	30	22	0	4	46	1	0	146	2163
6:30 PM	15	8	4	0	6	6	5	0	5	36	30	0	3	33	3	0	154	2106
6:35 PM	24	2	4	0	5	10	3	0	4	38	18	0	3	40	4	0	155	2055
6:40 PM	17	2	6	0	3	8	6	0	1	30	25	0	5	35	2	0	140	2014
6:45 PM	24	9	2	0	5	11	2	0	5	31	13	0	5	17	5	0	129	1973
6:50 PM	12	9	4	0	6	8	5	0	3	34	13	0	4	29	6	0	133	1933
6:55 PM	11	10	3	0	7	8	5	0	4	20	16	0	3	35	4	0	126	1897

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	244	96	80	0	100	220	168	0	76	496	320	0	76	596	96	0	2568
Heavy Trucks	12	0	0		0	16	0		0	24	0		0	28	8		88
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	4	0		0	4	0		0	0	0		0	4	0		12
Scooters																	

Comments:

Report generated on 6/24/2021 7:34 AM

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

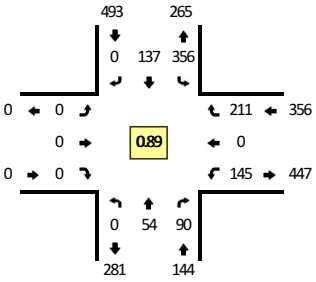
Type of peak hour being reported: User-Defined

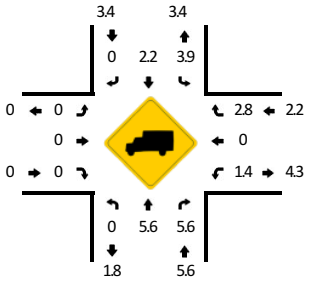
Method for determining peak hour: Total Entering Volume

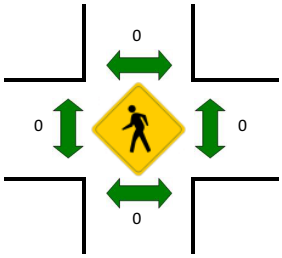
LOCATION: Butteville Rd NE -- OR-219
CITY/STATE: Woodburn, OR

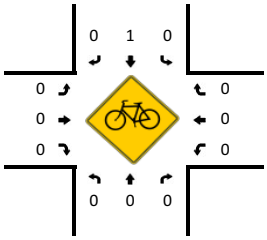
QC JOB #: 15405709
DATE: Wed, Apr 14 2021

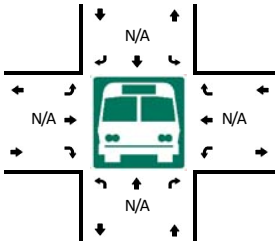
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

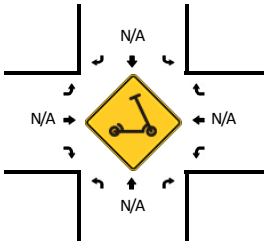












5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	2	0	9	3	0	0	0	0	0	0	9	0	16	0	39	
3:05 PM	0	1	12	0	15	4	0	0	0	0	0	0	8	0	19	0	59	
3:10 PM	0	5	8	0	18	4	0	0	0	0	0	0	9	0	10	0	54	
3:15 PM	0	3	5	0	20	4	0	0	0	0	0	0	17	0	21	0	70	
3:20 PM	0	6	5	0	15	5	0	0	0	0	0	0	10	0	6	0	47	
3:25 PM	0	2	10	0	13	7	0	0	0	0	0	0	20	0	21	0	73	
3:30 PM	0	4	10	0	14	3	0	0	0	0	0	0	13	0	15	0	59	
3:35 PM	0	4	8	0	23	5	0	0	0	0	0	0	11	0	14	0	65	
3:40 PM	0	1	14	0	28	6	0	0	0	0	0	0	11	0	15	0	75	
3:45 PM	0	4	11	0	19	6	0	0	0	0	0	0	12	0	18	0	70	
3:50 PM	0	1	5	0	29	6	0	0	0	0	0	0	14	0	23	0	78	
3:55 PM	0	4	9	0	22	5	0	1	0	0	0	0	13	0	6	0	60	749
4:00 PM	0	5	6	1	18	5	0	0	0	0	0	0	12	0	18	0	65	775
4:05 PM	0	7	6	0	16	5	0	0	0	0	0	0	6	0	17	0	57	773
4:10 PM	0	3	11	0	31	5	0	0	0	0	0	0	14	0	16	0	80	799
4:15 PM	0	3	8	0	21	10	0	0	0	0	0	0	11	0	16	0	69	798
4:20 PM	0	10	8	0	24	6	0	0	0	0	0	0	15	0	16	0	79	830
4:25 PM	0	4	4	0	19	7	0	0	0	0	0	0	16	0	12	0	62	819
4:30 PM	0	7	12	0	19	11	0	0	0	0	0	0	19	0	18	0	86	846
4:35 PM	0	8	4	0	41	9	0	0	0	0	0	0	7	0	11	0	80	861
4:40 PM	0	3	5	0	46	11	0	0	0	0	0	0	12	0	19	0	96	882
4:45 PM	0	3	9	0	33	12	0	0	0	0	0	0	12	0	23	0	92	904
4:50 PM	0	3	10	0	40	17	0	0	0	0	0	0	9	0	13	0	92	918
4:55 PM	0	5	8	0	20	7	0	0	0	0	0	0	12	0	17	0	69	927
5:00 PM	0	3	3	0	21	8	0	0	0	0	0	0	15	0	18	0	68	930
5:05 PM	0	8	6	0	28	11	0	0	0	0	0	0	12	0	28	0	93	966
5:10 PM	0	1	9	0	37	12	0	0	0	0	0	0	11	0	16	1	87	973
5:15 PM	0	3	7	0	23	14	0	0	0	0	0	0	8	0	16	0	71	975
5:20 PM	0	3	5	0	27	14	0	0	0	0	0	0	19	0	11	0	79	975
5:25 PM	0	7	12	0	21	11	0	0	0	0	0	0	8	0	21	0	80	993
5:30 PM	0	5	10	0	21	7	0	0	0	0	0	0	15	0	13	0	71	978
5:35 PM	0	7	8	0	25	4	0	0	0	0	0	0	15	0	13	0	72	970
5:40 PM	0	7	17	0	12	7	0	0	0	0	0	0	12	0	14	0	69	943
5:45 PM	0	1	13	0	20	7	0	0	0	0	0	0	14	0	18	0	73	924
5:50 PM	0	2	7	0	24	6	0	0	0	0	0	0	10	0	8	0	57	889
5:55 PM	0	3	4	0	14	8	0	0	0	0	0	0	17	0	7	0	53	873
6:00 PM	0	4	19	0	15	6	0	0	0	0	0	0	6	0	5	0	55	860
6:05 PM	0	1	7	0	9	3	0	0	0	0	0	0	8	0	15	0	43	810

5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	0	5	7	0	13	5	0	0	0	0	0	0	14	0	13	0	57	780
6:15 PM	0	4	5	1	15	5	0	0	0	0	0	0	12	0	8	0	50	759
6:20 PM	0	2	8	0	18	3	0	0	0	0	0	0	21	0	8	0	60	740
6:25 PM	0	3	8	0	11	6	0	0	0	0	0	0	13	0	5	0	46	706
6:30 PM	0	4	10	0	19	4	0	0	0	0	0	0	9	0	11	0	57	692
6:35 PM	0	3	11	0	11	4	0	0	0	0	0	0	11	0	9	0	49	669
6:40 PM	0	3	9	0	10	5	0	0	0	0	0	0	8	0	9	0	44	644
6:45 PM	0	0	5	0	14	9	0	0	0	0	0	0	12	0	14	0	54	625
6:50 PM	0	6	4	0	10	5	0	0	0	0	0	0	11	0	8	0	44	612
6:55 PM	0	2	8	0	12	6	0	0	0	0	0	0	9	0	6	0	43	602

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	36	96	0	476	160	0	0	0	0	0	0	132	0	220	0	1120
Heavy Trucks	0	0	4		12	4	0		0	0	0		8	0	8		36
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

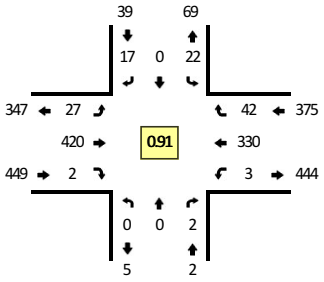
Type of peak hour being reported: User-Defined

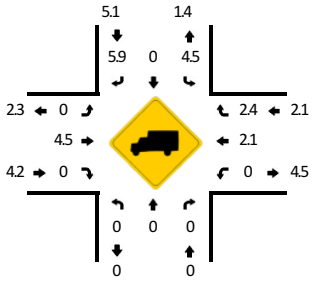
Method for determining peak hour: Total Entering Volume

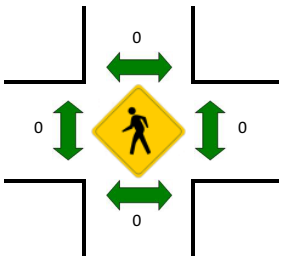
LOCATION: Willow Ave -- OR-219
CITY/STATE: Woodburn, OR

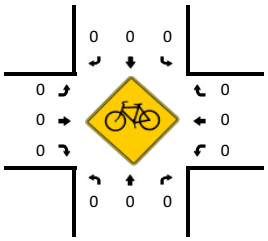
QC JOB #: 15405711
DATE: Wed, Apr 14 2021

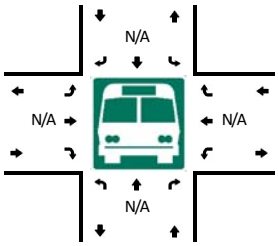
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

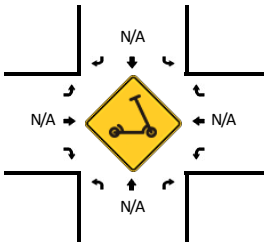












5-Min Count Period Beginning At	Willow Ave (Northbound)				Willow Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	2	0	0	0	0	11	0	0	0	22	3	0	38	
3:05 PM	0	0	0	0	0	0	3	0	1	25	0	0	0	24	3	0	56	
3:10 PM	0	0	0	0	4	0	1	0	3	22	0	0	0	20	3	0	53	
3:15 PM	0	0	0	0	1	1	1	0	2	22	0	0	0	36	4	0	67	
3:20 PM	0	0	0	0	0	0	0	0	4	18	0	0	0	16	2	0	40	
3:25 PM	0	0	0	0	1	0	2	0	1	19	0	0	0	41	3	0	67	
3:30 PM	0	1	0	0	3	0	2	0	2	22	0	0	0	22	4	0	56	
3:35 PM	0	0	0	0	4	0	2	0	1	29	0	0	0	27	6	0	69	
3:40 PM	0	0	0	0	3	0	1	0	2	42	1	0	0	22	2	0	73	
3:45 PM	0	0	1	0	2	0	0	0	1	31	0	0	0	30	3	0	68	
3:50 PM	0	0	0	0	0	0	2	0	2	30	0	0	0	36	4	0	74	
3:55 PM	0	0	0	0	3	1	1	0	4	27	0	0	0	18	2	0	56	717
4:00 PM	0	0	0	0	0	0	2	0	2	21	0	0	0	27	9	0	61	740
4:05 PM	0	0	1	0	0	0	1	0	1	22	0	0	0	22	6	0	53	737
4:10 PM	0	0	0	0	0	0	2	0	1	40	0	0	0	27	7	0	77	761
4:15 PM	0	0	0	0	4	0	0	0	2	31	0	0	0	29	0	0	66	760
4:20 PM	0	0	0	0	3	0	1	0	5	25	0	0	0	31	2	0	67	787
4:25 PM	0	0	0	0	3	0	1	0	2	19	0	0	0	29	3	0	57	777
4:30 PM	0	0	0	0	1	0	2	0	1	33	0	0	0	30	6	0	73	794
4:35 PM	0	0	0	0	2	0	3	0	2	42	0	0	1	20	4	0	74	799
4:40 PM	0	0	0	0	1	0	2	0	3	47	0	0	0	28	2	0	83	809
4:45 PM	0	0	0	0	1	0	3	0	2	41	0	0	0	27	7	0	81	822
4:50 PM	0	0	0	0	1	0	2	0	2	45	1	0	0	21	2	0	74	822
4:55 PM	0	0	1	0	1	0	0	0	5	26	0	0	0	31	3	0	67	833
5:00 PM	0	0	0	0	2	0	2	0	3	21	0	0	0	30	4	0	62	834
5:05 PM	0	0	0	0	6	0	0	0	2	31	0	0	0	37	1	0	77	858
5:10 PM	0	0	0	0	3	0	1	0	0	45	0	0	0	26	3	0	78	859
5:15 PM	0	0	0	0	0	0	1	0	1	29	0	0	0	27	3	0	61	854
5:20 PM	0	0	1	0	1	0	1	0	4	28	1	0	1	25	5	0	67	854
5:25 PM	0	0	0	0	3	0	0	0	2	32	0	0	1	28	2	0	68	865
5:30 PM	0	2	1	0	3	0	1	0	2	30	0	0	1	27	6	0	73	865
5:35 PM	0	0	0	0	2	0	2	0	2	28	0	0	0	25	3	0	62	853
5:40 PM	0	0	0	0	5	0	1	0	2	26	0	0	0	26	3	0	63	833
5:45 PM	0	0	0	0	1	0	4	0	5	27	0	0	0	24	9	0	70	822
5:50 PM	0	0	0	0	2	0	3	0	4	27	0	0	0	17	2	0	55	803
5:55 PM	0	0	0	0	5	0	3	0	2	18	0	0	0	19	4	0	51	787
6:00 PM	0	0	0	0	3	0	0	0	4	29	0	0	0	16	3	0	55	780
6:05 PM	0	0	0	0	4	0	0	0	3	13	0	0	0	20	5	0	45	748

5-Min Count Period Beginning At	Willow Ave (Northbound)				Willow Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	0	0	1	0	3	0	1	0	0	17	0	0	0	26	2	0	50	720
6:15 PM	0	0	0	0	1	0	0	0	2	18	0	0	0	22	5	0	48	707
6:20 PM	0	0	0	0	4	0	1	0	5	20	0	0	0	25	4	0	59	699
6:25 PM	0	0	0	0	3	0	0	0	4	17	0	0	0	19	2	0	45	676
6:30 PM	0	0	0	0	2	0	0	0	2	25	0	0	0	19	3	0	51	654
6:35 PM	0	0	0	0	4	0	2	0	3	19	0	0	0	19	3	0	50	642
6:40 PM	0	0	0	0	0	0	1	0	5	15	0	0	0	16	1	0	38	617
6:45 PM	0	0	0	0	2	1	1	0	3	16	0	0	0	25	5	0	53	600
6:50 PM	0	1	0	0	1	0	2	1	0	12	0	0	0	18	5	0	40	585
6:55 PM	0	0	0	0	3	1	1	0	2	18	0	0	0	16	1	0	42	576

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	16	0	32	0	28	520	0	0	4	300	52	0	952
Heavy Trucks	0	0	0		4	0	0		0	32	0		0	16	0		52
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

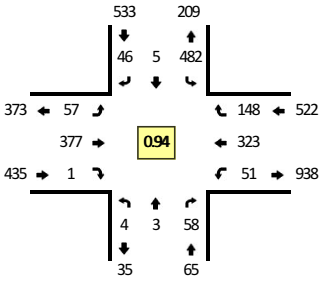
Type of peak hour being reported: User-Defined

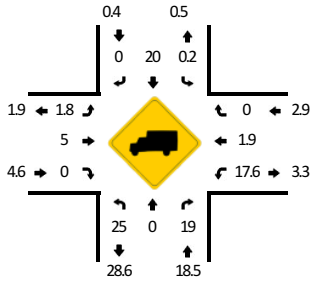
Method for determining peak hour: Total Entering Volume

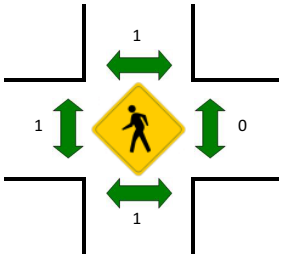
LOCATION: S Woodland Ave -- OR-219
CITY/STATE: Woodburn, OR

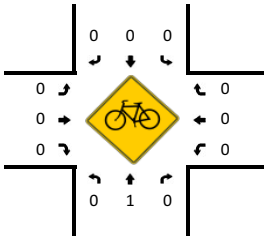
QC JOB #: 15405713
DATE: Wed, Apr 14 2021

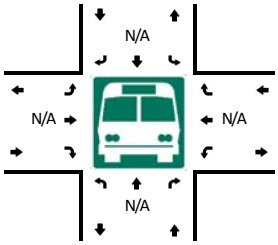
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

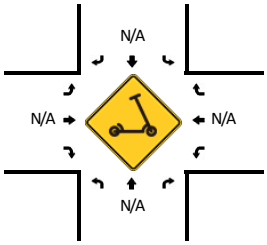












5-Min Count Period Beginning At	S Woodland Ave (Northbound)				S Woodland Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	6	0	46	0	3	0	1	12	0	0	1	26	9	2	106	
3:05 PM	0	0	6	0	51	0	2	1	5	17	0	0	5	27	4	2	120	
3:10 PM	0	0	2	0	46	1	3	0	4	24	0	0	3	24	6	1	114	
3:15 PM	0	1	13	0	49	0	2	0	4	18	0	0	3	31	8	2	131	
3:20 PM	0	0	7	0	47	1	2	0	4	15	0	0	1	17	10	4	108	
3:25 PM	2	1	7	0	38	0	4	0	3	18	0	0	4	37	2	1	117	
3:30 PM	0	0	3	0	53	0	4	0	3	19	0	0	0	27	10	2	121	
3:35 PM	1	0	4	0	49	0	4	0	4	27	0	0	2	25	11	1	128	
3:40 PM	0	0	4	0	39	0	1	0	6	37	1	0	2	26	5	0	121	
3:45 PM	1	0	7	0	37	0	0	0	11	29	0	0	0	27	11	2	125	
3:50 PM	2	0	2	0	42	0	4	0	3	26	0	0	3	39	10	0	131	
3:55 PM	0	0	4	0	56	0	1	0	7	19	0	0	5	18	6	2	118	1440
4:00 PM	2	0	23	0	42	0	7	0	2	20	0	0	0	25	5	6	132	1466
4:05 PM	2	0	6	0	45	0	4	0	2	23	0	0	6	21	8	5	122	1468
4:10 PM	0	0	7	0	46	0	2	0	5	32	0	0	6	33	4	4	139	1493
4:15 PM	2	0	8	0	43	0	6	0	4	26	0	0	2	29	3	5	128	1490
4:20 PM	0	2	5	0	38	0	5	0	1	34	0	0	2	24	10	2	123	1505
4:25 PM	0	0	1	0	42	0	1	0	5	14	0	0	1	28	10	7	109	1497
4:30 PM	0	0	3	0	42	0	3	0	7	25	0	0	3	36	6	0	125	1501
4:35 PM	0	1	3	0	46	0	1	0	8	37	0	0	2	21	11	2	132	1505
4:40 PM	0	0	2	0	35	0	4	1	4	39	0	0	3	27	9	3	127	1511
4:45 PM	1	0	3	0	38	1	2	0	2	44	0	0	4	30	10	5	140	1526
4:50 PM	0	0	5	0	31	1	4	0	6	39	0	0	2	19	23	4	134	1529
4:55 PM	0	0	6	0	32	1	3	0	4	25	0	0	4	31	12	0	118	1529
5:00 PM	1	0	10	0	34	0	5	0	2	23	0	0	3	25	10	2	115	1512
5:05 PM	2	2	5	0	50	0	9	0	4	24	0	0	0	29	12	1	138	1528
5:10 PM	0	0	12	0	43	1	2	0	8	41	0	0	3	29	11	1	151	1540
5:15 PM	0	0	2	0	39	1	6	0	5	28	1	0	4	24	13	1	124	1536
5:20 PM	0	0	4	0	42	0	5	0	2	26	0	0	1	25	17	0	122	1535
5:25 PM	0	0	3	0	49	0	2	0	5	26	0	0	0	27	14	3	129	1555
5:30 PM	0	0	2	0	34	0	1	0	4	39	0	0	4	33	12	3	132	1562
5:35 PM	0	0	3	0	47	0	6	0	5	23	0	0	3	23	11	1	122	1552
5:40 PM	1	0	2	0	53	0	3	1	7	22	1	0	0	26	21	2	139	1564
5:45 PM	0	0	4	0	39	0	5	0	3	26	0	0	2	26	11	2	118	1542
5:50 PM	0	0	1	0	37	0	2	0	5	22	0	0	2	16	9	4	98	1506
5:55 PM	0	0	5	0	39	0	4	0	6	18	0	0	1	18	13	2	106	1494
6:00 PM	1	0	7	0	38	0	4	0	8	26	0	0	1	15	8	0	108	1487
6:05 PM	1	0	5	0	50	0	2	0	1	15	0	0	1	20	11	2	108	1457

5-Min Count Period Beginning At	S Woodland Ave (Northbound)				S Woodland Ave (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	0	0	1	0	48	1	7	0	2	17	0	0	1	25	9	3	114	1420
6:15 PM	0	2	0	0	36	0	3	0	2	19	0	0	1	25	9	1	98	1394
6:20 PM	0	0	1	0	48	0	4	0	3	23	1	0	1	21	5	1	108	1380
6:25 PM	0	0	1	0	36	0	4	0	3	17	0	0	1	17	11	1	91	1342
6:30 PM	0	0	5	0	35	1	4	0	3	19	1	0	2	17	6	4	97	1307
6:35 PM	0	1	2	0	43	0	4	0	2	21	0	0	1	20	5	2	101	1286
6:40 PM	0	0	0	0	42	0	2	0	5	15	0	0	0	13	8	3	88	1235
6:45 PM	0	0	1	0	31	0	5	0	3	13	0	0	2	29	6	6	96	1213
6:50 PM	0	1	3	0	35	0	2	0	1	12	0	0	5	16	8	2	85	1200
6:55 PM	0	0	1	0	53	0	2	0	2	20	0	0	2	16	10	3	109	1203

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	8	8	76	0	528	8	68	0	68	372	4	0	28	328	144	12	1652
Heavy Trucks	0	0	20		0	0	0		0	12	0		4	0	0		36
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

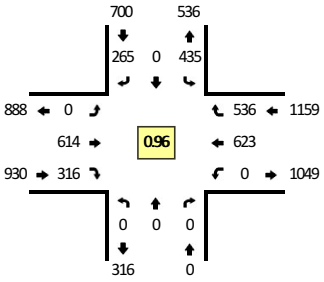
Type of peak hour being reported: User-Defined

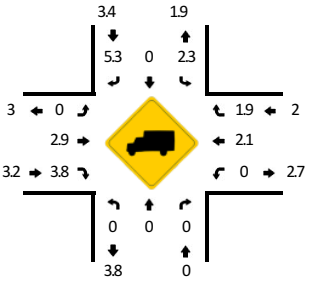
Method for determining peak hour: Total Entering Volume

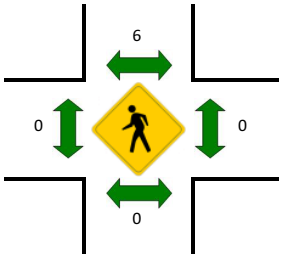
LOCATION: I-5 SB Ramps -- OR-219
CITY/STATE: Woodburn, OR

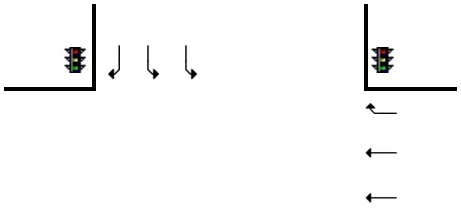
QC JOB #: 15405715
DATE: Wed, Apr 14 2021

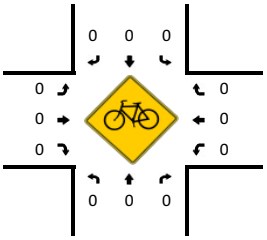
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

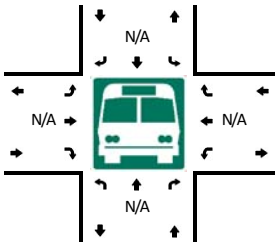


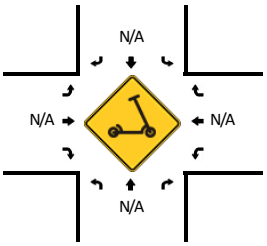












5-Min Count Period Beginning At	I-5 SB Ramps (Northbound)				I-5 SB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	0	0	0	33	0	23	0	0	43	27	0	0	46	38	0	210	
3:05 PM	0	0	0	0	32	0	19	0	0	48	26	0	0	53	38	0	216	
3:10 PM	0	0	0	0	33	0	18	0	0	55	20	0	0	30	31	0	187	
3:15 PM	0	0	0	0	28	0	30	0	0	56	19	0	0	64	44	0	241	
3:20 PM	0	0	0	0	34	0	12	0	0	52	24	0	0	41	31	0	194	
3:25 PM	0	0	0	0	35	0	22	0	0	40	23	0	0	58	34	0	212	
3:30 PM	0	0	0	0	31	0	17	0	0	58	18	0	0	51	35	0	210	
3:35 PM	0	0	0	0	28	0	19	0	0	49	29	0	0	46	49	0	220	
3:40 PM	0	0	0	0	20	0	22	0	0	49	29	0	0	45	31	0	196	
3:45 PM	0	0	0	0	31	0	21	0	0	52	28	0	0	53	46	0	231	
3:50 PM	0	0	0	0	36	0	21	0	0	42	27	0	0	63	28	0	217	
3:55 PM	0	0	0	0	29	0	29	0	0	57	26	0	0	37	33	0	211	2545
4:00 PM	0	0	0	0	40	0	17	0	0	53	35	0	0	56	32	0	233	2568
4:05 PM	0	0	0	0	43	0	16	0	0	45	32	0	0	46	39	0	221	2573
4:10 PM	0	0	0	0	40	0	22	0	0	49	41	0	0	49	37	0	238	2624
4:15 PM	0	0	0	0	43	0	19	0	0	50	32	0	0	55	47	0	246	2629
4:20 PM	0	0	0	0	28	0	13	0	0	62	24	0	0	48	45	0	220	2655
4:25 PM	0	0	0	0	22	0	24	0	0	38	23	0	0	53	54	0	214	2657
4:30 PM	0	0	0	0	30	0	26	0	0	47	26	0	0	42	49	0	220	2667
4:35 PM	0	0	0	0	38	0	14	0	0	53	31	0	0	55	50	0	241	2688
4:40 PM	0	0	0	0	34	0	17	0	0	59	27	0	0	58	35	0	230	2722
4:45 PM	0	0	0	0	31	0	21	0	0	54	25	0	0	64	38	0	233	2724
4:50 PM	0	0	0	0	43	0	28	0	0	58	30	0	0	58	46	0	263	2770
4:55 PM	0	0	0	0	22	0	24	0	0	43	19	0	0	52	48	0	208	2767
5:00 PM	0	0	0	0	43	0	24	0	0	45	22	0	0	45	44	0	223	2757
5:05 PM	0	0	0	0	33	0	24	0	0	50	27	0	0	59	57	0	250	2786
5:10 PM	0	0	0	0	36	0	20	0	0	60	31	0	0	44	46	0	237	2785
5:15 PM	0	0	0	0	39	0	18	0	0	48	23	0	0	57	43	0	228	2767
5:20 PM	0	0	0	0	41	0	34	0	0	46	31	0	0	40	38	0	230	2777
5:25 PM	0	0	0	0	45	0	15	0	0	51	24	0	0	49	42	0	226	2789
5:30 PM	0	0	0	0	38	0	22	0	0	65	18	0	0	65	42	0	250	2819
5:35 PM	0	0	0	0	44	0	17	0	0	45	21	0	0	49	28	0	204	2782
5:40 PM	0	0	0	0	38	0	23	0	0	62	26	0	0	47	45	0	241	2793
5:45 PM	0	0	0	0	49	0	17	0	0	49	18	0	0	49	42	0	224	2784
5:50 PM	0	0	0	0	46	0	15	0	0	41	17	0	0	46	45	0	210	2731
5:55 PM	0	0	0	0	32	0	20	0	0	50	17	0	0	50	28	0	197	2720
6:00 PM	0	0	0	0	44	0	20	0	0	51	20	0	0	41	25	0	201	2698
6:05 PM	0	0	0	0	35	0	17	0	0	51	11	0	0	46	31	0	191	2639

5-Min Count Period Beginning At	I-5 SB Ramps (Northbound)				I-5 SB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	0	0	0	0	33	0	12	0	0	49	21	0	0	46	36	0	197	2599
6:15 PM	0	0	0	0	34	0	26	0	0	47	17	0	0	47	30	0	201	2572
6:20 PM	0	0	0	0	36	0	14	0	0	48	17	0	0	40	29	0	184	2526
6:25 PM	0	0	0	0	27	0	22	0	0	41	18	0	0	40	24	0	172	2472
6:30 PM	0	0	0	0	27	0	20	0	0	50	12	0	0	39	32	0	180	2402
6:35 PM	0	0	0	0	45	0	19	0	0	52	17	0	0	31	23	0	187	2385
6:40 PM	0	0	0	0	45	0	12	0	0	46	16	0	0	31	25	0	175	2319
6:45 PM	0	0	0	0	30	0	13	0	0	36	15	0	0	41	27	0	162	2257
6:50 PM	0	0	0	0	13	0	17	0	0	35	20	0	0	26	22	0	133	2180
6:55 PM	0	0	0	0	20	0	12	0	0	59	16	0	0	34	30	0	171	2154

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	432	0	264	0	0	684	328	0	0	720	476	0	2904
Heavy Trucks	0	0	0		8	0	20		0	12	12		0	8	8		68
Buses																	
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

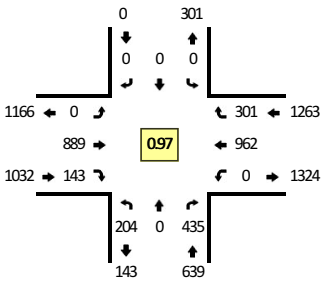
Type of peak hour being reported: User-Defined

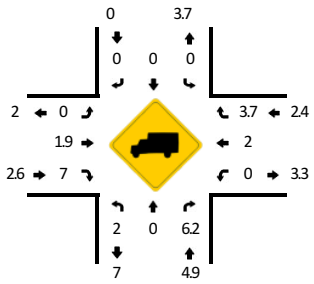
Method for determining peak hour: Total Entering Volume

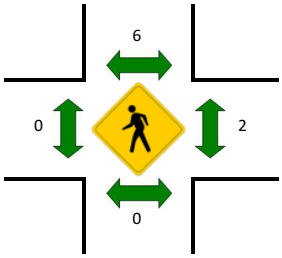
LOCATION: I-5 NB Ramps -- OR-219
CITY/STATE: Woodburn, OR

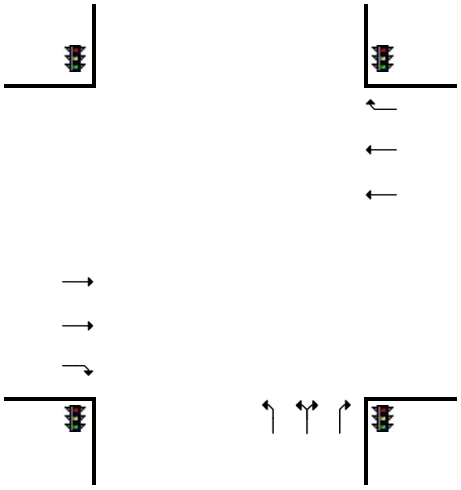
QC JOB #: 15405717
DATE: Wed, Apr 14 2021

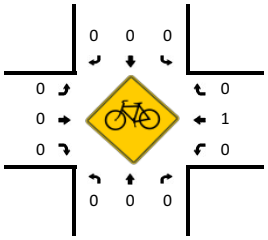
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

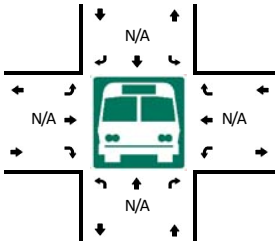


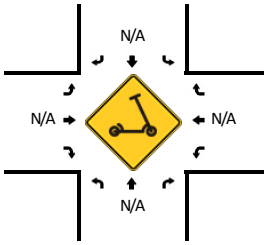












5-Min Count Period Beginning At	I-5 NB Ramps (Northbound)				I-5 NB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	17	0	30	0	0	0	0	0	0	54	19	0	0	63	29	0	212	
3:05 PM	16	0	21	0	0	0	0	0	0	61	13	0	0	72	30	1	214	
3:10 PM	12	0	33	0	0	0	0	0	0	73	21	0	0	43	22	0	204	
3:15 PM	20	0	39	0	0	0	0	0	0	57	18	0	0	90	18	0	242	
3:20 PM	22	0	21	0	0	0	0	0	0	71	22	0	0	55	22	0	213	
3:25 PM	18	0	38	0	0	0	0	0	0	63	12	0	0	82	39	0	252	
3:30 PM	17	0	33	0	0	0	0	0	0	59	14	0	0	63	19	0	205	
3:35 PM	12	0	31	0	0	0	0	0	0	80	17	0	0	86	29	0	255	
3:40 PM	15	0	33	0	0	0	0	0	0	46	15	0	0	57	27	0	193	
3:45 PM	18	0	27	0	0	0	0	0	0	67	19	0	0	80	32	0	243	
3:50 PM	18	0	34	0	0	0	0	0	0	68	19	0	0	81	24	0	244	
3:55 PM	12	0	46	0	0	0	0	0	0	51	22	0	0	51	18	0	200	2677
4:00 PM	19	0	43	0	0	0	0	0	0	77	20	0	0	71	24	0	254	2719
4:05 PM	11	0	34	0	0	0	0	0	0	68	12	0	0	71	34	0	230	2735
4:10 PM	22	0	38	0	0	0	0	0	0	82	19	0	0	68	31	0	260	2791
4:15 PM	21	0	42	0	0	0	0	0	0	61	18	0	0	82	17	0	241	2790
4:20 PM	12	0	42	0	0	0	0	0	0	88	24	0	0	78	27	0	271	2848
4:25 PM	27	0	41	0	0	0	0	0	0	47	12	0	0	76	23	0	226	2822
4:30 PM	10	0	32	0	0	0	0	0	0	70	8	0	0	85	17	0	222	2839
4:35 PM	13	0	40	0	0	0	0	0	0	71	14	0	0	93	32	0	263	2847
4:40 PM	23	0	40	0	0	0	0	0	0	84	5	0	0	68	27	0	247	2901
4:45 PM	20	0	40	0	0	0	0	0	0	73	8	0	0	81	20	0	242	2900
4:50 PM	23	0	35	0	0	0	0	0	0	93	9	0	0	81	26	0	267	2923
4:55 PM	17	0	38	0	0	0	0	0	0	60	11	0	0	85	17	0	228	2951
5:00 PM	11	0	28	0	0	0	0	0	0	80	14	0	0	93	25	0	251	2948
5:05 PM	17	0	39	0	0	0	0	0	0	57	17	0	0	93	22	0	245	2963
5:10 PM	20	0	26	0	0	0	0	0	0	85	18	0	0	68	37	0	254	2957
5:15 PM	19	0	34	0	0	0	0	0	0	76	13	0	0	80	30	0	252	2968
5:20 PM	12	0	44	0	0	0	0	0	0	71	9	0	0	61	27	0	224	2921
5:25 PM	19	0	39	0	0	0	0	0	0	69	17	0	0	74	21	0	239	2934
5:30 PM	12	0	22	0	0	0	0	0	0	94	19	0	0	90	16	0	253	2965
5:35 PM	13	0	41	0	0	0	0	0	0	77	12	0	0	71	19	0	233	2935
5:40 PM	22	0	28	0	0	0	0	0	0	80	15	0	0	59	13	0	217	2905
5:45 PM	17	0	29	0	0	0	0	0	0	85	10	0	0	82	24	0	247	2910
5:50 PM	14	0	35	0	0	0	0	0	0	72	12	0	0	79	20	0	232	2875
5:55 PM	13	0	34	0	0	0	0	0	0	80	10	0	0	60	16	0	213	2860
6:00 PM	15	0	23	0	0	0	0	0	0	79	16	0	0	49	19	0	201	2810
6:05 PM	11	0	28	0	0	0	0	0	0	60	15	0	0	67	14	0	195	2760

5-Min Count Period Beginning At	I-5 NB Ramps (Northbound)				I-5 NB Ramps (Southbound)				OR-219 (Eastbound)				OR-219 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	8	0	13	0	0	0	0	0	0	84	15	0	0	76	17	0	213	2719
6:15 PM	12	0	28	0	0	0	0	0	0	68	14	0	0	62	23	0	207	2674
6:20 PM	7	0	29	0	0	0	0	0	0	74	10	0	0	55	27	0	202	2652
6:25 PM	12	0	37	0	0	0	0	0	0	56	10	0	0	51	17	0	183	2596
6:30 PM	9	0	21	0	0	0	0	0	0	59	12	0	0	61	10	0	172	2515
6:35 PM	5	0	25	0	0	0	0	0	0	76	13	0	0	56	19	0	194	2476
6:40 PM	12	0	25	0	0	0	0	0	0	90	8	0	0	42	17	0	194	2453
6:45 PM	8	0	25	0	0	0	0	0	0	57	8	0	0	59	17	0	174	2380
6:50 PM	4	0	28	0	0	0	0	0	0	45	7	0	0	46	15	0	145	2293
6:55 PM	8	0	29	0	0	0	0	0	0	61	14	0	0	54	24	0	190	2270

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	264	0	460	0	0	0	0	0	0	1000	88	0	0	920	292	0	3024
Heavy Trucks	8	0	24		0	0	0		0	12	4		0	8	4		60
Buses																	
Pedestrians		0				8				0				8			16
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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: Butteville Rd NE -- Parr Rd NE

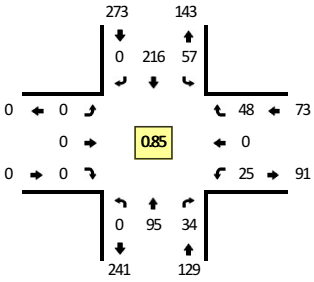
QC JOB #: 15405719

CITY/STATE: Woodburn, OR

DATE: Wed, Apr 14 2021

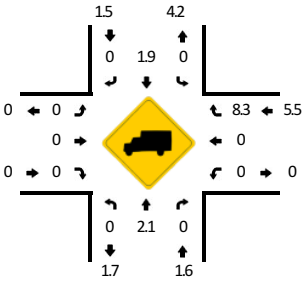
Peak-Hour: 4:30 PM -- 5:30 PM

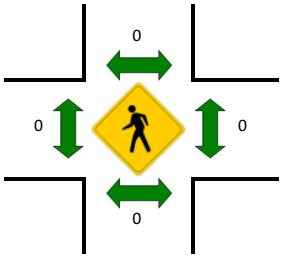
Peak 15-Min: 5:15 PM -- 5:30 PM

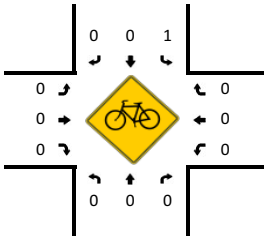


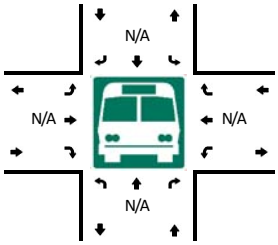
Quality Counts

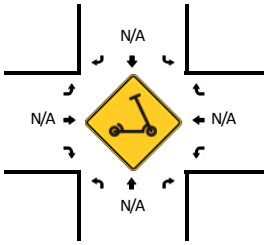
DATA THAT DRIVES COMMUNITIES











5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				Parr Rd NE (Eastbound)				Parr Rd NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	5	2	0	2	12	0	0	0	0	0	0	2	0	0	0	23	
3:05 PM	0	9	1	0	0	12	0	0	0	0	0	0	2	0	1	0	25	
3:10 PM	0	8	1	0	2	12	0	0	0	0	0	0	0	0	6	0	29	
3:15 PM	0	5	2	0	0	16	0	0	0	0	0	0	0	0	1	0	24	
3:20 PM	0	5	1	0	5	10	0	0	0	0	0	0	3	0	4	0	28	
3:25 PM	0	12	1	0	3	16	0	0	0	0	0	0	0	0	1	0	33	
3:30 PM	0	6	2	0	6	18	0	0	0	0	0	0	2	0	3	0	37	
3:35 PM	0	8	2	1	2	10	0	0	0	0	0	0	0	0	3	0	26	
3:40 PM	0	13	0	0	5	13	0	0	0	0	0	0	0	0	8	0	39	
3:45 PM	0	4	0	0	6	12	0	0	0	0	0	0	2	0	2	0	26	
3:50 PM	0	9	1	0	2	16	0	0	0	0	0	0	0	0	5	0	33	
3:55 PM	0	7	2	0	2	17	0	0	0	0	0	0	3	0	0	0	31	354
4:00 PM	0	10	2	0	2	14	0	0	0	0	0	0	1	0	3	0	32	363
4:05 PM	0	8	2	0	2	9	0	0	0	0	0	0	0	0	4	0	25	363
4:10 PM	0	8	5	0	3	9	0	0	0	0	0	0	3	0	2	0	30	364
4:15 PM	0	14	1	0	7	17	0	0	0	0	0	0	1	0	3	0	43	383
4:20 PM	0	7	2	0	8	15	0	0	0	0	0	0	1	0	1	0	34	389
4:25 PM	0	8	1	0	2	19	0	0	0	0	0	0	1	0	2	0	33	389
4:30 PM	0	11	2	0	4	22	0	0	0	0	0	0	1	0	8	0	48	400
4:35 PM	0	7	4	0	3	14	0	0	0	0	0	0	0	0	5	0	33	407
4:40 PM	0	8	3	0	2	16	0	0	0	0	0	0	1	0	1	0	31	399
4:45 PM	0	6	3	0	6	23	0	0	0	0	0	0	1	0	6	0	45	418
4:50 PM	0	10	3	0	7	12	0	0	0	0	0	0	1	0	4	0	37	422
4:55 PM	0	4	1	0	3	16	0	0	0	0	0	0	3	0	3	0	30	421
5:00 PM	0	10	3	0	2	20	0	0	0	0	0	0	2	0	0	0	37	426
5:05 PM	0	7	4	0	5	14	0	0	0	0	0	0	2	0	5	0	37	438
5:10 PM	0	8	0	0	5	19	0	0	0	0	0	0	3	0	3	0	38	446
5:15 PM	0	7	3	0	6	18	0	0	0	0	0	0	3	0	3	0	40	443
5:20 PM	0	5	6	0	6	20	0	0	0	0	0	0	6	0	5	0	48	457
5:25 PM	0	12	2	0	8	22	0	0	0	0	0	0	2	0	5	0	51	475
5:30 PM	0	9	2	0	5	14	0	0	0	0	0	0	0	0	6	0	36	463
5:35 PM	0	9	1	0	2	17	0	0	0	0	0	0	3	0	5	0	37	467
5:40 PM	0	11	1	0	4	15	0	0	0	0	0	0	4	0	6	0	41	477
5:45 PM	0	4	3	0	6	12	0	0	0	0	0	0	3	0	4	0	32	464
5:50 PM	0	9	3	0	5	13	0	0	0	0	0	0	3	0	2	0	35	462
5:55 PM	0	12	3	0	3	17	0	0	0	0	0	0	2	0	2	0	39	471
6:00 PM	0	8	1	0	5	14	0	0	0	0	0	0	0	0	4	0	32	466
6:05 PM	0	4	2	0	4	8	0	0	0	0	0	0	3	0	5	0	26	455

5-Min Count Period Beginning At	Butteville Rd NE (Northbound)				Butteville Rd NE (Southbound)				Parr Rd NE (Eastbound)				Parr Rd NE (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	0	10	2	0	4	11	0	0	0	0	0	0	4	0	4	0	35	452
6:15 PM	0	5	2	0	4	17	0	0	0	0	0	0	1	0	1	0	30	442
6:20 PM	0	10	1	0	6	12	0	0	0	0	0	0	0	0	6	0	35	429
6:25 PM	0	6	2	0	6	16	0	0	0	0	0	0	2	0	3	0	35	413
6:30 PM	0	10	3	0	5	9	0	0	0	0	0	0	3	0	3	0	33	410
6:35 PM	0	10	6	0	3	10	0	0	0	0	0	0	0	0	7	0	36	409
6:40 PM	0	7	4	0	4	12	0	0	0	0	0	0	2	0	3	0	32	400
6:45 PM	0	2	3	0	6	14	0	0	0	0	0	0	1	0	2	0	28	396
6:50 PM	0	13	2	0	8	8	0	0	0	0	0	0	1	0	2	0	34	395
6:55 PM	0	5	9	0	8	7	0	0	0	0	0	0	4	0	1	0	34	390

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	96	44	0	80	240	0	0	0	0	0	0	44	0	52	0	556
Heavy Trucks	0	0	0		0	4	0		0	0	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 5/21/2021 10:53 AM

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

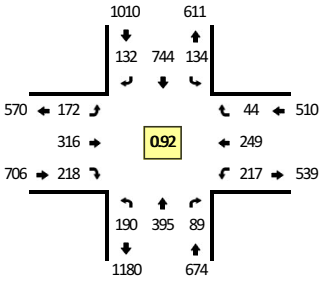
Type of peak hour being reported: User-Defined

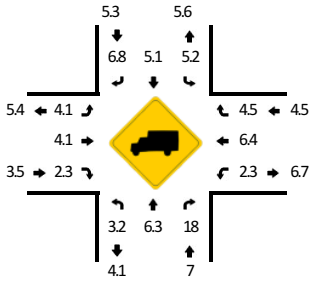
Method for determining peak hour: Total Entering Volume

LOCATION: OR 99E -- OR 214
CITY/STATE: Woodburn, OR

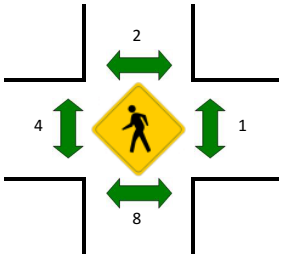
QC JOB #: 15462410
DATE: Tue, May 25 2021

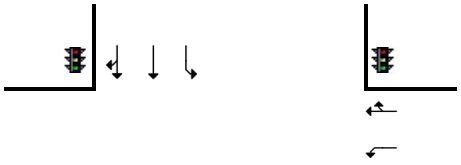
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

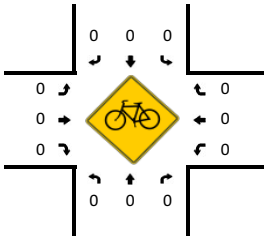


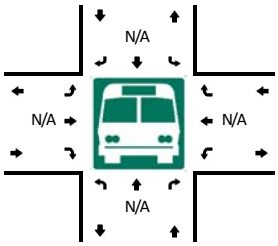


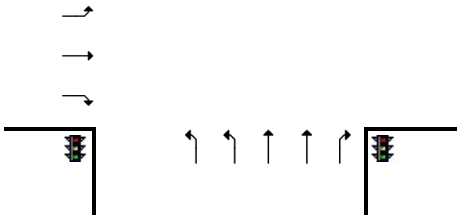
Quality Counts
DATA THAT DRIVES COMMUNITIES

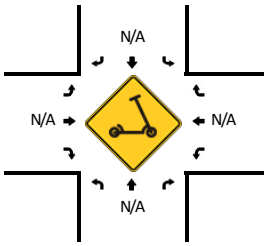












5-Min Count Period Beginning At	OR 99E (Northbound)				OR 99E (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	21	35	5	0	12	47	16	0	12	21	22	0	14	16	6	0	227	
3:05 PM	12	24	9	0	2	45	12	0	7	21	18	0	11	17	3	0	181	
3:10 PM	15	24	6	0	8	37	9	1	19	24	15	0	16	16	1	0	191	
3:15 PM	27	37	8	0	5	60	15	0	10	10	26	0	11	14	5	0	228	
3:20 PM	21	31	7	0	6	38	10	0	19	31	19	0	16	25	4	0	227	
3:25 PM	11	30	3	0	15	34	7	0	15	24	18	0	13	26	3	0	199	
3:30 PM	18	50	9	0	10	62	15	0	7	28	25	0	8	20	5	0	257	
3:35 PM	18	23	8	1	22	48	12	0	21	26	20	0	16	15	7	0	237	
3:40 PM	16	31	10	0	10	80	20	0	14	25	20	0	12	18	4	0	260	
3:45 PM	14	20	11	0	13	44	15	0	14	30	26	0	24	22	3	0	236	
3:50 PM	18	22	8	0	17	47	12	0	19	29	26	0	18	19	7	0	242	
3:55 PM	18	44	7	0	16	66	16	0	9	25	27	0	16	26	4	0	274	2759
4:00 PM	21	26	6	0	12	58	7	0	20	30	21	0	28	22	5	0	256	2788
4:05 PM	19	40	9	0	10	76	20	0	12	23	15	0	11	20	4	0	259	2866
4:10 PM	14	32	10	1	6	58	6	0	17	26	24	0	23	28	5	0	250	2925
4:15 PM	14	47	5	0	13	71	14	0	15	21	17	0	19	27	2	0	265	2962
4:20 PM	17	31	6	0	11	46	15	0	6	31	22	0	11	20	2	0	218	2953
4:25 PM	27	33	4	0	14	45	9	0	7	27	19	0	23	17	4	0	229	2983
4:30 PM	13	32	9	1	11	84	13	0	17	24	25	0	18	17	5	0	269	2995
4:35 PM	21	28	15	0	7	51	14	0	14	31	21	0	26	25	5	0	258	3016
4:40 PM	22	31	8	0	20	74	15	0	16	22	15	0	16	21	4	0	264	3020
4:45 PM	19	39	5	0	7	74	6	0	11	28	19	0	18	23	4	0	253	3037
4:50 PM	24	32	7	0	9	46	11	0	18	28	21	0	24	18	5	0	243	3038
4:55 PM	18	43	7	0	9	86	18	0	11	23	11	0	14	12	1	0	253	3017
5:00 PM	14	21	7	0	8	62	9	0	9	31	17	0	14	30	5	0	227	2988
5:05 PM	13	42	9	0	17	68	9	0	14	23	20	0	12	16	1	0	244	2973
5:10 PM	5	24	4	0	16	51	12	0	19	35	17	0	15	30	7	0	235	2958
5:15 PM	25	24	5	0	11	44	5	0	20	24	19	0	23	18	1	0	219	2912
5:20 PM	6	59	5	0	13	61	11	0	12	19	20	0	18	18	4	0	246	2940
5:25 PM	9	20	8	0	6	43	9	0	11	28	13	0	19	21	2	0	189	2900
5:30 PM	23	43	9	1	12	51	14	0	18	18	27	0	17	16	3	0	252	2883
5:35 PM	17	39	8	0	8	52	11	0	13	35	11	0	20	25	6	0	245	2870
5:40 PM	27	29	7	0	11	37	14	0	14	30	22	0	24	15	6	0	236	2842
5:45 PM	18	35	12	0	8	58	10	0	13	14	14	0	15	17	1	0	215	2804
5:50 PM	5	23	6	0	6	47	11	0	7	24	12	0	11	24	6	0	182	2743
5:55 PM	17	35	8	0	18	41	8	0	5	10	15	0	12	14	5	0	188	2678
6:00 PM	10	21	9	0	7	32	5	0	8	22	18	0	20	26	7	0	185	2636
6:05 PM	13	26	6	0	8	52	12	0	14	16	17	0	19	16	1	0	200	2592

5-Min Count Period Beginning At	OR 99E (Northbound)				OR 99E (Southbound)				OR 214 (Eastbound)				OR 214 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:10 PM	11	18	8	0	5	64	7	0	11	21	16	0	16	11	4	0	192	2549
6:15 PM	11	23	9	0	7	43	12	0	16	32	11	0	14	14	4	0	196	2526
6:20 PM	16	26	4	0	8	39	13	0	7	19	14	0	13	16	3	0	178	2458
6:25 PM	7	21	1	0	4	28	8	0	11	15	14	0	17	17	3	0	146	2415
6:30 PM	9	19	11	0	11	29	12	0	10	21	16	0	15	14	2	0	169	2332
6:35 PM	14	22	6	0	8	48	15	0	7	16	16	0	16	12	3	0	183	2270
6:40 PM	17	20	2	0	9	31	7	0	9	17	15	0	18	17	2	0	164	2198
6:45 PM	14	24	2	0	3	35	6	0	4	13	9	0	15	18	6	0	149	2132
6:50 PM	3	21	0	0	6	28	9	0	7	22	12	0	8	14	3	0	133	2083
6:55 PM	13	22	6	0	8	14	5	0	14	10	11	0	17	10	5	0	135	2030

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	224	364	128	4	152	836	168	0	188	308	244	0	240	252	56	0	3164
Heavy Trucks	4	24	32		4	36	4		8	12	0		0	24	0		148
Buses																	
Pedestrians		12				0				0				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 7/14/2021 8:14 AM

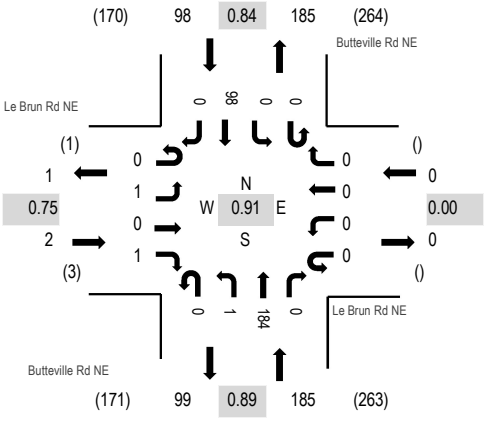
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

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

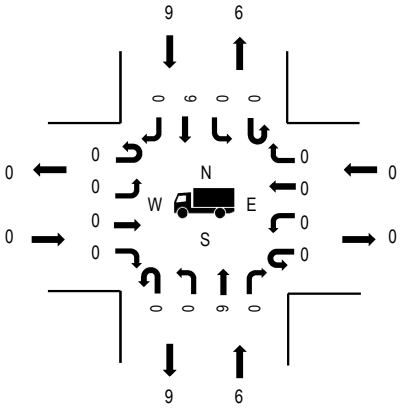
Location: 1 Butteville Rd NE & Le Brun Rd NE AM
Date: Tuesday, April 6, 2021
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour

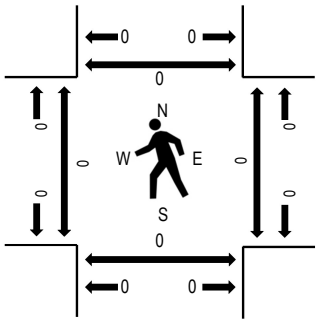
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.75
WB	0.0%	0.00
NB	3.2%	0.89
SB	9.2%	0.84
All	5.3%	0.91

Traffic Counts - Motorized Vehicles

Interval Start Time	Le Brun Rd NE Eastbound				Le Brun Rd NE Westbound				Butteville Rd NE Northbound				Butteville Rd NE Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	18	0	0	0	12	0	30	285
7:05 AM	0	1	0	0	0	0	0	0	0	0	14	0	0	0	6	0	21	271
7:10 AM	0	0	0	0	0	0	0	0	0	0	15	0	0	0	7	0	22	265
7:15 AM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	10	0	22	253
7:20 AM	0	0	0	0	0	0	0	0	0	1	18	0	0	0	10	0	29	243
7:25 AM	0	0	0	0	0	0	0	0	0	0	18	0	0	0	9	0	27	230
7:30 AM	0	0	0	0	0	0	0	0	0	0	15	0	0	0	4	0	19	216
7:35 AM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	8	0	20	210
7:40 AM	0	0	0	0	0	0	0	0	0	0	13	0	0	0	6	0	19	203
7:45 AM	0	0	0	1	0	0	0	0	0	0	20	0	0	0	6	0	27	196
7:50 AM	0	0	0	0	0	0	0	0	0	0	17	0	0	0	12	0	29	181
7:55 AM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	8	0	20	162
8:00 AM	0	1	0	0	0	0	0	0	0	0	11	0	0	0	4	0	16	151
8:05 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	9	0	15	
8:10 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	10	
8:15 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	4	0	12	
8:20 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	10	0	16	
8:25 AM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	4	0	13	
8:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	7	0	13	
8:35 AM	0	0	0	0	0	0	0	0	0	0	8	0	0	0	5	0	13	
8:40 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0	12	
8:45 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	8	0	12	
8:50 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	10	
8:55 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	9	
Count Total	0	2	0	1	0	0	0	0	0	1	262	0	0	0	170	0	436	
Peak Hour	0	1	0	1	0	0	0	0	0	1	184	0	0	0	98	0	285	

Location: 1 Butteville Rd NE & Le Brun Rd NE AM

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

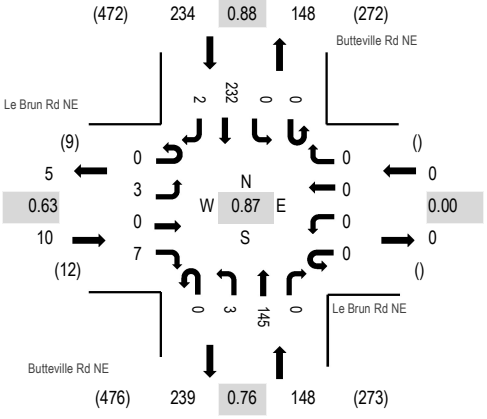
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	1	0	0	1	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	0	0	0	2	2	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	1	0	1	2	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	0	0	0	1	1	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	0	0	0	1	1	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	0	2	0	0	2	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	2	0	1	3	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	0	0	1	1	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	0	0	0	2	2	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	0	1	0	2	3	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	1	0	0	1	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	0	1	0	1	2	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	0	0	0	1	1	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	0	0	0	1	1	8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0
8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	0	9	0	14	23	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	6	0	9	15	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

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

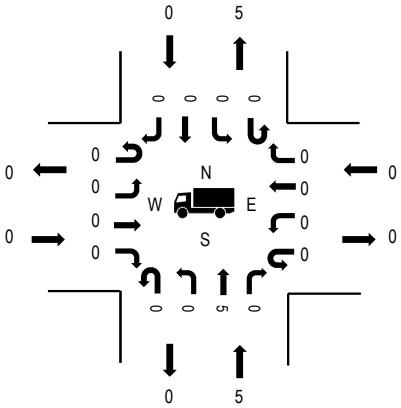
Location: 1 Butteville Rd NE & Le Brun Rd NE PM
Date: Tuesday, April 6, 2021
Peak Hour: 04:55 PM - 05:55 PM
Peak 15-Minutes: 05:25 PM - 05:40 PM

Peak Hour

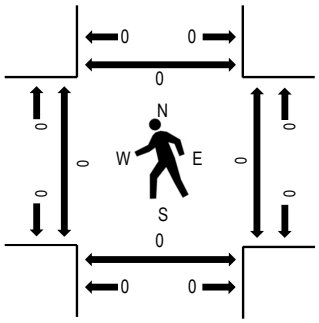
Motorized Vehicles



Heavy Vehicles



Pedestrians



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.63
WB	0.0%	0.00
NB	3.4%	0.76
SB	0.0%	0.88
All	1.3%	0.87

Traffic Counts - Motorized Vehicles

Interval Start Time	Le Brun Rd NE Eastbound				Le Brun Rd NE Westbound				Butteville Rd NE Northbound				Butteville Rd NE Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	15	0	24	374
4:05 PM	0	0	0	1	0	0	0	0	0	1	6	0	0	0	25	2	35	368
4:10 PM	0	0	0	0	0	0	0	0	0	0	18	0	0	0	18	0	36	374
4:15 PM	0	0	0	0	0	0	0	0	0	0	11	0	0	0	17	0	28	368
4:20 PM	0	1	0	0	0	0	0	0	0	0	9	0	0	0	23	0	33	367
4:25 PM	0	0	0	0	0	0	0	0	0	0	12	0	0	0	16	0	28	360
4:30 PM	0	0	0	0	0	0	0	0	0	1	13	0	0	0	14	0	28	373
4:35 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	19	0	26	387
4:40 PM	0	0	0	0	0	0	0	0	0	0	13	0	0	0	28	0	41	391
4:45 PM	0	0	0	0	0	0	0	0	0	0	10	0	0	0	24	0	34	374
4:50 PM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	17	0	26	378
4:55 PM	0	0	0	2	0	0	0	0	0	1	9	0	0	0	23	0	35	392
5:00 PM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	11	0	18	383
5:05 PM	0	1	0	0	0	0	0	0	0	0	11	0	0	0	29	0	41	
5:10 PM	0	0	0	0	0	0	0	0	0	0	9	0	0	0	21	0	30	
5:15 PM	0	0	0	1	0	0	0	0	0	0	8	0	0	0	18	0	27	
5:20 PM	0	0	0	0	0	0	0	0	0	0	11	0	0	0	15	0	26	
5:25 PM	0	0	0	0	0	0	0	0	0	0	16	0	0	0	24	1	41	
5:30 PM	0	1	0	1	0	0	0	0	0	0	20	0	0	0	19	1	42	
5:35 PM	0	0	0	0	0	0	0	0	0	0	13	0	0	0	17	0	30	
5:40 PM	0	0	0	0	0	0	0	0	0	1	8	0	0	0	15	0	24	
5:45 PM	0	0	0	0	0	0	0	0	0	1	18	0	0	0	19	0	38	
5:50 PM	0	1	0	3	0	0	0	0	0	0	15	0	0	0	21	0	40	
5:55 PM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	20	0	26	
Count Total	0	4	0	8	0	0	0	0	0	5	268	0	0	0	468	4	757	
Peak Hour	0	3	0	7	0	0	0	0	0	3	145	0	0	0	232	2	392	

Location: 1 Butteville Rd NE & Le Brun Rd NE PM

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

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

Appendix C Existing Conditions Operations Worksheets

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	61	97	79	16	3
Future Vol, veh/h	8	61	97	79	16	3
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, %	-	-2	0	-	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	0	9	4	3	0	0
Mvmt Flow	11	84	133	108	22	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	241	0	-	0	293	187
Stage 1	-	-	-	-	187	-
Stage 2	-	-	-	-	106	-
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	1337	-	-	-	702	860
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	923	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1337	-	-	-	696	860
Mov Cap-2 Maneuver	-	-	-	-	696	-
Stage 1	-	-	-	-	842	-
Stage 2	-	-	-	-	923	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1337	-	-	-	718
HCM Lane V/C Ratio	0.008	-	-	-	0.036
HCM Control Delay (s)	7.7	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	85	224	179	72	7
Future Vol, veh/h	4	85	224	179	72	7
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	76	76	76	76	76	76
Heavy Vehicles, %	0	7	4	9	31	29
Mvmt Flow	5	112	295	236	95	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	531	0	-	0	535	413
Stage 1	-	-	-	-	413	-
Stage 2	-	-	-	-	122	-
Critical Hdwy	4.1	-	-	-	6.71	6.49
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.2	-	-	-	3.779	3.561
Pot Cap-1 Maneuver	1047	-	-	-	459	585
Stage 1	-	-	-	-	610	-
Stage 2	-	-	-	-	836	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1047	-	-	-	457	585
Mov Cap-2 Maneuver	-	-	-	-	457	-
Stage 1	-	-	-	-	607	-
Stage 2	-	-	-	-	836	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1047	-	-	-	466
HCM Lane V/C Ratio	0.005	-	-	-	0.223
HCM Control Delay (s)	8.5	0	-	-	14.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	106	51	59	316	87	132
Future Vol, veh/h	106	51	59	316	87	132
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	85	85	85	85	85	85
Heavy Vehicles, %	12	9	8	5	3	4
Mvmt Flow	125	60	69	372	102	155

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	185	0	665	155
Stage 1	-	-	-	-	155	-
Stage 2	-	-	-	-	510	-
Critical Hdwy	-	-	4.18	-	6.43	6.24
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.272	-	3.527	3.336
Pot Cap-1 Maneuver	-	-	1354	-	424	886
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	601	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	397	886
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	563	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	15.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	595	-	-	1354	-
HCM Lane V/C Ratio	0.433	-	-	0.051	-
HCM Control Delay (s)	15.6	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇃	↱		⇕			⇕	
Traffic Vol, veh/h	2	236	1	1	356	11	1	1	1	32	1	19
Future Vol, veh/h	2	236	1	1	356	11	1	1	1	32	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	7	0	0	6	0	0	0	0	4	0	0
Mvmt Flow	2	271	1	1	409	13	1	1	1	37	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	422	0	0	272	0	0	705	700	273	689	687	409
Stage 1	-	-	-	-	-	-	276	276	-	411	411	-
Stage 2	-	-	-	-	-	-	429	424	-	278	276	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	1148	-	-	1303	-	-	354	366	771	357	372	647
Stage 1	-	-	-	-	-	-	735	685	-	614	598	-
Stage 2	-	-	-	-	-	-	608	590	-	724	685	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1148	-	-	1303	-	-	341	365	770	355	371	647
Mov Cap-2 Maneuver	-	-	-	-	-	-	341	365	-	355	371	-
Stage 1	-	-	-	-	-	-	734	684	-	613	597	-
Stage 2	-	-	-	-	-	-	586	589	-	720	684	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	13.4	14.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	430	1148	-	-	1303	-	-	426
HCM Lane V/C Ratio	0.008	0.002	-	-	0.001	-	-	0.14
HCM Control Delay (s)	13.4	8.1	0	-	7.8	0	-	14.8
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.5

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	27	238	3	17	59	350	21	1	1	28	213	5
Future Volume (vph)	27	238	3	17	59	350	21	1	1	28	213	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.85		1.00	0.98
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3107	1488		1352	3137	1417	1662	946		1526	1498
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3107	1488		1352	3137	1417	1662	946		1526	1498
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	264	3	19	66	389	23	1	1	31	237	6
RTOR Reduction (vph)	0	0	2	0	0	0	9	0	30	0	0	5
Lane Group Flow (vph)	30	264	1	0	85	389	14	1	2	0	133	124
Confl. Peds. (#/hr)								1				
Heavy Vehicles (%)	0%	7%	0%	23%	23%	6%	5%	0%	0%	60%	3%	25%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA	pt+ov	Split	NA		Split	NA
Protected Phases	5	2	2 8	1	1	6	6 4	8	8		4	4
Permitted Phases												
Actuated Green, G (s)	2.6	15.6	17.7		7.3	20.3	31.0	2.1	2.1		10.7	10.7
Effective Green, g (s)	2.6	15.6	17.7		7.3	20.3	31.0	2.1	2.1		10.7	10.7
Actuated g/C Ratio	0.05	0.30	0.34		0.14	0.39	0.59	0.04	0.04		0.20	0.20
Clearance Time (s)	4.0	4.5			4.0	4.5		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2			2.5	4.2		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	82	928	504		189	1219	841	66	38		312	307
v/s Ratio Prot	0.02	c0.08	0.00		c0.06	c0.12	0.01	0.00	c0.00		c0.09	0.08
v/s Ratio Perm												
v/c Ratio	0.37	0.28	0.00		0.45	0.32	0.02	0.02	0.06		0.43	0.40
Uniform Delay, d1	24.0	14.0	11.4		20.6	11.1	4.3	24.1	24.1		18.1	18.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.0	0.3	0.0		1.2	0.2	0.0	0.1	0.5		0.7	0.6
Delay (s)	26.0	14.3	11.4		21.8	11.4	4.4	24.1	24.6		18.8	18.6
Level of Service	C	B	B		C	B	A	C	C		B	B
Approach Delay (s)		15.4				12.8			24.6			18.7
Approach LOS		B				B			C			B

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	52.2	Sum of lost time (s)	16.5
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	17
Future Volume (vph)	17
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	19
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

07/13/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	27	238	3	17	59	350	21	1	1	28	213	5
Future Volume (veh/h)	27	238	3	17	59	350	21	1	1	28	213	5
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1654	1750		1436	1668	1682	1750	1750	1750	1704	1403
Adj Flow Rate, veh/h	30	264	3		66	389	23	1	1	31	259	0
Peak Hour Factor	0.90	0.90	0.90		0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	0	7	0		23	6	5	0	0	0	3	25
Cap, veh/h	60	831	467		92	892	626	85	2	73	511	221
Arrive On Green	0.04	0.26	0.26		0.07	0.28	0.28	0.05	0.05	0.05	0.16	0.00
Sat Flow, veh/h	1667	3143	1483		1368	3169	1425	1667	46	1441	3245	1403
Grp Volume(v), veh/h	30	264	3		66	389	23	1	0	32	259	0
Grp Sat Flow(s),veh/h/ln	1667	1572	1483		1368	1585	1425	1667	0	1488	1623	1403
Q Serve(g_s), s	0.6	2.4	0.0		1.7	3.6	0.3	0.0	0.0	0.7	2.6	0.0
Cycle Q Clear(g_c), s	0.6	2.4	0.0		1.7	3.6	0.3	0.0	0.0	0.7	2.6	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.97	1.00	
Lane Grp Cap(c), veh/h	60	831	467		92	892	626	85	0	76	511	221
V/C Ratio(X)	0.50	0.32	0.01		0.72	0.44	0.04	0.01	0.00	0.42	0.51	0.00
Avail Cap(c_a), veh/h	930	3945	1937		763	3978	2013	1394	0	1245	4073	1761
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.0	10.6	8.4		16.4	10.6	5.7	16.2	0.0	16.5	13.8	0.0
Incr Delay (d2), s/veh	4.7	0.3	0.0		7.6	0.5	0.0	0.0	0.0	2.8	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	1.2	0.0		1.1	1.8	0.2	0.0	0.0	0.5	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.7	10.9	8.4		23.9	11.1	5.8	16.2	0.0	19.3	14.4	0.0
LnGrp LOS	C	B	A		C	B	A	B	A	B	B	A
Approach Vol, veh/h		297				478			33			259
Approach Delay, s/veh		12.0				12.6			19.2			14.4
Approach LOS		B				B			B			B

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	14.0		9.6	5.8	14.6		5.8				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	3.7	4.4		4.6	2.6	5.6		2.7				
Green Ext Time (p_c), s	0.1	2.8		0.7	0.0	4.5		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B

Notes

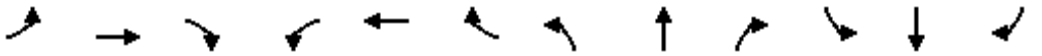
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	17
Future Volume (veh/h)	17
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1403
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.90
Percent Heavy Veh, %	25
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer - Assigned Phs
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	380	116	0	462	366	0	0	0	183	0	108
Future Volume (vph)	0	380	116	0	462	366	0	0	0	183	0	108
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3090	1263		3140	1315				2859		1283
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3090	1263		3140	1315				2859		1283
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	404	123	0	491	389	0	0	0	195	0	115
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	88
Lane Group Flow (vph)	0	404	123	0	491	389	0	0	0	195	0	27
Confl. Peds. (#/hr)						1						1
Heavy Vehicles (%)	0%	6%	16%	0%	8%	13%	0%	0%	0%	10%	0%	13%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		79.3	100.0		70.3	100.0				11.7		21.2
Effective Green, g (s)		79.3	100.0		70.3	100.0				11.7		23.2
Actuated g/C Ratio		0.79	1.00		0.70	1.00				0.12		0.23
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2450	1263		2207	1315				334		297
v/s Ratio Prot		0.13			0.16					c0.07		0.02
v/s Ratio Perm			0.10			c0.30						
v/c Ratio		0.16	0.10		0.22	0.30				0.58		0.09
Uniform Delay, d1		2.5	0.0		5.2	0.0				41.8		30.1
Progression Factor		1.00	1.00		0.61	1.00				1.00		1.00
Incremental Delay, d2		0.1	0.2		0.2	0.6				2.2		0.1
Delay (s)		2.6	0.2		3.4	0.6				44.0		30.2
Level of Service		A	A		A	A				D		C
Approach Delay (s)		2.0			2.1			0.0			38.9	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	28.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



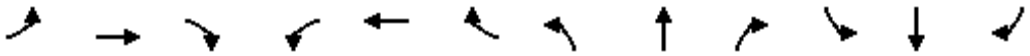
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	380	116	0	462	366	0	0	0	183	0	108
Future Volume (veh/h)	0	380	116	0	462	366	0	0	0	183	0	108
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1619	1483	0	1784	1715				1478	0	1437
Adj Flow Rate, veh/h	0	404	0	0	491	0				195	0	115
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	6	16	0	8	13				10	0	13
Cap, veh/h	0	2437		0	2685					322	0	168
Arrive On Green	0.00	0.79	0.00	0.00	1.00	0.00				0.12	0.00	0.14
Sat Flow, veh/h	0	3158	1257	0	3479	1454				2731	0	1218
Grp Volume(v), veh/h	0	404	0	0	491	0				195	0	115
Grp Sat Flow(s),veh/h/ln	0	1538	1257	0	1695	1454				1365	0	1218
Q Serve(g_s), s	0.0	3.1	0.0	0.0	0.0	0.0				6.8	0.0	9.0
Cycle Q Clear(g_c), s	0.0	3.1	0.0	0.0	0.0	0.0				6.8	0.0	9.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2437		0	2685					322	0	168
V/C Ratio(X)	0.00	0.17		0.00	0.18					0.61	0.00	0.68
Avail Cap(c_a), veh/h	0	2437		0	2685					969	0	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.95	0.00	0.00	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.5	0.0	0.0	0.0	0.0				41.9	0.0	41.0
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.1	0.0				1.4	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	1.3	0.0	0.0	0.1	0.0				4.2	0.0	10.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	2.6	0.0	0.0	0.1	0.0				43.3	0.0	44.7
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		404	A		491	A					310	
Approach Delay, s/veh		2.6			0.1						43.8	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		83.7		16.3		83.7						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		5.1		11.0		2.0						
Green Ext Time (p_c), s		7.7		0.8		5.2						

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B

Notes

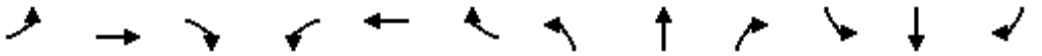
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	364	199	0	618	574	210	0	503	0	0	0
Future Volume (vph)	0	364	199	0	618	574	210	0	503	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.86	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3111	1445		2951	1436	1445	1284	1331			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3111	1445		2951	1436	1445	1284	1331			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	387	212	0	657	611	223	0	535	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	206	223	0	0	0
Lane Group Flow (vph)	0	387	212	0	657	611	201	73	55	0	0	0
Heavy Vehicles (%)	0%	9%	5%	0%	11%	2%	6%	0%	3%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		71.1	100.0		71.1	100.0	19.9	19.9	19.9			
Effective Green, g (s)		71.1	100.0		71.1	100.0	19.9	19.9	19.9			
Actuated g/C Ratio		0.71	1.00		0.71	1.00	0.20	0.20	0.20			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2211	1445		2098	1436	287	255	264			
v/s Ratio Prot		0.12			0.22		c0.14	0.06				
v/s Ratio Perm			0.15			c0.43			0.04			
v/c Ratio		0.18	0.15		0.31	0.43	0.70	0.29	0.21			
Uniform Delay, d1		4.8	0.0		5.4	0.0	37.3	34.0	33.5			
Progression Factor		2.20	1.00		1.02	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.2	0.2		0.3	0.8	7.0	0.5	0.3			
Delay (s)		10.7	0.2		5.8	0.8	44.2	34.5	33.8			
Level of Service		B	A		A	A	D	C	C			
Approach Delay (s)		7.0			3.4			36.8			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	13.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	41.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	364	199	0	618	574	210	0	503	0	0	0
Future Volume (veh/h)	0	364	199	0	618	574	210	0	503	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1770	1826	0	1551	1674	1473	1555	1514			
Adj Flow Rate, veh/h	0	387	0	0	657	0	149	0	402			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	9	5	0	11	2	6	0	3			
Cap, veh/h	0	2434		0	2132		262	0	479			
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.19	0.00	0.19			
Sat Flow, veh/h	0	3452	1547	0	3025	1419	1403	0	2566			
Grp Volume(v), veh/h	0	387	0	0	657	0	149	0	402			
Grp Sat Flow(s),veh/h/ln	0	1682	1547	0	1473	1419	1403	0	1283			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	9.7	0.0	15.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	9.7	0.0	15.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2434		0	2132		262	0	479			
V/C Ratio(X)	0.00	0.16		0.00	0.31		0.57	0.00	0.84			
Avail Cap(c_a), veh/h	0	2434		0	2132		498	0	911			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.96	0.00	0.00	0.83	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	37.0	0.0	39.2			
Incr Delay (d2), s/veh	0.0	0.1	0.0	0.0	0.3	0.0	1.4	0.0	3.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.0	0.0	0.2	0.0	6.1	0.0	8.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.1	0.0	0.0	0.3	0.0	38.5	0.0	42.3			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		387	A		657	A		551				
Approach Delay, s/veh		0.1			0.3			41.2				
Approach LOS		A			A			D				

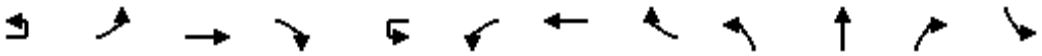
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		76.8				76.8		23.2				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		17.1				
Green Ext Time (p_c), s		4.2				14.2		1.5				

Intersection Summary		
HCM 6th Ctrl Delay	14.4	
HCM 6th LOS	B	

Notes

User approved volume balancing among the lanes for turning movement.

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



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	34	25	689	39	6	74	750	18	384	11	98	8
Future Volume (vph)	34	25	689	39	6	74	750	18	384	11	98	8
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95
Satd. Flow (prot)		1614	3079	1340		1502	2947		1519	1522	1347	1471
Flt Permitted		0.29	1.00	1.00		0.31	1.00		0.95	0.95	1.00	0.95
Satd. Flow (perm)		488	3079	1340		494	2947		1519	1522	1347	1471
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	35	26	718	41	6	77	781	19	400	11	102	8
RTOR Reduction (vph)	0	0	0	21	0	0	1	0	0	0	83	0
Lane Group Flow (vph)	0	61	718	21	0	83	799	0	204	207	19	8
Confl. Peds. (#/hr)											1	1
Heavy Vehicles (%)	3%	3%	8%	11%	9%	9%	11%	0%	4%	10%	9%	13%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		59.4	50.0	50.0		59.4	53.8		18.4	18.4	18.4	4.7
Effective Green, g (s)		59.4	50.0	50.0		59.4	53.8		18.4	18.4	18.4	4.7
Actuated g/C Ratio		0.59	0.50	0.50		0.59	0.54		0.18	0.18	0.18	0.05
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		352	1539	670		388	1585		279	280	247	69
v/s Ratio Prot		0.01	c0.23			0.02	c0.27		0.13	c0.14		0.01
v/s Ratio Perm		0.09		0.02		0.11					0.01	
v/c Ratio		0.17	0.47	0.03		0.21	0.50		0.73	0.74	0.08	0.12
Uniform Delay, d1		9.1	16.3	12.7		14.2	14.6		38.5	38.5	33.8	45.7
Progression Factor		1.17	1.11	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	1.0	0.1		0.2	1.1		9.0	9.3	0.1	0.5
Delay (s)		10.8	19.1	12.8		14.4	15.8		47.4	47.8	33.9	46.2
Level of Service		B	B	B		B	B		D	D	C	D
Approach Delay (s)			18.2				15.7			44.9		
Approach LOS			B				B			D		

Intersection Summary			
HCM 2000 Control Delay	23.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	15	24
Future Volume (vph)	15	24
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1503	
Flt Permitted	1.00	
Satd. Flow (perm)	1503	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	16	25
RTOR Reduction (vph)	24	0
Lane Group Flow (vph)	17	0
Confl. Peds. (#/hr)		
Heavy Vehicles (%)	7%	5%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	4.7	
Effective Green, g (s)	4.7	
Actuated g/C Ratio	0.05	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	70	
v/s Ratio Prot	c0.01	
v/s Ratio Perm		
v/c Ratio	0.25	
Uniform Delay, d1	45.9	
Progression Factor	1.00	
Incremental Delay, d2	1.3	
Delay (s)	47.3	
Level of Service	D	
Approach Delay (s)	47.1	
Approach LOS	D	

Intersection Summary

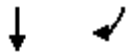
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	34	25	689	39	6	74	750	18	384	11	98	8
Future Volume (veh/h)	34	25	689	39	6	74	750	18	384	11	98	8
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1709	1641	1600		1578	1551	1551	1695	1614	1627	1573
Adj Flow Rate, veh/h		26	718	0		77	781	19	408	0	0	8
Peak Hour Factor		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		3	8	11		9	11	11	4	10	9	13
Cap, veh/h		426	1013			612	1833	45	485	0		54
Arrive On Green		0.01	0.22	0.00		0.31	0.62	0.62	0.15	0.00	0.00	0.04
Sat Flow, veh/h		1628	3118	1356		1503	2940	72	3229	0	1379	1498
Grp Volume(v), veh/h		26	718	0		77	391	409	408	0	0	8
Grp Sat Flow(s),veh/h/ln		1628	1559	1356		1503	1473	1538	1615	0	1379	1498
Q Serve(g_s), s		0.6	21.3	0.0		0.0	13.6	13.6	12.3	0.0	0.0	0.5
Cycle Q Clear(g_c), s		0.6	21.3	0.0		0.0	13.6	13.6	12.3	0.0	0.0	0.5
Prop In Lane		1.00		1.00		1.00		0.05	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		426	1013			612	919	959	485	0		54
V/C Ratio(X)		0.06	0.71			0.13	0.43	0.43	0.84	0.00		0.15
Avail Cap(c_a), veh/h		629	1013			612	919	959	662	0		232
HCM Platoon Ratio		0.67	0.67	0.67		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.95	0.95	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		7.6	34.7	0.0		18.9	9.6	9.6	41.3	0.0	0.0	46.7
Incr Delay (d2), s/veh		0.0	4.0	0.0		0.1	1.4	1.4	6.4	0.0	0.0	0.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		0.3	13.7	0.0		2.1	7.8	8.1	9.0	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		7.7	38.7	0.0		19.0	11.1	11.0	47.7	0.0	0.0	47.7
LnGrp LOS		A	D			B	B	B	D	A		D
Approach Vol, veh/h			744	A			877			408	A	
Approach Delay, s/veh			37.6				11.8			47.7		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	35.4	37.0		8.1	5.5	66.9		19.5
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	2.0	23.3		2.9	2.6	15.6		14.3
Green Ext Time (p_c), s	0.1	5.8		0.0	0.0	9.8		0.7

Intersection Summary	
HCM 6th Ctrl Delay	28.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

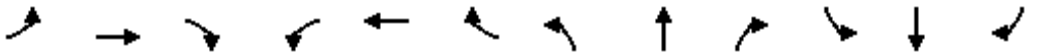


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	15	24
Future Volume (veh/h)	15	24
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1654	1654
Adj Flow Rate, veh/h	16	0
Peak Hour Factor	0.96	0.96
Percent Heavy Veh, %	7	7
Cap, veh/h	59	
Arrive On Green	0.04	0.00
Sat Flow, veh/h	1654	0
Grp Volume(v), veh/h	16	0
Grp Sat Flow(s),veh/h/ln	1654	0
Q Serve(g_s), s	0.9	0.0
Cycle Q Clear(g_c), s	0.9	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	59	
V/C Ratio(X)	0.27	
Avail Cap(c_a), veh/h	256	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	46.9	0.0
Incr Delay (d2), s/veh	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	48.7	0.0
LnGrp LOS	D	
Approach Vol, veh/h	24	A
Approach Delay, s/veh	48.4	
Approach LOS	D	

Timer - Assigned Phs

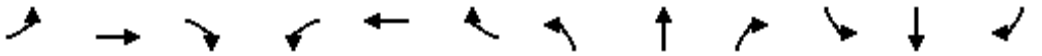
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	477	185	38	306	46	286	138	46	43	89	80
Future Volume (vph)	99	477	185	38	306	46	286	138	46	43	89	80
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1554	1591	1390	1363	1471	1380	1568	1699	1361	1385	1606	1288
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1554	1591	1390	1363	1471	1380	1568	1699	1361	1385	1606	1288
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	102	492	191	39	315	47	295	142	47	44	92	82
RTOR Reduction (vph)	0	0	61	0	0	31	0	0	33	0	0	72
Lane Group Flow (vph)	102	492	130	39	315	16	295	142	14	44	92	10
Confl. Peds. (#/hr)	4					4	1					1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	7%	10%	7%	22%	19%	5%	6%	3%	7%	20%	9%	13%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.3	41.9	67.9	5.3	34.9	34.9	26.0	31.4	31.4	7.2	12.6	12.6
Effective Green, g (s)	12.3	41.9	67.9	5.3	34.9	34.9	26.0	31.4	31.4	7.2	12.6	12.6
Actuated g/C Ratio	0.12	0.40	0.65	0.05	0.33	0.33	0.25	0.30	0.30	0.07	0.12	0.12
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	182	636	900	68	489	459	389	509	407	95	193	154
v/s Ratio Prot	c0.07	c0.31	0.04	0.03	0.21		c0.19	0.08		0.03	c0.06	
v/s Ratio Perm			0.06			0.01			0.01			0.01
v/c Ratio	0.56	0.77	0.14	0.57	0.64	0.03	0.76	0.28	0.03	0.46	0.48	0.06
Uniform Delay, d1	43.7	27.3	7.2	48.6	29.7	23.6	36.5	28.0	26.0	46.9	43.0	40.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.2	6.7	0.1	9.2	3.8	0.1	7.9	0.2	0.0	2.6	1.4	0.1
Delay (s)	46.9	34.0	7.2	57.9	33.5	23.6	44.3	28.3	26.0	49.5	44.4	41.0
Level of Service	D	C	A	E	C	C	D	C	C	D	D	D
Approach Delay (s)		29.2			34.7			37.8			44.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	104.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



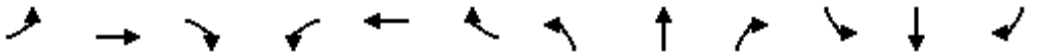
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	99	477	185	38	306	46	286	138	46	43	89	80
Future Volume (veh/h)	99	477	185	38	306	46	286	138	46	43	89	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1654	1614	1654	1450	1491	1682	1668	1709	1654	1477	1627	1573
Adj Flow Rate, veh/h	102	492	88	39	315	47	295	142	47	44	92	82
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	10	7	22	19	5	6	3	7	20	9	13
Cap, veh/h	128	640	851	51	525	500	337	466	373	56	163	133
Arrive On Green	0.08	0.40	0.40	0.04	0.35	0.35	0.21	0.27	0.27	0.04	0.10	0.10
Sat Flow, veh/h	1576	1614	1395	1381	1491	1417	1589	1709	1370	1407	1627	1326
Grp Volume(v), veh/h	102	492	88	39	315	47	295	142	47	44	92	82
Grp Sat Flow(s),veh/h/ln	1576	1614	1395	1381	1491	1417	1589	1709	1370	1407	1627	1326
Q Serve(g_s), s	4.8	19.8	2.0	2.1	13.0	1.7	13.5	4.9	1.9	2.3	4.0	4.4
Cycle Q Clear(g_c), s	4.8	19.8	2.0	2.1	13.0	1.7	13.5	4.9	1.9	2.3	4.0	4.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	128	640	851	51	525	500	337	466	373	56	163	133
V/C Ratio(X)	0.80	0.77	0.10	0.76	0.60	0.09	0.87	0.30	0.13	0.78	0.56	0.62
Avail Cap(c_a), veh/h	525	1184	1321	460	1093	1040	530	684	548	469	651	531
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	33.8	19.6	6.1	35.8	19.9	16.3	28.6	21.6	20.5	35.7	32.2	32.3
Incr Delay (d2), s/veh	8.0	3.8	0.1	15.7	2.1	0.2	8.3	0.3	0.1	15.8	2.3	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.7	12.2	1.0	1.7	8.2	1.0	9.7	3.5	1.1	1.9	3.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.9	23.4	6.2	51.5	22.1	16.4	36.9	21.9	20.6	51.5	34.4	35.7
LnGrp LOS	D	C	A	D	C	B	D	C	C	D	C	D
Approach Vol, veh/h		682			401			484			218	
Approach Delay, s/veh		24.0			24.3			30.9			38.4	
Approach LOS		C			C			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.3	34.8	20.4	12.5	10.6	31.4	7.5	25.4
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	4.1	21.8	15.5	6.4	6.8	15.0	4.3	6.9
Green Ext Time (p_c), s	0.0	7.6	0.5	0.6	0.2	4.6	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Notes

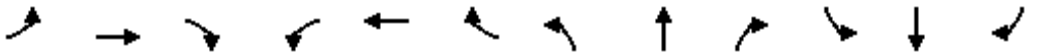
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	174	93	135	200	49	90	502	76	65	249	93
Future Volume (vph)	80	174	93	135	200	49	90	502	76	65	249	93
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1410	1524	1272	1554	1471		2941	2949	1344	1319	2743	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1410	1524	1272	1554	1471		2941	2949	1344	1319	2743	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	82	179	96	139	206	51	93	518	78	67	257	96
RTOR Reduction (vph)	0	0	81	0	9	0	0	0	45	0	30	0
Lane Group Flow (vph)	82	179	15	139	248	0	93	518	33	67	323	0
Heavy Vehicles (%)	14%	11%	13%	7%	14%	21%	6%	9%	7%	26%	16%	17%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	9.4	16.7	16.7	15.1	22.4		7.4	44.2	44.2	9.5	46.3	
Effective Green, g (s)	9.4	16.7	16.7	15.1	22.4		7.4	44.2	44.2	9.5	46.3	
Actuated g/C Ratio	0.09	0.16	0.16	0.14	0.21		0.07	0.42	0.42	0.09	0.44	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	126	242	202	223	313		207	1241	565	119	1209	
v/s Ratio Prot	0.06	0.12		c0.09	c0.17		0.03	c0.18		c0.05	0.12	
v/s Ratio Perm			0.01						0.02			
v/c Ratio	0.65	0.74	0.08	0.62	0.79		0.45	0.42	0.06	0.56	0.27	
Uniform Delay, d1	46.2	42.1	37.6	42.3	39.1		46.8	21.4	18.0	45.8	18.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	11.4	11.6	0.2	5.3	13.3		1.6	1.0	0.2	6.0	0.5	
Delay (s)	57.6	53.7	37.8	47.6	52.4		48.4	22.4	18.2	51.7	19.1	
Level of Service	E	D	D	D	D		D	C	B	D	B	
Approach Delay (s)		50.3			50.7			25.4			24.3	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	35.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	174	93	135	200	49	90	502	76	65	249	93
Future Volume (veh/h)	80	174	93	135	200	49	90	502	76	65	249	93
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1559	1600	1573	1654	1559	1559	1668	1627	1654	1395	1532	1532
Adj Flow Rate, veh/h	82	179	0	139	206	51	93	518	78	67	257	96
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	14	11	13	7	14	14	6	9	7	26	16	16
Cap, veh/h	100	212		197	229	57	144	1537	697	79	1065	388
Arrive On Green	0.07	0.13	0.00	0.13	0.19	0.19	0.05	0.50	0.50	0.06	0.51	0.51
Sat Flow, veh/h	1485	1600	1333	1576	1206	299	3082	3092	1402	1329	2089	761
Grp Volume(v), veh/h	82	179	0	139	0	257	93	518	78	67	177	176
Grp Sat Flow(s),veh/h/ln	1485	1600	1333	1576	0	1505	1541	1546	1402	1329	1455	1395
Q Serve(g_s), s	5.7	11.5	0.0	8.9	0.0	17.5	3.1	10.6	1.8	5.2	7.1	7.4
Cycle Q Clear(g_c), s	5.7	11.5	0.0	8.9	0.0	17.5	3.1	10.6	1.8	5.2	7.1	7.4
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	100	212		197	0	286	144	1537	697	79	742	711
V/C Ratio(X)	0.82	0.85		0.70	0.00	0.90	0.64	0.34	0.11	0.84	0.24	0.25
Avail Cap(c_a), veh/h	184	297		240	0	323	455	1537	697	196	742	711
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.3	44.5	0.0	44.1	0.0	41.5	49.2	16.0	4.6	48.9	14.3	14.4
Incr Delay (d2), s/veh	14.9	15.7	0.0	7.0	0.0	25.2	4.7	0.6	0.3	20.4	0.8	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.5	9.2	0.0	6.8	0.0	13.1	2.3	6.7	1.8	3.9	4.3	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.2	60.2	0.0	51.1	0.0	66.7	53.9	16.5	4.9	69.3	15.1	15.3
LnGrp LOS	E	E		D	A	E	D	B	A	E	B	B
Approach Vol, veh/h		261	A		396			689			420	
Approach Delay, s/veh		61.2			61.2			20.3			23.8	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.4	59.1	11.1	25.4	10.8	57.7	17.1	19.4
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	15.5	34.5	13.0	22.5	15.5	34.5	16.0	19.5
Max Q Clear Time (g_c+I1), s	5.1	9.4	7.7	19.5	7.2	12.6	10.9	13.5
Green Ext Time (p_c), s	0.2	4.2	0.1	0.4	0.1	7.0	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	36.3
HCM 6th LOS	D

Notes

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

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	1	217	111	1
Future Vol, veh/h	1	1	1	217	111	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	3	2	0
Mvmt Flow	1	1	1	238	122	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	363	123	123	0	-	0
Stage 1	123	-	-	-	-	-
Stage 2	240	-	-	-	-	-
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	640	933	1477	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	805	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	639	933	1477	-	-	-
Mov Cap-2 Maneuver	639	-	-	-	-	-
Stage 1	906	-	-	-	-	-
Stage 2	805	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1477	-	759	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s)	7.4	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	40	184	18	44	61
Future Vol, veh/h	17	40	184	18	44	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	1	0	10	7
Mvmt Flow	20	48	219	21	52	73

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	407	230	0	0	240	0
Stage 1	230	-	-	-	-	-
Stage 2	177	-	-	-	-	-
Critical Hdwy	7	6.5	-	-	4.2	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.29	-
Pot Cap-1 Maneuver	564	799	-	-	1281	-
Stage 1	782	-	-	-	-	-
Stage 2	834	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	540	799	-	-	1281	-
Mov Cap-2 Maneuver	540	-	-	-	-	-
Stage 1	782	-	-	-	-	-
Stage 2	799	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	3.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	699	1281	-
HCM Lane V/C Ratio	-	-	0.097	0.041	-
HCM Control Delay (s)	-	-	10.7	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	71	84	40	24	3
Future Vol, veh/h	12	71	84	40	24	3
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, %	-	-2	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	9	6	9	11	0	0
Mvmt Flow	14	82	97	46	28	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	143	0	-	0	230	120
Stage 1	-	-	-	-	120	-
Stage 2	-	-	-	-	110	-
Critical Hdwy	4.19	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.281	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1398	-	-	-	763	937
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	920	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1398	-	-	-	755	937
Mov Cap-2 Maneuver	-	-	-	-	755	-
Stage 1	-	-	-	-	901	-
Stage 2	-	-	-	-	920	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1398	-	-	-	772
HCM Lane V/C Ratio	0.01	-	-	-	0.04
HCM Control Delay (s)	7.6	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	114	154	122	79	4
Future Vol, veh/h	5	114	154	122	79	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	80	80	80	80	80	80
Heavy Vehicles, %	0	5	9	14	28	25
Mvmt Flow	6	143	193	153	99	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	346	0	-	0	425	270
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	155	-
Critical Hdwy	4.1	-	-	-	6.68	6.45
Critical Hdwy Stg 1	-	-	-	-	5.68	-
Critical Hdwy Stg 2	-	-	-	-	5.68	-
Follow-up Hdwy	2.2	-	-	-	3.752	3.525
Pot Cap-1 Maneuver	1224	-	-	-	540	716
Stage 1	-	-	-	-	719	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1224	-	-	-	537	716
Mov Cap-2 Maneuver	-	-	-	-	537	-
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	814	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1224	-	-	-	544
HCM Lane V/C Ratio	0.005	-	-	-	0.191
HCM Control Delay (s)	8	0	-	-	13.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	139	54	94	190	86	111
Future Vol, veh/h	139	54	94	190	86	111
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	97	97	97	97	97	97
Heavy Vehicles, %	10	2	2	10	4	2
Mvmt Flow	143	56	97	196	89	114

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	561	171
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	390	-
Critical Hdwy	-	-	4.12	-	6.44	6.22
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.218	-	3.536	3.318
Pot Cap-1 Maneuver	-	-	1373	-	485	873
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	680	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1373	-	447	873
Mov Cap-2 Maneuver	-	-	-	-	447	-
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	626	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	617	-	-	1373	-
HCM Lane V/C Ratio	0.329	-	-	0.071	-
HCM Control Delay (s)	13.7	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.4	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	12	237	1	1	252	19	1	1	1	32	1	32
Future Vol, veh/h	12	237	1	1	252	19	1	1	1	32	1	32
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	6	0	0	10	0	0	0	0	5	0	5
Mvmt Flow	13	255	1	1	271	20	1	1	1	34	1	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	291	0	0	256	0	0	583	575	256	556	555	271
Stage 1	-	-	-	-	-	-	282	282	-	273	273	-
Stage 2	-	-	-	-	-	-	301	293	-	283	282	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.15	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.545	4	3.345
Pot Cap-1 Maneuver	1282	-	-	1321	-	-	427	431	788	437	443	761
Stage 1	-	-	-	-	-	-	729	681	-	726	688	-
Stage 2	-	-	-	-	-	-	712	674	-	718	681	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1282	-	-	1321	-	-	403	425	788	431	437	761
Mov Cap-2 Maneuver	-	-	-	-	-	-	403	425	-	431	437	-
Stage 1	-	-	-	-	-	-	720	673	-	717	687	-
Stage 2	-	-	-	-	-	-	678	673	-	707	673	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	12.4	12.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	492	1282	-	-	1321	-	-	548
HCM Lane V/C Ratio	0.007	0.01	-	-	0.001	-	-	0.128
HCM Control Delay (s)	12.4	7.8	0	-	7.7	0	-	12.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	20	241	9	17	63	249	36	1	1	31	262	2
Future Volume (vph)	20	241	9	17	63	249	36	1	1	31	262	2
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.85		1.00	0.98
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3107	1488		1222	3167	1365	1662	968		1541	1505
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3107	1488		1222	3167	1365	1662	968		1541	1505
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)	22	265	10	19	69	274	40	1	1	34	288	2
RTOR Reduction (vph)	0	0	7	0	0	0	16	0	32	0	0	5
Lane Group Flow (vph)	22	265	3	0	88	274	24	1	3	0	158	151
Confl. Peds. (#/hr)											1	
Heavy Vehicles (%)	0%	7%	0%	36%	36%	5%	9%	0%	0%	56%	2%	50%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA	pt+ov	Split	NA		Split	NA
Protected Phases	5	2	2 8	1	1	6	6 4	8	8		4	4
Permitted Phases												
Actuated Green, G (s)	2.1	15.8	19.1		7.8	21.5	33.8	3.3	3.3		12.3	12.3
Effective Green, g (s)	2.1	15.8	19.1		7.8	21.5	33.8	3.3	3.3		12.3	12.3
Actuated g/C Ratio	0.04	0.28	0.34		0.14	0.39	0.61	0.06	0.06		0.22	0.22
Clearance Time (s)	4.0	4.5			4.0	4.5		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2			2.5	4.2		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	62	881	510		171	1222	828	98	57		340	332
v/s Ratio Prot	0.01	c0.09	0.00		c0.07	0.09	0.02	0.00	c0.00		c0.10	0.10
v/s Ratio Perm												
v/c Ratio	0.35	0.30	0.01		0.51	0.22	0.03	0.01	0.05		0.46	0.46
Uniform Delay, d1	26.1	15.6	12.1		22.2	11.5	4.4	24.7	24.7		18.8	18.8
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.5	0.3	0.0		1.9	0.1	0.0	0.0	0.3		0.7	0.7
Delay (s)	28.7	15.9	12.1		24.1	11.6	4.4	24.7	25.0		19.6	19.5
Level of Service	C	B	B		C	B	A	C	C		B	B
Approach Delay (s)		16.7				13.7			25.0			19.5
Approach LOS		B				B			C			B

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	16.5
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	22
Future Volume (vph)	22
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.91
Adj. Flow (vph)	24
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

07/13/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	20	241	9	17	63	249	36	1	1	31	262	2
Future Volume (veh/h)	20	241	9	17	63	249	36	1	1	31	262	2
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1654	1750		1259	1682	1627	1750	1750	1750	1717	1062
Adj Flow Rate, veh/h	22	265	10		69	274	40	1	1	34	312	0
Peak Hour Factor	0.91	0.91	0.91		0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	7	0		36	5	9	0	0	0	2	50
Cap, veh/h	93	730	420		84	742	552	85	2	73	550	179
Arrive On Green	0.06	0.23	0.23		0.07	0.23	0.23	0.05	0.05	0.05	0.17	0.00
Sat Flow, veh/h	1667	3143	1483		1199	3195	1379	1667	43	1447	3271	1062
Grp Volume(v), veh/h	22	265	10		69	274	40	1	0	35	312	0
Grp Sat Flow(s),veh/h/ln	1667	1572	1483		1199	1598	1379	1667	0	1490	1636	1062
Q Serve(g_s), s	0.4	2.4	0.2		2.0	2.5	0.6	0.0	0.0	0.8	3.0	0.0
Cycle Q Clear(g_c), s	0.4	2.4	0.2		2.0	2.5	0.6	0.0	0.0	0.8	3.0	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.97	1.00	
Lane Grp Cap(c), veh/h	93	730	420		84	742	552	85	0	76	550	179
V/C Ratio(X)	0.24	0.36	0.02		0.82	0.37	0.07	0.01	0.00	0.46	0.57	0.00
Avail Cap(c_a), veh/h	967	4105	2012		696	4172	2033	1451	0	1297	4271	1387
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	15.6	11.1	8.9		15.8	11.1	6.4	15.5	0.0	15.9	13.2	0.0
Incr Delay (d2), s/veh	1.0	0.5	0.0		13.5	0.5	0.1	0.0	0.0	3.2	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	1.2	0.1		1.4	1.3	0.4	0.0	0.0	0.5	1.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.5	11.6	9.0		29.3	11.6	6.5	15.6	0.0	19.1	13.9	0.0
LnGrp LOS	B	B	A		C	B	A	B	A	B	B	A
Approach Vol, veh/h		297				383			36			312
Approach Delay, s/veh		11.8				14.2			19.0			13.9
Approach LOS		B				B			B			B

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	12.5		9.8	6.4	12.5		5.7				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	4.0	4.4		5.0	2.4	4.5		2.8				
Green Ext Time (p_c), s	0.1	2.9		0.8	0.0	3.2		0.1				

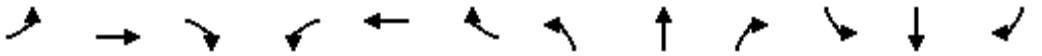
Intersection Summary		
HCM 6th Ctrl Delay		13.6
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

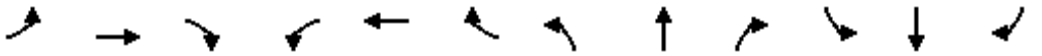
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	22
Future Volume (veh/h)	22
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1062
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.91
Percent Heavy Veh, %	50
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer - Assigned Phs
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	413	138	0	371	414	0	0	0	239	0	120
Future Volume (vph)	0	413	138	0	371	414	0	0	0	239	0	120
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3090	1308		3055	1292				2859		1261
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3090	1308		3055	1292				2859		1261
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)	0	454	152	0	408	455	0	0	0	263	0	132
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	98
Lane Group Flow (vph)	0	454	152	0	408	455	0	0	0	263	0	34
Confl. Peds. (#/hr)						1						1
Heavy Vehicles (%)	0%	6%	12%	0%	11%	15%	0%	0%	0%	10%	0%	15%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		76.9	100.0		67.9	100.0				14.1		23.6
Effective Green, g (s)		76.9	100.0		67.9	100.0				14.1		25.6
Actuated g/C Ratio		0.77	1.00		0.68	1.00				0.14		0.26
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2376	1308		2074	1292				403		322
v/s Ratio Prot		0.15			0.13					c0.09		0.03
v/s Ratio Perm			0.12			c0.35						
v/c Ratio		0.19	0.12		0.20	0.35				0.65		0.10
Uniform Delay, d1		3.1	0.0		5.9	0.0				40.6		28.4
Progression Factor		1.00	1.00		0.72	1.00				1.00		1.00
Incremental Delay, d2		0.2	0.2		0.2	0.7				3.4		0.1
Delay (s)		3.3	0.2		4.5	0.7				44.0		28.5
Level of Service		A	A		A	A				D		C
Approach Delay (s)		2.5			2.5			0.0			38.8	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



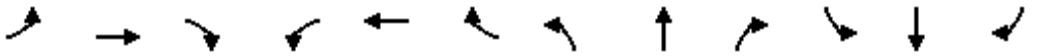
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	413	138	0	371	414	0	0	0	239	0	120
Future Volume (veh/h)	0	413	138	0	371	414	0	0	0	239	0	120
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1619	1537	0	1743	1688				1478	0	1410
Adj Flow Rate, veh/h	0	454	0	0	408	0				263	0	132
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	6	12	0	11	15				10	0	15
Cap, veh/h	0	2383		0	2565					369	0	186
Arrive On Green	0.00	0.77	0.00	0.00	1.00	0.00				0.14	0.00	0.16
Sat Flow, veh/h	0	3158	1303	0	3398	1430				2731	0	1195
Grp Volume(v), veh/h	0	454	0	0	408	0				263	0	132
Grp Sat Flow(s),veh/h/ln	0	1538	1303	0	1656	1430				1365	0	1195
Q Serve(g_s), s	0.0	3.9	0.0	0.0	0.0	0.0				9.2	0.0	10.5
Cycle Q Clear(g_c), s	0.0	3.9	0.0	0.0	0.0	0.0				9.2	0.0	10.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2383		0	2565					369	0	186
V/C Ratio(X)	0.00	0.19		0.00	0.16					0.71	0.00	0.71
Avail Cap(c_a), veh/h	0	2383		0	2565					969	0	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.94	0.00	0.00	0.94	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.0	0.0	0.0	0.0	0.0				41.4	0.0	40.1
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0				1.9	0.0	3.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	1.7	0.0	0.0	0.1	0.0				5.7	0.0	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.1	0.0	0.0	0.1	0.0				43.3	0.0	43.8
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		454	A		408	A					395	
Approach Delay, s/veh		3.1			0.1						43.5	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		82.0		18.0		82.0						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		5.9		12.5		2.0						
Green Ext Time (p_c), s		8.8		1.0		4.2						

Intersection Summary												
HCM 6th Ctrl Delay			14.8									
HCM 6th LOS			B									

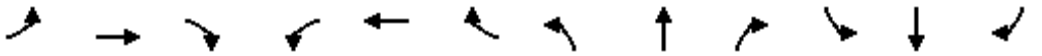
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	481	171	0	634	548	151	0	507	0	0	0
Future Volume (vph)	0	481	171	0	634	548	151	0	507	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.86	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3111	1431		2873	1407	1405	1280	1331			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3111	1431		2873	1407	1405	1280	1331			
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)	0	506	180	0	667	577	159	0	534	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	221	229	0	0	0
Lane Group Flow (vph)	0	506	180	0	667	577	143	57	43	0	0	0
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	0%	9%	6%	0%	14%	2%	9%	0%	3%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		75.2	100.0		75.2	100.0	15.8	15.8	15.8			
Effective Green, g (s)		75.2	100.0		75.2	100.0	15.8	15.8	15.8			
Actuated g/C Ratio		0.75	1.00		0.75	1.00	0.16	0.16	0.16			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2339	1431		2160	1407	221	202	210			
v/s Ratio Prot		0.16			0.23		c0.10	0.04				
v/s Ratio Perm			0.13			c0.41			0.03			
v/c Ratio		0.22	0.13		0.31	0.41	0.65	0.28	0.20			
Uniform Delay, d1		3.7	0.0		4.0	0.0	39.5	37.1	36.6			
Progression Factor		2.44	1.00		0.99	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.2	0.2		0.3	0.7	5.7	0.6	0.4			
Delay (s)		9.2	0.2		4.3	0.7	45.1	37.7	37.0			
Level of Service		A	A		A	A	D	D	D			
Approach Delay (s)		6.8			2.6			38.9			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



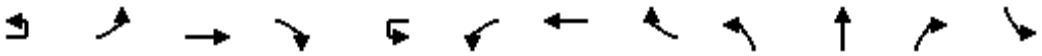
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	481	171	0	634	548	151	0	507	0	0	0
Future Volume (veh/h)	0	481	171	0	634	548	151	0	507	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1770	1812	0	1510	1674	1432	1555	1514			
Adj Flow Rate, veh/h	0	506	0	0	667	0	106	0	380			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	9	6	0	14	2	9	0	3			
Cap, veh/h	0	2466		0	2103		241	0	454			
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.18	0.00	0.18			
Sat Flow, veh/h	0	3452	1536	0	2945	1419	1364	0	2566			
Grp Volume(v), veh/h	0	506	0	0	667	0	106	0	380			
Grp Sat Flow(s),veh/h/ln	0	1682	1536	0	1435	1419	1364	0	1283			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	14.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	14.3			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2466		0	2103		241	0	454			
V/C Ratio(X)	0.00	0.21		0.00	0.32		0.44	0.00	0.84			
Avail Cap(c_a), veh/h	0	2466		0	2103		484	0	911			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.94	0.00	0.00	0.79	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	36.7	0.0	39.8			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.3	0.0	0.9	0.0	3.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.0	0.0	0.2	0.0	4.2	0.0	8.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	0.3	0.0	37.7	0.0	42.9			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		506	A		667	A		486				
Approach Delay, s/veh		0.2			0.3			41.8				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		77.8				77.8		22.2				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		16.3				
Green Ext Time (p_c), s		5.7				14.6		1.4				

Intersection Summary	
HCM 6th Ctrl Delay	12.4
HCM 6th LOS	B

Notes

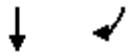
User approved volume balancing among the lanes for turning movement.

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



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	34	49	738	53	5	93	736	11	383	16	122	8
Future Volume (vph)	34	49	738	53	5	93	736	11	383	16	122	8
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1630	2995	1282		1489	2921		1490	1492	1390	1662
Flt Permitted		0.27	1.00	1.00		0.26	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		471	2995	1282		412	2921		1490	1492	1390	1662
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	37	53	794	57	5	100	791	12	412	17	131	9
RTOR Reduction (vph)	0	0	0	30	0	0	1	0	0	0	106	0
Lane Group Flow (vph)	0	90	794	27	0	105	802	0	214	215	25	9
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	2%	11%	16%	10%	10%	12%	0%	6%	13%	7%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		56.9	46.5	46.5		56.9	50.4		19.1	19.1	19.1	6.5
Effective Green, g (s)		56.9	46.5	46.5		56.9	50.4		19.1	19.1	19.1	6.5
Actuated g/C Ratio		0.57	0.46	0.46		0.57	0.50		0.19	0.19	0.19	0.06
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		343	1392	596		346	1472		284	284	265	108
v/s Ratio Prot		0.02	c0.27			0.03	c0.27		0.14	c0.14		0.01
v/s Ratio Perm		0.13		0.02		0.14					0.02	
v/c Ratio		0.26	0.57	0.04		0.30	0.54		0.75	0.76	0.09	0.08
Uniform Delay, d1		10.5	19.5	14.6		18.5	17.0		38.2	38.3	33.3	43.9
Progression Factor		1.35	1.15	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3	1.6	0.1		0.4	1.5		10.3	10.5	0.1	0.2
Delay (s)		14.5	24.0	14.7		18.9	18.4		48.5	48.7	33.4	44.2
Level of Service		B	C	B		B	B		D	D	C	D
Approach Delay (s)			22.5				18.5			45.1		
Approach LOS			C				B			D		

Intersection Summary			
HCM 2000 Control Delay	26.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	19	29
Future Volume (vph)	19	29
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1351	
Flt Permitted	1.00	
Satd. Flow (perm)	1351	
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	20	31
RTOR Reduction (vph)	29	0
Lane Group Flow (vph)	22	0
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	11%	22%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	6.5	
Effective Green, g (s)	6.5	
Actuated g/C Ratio	0.06	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	87	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.25	
Uniform Delay, d1	44.4	
Progression Factor	1.00	
Incremental Delay, d2	1.1	
Delay (s)	45.6	
Level of Service	D	
Approach Delay (s)	45.4	
Approach LOS	D	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	34	49	738	53	5	93	736	11	383	16	122	8
Future Volume (veh/h)	34	49	738	53	5	93	736	11	383	16	122	8
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1723	1600	1532		1565	1537	1537	1668	1573	1654	1750
Adj Flow Rate, veh/h		53	794	0		100	791	12	424	0	0	9
Peak Hour Factor		0.93	0.93	0.93		0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %		2	11	16		10	12	12	6	13	7	0
Cap, veh/h		425	988			567	1780	27	497	0		65
Arrive On Green		0.02	0.22	0.00		0.30	0.60	0.60	0.16	0.00	0.00	0.04
Sat Flow, veh/h		1641	3040	1298		1490	2944	45	3177	0	1402	1667
Grp Volume(v), veh/h		53	794	0		100	392	411	424	0	0	9
Grp Sat Flow(s),veh/h/ln		1641	1520	1298		1490	1461	1528	1589	0	1402	1667
Q Serve(g_s), s		1.2	24.8	0.0		0.0	14.5	14.5	13.0	0.0	0.0	0.5
Cycle Q Clear(g_c), s		1.2	24.8	0.0		0.0	14.5	14.5	13.0	0.0	0.0	0.5
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		425	988			567	883	924	497	0		65
V/C Ratio(X)		0.12	0.80			0.18	0.44	0.44	0.85	0.00		0.14
Avail Cap(c_a), veh/h		613	988			567	883	924	651	0		258
HCM Platoon Ratio		0.67	0.67	0.67		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.94	0.94	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		8.3	36.1	0.0		22.6	10.7	10.7	41.1	0.0	0.0	46.5
Incr Delay (d2), s/veh		0.1	6.5	0.0		0.1	1.6	1.5	7.8	0.0	0.0	0.7
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		0.7	15.5	0.0		3.0	8.3	8.6	9.4	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		8.4	42.6	0.0		22.8	12.3	12.2	48.9	0.0	0.0	47.2
LnGrp LOS		A	D			C	B	B	D	A		D
Approach Vol, veh/h			847	A			903			424	A	
Approach Delay, s/veh			40.5				13.4			48.9		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.5	37.0		8.4	6.5	65.0		20.1
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	2.0	26.8		3.2	3.2	16.5		15.0
Green Ext Time (p_c), s	0.1	4.1		0.0	0.0	9.5		0.6

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C

Notes

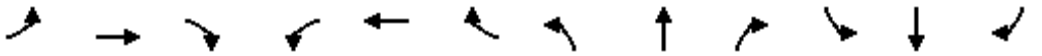
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	19	29
Future Volume (veh/h)	19	29
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1600	1600
Adj Flow Rate, veh/h	20	0
Peak Hour Factor	0.93	0.93
Percent Heavy Veh, %	11	11
Cap, veh/h	62	
Arrive On Green	0.04	0.00
Sat Flow, veh/h	1600	0
Grp Volume(v), veh/h	20	0
Grp Sat Flow(s),veh/h/ln	1600	0
Q Serve(g_s), s	1.2	0.0
Cycle Q Clear(g_c), s	1.2	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	62	
V/C Ratio(X)	0.32	
Avail Cap(c_a), veh/h	248	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	46.8	0.0
Incr Delay (d2), s/veh	2.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	49.0	0.0
LnGrp LOS	D	
Approach Vol, veh/h	29	A
Approach Delay, s/veh	48.4	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

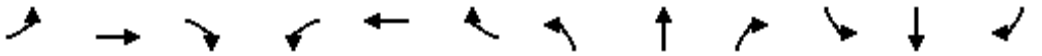
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	124	509	183	40	301	49	244	143	55	53	144	110
Future Volume (vph)	124	509	183	40	301	49	244	143	55	53	144	110
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1599	1535	1403	1409	1458	1445	1539	1683	1293	1458	1636	1253
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1599	1535	1403	1409	1458	1445	1539	1683	1293	1458	1636	1253
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	135	553	199	43	327	53	265	155	60	58	157	120
RTOR Reduction (vph)	0	0	57	0	0	33	0	0	43	0	0	103
Lane Group Flow (vph)	135	553	142	43	327	20	265	155	17	58	157	17
Confl. Peds. (#/hr)	5					5	2					2
Heavy Vehicles (%)	4%	14%	6%	18%	20%	0%	8%	4%	15%	14%	7%	16%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	15.4	55.2	80.6	7.5	47.3	47.3	25.4	34.8	34.8	8.5	17.9	17.9
Effective Green, g (s)	15.4	55.2	80.6	7.5	47.3	47.3	25.4	34.8	34.8	8.5	17.9	17.9
Actuated g/C Ratio	0.12	0.44	0.64	0.06	0.38	0.38	0.20	0.28	0.28	0.07	0.14	0.14
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	196	677	904	84	551	546	312	468	359	99	234	179
v/s Ratio Prot	c0.08	c0.36	0.03	0.03	0.22		c0.17	0.09		0.04	c0.10	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.69	0.82	0.16	0.51	0.59	0.04	0.85	0.33	0.05	0.59	0.67	0.10
Uniform Delay, d1	52.5	30.5	8.8	57.0	31.1	24.5	48.0	35.8	33.0	56.5	50.8	46.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.9	8.4	0.1	3.9	2.5	0.1	18.7	0.3	0.0	7.1	6.7	0.2
Delay (s)	61.4	38.9	8.8	60.9	33.6	24.5	66.6	36.2	33.0	63.7	57.5	46.7
Level of Service	E	D	A	E	C	C	E	D	C	E	E	D
Approach Delay (s)		35.6			35.2			52.6			54.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	42.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



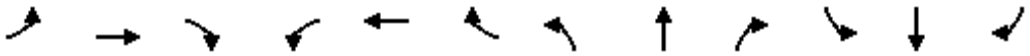
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	124	509	183	40	301	49	244	143	55	53	144	110
Future Volume (veh/h)	124	509	183	40	301	49	244	143	55	53	144	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1559	1668	1504	1477	1750	1641	1695	1545	1559	1654	1532
Adj Flow Rate, veh/h	135	553	90	43	327	53	265	155	60	58	157	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	14	6	18	20	0	8	4	15	14	7	16
Cap, veh/h	166	665	870	53	532	530	299	470	362	70	220	171
Arrive On Green	0.10	0.43	0.43	0.04	0.36	0.36	0.19	0.28	0.28	0.05	0.13	0.13
Sat Flow, veh/h	1615	1559	1405	1433	1477	1473	1563	1695	1305	1485	1654	1288
Grp Volume(v), veh/h	135	553	90	43	327	53	265	155	60	58	157	55
Grp Sat Flow(s),veh/h/ln	1615	1559	1405	1433	1477	1473	1563	1695	1305	1485	1654	1288
Q Serve(g_s), s	7.3	28.2	2.3	2.7	16.3	2.1	14.8	6.5	3.1	3.5	8.1	3.5
Cycle Q Clear(g_c), s	7.3	28.2	2.3	2.7	16.3	2.1	14.8	6.5	3.1	3.5	8.1	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	166	665	870	53	532	530	299	470	362	70	220	171
V/C Ratio(X)	0.81	0.83	0.10	0.82	0.61	0.10	0.89	0.33	0.17	0.83	0.71	0.32
Avail Cap(c_a), veh/h	451	959	1135	401	908	906	437	569	438	415	555	432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.3	22.8	7.0	42.8	23.5	19.0	35.2	25.7	24.5	42.2	37.1	35.1
Incr Delay (d2), s/veh	6.9	6.3	0.1	19.8	2.2	0.2	12.6	0.3	0.2	16.1	3.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	16.6	1.2	2.2	9.9	1.3	10.8	4.8	1.8	2.8	6.2	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.2	29.1	7.1	62.6	25.8	19.2	47.8	26.0	24.6	58.4	40.3	35.9
LnGrp LOS	D	C	A	E	C	B	D	C	C	E	D	D
Approach Vol, veh/h		778			423			480			270	
Approach Delay, s/veh		29.5			28.7			37.9			43.3	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.8	43.1	21.6	16.9	13.7	37.2	8.7	29.8
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	4.7	30.2	16.8	10.1	9.3	18.3	5.5	8.5
Green Ext Time (p_c), s	0.1	7.9	0.4	0.8	0.2	4.7	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	33.3
HCM 6th LOS	C

Notes

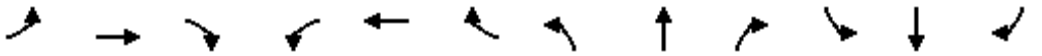
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	175	66	97	204	77	130	475	65	57	261	101
Future Volume (vph)	130	175	66	97	204	77	130	475	65	57	261	101
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1461	1422	1160	1446	1467		2887	2844	1141	1341	2746	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1461	1422	1160	1446	1467		2887	2844	1141	1341	2746	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	141	190	72	105	222	84	141	516	71	62	284	110
RTOR Reduction (vph)	0	0	57	0	13	0	0	0	43	0	36	0
Lane Group Flow (vph)	141	190	15	105	293	0	141	516	28	62	358	0
Heavy Vehicles (%)	10%	19%	24%	15%	16%	10%	8%	13%	26%	24%	16%	16%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	13.2	22.2	22.2	13.3	22.3		10.4	41.0	41.0	9.0	39.6	
Effective Green, g (s)	13.2	22.2	22.2	13.3	22.3		10.4	41.0	41.0	9.0	39.6	
Actuated g/C Ratio	0.13	0.21	0.21	0.13	0.21		0.10	0.39	0.39	0.09	0.38	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	183	300	245	183	311		285	1110	445	114	1035	
v/s Ratio Prot	c0.10	0.13		0.07	c0.20		c0.05	c0.18		0.05	0.13	
v/s Ratio Perm			0.01						0.02			
v/c Ratio	0.77	0.63	0.06	0.57	0.94		0.49	0.46	0.06	0.54	0.35	
Uniform Delay, d1	44.4	37.7	33.1	43.2	40.7		44.8	23.8	20.0	46.0	23.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	17.9	4.5	0.1	4.3	35.9		1.4	1.4	0.3	5.2	0.9	
Delay (s)	62.4	42.2	33.2	47.5	76.6		46.2	25.2	20.3	51.2	24.3	
Level of Service	E	D	C	D	E		D	C	C	D	C	
Approach Delay (s)		47.7			69.2			28.8			28.0	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	130	175	66	97	204	77	130	475	65	57	261	101
Future Volume (veh/h)	130	175	66	97	204	77	130	475	65	57	261	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1614	1491	1422	1545	1532	1532	1641	1573	1395	1422	1532	1532
Adj Flow Rate, veh/h	141	190	0	105	222	84	141	516	71	62	284	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	19	24	15	16	16	8	13	26	24	16	16
Cap, veh/h	166	219		258	227	86	200	1308	518	74	880	333
Arrive On Green	0.11	0.15	0.00	0.18	0.21	0.21	0.07	0.44	0.44	0.05	0.43	0.43
Sat Flow, veh/h	1537	1491	1205	1472	1059	401	3032	2988	1182	1355	2065	781
Grp Volume(v), veh/h	141	190	0	105	0	306	141	516	71	62	198	196
Grp Sat Flow(s),veh/h/ln	1537	1491	1205	1472	0	1459	1516	1494	1182	1355	1455	1391
Q Serve(g_s), s	9.5	13.1	0.0	6.7	0.0	21.9	4.8	12.3	2.0	4.8	9.5	9.9
Cycle Q Clear(g_c), s	9.5	13.1	0.0	6.7	0.0	21.9	4.8	12.3	2.0	4.8	9.5	9.9
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	166	219		258	0	313	200	1308	518	74	620	593
V/C Ratio(X)	0.85	0.87		0.41	0.00	0.98	0.71	0.39	0.14	0.84	0.32	0.33
Avail Cap(c_a), veh/h	190	277		258	0	313	448	1308	518	200	620	593
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	43.8	0.0	38.5	0.0	41.0	48.0	20.1	4.9	49.2	20.0	20.1
Incr Delay (d2), s/veh	26.4	21.2	0.0	1.0	0.0	44.9	4.5	0.9	0.6	21.6	1.4	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.4	10.1	0.0	4.4	0.0	17.1	3.4	7.7	1.9	3.7	6.0	6.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.4	65.0	0.0	39.5	0.0	85.9	52.6	21.0	5.5	70.8	21.4	21.6
LnGrp LOS	E	E		D	A	F	D	C	A	E	C	C
Approach Vol, veh/h		331	A		411			728			456	
Approach Delay, s/veh		68.2			74.1			25.6			28.2	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.4	50.3	15.3	28.0	10.2	51.5	22.4	20.9
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	15.5	34.5	13.0	22.5	15.5	34.5	16.0	19.5
Max Q Clear Time (g_c+I1), s	6.8	11.9	11.5	23.9	6.8	14.3	8.7	15.1
Green Ext Time (p_c), s	0.3	4.5	0.1	0.0	0.1	6.6	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	43.9
HCM 6th LOS	D

Notes

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

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	1	196	149	1
Future Vol, veh/h	1	1	1	196	149	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	3	2	0
Mvmt Flow	1	1	1	215	164	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	382	165	165	0	-	0
Stage 1	165	-	-	-	-	-
Stage 2	217	-	-	-	-	-
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	624	885	1426	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	623	885	1426	-	-	-
Mov Cap-2 Maneuver	623	-	-	-	-	-
Stage 1	868	-	-	-	-	-
Stage 2	824	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1426	-	731	-	-
HCM Lane V/C Ratio	0.001	-	0.003	-	-
HCM Control Delay (s)	7.5	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	25	166	28	31	78
Future Vol, veh/h	19	25	166	28	31	78
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	6	0	6	0	4	3
Mvmt Flow	20	27	177	30	33	83

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	341	192	0	0	207	0
Stage 1	192	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	7.06	6.5	-	-	4.14	-
Critical Hdwy Stg 1	6.06	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.236	-
Pot Cap-1 Maneuver	611	841	-	-	1352	-
Stage 1	805	-	-	-	-	-
Stage 2	848	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	595	841	-	-	1352	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	826	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	714	1352	-
HCM Lane V/C Ratio	-	-	0.066	0.024	-
HCM Control Delay (s)	-	-	10.4	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	124	69	17	27	7
Future Vol, veh/h	5	124	69	17	27	7
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, %	-	-2	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	3	3	0	4	0
Mvmt Flow	6	151	84	21	33	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	105	0	-	0	258	95
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	163	-
Critical Hdwy	4.1	-	-	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.2	-	-	-	3.536	3.3
Pot Cap-1 Maneuver	1499	-	-	-	726	967
Stage 1	-	-	-	-	924	-
Stage 2	-	-	-	-	861	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1499	-	-	-	723	967
Mov Cap-2 Maneuver	-	-	-	-	723	-
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	861	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1499	-	-	-	763
HCM Lane V/C Ratio	0.004	-	-	-	0.054
HCM Control Delay (s)	7.4	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	185	106	86	112	18
Future Vol, veh/h	12	185	106	86	112	18
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	94	94	94	94	94	94
Heavy Vehicles, %	9	3	2	4	1	18
Mvmt Flow	13	197	113	91	119	19

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	204	0	-	0	382	159
Stage 1	-	-	-	-	159	-
Stage 2	-	-	-	-	223	-
Critical Hdwy	4.19	-	-	-	6.41	6.38
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.281	-	-	-	3.509	3.462
Pot Cap-1 Maneuver	1327	-	-	-	622	846
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	816	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1327	-	-	-	615	846
Mov Cap-2 Maneuver	-	-	-	-	615	-
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	816	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1327	-	-	-	639
HCM Lane V/C Ratio	0.01	-	-	-	0.216
HCM Control Delay (s)	7.7	0	-	-	12.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Intersection	
Int Delay, s/veh	6.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	223	74	177	142	50	128
Future Vol, veh/h	223	74	177	142	50	128
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	83	83	83	83	83	83
Heavy Vehicles, %	3	1	1	5	9	3
Mvmt Flow	269	89	213	171	60	154

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	358	0	911	314
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	597	-
Critical Hdwy	-	-	4.11	-	6.49	6.23
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	-	-	2.209	-	3.581	3.327
Pot Cap-1 Maneuver	-	-	1206	-	296	724
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	536	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1206	-	238	724
Mov Cap-2 Maneuver	-	-	-	-	238	-
Stage 1	-	-	-	-	725	-
Stage 2	-	-	-	-	431	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	19.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	460	-	-	1206	-
HCM Lane V/C Ratio	0.466	-	-	0.177	-
HCM Control Delay (s)	19.5	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.4	-	-	0.6	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↗		↕			↕	
Traffic Vol, veh/h	36	315	1	1	301	54	1	2	2	42	1	18
Future Vol, veh/h	36	315	1	1	301	54	1	2	2	42	1	18
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	2	0	0	3	2	0	0	0	0	0	0
Mvmt Flow	42	371	1	1	354	64	1	2	2	49	1	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	418	0	0	372	0	0	857	876	372	814	812	356
Stage 1	-	-	-	-	-	-	456	456	-	356	356	-
Stage 2	-	-	-	-	-	-	401	420	-	458	456	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1152	-	-	1198	-	-	280	290	678	299	315	693
Stage 1	-	-	-	-	-	-	588	572	-	666	633	-
Stage 2	-	-	-	-	-	-	630	593	-	587	572	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1152	-	-	1198	-	-	260	276	678	286	300	692
Mov Cap-2 Maneuver	-	-	-	-	-	-	260	276	-	286	300	-
Stage 1	-	-	-	-	-	-	561	546	-	635	632	-
Stage 2	-	-	-	-	-	-	608	592	-	556	546	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	15.3	18.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	356	1152	-	-	1198	-	-	346
HCM Lane V/C Ratio	0.017	0.037	-	-	0.001	-	-	0.207
HCM Control Delay (s)	15.3	8.2	0	-	8	0	-	18.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	55	302	2	22	20	302	147	3	2	36	575	1
Future Volume (vph)	55	302	2	22	20	302	147	3	2	36	575	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.98
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3228	1460		1108	3197	1446	1662	1220		1541	1520
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3228	1460		1108	3197	1446	1662	1220		1541	1520
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	65	355	2	26	24	355	173	4	2	42	676	1
RTOR Reduction (vph)	0	0	1	0	0	0	65	0	40	0	0	4
Lane Group Flow (vph)	65	355	1	0	50	355	108	4	4	0	372	361
Confl. Peds. (#/hr)	1		1		1		1	1				
Confl. Bikes (#/hr)			1							1		
Heavy Vehicles (%)	0%	3%	0%	50%	50%	4%	2%	0%	0%	22%	2%	0%
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Split	NA		Split	NA
Protected Phases	5	2	8	1	1	6	4	8	8		4	4
Permitted Phases			2				6					
Actuated Green, G (s)	7.0	17.3	20.7		7.3	17.6	44.2	3.4	3.4		26.6	26.6
Effective Green, g (s)	7.0	17.3	20.7		7.3	17.6	44.2	3.4	3.4		26.6	26.6
Actuated g/C Ratio	0.10	0.24	0.29		0.10	0.25	0.62	0.05	0.05		0.37	0.37
Clearance Time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2	2.5		2.5	4.2	2.5	2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	163	785	425		113	791	898	79	58		576	568
v/s Ratio Prot	0.04	c0.11	0.00		0.05	c0.11	0.04	0.00	c0.00		c0.24	0.24
v/s Ratio Perm			0.00				0.03					
v/c Ratio	0.40	0.45	0.00		0.44	0.45	0.12	0.05	0.07		0.65	0.64
Uniform Delay, d1	30.1	22.9	17.9		30.0	22.6	5.5	32.3	32.3		18.4	18.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.2	0.6	0.0		2.0	0.6	0.0	0.2	0.4		2.2	2.0
Delay (s)	31.2	23.5	17.9		32.0	23.3	5.5	32.5	32.7		20.6	20.3
Level of Service	C	C	B		C	C	A	C	C		C	C
Approach Delay (s)		24.7				18.7			32.7			20.4
Approach LOS		C				B			C			C

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	71.1	Sum of lost time (s)	16.5
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	51
Future Volume (vph)	51
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.85
Adj. Flow (vph)	60
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

07/13/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	55	302	2	22	20	302	147	3	2	36	575	1
Future Volume (veh/h)	55	302	2	22	20	302	147	3	2	36	575	1
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1709	1750		1068	1695	1723	1750	1750	1750	1717	1745
Adj Flow Rate, veh/h	65	355	2		24	355	173	4	2	42	733	0
Peak Hour Factor	0.85	0.85	0.85		0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	3	0		50	4	2	0	0	0	2	0
Cap, veh/h	99	926	506		29	785	780	104	4	88	952	508
Arrive On Green	0.06	0.29	0.29		0.03	0.24	0.24	0.06	0.06	0.06	0.29	0.00
Sat Flow, veh/h	1667	3247	1449		1017	3221	1457	1667	67	1403	3271	1745
Grp Volume(v), veh/h	65	355	2		24	355	173	4	0	44	733	0
Grp Sat Flow(s),veh/h/ln	1667	1624	1449		1017	1611	1457	1667	0	1470	1636	1745
Q Serve(g_s), s	1.9	4.3	0.0		1.2	4.6	3.1	0.1	0.0	1.4	10.1	0.0
Cycle Q Clear(g_c), s	1.9	4.3	0.0		1.2	4.6	3.1	0.1	0.0	1.4	10.1	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.95	1.00	
Lane Grp Cap(c), veh/h	99	926	506		29	785	780	104	0	92	952	508
V/C Ratio(X)	0.65	0.38	0.00		0.83	0.45	0.22	0.04	0.00	0.48	0.77	0.00
Avail Cap(c_a), veh/h	673	2951	1409		411	2927	1749	1010	0	891	2972	1585
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.8	14.2	10.6		23.9	15.9	6.1	21.8	0.0	22.4	16.0	0.0
Incr Delay (d2), s/veh	5.3	0.4	0.0		34.0	0.6	0.2	0.1	0.0	2.9	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	2.6	0.0		1.0	2.8	2.7	0.1	0.0	0.9	6.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.1	14.6	10.6		58.0	16.5	6.3	21.9	0.0	25.3	17.1	0.0
LnGrp LOS	C	B	B		E	B	A	C	A	C	B	A
Approach Vol, veh/h		422				552			48			733
Approach Delay, s/veh		16.7				15.1			25.0			17.1
Approach LOS		B				B			C			B

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	18.6		18.4	7.5	16.6		7.1				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	3.2	6.3		12.1	3.9	6.6		3.4				
Green Ext Time (p_c), s	0.0	3.9		2.2	0.1	5.1		0.2				

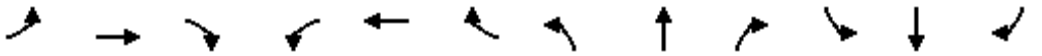
Intersection Summary		
HCM 6th Ctrl Delay		16.6
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

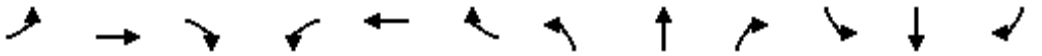
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	51
Future Volume (veh/h)	51
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1745
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.85
Percent Heavy Veh, %	0
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	685	250	0	640	458	0	0	0	521	0	254
Future Volume (vph)	0	685	250	0	640	458	0	0	0	521	0	254
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3180	1409		3325	1429				3083		1395
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3180	1409		3325	1429				3083		1395
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	770	281	0	719	515	0	0	0	585	0	285
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	770	281	0	719	515	0	0	0	585	0	238
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	3%	4%	0%	2%	4%	0%	0%	0%	2%	0%	4%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		66.9	100.0		57.5	100.0				24.1		34.0
Effective Green, g (s)		66.9	100.0		57.5	100.0				24.1		36.0
Actuated g/C Ratio		0.67	1.00		0.58	1.00				0.24		0.36
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2127	1409		1911	1429				743		502
v/s Ratio Prot		0.24			0.22					c0.19		c0.17
v/s Ratio Perm			0.20			c0.36						
v/c Ratio		0.36	0.20		0.38	0.36				0.79		0.47
Uniform Delay, d1		7.2	0.0		11.5	0.0				35.5		24.7
Progression Factor		1.00	1.00		0.76	1.00				1.00		1.00
Incremental Delay, d2		0.5	0.3		0.5	0.7				5.3		0.5
Delay (s)		7.7	0.3		9.3	0.7				40.9		25.2
Level of Service		A	A		A	A				D		C
Approach Delay (s)		5.7			5.7			0.0			35.8	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	14.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	685	250	0	640	458	0	0	0	521	0	254
Future Volume (veh/h)	0	685	250	0	640	458	0	0	0	521	0	254
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1660	1647	0	1867	1840				1587	0	1560
Adj Flow Rate, veh/h	0	770	0	0	719	0				585	0	173
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	3	4	0	2	4				2	0	4
Cap, veh/h	0	2142		0	2409					677	0	332
Arrive On Green	0.00	0.68	0.00	0.00	1.00	0.00				0.23	0.00	0.25
Sat Flow, veh/h	0	3237	1395	0	3641	1559				2932	0	1322
Grp Volume(v), veh/h	0	770	0	0	719	0				585	0	173
Grp Sat Flow(s),veh/h/ln	0	1577	1395	0	1774	1559				1466	0	1322
Q Serve(g_s), s	0.0	10.4	0.0	0.0	0.0	0.0				19.2	0.0	11.3
Cycle Q Clear(g_c), s	0.0	10.4	0.0	0.0	0.0	0.0				19.2	0.0	11.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2142		0	2409					677	0	332
V/C Ratio(X)	0.00	0.36		0.00	0.30					0.86	0.00	0.52
Avail Cap(c_a), veh/h	0	2142		0	2409					1041	0	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.83	0.00	0.00	0.88	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	0.0	0.0	0.0	0.0				36.9	0.0	32.3
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.3	0.0				4.2	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	5.8	0.0	0.0	0.2	0.0				11.5	0.0	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.2	0.0	0.0	0.3	0.0				41.1	0.0	33.2
LnGrp LOS	A	A		A	A					D	A	C
Approach Vol, veh/h		770	A		719	A					758	
Approach Delay, s/veh		7.2			0.3						39.3	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		72.4		27.6		72.4						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		12.4		21.2		2.0						
Green Ext Time (p_c), s		16.2		1.9		8.1						

Intersection Summary												
HCM 6th Ctrl Delay			15.8									
HCM 6th LOS			B									

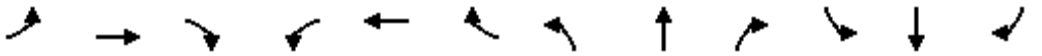
Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1027	179	0	919	254	179	0	392	0	0	0
Future Volume (vph)	0	1027	179	0	919	254	179	0	392	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.86	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3325	1402		3180	1392	1487	1278	1318			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3325	1402		3180	1392	1487	1278	1318			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1116	195	0	999	276	195	0	426	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	61	61	0	0	0
Lane Group Flow (vph)	0	1116	195	0	999	276	175	163	161	0	0	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	2%	6%	0%	3%	3%	3%	0%	4%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		72.6	100.0		72.6	100.0	18.4	18.4	18.4			
Effective Green, g (s)		72.6	100.0		72.6	100.0	18.4	18.4	18.4			
Actuated g/C Ratio		0.73	1.00		0.73	1.00	0.18	0.18	0.18			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2413	1402		2308	1392	273	235	242			
v/s Ratio Prot		c0.34			0.31		0.12	c0.13				
v/s Ratio Perm			0.14			0.20			0.12			
v/c Ratio		0.46	0.14		0.43	0.20	0.64	0.69	0.66			
Uniform Delay, d1		5.7	0.0		5.5	0.0	37.7	38.2	37.9			
Progression Factor		2.05	1.00		1.16	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.6	0.2		0.5	0.3	4.5	7.9	6.1			
Delay (s)		12.2	0.2		6.9	0.3	42.2	46.0	44.0			
Level of Service		B	A		A	A	D	D	D			
Approach Delay (s)		10.4			5.5			44.2			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	55.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰	✥	↱			
Traffic Volume (veh/h)	0	1027	179	0	919	254	179	0	392	0	0	0
Future Volume (veh/h)	0	1027	179	0	919	254	179	0	392	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1867	1812	0	1660	1660	1514	1555	1500			
Adj Flow Rate, veh/h	0	1116	0	0	999	0	262	0	137			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	2	6	0	3	3	3	0	4			
Cap, veh/h	0	2750		0	2445		389	0	171			
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.13	0.00	0.13			
Sat Flow, veh/h	0	3641	1536	0	3237	1407	2883	0	1271			
Grp Volume(v), veh/h	0	1116	0	0	999	0	262	0	137			
Grp Sat Flow(s),veh/h/ln	0	1774	1536	0	1577	1407	1442	0	1271			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	8.6	0.0	10.5			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	8.6	0.0	10.5			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2750		0	2445		389	0	171			
V/C Ratio(X)	0.00	0.41		0.00	0.41		0.67	0.00	0.80			
Avail Cap(c_a), veh/h	0	2750		0	2445		1024	0	451			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.82	0.00	0.00	0.84	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	41.2	0.0	42.0			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.4	0.0	1.5	0.0	6.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.3	0.0	0.0	0.3	0.0	5.6	0.0	6.4			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	0.4	0.0	42.7	0.0	48.2			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1116	A		999	A		399				
Approach Delay, s/veh		0.4			0.4			44.6				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		82.0				82.0		18.0				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		12.5				
Green Ext Time (p_c), s		16.7				24.8		1.0				

Intersection Summary	
HCM 6th Ctrl Delay	7.4
HCM 6th LOS	A

Notes

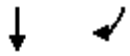
User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	33	78	815	117	11	141	691	16	370	11	146	30
Future Volume (vph)	33	78	815	117	11	141	691	16	370	11	146	30
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.98	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1583	3228	1382		1621	3141		1504	1516	1451	1662
Flt Permitted		0.30	1.00	1.00		0.24	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		497	3228	1382		409	3141		1504	1516	1451	1662
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)	35	82	858	123	12	148	727	17	389	12	154	32
RTOR Reduction (vph)	0	0	0	64	0	0	1	0	0	0	127	0
Lane Group Flow (vph)	0	117	858	59	0	160	743	0	198	203	27	32
Confl. Peds. (#/hr)				2		2			2		3	3
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	5%	5%	3%	5%	1%	1%	4%	0%	5%	0%	1%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		57.8	47.7	47.7		57.8	49.5		17.8	17.8	17.8	6.9
Effective Green, g (s)		57.8	47.7	47.7		57.8	49.5		17.8	17.8	17.8	6.9
Actuated g/C Ratio		0.58	0.48	0.48		0.58	0.50		0.18	0.18	0.18	0.07
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		377	1539	659		358	1554		267	269	258	114
v/s Ratio Prot		0.03	c0.27			0.05	c0.24		0.13	c0.13		c0.02
v/s Ratio Perm		0.15		0.04		0.21					0.02	
v/c Ratio		0.31	0.56	0.09		0.45	0.48		0.74	0.75	0.11	0.28
Uniform Delay, d1		10.2	18.6	14.3		21.3	16.7		38.9	39.0	34.4	44.2
Progression Factor		1.20	1.14	1.48		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3	1.3	0.2		0.6	1.1		10.0	10.9	0.1	1.0
Delay (s)		12.5	22.5	21.4		21.9	17.8		49.0	49.9	34.6	45.2
Level of Service		B	C	C		C	B		D	D	C	D
Approach Delay (s)			21.3				18.5			45.3		
Approach LOS			C				B			D		

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	20	79
Future Volume (vph)	20	79
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.88	
Flt Protected	1.00	
Satd. Flow (prot)	1461	
Flt Permitted	1.00	
Satd. Flow (perm)	1461	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	21	83
RTOR Reduction (vph)	77	0
Lane Group Flow (vph)	27	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		1
Heavy Vehicles (%)	0%	5%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	6.9	
Effective Green, g (s)	6.9	
Actuated g/C Ratio	0.07	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	100	
v/s Ratio Prot	0.02	
v/s Ratio Perm		
v/c Ratio	0.27	
Uniform Delay, d1	44.2	
Progression Factor	1.00	
Incremental Delay, d2	1.0	
Delay (s)	45.2	
Level of Service	D	
Approach Delay (s)	45.2	
Approach LOS	D	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	33	78	815	117	11	141	691	16	370	11	146	30
Future Volume (veh/h)	33	78	815	117	11	141	691	16	370	11	146	30
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1682	1709	1682		1688	1647	1647	1682	1750	1736	1750
Adj Flow Rate, veh/h		82	858	0		148	727	17	398	0	0	32
Peak Hour Factor		0.95	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %		5	3	5		1	4	4	5	0	1	0
Cap, veh/h		448	1055			580	1813	42	479	0		97
Arrive On Green		0.02	0.22	0.00		0.29	0.58	0.58	0.15	0.00	0.00	0.06
Sat Flow, veh/h		1602	3247	1425		1607	3124	73	3203	0	1471	1667
Grp Volume(v), veh/h		82	858	0		148	364	380	398	0	0	32
Grp Sat Flow(s),veh/h/ln		1602	1624	1425		1607	1564	1633	1602	0	1471	1667
Q Serve(g_s), s		2.1	25.1	0.0		0.0	12.7	12.7	12.1	0.0	0.0	1.8
Cycle Q Clear(g_c), s		2.1	25.1	0.0		0.0	12.7	12.7	12.1	0.0	0.0	1.8
Prop In Lane		1.00		1.00		1.00		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		448	1055			580	908	948	479	0		97
V/C Ratio(X)		0.18	0.81			0.26	0.40	0.40	0.83	0.00		0.33
Avail Cap(c_a), veh/h		613	1055			580	908	948	657	0		258
HCM Platoon Ratio		0.67	0.67	0.67		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.85	0.85	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		8.7	36.2	0.0		24.2	11.5	11.5	41.3	0.0	0.0	45.2
Incr Delay (d2), s/veh		0.1	5.9	0.0		0.2	1.3	1.3	5.8	0.0	0.0	1.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		1.2	16.2	0.0		4.6	8.0	8.2	8.8	0.0	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		8.9	42.1	0.0		24.4	12.8	12.8	47.1	0.0	0.0	46.7
LnGrp LOS		A	D			C	B	B	D	A		D
Approach Vol, veh/h			940	A			892			398	A	
Approach Delay, s/veh			39.2				14.7			47.1		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	33.2	37.0		10.3	7.7	62.5		19.5
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	2.0	27.1		3.8	4.1	14.7		14.1
Green Ext Time (p_c), s	0.2	4.1		0.1	0.1	9.5		0.6

Intersection Summary	
HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C

Notes

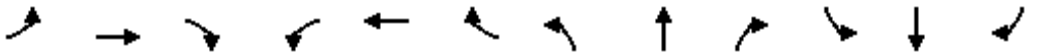
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	20	79
Future Volume (veh/h)	20	79
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1750	1750
Adj Flow Rate, veh/h	21	0
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	0	0
Cap, veh/h	102	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1750	0
Grp Volume(v), veh/h	21	0
Grp Sat Flow(s),veh/h/ln	1750	0
Q Serve(g_s), s	1.1	0.0
Cycle Q Clear(g_c), s	1.1	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	102	
V/C Ratio(X)	0.21	
Avail Cap(c_a), veh/h	271	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	44.9	0.0
Incr Delay (d2), s/veh	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	45.6	0.0
LnGrp LOS	D	
Approach Vol, veh/h	53	A
Approach Delay, s/veh	46.3	
Approach LOS	D	

Timer - Assigned Phs

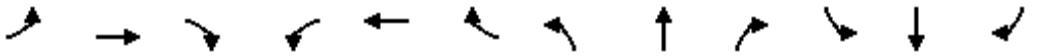
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	494	347	83	460	72	216	111	59	82	168	84
Future Volume (vph)	96	494	347	83	460	72	216	111	59	82	168	84
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	1683	1473	1646	1683	1441	1630	1750	1430	1646	1733	1376
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1630	1683	1473	1646	1683	1441	1630	1750	1430	1646	1733	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	107	549	386	92	511	80	240	123	66	91	187	93
RTOR Reduction (vph)	0	0	130	0	0	48	0	0	50	0	0	79
Lane Group Flow (vph)	107	549	256	92	511	32	240	123	16	91	187	14
Confl. Peds. (#/hr)	1					1	4					4
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	4%	1%	1%	4%	1%	2%	0%	4%	1%	1%	5%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	13.3	47.6	70.7	12.1	46.4	46.4	23.1	29.7	29.7	12.0	18.6	18.6
Effective Green, g (s)	13.3	47.6	70.7	12.1	46.4	46.4	23.1	29.7	29.7	12.0	18.6	18.6
Actuated g/C Ratio	0.11	0.40	0.59	0.10	0.39	0.39	0.19	0.25	0.25	0.10	0.15	0.15
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	180	665	864	165	648	555	312	431	352	164	267	212
v/s Ratio Prot	c0.07	c0.33	0.06	0.06	0.30		c0.15	0.07		0.06	c0.11	
v/s Ratio Perm			0.12			0.02			0.01			0.01
v/c Ratio	0.59	0.83	0.30	0.56	0.79	0.06	0.77	0.29	0.05	0.55	0.70	0.07
Uniform Delay, d1	51.0	32.7	12.4	51.6	32.7	23.3	46.1	36.8	34.6	51.7	48.3	43.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	9.1	0.1	3.2	7.2	0.1	10.4	0.3	0.0	3.2	7.5	0.1
Delay (s)	55.3	41.8	12.6	54.8	39.9	23.3	56.5	37.0	34.6	54.9	55.7	43.6
Level of Service	E	D	B	D	D	C	E	D	C	D	E	D
Approach Delay (s)		32.4			40.0			47.6			52.5	
Approach LOS		C			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	120.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	74.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



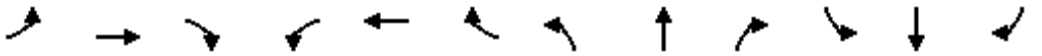
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	96	494	347	83	460	72	216	111	59	82	168	84
Future Volume (veh/h)	96	494	347	83	460	72	216	111	59	82	168	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1695	1736	1736	1695	1736	1723	1750	1695	1736	1736	1682
Adj Flow Rate, veh/h	107	549	219	92	511	80	240	123	66	91	187	93
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	1	1	4	1	2	0	4	1	1	5
Cap, veh/h	134	686	841	117	667	578	275	440	359	115	267	211
Arrive On Green	0.08	0.40	0.40	0.07	0.39	0.39	0.17	0.25	0.25	0.07	0.15	0.15
Sat Flow, veh/h	1641	1695	1470	1654	1695	1470	1641	1750	1425	1654	1736	1375
Grp Volume(v), veh/h	107	549	219	92	511	80	240	123	66	91	187	93
Grp Sat Flow(s),veh/h/ln	1641	1695	1470	1654	1695	1470	1641	1750	1425	1654	1736	1375
Q Serve(g_s), s	6.0	26.6	7.0	5.1	24.4	3.3	13.3	5.3	3.4	5.1	9.5	5.7
Cycle Q Clear(g_c), s	6.0	26.6	7.0	5.1	24.4	3.3	13.3	5.3	3.4	5.1	9.5	5.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	134	686	841	117	667	578	275	440	359	115	267	211
V/C Ratio(X)	0.80	0.80	0.26	0.79	0.77	0.14	0.87	0.28	0.18	0.79	0.70	0.44
Avail Cap(c_a), veh/h	439	999	1113	443	999	866	439	563	458	443	558	442
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.1	24.5	10.0	42.7	24.6	18.2	37.9	28.1	27.4	42.7	37.5	35.8
Incr Delay (d2), s/veh	7.8	4.8	0.3	8.5	3.7	0.2	9.2	0.3	0.2	8.5	2.5	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.9	16.8	4.0	4.3	15.5	2.0	10.0	4.0	2.1	4.2	7.6	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	29.3	10.4	51.2	28.3	18.4	47.0	28.4	27.6	51.3	39.9	36.9
LnGrp LOS	D	C	B	D	C	B	D	C	C	D	D	D
Approach Vol, veh/h		875			683			429			371	
Approach Delay, s/veh		27.0			30.2			38.7			42.0	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.1	42.8	20.1	19.3	12.1	41.7	11.0	28.5
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	7.1	28.6	15.3	11.5	8.0	26.4	7.1	7.3
Green Ext Time (p_c), s	0.1	9.1	0.4	1.1	0.2	7.5	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C

Notes

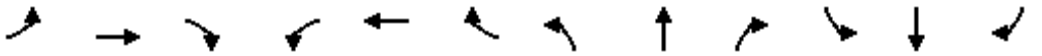
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	269	201	208	222	51	184	356	91	107	571	131
Future Volume (vph)	144	269	201	208	222	51	184	356	91	107	571	131
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1516	1611	1390	1646	1638		3057	3032	1339	1539	3010	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1516	1611	1390	1646	1638		3057	3032	1339	1539	3010	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	176	328	245	254	271	62	224	434	111	130	696	160
RTOR Reduction (vph)	0	0	192	0	7	0	0	0	73	0	15	0
Lane Group Flow (vph)	176	328	53	254	326	0	224	434	38	130	841	0
Confl. Peds. (#/hr)	1		2	2		1	4		1	1		4
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	6%	5%	2%	1%	3%	6%	2%	6%	5%	8%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	19.2	27.0	27.0	21.3	29.1		12.1	42.5	42.5	14.7	45.1	
Effective Green, g (s)	19.2	27.0	27.0	21.3	29.1		12.1	42.5	42.5	14.7	45.1	
Actuated g/C Ratio	0.15	0.22	0.22	0.17	0.23		0.10	0.34	0.34	0.12	0.36	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	232	347	300	280	381		295	1030	455	180	1086	
v/s Ratio Prot	0.12	c0.20		c0.15	0.20		0.07	0.14		c0.08	c0.28	
v/s Ratio Perm			0.04						0.03			
v/c Ratio	0.76	0.95	0.18	0.91	0.86		0.76	0.42	0.08	0.72	0.77	
Uniform Delay, d1	50.7	48.3	39.9	50.9	45.9		55.0	31.8	28.0	53.2	35.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	13.3	34.3	0.3	30.5	17.3		10.7	1.3	0.4	13.3	5.4	
Delay (s)	63.9	82.6	40.3	81.4	63.2		65.7	33.0	28.4	66.5	40.8	
Level of Service	E	F	D	F	E		E	C	C	E	D	
Approach Delay (s)		64.4			71.1			41.9			44.2	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	53.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	76.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	269	201	208	222	51	184	356	91	107	571	131
Future Volume (veh/h)	144	269	201	208	222	51	184	356	91	107	571	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1682	1723	1736	1709	1709	1723	1668	1682	1641	1654	1654
Adj Flow Rate, veh/h	176	328	0	254	271	62	224	434	111	130	696	160
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	6	5	2	1	3	3	2	6	5	8	7	7
Cap, veh/h	245	354		277	300	69	274	1167	522	153	960	221
Arrive On Green	0.15	0.21	0.00	0.17	0.22	0.22	0.09	0.37	0.37	0.10	0.38	0.38
Sat Flow, veh/h	1589	1682	1460	1654	1341	307	3183	3169	1417	1563	2529	581
Grp Volume(v), veh/h	176	328	0	254	0	333	224	434	111	130	432	424
Grp Sat Flow(s),veh/h/ln	1589	1682	1460	1654	0	1648	1591	1585	1417	1563	1572	1539
Q Serve(g_s), s	13.2	23.9	0.0	18.9	0.0	24.6	8.6	12.5	4.1	10.2	29.4	29.5
Cycle Q Clear(g_c), s	13.2	23.9	0.0	18.9	0.0	24.6	8.6	12.5	4.1	10.2	29.4	29.5
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	245	354		277	0	369	274	1167	522	153	597	584
V/C Ratio(X)	0.72	0.93		0.92	0.00	0.90	0.82	0.37	0.21	0.85	0.72	0.73
Avail Cap(c_a), veh/h	245	370		291	0	442	318	1167	522	219	597	584
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.3	48.4	0.0	51.1	0.0	47.2	56.1	28.9	10.2	55.5	33.2	33.2
Incr Delay (d2), s/veh	9.8	28.7	0.0	31.0	0.0	19.7	13.4	0.9	0.9	19.0	7.5	7.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.8	18.6	0.0	15.4	0.0	17.7	7.1	8.5	4.2	8.4	18.0	17.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.0	77.1	0.0	82.2	0.0	66.9	69.6	29.8	11.1	74.5	40.7	40.8
LnGrp LOS	E	E		F	A	E	E	C	B	E	D	D
Approach Vol, veh/h		504	A		587			769			986	
Approach Delay, s/veh		71.2			73.5			38.7			45.2	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	53.0	23.3	33.5	16.7	51.5	25.0	31.8
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	12.5	43.5	16.0	33.5	17.5	38.5	22.0	27.5
Max Q Clear Time (g_c+I1), s	10.6	31.5	15.2	26.6	12.2	14.5	20.9	25.9
Green Ext Time (p_c), s	0.1	7.0	0.0	1.2	0.1	6.4	0.1	0.3

Intersection Summary	
HCM 6th Ctrl Delay	53.9
HCM 6th LOS	D

Notes

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

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	2	177	248	1
Future Vol, veh/h	1	3	2	177	248	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	1	3	0
Mvmt Flow	1	3	2	181	253	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	439	254	254	0	-	0
Stage 1	254	-	-	-	-	-
Stage 2	185	-	-	-	-	-
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	579	790	1323	-	-	-
Stage 1	793	-	-	-	-	-
Stage 2	852	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	578	790	1323	-	-	-
Mov Cap-2 Maneuver	578	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	852	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1323	-	724	-	-
HCM Lane V/C Ratio	0.002	-	0.006	-	-
HCM Control Delay (s)	7.7	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	54	124	26	61	188
Future Vol, veh/h	28	54	124	26	61	188
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	1	0	2	2
Mvmt Flow	31	59	136	29	67	207

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	492	151	0	0	165	0
Stage 1	151	-	-	-	-	-
Stage 2	341	-	-	-	-	-
Critical Hdwy	7.04	6.54	-	-	4.12	-
Critical Hdwy Stg 1	6.04	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.218	-
Pot Cap-1 Maneuver	491	879	-	-	1413	-
Stage 1	850	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	464	879	-	-	1413	-
Mov Cap-2 Maneuver	464	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	639	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	673	1413	-
HCM Lane V/C Ratio	-	-	0.134	0.047	-
HCM Control Delay (s)	-	-	11.2	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	174	95	34	85	23
Future Vol, veh/h	8	174	95	34	85	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, %	-	-2	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	4	3	0	0	14
Mvmt Flow	9	193	106	38	94	26

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	144	0	-	0	336	125
Stage 1	-	-	-	-	125	-
Stage 2	-	-	-	-	211	-
Critical Hdwy	4.23	-	-	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.426
Pot Cap-1 Maneuver	1374	-	-	-	663	894
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	829	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1374	-	-	-	658	894
Mov Cap-2 Maneuver	-	-	-	-	658	-
Stage 1	-	-	-	-	900	-
Stage 2	-	-	-	-	829	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1374	-	-	-	697
HCM Lane V/C Ratio	0.006	-	-	-	0.172
HCM Control Delay (s)	7.6	0	-	-	11.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection	
Int Delay, s/veh	9.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	383	196	103	204	25
Future Vol, veh/h	11	383	196	103	204	25
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	83	83	83	83	83	83
Heavy Vehicles, %	0	3	2	4	2	38
Mvmt Flow	13	461	236	124	246	30

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	360	0	-	0	785	298
Stage 1	-	-	-	-	298	-
Stage 2	-	-	-	-	487	-
Critical Hdwy	4.1	-	-	-	6.42	6.58
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.642
Pot Cap-1 Maneuver	1210	-	-	-	361	664
Stage 1	-	-	-	-	753	-
Stage 2	-	-	-	-	618	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1210	-	-	-	356	664
Mov Cap-2 Maneuver	-	-	-	-	356	-
Stage 1	-	-	-	-	742	-
Stage 2	-	-	-	-	618	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	37.1
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1210	-	-	-	375
HCM Lane V/C Ratio	0.011	-	-	-	0.736
HCM Control Delay (s)	8	0	-	-	37.1
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0	-	-	-	5.7

Intersection	
Int Delay, s/veh	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	432	155	164	238	61	102
Future Vol, veh/h	432	155	164	238	61	102
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	95	95	95	95	95	95
Heavy Vehicles, %	4	2	1	3	6	6
Mvmt Flow	455	163	173	251	64	107

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	618	0	1134	537
Stage 1	-	-	-	-	537	-
Stage 2	-	-	-	-	597	-
Critical Hdwy	-	-	4.11	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	967	-	220	536
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	542	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	967	-	174	536
Mov Cap-2 Maneuver	-	-	-	-	174	-
Stage 1	-	-	-	-	578	-
Stage 2	-	-	-	-	429	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.9	31.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	301	-	-	967	-
HCM Lane V/C Ratio	0.57	-	-	0.179	-
HCM Control Delay (s)	31.7	-	-	9.5	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	3.3	-	-	0.6	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	55	479	1	3	373	52	1	1	2	26	1	29
Future Vol, veh/h	55	479	1	3	373	52	1	1	2	26	1	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	5	0	0	2	2	0	0	0	5	0	6
Mvmt Flow	59	510	1	3	397	55	1	1	2	28	1	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	452	0	0	511	0	0	1076	1087	511	1033	1032	397
Stage 1	-	-	-	-	-	-	629	629	-	403	403	-
Stage 2	-	-	-	-	-	-	447	458	-	630	629	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.15	6.5	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.545	4	3.354
Pot Cap-1 Maneuver	1119	-	-	1065	-	-	199	218	567	208	235	644
Stage 1	-	-	-	-	-	-	474	478	-	618	603	-
Stage 2	-	-	-	-	-	-	595	570	-	465	478	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1119	-	-	1065	-	-	178	201	567	194	217	644
Mov Cap-2 Maneuver	-	-	-	-	-	-	178	201	-	194	217	-
Stage 1	-	-	-	-	-	-	439	443	-	572	601	-
Stage 2	-	-	-	-	-	-	563	568	-	428	443	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0.1	17.9	19.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	283	1119	-	-	1065	-	-	305
HCM Lane V/C Ratio	0.015	0.052	-	-	0.003	-	-	0.195
HCM Control Delay (s)	17.9	8.4	0	-	8.4	0	-	19.6
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	0.7

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	66	436	5	22	56	370	167	6	6	66	545	6
Future Volume (vph)	66	436	5	22	56	370	167	6	6	66	545	6
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	0.98		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		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1630	3167	1462		1269	3260	1473	1330	1266		1571	1539
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1630	3167	1462		1269	3260	1473	1330	1266		1571	1539
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	69	454	5	23	58	385	174	6	6	69	568	6
RTOR Reduction (vph)	0	0	3	0	0	0	73	0	64	0	0	5
Lane Group Flow (vph)	69	454	2	0	81	385	101	6	11	0	318	305
Confl. Peds. (#/hr)	1		1		1		1	1				
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	2%	5%	0%	31%	31%	2%	0%	25%	0%	19%	0%	20%
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Split	NA		Split	NA
Protected Phases	5	2	8	1	1	6	4	8	8		4	4
Permitted Phases			2				6					
Actuated Green, G (s)	10.0	21.0	26.3		8.8	19.8	43.9	5.3	5.3		24.1	24.1
Effective Green, g (s)	10.0	21.0	26.3		8.8	19.8	43.9	5.3	5.3		24.1	24.1
Actuated g/C Ratio	0.13	0.28	0.35		0.12	0.26	0.58	0.07	0.07		0.32	0.32
Clearance Time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2	2.5		2.5	4.2	2.5	2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	215	878	507		147	852	854	93	88		500	489
v/s Ratio Prot	0.04	c0.14	0.00		c0.06	0.12	0.04	0.00	c0.01		c0.20	0.20
v/s Ratio Perm			0.00				0.03					
v/c Ratio	0.32	0.52	0.00		0.55	0.45	0.12	0.06	0.12		0.64	0.62
Uniform Delay, d1	29.8	23.1	16.1		31.6	23.4	7.2	32.9	33.0		22.1	21.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.6	0.8	0.0		3.5	0.6	0.0	0.2	0.5		2.3	2.1
Delay (s)	30.4	23.8	16.1		35.1	24.0	7.2	33.1	33.5		24.4	24.1
Level of Service	C	C	B		D	C	A	C	C		C	C
Approach Delay (s)		24.6				20.8			33.5			24.2
Approach LOS		C				C			C			C

Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	16.5
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	52
Future Volume (vph)	52
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	54
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

07/13/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	66	436	5	22	56	370	167	6	6	66	545	6
Future Volume (veh/h)	66	436	5	22	56	370	167	6	6	66	545	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1723	1682	1750		1327	1723	1750	1409	1750	1750	1745	1472
Adj Flow Rate, veh/h	69	454	5		58	385	174	6	6	69	623	0
Peak Hour Factor	0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	5	0		31	2	0	25	0	0	0	20
Cap, veh/h	102	874	531		70	841	753	114	10	116	836	370
Arrive On Green	0.06	0.27	0.27		0.06	0.26	0.26	0.09	0.09	0.09	0.25	0.00
Sat Flow, veh/h	1641	3195	1480		1264	3273	1480	1342	118	1360	3323	1472
Grp Volume(v), veh/h	69	454	5		58	385	174	6	0	75	623	0
Grp Sat Flow(s),veh/h/ln	1641	1598	1480		1264	1637	1480	1342	0	1479	1661	1472
Q Serve(g_s), s	2.0	5.9	0.1		2.2	4.9	3.2	0.2	0.0	2.4	8.5	0.0
Cycle Q Clear(g_c), s	2.0	5.9	0.1		2.2	4.9	3.2	0.2	0.0	2.4	8.5	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.92	1.00	
Lane Grp Cap(c), veh/h	102	874	531		70	841	753	114	0	126	836	370
V/C Ratio(X)	0.68	0.52	0.01		0.83	0.46	0.23	0.05	0.00	0.60	0.75	0.00
Avail Cap(c_a), veh/h	665	2912	1476		512	2983	1722	815	0	898	3029	1341
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.7	15.2	10.2		23.1	15.4	6.8	20.8	0.0	21.8	17.0	0.0
Incr Delay (d2), s/veh	5.8	0.7	0.0		16.2	0.6	0.2	0.1	0.0	3.3	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.6	3.5	0.1		1.7	3.0	2.7	0.1	0.0	1.6	5.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.4	15.9	10.2		39.3	16.0	7.0	20.9	0.0	25.1	18.0	0.0
LnGrp LOS	C	B	B		D	B	A	C	A	C	B	A
Approach Vol, veh/h		528				617			81			623
Approach Delay, s/veh		17.5				15.7			24.8			18.0
Approach LOS		B				B			C			B

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	18.0		16.4	7.6	17.2		8.2				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	4.2	7.9		10.5	4.0	6.9		4.4				
Green Ext Time (p_c), s	0.1	5.1		1.8	0.1	5.5		0.3				

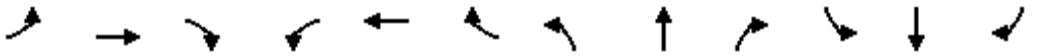
Intersection Summary			
HCM 6th Ctrl Delay		17.4	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	52
Future Volume (veh/h)	52
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1472
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.96
Percent Heavy Veh, %	20
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

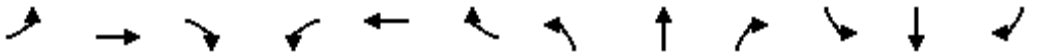
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	705	364	0	709	609	0	0	0	534	0	299
Future Volume (vph)	0	705	364	0	709	609	0	0	0	534	0	299
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3180	1409		3325	1487				3083		1381
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3180	1409		3325	1487				3083		1381
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	719	371	0	723	621	0	0	0	545	0	305
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	47
Lane Group Flow (vph)	0	719	371	0	723	621	0	0	0	545	0	258
Heavy Vehicles (%)	0%	3%	4%	0%	2%	2%	0%	0%	0%	2%	0%	5%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		68.0	100.0		58.5	100.0				23.0		33.0
Effective Green, g (s)		68.0	100.0		58.5	100.0				23.0		35.0
Actuated g/C Ratio		0.68	1.00		0.58	1.00				0.23		0.35
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2162	1409		1945	1487				709		483
v/s Ratio Prot		0.23			0.22					c0.18		c0.19
v/s Ratio Perm			0.26			c0.42						
v/c Ratio		0.33	0.26		0.37	0.42				0.77		0.53
Uniform Delay, d1		6.6	0.0		11.0	0.0				36.0		26.0
Progression Factor		1.00	1.00		0.84	1.00				1.00		1.00
Incremental Delay, d2		0.4	0.5		0.5	0.8				4.8		0.9
Delay (s)		7.0	0.5		9.7	0.8				40.8		26.9
Level of Service		A	A		A	A				D		C
Approach Delay (s)		4.8			5.6			0.0			35.8	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	48.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



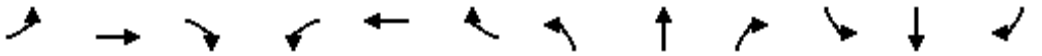
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	705	364	0	709	609	0	0	0	534	0	299
Future Volume (veh/h)	0	705	364	0	709	609	0	0	0	534	0	299
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1660	1647	0	1867	1867				1587	0	1546
Adj Flow Rate, veh/h	0	719	0	0	723	0				545	0	203
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	3	4	0	2	2				2	0	5
Cap, veh/h	0	2183		0	2455					639	0	312
Arrive On Green	0.00	0.69	0.00	0.00	1.00	0.00				0.22	0.00	0.24
Sat Flow, veh/h	0	3237	1395	0	3641	1582				2932	0	1310
Grp Volume(v), veh/h	0	719	0	0	723	0				545	0	203
Grp Sat Flow(s),veh/h/ln	0	1577	1395	0	1774	1582				1466	0	1310
Q Serve(g_s), s	0.0	9.1	0.0	0.0	0.0	0.0				17.9	0.0	14.0
Cycle Q Clear(g_c), s	0.0	9.1	0.0	0.0	0.0	0.0				17.9	0.0	14.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2183		0	2455					639	0	312
V/C Ratio(X)	0.00	0.33		0.00	0.29					0.85	0.00	0.65
Avail Cap(c_a), veh/h	0	2183		0	2455					1041	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.81	0.00	0.00	0.84	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.1	0.0	0.0	0.0	0.0				37.6	0.0	34.4
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0				3.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	4.9	0.0	0.0	0.2	0.0				10.8	0.0	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.5	0.0	0.0	0.3	0.0				40.7	0.0	36.1
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		719	A		723	A					748	
Approach Delay, s/veh		6.5			0.3						39.4	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		73.7		26.3		73.7						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		11.1		19.9		2.0						
Green Ext Time (p_c), s		15.0		1.9		8.2						

Intersection Summary	
HCM 6th Ctrl Delay	15.7
HCM 6th LOS	B

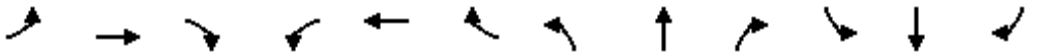
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1062	177	0	1087	340	231	0	500	0	0	0
Future Volume (vph)	0	1062	177	0	1087	340	231	0	500	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.86	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3325	1418		3211	1379	1502	1257	1293			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3325	1418		3211	1379	1502	1257	1293			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1084	181	0	1109	347	236	0	510	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	63	63	0	0	0
Lane Group Flow (vph)	0	1084	181	0	1109	347	212	206	202	0	0	0
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	0%	2%	7%	0%	2%	4%	2%	0%	6%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		69.0	100.0		69.0	100.0	22.0	22.0	22.0			
Effective Green, g (s)		69.0	100.0		69.0	100.0	22.0	22.0	22.0			
Actuated g/C Ratio		0.69	1.00		0.69	1.00	0.22	0.22	0.22			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2294	1418		2215	1379	330	276	284			
v/s Ratio Prot		0.33			c0.35		0.14	c0.16				
v/s Ratio Perm			0.13			0.25			0.16			
v/c Ratio		0.47	0.13		0.50	0.25	0.64	0.75	0.71			
Uniform Delay, d1		7.1	0.0		7.3	0.0	35.4	36.4	36.1			
Progression Factor		2.00	1.00		1.15	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.7	0.2		0.6	0.3	3.8	9.9	7.6			
Delay (s)		14.9	0.2		9.0	0.3	39.2	46.3	43.6			
Level of Service		B	A		A	A	D	D	D			
Approach Delay (s)		12.8			7.0			43.3			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	16.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	61.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1062	177	0	1087	340	231	0	500	0	0	0
Future Volume (veh/h)	0	1062	177	0	1087	340	231	0	500	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1867	1798	0	1674	1647	1527	1555	1473			
Adj Flow Rate, veh/h	0	1084	0	0	1109	0	342	0	192			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	2	7	0	2	4	2	0	6			
Cap, veh/h	0	2582		0	2314		531	0	228			
Arrive On Green	0.00	1.00	0.00	0.00	0.73	0.00	0.18	0.00	0.18			
Sat Flow, veh/h	0	3641	1524	0	3264	1395	2909	0	1248			
Grp Volume(v), veh/h	0	1084	0	0	1109	0	342	0	192			
Grp Sat Flow(s),veh/h/ln	0	1774	1524	0	1590	1395	1455	0	1248			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	14.6	0.0	10.9	0.0	14.9			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	14.6	0.0	10.9	0.0	14.9			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2582		0	2314		531	0	228			
V/C Ratio(X)	0.00	0.42		0.00	0.48		0.64	0.00	0.84			
Avail Cap(c_a), veh/h	0	2582		0	2314		1033	0	443			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.84	0.00	0.00	0.67	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	5.7	0.0	37.9	0.0	39.5			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.5	0.0	1.0	0.0	6.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.3	0.0	0.0	6.9	0.0	7.0	0.0	8.5			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	6.2	0.0	38.9	0.0	45.8			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1084	A		1109	A		534				
Approach Delay, s/veh		0.4			6.2			41.3				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		77.3				77.3		22.7				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				16.6		16.9				
Green Ext Time (p_c), s		15.9				23.6		1.4				

Intersection Summary		
HCM 6th Ctrl Delay	10.8	
HCM 6th LOS	B	

Notes

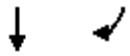
User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	36	75	906	125	10	200	897	17	404	27	156	27
Future Volume (vph)	36	75	906	125	10	200	897	17	404	27	156	27
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1583	3197	1458		1621	3083		1548	1558	1473	1662
Flt Permitted		0.20	1.00	1.00		0.17	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		326	3197	1458		297	3083		1548	1558	1473	1662
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	38	78	944	130	10	208	934	18	421	28	162	28
RTOR Reduction (vph)	0	0	0	76	0	0	1	0	0	0	133	0
Lane Group Flow (vph)	0	116	944	54	0	218	951	0	223	226	30	28
Confl. Peds. (#/hr)									2			
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	5%	5%	4%	2%	1%	1%	6%	0%	2%	4%	1%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		55.0	41.7	41.7		55.0	46.3		18.6	18.6	18.6	8.9
Effective Green, g (s)		55.0	41.7	41.7		55.0	46.3		18.6	18.6	18.6	8.9
Actuated g/C Ratio		0.55	0.42	0.42		0.55	0.46		0.19	0.19	0.19	0.09
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		288	1333	607		339	1427		287	289	273	147
v/s Ratio Prot		0.03	c0.30			0.09	c0.31		0.14	c0.15		0.02
v/s Ratio Perm		0.19		0.04		0.27					0.02	
v/c Ratio		0.40	0.71	0.09		0.64	0.67		0.78	0.78	0.11	0.19
Uniform Delay, d1		12.6	24.1	17.7		28.0	20.9		38.7	38.8	33.8	42.2
Progression Factor		1.14	1.15	1.39		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.6	2.8	0.3		3.7	2.5		12.0	12.5	0.1	0.5
Delay (s)		15.1	30.5	24.7		31.7	23.3		50.7	51.2	34.0	42.7
Level of Service		B	C	C		C	C		D	D	C	D
Approach Delay (s)			28.4				24.9			46.4		
Approach LOS			C				C			D		

Intersection Summary			
HCM 2000 Control Delay	31.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	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



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	30	90
Future Volume (vph)	30	90
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1419	
Flt Permitted	1.00	
Satd. Flow (perm)	1419	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	31	94
RTOR Reduction (vph)	86	0
Lane Group Flow (vph)	39	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	3%	10%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	8.9	
Effective Green, g (s)	8.9	
Actuated g/C Ratio	0.09	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	126	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.31	
Uniform Delay, d1	42.7	
Progression Factor	1.00	
Incremental Delay, d2	1.0	
Delay (s)	43.7	
Level of Service	D	
Approach Delay (s)	43.5	
Approach LOS	D	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	36	75	906	125	10	200	897	17	404	27	156	27
Future Volume (veh/h)	36	75	906	125	10	200	897	17	404	27	156	27
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1682	1695	1723		1688	1619	1619	1723	1695	1736	1750
Adj Flow Rate, veh/h		78	944	0		208	934	18	441	0	0	28
Peak Hour Factor		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		5	4	2		1	6	6	2	4	1	0
Cap, veh/h		351	1047			544	1762	34	520	0		99
Arrive On Green		0.04	0.32	0.00		0.28	0.57	0.57	0.16	0.00	0.00	0.06
Sat Flow, veh/h		1602	3221	1460		1607	3086	59	3281	0	1471	1667
Grp Volume(v), veh/h		78	944	0		208	466	486	441	0	0	28
Grp Sat Flow(s),veh/h/ln		1602	1611	1460		1607	1538	1607	1641	0	1471	1667
Q Serve(g_s), s		2.0	28.0	0.0		3.7	18.6	18.6	13.1	0.0	0.0	1.6
Cycle Q Clear(g_c), s		2.0	28.0	0.0		3.7	18.6	18.6	13.1	0.0	0.0	1.6
Prop In Lane		1.00		1.00		1.00		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		351	1047			544	879	918	520	0		99
V/C Ratio(X)		0.22	0.90			0.38	0.53	0.53	0.85	0.00		0.28
Avail Cap(c_a), veh/h		518	1047			544	879	918	673	0		258
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.83	0.83	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		10.1	32.2	0.0		26.3	13.2	13.2	40.9	0.0	0.0	45.0
Incr Delay (d2), s/veh		0.2	10.6	0.0		0.3	2.3	2.2	7.3	0.0	0.0	1.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		1.2	17.3	0.0		6.7	10.8	11.1	9.7	0.0	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		10.3	42.8	0.0		26.6	15.5	15.4	48.2	0.0	0.0	46.2
LnGrp LOS		B	D			C	B	B	D	A		D
Approach Vol, veh/h			1022	A			1160			441	A	
Approach Delay, s/veh			40.3				17.4			48.2		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	32.2	37.0		10.4	7.6	61.6		20.4
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	5.7	30.0		3.7	4.0	20.6		15.1
Green Ext Time (p_c), s	0.3	2.1		0.1	0.1	8.6		0.7

Intersection Summary	
HCM 6th Ctrl Delay	31.8
HCM 6th LOS	C

Notes

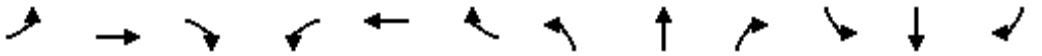
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	30	90
Future Volume (veh/h)	30	90
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1709	1709
Adj Flow Rate, veh/h	31	0
Peak Hour Factor	0.96	0.96
Percent Heavy Veh, %	3	3
Cap, veh/h	101	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1709	0
Grp Volume(v), veh/h	31	0
Grp Sat Flow(s),veh/h/ln	1709	0
Q Serve(g_s), s	1.7	0.0
Cycle Q Clear(g_c), s	1.7	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	101	
V/C Ratio(X)	0.31	
Avail Cap(c_a), veh/h	265	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	45.1	0.0
Incr Delay (d2), s/veh	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	46.3	0.0
LnGrp LOS	D	
Approach Vol, veh/h	59	A
Approach Delay, s/veh	46.3	
Approach LOS	D	

Timer - Assigned Phs

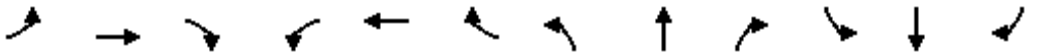
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	537	315	80	596	81	251	113	76	102	205	131
Future Volume (vph)	81	537	315	80	596	81	251	113	76	102	205	131
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	1651	1447	1662	1651	1400	1583	1699	1450	1599	1667	1429
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1614	1651	1447	1662	1651	1400	1583	1699	1450	1599	1667	1429
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)	85	565	332	84	627	85	264	119	80	107	216	138
RTOR Reduction (vph)	0	0	98	0	0	46	0	0	60	0	0	115
Lane Group Flow (vph)	85	565	234	84	627	39	264	119	20	107	216	23
Confl. Peds. (#/hr)			3	3			3		2	2		3
Confl. Bikes (#/hr)						1			1			2
Heavy Vehicles (%)	3%	6%	1%	0%	6%	4%	5%	3%	0%	4%	5%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	11.9	55.5	80.6	11.7	55.3	55.3	25.1	33.0	33.0	13.8	21.7	21.7
Effective Green, g (s)	11.9	55.5	80.6	11.7	55.3	55.3	25.1	33.0	33.0	13.8	21.7	21.7
Actuated g/C Ratio	0.09	0.42	0.61	0.09	0.42	0.42	0.19	0.25	0.25	0.10	0.16	0.16
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	144	688	876	146	686	582	298	421	359	165	271	233
v/s Ratio Prot	c0.05	0.34	0.05	0.05	c0.38		c0.17	0.07		0.07	c0.13	
v/s Ratio Perm			0.11			0.03			0.01			0.02
v/c Ratio	0.59	0.82	0.27	0.58	0.91	0.07	0.89	0.28	0.06	0.65	0.80	0.10
Uniform Delay, d1	58.2	34.4	12.3	58.3	36.6	23.4	52.6	40.4	38.1	57.3	53.5	47.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.3	8.6	0.1	4.4	17.4	0.1	25.3	0.3	0.0	7.5	14.5	0.1
Delay (s)	63.5	43.0	12.4	62.7	54.0	23.5	77.8	40.7	38.2	64.8	68.0	47.4
Level of Service	E	D	B	E	D	C	E	D	D	E	E	D
Approach Delay (s)		34.4			51.6			61.4			61.1	
Approach LOS		C			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	48.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	133.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	83.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



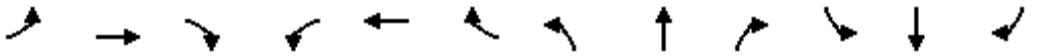
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	537	315	80	596	81	251	113	76	102	205	131
Future Volume (veh/h)	81	537	315	80	596	81	251	113	76	102	205	131
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1668	1736	1750	1668	1695	1682	1709	1750	1695	1682	1736
Adj Flow Rate, veh/h	85	565	174	84	627	85	264	119	80	107	216	75
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	6	1	0	6	4	5	3	0	4	5	1
Cap, veh/h	107	708	890	106	705	593	291	447	377	131	271	229
Arrive On Green	0.07	0.42	0.42	0.06	0.42	0.42	0.18	0.26	0.26	0.08	0.16	0.16
Sat Flow, veh/h	1628	1668	1466	1667	1668	1402	1602	1709	1443	1615	1682	1422
Grp Volume(v), veh/h	85	565	174	84	627	85	264	119	80	107	216	75
Grp Sat Flow(s),veh/h/ln	1628	1668	1466	1667	1668	1402	1602	1709	1443	1615	1682	1422
Q Serve(g_s), s	5.8	33.2	6.0	5.6	39.1	4.2	18.2	6.2	4.9	7.3	13.9	5.3
Cycle Q Clear(g_c), s	5.8	33.2	6.0	5.6	39.1	4.2	18.2	6.2	4.9	7.3	13.9	5.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	107	708	890	106	705	593	291	447	377	131	271	229
V/C Ratio(X)	0.80	0.80	0.20	0.79	0.89	0.14	0.91	0.27	0.21	0.81	0.80	0.33
Avail Cap(c_a), veh/h	362	815	984	370	815	685	356	456	385	359	448	379
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.9	28.2	9.9	52.0	30.0	20.0	45.1	33.0	32.5	50.9	45.4	41.8
Incr Delay (d2), s/veh	9.7	6.1	0.2	9.4	12.1	0.2	22.4	0.2	0.2	8.7	4.0	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	20.5	3.5	4.7	24.7	2.6	14.0	4.8	3.2	5.9	10.2	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.5	34.2	10.1	61.4	42.1	20.2	67.5	33.2	32.7	59.6	49.4	42.4
LnGrp LOS	E	C	B	E	D	C	E	C	C	E	D	D
Approach Vol, veh/h		824			796			463			398	
Approach Delay, s/veh		31.9			41.8			52.7			50.8	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	52.8	24.9	23.1	11.9	52.6	13.7	34.4
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	7.6	35.2	20.2	15.9	7.8	41.1	9.3	8.2
Green Ext Time (p_c), s	0.1	7.8	0.3	1.0	0.1	6.5	0.2	0.7

Intersection Summary	
HCM 6th Ctrl Delay	42.0
HCM 6th LOS	D

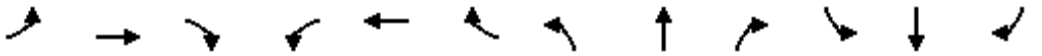
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	332	229	228	261	46	198	415	93	141	781	139
Future Volume (vph)	181	332	229	228	261	46	198	415	93	141	781	139
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1545	1627	1382	1630	1613		3027	3032	1192	1583	3078	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1545	1627	1382	1630	1613		3027	3032	1192	1583	3078	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	197	361	249	248	284	50	215	451	101	153	849	151
RTOR Reduction (vph)	0	0	194	0	5	0	0	0	68	0	12	0
Lane Group Flow (vph)	197	361	55	248	329	0	215	451	33	153	988	0
Confl. Peds. (#/hr)	2		8	8		2	4		1	1		4
Heavy Vehicles (%)	4%	4%	2%	2%	6%	5%	3%	6%	18%	5%	5%	7%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	19.2	27.5	27.5	21.2	29.5		12.0	41.1	41.1	15.7	44.8	
Effective Green, g (s)	19.2	27.5	27.5	21.2	29.5		12.0	41.1	41.1	15.7	44.8	
Actuated g/C Ratio	0.15	0.22	0.22	0.17	0.24		0.10	0.33	0.33	0.13	0.36	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	237	357	304	276	380		290	996	391	198	1103	
v/s Ratio Prot	0.13	c0.22		c0.15	0.20		0.07	0.15		c0.10	c0.32	
v/s Ratio Perm			0.04						0.03			
v/c Ratio	0.83	1.01	0.18	0.90	0.86		0.74	0.45	0.08	0.77	0.90	
Uniform Delay, d1	51.3	48.8	39.6	50.8	45.8		55.0	33.1	29.0	52.9	37.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	21.3	50.5	0.3	29.1	18.5		9.8	1.5	0.4	16.9	11.3	
Delay (s)	72.6	99.2	39.9	79.9	64.3		64.8	34.6	29.4	69.8	49.2	
Level of Service	E	F	D	E	E		E	C	C	E	D	
Approach Delay (s)		74.4			71.0			42.4			52.0	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	58.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	86.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	332	229	228	261	46	198	415	93	141	781	139
Future Volume (veh/h)	181	332	229	228	261	46	198	415	93	141	781	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1695	1723	1723	1668	1668	1709	1668	1504	1682	1682	1682
Adj Flow Rate, veh/h	197	361	0	248	284	50	215	451	101	153	849	151
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	2	2	6	6	3	6	18	5	5	5
Cap, veh/h	250	373		271	318	56	265	1103	441	177	1015	180
Arrive On Green	0.15	0.22	0.00	0.17	0.23	0.23	0.08	0.35	0.35	0.11	0.37	0.37
Sat Flow, veh/h	1615	1695	1460	1641	1379	243	3158	3169	1268	1602	2709	482
Grp Volume(v), veh/h	197	361	0	248	0	334	215	451	101	153	501	499
Grp Sat Flow(s),veh/h/ln	1615	1695	1460	1641	0	1621	1579	1585	1268	1602	1598	1593
Q Serve(g_s), s	14.7	26.4	0.0	18.6	0.0	24.9	8.4	13.5	4.4	11.7	35.7	35.7
Cycle Q Clear(g_c), s	14.7	26.4	0.0	18.6	0.0	24.9	8.4	13.5	4.4	11.7	35.7	35.7
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	250	373		271	0	374	265	1103	441	177	598	597
V/C Ratio(X)	0.79	0.97		0.91	0.00	0.89	0.81	0.41	0.23	0.87	0.84	0.84
Avail Cap(c_a), veh/h	250	373		289	0	435	316	1103	441	224	598	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	48.3	0.0	51.3	0.0	46.6	56.3	31.0	11.4	54.7	35.6	35.6
Incr Delay (d2), s/veh	15.5	38.1	0.0	30.6	0.0	18.9	12.6	1.1	1.2	23.6	13.1	13.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.3	21.3	0.0	15.0	0.0	17.6	6.8	9.1	4.0	9.8	22.2	22.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.3	86.4	0.0	81.9	0.0	65.5	68.9	32.1	12.6	78.3	48.7	48.7
LnGrp LOS	E	F		F	A	E	E	C	B	E	D	D
Approach Vol, veh/h		558	A		582			767			1153	
Approach Delay, s/veh		79.3			72.5			39.8			52.6	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	52.3	23.3	34.3	18.3	49.0	24.7	33.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	12.5	43.5	16.0	33.5	17.5	38.5	22.0	27.5
Max Q Clear Time (g_c+I1), s	10.4	37.7	16.7	26.9	13.7	15.5	20.6	28.4
Green Ext Time (p_c), s	0.1	4.3	0.0	1.2	0.1	6.4	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	58.1
HCM 6th LOS	E

Notes

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

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	3	2	163	313	1
Future Vol, veh/h	1	3	2	163	313	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	1	3	0
Mvmt Flow	1	3	2	166	319	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	490	320	320	0	-	0
Stage 1	320	-	-	-	-	-
Stage 2	170	-	-	-	-	-
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	541	725	1251	-	-	-
Stage 1	741	-	-	-	-	-
Stage 2	865	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	540	725	1251	-	-	-
Mov Cap-2 Maneuver	540	-	-	-	-	-
Stage 1	740	-	-	-	-	-
Stage 2	865	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1251	-	668	-	-
HCM Lane V/C Ratio	0.002	-	0.006	-	-
HCM Control Delay (s)	7.9	0	10.4	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	54	107	38	64	244
Future Vol, veh/h	28	54	107	38	64	244
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	8	2	0	0	2
Mvmt Flow	33	64	126	45	75	287

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	586	149	0	0	171	0
Stage 1	149	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Critical Hdwy	7	6.58	-	-	4.1	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	432	871	-	-	1418	-
Stage 1	862	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	405	871	-	-	1418	-
Mov Cap-2 Maneuver	405	-	-	-	-	-
Stage 1	862	-	-	-	-	-
Stage 2	571	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	625	1418	-
HCM Lane V/C Ratio	-	-	0.154	0.053	-
HCM Control Delay (s)	-	-	11.8	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.2	-

Appendix D Detailed Crash Summary Worksheets

140 HILLSBORO-SILVERTON

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Arbor Grove Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	SWORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MILEPNT / LRS	FC / MLG / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS / RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
04450	N	N	N	N	N	11/08/2019	MARION	1	06	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	UNK											32,03,27
STATE		N				Fri 7P		MN 0		CN		STOP SIGN	N	DRY	TURN		PRVTE	S UN									000		00
								34.65		04	0		N	DARK	INJ		PSNGR CAR		01	DRVR	INJC	31	M	OR-Y	052,021,016		038		32,03,27
No	*45*	*9*	*40.67*	*-122*	*55*	*1.04*		014000100S00																OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	W E									000		00
																	PSNGR CAR		01	DRVR	INJC	20	F	OR-Y	000		000		00
																								OR<25					

140 HILLSBORO-SILVERTON

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Butteville Rd NE (North)
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	MJ	SCHL	WORK	DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
04010	N	N	N	N	N	N	09/25/2017	MARION	1 16		INTER	3-LEG	N		N CLR	S-1STOP	01	NONE 9	STRGHT											27,29
STATE		N					Mon 2P		MN 0		S		STOP SIGN		N DRY	REAR		N/A	S N									000		00
								WOODBURN UA	35.77		06	0			N DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*16.77*	*-122*	*53*	*45.93*			014000100S00																	UNK				
																	02	NONE 9	STOP											
																		N/A	S N									011		00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																									UNK					
02278	N	N	N	N	N	N	06/16/2019	MARION	1 16		INTER	3-LEG	N		Y CLR	FIX OBJ	01	NONE 9	STRGHT										058	10
STATE		N					Sun 7A		MN 0		W		STOP SIGN		N DRY	FIX		N/A	N S									000		00
								WOODBURN UA	35.77		05	0			N DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*16.78*	*-122*	*53*	*45.95*			014000100S00																	UNK				
04267	N	N	N				10/10/2017	MARION	1 16		INTER	3-LEG	N		N CLR	ANGL-OTH	01	NONE 9	TURN-L											02
NONE		N					Tue 7A		MN 0		CN		STOP SIGN		N DRY	TURN		N/A	E S									000		00
								WOODBURN UA	35.77		01	0			N DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*16.77*	*-122*	*53*	*45.93*			014000100S00																	UNK				
																	02	NONE 9	TURN-L											
																		N/A	N E									000		00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																									UNK					
04821	N	N	N	N	N	N	12/16/2018	MARION	1 16		INTER	3-LEG	N		N RAIN	ANGL-OTH	01	NONE 0	TURN-L											02
STATE		N					Sun 6P		MN 0		CN		STOP SIGN		N WET	TURN		PRVTE	E S									000		00
								WOODBURN UA	35.77		02	0			N DARK	INJ		PSNGR CAR		01	DRVR	NONE	42	M	OR-Y		028	000		02
No	*45*	*9*	*16.77*	*-122*	*53*	*45.93*			014000100S00																	OR<25				
																	02	NONE 0	STRGHT											
																		PRVTE	S N									000		00
																		PSNGR CAR		01	DRVR	INJC	25	F	OR-Y		000	000		00
																									OR<25					
																				02	PSNG	INJC	21	F			000	000		00

140 HILLSBORO-SILVERTON

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Butteville Rd NE (South)
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MILEPNT / LRS	FC / MLG	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
05050	N	N	N			12/21/2018	MARION	1	16		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		N				Fri 2P		MN 0			E		STOP SIGN	N	DRY	REAR		PRVTE	E W										000		00
							WOODBURN UA	36.02			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000		29
No	*45*	*9*	*4.13*	*-122*	*53*	*47.58*		014000100S00																	OR<25					
																	02	NONE 0	STOP											
																		PRVTE	E W									012		00
																		PSNGR CAR		01	DRVR	INJC	53	M	OR-Y		000	000		00
																									OR<25					
04606	N	Y	N			11/18/2019	MARION	1	16		INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE 9	STRGHT										058	27
COUNTY		N				Mon 8P		MN 0			S		CURVE	N	DRY	FIX		N/A	N S									000		00
							WOODBURN UA	36.02			05	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*4.14*	*-122*	*53*	*47.58*		014000100S00																	UNK					
01065	N	N	N			03/23/2015	MARION	1	16		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		N				Mon 10A		MN 0			S		STOP SIGN	N	DRY	REAR		RENTL	S N									000		00
							WOODBURN UA	36.02			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	25	M	OR-Y		026	000		07
No	*45*	*9*	*4.13*	*-122*	*53*	*47.58*		014000100S00																	OR<25					
																	02	NONE 0	STOP											
																		PRVTE	S N									012		00
																		PSNGR CAR		01	DRVR	INJC	18	M	OR-Y		000	000		00
																									OR<25					
																				02	PSNG	INJC	17	F			000	000		00
03986	N	N	N			10/16/2015	MARION	1	16		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		N				Fri 6A		MN 0			S		STOP SIGN	N	DRY	REAR		PRVTE	S N									000		00
							WOODBURN UA	36.02			06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	57	M	OR-Y		026	000		29
No	*45*	*9*	*4.13*	*-122*	*53*	*47.58*		014000100S00																	OR<25					
																	02	NONE 0	STOP											
																		PRVTE	S N									012		00
																		PSNGR CAR		01	DRVR	NONE	00	F	UNK		000	000		00
																									UNK					
03497	N	N	N			09/11/2019	MARION	1	16		INTER	3-LEG	N	N	CLR	S-1STOP	01	UNKN 0	STRGHT											29
NONE		N				Wed 7P		MN 0			S		STOP SIGN	N	DRY	REAR		UNKN	S N									000		00
							WOODBURN UA	36.02			06	0		N	DUSK	INJ		UNKNOWN		01	DRVR	NONE	00	U	UNK		026	000		29
No	*45*	*9*	*4.14*	*-122*	*53*	*47.60*		014000100S00																	UNK					
																	02	NONE 0	STOP											
																		PRVTE	S N									012		00
																		PSNGR CAR		01	DRVR	INJC	20	M	OR-Y		000	000		00
																									OR<25					
																				02	PSNG	INJC	19	F			000	000		00

140 HILLSBORO-SILVERTON Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Butteville Rd NE (South)
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	MC	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR / OWNER / VEH TYPE	QTY	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01241	N	N	N				04/06/2015	MARION	1	16	INTER	3-LEG	N		N	CLR	O-STRGHT	01	NONE	0	STRGHT										128	10
NONE			N				Mon 5P		MN	0	CN		STOP SIGN		N	DRY	SS-M		PRVTE		N S								000	128	00
								WOODBURN UA	36.02		02	0			N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	F	OR-Y		079,080	000		10
No	*45*	*9*	*4.13*	*-122*	*53*	*47.58*			014000100S00																		OR<25					
																		02	NONE	0	STRGHT										
																			PRVTE		S N								000	128	00
																			PSNGR CAR			01	DRVR	NONE	40	M	OR-Y		000	000		00
																											OR>25				
00038	N	N	N				01/05/2015	MARION	1	16	INTER	3-LEG	N		N	RAIN	ANGL-OTH	01	NONE	0	TURN-R											02
NONE			N				Mon 1A		MN	0	CN		STOP SIGN		N	WET	TURN		PRVTE		W S								000		00
								WOODBURN UA	36.02		03	0			N	DARK	PDO		PSNGR CAR			01	DRVR	NONE	00	U	UNK		028	000		02
No	*45*	*9*	*4.13*	*-122*	*53*	*47.58*			014000100S00																		UNK				
																		02	NONE	0	STRGHT										
																			PRVTE		N S								000		00
																			PSNGR CAR			01	DRVR	NONE	36	M	OR-Y		000	000		00
																											OR<25				
04839	N	N	N				12/03/2019	MARION	1	16	INTER	3-LEG	N		N	RAIN	O-1 L-TURN	01	NONE	9	TURN-L											02
CITY			N				Tue 5P		MN	0	CN		STOP SIGN		N	WET	TURN		N/A		E S								000		00
								WOODBURN UA	36.02		03	0			N	DARK	PDO		PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*4.14*	*-122*	*53*	*47.59*			014000100S00																		UNK				
																		02	NONE	9	STRGHT										
																			N/A		W E								000		00
																			PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000		00
																											UNK				

140 HILLSBORO-SILVERTON

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Butteville Rd NE (South)
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MILEPNT / LRS	FC / MLG	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
05050	N	N	N			12/21/2018	MARION	1	16		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		N				Fri 2P		MN 0			E		STOP SIGN	N	DRY	REAR		PRVTE	E W										000		00
							WOODBURN UA	36.02			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000		29
No	*45*	*9*	*4.13*	*-122*	*53*	*47.58*		014000100S00																	OR<25					
																	02	NONE 0	STOP											
																		PRVTE	E W									012		00
																		PSNGR CAR		01	DRVR	INJC	53	M	OR-Y		000	000		00
																									OR<25					
04606	N	Y	N			11/18/2019	MARION	1	16		INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE 9	STRGHT										058	27
COUNTY		N				Mon 8P		MN 0			S		CURVE	N	DRY	FIX		N/A	N S									000		00
							WOODBURN UA	36.02			05	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*4.14*	*-122*	*53*	*47.58*		014000100S00																	UNK					
01065	N	N	N			03/23/2015	MARION	1	16		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		N				Mon 10A		MN 0			S		STOP SIGN	N	DRY	REAR		RENTL	S N									000		00
							WOODBURN UA	36.02			06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	25	M	OR-Y		026	000		07
No	*45*	*9*	*4.13*	*-122*	*53*	*47.58*		014000100S00																	OR<25					
																	02	NONE 0	STOP											
																		PRVTE	S N									012		00
																		PSNGR CAR		01	DRVR	INJC	18	M	OR-Y		000	000		00
																									OR<25					
																				02	PSNG	INJC	17	F			000	000		00
03986	N	N	N			10/16/2015	MARION	1	16		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		N				Fri 6A		MN 0			S		STOP SIGN	N	DRY	REAR		PRVTE	S N									000		00
							WOODBURN UA	36.02			06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	57	M	OR-Y		026	000		29
No	*45*	*9*	*4.13*	*-122*	*53*	*47.58*		014000100S00																	OR<25					
																	02	NONE 0	STOP											
																		PRVTE	S N									012		00
																		PSNGR CAR		01	DRVR	NONE	00	F	UNK		000	000		00
																									UNK					
03497	N	N	N			09/11/2019	MARION	1	16		INTER	3-LEG	N	N	CLR	S-1STOP	01	UNKN 0	STRGHT											29
NONE		N				Wed 7P		MN 0			S		STOP SIGN	N	DRY	REAR		UNKN	S N									000		00
							WOODBURN UA	36.02			06	0		N	DUSK	INJ		UNKNOWN		01	DRVR	NONE	00	U	UNK		026	000		29
No	*45*	*9*	*4.14*	*-122*	*53*	*47.60*		014000100S00																	UNK					
																	02	NONE 0	STOP											
																		PRVTE	S N									012		00
																		PSNGR CAR		01	DRVR	INJC	20	M	OR-Y		000	000		00
																									OR<25					
																				02	PSNG	INJC	19	F			000	000		00

140 HILLSBORO-SILVERTON Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Butteville Rd NE (South)
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	MC	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR / OWNER / VEH TYPE	QTY	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01241	N	N	N				04/06/2015	MARION	1	16	INTER	3-LEG	N		N	CLR	O-STRGHT	01	NONE	0	STRGHT										128	10
NONE			N				Mon 5P		MN	0	CN		STOP SIGN		N	DRY	SS-M		PRVTE		N S								000	128	00
								WOODBURN UA	36.02		02	0			N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	F	OR-Y		079,080	000		10
No	*45*	*9*	*4.13*	*-122*	*53*	*47.58*			014000100S00																		OR<25					
																		02	NONE	0	STRGHT										
																			PRVTE		S N								000	128	00
																			PSNGR CAR			01	DRVR	NONE	40	M	OR-Y		000	000		00
																											OR>25				
00038	N	N	N				01/05/2015	MARION	1	16	INTER	3-LEG	N		N	RAIN	ANGL-OTH	01	NONE	0	TURN-R											02
NONE			N				Mon 1A		MN	0	CN		STOP SIGN		N	WET	TURN		PRVTE		W S								000		00
								WOODBURN UA	36.02		03	0			N	DARK	PDO		PSNGR CAR			01	DRVR	NONE	00	U	UNK		028	000		02
No	*45*	*9*	*4.13*	*-122*	*53*	*47.58*			014000100S00																		UNK				
																		02	NONE	0	STRGHT										
																			PRVTE		N S								000		00
																			PSNGR CAR			01	DRVR	NONE	36	M	OR-Y		000	000		00
																											OR<25				
04839	N	N	N				12/03/2019	MARION	1	16	INTER	3-LEG	N		N	RAIN	O-1 L-TURN	01	NONE	9	TURN-L											02
CITY			N				Tue 5P		MN	0	CN		STOP SIGN		N	WET	TURN		N/A		E S								000		00
								WOODBURN UA	36.02		03	0			N	DARK	PDO		PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*4.14*	*-122*	*53*	*47.59*			014000100S00																		UNK				
																		02	NONE	9	STRGHT										
																			N/A		W E								000		00
																			PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000		00
																											UNK				

140 HILLSBORO-SILVERTON

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	MDRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
02454	N	N	N			06/30/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		N				Tue 10A	WOODBURN	MN 0	EVERGREEN RD	UN		TRF SIGNAL	N	DRY	REAR		PRVTE	UN UN									000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	46	M	OR-Y		026	000		29
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															UNK					
																02	NONE 0	STOP											
																	PRVTE	UN UN									011		00
																	PSNGR CAR		01	DRVR	NONE	00	M	UNK		000	000		00
																								OR<25					
05295	N	N	N	N	N	12/31/2019	MARION	1 14		INTER	CROSS	N	N	RAIN	ANGL-STP	01	NONE 0	STRGHT										092	26
CITY		N				Tue 5P	WOODBURN	MN 0	EVERGREEN RD	N		TRF SIGNAL	N	WET	ANGL		PRVTE	E W								007	092	26
							WOODBURN UA	37.02	HILLSBORO-SILV HY	06	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	49	F	OR-Y		026	000	092	26
No	*45*	*9*	*3.52*	*-122*	*52*	*32.55*		014000100S00	1															OR>25					
																02	NONE 0	STOP											
																	PRVTE	N S									011		00
																	PSNGR CAR		01	DRVR	INJC	51	M	OR-Y		000	000		00
																								OR<25					
03633	N	N	N	N	N	09/04/2017	MARION	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT											02
CITY		N				Mon 12P	WOODBURN	MN 0	EVERGREEN RD	E		TRF SIGNAL	N	DRY	TURN		N/A	W E								000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	04	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															UNK					
																02	NONE 9	TURN-R											
																	N/A	S E									000		00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																								UNK					
02333	N	N	N			06/29/2018	MARION	1 14		INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE 0	STRGHT											13
NONE		N				Fri 6P	WOODBURN	MN 0	EVERGREEN RD	E		TRF SIGNAL	N	DRY	SS-O		PRVTE	E W								000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	06	3		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	25	M	OR-Y		045	000		13
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	E W									000		00
																	PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		000	000		00
																								OR<25					
04800	N	N	N	N	N	12/01/2019	MARION	1 14		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
CITY		N				Sun 7P	WOODBURN	MN 0	EVERGREEN RD	E		TRF SIGNAL	N	WET	REAR		PRVTE	E W								000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		043,026	000		07
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															OR<25					

140 HILLSBORO-SILVERTON
Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																02	NONE 0 PRVTE	STOP E W									011		00
																	PSNGR CAR		01	DRVR	INJC	24	M	OR-Y OR<25		000	000		00
																			02	PSNG	INJC	23	F			000	000		00
00267 CITY	N	N	N	N	N	01/24/2018 Wed 5A	MARION WOODBURN	1 14 MN 0	EVERGREEN RD	INTER W	CROSS TRF SIGNAL	N	Y N	RAIN WET	FIX OBJ FIX	01	NONE 9 N/A	TURN-L S W									000	050,055	08 00
No						*45 9 3.52 -122 52 32.54*	WOODBURN UA	37.02 014000100S00	HILLSBORO-SILV HY 1	05	3		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
02960 NONE	N	N	N			08/05/2015 Wed 5P	MARION WOODBURN	1 14 MN 0	EVERGREEN RD	INTER W	CROSS TRF SIGNAL	N	N N	CLR DRY	S-1STOP REAR	01	NONE 0 PRVTE	STRGHT W E									000		29 00
No						*45 9 3.52 -122 52 32.54*	WOODBURN UA	37.02 014000100S00	HILLSBORO-SILV HY 1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y OR>25	026	000	000		29
																02	NONE 0 PRVTE	STOP W E									011		00
																	PSNGR CAR		01	DRVR	NONE	61	F	OR-Y OR<25		000	000		00
01019 NO RPT	N	N	N			03/11/2016 Fri 5A	MARION WOODBURN	1 14 MN 0	EVERGREEN RD	INTER W	CROSS TRF SIGNAL	N	N N	CLR DRY	S-1STOP REAR	01	NONE 0 PRVTE	STRGHT W E									000		27,29 00
No						*45 9 3.52 -122 52 32.54*	WOODBURN UA	37.02 014000100S00	HILLSBORO-SILV HY 1	06	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	27	M	OR-Y OR<25	016,026	038			27,29
																02	NONE 0 PRVTE	STOP W E									011		00
																	PSNGR CAR		01	DRVR	INJC	43	M	OR-Y OR<25		000	000		00
02760 NONE	N	N	N			07/21/2019 Sun 9A	MARION WOODBURN	1 14 MN 0	EVERGREEN RD	INTER W	CROSS TRF SIGNAL	N	N N	CLR DRY	S-1STOP REAR	01	NONE 9 N/A	STRGHT W E									000		29 00
No						*45 9 3.56 -122 52 32.62*	WOODBURN UA	37.02 014000100S00	HILLSBORO-SILV HY 1	06	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
																02	NONE 9 N/A	STOP W E									011		00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
00161 NONE	N	N	N			01/15/2018 Mon 5P	MARION WOODBURN	1 14 MN 0	EVERGREEN RD	INTER CN	CROSS TRF SIGNAL	N	N N	CLR DRY	O-1 L-TURN TURN	01	NONE 0 PRVTE	U-TURN UN UN									000		02 00
No						*45 9 3.52 -122 52 32.54*	WOODBURN UA	37.02 014000100S00	HILLSBORO-SILV HY 1	00	3		N	DUSK	INJ		PSNGR CAR		01	DRVR	NONE	30	F	OR-Y OR<25	028	000			02

140 HILLSBORO-SILVERTON
Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																	02	NONE / PRVTE	0 STRGHT / UN UN									000		00
																		PSNGR CAR		01	DRVR	INJC	70	F	OR-Y / OR<25		000	000		00
00907	Y	N	N			03/09/2018	MARION	1	14		INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE	9 STRGHT											04,01
NONE		N				Fri 10P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL		N	DRY	ANGL		N/A	UN UN								000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	01	3			N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000		00
No	*45*	*9*				*3.52 -122 52 32.54*		014000100S00		1																					
																	02	NONE / N/A	9 STRGHT / UN UN									000		00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000		00
01701	N	N	N			05/03/2019	MARION	1	14		INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE	0 STRGHT											04
NONE		N				Fri 10P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL		N	DRY	TURN		PRVTE	E W								000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	01	3			N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	22	F	OTH-Y / OR<25		097	000		00
No	*45*	*9*				*3.52 -122 52 32.54*		014000100S00		1																					
																	02	NONE / PRVTE	0 TURN-L / N E									000		00
																		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y / OR<25		097	000		00
01890	N	N	N			05/20/2019	MARION	1	14		INTER	CROSS	N		N	UNK	O-1 L-TURN	01	NONE	9 TURN-L											02
NONE		N				Mon UNK	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL		N	UNK	TURN		N/A	UN UN								000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	01	3			N	UNK	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000		00
No	*45*	*9*				*3.52 -122 52 32.54*		014000100S00		1																					
																	02	NONE / N/A	9 STRGHT / UN UN									000		00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000		00
03374	N	N	N	N	N	09/03/2019	MARION	1	14		INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE	0 STRGHT										001	04
CITY		N				Tue 7P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL		N	DRY	ANGL		PRVTE	E W								000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	01	3			N	DAY	INJ		MTRCYCLE		01	DRVR	INJC	39	M	SUSP / OR<25		020	000	001	04
No	*45*	*9*				*3.53 -122 52 32.56*		014000100S00		1																					
																	02	NONE / PRVTE	0 STRGHT / N S									000		00
																		PSNGR CAR		01	DRVR	NONE	36	M	OR-Y / OR<25		000	000		00
																				02	PSNG	INJC	38	F			000	000		00

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01776	N	N	N			05/16/2015	MARION	1 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
CITY		N				Sat 9A	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	S N									000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	42	M	OR-Y		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	E W									000		00
																	PSNGR CAR		01	DRVR	INJC	83	M	OR-Y		020	000		04
																								OR<25					
02012	N	N	N		Y	06/05/2015	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY		N				Fri 12P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	E W									000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	43	M	OTH-Y		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															N-RES					
																02	NONE 0	TURN-L											
																	PRVTE	W N									000		00
																	PSNGR CAR		01	DRVR	INJC	83	F	OR-Y		028,004	000		02
																								OR<25					
02934	N	N	N	N	N	08/04/2015	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY		N				Tue 11P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	E W									000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	02	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	60	F	OR-Y		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															OR<25					
																02	NONE 0	TURN-L											
																	PRVTE	W N									000		00
																	PSNGR CAR		01	DRVR	INJC	30	M	OR-Y		028,004	000		02
																								OR<25					
03313	N	N	N	N	N	09/01/2015	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										087	02
CITY		N				Tue 4P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	E W									000	087	00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	51	M	OR-Y		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															OR<25					
																02	NONE 0	TURN-L											
																	PRVTE	W N									000	087	00
																	PSNGR CAR		01	DRVR	INJB	84	F	OR-Y		028,004	000		02
																								OR<25					
04302	N	N	N		Y	11/04/2015	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	U-TURN											02
CITY		N				Wed 3P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W W									000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		028	000		02
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															OR>25					

140 HILLSBORO-SILVERTON
Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																	02	NONE 0 PRVTE	STRGHT E W									000		00
																		PSNGR CAR		01	DRVR	NONE	74	M	OR-Y OR<25		000	000		00
00305	N	N	N			01/22/2016	MARION	1	14		INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 9	STRGHT											02
CITY		N				Fri 3P	WOODBURN	MN 0		EVERGREEN RD	CN		FLASHBCN-A		N	DRY	TURN		N/A	E W								000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	02	0			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*				*3.52 -122 52 32.54*		014000100S00		1																UNK					
																	02	NONE 9 N/A	TURN-L W N									000		00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
01283	N	N	N	N	N	03/28/2016	MARION	1	14		INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 0	U-TURN											02
CITY		N				Mon 10P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL		N	DRY	TURN		PRVTE	W W								000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	02	3			N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	22	F	OR-Y		028	000		02
No	*45*	*9*				*3.52 -122 52 32.54*		014000100S00		1																OR<25					
																	02	NONE 0 PRVTE	STRGHT E W									000		00
																		PSNGR CAR		01	DRVR	NONE	28	F	OR-Y OR<25		000	000		00
01323	N	N	N			03/30/2016	MARION	1	14		INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 0	U-TURN										082	02
CITY		N				Wed 6P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL		N	DRY	TURN		PRVTE	W W								000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	02	3			N	DUSK	INJ		PSNGR CAR		01	DRVR	INJC	65	M	OR-Y		028,004	000	082	02
No	*45*	*9*				*3.52 -122 52 32.54*		014000100S00		1																OR>25					
																	02	NONE 0 PRVTE	STRGHT E W									000		00
																		PSNGR CAR		01	DRVR	INJC	24	M	OR-Y OR<25		000	000		00
02837	N	N	N	N	N	07/07/2016	MARION	1	14		INTER	CROSS	N		N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY		N				Thu 1P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL		N	WET	TURN		PRVTE	E W								000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	02	0			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	40	F	SUSP		000	000		00
No	*45*	*9*				*3.52 -122 52 32.54*		014000100S00		1																OR>25					
																				02	PSNG	INJC	18	F			000	000		00
																	02	NONE 0 PRVTE	TURN-L W N									000		00
																		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y OR>25		028,004	000		02

140 HILLSBORO-SILVERTON Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG / MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
04720	N	N	N	N	N	10/26/2016	MARION	1	14		INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE	9										04
CITY		N				Wed 7P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL	N	WET	ANGL		N/A	E W								000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	02	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00		1															UNK				
																	02	NONE	9	STRGHT									
																		N/A		S N								000	00
																		PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000	00
																										UNK				
00034	N	N	N	N	N	01/03/2017	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT									02
CITY		N				Tue 10P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	E W								000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	02	3		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	43	M	OR-Y		000	000	00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00		1															OR<25				
																	02	NONE	0	TURN-L									
																		PRVTE		W N								000	00
																		PSNGR CAR			01	DRVR	INJC	36	F	OR-Y		028,004	000	02
																										OR<25				
01895	N	N	N	N	N	05/15/2017	MARION	1	14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE	9	U-TURN									02
CITY		N				Mon 10A	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		N/A	W W								000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	02	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00		1															UNK				
																	02	NONE	9	STRGHT									
																		N/A		E W								000	00
																		PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000	00
																										UNK				
03737	N	N	N	N	N	09/10/2017	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	9	STRGHT									02
CITY		N				Sun 7P	WOODBURN	MN 0		EVERGREEN RD	CN		FLASHBCN-A	N	DRY	TURN		N/A	E W								000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	02	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00		1															UNK				
																	02	NONE	9	TURN-L									
																		N/A		W N								000	00
																		PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000	00
																										UNK				
00833	N	N	N	N	N	03/11/2018	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	0	U-TURN									02
CITY		N				Sun 1P	WOODBURN	MN 0		EVERGREEN RD	CN		FLASHBCN-A	N	DRY	TURN		PRVTE	W W								000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	02	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	69	M	OTH-Y		028	000	02
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00		1															N-RES				

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	S P E D	E A C	D R U G / M J	S C H L	W O R K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																	02	NONE 0 / PRVTE	STRGHT / E W								000		00
																		PSNGR CAR		01	DRVR	INJC	30	M	OR-Y / OR<25		000	000		00
																				02	PSNG	INJC	25	F			000	000		00
02092 NO RPT	N	N N	N			06/12/2018 Tue 8A	MARION / WOODBURN	1 MN	14 0	EVERGREEN RD	INTER / CN	CROSS	N / TRF SIGNAL	N	CLR / DRY	O-1 L-TURN / TURN	01	NONE 9 / N/A	STRGHT / E W								000		04 00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	02	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000		00
No	*45*	*9*	*3.52*	*-122 52 32.54*				014000100S00		1																				
																	02	NONE 9 / N/A	TURN-L / W N								000		00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000		00
02576 CITY	N	N N	N	N	N	07/08/2015 Wed 11A	MARION / WOODBURN	1 MN	14 0	EVERGREEN RD	INTER / CN	CROSS	N / TRF SIGNAL	N	CLR / DRY	O-1 L-TURN / TURN	01	NONE 0 / PRVTE	STRGHT / W E								000		02 00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	24	F	OR-Y / OR<25		000	000		00
No	*45*	*9*	*3.52*	*-122 52 32.54*				014000100S00		1																				
																	02	NONE 0 / PRVTE	TURN-L / E S								000		00
																		PSNGR CAR		01	DRVR	INJB	41	F	OR-Y / OR<25	028,004	000			02
03023 CITY	N	N N	N			08/09/2015 Sun 11P	MARION / WOODBURN	1 MN	14 0	EVERGREEN RD	INTER / CN	CROSS	N / TRF SIGNAL	N	CLR / DRY	O-1 L-TURN / TURN	01	NONE 0 / PRVTE	STRGHT / W E								000		02 00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	58	M	OR-Y / OR<25		000	000		00
No	*45*	*9*	*3.52*	*-122 52 32.54*				014000100S00		1																				
																	02	NONE 0 / PRVTE	TURN-L / E S								000		00
																		PSNGR CAR		01	DRVR	NONE	32	F	OR-Y / OR<25	028,004	000			02
03582 CITY	N	N N	N		Y	09/19/2015 Sat 11A	MARION / WOODBURN	1 MN	14 0	EVERGREEN RD	INTER / CN	CROSS	N / TRF SIGNAL	N	CLR / DRY	NON-COLL / NCOL	01	NONE 0 / PRVTE	STRGHT / W E								007	092,001 / 092	26 26
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	0		N	DAY	INJ		MTRCYCLE		01	DRVR	INJB	58	M	OR-Y / OR<25		000	000		26
No	*45*	*9*	*3.52*	*-122 52 32.54*				014000100S00		1																				
03695 CITY	N	N N	N		Y	09/26/2015 Sat 6P	MARION / WOODBURN	1 MN	14 0	EVERGREEN RD	INTER / CN	CROSS	N / TRF SIGNAL	N	CLR / DRY	O-1 L-TURN / TURN	01	NONE 0 / PRVTE	STRGHT / W E								000		02 00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	31	M	OR-Y / OR<25		000	000		00
No	*45*	*9*	*3.52*	*-122 52 32.54*				014000100S00		1																				
																				02	PSNG	INJB	30	F			000	000		00
																				03	PSNG	INJB	02	F			000	000		00

140 HILLSBORO-SILVERTON Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG / MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																			04	PSNG	INJB	03	M			000	000	00
																			05	PSNG	NO<5	01	M			000	000	00
																02	NONE 0 PRVTE	TURN-L E S										
																											000	00
																	PSNGR CAR		01	DRVR	INJC	58	M	OR-Y OR<25		000	000	00
																			02	PSNG	INJB	54	F			028	000	02
04378	N	N	N			11/07/2015	MARION	1 14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT										02
CITY		N				Sat 6P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	WET	TURN		PRVTE	W E									000	00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	34	M	OR-Y		000	000	00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															OR<25				
																			02	PSNG	INJC	26	M			000	000	00
																			03	PSNG	INJC	16	M			000	000	00
																02	NONE 0 PRVTE	TURN-L E S										
																											000	00
																	PSNGR CAR		01	DRVR	INJC	29	F	OR-Y OR<25	028,004	000	02
																			02	PSNG	INJC	05	M			000	000	00
04387	N	N	N			11/07/2015	MARION	1 14		INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT										02
CITY		N				Sat 3P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	WET	TURN		PRVTE	W E									000	00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	62	F	OR-Y		000	000	00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															OR<25				
																02	NONE 0 PRVTE	TURN-L E S										
																											000	00
																	PSNGR CAR		01	DRVR	NONE	20	F	OR-Y OR<25	028,004	000	02
04534	N	N	N			11/17/2015	MARION	1 14		INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	STRGHT										02
CITY		N				Tue 11A	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	WET	TURN		PRVTE	W E									000	00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	45	M	OR-Y		000	000	00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1															OR<25				
																02	NONE 0 PRVTE	TURN-L E S										
																											000	00
																	PSNGR CAR		01	DRVR	NONE	60	F	OR-Y OR<25	004,028	000	02
05001	N	N	N			12/13/2015	MARION	1 14		INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY		N				Sun 4P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	WET	TURN		PRVTE	E S									000	00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJA	59	F	OR-Y OR<25	028,004	000	02
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1																			

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	MC	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																	02	NONE 0 / PRVTE	STRGHT / W E									000		00
																		PSNGR CAR		01	DRVR	INJC	27	M	NONE / OR<25		000	000		00
02930	N	N	N		Y	07/14/2016	MARION	1 14		INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											013	02
CITY			N			Thu 12P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL		N	DRY	TURN		PRVTE	W E									000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0			N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	34	F	OR-Y / OR<25		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1																					
																	02	NONE 0 / PRVTE	TURN-L / E S									000	013	00
																		PSNGR CAR		01	DRVR	INJB	24	M	OR-Y / OR<25		028,004	000		02
																	03	NONE 0 / PRVTE	STOP / S N									012		00
																		PSNGR CAR		01	DRVR	INJC	24	M	OTH-Y / N-RES		000	000		00
05006	N	N	N	N	N	11/11/2016	MARION	1 14		INTER	CROSS	N		N	RAIN	O-1 L-TURN	01	NONE 9	TURN-L												02
CITY			N			Fri 10P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL		N	WET	TURN		N/A	E S									000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	3			N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1																					
																	02	NONE 9	STRGHT									000		00
																		N/A	W E											
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000		00
05078	N	N	N	N	N	11/16/2016	MARION	1 14		INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 0	STRGHT												02
CITY			N			Wed 12P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL		N	DRY	TURN		PRVTE	W E									000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	0			N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	61	F	OR-Y / OR<25		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1																					
																	02	NONE 0 / PRVTE	TURN-L / E S									000		00
																		PSNGR CAR		01	DRVR	INJB	16	F	OR-Y / OR<25		028,004	000		02
																				02	PSNG	INJB	11	F			000	000		00
00385	N	N	N			01/31/2017	MARION	1 14		INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE 0	STRGHT											013	04
CITY			N			Tue 2P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL		N	DRY	ANGL		PRVTE	W E									000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	3			N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	23	F	OR-Y / OR<25		020	000		04
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1																					
																				02	PSNG	NO<5	02	F			000	000		00
																				03	PSNG	NO<5	01	F			000	000		00

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																02	NONE 0 PRVTE	STRGHT N S									000	013	00
																	PSNGR CAR		01	DRVR	NONE	39	M	OR-Y OR<25		000	022		00
																			02	PSNG	INJC	20	M			000	000		00
																			03	PSNG	INJC	39	F			000	000		00
																03	NONE 0 PRVTE	STOP S N									012	013	00
																	PSNGR CAR		01	DRVR	NONE	60	F	OR-Y OR<25		000	022		00
																04	NONE 0 PRVTE	STOP S N									012		00
																	PSNGR CAR		01	DRVR	INJC	36	F	OR-Y OR<25		000	000		00
																			02	PSNG	INJC	15	M			000	000		00
01864	N	N	N	N	N	05/13/2017	MARION	1 14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 9 N/A	STRGHT W E											02
CITY		N				Sat 7P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	WET	TURN												000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	3		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1																				
																02	NONE 9 N/A	TURN-L E S									000		00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
02923	N	N	N	N	N	07/20/2017	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0 PRVTE	STRGHT W E											04
CITY		N				Thu 2P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN												000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	3		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	25	F	OTH-Y N-RES		020	000		04
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1																				
																			02	PSNG	INJC	22	F			000	000		00
																02	NONE 0 PRVTE	TURN-L E S									000		00
																	PSNGR CAR		01	DRVR	NONE	73	M	OTH-Y N-RES		000	000		00
03299	N	N	N	N	N	08/15/2017	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0 PRVTE	TURN-L E S											04
CITY		N				Tue 3P	WOODBURN	MN 0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN												000		00
							WOODBURN UA	37.02	HILLSBORO-SILV HY	03	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	M	OR-Y OR<25		097	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100S00	1																				

140 HILLSBORO-SILVERTON
Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	MC	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# CMPT/MLG MILEPNT LRS	FC	CONN # FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																		02	NONE 0 / PRVTE	STRGHT / W E									000	00
																			PSNGR CAR		01	DRVR	INJC	51	M	OR-Y / OR<25		097	000		00
03425	N	N	N				08/22/2017	MARION	1	14		INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
CITY		N					Tue 6A	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL		N	DRY	TURN		PRVTE	W E								000		00
								WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3			N	DAWN	INJ		PSNGR CAR		01	DRVR	INJC	53	M	OR-Y / OR<25		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*			014000100S00		1																			
																		02	NONE 0 / PRVTE	TURN-L / E S									000	00
																			PSNGR CAR		01	DRVR	NONE	46	M	OR-Y / OR<25		028,004	000		02
03973	N	N	N				09/23/2017	MARION	1	14		INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY		N					Sat 1P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL		N	DRY	TURN		PRVTE	E S								000		00
								WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	27	F	OR-Y / OR<25		028,004	000		02
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*			014000100S00		1												02	PSNG	NO<5	01	F			000	000		00
																							03	PSNG	NO<5	03	F			000	000		00
																		02	NONE 0 / PRVTE	STRGHT / W E									000	00
																			PSNGR CAR		01	DRVR	NONE	52	F	OTH-Y / N-RES		000	000		00
																					02	PSNG	INJB	12	F			000	000		00
05357	N	N	N	N	N	N	12/10/2017	MARION	1	14		INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										04
CITY		N					Sun 6A	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL		N	DRY	TURN		PRVTE	E S								000		00
								WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3			N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	37	F	OR-Y / OR<25		020	000		04
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*			014000100S00		1																			
																		02	NONE 0 / PRVTE	STRGHT / W E									000	00
																			PSNGR CAR		01	DRVR	INJC	17	F	OR-Y / OR<25		000	000		00
05408	N	N	N	N	N	N	12/13/2017	MARION	1	14		INTER	CROSS	N		N	CLR	O-1 L-TURN	01	NONE 9	TURN-L									087	02
CITY		N					Wed 12P	WOODBURN	MN 0		EVERGREEN RD	CN		FLASHBCN-A		N	DRY	TURN		N/A	E S								000		00
								WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*			014000100S00		1																			
																		02	NONE 9 / N/A	STRGHT / W E									000	00
																			PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000		00

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS / RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00422	N	N	N	N	N	02/05/2018	MARION	1	14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										013	04
CITY		N				Mon 8A	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	W E									000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3		N	DAY	INJ		PSNGR CAR		01	DRVR	INJA	76	F	OR-Y		020	000		04
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100	S00	1																OR<25					
																				02	PSNG	INJA	48	M			000	000		00
																				03	PSNG	INJA	08	F			000	000		00
																	02	NONE 0	STRGHT											
																		PRVTE	N S									000	013	00
																		PSNGR CAR		01	DRVR	INJC	47	F	OR-Y		000	022		00
																									OR<25					
																	03	NONE 0	STRGHT											
																		PRVTE	UN UN									000	013	00
																		PSNGR CAR		01	DRVR	NONE	48	M	OR-Y		000	022		00
																									OR<25					
																	04	NONE 0	STRGHT											
																		PRVTE	UN UN									000	013	00
																		PSNGR CAR		01	DRVR	NONE	66	M	OR-Y		000	022		00
																									OR>25					
																	05	NONE 0	STRGHT											
																		PRVTE	UN UN									000		00
																		PSNGR CAR		01	DRVR	NONE	16	M	OR-Y		000	000		00
																									OR<25					
01628	N	N	N			05/02/2018	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	STRGHT											02
NONE		N				Wed 12P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		N/A	W E									000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*3.52*	*-122*	*52*	*32.54*		014000100	S00	1																UNK					
																	02	NONE 9	TURN-L											
																		N/A	E S									000		00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																									UNK					
03460	N	N	N			09/14/2018	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	TURN-L											02
CITY		N				Fri 1P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		N/A	E S									000		00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*3.55*	*-122*	*52*	*32.54*		014000100	S00	1																UNK					
																	02	NONE 9	STRGHT											
																		N/A	W E									000		00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																									UNK					

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
04885	N	N	N	N	N	12/19/2018	MARION	1	14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT										02
CITY		N				Wed 12P	WOODBURN	MN 0		EVERGREEN RD	CN		FLASHBCN-A	N	DRY	TURN		PRVTE	W E									000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	55	F	OTH-Y		000	000	00
No	*45*	*9*				*3.52 -122 52 32.54*		014000100		S00 1															N-RES				
																	02	NONE 0	TURN-L										
																		PRVTE	E S									000	00
																		PSNGR CAR		01	DRVR	NONE	56	F	OR-Y		028,004	000	02
																									OR<25				
																				02	PSNG	INJC	37	F			000	000	00
																				03	PSNG	INJC	35	F			000	000	00
05016	N	N	N	N	N	12/29/2018	MARION	1	14		INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 9	STRGHT										02
CITY		N				Sat 5P	WOODBURN	MN 0		EVERGREEN RD	CN		TRF SIGNAL	N	WET	TURN		N/A	W E									000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*				*3.52 -122 52 32.54*		014000100		S00 1															UNK				
																	02	NONE 9	TURN-L										
																		N/A	E S									000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																									UNK				
00885	N	N	N			03/09/2019	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
CITY		N				Sat 12P	WOODBURN	MN 0		EVERGREEN RD	CN		FLASHBCN-A	N	DRY	TURN		RENTL	W E									000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	23	M	OR-Y		000	000	00
No	*45*	*9*				*3.52 -122 52 32.54*		014000100		S00 1															OR>25				
																				02	PSNG	INJC	22	F			000	000	00
																				03	PSNG	INJC	48	F			000	000	00
																				04	PSNG	INJC	50	M			000	000	00
																	02	NONE 0	TURN-L										
																		PRVTE	E S									000	00
																		PSNGR CAR		01	DRVR	NONE	30	M	NONE		028,004	000	02
																									OR<25				
01667	N	N	N			05/05/2019	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	STRGHT										02
CITY		N				Sun 3P	WOODBURN	MN 0		EVERGREEN RD	CN		FLASHBCN-A	N	DRY	TURN		N/A	W E									000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*				*3.53 -122 52 32.56*		014000100		S00 1															UNK				
																	02	NONE 9	TURN-L										
																		N/A	E S									000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																									UNK				

140 HILLSBORO-SILVERTON

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MILEPNT / LRS	FC / MLG / PNT	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
03230	N	N	N	N	N	08/24/2019	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
CITY		N				Sat 6A	WOODBURN	MN	0	EVERGREEN RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W E									000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	44	M	OTH-Y		000	000	00
No	*45*	*9*	*3.55*	*-122*	*52*	*32.56*		014000100		S00 1															OR<25				
																				02	PSNG	INJB	56	M			000	000	00
																				03	PSNG	INJB	08	M			000	000	00
																	02	NONE 0	TURN-L										
																		PRVTE	E S									000	00
																		PSNGR CAR		01	DRVR	INJB	61	M	OR-Y		028,004	000	02
																									OR<25				
03455	N	N	N	N	N	09/09/2019	MARION	1	14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY		N				Mon 7A	WOODBURN	MN	0	EVERGREEN RD	CN		FLASHBCN-A	N	WET	TURN		PRVTE	E S									000	00
							WOODBURN UA	37.02		HILLSBORO-SILV HY	03	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		028,004	000	02
No	*45*	*9*	*3.53*	*-122*	*52*	*32.54*		014000100		S00 1															OR<25				
																	02	NONE 0	STRGHT										
																		PRVTE	W E									000	00
																		PSNGR CAR		01	DRVR	INJC	53	M	OR-Y		000	000	00
																									OR>25				

CITY OF WOODBURN, MARION COUNTY

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	FC / DISTNC	CITY STREET / FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
03038	N	N	N		Y	08/10/2015	17	EVERGREEN RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											27,29
CITY			N			Mon 12P	0	HILLSBORO-SILV HY	SE		R-GRN-SIG	N	DRY	REAR		PRVTE	SW NE										000		00
No	*45*	*9*	*3.51*			*-122 52 32.55*		1	09	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	44	M	OR-Y OR>25		016,026	038		27,29
															02	NONE 0	STOP											
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	NONE	78	M	OR-Y OR<25		000	000		00
03681	N	N	N			08/26/2016	17	EVERGREEN RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											27,29
CITY			N			Fri 8A	0	HILLSBORO-SILV HY	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE										000		00
No	*45*	*9*	*3.52*			*-122 52 32.54*		1	09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y OR<25		016,026	038		27,29
															02	NONE 0	STOP											
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	INJC	43	F	OR-Y OR<25		000	000		00
00703	N	N	N	N	N	02/24/2017	17	EVERGREEN RD	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 9	STRGHT											29
CITY			N			Fri 2P	0	HILLSBORO-SILV HY	SE		YIELD	N	WET	REAR		N/A	SW NE										000		00
No	*45*	*9*	*3.52*			*-122 52 32.54*		1	09	3		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
															02	NONE 9	STOP											
																N/A	SW NE									011		00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
03027	N	N	N			08/09/2015	17	EVERGREEN RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE			N			Sun 2P	0	HILLSBORO-SILV HY	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S N										000		00
No	*45*	*9*	*3.51*			*-122 52 32.55*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	S N									011		00
																PSNGR CAR		01	DRVR	NONE	61	F	OR-Y OR<25		000	000		00
02402	N	N	N			02/20/2016	17	EVERGREEN RD	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 9	STRGHT											29
NO RPT			N			Sat 7P	0	HILLSBORO-SILV HY	S		TRF SIGNAL	N	UNK	REAR		N/A	S N										000		00
No	*45*	*9*	*3.52*			*-122 52 32.54*		1	06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
															02	NONE 9	STOP											
																N/A	S N									011		00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00

CITY OF WOODBURN, MARION COUNTY

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Evergreen Rd
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	FC / DISTNC	CITY STREET / FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01901	N	N	N	N	N	05/18/2019	17	EVERGREEN RD	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
CITY			N			Sat 1P	0	HILLSBORO-SILV HY	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									000		00
No	*45*	*9*	*3.54*	*-122*	*52*	*32.55*	1		09	3		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	26	F	OR-Y OR<25		043,026	000		07
															02	NONE 0	STOP											
																PRVTE	SW NE									011		00
																PSNGR CAR		01	DRVR	INJC	60	M	OR-Y OR<25		000	000		00
																		02	PSNG	INJC	47	F			000	000		00
																		03	PSNG	INJC	15	F			000	000		00

001 PACIFIC — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), NB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	MC	SCHL	WORK	DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# CMPT/MLG MILEPNT LRS	FC	CONN # FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
01720	N	N	N				04/23/2016	MARION	1	11	1	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE		N					Sat 11A	WOODBURN	CN 0		HILLSBORO-SILV HY	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									000	00
								WOODBURN UA	271.90		NB EX HILLS-SILV C1	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	38	F	OR-Y		026	000	29
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*			0001PZ100S00		1															OR>25				
																		02	NONE 0	STOP										
																			PRVTE	SW NE									011	00
																			PSNGR CAR		01	DRVR	INJC	57	F	OR-Y		000	000	00
																										OR>25				
02713	N	N	N	N	N		06/29/2016	MARION	1	11	1	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
CITY		N					Wed 1P	WOODBURN	CN 0		HILLSBORO-SILV HY	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									000	00
								WOODBURN UA	271.90		NB EX HILLS-SILV C1	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	39	F	OR-Y		043,026	000	07
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*			0001PZ100S00		1															OR<25				
																		02	NONE 0	STOP										
																			PRVTE	SW NE									011	00
																			PSNGR CAR		01	DRVR	INJC	51	M	OR-Y		000	000	00
																										OR<25				
																					02	PSNG	INJC	50	F			000	000	00
01399	N	N	N				04/10/2017	MARION	1	11	1	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT										29
NONE		N					Mon 4P	WOODBURN	CN 0		HILLSBORO-SILV HY	S		TRF SIGNAL	N	DRY	REAR		N/A	S N									000	00
								WOODBURN UA	271.93		NB EX HILLS-SILV C1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*			0001YM100S00		1															UNK				
																		02	NONE 9	STOP										
																			N/A	S N									011	00
																			PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																										UNK				
04493	N	N	N				10/23/2017	MARION	1	11	1	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE		N					Mon 5P	WOODBURN	CN 0		HILLSBORO-SILV HY	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S N									000	00
								WOODBURN UA	271.93		NB EX HILLS-SILV C1	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	41	M	OR-Y		026	000	29
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*			0001YM100S00		1															OR<25				
																		02	NONE 0	STOP										
																			PRVTE	S N									011	00
																			PSNGR CAR		01	DRVR	INJC	49	M	OR-Y		000	000	00
																										OR>25				
02120	N	N	N				06/14/2018	MARION	1	11	1	INTER	3-LEG	N	N	CLR	S-OTHER	01	NONE 9	TURN-R										29
NONE		N					Thu 5P	WOODBURN	CN 0		HILLSBORO-SILV HY	S		TRF SIGNAL	N	DRY	TURN		N/A	S E									000	00
								WOODBURN UA	271.93		NB EX HILLS-SILV C1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*			0001YM100S00		1															UNK				

001 PACIFIC

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), NB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG / MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																	02	NONE 9 N/A	TURN-R S E									000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
02078	N	N	N			06/03/2019	MARION	1	11	1	INTER	CROSS	N		N	S-1STOP	01	NONE 0	STRGHT										29
NONE		N				Mon 2P	WOODBURN	CN 0		HILLSBORO-SILV HY	SW		TRF SIGNAL		N DRY	REAR		PRVTE	SW NE									000	00
							WOODBURN UA	271.93		NB EX HILLS-SILV C1	06	0			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	38	M	OR-Y OR<25		026	000		29
No	*45*	*9*	*3.79*	*-122*	*52*	*45.75*	0001YM100S00			1																			
																	02	NONE 0 PRVTE	STOP SW NE									011	00
																		PSNGR CAR		01	DRVR	INJC	65	F	OR-Y OR<25		000	000	00
02627	N	N	N			07/13/2019	MARION	1	11	1	INTER	3-LEG	N		N	S-1STOP	01	NONE 0	STRGHT										29
NONE		N				Sat 7P	WOODBURN	CN 0		HILLSBORO-SILV HY	SW		TRF SIGNAL		N DRY	REAR		PRVTE	SW NE									000	00
							WOODBURN UA	271.93		NB EX HILLS-SILV C1	06	0			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	24	M	OR-Y OR>25		026	000		29
No	*45*	*9*	*3.80*	*-122*	*52*	*45.73*	0001YM100S00			1																			
																	02	NONE 0 PRVTE	STOP SW NE									011	00
																		PSNGR CAR		01	DRVR	INJC	51	F	OR-Y OR<25		000	000	00

140 HILLSBORO-SILVERTON Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), NB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00875	N	N	N		Y	03/12/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 1	TURN-R											08
CITY		N				Thu 11A	WOODBURN	MN 0	HILLSBORO-SILV HY	E		TRF SIGNAL	N	DRY	TURN		PRVTE	SW E										000		00
							WOODBURN UA	36.86	NB EX HILLS-SILV C1	05	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	33	M	OTH-Y		001	000		08
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*	014000100S00		1															N-RES					
																02	NONE 1	TURN-R											
																	PRVTE	SW E									000		00
																	SEMI TOW		01	DRVR	NONE	58	M	OTH-Y		000	000		00
																								N-RES					
02399	N	N	N			06/25/2015	MARION	1 14		INTER	CROSS	N	N	CLR	O-1STOP	01	NONE 0	BACK											10
NONE		N				Thu 6A	WOODBURN	MN 0	HILLSBORO-SILV HY	E		TRF SIGNAL	N	UNK	BACK		PRVTE	W E									000		00
							WOODBURN UA	36.86	NB EF HILLS-SILV C2	06	1		N	UNK	PDO		PSNGR CAR		01	DRVR	NONE	39	M	OR-Y		011	000		10
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*	014000100S00		1															OR>25					
																02	NONE 0	STOP											
																	PRVTE	E W									011		00
																	PSNGR CAR		01	DRVR	NONE	35	M	OR-Y		000	000		00
																								OR<25					
03744	N	N	N			08/29/2016	MARION	1 14		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
NONE		N				Mon 7A	WOODBURN	MN 0	HILLSBORO-SILV HY	E		TRF SIGNAL	N	DRY	REAR		N/A	E W									000		00
							WOODBURN UA	36.86	NB EX HILLS-SILV C1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*	014000100S00		1															UNK					
																02	NONE 9	STOP											
																	N/A	E W									011		00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																								UNK					
03289	N	N	N	N	N	09/03/2018	MARION	1 14		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										093	07,27
CITY		N				Mon 12P	WOODBURN	MN 0	HILLSBORO-SILV HY	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000		00
							WOODBURN UA	36.86	NB EX HILLS-SILV C1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	16	F	OR-Y		043,026,016	025	093	07,27
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*	014000100S00		1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	E W									011		00
																	PSNGR CAR		01	DRVR	INJC	45	F	OR-Y		000	000		00
																								OR<25					
00185	N	N	N			01/17/2015	MARION	1 14		INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT											29
NONE		N				Sat 11P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	UNK	REAR		PRVTE	W E									000		00
							WOODBURN UA	36.86	NB EF HILLS-SILV C2	06	1		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK		026	000		29
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*	014000100S00		1															UNK					

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), NB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# CMPT/MLG MILEPNT LRS	FC	CONN # FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																	02	NONE 0 PRVTE	STOP W E										012	00
																		PSNGR CAR		01	DRVR	NONE	20	F	OR-Y OR>25		000	000		00
03869 CITY	N N	N N	N			10/08/2015 Thu 7P	MARION WOODBURN	1 MN 0	14	HILLSBORO-SILV HY	INTER W	CROSS	N TRF SIGNAL	N N	CLR DRY	S-1STOP REAR	01	NONE 0 PRVTE	STRGHT W E										000		07 00
							WOODBURN UA	36.86		NB EX HILLS-SILV	C1 06	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	65	M	OR-Y OR<25		026	000		07
No	*45 9*		*3.79 -122 52 45.31*					014000100S00			1																			
																	02	NONE 0 PRVTE	STOP W E										011	00
																		PSNGR CAR		01	DRVR	INJC	75	M	OR-Y OR<25		000	000		00
01389 NO RPT	N N	N N	N			04/24/2018 Tue 4P	MARION WOODBURN	1 MN 0	11	HILLSBORO-SILV HY	INTER CN	3-LEG	N TRF SIGNAL	N N	UNK UNK	ANGL-OTH TURN	01	NONE 0 PRVTE	TURN-L S W										000		04 00
							WOODBURN UA	36.86		NB EX HILLS-SILV	C1 00	1		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	23	F	OR-Y OR<25		097	000		00
No	*45 9*		*3.80 -122 52 45.75*					014000100S00			1																			
																	02	NONE 0 PRVTE	STRGHT UN UN										000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		097	000		00
03623 CITY	N N	N N	N	N	N	09/03/2017 Sun 9A	MARION WOODBURN	1 MN 0	11	HILLSBORO-SILV HY	INTER CN	3-LEG	N L-GRN-SIG	N N	CLR DRY	S-OTHER TURN	01	NONE 9 N/A	TURN-L S W										000		08 00
							WOODBURN UA	36.86		NB EX HILLS-SILV	C1 01	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	U	UNK UNK		000	000		00
No	*45 9*		*3.79 -122 52 45.74*					014000100S00			1																			
																	02	NONE 9 N/A	TURN-L S W										000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
00202 NO RPT	N N	N N	N			01/19/2015 Mon 4P	MARION WOODBURN	1 MN 0	14	HILLSBORO-SILV HY	INTER CN	CROSS	N TRF SIGNAL	N N	CLR DRY	O-1 L-TURN TURN	01	NONE 0 PRVTE	TURN-L W N										000		02 00
							WOODBURN UA	36.86		NB EF HILLS-SILV	C2 02	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	25	F	OR-Y OR<25		028,004	000		02
No	*45 9*		*3.79 -122 52 45.31*					014000100S00			1																			
																	02	NONE 0 PRVTE	STRGHT E W										000	00
																		PSNGR CAR		01	DRVR	NONE	24	F	OR-Y OR<25		000	000		00

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), NB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
02367	N	N	N			06/25/2015	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY		N				Thu 8P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		FLASHBCN-A	N	DRY	TURN		PRVTE	W NW									000	00
							WOODBURN UA	36.86		NB EF HILLS-SILV C2	02	1		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	16	M	OR-Y		028,004	000	02
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*		014000100S00		1																OR<25				
																	02	NONE 0	STRGHT										
																		PRVTE	E W									000	00
																		PSNGR CAR		01	DRVR	INJC	35	M	NONE		000	000	00
																									OR<25				
02419	N	N	N			06/28/2015	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										04
CITY		N				Sun 6P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	E W									000	00
							WOODBURN UA	36.86		NB EF HILLS-SILV C2	02	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	29	M	OR-Y		097	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*		014000100S00		1																OR<25				
																					02	PSNG	INJC	30	F			000	000	00
																					03	PSNG	NO<5	04	F			000	000	00
																	02	NONE 0	TURN-L										
																		RENTL	W NW									000	00
																		PSNGR CAR		01	DRVR	NONE	49	F	OR-Y		097	000	00
																									OR>25				
02268	N	N	N			06/01/2016	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
NONE		N				Wed 5A	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	E W									000	00
							WOODBURN UA	36.86		NB EF HILLS-SILV C2	02	1		N	DAWN	INJ		PSNGR CAR		01	DRVR	INJB	46	M	OR-Y		000	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*		014000100S00		1																OR<25				
																	02	NONE 0	TURN-L										
																		PRVTE	W NW									000	00
																		PSNGR CAR		01	DRVR	NONE	31	F	OR-Y		028,004	000	02
																									OR<25				
05749	N	N	N	N	N	12/27/2016	MARION	1	14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										40,04
CITY		N				Tue 11A	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		N/A	E W									000	00
							WOODBURN UA	36.86		NB EX HILLS-SILV C1	02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*		014000100S00		1																UNK				
																	02	NONE 9	TURN-L										
																		N/A	S W									000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																									UNK				
00017	N	N	N			01/02/2017	MARION	1	11		INTER	3-LEG	N	N	SNOW	ANGL-OTH	01	NONE 9	TURN-L										04
NONE		N				Mon 6P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	SNO	TURN		N/A	SW W									000	00
							WOODBURN UA	36.86		NB EX HILLS-SILV C1	02	1		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*		014000100S00		1																UNK				

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), NB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# CMPT/MLG MILEPNT LRS	FC	CONN # FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																	02	NONE 9	STRGHT									
																		N/A	E W								000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK	000	000	00
																									UNK			
05481	N	N	N			12/18/2017	MARION	1	11		INTER	3-LEG	N		N	CLR ANGL-OTH	01	NONE 9	TURN-L									04
NONE		N				Mon 5P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL		N	DRY TURN		N/A	S W								000	00
							WOODBURN UA	36.86		NB EX HILLS-SILV C1	02	0			N	DUSK PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK	000	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*		014000100S00		1															UNK			
																	02	NONE 9	STRGHT									
																		N/A	E W								000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK	000	000	00
																									UNK			
05500	N	N	N	N	N	12/20/2017	MARION	1	11		INTER	3-LEG	N		N	CLR ANGL-OTH	01	NONE 9	TURN-L									04,40
STATE		N				Wed 4P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL		N	DRY TURN		N/A	S W								000	00
							WOODBURN UA	36.86		NB EX HILLS-SILV C1	02	0			N	DAY PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK	000	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*		014000100S00		1															UNK			
																	02	NONE 9	STRGHT									
																		N/A	E W								000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK	000	000	00
																									UNK			
01879	N	N	N			05/30/2018	MARION	1	11		INTER	3-LEG	N		N	CLR ANGL-OTH	01	NONE 0	TURN-L									04
NO RPT		N				Wed 1P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL		N	DRY TURN		PRVTE	S W								000	00
							WOODBURN UA	36.86		NB EX HILLS-SILV C1	02	0			N	DAY INJ		PSNGR CAR		01	DRVR	INJC	53	F	OR-Y	097	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*		014000100S00		1															OR<25			
																	02	NONE 0	STRGHT									
																		PRVTE	E W								000	00
																		PSNGR CAR		01	DRVR	NONE	61	M	OR-Y	097	000	00
																									OR<25			
01103	N	N	N			03/27/2019	MARION	1	11		INTER	5-LEG	N		N	CLR ANGL-OTH	01	NONE 9	STRGHT									04
NO RPT		N				Wed 10A	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL		N	DRY TURN		N/A	E W								000	00
							WOODBURN UA	36.86		NB EX HILLS-SILV C1	02	0			N	DAY PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK	000	000	00
No	*45*	*9*	*3.80*	*-122*	*52*	*45.77*		014000100S00		1															UNK			
																	02	NONE 9	TURN-L									
																		N/A	SW W								000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK	000	000	00
																									UNK			

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), NB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
03828	N	N	N		Y	10/06/2015	MARION	1	14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L										04
CITY			N			Tue 7A	WOODBURN	MN	0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW W									000	00
							WOODBURN UA	36.86		NB EX HILLS-SILV C1	04	1		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	66	M	OR-Y		020	000	04
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*	014000100S00			1															OR<25				
																				02	PSNG	INJC	55	F			000	000	00
																	02	NONE 0	STRGHT										
																		PRVTE	W E									000	00
																		PSNGR CAR		01	DRVR	INJC	37	F	OR-Y		000	000	00
																									OR<25				
00066	N	N	N			01/04/2016	MARION	1	11		INTER	CROSS	N	N	SNOW	ANGL-OTH	01	NONE 0	STRGHT										04
NO RPT			N			Mon 7P	WOODBURN	MN	0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	SNO	TURN		PRVTE	W E								000	00
							WOODBURN UA	36.86		NB EX HILLS-SILV C1	04	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	41	F	OR-Y		020	000	04
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*	014000100S00			1															OR<25				
																	02	NONE 0	TURN-L										
																		PRVTE	SW W									000	00
																		PSNGR CAR		01	DRVR	INJC	26	M	OR-Y		000	000	00
																									OR<25				
																				02	PSNG	INJC	28	F			000	000	00
00221	N	N	N			01/14/2016	MARION	1	11		INTER	CROSS	N	N	RAIN	S-OTHER	01	NONE 0	TURN-R										07
NO RPT			N			Thu 2P	WOODBURN	MN	0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	WET	TURN		PRVTE	SW E								000	00
							WOODBURN UA	36.86		NB EX HILLS-SILV C1	04	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	24	F	OR-Y		042	000	07
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*	014000100S00			1															OR<25				
																	02	NONE 0	TURN-R										
																		PRVTE	SW E									000	00
																		PSNGR CAR		01	DRVR	INJC	33	F	OR-Y		000	000	00
																									OR>25				
																				02	PSNG	INJC	07	F			000	000	00
04679	N	N	N			10/23/2016	MARION	1	14		INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	TURN-R										04
CITY			N			Sun 5A	WOODBURN	MN	0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	WET	TURN		PRVTE	SE E								000	00
							WOODBURN UA	36.86		NB EF HILLS-SILV C2	04	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	27	M	OR-Y		097	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.31*	014000100S00			1															OR<25				
																	02	NONE 0	STRGHT										
																		PRVTE	W E									000	00
																		PSNGR CAR		01	DRVR	NONE	61	F	OR-Y		097	000	00
																									OR<25				
01974	N	N	N			05/21/2017	MARION	1	14		INTER	3-LEG	N	N	CLR	S-OTHER	01	NONE 0	TURN-R										08
NONE			N			Sun 5P	WOODBURN	MN	0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW E								000	00
							WOODBURN UA	36.86		NB EX HILLS-SILV C1	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	69	F	OR-Y		000	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*	014000100S00			1															OR>25				

140 HILLSBORO-SILVERTON Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), NB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																02	NONE 0 PRVTE	TURN-R SW E									000	00
																	PSNGR CAR		01	DRVR	INJC	20	M	OR-Y OR<25		000	000	00
																			02	PSNG	INJC	25	F			000	000	00
04046	N	N	N	N	N	09/27/2017	MARION	1 11		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										40,04
CITY		N				Wed 8A	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W E									000	00
							WOODBURN UA	36.86	NB EX HILLS-SILV C1	04	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	43	M	OR-Y OR<25		040	026	40,04
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*	014000100S00		1																			
																02	NONE 0 PRVTE	TURN-L SW W									000	00
																	PSNGR CAR		01	DRVR	INJC	39	F	OR-Y OR<25		000	000	00
02875	N	N	N	N	N	08/04/2018	MARION	1 11		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04
CITY		N				Sat 7A	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W E									000	00
							WOODBURN UA	36.86	NB EX HILLS-SILV C1	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	79	F	OR-Y OR<25		097	000	00
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*	014000100S00		1																			
																02	NONE 0 PRVTE	TURN-R S E									000	00
																	PSNGR CAR		01	DRVR	NONE	21	F	OR-Y OR<25		097	000	00
03676	N	N	N	N	N	09/29/2018	MARION	1 11		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										04
CITY		N				Sat 7A	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		N/A	W E									000	00
							WOODBURN UA	36.86	NB EX HILLS-SILV C1	04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
No	*45*	*9*	*3.83*	*-122*	*52*	*45.75*	014000100S00		1																			
																02	NONE 9 N/A	TURN-L SW W									000	00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
01168	N	N	N	N	N	04/01/2019	MARION	1 11		INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 0	STRGHT										04
CITY		N				Mon 4P	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W E									000	00
							WOODBURN UA	36.86	NB EX HILLS-SILV C1	04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	55	M	OR-Y OR<25		020	000	04
No	*45*	*9*	*3.79*	*-122*	*52*	*45.74*	014000100S00		1																			
																02	NONE 0 PRVTE	TURN-L SW W									000	00
																	PSNGR CAR		01	DRVR	INJC	24	F	OR-Y OR<25		000	000	00

140 HILLSBORO-SILVERTON Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), NB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
03673	Y	N	N			09/22/2019	MARION	1 11		INTER	5-LEG	N		N RAIN	ANGL-OTH	01	NONE 9	STRGHT										30,04,27
CITY			N			Sun 9A	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		TRF SIGNAL		N WET	TURN		N/A	W E									000	00
							WOODBURN UA	36.86	NB EX HILLS-SILV C1	04	0			N DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.82*	*-122*	*52*	*45.75*		014000100	S00 1															UNK				
																02	NONE 9	TURN-L										
																	N/A	S W									000	00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																								UNK				
00709	N	N	N	N	N	02/23/2017	MARION	1 14		INTER	3-LEG	N		N CLD	O-1 L-TURN	01	NONE 9	TURN-L										08,02
CITY			N			Thu 9P	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		TRF SIGNAL		N WET	TURN		N/A	W N									000	00
							WOODBURN UA	36.89	NB EF HILLS-SILV C2	02	0			N DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.74*	*-122*	*52*	*43.50*		014000100	S00 1															UNK				
																02	NONE 9	STRGHT										
																	N/A	E W									000	00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																								UNK				

001 PACIFIC

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), SB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG	SCHL	WORK	O/D/K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
05062	N	N	N				12/11/2015	MARION	1	11	2	INTER	CROSS	N		N RAIN	S-1STOP	01	NONE 0	STRGHT									07
NONE		N					Fri 8P	WOODBURN	CN 0		HILLSBORO-SILV HY	NE		TRF SIGNAL		N WET	REAR		PRVTE	NE SW								000	00
								WOODBURN UA	272.25		SB EX HILLS-SILV C2	06	0			N DLIT	INJ		PSNGR CAR		01	DRVR	NONE	73	M	OR-Y		026	000	07
No							*45 9 3.96 -122 52 55.34*		0001QA100S00		1															OR<25				
																		02	NONE 0	STOP									
																			PRVTE	NE SW								011	00
																			PSNGR CAR		01	DRVR	NONE	64	M	OR-Y		000	000	00
																										OR>25				
																					02	PSNG	INJC	16	F			000	000	00
																					03	PSNG	NO<5	03	F			000	000	00
																					04	PSNG	INJC	60	F			000	000	00
02317	N	N	N	N	N		06/04/2016	MARION	1	11	2	INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT									07
CITY		N					Sat 2P	WOODBURN	CN 0		HILLSBORO-SILV HY	NE		TRF SIGNAL		N DRY	REAR		PRVTE	NE SW								000	00
								WOODBURN UA	272.25		SB EX HILLS-SILV C2	06	0			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	36	M	OR-Y		043,026	000	07
No							*45 9 3.96 -122 52 55.34*		0001QA100S00		1															OR>25				
																		02	NONE 0	STOP									
																			PRVTE	NE SW								011	00
																			PSNGR CAR		01	DRVR	INJC	46	F	OR-Y		000	000	00
																										OR>25				
03098	N	N	N				07/24/2016	MARION	1	11	2	INTER	CROSS	N		N CLR	S-1STOP	01	NONE 0	STRGHT									29
NONE		N					Sun 1P	WOODBURN	CN 0		HILLSBORO-SILV HY	NE		TRF SIGNAL		N DRY	REAR		PRVTE	NE SW								000	00
								WOODBURN UA	272.25		SB EX HILLS-SILV C2	06	0			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		026	000	29
No							*45 9 3.96 -122 52 55.34*		0001QA100S00		1															OR>25				
																		02	NONE 0	STOP									
																			PRVTE	NE SW								011	00
																			PSNGR CAR		01	DRVR	INJC	51	F	OR-Y		000	000	00
																										OR>25				
01956	N	N	N				05/19/2017	MARION	1	11	1	INTER	3-LEG	N		N CLR	S-1STOP	01	NONE 0	STRGHT									29
CITY		N					Fri 7A	WOODBURN	CN 0		HILLSBORO-SILV HY	NW		R-GRN-SIG		N DRY	REAR		PRVTE	NW SE								000	00
								WOODBURN UA	272.40		SB EX HILLS-SILV C2	09	1			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	49	F	OR-Y		026	000	29
No							*45 9 3.96 -122 52 55.44*		0001YL100S00		1															OR<25				
																		02	NONE 0	STOP									
																			PRVTE	NW SE								011	00
																			PSNGR CAR		01	DRVR	INJB	47	F	OR-Y		000	000	00
																										OR<25				
03197	N	N	N				07/25/2017	MARION	1	11	2	INTER	3-LEG	N		N CLR	S-1STOP	01	NONE 9	STRGHT									29
NO RPT		N					Tue 2P	WOODBURN	CN 0		HILLSBORO-SILV HY	N		TRF SIGNAL		N DRY	REAR		N/A	N S								000	00
								WOODBURN UA	272.40		SB EX HILLS-SILV C2	06	1			N DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No							*45 9 3.96 -122 52 55.44*		0001YL100S00		1															UNK				

001 PACIFIC — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), SB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCH	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# CMPT/MLG MILEPNT LRS	FC	CONN # FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CNTL	OFFRD RNDBT DRVWY	WTHR SURF LIGHT	CRASH TYP COLL TYP SVRTY	V#	SPCL USE TRLR QTY OWNER VEH TYPE	MOVE FROM TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																	02	NONE 9 N/A	STOP N S									011	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
00582	N	N	N			02/18/2018	MARION	1	11	2	INTER	CROSS	N		N	CLR S-1STOP	01	NONE 0	STRGHT										29
NONE		N				Sun 2P	WOODBURN	CN 0		HILLSBORO-SILV HY	N		TRF SIGNAL		N	DRY REAR		PRVTE	N S									000	00
							WOODBURN UA	272.40		SB EX HILLS-SILV C2	06	1			N	DAY INJ		PSNGR CAR		01	DRVR	NONE	25	M	OTH-Y N-RES		026	000	29
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*		0001YL100S00		1																		
																	02	NONE 0 PRVTE	STOP N S									011	00
																		PSNGR CAR		01	DRVR	INJC	57	M	OR-Y OR>25		000	000	00
																				02	PSNG	INJC	53	F			000	000	00
03416	N	N	N			07/23/2018	MARION	1	11	2	INTER	3-LEG	N		N	CLR S-1STOP	01	NONE 0	STRGHT										29
NONE		N				Mon 7P	WOODBURN	CN 0		HILLSBORO-SILV HY	N		TRF SIGNAL		N	DRY REAR		PRVTE	N S									000	00
							WOODBURN UA	272.40		SB EX HILLS-SILV C2	06	0			N	DAY INJ		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		026	000	29
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*		0001YL100S00		1																		
																	02	NONE 0 PRVTE	STOP N S									011	00
																		PSNGR CAR		01	DRVR	INJC	29	F	OR-Y OR>25		000	000	00
02952	N	N	N			08/10/2018	MARION	1	11	2	INTER	3-LEG	N		N	CLR S-1STOP	01	NONE 0	STRGHT										29
NONE		N				Fri 4P	WOODBURN	CN 0		HILLSBORO-SILV HY	N		TRF SIGNAL		N	DRY REAR		PRVTE	N S									000	00
							WOODBURN UA	272.40		SB EX HILLS-SILV C2	06	0			N	DAY INJ		PSNGR CAR		01	DRVR	NONE	53	F	OR-Y OR>25		026	000	29
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*		0001YL100S00		1																		
																	02	NONE 0 PRVTE	STOP N S									011	00
																		PSNGR CAR		01	DRVR	NONE	40	F	OR-Y OR>25		000	000	00
																				02	PSNG	INJB	13	F			000	000	00
03288	N	N	N			09/03/2018	MARION	1	11	2	INTER	3-LEG	N		N	CLR S-1STOP	01	NONE 0	STRGHT										29
NONE		N				Mon 6P	WOODBURN	CN 0		HILLSBORO-SILV HY	N		TRF SIGNAL		N	DRY REAR		PRVTE	N S									000	00
							WOODBURN UA	272.40		SB EX HILLS-SILV C2	06	1			N	DAY INJ		PSNGR CAR		01	DRVR	INJC	24	F	OR-Y OR<25		026	000	29
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*		0001YL100S00		1																		
																	02	NONE 0 PRVTE	STOP N S									011	00
																		PSNGR CAR		01	DRVR	NONE	30	M	OTH-Y N-RES		000	000	00

001 PACIFIC — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), SB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCH	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
03361	N	N	N			09/07/2018	MARION	1	11	2	INTER	3-LEG	N		N CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE			N			Fri 10A	WOODBURN	CN 0		HILLSBORO-SILV HY	N		TRF SIGNAL		N DRY	REAR		PRVTE	N S									000	00
							WOODBURN UA	272.40		SB EX HILLS-SILV C2	06	0			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	63	F	OR-Y		026	000	29
No						*45 9 3.96 -122 52 55.44*		0001YL100S00		1															OR<25				
																	02	NONE 0	STOP									011	00
																		PRVTE	N S										
																		PSNGR CAR		01	DRVR	INJC	55	F	OR-Y		000	000	00
																									OR<25				
																				02	PSNG	INJC	66	F			000	000	00
02412	N	N	N			06/26/2019	MARION	1	11	2	INTER	5-LEG	N		N CLR	S-1STOP	01	NONE 9	STRGHT										29
NONE			N			Wed 2P	WOODBURN	CN 0		HILLSBORO-SILV HY	N		TRF SIGNAL		N DRY	REAR		N/A	N S									000	00
							WOODBURN UA	272.40		SB EX HILLS-SILV C2	06	1			N DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No						*45 9 3.97 -122 52 55.44*		0001YL100S00		1															UNK				
																	02	NONE 9	STOP									011	00
																		N/A	N S										
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																									UNK				
03646	N	N	N			09/21/2019	MARION	1	11	2	INTER	3-LEG	N		N CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE			N			Sat 4P	WOODBURN	CN 0		HILLSBORO-SILV HY	N		TRF SIGNAL		N DRY	REAR		PRVTE	N S									000	00
							WOODBURN UA	272.40		SB EX HILLS-SILV C2	06	0			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	47	M	OR-Y		026	000	29
No						*45 9 3.95 -122 52 55.46*		0001YL100S00		1															OR<25				
																	02	NONE 0	STOP									011	00
																		PRVTE	N S										
																		PSNGR CAR		01	DRVR	INJC	23	F	OR-Y		000	000	00
																									OR>25				
																				02	PSNG	INJC	16	F			000	000	00
																				03	PSNG	INJC	03	M			000	000	00
																				04	PSNG	INJC	46	M			000	000	00
																				05	PSNG	INJC	14	M			000	000	00
03913	N	N	N			02/23/2019	MARION	1	11	2	INTER	CROSS	N		N UNK	S-1STOP	01	NONE 0	STRGHT										29
NONE			N			Sat 12P	WOODBURN	CN 0		HILLSBORO-SILV HY	N		TRF SIGNAL		N UNK	REAR		PRVTE	N S									000	00
							WOODBURN UA	272.40		SB EX HILLS-SILV C2	09	1			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	F	UNK		026	000	29
No						*45 9 3.96 -122 52 55.44*		0001YL100S00		1															UNK				
																	02	NONE 0	STOP									011	00
																		PRVTE	N S										
																		PSNGR CAR		01	DRVR	INJC	38	M	OR-Y		000	000	00
																									OR<25				

001 PACIFIC

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), SB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
04104	N	N	N			10/19/2019	MARION	1 11	2	INTER	3-LEG	N	N	UNK	S-1STOP	01	NONE 0	STRGHT										27,29
NO RPT			N			Sat 4P	WOODBURN	CN 0	HILLSBORO-SILV HY	N		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000	00
							WOODBURN UA	272.40	SB EX HILLS-SILV C2	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	47	M	OR-Y		016,026	038	27,29
No	*45*	*9*	*3.95*	*-122*	*52*	*55.44*		0001YL100S00	1															OR>25				
																02	NONE 0	STOP									011	00
																	PRVTE	NE SW										
																	PSNGR CAR		01	DRVR	INJC	53	M	OR-Y		000	000	00
																								OR>25				
																			02	PSNG	INJC	58	M			000	000	00
02304	N	N	N			06/10/2017	MARION	1 11	2	INTER	3-LEG	N	N	CLR	S-OTHER	01	NONE 9	STRGHT										29
NONE			N			Sat 11A	WOODBURN	CN 0	HILLSBORO-SILV HY	NE		R-GRN-SIG	N	DRY	REAR		N/A	NE SW									000	00
							WOODBURN UA	272.40	SB EX HILLS-SILV C2	09	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*		0001YL100S00	1															UNK				
																02	NONE 9	STRGHT									000	00
																	N/A	NE SW										
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																								UNK				
01122	N	N	N			03/23/2018	MARION	1 11	2	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										29
NONE			N			Fri 5P	WOODBURN	CN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE SW									000	00
							WOODBURN UA	272.40	SB EX HILLS-SILV C2	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	50	M	OR-Y		026	000	29
No	*45*	*9*	*3.97*	*-122*	*52*	*55.45*		0001YL100S00	1															OR<25				
																02	NONE 0	STOP									011	00
																	PRVTE	NE SW										
																	PSNGR CAR		01	DRVR	INJC	48	M	OR-Y		000	000	00
																								OR<25				
01011	N	N	N			03/19/2019	MARION	1 11	2	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE			N			Tue 12P	WOODBURN	CN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL	N	DRY	REAR		PRVTE	NE SW									000	00
							WOODBURN UA	272.40	SB EX HILLS-SILV C2	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		026	000	29
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*		0001YL100S00	1															OR>25				
																02	NONE 0	STOP									011	00
																	PRVTE	NE SW										
																	PSNGR CAR		01	DRVR	INJC	28	F	OR-Y		000	000	00
																								OR>25				
04600	N	N	N	N	N	11/17/2019	MARION	1 11	2	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										27,29
CITY			N			Sun 11A	WOODBURN	CN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL	N	WET	REAR		PRVTE	NE SW									000	00
							WOODBURN UA	272.40	SB EX HILLS-SILV C2	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	26	M	OTH-Y		016,026	038	27,29
No	*45*	*9*	*3.98*	*-122*	*52*	*55.45*		0001YL100S00	1															N-RES				

001 PACIFIC — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), SB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	MAJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																		02	NONE 0 / PRVTE	STOP / NE SW									011	00
																			PSNGR CAR		01	DRVR	INJC	38	M	OR-Y / OR<25		000	000	00
																					02	PSNG	INJC	33	F			000	000	00
																					03	PSNG	INJC	08	U			000	000	00
																					04	PSNG	INJC	08	U			000	000	00
03854	N	N	N				09/16/2017	MARION	1	11	2	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
CITY		N					Sat 12P	WOODBURN	CN 0		HILLSBORO-SILV HY	NW		R-GRN-SIG	N	DRY	REAR		PRVTE	NW SE									000	00
								WOODBURN UA	272.40		SB EX HILLS-SILV C2	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	40	F	OR-Y / OR<25		026	000	29
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*			0001YL100S00		1																			
																		02	NONE 0 / PRVTE	STOP / NW SE									011	00
																			PSNGR CAR		01	DRVR	INJC	35	M	OR-Y / OR>25		000	000	00
																					02	PSNG	INJC	31	F			000	000	00
																					03	PSNG	INJC	08	F			000	000	00
																					04	PSNG	NO<5	01	M			000	000	00
04987	N	N	N	N	N	N	11/18/2017	MARION	1	11	2	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
CITY		N					Sat 2P	WOODBURN	CN 0		HILLSBORO-SILV HY	NW		R-GRN-SIG	N	DRY	REAR		PRVTE	NW SE									000	00
								WOODBURN UA	272.40		SB EX HILLS-SILV C2	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	51	F	OTH-Y / N-RES		043,026	000	07
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*			0001YL100S00		1																			
																		02	NONE 0 / PRVTE	STOP / NW SE									011	00
																			PSNGR CAR		01	DRVR	INJC	44	F	OR-Y / OR<25		000	000	00
																					02	PSNG	INJC	36	M			000	000	00
																					03	PSNG	INJC	11	F			000	000	00
05083	N	N	N				11/25/2017	MARION	1	11	2	INTER	3-LEG	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										29
NONE		N					Sat 11A	WOODBURN	CN 0		HILLSBORO-SILV HY	NW		R-GRN-SIG	N	WET	REAR		PRVTE	NW SE									000	00
								WOODBURN UA	272.40		SB EX HILLS-SILV C2	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	21	F	OR-Y / OR<25		026	000	29
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*			0001YL100S00		1																			
																		02	NONE 0 / PRVTE	STOP / NW SE									011	00
																			PSNGR CAR		01	DRVR	INJC	46	M	OR-Y / OR>25		000	000	00
05351	N	N	N	N	N	N	12/10/2017	MARION	1	11	2	INTER	3-LEG	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										27,29
STATE		N					Sun 11A	WOODBURN	CN 0		HILLSBORO-SILV HY	NW		R-GRN-SIG	N	DRY	REAR		PRVTE	NW SE									000	00
								WOODBURN UA	272.40		SB EX HILLS-SILV C2	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	59	F	OR-Y / OR<25		016,026	038	27,29
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*			0001YL100S00		1																			

001 PACIFIC

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), SB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG / MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																02	NONE 0 PRVTE	STOP NW SE										011	00
																	PSNGR CAR		01	DRVR	INJC	54	M	OR-Y OR>25		000	000		00
																			02	PSNG	INJC	18	F			000	000		00

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), SB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEC	ALC	DRUG/MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MILEPNT / LRS	FC / MLG	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
00131	N	N	N		Y	01/14/2015	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										27,07
CITY		N				Wed 8P	WOODBURN	MN 0		HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000	00
							WOODBURN UA	36.72		SB EF HILLS-SILV C1	06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	22	M	OR-Y		016,043,026	038	27,07
No	*45*	*9*	*3.95*	*-122*	*52*	*56.10*		014000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	W E									011	00
																		PSNGR CAR		01	DRVR	INJC	61	F	OR-Y		000	000	00
																									OR<25				
82225	N	N	N			05/17/2016	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
NONE		N				Tue 2P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W E									000	00
							WOODBURN UA	36.72		SB EF HILLS-SILV C1	03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	33	M	OR-Y		000	000	00
No	*45*	*9*	*3.95*	*-122*	*52*	*56.10*		014000100	S00	1															OR<25				
																	02	NONE 0	TURN-L										
																		PRVTE	E S									000	00
																		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		028,004	000	02
																									OR<25				
																				02	PSNG	INJC	17	M			000	000	00
																				03	PSNG	INJC	17	M			000	000	00
03002	N	N	N	N	N	08/10/2018	MARION	1	14		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										27,29
STATE		N				Fri 5P	WOODBURN	MN 0		HILLSBORO-SILV HY	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000	00
							WOODBURN UA	36.73		SB EX HILLS-SILV C2	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	19	F	OR-Y		016,026	038	27,29
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*		014000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	E W									011	00
																		PSNGR CAR		01	DRVR	INJC	22	M	OR-Y		000	000	00
																									OR<25				
																				02	PSNG	INJC	30	F			000	000	00
01526	N	N	N	N	N	04/25/2019	MARION	1	14		INTER	CROSS	N	N	CLR	S-STRGHT	01	NONE 0	STRGHT										13
CITY		N				Thu 7P	WOODBURN	MN 0		HILLSBORO-SILV HY	E		TRF SIGNAL	N	DRY	SS-O		PRVTE	E W									000	00
							WOODBURN UA	36.73		SB EX HILLS-SILV C2	06	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	INJC	36	F	NONE		045	000	13
No	*45*	*9*	*3.97*	*-122*	*52*	*55.42*		014000100	S00	1															OR<25				
																				02	PSNG	INJC	06	F			000	000	00
																				03	PSNG	INJC	13	F			000	000	00
																	02	NONE 1	STRGHT										
																		PRVTE	E W									000	00
																		PSNGR CAR		01	DRVR	NONE	49	M	OR-Y		000	000	00
																									OR>25				

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), SB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
03295	N	N	N	N	N	08/03/2016	MARION	1	14		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 9	STRGHT										04
STATE		N				Wed 10P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		N/A	E W									000	00
							WOODBURN UA	36.73		SB EX HILLS-SILV C2	01	1		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*				*3.96 -122 52 55.34*		014000100S00		1									UNK									
																	02	NONE 9	TURN-L										
																		N/A	N E									000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																			UNK										
04513	N	N	N		Y	08/16/2016	MARION	1	14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										33,04
CITY		N				Tue 2P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	E W									000	00
							WOODBURN UA	36.73		SB EX HILLS-SILV C2	01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	42	F	OR-Y		051,020	000	33,04
No	*45*	*9*				*3.96 -122 52 55.34*		014000100S00		1									OR>25									
																	02	NONE 0	TURN-L										
																		PRVTE	NE E									000	00
																		PSNGR CAR		01	DRVR	INJA	73	F	OR-Y		000	000	00
																			OR>25										
01406	N	N	N	N	N	04/11/2017	MARION	1	14		INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 0	STRGHT										04
CITY		N				Tue 5P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	E W									022	00
							WOODBURN UA	36.73		SB EX HILLS-SILV C2	01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	86	F	OR-Y		020	022	04
No	*45*	*9*				*3.96 -122 52 55.44*		014000100S00		1									OR<25									
																	02	NONE 0	TURN-L										
																		PRVTE	N E									000	00
																		PSNGR CAR		01	DRVR	INJC	46	F	OR-Y		000	000	00
																			OR<25										
																	03	NONE 0	TURN-L										
																		PRVTE	N E									022	00
																		PSNGR CAR		01	DRVR	NONE	33	M	OR-Y		000	022	00
																			OR<25										
05149	N	N	N	N	N	11/30/2017	MARION	1	11		INTER	3-LEG	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										04
CITY		N				Thu 10A	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	WET	TURN		PRVTE	E W									000	00
							WOODBURN UA	36.73		SB EX HILLS-SILV C2	01	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	62	F	OTH-Y		097	000	00
No	*45*	*9*				*3.96 -122 52 55.44*		014000100S00		1									N-RES									
																	02	NONE 0	TURN-L										
																		PRVTE	N E									000	00
																		PSNGR CAR		01	DRVR	INJC	21	F	OR-Y		097	000	00
																			OR<25										

140 HILLSBORO-SILVERTON — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Interstate 5, Pacific Hwy (#001), SB Ramps
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG / MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MILEPNT / LRS	FC / MLG	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
00780	N	N	N			03/01/2019	MARION	1	11		INTER	3-LEG	N		N	CLR	ANGL-OTH	01	NONE 9	TURN-L										04
CITY		N				Fri 8P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL		N	DRY	TURN		N/A	N E								000	00
							WOODBURN UA	36.73		SB EX HILLS-SILV C2	01	0			N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.95*	*-122*	*52*	*55.43*		014000100	S00	1																UNK				
																		02	NONE 9	STRGHT										
																			N/A	E W								000	00
																			PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																										UNK				
02901	N	N	N	Y		08/01/2015	MARION	1	11		INTER	CROSS	N		N	CLR	O-STRGHT	01	NONE 0	STRGHT										05
CITY		N				Sat 11P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL		N	DRY	HEAD		PRVTE	W E								000	00
							WOODBURN UA	36.73		SB EX HILLS-SILV C2	02	0			N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	26	M	NONE		080	000	05
No	*45*	*9*	*3.96*	*-122*	*52*	*55.34*		014000100	S00	1																OR<25				
																					02	PSNG	INJC	57	M			000	000	00
																		02	NONE 0	STRGHT										
																			PRVTE	E W								000	00
																			PSNGR CAR		01	DRVR	INJB	19	F	OR-Y		000	000	00
																										OR<25				
																					02	PSNG	INJB	23	M			000	000	00
01960	N	N	N			05/19/2017	MARION	1	14		INTER	3-LEG	N		N	CLR	S-STRGHT	01	NONE 0	STRGHT										29
NONE		N				Fri 5P	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL		N	DRY	REAR		PRVTE	E W								000	00
							WOODBURN UA	36.73		SB EX HILLS-SILV C2	02	2			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	69	M	OR-Y		042	000	29
No	*45*	*9*	*3.96*	*-122*	*52*	*55.44*		014000100	S00	1																OR<25				
																		02	NONE 0	STRGHT										
																			PRVTE	E W								000	00
																			PSNGR CAR		01	DRVR	INJC	37	M	OR-Y		000	000	00
																										OR<25				

140 HILLSBORO-SILVERTON

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & N Boones Ferry Rd / Settlemier Ave
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEC	ALC	DRUG	SCHL	WORK	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# / CMPT / MILEPNT / LRS	FC / MLG / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS / RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
03636	N	N	N			08/23/2016	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										087	29
CITY		N				Tue 7P	WOODBURN	MN 0	BOONES FERRY RD	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000	087	00
							WOODBURN UA	37.87	HILLSBORO-SILV HY	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	18	F	OR-Y		026	026		29
No	*45*	*8*	*58.04*	*-122*	*51*	*34.65*		014000100S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	E W									011	087	00
																	PSNGR CAR		01	DRVR	INJC	43	F	OR-Y		000	000		00
																								OR<25					
05015	N	N	N			11/21/2017	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		N				Tue 2P	WOODBURN	MN 0	BOONES FERRY RD	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000		00
							WOODBURN UA	37.87	HILLSBORO-SILV HY	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	22	M	OR-Y		026	000		29
No	*45*	*8*	*58.04*	*-122*	*51*	*34.65*		014000100S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	E W									011		00
																	PSNGR CAR		01	DRVR	INJC	70	F	OR-Y		000	000		00
																								OR<25					
04005	N	N	N			10/22/2018	MARION	1 14		INTER	CROSS	N	N	FOG	PED	01	NONE 0	TURN-R											40,02
CITY		N				Mon 7A	WOODBURN	MN 0	HILLSBORO-SILV HY	S		TRF SIGNAL	N	DRY	PED		PRVTE	W S									000		00
							WOODBURN UA	37.87	SETTLEMIER AVE	05	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	NONE	54	F	OR-Y		029	000		40,02
No	*45*	*8*	*58.04*	*-122*	*51*	*34.65*		014000100S00	1															OR<25					
																		STRGHT	01	PED	INJB	16	M		01	000	000		00
																		W E											
02839	N	N	N			07/28/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 1	TURN-R											08
NO RPT		N				Tue 9A	WOODBURN	MN 0	BOONES FERRY RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N W									000		00
							WOODBURN UA	37.87	HILLSBORO-SILV HY	01	0		N	DAY	INJ		SEMI TOW		01	DRVR	NONE	49	M	OR-Y		006	000		08
No	*45*	*8*	*58.04*	*-122*	*51*	*34.65*		014000100S00	1															OR<25					
																02	NONE 0	TURN-R											
																	PRVTE	N W									000		00
																	PSNGR CAR		01	DRVR	INJC	25	F	OR-Y		000	000		00
																								OR<25					
																			02	PSNG	NO<5	03	M			000	000		00
00630	N	N	N			02/18/2019	MARION	1 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	STRGHT											02
NONE		N				Mon 1P	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		N/A	W E									000		00
							WOODBURN UA	37.87	SETTLEMIER AVE	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*8*	*58.02*	*-122*	*51*	*34.64*		014000100S00	1															UNK					
																02	NONE 9	TURN-L											
																	N/A	E S									000		00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																								UNK					

CITY OF WOODBURN, MARION COUNTY — Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & N Boones Ferry Rd / Settlemier Ave
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	FC / DISTNC	CITY STREET / FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
05006	N	N	N	N	N	11/20/2017	16	BOONES FERRY RD	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											29
CITY			N			Mon 7P	0	HILLSBORO-SILV HY	N		TRF SIGNAL	N	WET	REAR		PRVTE	N S									000		00
No	*45*	*8 58.04*				*-122 51 34.65*		1	06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	16	M	OR-Y OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	N S									011		00
																PSNGR CAR		01	DRVR	INJC	20	F	OR-Y OR<25		000	000		00
															02	PSNG		01	DRVR	INJC	20	M			000	000		00
00353	N	N	N			01/25/2016	16	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE			N			Mon 7A	0	SETTLEMIER AVE	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S N									000		00
No	*45*	*8 58.04*				*-122 51 34.65*		1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	S N									011		00
																PSNGR CAR		01	DRVR	INJC	64	F	OR-Y OR<25		000	000		00
02475	N	N	N			06/22/2017	16	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
NO RPT			N			Thu 12P	0	SETTLEMIER AVE	S		TRF SIGNAL	N	DRY	REAR		N/A	S N									000		00
No	*45*	*8 58.04*				*-122 51 34.65*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
															02	NONE 9	STOP											
																N/A	S N									011		00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
02575	N	N	N	N	N	07/16/2018	16	HILLSBORO-SILV HY	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	17
CITY			N			Mon 11A	0	SETTLEMIER AVE	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S N									000		00
No	*45*	*8 58.04*				*-122 51 34.65*		1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	18	F	OR-Y OR<25		026	028		17
															02	NONE 0	STOP											
																PRVTE	S N									011	013	00
																PSNGR CAR		01	DRVR	NONE	72	M	OR-Y OR<25		000	022		00
															03	NONE 0	STOP											
																PRVTE	S N									011		00
																PSNGR CAR		01	DRVR	NONE	69	M	OR-Y OR<25		000	000		00

140 HILLSBORO-SILVERTON

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Willow Ave
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
04111	N	N	N			08/16/2019	MARION	1 16		INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NO RPT		N				Fri UNK	WOODBURN	MN 0	HILLSBORO-SILV HY	W		STOP SIGN	N	DRY	REAR		PRVTE	W E									000		00
							WOODBURN UA	36.24	WILLOW AVE	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	26	M	OR-Y		026	000		29
No	*45 9*		*3.50 -122 53 31.35*					014000100S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	W E									012		00
																	PSNGR CAR		01	DRVR	INJC	24	M	OR-Y		000	000		00
																								OR<25					
03326	N	N	N	N	N	08/05/2016	MARION	1 16		INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
CITY		N				Fri 6A	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		STOP SIGN	N	DRY	TURN		PRVTE	N E									000		00
							WOODBURN UA	36.24	WILLOW AVE	01	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	INJC	48	M	OR-Y		028	000		02
No	*45 9*		*3.49 -122 53 31.34*					014000100S00	1															OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	E W									000		00
																	PSNGR CAR		01	DRVR	INJC	31	M	OR-Y		000	000		00
																								OR<25					
00203	N	Y	N	N	N	01/20/2018	MARION	1 16		INTER	3-LEG	N	N	CLD	O-1 L-TURN	01	NONE 0	TURN-L										087	02
CITY		N				Sat 1A	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		STOP SIGN	N	DRY	TURN		PRVTE	W N									000	087	00
							WOODBURN UA	36.24	WILLOW AVE	02	0		N	DARK	INJ		PSNGR CAR		01	DRVR	INJA	23	M	NONE		028,004	000		02
No	*45 9*		*3.49 -122 53 31.34*					014000100S00	1															OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	E W									000		00
																	PSNGR CAR		01	DRVR	NONE	25	M	OR-Y		000	000		00
																								OR<25					
02968	N	N	N	N	N	08/11/2018	MARION	1 16		INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L											02
CITY		N				Sat 2P	WOODBURN	MN 0	HILLSBORO-SILV HY	CN		STOP SIGN	N	DRY	TURN		PRVTE	W N									000		00
							WOODBURN UA	36.24	WILLOW AVE	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	33	F	OR-Y		028,004	000		02
No	*45 9*		*3.49 -122 53 31.34*					014000100S00	1															OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	E W									000		00
																	PSNGR CAR		01	DRVR	INJC	25	F	OR-Y		000	000		00
																								OR<25					

140 HILLSBORO-SILVERTON

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Woodland Ave
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY / TIME	COUNTY / CITY / URBAN AREA	RD# / CMPT / MILEPNT / LRS	FC / MLG / INTERSECTION SEQ#	CONN # / FIRST STREET / SECOND STREET	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF-CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
01789	N	N	N	N	N	05/13/2019	MARION	1	14		INTER	CROSS	N	N	CLR	BIKE	01	NONE 0	TURN-R										02
CITY		N				Mon 4P	WOODBURN	MN 0	HILLSBORO-SILV HY		W		TRF SIGNAL	N	DRY	TURN		PRVTE	N W									000	00
							WOODBURN UA	36.52	WOODLAND AVE		05	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	42	M	OR-Y		027	000	02
No	*45*	*9*	*3.71*	*-122*	*53*	*10.86*		014000100	S00	1															OR<25				
																			STRGHT	01	BIKE	INJC	22	M		01	000	000	00
																			S N										
04656	N	N	N			10/22/2016	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07,29
NONE		N				Sat 10P	WOODBURN	MN 0	HILLSBORO-SILV HY		W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000	00
							WOODBURN UA	36.52	WOODLAND AVE		06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	38	M	OR-Y		043,026	000	07,29
No	*45*	*9*	*3.71*	*-122*	*53*	*10.85*		014000100	S00	1															OR<25				
																	02	NONE 0	STOP										
																		PRVTE	W E									011	00
																		PSNGR CAR		01	DRVR	INJC	47	M	OR-Y		000	000	00
																									OR<25				
																				02	PSNG	INJC	42	F			000	000	00
04502	N	N	N	N	N	11/11/2019	MARION	1	14		INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 9	TURN-L										27,08
CITY		N				Mon 2P	WOODBURN	MN 0	HILLSBORO-SILV HY		CN		TRF SIGNAL	N	DRY	TURN		N/A	UN UN									000	00
							WOODBURN UA	36.52	WOODLAND AVE		01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.73*	*-122*	*53*	*10.87*		014000100	S00	1															UNK				
																	02	NONE 9	TURN-L										
																		N/A	UN UN									000	00
																		SEMI TOW		01	DRVR	NONE	00	U	UNK		000	000	00
																									UNK				
05439	Y	N	N			12/09/2016	MARION	1	14		INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 9	STRGHT										04,01
CITY		N				Fri 9A	WOODBURN	MN 0	HILLSBORO-SILV HY		CN		TRF SIGNAL	N	WET	ANGL		N/A	E W									000	00
							WOODBURN UA	36.52	WOODLAND AVE		02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*3.71*	*-122*	*53*	*10.85*		014000100	S00	1															UNK				
																	02	NONE 9	STRGHT										
																		N/A	S N									000	00
																		SEMI TOW		01	DRVR	NONE	00	U	UNK		000	000	00
																									UNK				
04332	N	N	N	N	N	11/01/2019	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY		N				Fri 7P	WOODBURN	MN 0	HILLSBORO-SILV HY		CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W N									000	00
							WOODBURN UA	36.52	WOODLAND AVE		02	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	42	F	NONE		028,004	000	02
No	*45*	*9*	*3.74*	*-122*	*53*	*10.84*		014000100	S00	1															OR<25				
																				02	PSNG	INJC	09	M			000	000	00

140 HILLSBORO-SILVERTON

Intersectional Crashes at OR-219, Hillsboro-Silverton Hwy (#140) & Woodland Ave
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	CONN #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																	02	NONE 0 PRVTE	STRGHT E W									000	00
																		PSNGR CAR		01	DRVR	NONE	40	M	OTH-Y OR<25		000	000	00
																				02	PSNG	INJC	39	F			000	000	00
																				03	PSNG	INJC	16	F			000	000	00
																				04	PSNG	INJC	09	F			000	000	00
02296	N	N	N	N	N	06/10/2017	MARION	1 14			INTER	CROSS	N	N	RAIN	S-1TURN	01	NONE 0	STRGHT										14
CITY		N				Sat 9P	WOODBURN	MN 0	HILLSBORO-SILV HY		CN		L-GRN-SIG	N	WET	TURN		PRVTE	N S								000	00
							WOODBURN UA	36.52	WOODLAND AVE		03	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	34	M	NONE OR>25		003,019	000	14
No	*45*	*9*	*3.71*	*-122*	*53*	*10.85*	014000100S00			1																			
																	02	NONE 0 PRVTE	TURN-L N E									000	00
																		PSNGR CAR		01	DRVR	INJC	18	M	OR-Y OR<25		000	000	00
																				02	PSNG	INJC	18	F			000	000	00
04266	N	N	N			10/29/2019	MARION	1 14			INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	U-TURN										02
CITY		N				Tue 6A	WOODBURN	MN 0	HILLSBORO-SILV HY		CN		TRF SIGNAL	N	DRY	TURN		N/A	E E								000	00
							WOODBURN UA	36.52	WOODLAND AVE		03	0		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
No	*45*	*9*	*3.72*	*-122*	*53*	*10.86*	014000100S00			1																			
																	02	NONE 9 N/A	STRGHT W E									000	00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00

MARION COUNTY

Intersectional Crashes at Parr Rd NE & Butteville Rd NE
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG / MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	MILEPNT / DIST FROM / INTERSECT	COUNTY ROADS FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
03013	N	N	N			7/19/2016	2.86	BUTTEVILLE RD NE A	INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE 9	TURN-R										034	08
NONE			N			Tue 4P			N		STOP SIGN	N	DRY	FIX		N/A	E N									007		00
No	*45*	*7*	*59.20*	*-122*	*53*	*50.77*		05	0			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																							UNK					
04172	N	N	N	N	N	11/2/2018	2.86	BUTTEVILLE RD NE A	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											27,29
COUNTY			N			Fri 7P			N		STOP SIGN	N	DRY	REAR		PRVTE	N S									000		00
No	*45*	*7*	*59.20*	*-122*	*53*	*50.77*		06	0			N	DARK	INJ		PSNGR CAR		01	DRVR	NONE	19	M	OR-Y		016,026	038		27,29
																							OR<25					
															02	NONE 0	STOP											
																PRVTE	N S									012		00
																PSNGR CAR		01	DRVR	NONE	22	F	OR-Y		000	000		00
																							OR<25					
																		02	PSNG	INJC	17	F			000	000		00
02628	Y	N	N	N	N	7/19/2018	2.86	BUTTEVILLE RD NE A	INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE 0	STRGHT										079,092	01,26
COUNTY			N			Thu 3A			S		STOP SIGN	N	DRY	FIX		PRVTE	N S									007	079,092	26
No	*45*	*7*	*59.20*	*-122*	*53*	*50.77*		05	0			N	DARK	INJ		PSNGR CAR		01	DRVR	INJA	22	M	OR-Y		047,081	000	092	01,26
																							OR<25					
01193	Y	N	N	N	N	4/8/2018	2.86	BUTTEVILLE RD NE A	INTER	3-LEG	N	Y	CLR	FIX OBJ	01	NONE 0	TURN-R										043,079	01,03
COUNTY			N			Sun 9P			W		STOP SIGN	N	DRY	FIX		PRVTE	E N									000	043,079	00
No	*45*	*7*	*59.20*	*-122*	*53*	*50.77*		05	0			N	DARK	INJ		PSNGR CAR		01	DRVR	INJC	22	M	OR-Y		047,021	000		01,03
																							OR>25					
00010	N	N	N			1/1/2016	2.86	BUTTEVILLE RD NE A	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NONE			N			Fri 1A			CN		STOP SIGN	N	DRY	TURN		PRVTE	N S									000		00
No	*45*	*7*	*59.20*	*-122*	*53*	*50.77*		01	0			N	DLIT	INJ		PSNGR CAR		01	DRVR	INJB	22	F	OR-Y		000	000		00
																							OR<25					
																		02	PSNG	INJB	23	M			000	000		00
															02	NONE 0	TURN-L											
																PRVTE	E S									000		00
																PSNGR CAR		01	DRVR	NONE	33	M	OR-Y		028	000		02
																							OR<25					
03078	N	N	N			8/13/2019	2.86	BUTTEVILLE RD NE A	INTER	3-LEG	N	N	CLR	ANGL-STP	01	NONE 0	TURN-L											02
NONE			N			Tue 5P			CN		STOP SIGN	N	DRY	TURN		PRVTE	E S									000		00
No	*45*	*7*	*59.21*	*-122*	*53*	*50.78*		01	0			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	45	M	OR-Y		028	000		02
																							OR<25					
															02	NONE	STOP											
																PRVTE	N S									012		00
																PSNGR CAR		01	DRVR	INJC	35	M	OR-Y		000	000		00
																							OR<25					

MARION COUNTY

Intersectional Crashes at Parr Rd NE & Butteville Rd NE
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG/MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	MILEPNT / DIST FROM / INTERSECT	COUNTY ROADS FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
02844	N	N	N	N	N	7/16/2017	2.86	BUTTEVILLE RD NE A	INTER	3-LEG	N	N	CLR	S-1TURN	01	NONE 0	STRGHT											27,29
COUNTY		N				Sun 6P			CN		STOP SIGN	N	DRY	REAR		PRVTE	N S									000		00
No	45	7	59.20	-122	53	50.77			03	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	M	NONE OR<25		016,042	038		27,29
															02	NONE 0	TURN-L											
																PRVTE	N E									000		00
																PSNGR CAR		01	DRVR	NONE	35	M	OR-Y OR>25		000	000		00
																		02	PSNG	INJC	67	F			000	000		00
																		03	PSNG	INJC	32	F			000	000		00
03641	N	N	N	N	N	8/24/2016	2.86	BUTTEVILLE RD NE A	INTER	3-LEG	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
COUNTY		N				Wed 3P			CN		STOP SIGN	N	DRY	TURN		PRVTE	S N									000		00
No	45	7	59.20	-122	53	50.77			04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	61	F	OR-Y OR>25		000	000		00
															02	NONE 0	TURN-L											
																PRVTE	N E									000		00
																PSNGR CAR		01	DRVR	NONE	38	F	OR-Y OR<25		028,004	000		02
00142	N	N	N			1/10/2018	0.00	PARR RD NE	INTER	3-LEG	N	N	CLR	ANGL-STP	01	NONE 0	TURN-L											08
NONE		N				Wed 6P			E		STOP SIGN	N	DRY	TURN		PRVTE	N E									000		00
No	45	7	59.20	-122	53	50.77			06	0		N	DARK	INJ		PSNGR CAR		01	DRVR	NONE	30	F	OR-Y OR<25		002,026	000		08
															02	NONE 0	STOP											
																PRVTE	E W									011		00
																PSNGR CAR		01	DRVR	INJC	56	M	OR-Y OR<25		000	000		00
																		02	PSNG	INJC	53	F			000	000		00
																		03	PSNG	INJC	15	M			000	000		00

MARION COUNTY

Intersectional Crashes at Lebrun Rd NE & Butteville Rd NE
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG/MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	MILEPNT / DIST FROM / INTERSECT	COUNTY ROADS FIRST STREET / SECOND STREET / INTERSECTION SEQ #	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFF-RD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
04012	N	N	N	N	N	10/11/2019	3.28	BUTTEVILLE RD NE A	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											27,29
COUNTY		N				Fri 8A			S		STOP SIGN	N	DRY	REAR		N/A	S N									000		00
No						*45 8 16.53 -122 53 50.66*			06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																								UNK				
															02	NONE 9	STOP											
																N/A	S N									012		00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																							UNK					

081 PACIFIC HIGHWAY EAST — Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DAY/TIME / LAT/LONG	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01131	N	N	N	N	N	03/18/2016	MARION	1	14		INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE 9	TURN-R										100	08
CITY		N				Fri 5P	WOODBURN	MN 0	WOODBURN-ESTACADA H	N		TRF SIGNAL		N	DRY	FIX		N/A	E N								000		00
							WOODBURN UA	31.70	PACIFIC HY 99E	05	0			N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	U	UNK		000	000		00
No	45	9				4.66 -122 49 52.38		008100100	S00 1																UNK					
02858	N	N	N			07/24/2015	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		N				Fri UNK	WOODBURN	MN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL		N	DRY	REAR		PRVTE	NE SW								000		00
							WOODBURN UA	31.70	PACIFIC HY 99E	06	1			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	51	F	OR-Y		026	000		29
No	45	9				4.66 -122 49 52.38		008100100	S00 1																OR<25					
																	02	NONE 0	STOP										
																		PRVTE	NE SW									011		00
																		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		000	000		00
																									UNK					
03475	N	Y	N	N	N	09/11/2015	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
CITY		N				Fri 8P	WOODBURN	MN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL		N	DRY	REAR		PRVTE	NE SW								000		00
							WOODBURN UA	31.70	PACIFIC HY 99E	06	1			N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	67	M	OR-Y		043,026	000		07
No	45	9				4.66 -122 49 52.38		008100100	S00 1																OR<25					
																	02	NONE 0	STOP										
																		PRVTE	NE SW									011	013	00
																		PSNGR CAR		01	DRVR	NONE	27	F	OR-Y		000	022		00
																									OR<25					
																				02	PSNG	NO<5	01	M			000	000		00
																	03	UNKN 0	STOP										
																		UNKN	NE SW									011		00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																									UNK					
00417	N	N	N	N	N	01/29/2016	MARION	1	14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT											29
CITY		N				Fri 5P	WOODBURN	MN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL		N	WET	REAR		N/A	NE SW								000		00
							WOODBURN UA	31.70	PACIFIC HY 99E	06	0			N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	45	9				4.66 -122 49 52.38		008100100	S00 1																UNK					
																	02	NONE 9	STOP										
																		N/A	NE SW									011		00
																		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																									UNK					
04475	N	N	N	N	N	10/12/2016	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
CITY		N				Wed 10A	WOODBURN	MN 0	HILLSBORO-SILV HY	NE		TRF SIGNAL		N	DRY	REAR		PRVTE	NE SW								000		00
							WOODBURN UA	31.70	PACIFIC HY 99E	06	0			N	DAY	INJ		TRUCK		01	DRVR	NONE	57	M	OR-Y		026	000		29
No	45	9				4.66 -122 49 52.38		008100100	S00 1																OR>25					

081 PACIFIC HIGHWAY EAST — Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG/MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# CMPT/MLG MILEPNT LRS	FC	CONN # FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																	02	NONE 0 / PRVTE	STOP / NE SW									011	00
																		PSNGR CAR		01	DRVR	INJC	40	M	OR-Y / OR<25		000	000		00
05247	N	N	N			12/05/2017 / Tue / 2P	MARION / WOODBURN	1 / MN / 0	16	/ HILLSBORO-SILV HY	INTER / NE	CROSS /	N / TRF SIGNAL		N CLR / N DRY	S-1STOP / REAR	01	NONE 0 / PRVTE	STRGHT / NE SW										29
NONE			N																									000	00
							WOODBURN UA	31.70		PACIFIC HY 99E	06	0			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	26	M	OR-Y / OR<25		026	000		29
No						*45 9 4.66 -122 49 52.38*		008100100S00		1																				
																	02	NONE 0 / PRVTE	STOP / NE SW									011	00
																		PSNGR CAR		01	DRVR	INJC	26	F	OR-Y / OR<25		000	000		00
00248	N	N	N			01/23/2018 / Tue / 7A	MARION / WOODBURN	1 / MN / 0	16	/ HILLSBORO-SILV HY	INTER / NE	CROSS /	N / TRF SIGNAL		N RAIN / N WET	ANGL-STP / TURN	01	NONE 0 / PRVTE	TURN-L / W NE										08
NONE			N																									000	00
							WOODBURN UA	31.70		PACIFIC HY 99E	06	0			N DAY	INJ		PSNGR CAR		01	DRVR	INJC	48	F	OR-Y / OR<25		002,026	000		08
No						*45 9 4.67 -122 49 52.39*		008100100S00		1										02	PSNG	INJB	13	F			000	000		00
																	02	NONE 0 / PRVTE	STOP / NE SW									012	00
																		PSNGR CAR		01	DRVR	NONE	38	M	OR-Y / OR<25		000	000		00
02698	N	N	N			07/24/2018 / Tue / 4P	MARION / WOODBURN	1 / MN / 0	16	/ HILLSBORO-SILV HY	INTER / NE	CROSS /	N / TRF SIGNAL		N CLR / N DRY	S-1STOP / REAR	01	NONE 0 / PRVTE	STRGHT / NE SW										29
NO RPT			N																									000	00
							WOODBURN UA	31.70		PACIFIC HY 99E	06	0			N DAY	INJ		PSNGR CAR		01	DRVR	NONE	51	M	OR-Y / OR<25		026	000		29
No						*45 9 4.66 -122 49 52.38*		008100100S00		1																				
																	02	NONE 0 / PRVTE	STOP / NE SW									011	00
																		PSNGR CAR		01	DRVR	INJC	60	F	OR-Y / OR<25		000	000		00
04933	N	N	N			12/23/2018 / Sun / 6P	MARION / WOODBURN	1 / MN / 0	16	/ HILLSBORO-SILV HY	INTER / NE	CROSS /	N / TRF SIGNAL		N RAIN / N WET	S-1STOP / REAR	01	NONE 0 / PRVTE	STRGHT / NE SW										29
NONE			N																									000	00
							WOODBURN UA	31.70		PACIFIC HY 99E	06	1			N DARK	INJ		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y / OR<25		026	000		29
No						*45 9 4.66 -122 49 52.38*		008100100S00		1																				
																	02	NONE 0 / PRVTE	STOP / NE SW									011	00
																		PSNGR CAR		01	DRVR	INJC	39	M	OR-Y / OR<25		000	000		00
																				02	PSNG	INJC	00	F			000	000		00

081 PACIFIC HIGHWAY EAST — Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	S P E D	A L C	D R U G / M J	S C L	W O R K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR / OWNER / VEH TYPE	QTY	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACTN EVENT	CAUSE
02580	N	N	N			06/11/2016	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	9	STRGHT										29
NONE		N				Sat 3P	WOODBURN	MN 0		WOODBURN-ESTACADA H	S		TRF SIGNAL	N	DRY	REAR		N/A		S N									000	00
							WOODBURN UA	31.70		PACIFIC HY 99E	06	1		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		008100100	S00	1																UNK				
																	02	NONE	9	STOP										
																		N/A		S N									011	00
																		PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000	00
																										UNK				
00346	N	N	N	N	N	01/27/2017	MARION	1	14		INTER	CROSS	N	N	FOG	S-1STOP	01	NONE	0	STRGHT										07
CITY		N				Fri 10A	WOODBURN	MN 0		WOODBURN-ESTACADA H	S		TRF SIGNAL	N	WET	REAR		PRVTE		S N									000	00
							WOODBURN UA	31.70		PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR			01	DRVR	NONE	56	F	OR-Y		043,026	000	07
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		008100100	S00	1																OR<25				
																	02	NONE	0	STOP										
																		PRVTE		S N									011	00
																		PSNGR CAR			01	DRVR	INJC	29	F	OR-Y		000	000	00
																										OR<25				
01056	N	N	N			03/30/2018	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE	9	STRGHT										29
NONE		N				Fri 1P	WOODBURN	MN 0		PACIFIC HY 99E	S		TRF SIGNAL	N	DRY	REAR		N/A		S N									000	00
							WOODBURN UA	31.70		WOODBURN-ESTACADA H	06	1		N	DAY	PDO		PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		008100100	S00	1																UNK				
																	02	NONE	9	STOP										
																		N/A		S N									012	00
																		PSNGR CAR			01	DRVR	NONE	00	U	UNK		000	000	00
																										UNK				
03610	N	N	N			09/25/2018	MARION	1	14		INTER	CROSS	N	N	CLR	S-1STOP	01	UNKN	0	STRGHT										29
NO RPT		N				Tue 8P	WOODBURN	MN 0		WOODBURN-ESTACADA H	S		TRF SIGNAL	N	DRY	REAR		UNKN		S N									000	00
							WOODBURN UA	31.70		PACIFIC HY 99E	06	0		N	DLIT	INJ		UNKNOWN			01	DRVR	NONE	00	U	UNK		026	000	29
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		008100100	S00	1																UNK				
																	02	NONE	0	STOP										
																		PRVTE		S N									011	00
																		PSNGR CAR			01	DRVR	INJC	40	M	OR-Y		000	000	00
																										OR<25				
00009	N	N	N	N	N	01/02/2018	MARION	1	14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE	0	STRGHT										27,02
CITY		N				Tue 7A	WOODBURN	MN 0		HILLSBORO-SILV HY	CN		TRF SIGNAL	N	DRY	TURN		PRVTE		NE SW									000	00
							WOODBURN UA	31.70		PACIFIC HY 99E	01	0		N	DAWN	INJ		PSNGR CAR			01	DRVR	NONE	41	F	OR-Y		000	000	00
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		008100100	S00	1																OR<25				
																					02	PSNG	NONE	04	M			000	000	00

081 PACIFIC HIGHWAY EAST — Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
																02	NONE 0 PRVTE	TURN-L SW W									000		00
																	PSNGR CAR		01	DRVR	INJC	26	F	OR-Y OR<25		016,028,004	038		27,02
04717	N	N	N	N	N	11/25/2019	MARION	1	14		INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE 9 N/A	STRGHT N S											32,04,27
CITY		N				Mon 9P	WOODBURN	MN	0 HILLSBORO-SILV HY		CN		TRF SIGNAL		N	DRY	ANGL											000		00
							WOODBURN UA	31.70	PACIFIC HY 99E		01	0			N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK	000	000		00
No						*45 9 4.67 -122 49 52.40*		008100100	S00	1																					
																02	NONE 9 N/A	STRGHT E W									000		00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK	000	000		00
01709	N	N	N			05/11/2015	MARION	1	14		INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE 0 PRVTE	TURN-R E N											02
CITY		N				Mon 12P	WOODBURN	MN	0 WOODBURN-ESTACADA H		CN		TRF SIGNAL		N	DRY	TURN											000		00
							WOODBURN UA	31.70	PACIFIC HY 99E		02	1			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	19	F	OR-Y OR<25	028	000		02
No						*45 9 4.66 -122 49 52.38*		008100100	S00	1																					
																02	NONE 1 PRVTE	STRGHT S N									000		00
																	SEMI TOW		01	DRVR	NONE	30	M	OTH-Y N-RES	000	000		00
04469	N	N	N			11/13/2015	MARION	1	14		INTER	CROSS	N		N	RAIN	ANGL-OTH	01	NONE 0 PRVTE	STRGHT E W										013	27,04
CITY		N				Fri 8P	WOODBURN	MN	0 WOODBURN-ESTACADA H		CN		TRF SIGNAL		N	WET	ANGL											000		00
							WOODBURN UA	31.70	PACIFIC HY 99E		02	0			N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	68	M	OR-Y OR<25	016,020	038		27,04
No						*45 9 4.66 -122 49 52.38*		008100100	S00	1											02	PSNG	INJC	70	F		000	000		00
																02	NONE 0 PRVTE	STRGHT S N									000	013	00
																	PSNGR CAR		01	DRVR	INJC	49	M	OR-Y OR<25	000	022		00
																			02	PSNG	INJC	10	M		000	000		00
																			03	PSNG	INJC	17	M		000	000		00
																03	NONE 0 PRVTE	STRGHT S N									000		00
																	PSNGR CAR		01	DRVR	NONE	71	M	OR-Y OR<25	000	000		00
04442	N	N	N			10/20/2017	MARION	1	14		INTER	CROSS	N		N	CLR	ANGL-OTH	01	NONE 9 N/A	TURN-R E N											02
NONE		N				Fri 2P	WOODBURN	MN	0 WOODBURN-ESTACADA H		CN		TRF SIGNAL		N	DRY	TURN											000		00
							WOODBURN UA	31.70	PACIFIC HY 99E		02	0			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK	000	000		00
No						*45 9 4.66 -122 49 52.38*		008100100	S00	1																					

081 PACIFIC HIGHWAY EAST — Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG	SCH	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																02	NONE / 9 / N/A	STRGHT / S / N									000	00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK / UNK		000	000	00
04476	N	N	N			10/21/2017	MARION	1	14		INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE / 0	TURN-R										02
NO RPT			N			Sat 7P	WOODBURN	MN	0 WOODBURN-ESTACADA H		CN		TRF SIGNAL	N	WET	TURN		PRVTE	E N									000	00
							WOODBURN UA	31.70	PACIFIC HY 99E		02	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	29	M	OR-Y / OR<25		028	000	02
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		008100100	S00 1																			
																02	NONE / 1 / PRVTE	STRGHT / S / N									000	00
																	PSNGR CAR		01	DRVR	INJB	59	F	OR-Y / OR<25		000	000	00
02787	N	N	N			07/04/2016	MARION	1	14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE / 0	STRGHT										04
CITY			N			Mon 9P	WOODBURN	MN	0 WOODBURN-ESTACADA H		CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	W E									000	00
							WOODBURN UA	31.70	PACIFIC HY 99E		04	1		N	DARK	INJ		PSNGR CAR		01	DRVR	INJC	28	F	OR-Y / OR<25		097	000	00
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		008100100	S00 1																			
																02	NONE / 0	STRGHT									000	00
																	PRVTE	S N										
																	PSNGR CAR		01	DRVR	NONE	39	M	OR-Y / OR>25		097	000	00
05532	N	N	N	N	N	12/21/2017	MARION	1	14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE / 0	TURN-L										04
CITY			N			Thu 5P	WOODBURN	MN	0 WOODBURN-ESTACADA H		CN		TRF SIGNAL	N	DRY	TURN		PRVTE	N E									022	00
							WOODBURN UA	31.70	PACIFIC HY 99E		04	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	42	F	OR-Y / OR<25		020	022	04
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		008100100	S00 1																			
																02	NONE / 0	STRGHT									000	00
																	PRVTE	S N										
																	PSNGR CAR		01	DRVR	INJC	70	F	OR-Y / OR<25		000	000	00
																03	NONE / 0	STRGHT									022	00
																	PRVTE	S N										
																	PSNGR CAR		01	DRVR	NONE	26	M	OR-Y / OR<25		000	022	00
03454	N	Y	N	N	N	09/14/2018	MARION	1	14		INTER	CROSS	N	N	CLR	S-1TURN	01	NONE / 0	STRGHT										33,04,05
CITY			N			Fri 11P	WOODBURN	MN	0 HILLSBORO-SILV HY		CN		TRF SIGNAL	N	DRY	TURN		PRVTE	NE SW									031	00
							WOODBURN UA	31.70	PACIFIC HY 99E		04	1		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJA	18	M	NONE / OR<25		051,020,034	000	33,04,05
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		008100100	S00 1																			

081 PACIFIC HIGHWAY EAST — Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	S P E D	A L C	D R U G / M J	S C H L	W O R K	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																02	NONE 0 / PRVTE	TURN-L / NE E									000	00
																	PSNGR CAR		01	DRVR	INJA	24	F	OR-Y / OR<25		000	000	00
																			02	PSNG	INJB	24	M			000	000	00
																			03	PSNG	INJC	22	F			000	000	00
																			04	PSNG	INJC	19	M			000	000	00

140 HILLSBORO-SILVERTON Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG / MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
02917	N	N	N	N	N	07/13/2016	MARION	1 14		INTER	CROSS	N	N	CLR	PED	01	NONE 0	TURN-R										27,02
CITY		N				Wed 12P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		STOP SIGN	N	DRY	PED		PRVTE	W SW									000	00
							WOODBURN UA	39.27	PACIFIC HY 99E	09	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		016,029	038	27,02
No	*45*	*9*	*4.70*	*-122*	*49*	*53.90*		014000100S00	1															OR<25				
																		STRGHT	01	PED	INJB	26	F		01	000	000	00
																		SW NE										
00603	N	N	N			02/09/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE		N				Mon UNK	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000	00
							WOODBURN UA	39.29	PACIFIC HY 99E	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		026	000	29
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		014000100S00	1															UNK				
																02	NONE 0	STOP										
																	PRVTE	W E									011	00
																	PSNGR CAR		01	DRVR	NONE	45	M	OR-Y		000	000	00
																								UNK				
01653	N	N	N	N	N	05/07/2015	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										07
CITY		N				Thu 2P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000	00
							WOODBURN UA	39.29	PACIFIC HY 99E	06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	23	M	OR-Y		043,026	000	07
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		014000100S00	1															OR<25				
																02	NONE 0	STOP										
																	PRVTE	W E									011	00
																	PSNGR CAR		01	DRVR	NONE	42	M	OR-Y		000	000	00
																								OR>25				
05183	N	N	N	N	N	12/23/2015	MARION	1 14		INTER	CROSS	N	N	RAIN	O-1STOP	01	NONE 0	BACK										10
CITY		N				Wed 1P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	WET	BACK		PRVTE	E W									000	00
							WOODBURN UA	39.29	PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	58	M	OR-Y		011	000	10
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		014000100S00	1															OR<25				
																02	NONE 0	STOP										
																	PRVTE	W E									011	00
																	PSNGR CAR		01	DRVR	INJC	31	F	OR-Y		000	000	00
																								OR<25				
03029	N	N	N			07/26/2017	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
NONE		N				Wed 3P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000	00
							WOODBURN UA	39.29	PACIFIC HY 99E	06	1		N	DAY	INJ		SEMI TOW		01	DRVR	NONE	48	M	OR-Y		026	000	29
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		014000100S00	1															OR>25				
																02	NONE 0	STOP										
																	PRVTE	W E									011	00
																	PSNGR CAR		01	DRVR	INJC	36	M	OR-Y		000	000	00
																								OR>25				

140 HILLSBORO-SILVERTON Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG / MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
03108	N	N	N	N	N	08/01/2017	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 1	STRGHT											07
CITY		N				Tue 1P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		L-GRN-SIG	N	DRY	REAR		PRVTE	W E										000		00
							WOODBURN UA	39.29	PACIFIC HY 99E	06	1		N	DAY	INJ		SEMI TOW		01	DRVR	INJC	55	M	OTH-Y		043,026	000		07
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		014000100S00	1															N-RES					
																02	NONE 0	STOP											
																	PRVTE	W E									011		00
																	PSNGR CAR		01	DRVR	INJC	20	F	OR-Y		000	000		00
																								OR<25					
00985	N	N	N			03/23/2018	MARION	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT											07
NO RPT		N				Fri 11A	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	WET	REAR		N/A	W E									000		00
							WOODBURN UA	39.29	PACIFIC HY 99E	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*4.66*	*-122*	*49*	*52.37*		014000100S00	1															UNK					
																02	NONE 9	STOP											
																	N/A	W E									011		00
																	SEMI TOW		01	DRVR	NONE	00	U	UNK		000	000		00
																								UNK					
02059	N	N	N	N	N	06/10/2018	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											27,29
NO RPT		N				Sun 4P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000		00
							WOODBURN UA	39.29	PACIFIC HY 99E	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	37	F	OTH-Y		016,026	038		27,29
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		014000100S00	1															N-RES					
																			02	PSNG	INJC	10	M			000	000		00
																02	NONE 0	STOP											
																	PRVTE	W E									012		00
																	PSNGR CAR		01	DRVR	INJC	33	M	OR-Y		000	000		00
																								OR<25					
																			02	PSNG	INJC	33	F			000	000		00
02894	N	N	N			08/05/2018	MARION	1 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
CITY		N				Sun 7P	WOODBURN	MN 0	HILLSBORO-SILV HY	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000		00
							WOODBURN UA	39.29	PACIFIC HY 99E	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		026	000		29
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		014000100S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	W E									011		00
																	PSNGR CAR		01	DRVR	INJC	23	M	OR-Y		000	000		00
																								OR<25					
																			02	PSNG	INJC	50	F			000	000		00
																			03	PSNG	NONE	01	M			000	000		00

140 HILLSBORO-SILVERTON Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00522	N	N	N			02/10/2019	MARION	1	14		INTER	CROSS	N		N	CLR	S-1STOP	01	NONE 0	STRGHT										29
CITY			N			Sun 2P	WOODBURN	MN 0	HILLSBORO-SILV HY	W			TRF SIGNAL		N	DRY	REAR		PRVTE	W E									000	00
							WOODBURN UA	39.29	PACIFIC HY 99E	06	1				N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	29	M	OR-Y		026	000		29
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		014000100	S00	1																	OR<25				
																		02	NONE 0	STOP										
																			PRVTE	W E									011	00
																			PSNGR CAR		01	DRVR	NONE	53	M	NONE		000	000		00
																										OR<25				
																					02	PSNG	INJC	62	F			000	000		00

161 WOODBURN-ESTACADA

Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPED	ALC	DRUG / MJ	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLEPNT / LRS	FC / MLG	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
01257	N	N	N	N	N	04/08/2015	MARION	1	16		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 1	STRGHT										054	07
CITY		N				Wed 7A	WOODBURN	MN 0		WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	REAR		PRVTE	E W									000	054	00
							WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DAY	INJ		SEMI TOW		01	DRVR	NONE	67	M	OR-Y		043,026	000		07
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		016100100S00		1															OR<25					
																	02	NONE 0	STOP											
																		PRVTE	E W									011		00
																		PSNGR CAR		01	DRVR	INJC	47	M	OR-Y		000	000		00
																									OR<25					
01315	N	N	N			04/12/2015	MARION	1	16		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NO RPT		N				Sun 5P	WOODBURN	MN 0		WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000		00
							WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		026	000		29
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		016100100S00		1															OR<25					
																	02	NONE 0	STOP											
																		PRVTE	E W									011		00
																		PSNGR CAR		01	DRVR	NONE	49	M	OR-Y		000	000		00
																									OR<25					
01586	N	N	N			04/18/2015	MARION	1	16		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE		N				Sat 7P	WOODBURN	MN 0		WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000		00
							WOODBURN UA	0.00		PACIFIC HY 99E	06	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	29	F	OR-Y		026	000		29
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		016100100S00		1															OR<25					
																	02	NONE 0	STOP											
																		PRVTE	E W									011		00
																		PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		000	000		00
																									OR<25					
01713	N	N	N	N	N	05/12/2015	MARION	1	16		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											07
CITY		N				Tue 11A	WOODBURN	MN 0		WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	REAR		PRVTE	E W									000		00
							WOODBURN UA	0.00		PACIFIC HY 99E	06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	48	M	OR-Y		043,026	000		07
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		016100100S00		1															OR<25					
																	02	NONE 1	STOP											
																		PRVTE	E W									011		00
																		SEMI TOW		01	DRVR	NONE	23	M	OR-Y		000	000		00
																									OR<25					
03768	Y	N	N	N	N	08/31/2016	MARION	1	16		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 9	STRGHT											01,29
CITY		N				Wed 11A	WOODBURN	MN 0		WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	REAR		N/A	E W									000		00
							WOODBURN UA	0.00		PACIFIC HY 99E	06	1		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		016100100S00		1															UNK					

161 WOODBURN-ESTACADA Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALC	DRUG	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / MILEPNT / LRS	FC / CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN EVENT	CAUSE
																02	NONE 9	STOP									
																	N/A	E W									011	00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																								UNK				
04926	N	N	N	N	N	11/07/2016	MARION	1 16		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										29
CITY		N				Mon 9A	WOODBURN	MN 0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W									000	00
							WOODBURN UA	0.00	PACIFIC HY 99E	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	30	F	OR-Y		026	000	29
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		016100100S00	1															OR<25				
																02	NONE 0	STOP									
																	PRVTE	E W									011	00
																	PSNGR CAR		01	DRVR	INJC	19	F	OR-Y		000	000	00
																								OR<25				
																			02	PSNG	INJC	54	F			000	000	00
																			03	PSNG	INJC	56	F			000	000	00
																			04	PSNG	INJC	56	F			000	000	00
05739	N	N	N	N	N	12/27/2016	MARION	1 16		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT										07
CITY		N				Tue 2P	WOODBURN	MN 0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	REAR		PRVTE	E W									000	00
							WOODBURN UA	0.00	PACIFIC HY 99E	06	1		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	89	F	OR-Y		043,026	000	07
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		016100100S00	1															OR<25				
																02	NONE 0	STOP									
																	PRVTE	E W									011	00
																	PSNGR CAR		01	DRVR	INJC	66	M	OR-Y		000	000	00
																								OR>25				
																			02	PSNG	INJC	65	F			000	000	00
03473	N	N	N			08/06/2017	MARION	1 16		INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 9	STRGHT										29
NONE		N				Sun 12P	WOODBURN	MN 0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	UNK	REAR		N/A	E W									000	00
							WOODBURN UA	0.00	PACIFIC HY 99E	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		016100100S00	1															UNK				
																02	NONE 9	STOP									
																	N/A	E W									011	00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																								UNK				
00100	N	N	N			01/11/2018	MARION	1 16		INTER	CROSS	N	N	RAIN	O-1STOP	01	NONE 0	BACK										10
NO RPT		N				Thu 6A	WOODBURN	MN 0	WOODBURN-ESTACADA H	E		TRF SIGNAL	N	WET	BACK		PRVTE	W E									000	00
							WOODBURN UA	0.00	PACIFIC HY 99E	06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		011	000	10
No	*45*	*9*	*4.66*	*-122*	*49*	*52.38*		016100100S00	1															OR<25				

161 WOODBURN-ESTACADA Intersectional Crashes OR 99E, Pacific Hwy East (081) & OR 214 / OR 211 in Woodburn, OR. Includes crashes at the turn leg.
January 1, 2015 through December 31, 2019

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / MILEPNT / LRS	CONN # / FIRST STREET / SECOND STREET / INTERSECTION SEQ#	RD CHAR / DIRECT / LOCTN	INT-TYP (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CNTL	OFFRD / WTHR / SURF / LIGHT	CRASH TYP / COLL TYP / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
															02	NONE PRVTE	0 STOP E W										011		00
																PSNGR CAR		01	DRVR	INJC	48	F	OR-Y OR<25		000	000		00

ACTION CODE TRANSLATION LIST

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

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

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

COLLISION TYPE CODE TRANSLATION LIST

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

CRASH TYPE CODE TRANSLATION LIST

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

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

DRIVER RESIDENCE CODE TRANSLATION LIST

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

ERROR CODE TRANSLATION LIST

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

ERROR CODE TRANSLATION LIST

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

EVENT CODE TRANSLATION LIST

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

EVENT CODE TRANSLATION LIST

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

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)
135	RAIL OCC	INJURED OCCUPANT OF RAILWAY TRAIN, LIGHT RAIL, STREET CAR OR CABLE CAR

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

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

HIGHWAY COMPONENT TRANSLATION LIST

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

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY (K)
2	INJA	SUSPECTED SERIOUS INJURY (A)
3	INJB	SUSPECTED MINOR INJURY (B)
4	INJC	POSSIBLE INJURY (C)
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	NO APPARENT INJURY (O)

LIGHT CONDITION CODE TRANSLATION LIST

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

MEDIAN TYPE CODE TRANSLATION LIST

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

MILEAGE TYPE CODE TRANSLATION LIST

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

MOVEMENT TYPE CODE TRANSLATION LIST

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

NON-MOTORIST LOCATION CODE TRANSLATION LIST

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

ROAD CHARACTER CODE TRANSLATION LIST

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

PARTICIPANT TYPE CODE TRANSLATION LIST

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

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBCN-R	FLASHING BEACON - RED (STOP)
003	FLASHBCN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING
095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
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

WEATHER CONDITION CODE TRANSLATION LIST

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

Appendix E 2023 Background Traffic Conditions Operations Worksheets

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	66	114	82	17	3
Future Vol, veh/h	8	66	114	82	17	3
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, %	-	-2	0	-	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	0	9	4	3	0	0
Mvmt Flow	11	90	156	112	23	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	268	0	-	0	324	212
Stage 1	-	-	-	-	212	-
Stage 2	-	-	-	-	112	-
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	1307	-	-	-	674	833
Stage 1	-	-	-	-	828	-
Stage 2	-	-	-	-	918	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1307	-	-	-	668	833
Mov Cap-2 Maneuver	-	-	-	-	668	-
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	918	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1307	-	-	-	688
HCM Lane V/C Ratio	0.008	-	-	-	0.04
HCM Control Delay (s)	7.8	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	92	252	203	79	7
Future Vol, veh/h	4	92	252	203	79	7
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	76	76	76	76	76	76
Heavy Vehicles, %	0	7	4	9	31	29
Mvmt Flow	5	121	332	267	104	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	599	0	-	0	597	466
Stage 1	-	-	-	-	466	-
Stage 2	-	-	-	-	131	-
Critical Hdwy	4.1	-	-	-	6.71	6.49
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.2	-	-	-	3.779	3.561
Pot Cap-1 Maneuver	988	-	-	-	421	545
Stage 1	-	-	-	-	575	-
Stage 2	-	-	-	-	828	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	988	-	-	-	419	545
Mov Cap-2 Maneuver	-	-	-	-	419	-
Stage 1	-	-	-	-	572	-
Stage 2	-	-	-	-	828	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	16.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	988	-	-	-	427
HCM Lane V/C Ratio	0.005	-	-	-	0.265
HCM Control Delay (s)	8.7	0	-	-	16.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.1

Intersection	
Int Delay, s/veh	6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	116	55	71	363	92	153
Future Vol, veh/h	116	55	71	363	92	153
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	85	85	85	85	85	85
Heavy Vehicles, %	12	9	8	5	3	4
Mvmt Flow	136	65	84	427	108	180

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	201	0	764	169
Stage 1	-	-	-	-	169	-
Stage 2	-	-	-	-	595	-
Critical Hdwy	-	-	4.18	-	6.43	6.24
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.272	-	3.527	3.336
Pot Cap-1 Maneuver	-	-	1336	-	370	870
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1336	-	340	870
Mov Cap-2 Maneuver	-	-	-	-	340	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	504	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	18.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	549	-	-	1336	-
HCM Lane V/C Ratio	0.525	-	-	0.063	-
HCM Control Delay (s)	18.6	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	3	-	-	0.2	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	2	267	1	1	414	11	1	1	1	34	1	20
Future Vol, veh/h	2	267	1	1	414	11	1	1	1	34	1	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	0	7	0	0	6	0	0	0	0	4	0	0
Mvmt Flow	2	307	1	1	476	13	1	1	1	39	1	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	489	0	0	308	0	0	809	803	309	792	790	476
Stage 1	-	-	-	-	-	-	312	312	-	478	478	-
Stage 2	-	-	-	-	-	-	497	491	-	314	312	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	1085	-	-	1264	-	-	301	319	736	305	325	593
Stage 1	-	-	-	-	-	-	703	661	-	565	559	-
Stage 2	-	-	-	-	-	-	559	552	-	693	661	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1085	-	-	1264	-	-	288	318	735	303	324	593
Mov Cap-2 Maneuver	-	-	-	-	-	-	288	318	-	303	324	-
Stage 1	-	-	-	-	-	-	702	660	-	564	558	-
Stage 2	-	-	-	-	-	-	536	551	-	689	660	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	14.7	16.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	376	1085	-	-	1264	-	-	369
HCM Lane V/C Ratio	0.009	0.002	-	-	0.001	-	-	0.171
HCM Control Delay (s)	14.7	8.3	0	-	7.9	0	-	16.8
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.6

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	36	262	3	17	61	390	42	1	1	29	324	5
Future Volume (vph)	36	262	3	17	61	390	42	1	1	29	324	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.85		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3107	1488		1352	3137	1417	1662	945		1526	1496
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3107	1488		1352	3137	1417	1662	945		1526	1496
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	40	291	3	19	68	433	47	1	1	32	360	6
RTOR Reduction (vph)	0	0	2	0	0	0	20	0	30	0	0	6
Lane Group Flow (vph)	40	291	1	0	87	433	27	1	3	0	205	194
Confl. Peds. (#/hr)								1				
Heavy Vehicles (%)	0%	7%	0%	23%	23%	6%	5%	0%	0%	60%	3%	25%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA	pt+ov	Split	NA		Split	NA
Protected Phases	5	2	2 8	1	1	6	6 4	8	8		4	4
Permitted Phases												
Actuated Green, G (s)	4.0	15.2	18.6		7.7	18.9	33.5	3.4	3.4		14.6	14.6
Effective Green, g (s)	4.0	15.2	18.6		7.7	18.9	33.5	3.4	3.4		14.6	14.6
Actuated g/C Ratio	0.07	0.26	0.32		0.13	0.33	0.58	0.06	0.06		0.25	0.25
Clearance Time (s)	4.0	4.5			4.0	4.5		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2			2.5	4.2		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	115	822	482		181	1032	826	98	55		388	380
v/s Ratio Prot	0.02	c0.09	0.00		0.06	c0.14	0.02	0.00	c0.00		c0.13	0.13
v/s Ratio Perm												
v/c Ratio	0.35	0.35	0.00		0.48	0.42	0.03	0.01	0.05		0.53	0.51
Uniform Delay, d1	25.5	17.1	13.1		23.0	15.0	5.1	25.4	25.5		18.4	18.3
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.4	0.0		1.5	0.4	0.0	0.0	0.3		1.0	0.9
Delay (s)	26.8	17.5	13.1		24.5	15.4	5.1	25.4	25.8		19.4	19.2
Level of Service	C	B	B		C	B	A	C	C		B	B
Approach Delay (s)		18.6				15.9			25.8			19.3
Approach LOS		B				B			C			B

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	16.5
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	35
Future Volume (vph)	35
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.90
Adj. Flow (vph)	39
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

07/13/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	76	330	2	22	21	327	236	3	2	37	660	1
Future Volume (veh/h)	76	330	2	22	21	327	236	3	2	37	660	1
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1709	1750		1068	1695	1723	1750	1750	1750	1717	1745
Adj Flow Rate, veh/h	89	388	2		25	385	278	4	2	44	850	0
Peak Hour Factor	0.85	0.85	0.85		0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	3	0		50	4	2	0	0	0	2	0
Cap, veh/h	113	978	527		29	815	836	102	4	86	1048	559
Arrive On Green	0.07	0.30	0.30		0.03	0.25	0.25	0.06	0.06	0.06	0.32	0.00
Sat Flow, veh/h	1667	3247	1449		1017	3221	1457	1667	64	1405	3271	1745
Grp Volume(v), veh/h	89	388	2		25	385	278	4	0	46	850	0
Grp Sat Flow(s),veh/h/ln	1667	1624	1449		1017	1611	1457	1667	0	1469	1636	1745
Q Serve(g_s), s	3.0	5.4	0.1		1.4	5.8	5.7	0.1	0.0	1.7	13.6	0.0
Cycle Q Clear(g_c), s	3.0	5.4	0.1		1.4	5.8	5.7	0.1	0.0	1.7	13.6	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.96	1.00	
Lane Grp Cap(c), veh/h	113	978	527		29	815	836	102	0	90	1048	559
V/C Ratio(X)	0.79	0.40	0.00		0.86	0.47	0.33	0.04	0.00	0.51	0.81	0.00
Avail Cap(c_a), veh/h	583	2557	1232		356	2537	1615	875	0	771	2576	1374
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.2	15.9	11.6		27.6	18.1	6.4	25.2	0.0	26.0	17.8	0.0
Incr Delay (d2), s/veh	8.7	0.4	0.0		37.6	0.7	0.4	0.1	0.0	3.3	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	3.4	0.0		1.1	3.7	5.7	0.1	0.0	1.2	8.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	16.3	11.6		65.3	18.8	6.8	25.4	0.0	29.3	19.0	0.0
LnGrp LOS	C	B	B		E	B	A	C	A	C	B	A
Approach Vol, veh/h		479				688			50			850
Approach Delay, s/veh		19.7				15.6			29.0			19.0
Approach LOS		B				B			C			B

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	21.7		22.3	8.4	19.0		7.5				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	3.4	7.4		15.6	5.0	7.8		3.7				
Green Ext Time (p_c), s	0.0	4.3		2.6	0.1	6.3		0.2				

Intersection Summary			
HCM 6th Ctrl Delay		18.3	
HCM 6th LOS		B	

Notes

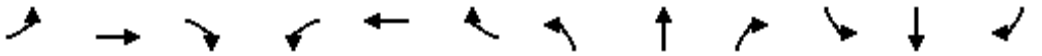
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	66
Future Volume (veh/h)	66
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1745
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.85
Percent Heavy Veh, %	0
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	475	157	0	508	382	0	0	0	191	0	124
Future Volume (vph)	0	475	157	0	508	382	0	0	0	191	0	124
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3090	1263		3140	1315				2859		1283
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3090	1263		3140	1315				2859		1283
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	505	167	0	540	406	0	0	0	203	0	132
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	101
Lane Group Flow (vph)	0	505	167	0	540	406	0	0	0	203	0	31
Confl. Peds. (#/hr)						1						1
Heavy Vehicles (%)	0%	6%	16%	0%	8%	13%	0%	0%	0%	10%	0%	13%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		79.0	100.0		70.0	100.0				12.0		21.5
Effective Green, g (s)		79.0	100.0		70.0	100.0				12.0		23.5
Actuated g/C Ratio		0.79	1.00		0.70	1.00				0.12		0.24
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2441	1263		2198	1315				343		301
v/s Ratio Prot		0.16			0.17					c0.07		0.02
v/s Ratio Perm			0.13			c0.31						
v/c Ratio		0.21	0.13		0.25	0.31				0.59		0.10
Uniform Delay, d1		2.6	0.0		5.4	0.0				41.7		30.0
Progression Factor		1.00	1.00		0.60	1.00				1.00		1.00
Incremental Delay, d2		0.2	0.2		0.3	0.6				2.3		0.1
Delay (s)		2.8	0.2		3.5	0.6				44.0		30.1
Level of Service		A	A		A	A				D		C
Approach Delay (s)		2.2			2.3			0.0			38.5	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	8.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



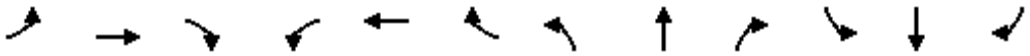
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	475	157	0	508	382	0	0	0	191	0	124
Future Volume (veh/h)	0	475	157	0	508	382	0	0	0	191	0	124
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1619	1483	0	1784	1715				1478	0	1437
Adj Flow Rate, veh/h	0	505	0	0	540	0				203	0	132
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94				0.94	0.94	0.94
Percent Heavy Veh, %	0	6	16	0	8	13				10	0	13
Cap, veh/h	0	2394		0	2638					360	0	185
Arrive On Green	0.00	0.78	0.00	0.00	1.00	0.00				0.13	0.00	0.15
Sat Flow, veh/h	0	3158	1257	0	3479	1454				2731	0	1218
Grp Volume(v), veh/h	0	505	0	0	540	0				203	0	132
Grp Sat Flow(s),veh/h/ln	0	1538	1257	0	1695	1454				1365	0	1218
Q Serve(g_s), s	0.0	4.4	0.0	0.0	0.0	0.0				7.0	0.0	10.3
Cycle Q Clear(g_c), s	0.0	4.4	0.0	0.0	0.0	0.0				7.0	0.0	10.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2394		0	2638					360	0	185
V/C Ratio(X)	0.00	0.21		0.00	0.20					0.56	0.00	0.71
Avail Cap(c_a), veh/h	0	2394		0	2638					969	0	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.91	0.00	0.00	0.90	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	2.9	0.0	0.0	0.0	0.0				40.7	0.0	40.4
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0				1.0	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	1.9	0.0	0.0	0.1	0.0				4.3	0.0	11.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.1	0.0	0.0	0.2	0.0				41.8	0.0	44.1
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		505	A		540	A					335	
Approach Delay, s/veh		3.1			0.2						42.7	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		82.3		17.7		82.3						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		6.4		12.3		2.0						
Green Ext Time (p_c), s		10.0		0.9		5.8						

Intersection Summary	
HCM 6th Ctrl Delay	11.6
HCM 6th LOS	B

Notes

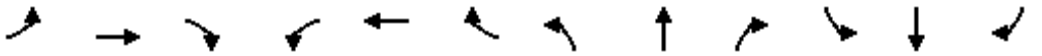
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	411	255	0	651	597	239	0	523	0	0	0
Future Volume (vph)	0	411	255	0	651	597	239	0	523	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.86	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3111	1445		2951	1436	1445	1285	1331			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3111	1445		2951	1436	1445	1285	1331			
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	437	271	0	693	635	254	0	556	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	208	225	0	0	0
Lane Group Flow (vph)	0	437	271	0	693	635	229	84	64	0	0	0
Heavy Vehicles (%)	0%	9%	5%	0%	11%	2%	6%	0%	3%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		69.0	100.0		69.0	100.0	22.0	22.0	22.0			
Effective Green, g (s)		69.0	100.0		69.0	100.0	22.0	22.0	22.0			
Actuated g/C Ratio		0.69	1.00		0.69	1.00	0.22	0.22	0.22			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2146	1445		2036	1436	317	282	292			
v/s Ratio Prot		0.14			0.23		c0.16	0.07				
v/s Ratio Perm			0.19			c0.44			0.05			
v/c Ratio		0.20	0.19		0.34	0.44	0.72	0.30	0.22			
Uniform Delay, d1		5.6	0.0		6.3	0.0	36.2	32.5	32.0			
Progression Factor		1.94	1.00		0.98	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.2	0.3		0.4	0.9	7.4	0.4	0.3			
Delay (s)		11.1	0.3		6.6	0.9	43.6	33.0	32.2			
Level of Service		B	A		A	A	D	C	C			
Approach Delay (s)		6.9			3.8			35.7			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	411	255	0	651	597	239	0	523	0	0	0
Future Volume (veh/h)	0	411	255	0	651	597	239	0	523	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1770	1826	0	1551	1674	1473	1555	1514			
Adj Flow Rate, veh/h	0	437	0	0	693	0	375	0	214			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94			
Percent Heavy Veh, %	0	9	5	0	11	2	6	0	3			
Cap, veh/h	0	2401		0	2104		550	0	252			
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.20	0.00	0.20			
Sat Flow, veh/h	0	3452	1547	0	3025	1419	2805	0	1283			
Grp Volume(v), veh/h	0	437	0	0	693	0	375	0	214			
Grp Sat Flow(s),veh/h/ln	0	1682	1547	0	1473	1419	1403	0	1283			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	12.4	0.0	16.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	12.4	0.0	16.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2401		0	2104		550	0	252			
V/C Ratio(X)	0.00	0.18		0.00	0.33		0.68	0.00	0.85			
Avail Cap(c_a), veh/h	0	2401		0	2104		996	0	455			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.96	0.00	0.00	0.81	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	37.3	0.0	38.8			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.3	0.0	1.1	0.0	6.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.0	0.0	0.2	0.0	7.7	0.0	9.2			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	0.3	0.0	38.4	0.0	44.8			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		437	A		693	A		589				
Approach Delay, s/veh		0.2			0.3			40.7				
Approach LOS		A			A			D				

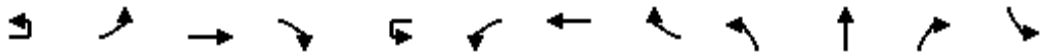
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		75.9				75.9		24.1				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		18.1				
Green Ext Time (p_c), s		4.8				15.3		1.5				

Intersection Summary		
HCM 6th Ctrl Delay	14.1	
HCM 6th LOS	B	

Notes

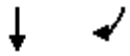
User approved volume balancing among the lanes for turning movement.

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



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	34	26	750	41	6	77	789	19	400	11	102	8
Future Volume (vph)	34	26	750	41	6	77	789	19	400	11	102	8
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95
Satd. Flow (prot)		1614	3079	1340		1502	2947		1519	1522	1347	1471
Flt Permitted		0.27	1.00	1.00		0.28	1.00		0.95	0.95	1.00	0.95
Satd. Flow (perm)		452	3079	1340		439	2947		1519	1522	1347	1471
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	35	27	781	43	6	80	822	20	417	11	106	8
RTOR Reduction (vph)	0	0	0	22	0	0	1	0	0	0	86	0
Lane Group Flow (vph)	0	62	781	21	0	86	841	0	213	215	20	8
Confl. Peds. (#/hr)											1	1
Heavy Vehicles (%)	3%	3%	8%	11%	9%	9%	11%	0%	4%	10%	9%	13%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		58.6	48.6	48.6		58.6	52.9		19.1	19.1	19.1	4.8
Effective Green, g (s)		58.6	48.6	48.6		58.6	52.9		19.1	19.1	19.1	4.8
Actuated g/C Ratio		0.59	0.49	0.49		0.59	0.53		0.19	0.19	0.19	0.05
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		331	1496	651		363	1558		290	290	257	70
v/s Ratio Prot		0.01	c0.25			0.02	c0.29		0.14	c0.14		0.01
v/s Ratio Perm		0.10		0.02		0.12					0.02	
v/c Ratio		0.19	0.52	0.03		0.24	0.54		0.73	0.74	0.08	0.11
Uniform Delay, d1		9.6	17.7	13.4		16.0	15.5		38.1	38.1	33.2	45.6
Progression Factor		1.11	1.07	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	1.2	0.1		0.2	1.3		8.8	9.3	0.1	0.5
Delay (s)		10.8	20.1	13.5		16.3	16.9		46.8	47.4	33.3	46.1
Level of Service		B	C	B		B	B		D	D	C	D
Approach Delay (s)			19.1				16.8			44.4		
Approach LOS			B				B			D		

Intersection Summary			
HCM 2000 Control Delay	24.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	16	25
Future Volume (vph)	16	25
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1504	
Flt Permitted	1.00	
Satd. Flow (perm)	1504	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	17	26
RTOR Reduction (vph)	25	0
Lane Group Flow (vph)	18	0
Confl. Peds. (#/hr)		
Heavy Vehicles (%)	7%	5%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	4.8	
Effective Green, g (s)	4.8	
Actuated g/C Ratio	0.05	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	72	
v/s Ratio Prot	c0.01	
v/s Ratio Perm		
v/c Ratio	0.25	
Uniform Delay, d1	45.9	
Progression Factor	1.00	
Incremental Delay, d2	1.4	
Delay (s)	47.2	
Level of Service	D	
Approach Delay (s)	47.0	
Approach LOS	D	

Intersection Summary

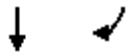
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	34	26	750	41	6	77	789	19	400	11	102	8
Future Volume (veh/h)	34	26	750	41	6	77	789	19	400	11	102	8
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1709	1641	1600		1578	1551	1551	1695	1614	1627	1573
Adj Flow Rate, veh/h		27	781	0		80	822	20	425	0	0	8
Peak Hour Factor		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		3	8	11		9	11	11	4	10	9	13
Cap, veh/h		402	1013			584	1815	44	501	0		55
Arrive On Green		0.01	0.22	0.00		0.30	0.62	0.62	0.16	0.00	0.00	0.04
Sat Flow, veh/h		1628	3118	1356		1503	2940	72	3229	0	1379	1498
Grp Volume(v), veh/h		27	781	0		80	412	430	425	0	0	8
Grp Sat Flow(s),veh/h/ln		1628	1559	1356		1503	1473	1538	1615	0	1379	1498
Q Serve(g_s), s		0.6	23.5	0.0		0.0	14.9	14.9	12.8	0.0	0.0	0.5
Cycle Q Clear(g_c), s		0.6	23.5	0.0		0.0	14.9	14.9	12.8	0.0	0.0	0.5
Prop In Lane		1.00		1.00		1.00		0.05	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		402	1013			584	909	949	501	0		55
V/C Ratio(X)		0.07	0.77			0.14	0.45	0.45	0.85	0.00		0.15
Avail Cap(c_a), veh/h		604	1013			584	909	949	662	0		232
HCM Platoon Ratio		0.67	0.67	0.67		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.95	0.95	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		8.0	35.6	0.0		21.1	10.2	10.2	41.1	0.0	0.0	46.6
Incr Delay (d2), s/veh		0.0	5.4	0.0		0.1	1.6	1.6	7.2	0.0	0.0	0.9
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		0.4	15.1	0.0		2.3	8.4	8.7	9.4	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		8.1	41.0	0.0		21.2	11.8	11.7	48.3	0.0	0.0	47.5
LnGrp LOS		A	D			C	B	B	D	A		D
Approach Vol, veh/h			808	A			922			425	A	
Approach Delay, s/veh			39.9				12.6			48.3		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	34.8	37.0		8.2	5.6	66.2		20.0
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	2.0	25.5		3.0	2.6	16.9		14.8
Green Ext Time (p_c), s	0.1	4.8		0.0	0.0	9.7		0.6

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

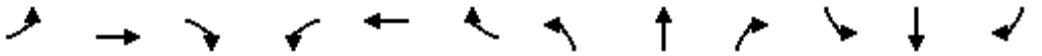


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	16	25
Future Volume (veh/h)	16	25
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1654	1654
Adj Flow Rate, veh/h	17	0
Peak Hour Factor	0.96	0.96
Percent Heavy Veh, %	7	7
Cap, veh/h	61	
Arrive On Green	0.04	0.00
Sat Flow, veh/h	1654	0
Grp Volume(v), veh/h	17	0
Grp Sat Flow(s),veh/h/ln	1654	0
Q Serve(g_s), s	1.0	0.0
Cycle Q Clear(g_c), s	1.0	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	61	
V/C Ratio(X)	0.28	
Avail Cap(c_a), veh/h	256	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	46.9	0.0
Incr Delay (d2), s/veh	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	48.7	0.0
LnGrp LOS	D	
Approach Vol, veh/h	25	A
Approach Delay, s/veh	48.3	
Approach LOS	D	

Timer - Assigned Phs

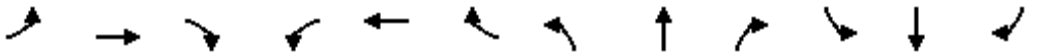
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	514	199	40	322	48	299	144	48	45	93	84
Future Volume (vph)	106	514	199	40	322	48	299	144	48	45	93	84
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1554	1591	1390	1363	1471	1380	1568	1699	1361	1385	1606	1288
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1554	1591	1390	1363	1471	1380	1568	1699	1361	1385	1606	1288
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	109	530	205	41	332	49	308	148	49	46	96	87
RTOR Reduction (vph)	0	0	62	0	0	31	0	0	35	0	0	77
Lane Group Flow (vph)	109	530	143	41	332	18	308	148	14	46	96	10
Confl. Peds. (#/hr)	4					4	1					1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	7%	10%	7%	22%	19%	5%	6%	3%	7%	20%	9%	13%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	13.0	45.7	71.6	7.1	39.8	39.8	25.9	31.7	31.7	7.4	13.2	13.2
Effective Green, g (s)	13.0	45.7	71.6	7.1	39.8	39.8	25.9	31.7	31.7	7.4	13.2	13.2
Actuated g/C Ratio	0.12	0.41	0.65	0.06	0.36	0.36	0.23	0.29	0.29	0.07	0.12	0.12
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	182	655	897	87	527	495	366	485	389	92	191	153
v/s Ratio Prot	c0.07	c0.33	0.04	0.03	0.23		c0.20	0.09		0.03	c0.06	
v/s Ratio Perm			0.07			0.01			0.01			0.01
v/c Ratio	0.60	0.81	0.16	0.47	0.63	0.04	0.84	0.31	0.04	0.50	0.50	0.07
Uniform Delay, d1	46.5	28.8	7.8	50.1	29.5	23.1	40.5	31.0	28.6	50.0	45.8	43.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.4	8.2	0.1	2.9	3.2	0.1	15.7	0.3	0.0	3.1	1.5	0.1
Delay (s)	50.9	37.0	7.8	53.0	32.6	23.1	56.2	31.2	28.6	53.1	47.3	43.5
Level of Service	D	D	A	D	C	C	E	C	C	D	D	D
Approach Delay (s)		31.7			33.5			46.2			47.0	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	37.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	110.9	Sum of lost time (s)	19.0
Intersection Capacity Utilization	73.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



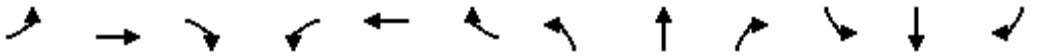
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	514	199	40	322	48	299	144	48	45	93	84
Future Volume (veh/h)	106	514	199	40	322	48	299	144	48	45	93	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1654	1614	1654	1450	1491	1682	1668	1709	1654	1477	1627	1573
Adj Flow Rate, veh/h	109	530	102	41	332	49	308	148	49	46	96	87
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	10	7	22	19	5	6	3	7	20	9	13
Cap, veh/h	136	665	881	51	541	514	346	478	383	56	165	134
Arrive On Green	0.09	0.41	0.41	0.04	0.36	0.36	0.22	0.28	0.28	0.04	0.10	0.10
Sat Flow, veh/h	1576	1614	1395	1381	1491	1417	1589	1709	1370	1407	1627	1326
Grp Volume(v), veh/h	109	530	102	41	332	49	308	148	49	46	96	87
Grp Sat Flow(s),veh/h/ln	1576	1614	1395	1381	1491	1417	1589	1709	1370	1407	1627	1326
Q Serve(g_s), s	5.6	23.6	2.4	2.4	15.0	1.9	15.4	5.6	2.2	2.7	4.6	5.2
Cycle Q Clear(g_c), s	5.6	23.6	2.4	2.4	15.0	1.9	15.4	5.6	2.2	2.7	4.6	5.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	136	665	881	51	541	514	346	478	383	56	165	134
V/C Ratio(X)	0.80	0.80	0.12	0.80	0.61	0.10	0.89	0.31	0.13	0.83	0.58	0.65
Avail Cap(c_a), veh/h	480	1081	1240	421	999	950	484	625	501	428	595	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	36.8	21.1	6.1	39.2	21.4	17.3	31.1	23.3	22.1	39.1	35.2	35.5
Incr Delay (d2), s/veh	7.8	4.3	0.1	18.9	2.2	0.2	13.0	0.3	0.1	19.7	2.4	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.4	14.3	1.2	2.0	9.2	1.1	11.4	4.1	1.3	2.2	3.5	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.5	25.4	6.2	58.2	23.6	17.4	44.2	23.6	22.2	58.8	37.6	39.3
LnGrp LOS	D	C	A	E	C	B	D	C	C	E	D	D
Approach Vol, veh/h		741			422			505			229	
Approach Delay, s/veh		25.5			26.3			36.0			42.5	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.5	38.8	22.4	13.3	11.6	34.8	7.7	27.9
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	4.4	25.6	17.4	7.2	7.6	17.0	4.7	7.6
Green Ext Time (p_c), s	0.1	8.1	0.5	0.6	0.2	4.8	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	30.5
HCM 6th LOS	C

Notes

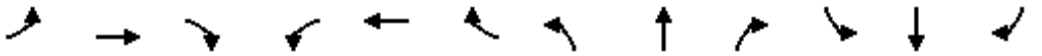
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	183	107	140	209	51	95	522	79	68	259	97
Future Volume (vph)	84	183	107	140	209	51	95	522	79	68	259	97
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1410	1524	1272	1554	1472		2941	2949	1344	1319	2743	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1410	1524	1272	1554	1472		2941	2949	1344	1319	2743	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	87	189	110	144	215	53	98	538	81	70	267	100
RTOR Reduction (vph)	0	0	90	0	10	0	0	0	57	0	38	0
Lane Group Flow (vph)	87	189	20	144	258	0	98	538	24	70	329	0
Heavy Vehicles (%)	14%	11%	13%	7%	14%	21%	6%	9%	7%	26%	16%	17%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	12.0	18.4	18.4	23.0	29.4		7.5	29.3	29.3	9.8	31.6	
Effective Green, g (s)	12.0	18.4	18.4	23.0	29.4		7.5	29.3	29.3	9.8	31.6	
Actuated g/C Ratio	0.12	0.18	0.18	0.23	0.29		0.08	0.29	0.29	0.10	0.32	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	169	280	234	357	432		220	864	393	129	866	
v/s Ratio Prot	c0.06	0.12		0.09	c0.18		0.03	c0.18		c0.05	0.12	
v/s Ratio Perm			0.02						0.02			
v/c Ratio	0.51	0.68	0.09	0.40	0.60		0.45	0.62	0.06	0.54	0.38	
Uniform Delay, d1	41.3	38.0	33.8	32.7	30.2		44.3	30.6	25.4	43.0	26.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.6	6.5	0.2	0.7	2.4		1.4	3.4	0.3	4.6	1.3	
Delay (s)	43.9	44.6	34.0	33.4	32.6		45.7	33.9	25.7	47.6	27.9	
Level of Service	D	D	C	C	C		D	C	C	D	C	
Approach Delay (s)		41.4			32.9			34.6			31.0	
Approach LOS		D			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	34.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	183	107	140	209	51	95	522	79	68	259	97
Future Volume (veh/h)	84	183	107	140	209	51	95	522	79	68	259	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1559	1600	1573	1654	1559	1559	1668	1627	1654	1395	1532	1532
Adj Flow Rate, veh/h	87	189	0	144	215	53	98	538	81	70	267	100
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	14	11	13	7	14	14	6	9	7	26	16	16
Cap, veh/h	82	235		184	251	62	148	1520	690	66	1031	377
Arrive On Green	0.06	0.15	0.00	0.12	0.21	0.21	0.05	0.49	0.49	0.05	0.49	0.49
Sat Flow, veh/h	1485	1600	1333	1576	1208	298	3082	3092	1402	1329	2087	763
Grp Volume(v), veh/h	87	189	0	144	0	268	98	538	81	70	184	183
Grp Sat Flow(s),veh/h/ln	1485	1600	1333	1576	0	1505	1541	1546	1402	1329	1455	1394
Q Serve(g_s), s	5.5	11.4	0.0	8.9	0.0	17.2	3.1	10.7	1.8	5.0	7.3	7.6
Cycle Q Clear(g_c), s	5.5	11.4	0.0	8.9	0.0	17.2	3.1	10.7	1.8	5.0	7.3	7.6
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		0.55
Lane Grp Cap(c), veh/h	82	235		184	0	313	148	1520	690	66	719	689
V/C Ratio(X)	1.07	0.81		0.78	0.00	0.86	0.66	0.35	0.12	1.05	0.26	0.27
Avail Cap(c_a), veh/h	82	640		184	0	557	154	1520	690	66	719	689
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.3	41.3	0.0	42.9	0.0	38.1	46.8	15.6	4.7	47.5	14.7	14.7
Incr Delay (d2), s/veh	118.6	7.6	0.0	19.6	0.0	7.9	9.7	0.6	0.3	126.1	0.9	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.4	8.5	0.0	7.8	0.0	11.1	2.5	6.7	1.8	7.1	4.5	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	165.8	48.9	0.0	62.5	0.0	46.0	56.5	16.3	5.0	173.6	15.5	15.7
LnGrp LOS	F	D		E	A	D	E	B	A	F	B	B
Approach Vol, veh/h		276	A		412			717			437	
Approach Delay, s/veh		85.8			51.8			20.5			40.9	
Approach LOS		F			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	54.9	9.5	26.3	9.5	54.7	15.7	20.2
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	5.0	28.0	5.5	37.0	5.0	30.0	5.5	40.0
Max Q Clear Time (g_c+I1), s	5.1	9.6	7.5	19.2	7.0	12.7	10.9	13.4
Green Ext Time (p_c), s	0.0	3.8	0.0	1.7	0.0	6.4	0.0	1.2

Intersection Summary	
HCM 6th Ctrl Delay	42.1
HCM 6th LOS	D

Notes

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	10	10	230	127	1
Future Vol, veh/h	14	10	10	230	127	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	90	90	90	3	2	90
Mvmt Flow	15	11	11	253	140	1

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	416	141	141	0	-	0
Stage 1	141	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	7.3	7.1	5	-	-	-
Critical Hdwy Stg 1	6.3	-	-	-	-	-
Critical Hdwy Stg 2	6.3	-	-	-	-	-
Follow-up Hdwy	4.31	4.11	3.01	-	-	-
Pot Cap-1 Maneuver	456	718	1042	-	-	-
Stage 1	709	-	-	-	-	-
Stage 2	606	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	451	718	1042	-	-	-
Mov Cap-2 Maneuver	451	-	-	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	606	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1042	-	534	-	-
HCM Lane V/C Ratio	0.011	-	0.049	-	-
HCM Control Delay (s)	8.5	0	12.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	42	201	19	46	70
Future Vol, veh/h	18	42	201	19	46	70
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	1	0	10	7
Mvmt Flow	21	50	239	23	55	83

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	444	251	0	0	262	0
Stage 1	251	-	-	-	-	-
Stage 2	193	-	-	-	-	-
Critical Hdwy	7	6.5	-	-	4.2	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.29	-
Pot Cap-1 Maneuver	534	776	-	-	1257	-
Stage 1	763	-	-	-	-	-
Stage 2	818	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	509	776	-	-	1257	-
Mov Cap-2 Maneuver	509	-	-	-	-	-
Stage 1	763	-	-	-	-	-
Stage 2	780	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	3.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	670	1257	-
HCM Lane V/C Ratio	-	-	0.107	0.044	-
HCM Control Delay (s)	-	-	11	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	78	98	42	25	3
Future Vol, veh/h	12	78	98	42	25	3
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, %	-	-2	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	9	6	9	11	0	0
Mvmt Flow	14	90	113	48	29	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	161	0	-	0	255	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	118	-
Critical Hdwy	4.19	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.281	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1376	-	-	-	738	917
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1376	-	-	-	730	917
Mov Cap-2 Maneuver	-	-	-	-	730	-
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	912	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1376	-	-	-	746
HCM Lane V/C Ratio	0.01	-	-	-	0.043
HCM Control Delay (s)	7.6	0	-	-	10
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	123	171	138	86	4
Future Vol, veh/h	5	123	171	138	86	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	80	80	80	80	80	80
Heavy Vehicles, %	0	5	9	14	28	25
Mvmt Flow	6	154	214	173	108	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	387	0	-	0	467	301
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	166	-
Critical Hdwy	4.1	-	-	-	6.68	6.45
Critical Hdwy Stg 1	-	-	-	-	5.68	-
Critical Hdwy Stg 2	-	-	-	-	5.68	-
Follow-up Hdwy	2.2	-	-	-	3.752	3.525
Pot Cap-1 Maneuver	1183	-	-	-	509	688
Stage 1	-	-	-	-	695	-
Stage 2	-	-	-	-	804	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1183	-	-	-	506	688
Mov Cap-2 Maneuver	-	-	-	-	506	-
Stage 1	-	-	-	-	691	-
Stage 2	-	-	-	-	804	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1183	-	-	-	512
HCM Lane V/C Ratio	0.005	-	-	-	0.22
HCM Control Delay (s)	8.1	0	-	-	14
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	151	58	109	218	91	126
Future Vol, veh/h	151	58	109	218	91	126
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	97	97	97	97	97	97
Heavy Vehicles, %	10	2	2	10	4	2
Mvmt Flow	156	60	112	225	94	130

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	635	186
Stage 1	-	-	-	-	186	-
Stage 2	-	-	-	-	449	-
Critical Hdwy	-	-	4.12	-	6.44	6.22
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.218	-	3.536	3.318
Pot Cap-1 Maneuver	-	-	1354	-	439	856
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	639	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	397	856
Mov Cap-2 Maneuver	-	-	-	-	397	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	578	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	576	-	-	1354	-
HCM Lane V/C Ratio	0.388	-	-	0.083	-
HCM Control Delay (s)	15.2	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.8	-	-	0.3	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↗		↕			↕	
Traffic Vol, veh/h	12	264	1	1	294	20	1	1	1	33	1	33
Future Vol, veh/h	12	264	1	1	294	20	1	1	1	33	1	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	6	0	0	10	0	0	0	0	5	0	5
Mvmt Flow	13	284	1	1	316	22	1	1	1	35	1	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	338	0	0	285	0	0	658	651	285	630	629	316
Stage 1	-	-	-	-	-	-	311	311	-	318	318	-
Stage 2	-	-	-	-	-	-	347	340	-	312	311	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.15	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.545	4	3.345
Pot Cap-1 Maneuver	1232	-	-	1289	-	-	380	390	759	390	402	718
Stage 1	-	-	-	-	-	-	704	662	-	687	657	-
Stage 2	-	-	-	-	-	-	673	643	-	692	662	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1232	-	-	1289	-	-	356	385	759	385	396	718
Mov Cap-2 Maneuver	-	-	-	-	-	-	356	385	-	385	396	-
Stage 1	-	-	-	-	-	-	695	653	-	678	656	-
Stage 2	-	-	-	-	-	-	638	642	-	681	653	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0	13.1	13.4
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	446	1232	-	-	1289	-	-	499
HCM Lane V/C Ratio	0.007	0.01	-	-	0.001	-	-	0.144
HCM Control Delay (s)	13.1	8	0	-	7.8	0	-	13.4
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.5

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	27	262	9	17	66	271	61	1	1	32	381	2
Future Volume (vph)	27	262	9	17	66	271	61	1	1	32	381	2
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.85		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3107	1488		1222	3167	1365	1662	968		1541	1497
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3107	1488		1222	3167	1365	1662	968		1541	1497
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)	30	288	10	19	73	298	67	1	1	35	419	2
RTOR Reduction (vph)	0	0	7	0	0	0	26	0	33	0	0	6
Lane Group Flow (vph)	30	288	3	0	92	298	41	1	3	0	239	223
Confl. Peds. (#/hr)											1	
Heavy Vehicles (%)	0%	7%	0%	36%	36%	5%	9%	0%	0%	56%	2%	50%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA	pt+ov	Split	NA		Split	NA
Protected Phases	5	2	2 8	1	1	6	6 4	8	8		4	4
Permitted Phases												
Actuated Green, G (s)	4.5	16.7	20.1		8.7	20.9	37.9	3.4	3.4		17.0	17.0
Effective Green, g (s)	4.5	16.7	20.1		8.7	20.9	37.9	3.4	3.4		17.0	17.0
Actuated g/C Ratio	0.07	0.27	0.32		0.14	0.34	0.61	0.05	0.05		0.27	0.27
Clearance Time (s)	4.0	4.5			4.0	4.5		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2			2.5	4.2		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	120	832	480		170	1062	830	90	52		420	408
v/s Ratio Prot	0.02	c0.09	0.00		c0.08	0.09	0.03	0.00	c0.00		c0.16	0.15
v/s Ratio Perm												
v/c Ratio	0.25	0.35	0.01		0.54	0.28	0.05	0.01	0.06		0.57	0.55
Uniform Delay, d1	27.3	18.4	14.3		24.9	15.2	4.9	27.9	27.9		19.5	19.4
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.8	0.4	0.0		2.8	0.2	0.0	0.0	0.3		1.4	1.2
Delay (s)	28.1	18.8	14.3		27.7	15.4	5.0	27.9	28.3		20.9	20.5
Level of Service	C	B	B		C	B	A	C	C		C	C
Approach Delay (s)		19.5				16.3			28.2			20.7
Approach LOS		B				B			C			C

Intersection Summary			
HCM 2000 Control Delay	19.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	62.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	43
Future Volume (vph)	43
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.91
Adj. Flow (vph)	47
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

07/13/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	27	262	9	17	66	271	61	1	1	32	381	2
Future Volume (veh/h)	27	262	9	17	66	271	61	1	1	32	381	2
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1654	1750		1259	1682	1627	1750	1750	1750	1717	1062
Adj Flow Rate, veh/h	30	288	10		73	298	67	1	1	35	464	0
Peak Hour Factor	0.91	0.91	0.91		0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	7	0		36	5	9	0	0	0	2	50
Cap, veh/h	74	683	398		85	737	619	85	2	74	714	232
Arrive On Green	0.04	0.22	0.22		0.07	0.23	0.23	0.05	0.05	0.05	0.22	0.00
Sat Flow, veh/h	1667	3143	1483		1199	3195	1379	1667	41	1448	3271	1062
Grp Volume(v), veh/h	30	288	10		73	298	67	1	0	36	464	0
Grp Sat Flow(s),veh/h/ln	1667	1572	1483		1199	1598	1379	1667	0	1489	1636	1062
Q Serve(g_s), s	0.7	2.9	0.2		2.2	3.0	1.1	0.0	0.0	0.9	4.8	0.0
Cycle Q Clear(g_c), s	0.7	2.9	0.2		2.2	3.0	1.1	0.0	0.0	0.9	4.8	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.97	1.00	
Lane Grp Cap(c), veh/h	74	683	398		85	737	619	85	0	76	714	232
V/C Ratio(X)	0.40	0.42	0.03		0.86	0.40	0.11	0.01	0.00	0.47	0.65	0.00
Avail Cap(c_a), veh/h	893	3788	1863		642	3851	1963	1339	0	1197	3942	1280
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	17.4	12.6	10.1		17.2	12.2	6.0	16.8	0.0	17.2	13.3	0.0
Incr Delay (d2), s/veh	2.6	0.6	0.0		16.2	0.5	0.1	0.0	0.0	3.3	0.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	1.6	0.1		1.6	1.6	0.7	0.0	0.0	0.6	2.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.0	13.2	10.1		33.3	12.7	6.1	16.9	0.0	20.6	14.0	0.0
LnGrp LOS	B	B	B		C	B	A	B	A	C	B	A
Approach Vol, veh/h		328				438			37			464
Approach Delay, s/veh		13.7				15.1			20.5			14.0
Approach LOS		B				B			C			B

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	12.6		12.2	6.2	13.1		5.9				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	4.2	4.9		6.8	2.7	5.0		2.9				
Green Ext Time (p_c), s	0.1	3.2		1.3	0.0	3.7		0.1				

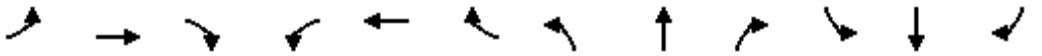
Intersection Summary		
HCM 6th Ctrl Delay		14.5
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

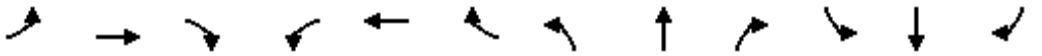
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	43
Future Volume (veh/h)	43
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1062
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.91
Percent Heavy Veh, %	50
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer - Assigned Phs
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	506	186	0	408	431	0	0	0	249	0	138
Future Volume (vph)	0	506	186	0	408	431	0	0	0	249	0	138
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3090	1308		3055	1292				2859		1261
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3090	1308		3055	1292				2859		1261
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)	0	556	204	0	448	474	0	0	0	274	0	152
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	112
Lane Group Flow (vph)	0	556	204	0	448	474	0	0	0	274	0	40
Confl. Peds. (#/hr)						1						1
Heavy Vehicles (%)	0%	6%	12%	0%	11%	15%	0%	0%	0%	10%	0%	15%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		76.5	100.0		67.5	100.0				14.5		24.0
Effective Green, g (s)		76.5	100.0		67.5	100.0				14.5		26.0
Actuated g/C Ratio		0.76	1.00		0.68	1.00				0.14		0.26
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2363	1308		2062	1292				414		327
v/s Ratio Prot		0.18			0.15					c0.10		0.03
v/s Ratio Perm			0.16			c0.37						
v/c Ratio		0.24	0.16		0.22	0.37				0.66		0.12
Uniform Delay, d1		3.4	0.0		6.2	0.0				40.4		28.3
Progression Factor		1.00	1.00		0.65	1.00				1.00		1.00
Incremental Delay, d2		0.2	0.3		0.2	0.8				3.6		0.1
Delay (s)		3.6	0.3		4.3	0.8				44.0		28.4
Level of Service		A	A		A	A				D		C
Approach Delay (s)		2.7			2.5			0.0			38.4	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	30.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



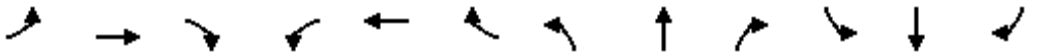
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	506	186	0	408	431	0	0	0	249	0	138
Future Volume (veh/h)	0	506	186	0	408	431	0	0	0	249	0	138
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1619	1537	0	1743	1688				1478	0	1410
Adj Flow Rate, veh/h	0	556	0	0	448	0				274	0	152
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	6	12	0	11	15				10	0	15
Cap, veh/h	0	2332		0	2510					415	0	205
Arrive On Green	0.00	0.76	0.00	0.00	1.00	0.00				0.15	0.00	0.17
Sat Flow, veh/h	0	3158	1303	0	3398	1430				2731	0	1195
Grp Volume(v), veh/h	0	556	0	0	448	0				274	0	152
Grp Sat Flow(s),veh/h/ln	0	1538	1303	0	1656	1430				1365	0	1195
Q Serve(g_s), s	0.0	5.3	0.0	0.0	0.0	0.0				9.5	0.0	12.1
Cycle Q Clear(g_c), s	0.0	5.3	0.0	0.0	0.0	0.0				9.5	0.0	12.1
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2332		0	2510					415	0	205
V/C Ratio(X)	0.00	0.24		0.00	0.18					0.66	0.00	0.74
Avail Cap(c_a), veh/h	0	2332		0	2510					969	0	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.90	0.00	0.00	0.92	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.6	0.0	0.0	0.0	0.0				40.0	0.0	39.3
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.1	0.0				1.3	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	2.5	0.0	0.0	0.1	0.0				5.8	0.0	12.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.8	0.0	0.0	0.1	0.0				41.3	0.0	43.2
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		556	A		448	A					426	
Approach Delay, s/veh		3.8			0.1						42.0	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		80.3		19.7		80.3						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		7.3		14.1		2.0						
Green Ext Time (p_c), s		11.2		1.1		4.7						

Intersection Summary		
HCM 6th Ctrl Delay		14.0
HCM 6th LOS		B

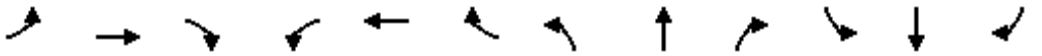
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	536	219	0	668	570	171	0	527	0	0	0
Future Volume (vph)	0	536	219	0	668	570	171	0	527	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.86	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3111	1431		2873	1407	1405	1280	1331			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3111	1431		2873	1407	1405	1280	1331			
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)	0	564	231	0	703	600	180	0	555	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	225	234	0	0	0
Lane Group Flow (vph)	0	564	231	0	703	600	162	65	49	0	0	0
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	0%	9%	6%	0%	14%	2%	9%	0%	3%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		73.8	100.0		73.8	100.0	17.2	17.2	17.2			
Effective Green, g (s)		73.8	100.0		73.8	100.0	17.2	17.2	17.2			
Actuated g/C Ratio		0.74	1.00		0.74	1.00	0.17	0.17	0.17			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2295	1431		2120	1407	241	220	228			
v/s Ratio Prot		0.18			0.24		c0.12	0.05				
v/s Ratio Perm			0.16			c0.43			0.04			
v/c Ratio		0.25	0.16		0.33	0.43	0.67	0.29	0.21			
Uniform Delay, d1		4.2	0.0		4.5	0.0	38.8	36.1	35.6			
Progression Factor		2.16	1.00		0.90	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.3	0.2		0.3	0.8	6.5	0.5	0.3			
Delay (s)		9.3	0.2		4.4	0.8	45.3	36.7	35.9			
Level of Service		A	A		A	A	D	D	D			
Approach Delay (s)		6.7			2.8			38.3			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	536	219	0	668	570	171	0	527	0	0	0
Future Volume (veh/h)	0	536	219	0	668	570	171	0	527	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1770	1812	0	1510	1674	1432	1555	1514			
Adj Flow Rate, veh/h	0	564	0	0	703	0	120	0	409			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	9	6	0	14	2	9	0	3			
Cap, veh/h	0	2426		0	2069		257	0	484			
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.19	0.00	0.19			
Sat Flow, veh/h	0	3452	1536	0	2945	1419	1364	0	2566			
Grp Volume(v), veh/h	0	564	0	0	703	0	120	0	409			
Grp Sat Flow(s),veh/h/ln	0	1682	1536	0	1435	1419	1364	0	1283			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	15.4			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	7.8	0.0	15.4			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2426		0	2069		257	0	484			
V/C Ratio(X)	0.00	0.23		0.00	0.34		0.47	0.00	0.84			
Avail Cap(c_a), veh/h	0	2426		0	2069		484	0	911			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	2.00	2.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.93	0.00	0.00	0.76	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	36.1	0.0	39.1			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.3	0.0	1.0	0.0	3.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.0	0.0	0.2	0.0	4.8	0.0	8.7			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	0.3	0.0	37.1	0.0	42.2			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		564	A		703	A		529				
Approach Delay, s/veh		0.2			0.3			41.1				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		76.6				76.6		23.4				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		17.4				
Green Ext Time (p_c), s		6.5				15.6		1.5				

Intersection Summary												
HCM 6th Ctrl Delay			12.3									
HCM 6th LOS			B									

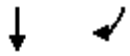
Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	34	51	803	55	5	97	775	11	399	17	127	8
Future Volume (vph)	34	51	803	55	5	97	775	11	399	17	127	8
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1630	2995	1282		1489	2922		1490	1492	1390	1662
Flt Permitted		0.25	1.00	1.00		0.22	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		434	2995	1282		341	2922		1490	1492	1390	1662
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	37	55	863	59	5	104	833	12	429	18	137	9
RTOR Reduction (vph)	0	0	0	33	0	0	1	0	0	0	110	0
Lane Group Flow (vph)	0	92	863	26	0	109	844	0	223	224	27	9
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	2%	11%	16%	10%	10%	12%	0%	6%	13%	7%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		56.2	43.4	43.4		56.2	49.6		19.7	19.7	19.7	6.6
Effective Green, g (s)		56.2	43.4	43.4		56.2	49.6		19.7	19.7	19.7	6.6
Actuated g/C Ratio		0.56	0.43	0.43		0.56	0.50		0.20	0.20	0.20	0.07
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		322	1299	556		338	1449		293	293	273	109
v/s Ratio Prot		0.02	c0.29			0.04	c0.29		0.15	c0.15		0.01
v/s Ratio Perm		0.14		0.02		0.14					0.02	
v/c Ratio		0.29	0.66	0.05		0.32	0.58		0.76	0.76	0.10	0.08
Uniform Delay, d1		11.0	22.5	16.3		21.6	17.9		37.9	38.0	32.9	43.9
Progression Factor		1.32	1.10	17.32		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3	2.6	0.1		0.4	1.7		10.6	10.8	0.1	0.2
Delay (s)		14.9	27.4	283.3		22.0	19.6		48.5	48.7	33.0	44.1
Level of Service		B	C	F		C	B		D	D	C	D
Approach Delay (s)			41.2				19.9			45.0		
Approach LOS			D				B			D		

Intersection Summary			
HCM 2000 Control Delay	34.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	20	30
Future Volume (vph)	20	30
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1357	
Flt Permitted	1.00	
Satd. Flow (perm)	1357	
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	22	32
RTOR Reduction (vph)	30	0
Lane Group Flow (vph)	24	0
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	11%	22%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	6.6	
Effective Green, g (s)	6.6	
Actuated g/C Ratio	0.07	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	89	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.27	
Uniform Delay, d1	44.4	
Progression Factor	1.00	
Incremental Delay, d2	1.2	
Delay (s)	45.6	
Level of Service	D	
Approach Delay (s)	45.4	
Approach LOS	D	

Intersection Summary

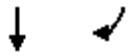
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	34	51	803	55	5	97	775	11	399	17	127	8
Future Volume (veh/h)	34	51	803	55	5	97	775	11	399	17	127	8
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1723	1600	1532		1565	1537	1537	1668	1573	1654	1750
Adj Flow Rate, veh/h		55	863	0		104	833	12	442	0	0	9
Peak Hour Factor		0.93	0.93	0.93		0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %		2	11	16		10	12	12	6	13	7	0
Cap, veh/h		400	988			538	1758	25	514	0		67
Arrive On Green		0.02	0.22	0.00		0.29	0.60	0.60	0.16	0.00	0.00	0.04
Sat Flow, veh/h		1641	3040	1298		1490	2947	42	3177	0	1402	1667
Grp Volume(v), veh/h		55	863	0		104	413	432	442	0	0	9
Grp Sat Flow(s),veh/h/ln		1641	1520	1298		1490	1461	1529	1589	0	1402	1667
Q Serve(g_s), s		1.3	27.4	0.0		0.0	15.9	15.9	13.5	0.0	0.0	0.5
Cycle Q Clear(g_c), s		1.3	27.4	0.0		0.0	15.9	15.9	13.5	0.0	0.0	0.5
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		400	988			538	871	912	514	0		67
V/C Ratio(X)		0.14	0.87			0.19	0.47	0.47	0.86	0.00		0.13
Avail Cap(c_a), veh/h		587	988			538	871	912	651	0		258
HCM Platoon Ratio		0.67	0.67	0.67		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.94	0.94	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		8.8	37.1	0.0		24.3	11.3	11.3	40.8	0.0	0.0	46.3
Incr Delay (d2), s/veh		0.1	10.1	0.0		0.1	1.8	1.8	8.7	0.0	0.0	0.7
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		0.8	17.4	0.0		3.2	9.0	9.3	9.8	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		8.9	47.2	0.0		24.4	13.2	13.1	49.5	0.0	0.0	47.0
LnGrp LOS		A	D			C	B	B	D	A		D
Approach Vol, veh/h			918	A			949			442	A	
Approach Delay, s/veh			44.9				14.4			49.5		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	33.8	37.0		8.5	6.6	64.2		20.7
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	2.0	29.4		3.3	3.3	17.9		15.5
Green Ext Time (p_c), s	0.1	2.4		0.0	0.0	9.2		0.6

Intersection Summary	
HCM 6th Ctrl Delay	33.4
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

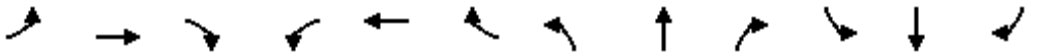


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	20	30
Future Volume (veh/h)	20	30
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1600	1600
Adj Flow Rate, veh/h	22	0
Peak Hour Factor	0.93	0.93
Percent Heavy Veh, %	11	11
Cap, veh/h	65	
Arrive On Green	0.04	0.00
Sat Flow, veh/h	1600	0
Grp Volume(v), veh/h	22	0
Grp Sat Flow(s),veh/h/ln	1600	0
Q Serve(g_s), s	1.3	0.0
Cycle Q Clear(g_c), s	1.3	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	65	
V/C Ratio(X)	0.34	
Avail Cap(c_a), veh/h	248	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	46.7	0.0
Incr Delay (d2), s/veh	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	49.0	0.0
LnGrp LOS	D	
Approach Vol, veh/h	31	A
Approach Delay, s/veh	48.4	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

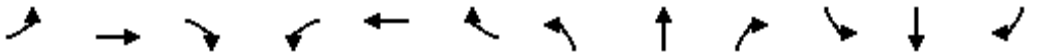
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	133	548	197	42	317	51	256	149	57	55	150	115
Future Volume (vph)	133	548	197	42	317	51	256	149	57	55	150	115
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1599	1535	1403	1409	1458	1444	1539	1683	1293	1458	1636	1252
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1599	1535	1403	1409	1458	1444	1539	1683	1293	1458	1636	1252
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	145	596	214	46	345	55	278	162	62	60	163	125
RTOR Reduction (vph)	0	0	57	0	0	34	0	0	45	0	0	107
Lane Group Flow (vph)	145	596	157	46	345	21	278	162	17	60	163	18
Confl. Peds. (#/hr)	5					5	2					2
Heavy Vehicles (%)	4%	14%	6%	18%	20%	0%	8%	4%	15%	14%	7%	16%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	16.2	57.3	82.6	7.9	49.0	49.0	25.3	35.0	35.0	8.8	18.5	18.5
Effective Green, g (s)	16.2	57.3	82.6	7.9	49.0	49.0	25.3	35.0	35.0	8.8	18.5	18.5
Actuated g/C Ratio	0.13	0.45	0.65	0.06	0.38	0.38	0.20	0.27	0.27	0.07	0.14	0.14
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	202	687	905	86	558	552	304	460	353	100	236	180
v/s Ratio Prot	c0.09	c0.39	0.03	0.03	0.24		c0.18	0.10		0.04	c0.10	
v/s Ratio Perm			0.08			0.01			0.01			0.01
v/c Ratio	0.72	0.87	0.17	0.53	0.62	0.04	0.91	0.35	0.05	0.60	0.69	0.10
Uniform Delay, d1	53.7	31.9	9.1	58.3	31.9	24.7	50.3	37.4	34.2	57.9	52.0	47.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.8	12.0	0.1	4.9	2.8	0.1	30.3	0.3	0.0	7.9	7.8	0.2
Delay (s)	64.5	44.0	9.1	63.2	34.8	24.8	80.6	37.7	34.3	65.8	59.8	47.7
Level of Service	E	D	A	E	C	C	F	D	C	E	E	D
Approach Delay (s)		39.3			36.5			61.0			56.5	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	46.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



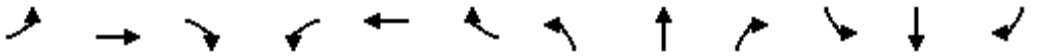
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	133	548	197	42	317	51	256	149	57	55	150	115
Future Volume (veh/h)	133	548	197	42	317	51	256	149	57	55	150	115
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1559	1668	1504	1477	1750	1641	1695	1545	1559	1654	1532
Adj Flow Rate, veh/h	145	596	105	46	345	55	278	162	62	60	163	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	14	6	18	20	0	8	4	15	14	7	16
Cap, veh/h	175	688	899	54	548	546	308	476	366	73	220	171
Arrive On Green	0.11	0.44	0.44	0.04	0.37	0.37	0.20	0.28	0.28	0.05	0.13	0.13
Sat Flow, veh/h	1615	1559	1406	1433	1477	1473	1563	1695	1305	1485	1654	1288
Grp Volume(v), veh/h	145	596	105	46	345	55	278	162	62	60	163	60
Grp Sat Flow(s),veh/h/ln	1615	1559	1406	1433	1477	1473	1563	1695	1305	1485	1654	1288
Q Serve(g_s), s	8.8	34.5	2.9	3.2	19.1	2.4	17.3	7.6	3.6	4.0	9.4	4.2
Cycle Q Clear(g_c), s	8.8	34.5	2.9	3.2	19.1	2.4	17.3	7.6	3.6	4.0	9.4	4.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	688	899	54	548	546	308	476	366	73	220	171
V/C Ratio(X)	0.83	0.87	0.12	0.85	0.63	0.10	0.90	0.34	0.17	0.82	0.74	0.35
Avail Cap(c_a), veh/h	405	860	1054	359	815	813	392	510	393	372	498	388
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	25.2	7.0	47.7	25.7	20.5	39.1	28.5	27.1	46.9	41.5	39.3
Incr Delay (d2), s/veh	7.3	9.4	0.1	22.4	2.3	0.2	19.3	0.3	0.2	15.0	3.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.0	20.3	1.5	2.7	11.3	1.6	13.0	5.6	2.0	3.2	7.4	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	34.6	7.2	70.0	28.1	20.6	58.4	28.8	27.2	61.9	45.2	40.2
LnGrp LOS	D	C	A	E	C	C	E	C	C	E	D	D
Approach Vol, veh/h		846			446			502			283	
Approach Delay, s/veh		34.0			31.5			45.0			47.7	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.3	49.0	24.1	18.3	15.3	42.0	9.4	33.0
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	5.2	36.5	19.3	11.4	10.8	21.1	6.0	9.6
Green Ext Time (p_c), s	0.1	7.5	0.3	0.8	0.2	4.9	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	38.0
HCM 6th LOS	D

Notes

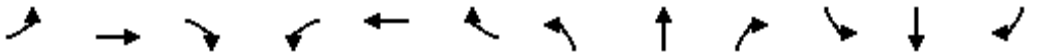
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	184	76	101	213	80	137	494	68	59	271	105
Future Volume (vph)	137	184	76	101	213	80	137	494	68	59	271	105
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1461	1422	1160	1446	1468		2887	2844	1141	1341	2747	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1461	1422	1160	1446	1468		2887	2844	1141	1341	2747	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	149	200	83	110	232	87	149	537	74	64	295	114
RTOR Reduction (vph)	0	0	69	0	13	0	0	0	45	0	36	0
Lane Group Flow (vph)	149	200	14	110	306	0	149	537	29	64	373	0
Heavy Vehicles (%)	10%	19%	24%	15%	16%	10%	8%	13%	26%	24%	16%	16%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	12.6	18.0	18.0	17.1	22.5		10.7	41.2	41.2	9.2	39.7	
Effective Green, g (s)	12.6	18.0	18.0	17.1	22.5		10.7	41.2	41.2	9.2	39.7	
Actuated g/C Ratio	0.12	0.17	0.17	0.16	0.21		0.10	0.39	0.39	0.09	0.38	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	175	243	198	235	314		294	1115	447	117	1038	
v/s Ratio Prot	c0.10	0.14		c0.08	c0.21		c0.05	c0.19		0.05	0.14	
v/s Ratio Perm			0.01						0.03			
v/c Ratio	0.85	0.82	0.07	0.47	0.98		0.51	0.48	0.06	0.55	0.36	
Uniform Delay, d1	45.3	42.0	36.5	39.8	41.0		44.7	23.9	19.9	45.9	23.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	30.7	20.1	0.2	1.5	44.0		1.4	1.5	0.3	5.1	1.0	
Delay (s)	76.0	62.1	36.7	41.3	85.0		46.0	25.4	20.2	51.0	24.5	
Level of Service	E	E	D	D	F		D	C	C	D	C	
Approach Delay (s)		62.0			73.8			28.9			28.1	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	137	184	76	101	213	80	137	494	68	59	271	105
Future Volume (veh/h)	137	184	76	101	213	80	137	494	68	59	271	105
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1614	1491	1422	1545	1532	1532	1641	1573	1395	1422	1532	1532
Adj Flow Rate, veh/h	149	200	0	110	232	87	149	537	74	64	295	114
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	19	24	15	16	16	8	13	26	24	16	16
Cap, veh/h	174	229		256	228	85	209	1287	509	76	863	326
Arrive On Green	0.11	0.15	0.00	0.17	0.21	0.21	0.07	0.43	0.43	0.06	0.42	0.42
Sat Flow, veh/h	1537	1491	1205	1472	1062	398	3032	2988	1182	1355	2065	781
Grp Volume(v), veh/h	149	200	0	110	0	319	149	537	74	64	206	203
Grp Sat Flow(s),veh/h/ln	1537	1491	1205	1472	0	1460	1516	1494	1182	1355	1455	1391
Q Serve(g_s), s	10.0	13.8	0.0	7.0	0.0	22.5	5.1	13.1	2.1	4.9	10.1	10.4
Cycle Q Clear(g_c), s	10.0	13.8	0.0	7.0	0.0	22.5	5.1	13.1	2.1	4.9	10.1	10.4
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	174	229		256	0	313	209	1287	509	76	608	582
V/C Ratio(X)	0.86	0.87		0.43	0.00	1.02	0.71	0.42	0.15	0.84	0.34	0.35
Avail Cap(c_a), veh/h	190	277		256	0	313	448	1287	509	200	608	582
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	43.5	0.0	38.7	0.0	41.3	47.9	20.7	5.2	49.1	20.7	20.8
Incr Delay (d2), s/veh	28.4	23.0	0.0	1.1	0.0	56.0	4.5	1.0	0.6	20.9	1.5	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.8	10.6	0.0	4.6	0.0	18.8	3.6	8.1	2.0	3.7	6.4	6.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.1	66.5	0.0	39.9	0.0	97.3	52.4	21.7	5.8	69.9	22.2	22.5
LnGrp LOS	E	E		D	A	F	D	C	A	E	C	C
Approach Vol, veh/h		349	A		429			760			473	
Approach Delay, s/veh		69.7			82.5			26.2			28.8	
Approach LOS		E			F			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.7	49.4	15.9	28.0	10.4	50.7	22.3	21.6
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	15.5	34.5	13.0	22.5	15.5	34.5	16.0	19.5
Max Q Clear Time (g_c+I1), s	7.1	12.4	12.0	24.5	6.9	15.1	9.0	15.8
Green Ext Time (p_c), s	0.3	4.7	0.0	0.0	0.1	6.8	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	46.4
HCM 6th LOS	D

Notes

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

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

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	10	10	203	155	13
Future Vol, veh/h	14	10	10	203	155	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	90	90	90	3	2	90
Mvmt Flow	15	11	11	223	170	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	422	177	184	0	-	0
Stage 1	177	-	-	-	-	-
Stage 2	245	-	-	-	-	-
Critical Hdwy	7.3	7.1	5	-	-	-
Critical Hdwy Stg 1	6.3	-	-	-	-	-
Critical Hdwy Stg 2	6.3	-	-	-	-	-
Follow-up Hdwy	4.31	4.11	3.01	-	-	-
Pot Cap-1 Maneuver	452	682	999	-	-	-
Stage 1	680	-	-	-	-	-
Stage 2	628	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	446	682	999	-	-	-
Mov Cap-2 Maneuver	446	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	628	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.3	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	999	-	521	-	-
HCM Lane V/C Ratio	0.011	-	0.051	-	-
HCM Control Delay (s)	8.6	0	12.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	26	182	29	32	90
Future Vol, veh/h	20	26	182	29	32	90
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	6	0	6	0	4	3
Mvmt Flow	21	28	194	31	34	96

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	374	210	0	0	225	0
Stage 1	210	-	-	-	-	-
Stage 2	164	-	-	-	-	-
Critical Hdwy	7.06	6.5	-	-	4.14	-
Critical Hdwy Stg 1	6.06	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.236	-
Pot Cap-1 Maneuver	582	821	-	-	1332	-
Stage 1	788	-	-	-	-	-
Stage 2	832	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	566	821	-	-	1332	-
Mov Cap-2 Maneuver	566	-	-	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	810	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	687	1332	-
HCM Lane V/C Ratio	-	-	0.071	0.026	-
HCM Control Delay (s)	-	-	10.6	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	137	77	18	28	7
Future Vol, veh/h	5	137	77	18	28	7
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, %	-	-2	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	0	3	3	0	4	0
Mvmt Flow	6	167	94	22	34	9

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	116	0	-	0	284	105
Stage 1	-	-	-	-	105	-
Stage 2	-	-	-	-	179	-
Critical Hdwy	4.1	-	-	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.2	-	-	-	3.536	3.3
Pot Cap-1 Maneuver	1485	-	-	-	702	955
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	847	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1485	-	-	-	699	955
Mov Cap-2 Maneuver	-	-	-	-	699	-
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	847	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1485	-	-	-	739
HCM Lane V/C Ratio	0.004	-	-	-	0.058
HCM Control Delay (s)	7.4	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	204	116	97	126	19
Future Vol, veh/h	12	204	116	97	126	19
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	94	94	94	94	94	94
Heavy Vehicles, %	9	3	2	4	1	18
Mvmt Flow	13	217	123	103	134	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	226	0	-	0	418	175
Stage 1	-	-	-	-	175	-
Stage 2	-	-	-	-	243	-
Critical Hdwy	4.19	-	-	-	6.41	6.38
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.281	-	-	-	3.509	3.462
Pot Cap-1 Maneuver	1302	-	-	-	593	829
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	800	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1302	-	-	-	586	829
Mov Cap-2 Maneuver	-	-	-	-	586	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	800	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1302	-	-	-	609
HCM Lane V/C Ratio	0.01	-	-	-	0.253
HCM Control Delay (s)	7.8	0	-	-	12.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1

Intersection	
Int Delay, s/veh	7.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	252	78	199	159	54	149
Future Vol, veh/h	252	78	199	159	54	149
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	83	83	83	83	83	83
Heavy Vehicles, %	3	1	1	5	9	3
Mvmt Flow	304	94	240	192	65	180

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	398	0	1023	351
Stage 1	-	-	-	-	351	-
Stage 2	-	-	-	-	672	-
Critical Hdwy	-	-	4.11	-	6.49	6.23
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	-	-	2.209	-	3.581	3.327
Pot Cap-1 Maneuver	-	-	1166	-	253	690
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	495	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1166	-	195	690
Mov Cap-2 Maneuver	-	-	-	-	195	-
Stage 1	-	-	-	-	697	-
Stage 2	-	-	-	-	381	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.9	25.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	412	-	-	1166	-
HCM Lane V/C Ratio	0.594	-	-	0.206	-
HCM Control Delay (s)	25.7	-	-	8.9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	3.7	-	-	0.8	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	39	362	1	1	339	56	1	2	2	44	1	19
Future Vol, veh/h	39	362	1	1	339	56	1	2	2	44	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	2	0	0	3	2	0	0	0	0	0	0
Mvmt Flow	46	426	1	1	399	66	1	2	2	52	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	465	0	0	427	0	0	967	986	427	922	920	401
Stage 1	-	-	-	-	-	-	519	519	-	401	401	-
Stage 2	-	-	-	-	-	-	448	467	-	521	519	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1107	-	-	1143	-	-	236	250	632	253	273	653
Stage 1	-	-	-	-	-	-	544	536	-	630	604	-
Stage 2	-	-	-	-	-	-	594	565	-	542	536	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1107	-	-	1143	-	-	217	236	632	240	258	652
Mov Cap-2 Maneuver	-	-	-	-	-	-	217	236	-	240	258	-
Stage 1	-	-	-	-	-	-	515	507	-	596	603	-
Stage 2	-	-	-	-	-	-	571	564	-	508	507	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	16.9	21.3
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	308	1107	-	-	1143	-	-	296
HCM Lane V/C Ratio	0.019	0.041	-	-	0.001	-	-	0.254
HCM Control Delay (s)	16.9	8.4	0	-	8.2	0	-	21.3
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	76	330	2	22	21	327	236	3	2	37	660	1
Future Volume (vph)	76	330	2	22	21	327	236	3	2	37	660	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3228	1461		1108	3197	1448	1662	1219		1541	1517
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3228	1461		1108	3197	1448	1662	1219		1541	1517
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Adj. Flow (vph)	89	388	2	26	25	385	278	4	2	44	776	1
RTOR Reduction (vph)	0	0	1	0	0	0	93	0	42	0	0	4
Lane Group Flow (vph)	89	388	1	0	51	385	185	4	4	0	435	416
Confl. Peds. (#/hr)	1		1		1		1	1				
Confl. Bikes (#/hr)			1							1		
Heavy Vehicles (%)	0%	3%	0%	50%	50%	4%	2%	0%	0%	22%	2%	0%
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Split	NA		Split	NA
Protected Phases	5	2	8	1	1	6	4	8	8		4	4
Permitted Phases			2				6					
Actuated Green, G (s)	8.3	20.4	25.4		7.8	19.9	58.9	5.0	5.0		39.0	39.0
Effective Green, g (s)	8.3	20.4	25.4		7.8	19.9	58.9	5.0	5.0		39.0	39.0
Actuated g/C Ratio	0.09	0.23	0.29		0.09	0.22	0.66	0.06	0.06		0.44	0.44
Clearance Time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2	2.5		2.5	4.2	2.5	2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	155	742	418		97	717	961	93	68		677	667
v/s Ratio Prot	0.05	c0.12	0.00		0.05	c0.12	0.08	0.00	c0.00		c0.28	0.27
v/s Ratio Perm			0.00				0.04					
v/c Ratio	0.57	0.52	0.00		0.53	0.54	0.19	0.04	0.07		0.64	0.62
Uniform Delay, d1	38.5	29.9	22.6		38.7	30.3	5.7	39.6	39.6		19.4	19.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	4.2	0.9	0.0		3.9	1.1	0.1	0.1	0.3		1.9	1.6
Delay (s)	42.7	30.8	22.6		42.6	31.4	5.8	39.7	39.9		21.3	20.8
Level of Service	D	C	C		D	C	A	D	D		C	C
Approach Delay (s)		33.0				22.2			39.9			21.0
Approach LOS		C				C			D			C

Intersection Summary			
HCM 2000 Control Delay	24.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	88.7	Sum of lost time (s)	16.5
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	66
Future Volume (vph)	66
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.85
Adj. Flow (vph)	78
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

07/13/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	76	330	2	22	21	327	236	3	2	37	660	1
Future Volume (veh/h)	76	330	2	22	21	327	236	3	2	37	660	1
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1709	1750		1068	1695	1723	1750	1750	1750	1717	1745
Adj Flow Rate, veh/h	89	388	2		25	385	278	4	2	44	850	0
Peak Hour Factor	0.85	0.85	0.85		0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	0	3	0		50	4	2	0	0	0	2	0
Cap, veh/h	113	978	527		29	815	836	102	4	86	1048	559
Arrive On Green	0.07	0.30	0.30		0.03	0.25	0.25	0.06	0.06	0.06	0.32	0.00
Sat Flow, veh/h	1667	3247	1449		1017	3221	1457	1667	64	1405	3271	1745
Grp Volume(v), veh/h	89	388	2		25	385	278	4	0	46	850	0
Grp Sat Flow(s),veh/h/ln	1667	1624	1449		1017	1611	1457	1667	0	1469	1636	1745
Q Serve(g_s), s	3.0	5.4	0.1		1.4	5.8	5.7	0.1	0.0	1.7	13.6	0.0
Cycle Q Clear(g_c), s	3.0	5.4	0.1		1.4	5.8	5.7	0.1	0.0	1.7	13.6	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.96	1.00	
Lane Grp Cap(c), veh/h	113	978	527		29	815	836	102	0	90	1048	559
V/C Ratio(X)	0.79	0.40	0.00		0.86	0.47	0.33	0.04	0.00	0.51	0.81	0.00
Avail Cap(c_a), veh/h	583	2557	1232		356	2537	1615	875	0	771	2576	1374
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.2	15.9	11.6		27.6	18.1	6.4	25.2	0.0	26.0	17.8	0.0
Incr Delay (d2), s/veh	8.7	0.4	0.0		37.6	0.7	0.4	0.1	0.0	3.3	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	3.4	0.0		1.1	3.7	5.7	0.1	0.0	1.2	8.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.9	16.3	11.6		65.3	18.8	6.8	25.4	0.0	29.3	19.0	0.0
LnGrp LOS	C	B	B		E	B	A	C	A	C	B	A
Approach Vol, veh/h		479				688			50			850
Approach Delay, s/veh		19.7				15.6			29.0			19.0
Approach LOS		B				B			C			B

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.6	21.7		22.3	8.4	19.0		7.5				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	3.4	7.4		15.6	5.0	7.8		3.7				
Green Ext Time (p_c), s	0.0	4.3		2.6	0.1	6.3		0.2				

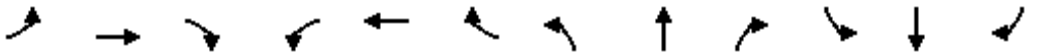
Intersection Summary			
HCM 6th Ctrl Delay		18.3	
HCM 6th LOS		B	

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

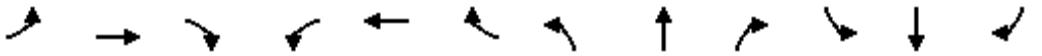
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	66
Future Volume (veh/h)	66
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1745
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.85
Percent Heavy Veh, %	0
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	767	282	0	728	476	0	0	0	542	0	295
Future Volume (vph)	0	767	282	0	728	476	0	0	0	542	0	295
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3180	1409		3325	1429				3083		1395
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3180	1409		3325	1429				3083		1395
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	862	317	0	818	535	0	0	0	609	0	331
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	31
Lane Group Flow (vph)	0	862	317	0	818	535	0	0	0	609	0	300
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	3%	4%	0%	2%	4%	0%	0%	0%	2%	0%	4%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		65.7	100.0		56.1	100.0				25.3		35.4
Effective Green, g (s)		65.7	100.0		56.1	100.0				25.3		37.4
Actuated g/C Ratio		0.66	1.00		0.56	1.00				0.25		0.37
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2089	1409		1865	1429				779		521
v/s Ratio Prot		0.27			c0.25					c0.20		c0.22
v/s Ratio Perm			0.23			0.37						
v/c Ratio		0.41	0.22		0.44	0.37				0.78		0.58
Uniform Delay, d1		8.1	0.0		12.8	0.0				34.8		25.0
Progression Factor		1.00	1.00		0.85	1.00				1.00		1.00
Incremental Delay, d2		0.6	0.4		0.7	0.7				4.9		1.3
Delay (s)		8.7	0.4		11.5	0.7				39.7		26.2
Level of Service		A	A		B	A				D		C
Approach Delay (s)		6.4			7.3			0.0			35.0	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



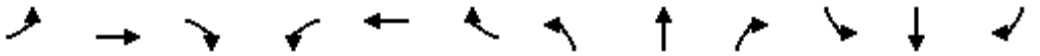
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	767	282	0	728	476	0	0	0	542	0	295
Future Volume (veh/h)	0	767	282	0	728	476	0	0	0	542	0	295
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1660	1647	0	1867	1840				1587	0	1560
Adj Flow Rate, veh/h	0	862	0	0	818	0				609	0	219
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89				0.89	0.89	0.89
Percent Heavy Veh, %	0	3	4	0	2	4				2	0	4
Cap, veh/h	0	2113		0	2376					704	0	344
Arrive On Green	0.00	0.67	0.00	0.00	1.00	0.00				0.24	0.00	0.26
Sat Flow, veh/h	0	3237	1395	0	3641	1559				2932	0	1322
Grp Volume(v), veh/h	0	862	0	0	818	0				609	0	219
Grp Sat Flow(s),veh/h/ln	0	1577	1395	0	1774	1559				1466	0	1322
Q Serve(g_s), s	0.0	12.4	0.0	0.0	0.0	0.0				19.9	0.0	14.7
Cycle Q Clear(g_c), s	0.0	12.4	0.0	0.0	0.0	0.0				19.9	0.0	14.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2113		0	2376					704	0	344
V/C Ratio(X)	0.00	0.41		0.00	0.34					0.86	0.00	0.64
Avail Cap(c_a), veh/h	0	2113		0	2376					1041	0	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.79	0.00	0.00	0.85	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.5	0.0	0.0	0.0	0.0				36.4	0.0	32.8
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.3	0.0				4.6	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	6.7	0.0	0.0	0.2	0.0				11.9	0.0	16.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.0	0.0	0.0	0.3	0.0				41.0	0.0	34.3
LnGrp LOS	A	A		A	A					D	A	C
Approach Vol, veh/h		862	A		818	A					828	
Approach Delay, s/veh		8.0			0.3						39.2	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		71.5		28.5		71.5						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		14.4		21.9		2.0						
Green Ext Time (p_c), s		18.2		2.1		9.5						

Intersection Summary												
HCM 6th Ctrl Delay			15.8									
HCM 6th LOS			B									

Notes

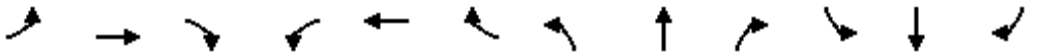
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1095	214	0	987	264	217	0	408	0	0	0
Future Volume (vph)	0	1095	214	0	987	264	217	0	408	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		3325	1402		3180	1392	1487	1280	1318			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		3325	1402		3180	1392	1487	1280	1318			
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	1190	233	0	1073	287	236	0	443	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	49	49	0	0	0
Lane Group Flow (vph)	0	1190	233	0	1073	287	212	188	181	0	0	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	2%	6%	0%	3%	3%	3%	0%	4%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		70.5	100.0		70.5	100.0	20.5	20.5	20.5			
Effective Green, g (s)		70.5	100.0		70.5	100.0	20.5	20.5	20.5			
Actuated g/C Ratio		0.70	1.00		0.70	1.00	0.20	0.20	0.20			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2344	1402		2241	1392	304	262	270			
v/s Ratio Prot		c0.36			0.34		0.14	c0.15				
v/s Ratio Perm			0.17			0.21			0.14			
v/c Ratio		0.51	0.17		0.48	0.21	0.70	0.72	0.67			
Uniform Delay, d1		6.8	0.0		6.6	0.0	36.9	37.0	36.6			
Progression Factor		1.84	1.00		1.12	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.7	0.2		0.6	0.3	6.3	8.4	5.6			
Delay (s)		13.2	0.2		8.0	0.3	43.2	45.4	42.2			
Level of Service		B	A		A	A	D	D	D			
Approach Delay (s)		11.0			6.4			43.6			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	15.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1095	214	0	987	264	217	0	408	0	0	0
Future Volume (veh/h)	0	1095	214	0	987	264	217	0	408	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1867	1812	0	1660	1660	1514	1555	1500			
Adj Flow Rate, veh/h	0	1190	0	0	1073	0	306	0	150			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Percent Heavy Veh, %	0	2	6	0	3	3	3	0	4			
Cap, veh/h	0	2710		0	2410		421	0	186			
Arrive On Green	0.00	1.00	0.00	0.00	1.00	0.00	0.15	0.00	0.15			
Sat Flow, veh/h	0	3641	1536	0	3237	1407	2883	0	1271			
Grp Volume(v), veh/h	0	1190	0	0	1073	0	306	0	150			
Grp Sat Flow(s),veh/h/ln	0	1774	1536	0	1577	1407	1442	0	1271			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	10.1	0.0	11.4			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	0.0	0.0	10.1	0.0	11.4			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2710		0	2410		421	0	186			
V/C Ratio(X)	0.00	0.44		0.00	0.45		0.73	0.00	0.81			
Avail Cap(c_a), veh/h	0	2710		0	2410		1024	0	451			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.33	1.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.80	0.00	0.00	0.78	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	40.8	0.0	41.3			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.5	0.0	1.8	0.0	6.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.3	0.0	0.0	0.3	0.0	6.6	0.0	6.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	0.5	0.0	42.6	0.0	47.4			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1190	A		1073	A		456				
Approach Delay, s/veh		0.4			0.5			44.2				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		80.9				80.9		19.1				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				2.0		13.4				
Green Ext Time (p_c), s		18.5				27.3		1.2				

Intersection Summary	
HCM 6th Ctrl Delay	7.8
HCM 6th LOS	A

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	33	81	865	122	11	147	747	17	388	11	152	31
Future Volume (vph)	33	81	865	122	11	147	747	17	388	11	152	31
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.98	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95
Satd. Flow (prot)		1583	3228	1382		1621	3141		1504	1516	1451	1662
Flt Permitted		0.26	1.00	1.00		0.20	1.00		0.95	0.95	1.00	0.95
Satd. Flow (perm)		436	3228	1382		349	3141		1504	1516	1451	1662
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)	35	85	911	128	12	155	786	18	408	12	160	33
RTOR Reduction (vph)	0	0	0	71	0	0	1	0	0	0	131	0
Lane Group Flow (vph)	0	120	911	57	0	167	803	0	208	212	29	33
Confl. Peds. (#/hr)				2		2			2		3	3
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	5%	5%	3%	5%	1%	1%	4%	0%	5%	0%	1%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		55.7	44.8	44.8		55.7	47.2		18.4	18.4	18.4	8.4
Effective Green, g (s)		55.7	44.8	44.8		55.7	47.2		18.4	18.4	18.4	8.4
Actuated g/C Ratio		0.56	0.45	0.45		0.56	0.47		0.18	0.18	0.18	0.08
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		340	1446	619		333	1482		276	278	266	139
v/s Ratio Prot		0.03	c0.28			0.05	c0.26		0.14	c0.14		0.02
v/s Ratio Perm		0.17		0.04		0.22					0.02	
v/c Ratio		0.35	0.63	0.09		0.50	0.54		0.75	0.76	0.11	0.24
Uniform Delay, d1		11.5	21.2	15.9		26.0	18.7		38.7	38.7	34.0	42.8
Progression Factor		1.10	1.10	1.25		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4	1.8	0.3		0.9	1.4		10.6	11.2	0.1	0.6
Delay (s)		13.0	25.3	20.2		26.9	20.2		49.2	49.9	34.1	43.5
Level of Service		B	C	C		C	C		D	D	C	D
Approach Delay (s)			23.4				21.3			45.3		
Approach LOS			C				C			D		

Intersection Summary			
HCM 2000 Control Delay	28.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	21	83
Future Volume (vph)	21	83
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.88	
Flt Protected	1.00	
Satd. Flow (prot)	1462	
Flt Permitted	1.00	
Satd. Flow (perm)	1462	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	22	87
RTOR Reduction (vph)	80	0
Lane Group Flow (vph)	29	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		1
Heavy Vehicles (%)	0%	5%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	8.4	
Effective Green, g (s)	8.4	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	122	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.24	
Uniform Delay, d1	42.8	
Progression Factor	1.00	
Incremental Delay, d2	0.7	
Delay (s)	43.6	
Level of Service	D	
Approach Delay (s)	43.5	
Approach LOS	D	

Intersection Summary

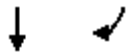
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	33	81	865	122	11	147	747	17	388	11	152	31
Future Volume (veh/h)	33	81	865	122	11	147	747	17	388	11	152	31
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1682	1709	1682		1688	1647	1647	1682	1750	1736	1750
Adj Flow Rate, veh/h		85	911	0		155	786	18	417	0	0	33
Peak Hour Factor		0.95	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %		5	3	5		1	4	4	5	0	1	0
Cap, veh/h		417	1055			561	1789	41	497	0		98
Arrive On Green		0.04	0.32	0.00		0.28	0.57	0.57	0.16	0.00	0.00	0.06
Sat Flow, veh/h		1602	3247	1425		1607	3126	72	3203	0	1471	1667
Grp Volume(v), veh/h		85	911	0		155	393	411	417	0	0	33
Grp Sat Flow(s),veh/h/ln		1602	1624	1425		1607	1564	1634	1602	0	1471	1667
Q Serve(g_s), s		2.2	26.3	0.0		0.2	14.4	14.4	12.6	0.0	0.0	1.9
Cycle Q Clear(g_c), s		2.2	26.3	0.0		0.2	14.4	14.4	12.6	0.0	0.0	1.9
Prop In Lane		1.00		1.00		1.00		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		417	1055			561	895	935	497	0		98
V/C Ratio(X)		0.20	0.86			0.28	0.44	0.44	0.84	0.00		0.34
Avail Cap(c_a), veh/h		580	1055			561	895	935	657	0		258
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.82	0.82	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		9.2	31.7	0.0		25.1	12.2	12.2	41.0	0.0	0.0	45.2
Incr Delay (d2), s/veh		0.1	7.8	0.0		0.2	1.6	1.5	6.7	0.0	0.0	1.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		1.3	16.1	0.0		4.8	8.8	9.1	9.2	0.0	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		9.3	39.5	0.0		25.3	13.8	13.7	47.7	0.0	0.0	46.6
LnGrp LOS		A	D			C	B	B	D	A		D
Approach Vol, veh/h			996	A			959			417	A	
Approach Delay, s/veh			36.9				15.6			47.7		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	32.6	37.0		10.4	7.9	61.7		20.0
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	2.2	28.3		3.9	4.2	16.4		14.6
Green Ext Time (p_c), s	0.2	3.3		0.1	0.1	9.5		0.6

Intersection Summary	
HCM 6th Ctrl Delay	30.6
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

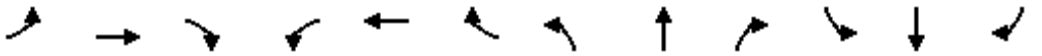


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	21	83
Future Volume (veh/h)	21	83
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1750	1750
Adj Flow Rate, veh/h	22	0
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	0	0
Cap, veh/h	103	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1750	0
Grp Volume(v), veh/h	22	0
Grp Sat Flow(s),veh/h/ln	1750	0
Q Serve(g_s), s	1.2	0.0
Cycle Q Clear(g_c), s	1.2	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	103	
V/C Ratio(X)	0.21	
Avail Cap(c_a), veh/h	271	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	44.8	0.0
Incr Delay (d2), s/veh	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	45.6	0.0
LnGrp LOS	D	
Approach Vol, veh/h	55	A
Approach Delay, s/veh	46.2	
Approach LOS	D	

Timer - Assigned Phs

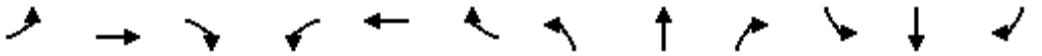
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	523	365	86	491	75	230	115	61	85	175	89
Future Volume (vph)	102	523	365	86	491	75	230	115	61	85	175	89
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	1683	1473	1646	1683	1441	1630	1750	1430	1646	1733	1376
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1630	1683	1473	1646	1683	1441	1630	1750	1430	1646	1733	1376
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	113	581	406	96	546	83	256	128	68	94	194	99
RTOR Reduction (vph)	0	0	125	0	0	47	0	0	51	0	0	84
Lane Group Flow (vph)	113	581	281	96	546	36	256	128	17	94	194	15
Confl. Peds. (#/hr)	1					1	4					4
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	4%	1%	1%	4%	1%	2%	0%	4%	1%	1%	5%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	14.0	52.2	76.9	12.6	50.8	50.8	24.7	31.8	31.8	12.4	19.5	19.5
Effective Green, g (s)	14.0	52.2	76.9	12.6	50.8	50.8	24.7	31.8	31.8	12.4	19.5	19.5
Actuated g/C Ratio	0.11	0.41	0.60	0.10	0.40	0.40	0.19	0.25	0.25	0.10	0.15	0.15
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	178	686	884	162	667	571	314	434	355	159	264	209
v/s Ratio Prot	c0.07	c0.35	0.06	0.06	0.32		c0.16	0.07		0.06	c0.11	
v/s Ratio Perm			0.13			0.02			0.01			0.01
v/c Ratio	0.63	0.85	0.32	0.59	0.82	0.06	0.82	0.29	0.05	0.59	0.73	0.07
Uniform Delay, d1	54.6	34.3	12.6	55.2	34.5	23.9	49.5	39.0	36.6	55.4	51.8	46.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.3	10.4	0.2	4.8	8.6	0.1	14.6	0.3	0.0	4.8	9.6	0.1
Delay (s)	60.9	44.6	12.8	60.0	43.1	24.0	64.1	39.3	36.6	60.2	61.4	46.6
Level of Service	E	D	B	E	D	C	E	D	D	E	E	D
Approach Delay (s)		34.5			43.2			52.9			57.3	
Approach LOS		C			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	43.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	128.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	77.4%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



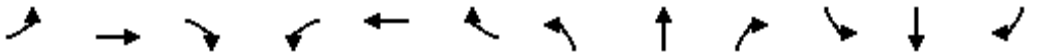
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	523	365	86	491	75	230	115	61	85	175	89
Future Volume (veh/h)	102	523	365	86	491	75	230	115	61	85	175	89
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1695	1736	1736	1695	1736	1723	1750	1695	1736	1736	1682
Adj Flow Rate, veh/h	113	581	239	96	546	83	256	128	68	94	194	99
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	4	1	1	4	1	2	0	4	1	1	5
Cap, veh/h	140	700	865	121	679	589	287	450	367	118	267	211
Arrive On Green	0.09	0.41	0.41	0.07	0.40	0.40	0.18	0.26	0.26	0.07	0.15	0.15
Sat Flow, veh/h	1641	1695	1470	1654	1695	1470	1641	1750	1426	1654	1736	1375
Grp Volume(v), veh/h	113	581	239	96	546	83	256	128	68	94	194	99
Grp Sat Flow(s),veh/h/ln	1641	1695	1470	1654	1695	1470	1641	1750	1426	1654	1736	1375
Q Serve(g_s), s	6.9	31.4	8.2	5.9	29.2	3.7	15.6	6.0	3.8	5.7	10.9	6.7
Cycle Q Clear(g_c), s	6.9	31.4	8.2	5.9	29.2	3.7	15.6	6.0	3.8	5.7	10.9	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	140	700	865	121	679	589	287	450	367	118	267	211
V/C Ratio(X)	0.81	0.83	0.28	0.80	0.80	0.14	0.89	0.28	0.19	0.79	0.73	0.47
Avail Cap(c_a), veh/h	400	909	1046	403	909	788	400	512	417	403	508	402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.1	26.9	10.4	46.8	27.2	19.5	41.3	30.5	29.7	46.9	41.4	39.6
Incr Delay (d2), s/veh	7.9	6.7	0.3	8.5	5.5	0.2	15.4	0.3	0.2	8.6	2.8	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	19.8	4.8	4.9	18.5	2.3	12.0	4.7	2.4	4.8	8.5	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.0	33.6	10.7	55.3	32.7	19.7	56.7	30.8	29.9	55.5	44.2	40.8
LnGrp LOS	D	C	B	E	C	B	E	C	C	E	D	D
Approach Vol, veh/h		933			725			452			387	
Approach Delay, s/veh		30.2			34.2			45.3			46.1	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	47.3	22.5	20.8	13.3	46.1	11.8	31.4
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	7.9	33.4	17.6	12.9	8.9	31.2	7.7	8.0
Green Ext Time (p_c), s	0.1	9.0	0.3	1.1	0.2	7.5	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

Notes

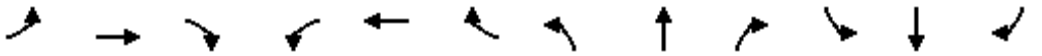
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	281	213	216	232	53	197	370	95	111	594	137
Future Volume (vph)	151	281	213	216	232	53	197	370	95	111	594	137
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1516	1611	1390	1646	1638		3057	3032	1339	1539	3010	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1516	1611	1390	1646	1638		3057	3032	1339	1539	3010	
Peak-hour factor, PHF	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Adj. Flow (vph)	184	343	260	263	283	65	240	451	116	135	724	167
RTOR Reduction (vph)	0	0	203	0	7	0	0	0	77	0	15	0
Lane Group Flow (vph)	184	343	57	263	341	0	240	451	39	135	876	0
Confl. Peds. (#/hr)	1		2	2		1	4		1	1		4
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	6%	5%	2%	1%	3%	6%	2%	6%	5%	8%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	19.1	27.5	27.5	21.5	29.9		12.2	41.6	41.6	14.9	44.3	
Effective Green, g (s)	19.1	27.5	27.5	21.5	29.9		12.2	41.6	41.6	14.9	44.3	
Actuated g/C Ratio	0.15	0.22	0.22	0.17	0.24		0.10	0.33	0.33	0.12	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	231	354	305	283	391		298	1009	445	183	1066	
v/s Ratio Prot	0.12	c0.21		c0.16	0.21		0.08	0.15		c0.09	c0.29	
v/s Ratio Perm			0.04						0.03			
v/c Ratio	0.80	0.97	0.19	0.93	0.87		0.81	0.45	0.09	0.74	0.82	
Uniform Delay, d1	51.1	48.3	39.7	51.0	45.7		55.2	32.7	28.6	53.2	36.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	17.1	39.3	0.4	34.8	19.2		14.6	1.4	0.4	14.4	7.1	
Delay (s)	68.2	87.6	40.0	85.8	64.9		69.8	34.1	29.0	67.5	43.9	
Level of Service	E	F	D	F	E		E	C	C	E	D	
Approach Delay (s)		67.3			73.9			44.0			47.0	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	56.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	78.1%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	151	281	213	216	232	53	197	370	95	111	594	137
Future Volume (veh/h)	151	281	213	216	232	53	197	370	95	111	594	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1682	1723	1736	1709	1709	1723	1668	1682	1641	1654	1654
Adj Flow Rate, veh/h	184	343	0	263	283	65	240	451	116	135	724	167
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	6	5	2	1	3	3	2	6	5	8	7	7
Cap, veh/h	251	366		286	311	71	289	1118	500	158	917	211
Arrive On Green	0.16	0.22	0.00	0.17	0.23	0.23	0.09	0.35	0.35	0.10	0.36	0.36
Sat Flow, veh/h	1589	1682	1460	1654	1340	308	3183	3169	1417	1563	2527	583
Grp Volume(v), veh/h	184	343	0	263	0	348	240	451	116	135	450	441
Grp Sat Flow(s),veh/h/ln	1589	1682	1460	1654	0	1648	1591	1585	1417	1563	1572	1538
Q Serve(g_s), s	13.8	25.1	0.0	19.6	0.0	25.7	9.3	13.4	4.4	10.6	32.0	32.0
Cycle Q Clear(g_c), s	13.8	25.1	0.0	19.6	0.0	25.7	9.3	13.4	4.4	10.6	32.0	32.0
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	251	366		286	0	382	289	1118	500	158	570	558
V/C Ratio(X)	0.73	0.94		0.92	0.00	0.91	0.83	0.40	0.23	0.85	0.79	0.79
Avail Cap(c_a), veh/h	251	370		291	0	442	318	1118	500	219	570	558
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.1	48.1	0.0	50.9	0.0	46.7	55.9	30.5	10.8	55.3	35.6	35.6
Incr Delay (d2), s/veh	10.5	31.3	0.0	32.5	0.0	21.4	15.4	1.1	1.1	20.4	10.6	10.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	10.2	19.6	0.0	15.9	0.0	18.5	7.7	9.0	4.5	8.7	19.7	19.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.6	79.4	0.0	83.3	0.0	68.1	71.3	31.6	11.9	75.7	46.2	46.4
LnGrp LOS	E	E		F	A	E	E	C	B	E	D	D
Approach Vol, veh/h		527	A		611			807			1026	
Approach Delay, s/veh		72.8			74.7			40.6			50.2	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.9	50.9	23.8	34.5	17.1	49.6	25.6	32.7
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	12.5	43.5	16.0	33.5	17.5	38.5	22.0	27.5
Max Q Clear Time (g_c+I1), s	11.3	34.0	15.8	27.7	12.6	15.4	21.6	27.1
Green Ext Time (p_c), s	0.1	6.0	0.0	1.1	0.1	6.6	0.0	0.1

Intersection Summary	
HCM 6th Ctrl Delay	56.6
HCM 6th LOS	E

Notes

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

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

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	12	11	184	261	14
Future Vol, veh/h	14	12	11	184	261	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	90	90	90	1	3	90
Mvmt Flow	14	12	11	188	266	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	483	273	280	0	-	0
Stage 1	273	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Critical Hdwy	7.3	7.1	5	-	-	-
Critical Hdwy Stg 1	6.3	-	-	-	-	-
Critical Hdwy Stg 2	6.3	-	-	-	-	-
Follow-up Hdwy	4.31	4.11	3.01	-	-	-
Pot Cap-1 Maneuver	413	595	909	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	654	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	407	595	909	-	-	-
Mov Cap-2 Maneuver	407	-	-	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	654	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13	0.5	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	909	-	476	-	-
HCM Lane V/C Ratio	0.012	-	0.056	-	-
HCM Control Delay (s)	9	0	13	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	56	138	27	63	203
Future Vol, veh/h	29	56	138	27	63	203
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	1	0	2	2
Mvmt Flow	32	62	152	30	69	223

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	528	167	0	0	182	0
Stage 1	167	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Critical Hdwy	7.04	6.54	-	-	4.12	-
Critical Hdwy Stg 1	6.04	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.218	-
Pot Cap-1 Maneuver	465	860	-	-	1393	-
Stage 1	834	-	-	-	-	-
Stage 2	660	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	438	860	-	-	1393	-
Mov Cap-2 Maneuver	438	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	622	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.5	0	1.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	647	1393	-
HCM Lane V/C Ratio	-	-	0.144	0.05	-
HCM Control Delay (s)	-	-	11.5	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.2	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	192	106	35	88	24
Future Vol, veh/h	8	192	106	35	88	24
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, %	-	-2	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	4	3	0	0	14
Mvmt Flow	9	213	118	39	98	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	157	0	-	0	369	138
Stage 1	-	-	-	-	138	-
Stage 2	-	-	-	-	231	-
Critical Hdwy	4.23	-	-	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.426
Pot Cap-1 Maneuver	1358	-	-	-	635	879
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1358	-	-	-	630	879
Mov Cap-2 Maneuver	-	-	-	-	630	-
Stage 1	-	-	-	-	887	-
Stage 2	-	-	-	-	812	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1358	-	-	-	671
HCM Lane V/C Ratio	0.007	-	-	-	0.185
HCM Control Delay (s)	7.7	0	-	-	11.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	14

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	409	211	114	223	26
Future Vol, veh/h	11	409	211	114	223	26
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	83	83	83	83	83	83
Heavy Vehicles, %	0	3	2	4	2	38
Mvmt Flow	13	493	254	137	269	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	391	0	-	0	842	323
Stage 1	-	-	-	-	323	-
Stage 2	-	-	-	-	519	-
Critical Hdwy	4.1	-	-	-	6.42	6.58
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.642
Pot Cap-1 Maneuver	1179	-	-	-	334	642
Stage 1	-	-	-	-	734	-
Stage 2	-	-	-	-	597	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1179	-	-	-	329	642
Mov Cap-2 Maneuver	-	-	-	-	329	-
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	597	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	55.4
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1179	-	-	-	347
HCM Lane V/C Ratio	0.011	-	-	-	0.865
HCM Control Delay (s)	8.1	0	-	-	55.4
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	8.1

Intersection	
Int Delay, s/veh	8.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	469	163	182	260	65	117
Future Vol, veh/h	469	163	182	260	65	117
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	95	95	95	95	95	95
Heavy Vehicles, %	4	2	1	3	6	6
Mvmt Flow	494	172	192	274	68	123

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	666	0	1238	580
Stage 1	-	-	-	-	580	-
Stage 2	-	-	-	-	658	-
Critical Hdwy	-	-	4.11	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	928	-	190	507
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	508	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	928	-	144	507
Mov Cap-2 Maneuver	-	-	-	-	144	-
Stage 1	-	-	-	-	552	-
Stage 2	-	-	-	-	384	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.1	46.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	267	-	-	928	-
HCM Lane V/C Ratio	0.718	-	-	0.206	-
HCM Control Delay (s)	46.5	-	-	9.9	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	5	-	-	0.8	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	57	529	1	4	412	54	1	1	2	27	1	30
Future Vol, veh/h	57	529	1	4	412	54	1	1	2	27	1	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	5	0	0	2	2	0	0	0	5	0	6
Mvmt Flow	61	563	1	4	438	57	1	1	2	29	1	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	495	0	0	564	0	0	1177	1189	564	1133	1132	438
Stage 1	-	-	-	-	-	-	686	686	-	446	446	-
Stage 2	-	-	-	-	-	-	491	503	-	687	686	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.15	6.5	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.545	4	3.354
Pot Cap-1 Maneuver	1079	-	-	1018	-	-	169	190	529	178	205	610
Stage 1	-	-	-	-	-	-	441	451	-	586	577	-
Stage 2	-	-	-	-	-	-	563	545	-	432	451	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1079	-	-	1018	-	-	149	173	529	165	187	610
Mov Cap-2 Maneuver	-	-	-	-	-	-	149	173	-	165	187	-
Stage 1	-	-	-	-	-	-	405	414	-	538	574	-
Stage 2	-	-	-	-	-	-	530	542	-	394	414	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.1	19.9	22.6
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	246	1079	-	-	1018	-	-	266
HCM Lane V/C Ratio	0.017	0.056	-	-	0.004	-	-	0.232
HCM Control Delay (s)	19.9	8.5	0	-	8.6	0	-	22.6
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.9

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	89	464	5	22	58	397	269	6	6	69	627	6
Future Volume (vph)	89	464	5	22	58	397	269	6	6	69	627	6
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	0.98		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		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1630	3167	1462		1269	3260	1474	1330	1264		1571	1537
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1630	3167	1462		1269	3260	1474	1330	1264		1571	1537
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	93	483	5	23	60	414	280	6	6	72	653	6
RTOR Reduction (vph)	0	0	3	0	0	0	108	0	67	0	0	5
Lane Group Flow (vph)	93	483	2	0	83	414	172	6	11	0	366	357
Confl. Peds. (#/hr)	1		1		1		1	1				
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	2%	5%	0%	31%	31%	2%	0%	25%	0%	19%	0%	20%
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Split	NA		Split	NA
Protected Phases	5	2	8	1	1	6	4	8	8		4	4
Permitted Phases			2				6					
Actuated Green, G (s)	10.2	22.9	28.3		9.3	22.0	51.5	5.4	5.4		29.5	29.5
Effective Green, g (s)	10.2	22.9	28.3		9.3	22.0	51.5	5.4	5.4		29.5	29.5
Actuated g/C Ratio	0.12	0.27	0.34		0.11	0.26	0.62	0.06	0.06		0.35	0.35
Clearance Time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2	2.5		2.5	4.2	2.5	2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	198	867	494		141	857	908	85	81		554	542
v/s Ratio Prot	0.06	c0.15	0.00		c0.07	0.13	0.07	0.00	c0.01		c0.23	0.23
v/s Ratio Perm			0.00				0.05					
v/c Ratio	0.47	0.56	0.00		0.59	0.48	0.19	0.07	0.13		0.66	0.66
Uniform Delay, d1	34.2	26.0	18.3		35.3	26.0	7.0	36.7	36.9		22.8	22.8
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	1.0	0.0		5.1	0.6	0.1	0.3	0.5		2.7	2.6
Delay (s)	35.5	27.0	18.3		40.5	26.6	7.1	37.0	37.4		25.5	25.4
Level of Service	D	C	B		D	C	A	D	D		C	C
Approach Delay (s)		28.3				21.1			37.4			25.4
Approach LOS		C				C			D			C

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	16.5
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	66
Future Volume (vph)	66
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	69
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

07/13/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	89	464	5	22	58	397	269	6	6	69	627	6
Future Volume (veh/h)	89	464	5	22	58	397	269	6	6	69	627	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1723	1682	1750		1327	1723	1750	1409	1750	1750	1745	1472
Adj Flow Rate, veh/h	93	483	5		60	414	280	6	6	72	722	0
Peak Hour Factor	0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	5	0		31	2	0	25	0	0	0	20
Cap, veh/h	118	940	557		68	876	806	110	9	111	917	406
Arrive On Green	0.07	0.29	0.29		0.05	0.27	0.27	0.08	0.08	0.08	0.28	0.00
Sat Flow, veh/h	1641	3195	1481		1264	3273	1480	1342	114	1363	3323	1472
Grp Volume(v), veh/h	93	483	5		60	414	280	6	0	78	722	0
Grp Sat Flow(s),veh/h/ln	1641	1598	1481		1264	1637	1480	1342	0	1477	1661	1472
Q Serve(g_s), s	3.1	7.1	0.1		2.6	6.0	6.0	0.2	0.0	2.9	11.3	0.0
Cycle Q Clear(g_c), s	3.1	7.1	0.1		2.6	6.0	6.0	0.2	0.0	2.9	11.3	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.92	1.00	
Lane Grp Cap(c), veh/h	118	940	557		68	876	806	110	0	121	917	406
V/C Ratio(X)	0.79	0.51	0.01		0.88	0.47	0.35	0.05	0.00	0.65	0.79	0.00
Avail Cap(c_a), veh/h	585	2562	1308		450	2625	1597	717	0	790	2665	1180
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.6	16.5	11.0		26.4	17.2	7.2	23.8	0.0	25.0	18.8	0.0
Incr Delay (d2), s/veh	8.5	0.7	0.0		21.6	0.6	0.4	0.2	0.0	4.3	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.6	4.3	0.1		2.1	3.8	5.5	0.1	0.0	1.9	7.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.1	17.1	11.0		48.0	17.8	7.6	23.9	0.0	29.2	19.9	0.0
LnGrp LOS	C	B	B		D	B	A	C	A	C	B	A
Approach Vol, veh/h		581				754			84			722
Approach Delay, s/veh		19.8				16.4			28.9			19.9
Approach LOS		B				B			C			B

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	21.0		19.5	8.5	19.5		8.6				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	4.6	9.1		13.3	5.1	8.0		4.9				
Green Ext Time (p_c), s	0.1	5.5		2.1	0.1	6.7		0.3				

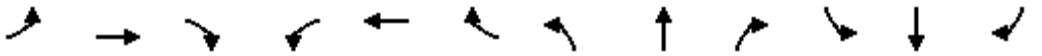
Intersection Summary		
HCM 6th Ctrl Delay		19.0
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	66
Future Volume (veh/h)	66
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1472
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.96
Percent Heavy Veh, %	20
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

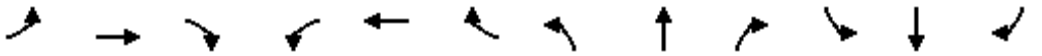
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	777	405	0	806	633	0	0	0	555	0	348
Future Volume (vph)	0	777	405	0	806	633	0	0	0	555	0	348
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3180	1409		3325	1487				3083		1381
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3180	1409		3325	1487				3083		1381
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	793	413	0	822	646	0	0	0	566	0	355
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	30
Lane Group Flow (vph)	0	793	413	0	822	646	0	0	0	566	0	325
Heavy Vehicles (%)	0%	3%	4%	0%	2%	2%	0%	0%	0%	2%	0%	5%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		65.1	100.0		55.4	100.0				25.9		36.1
Effective Green, g (s)		65.1	100.0		55.4	100.0				25.9		38.1
Actuated g/C Ratio		0.65	1.00		0.55	1.00				0.26		0.38
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2070	1409		1842	1487				798		526
v/s Ratio Prot		0.25			0.25					c0.18		c0.24
v/s Ratio Perm			0.29			c0.43						
v/c Ratio		0.38	0.29		0.45	0.43				0.71		0.62
Uniform Delay, d1		8.1	0.0		13.2	0.0				33.6		25.0
Progression Factor		1.00	1.00		0.87	1.00				1.00		1.00
Incremental Delay, d2		0.5	0.5		0.7	0.8				2.7		1.8
Delay (s)		8.7	0.5		12.2	0.8				36.3		26.9
Level of Service		A	A		B	A				D		C
Approach Delay (s)		5.9			7.2			0.0			32.7	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	54.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	777	405	0	806	633	0	0	0	555	0	348
Future Volume (veh/h)	0	777	405	0	806	633	0	0	0	555	0	348
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1660	1647	0	1867	1867				1587	0	1546
Adj Flow Rate, veh/h	0	793	0	0	822	0				566	0	253
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	3	4	0	2	2				2	0	5
Cap, veh/h	0	2157		0	2425					664	0	323
Arrive On Green	0.00	0.68	0.00	0.00	1.00	0.00				0.23	0.00	0.25
Sat Flow, veh/h	0	3237	1395	0	3641	1582				2932	0	1310
Grp Volume(v), veh/h	0	793	0	0	822	0				566	0	253
Grp Sat Flow(s),veh/h/ln	0	1577	1395	0	1774	1582				1466	0	1310
Q Serve(g_s), s	0.0	10.6	0.0	0.0	0.0	0.0				18.5	0.0	18.0
Cycle Q Clear(g_c), s	0.0	10.6	0.0	0.0	0.0	0.0				18.5	0.0	18.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2157		0	2425					664	0	323
V/C Ratio(X)	0.00	0.37		0.00	0.34					0.85	0.00	0.78
Avail Cap(c_a), veh/h	0	2157		0	2425					1041	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.77	0.00	0.00	0.79	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.7	0.0	0.0	0.0	0.0				37.1	0.0	35.2
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.3	0.0				3.5	0.0	3.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	5.8	0.0	0.0	0.2	0.0				11.1	0.0	18.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.1	0.0	0.0	0.3	0.0				40.6	0.0	38.8
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		793	A		822	A					819	
Approach Delay, s/veh		7.1			0.3						40.0	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		72.9		27.1		72.9						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		12.6		20.5		2.0						
Green Ext Time (p_c), s		16.7		2.1		9.6						

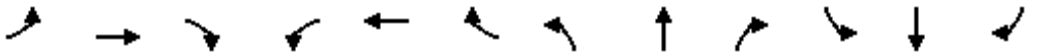
Intersection Summary												
HCM 6th Ctrl Delay			15.9									
HCM 6th LOS			B									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1123	209	0	1161	354	278	0	520	0	0	0
Future Volume (vph)	0	1123	209	0	1161	354	278	0	520	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.86	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3325	1418		3211	1379	1502	1259	1293			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3325	1418		3211	1379	1502	1259	1293			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1146	213	0	1185	361	284	0	531	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	52	52	0	0	0
Lane Group Flow (vph)	0	1146	213	0	1185	361	256	231	224	0	0	0
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	0%	2%	7%	0%	2%	4%	2%	0%	6%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		66.7	100.0		66.7	100.0	24.3	24.3	24.3			
Effective Green, g (s)		66.7	100.0		66.7	100.0	24.3	24.3	24.3			
Actuated g/C Ratio		0.67	1.00		0.67	1.00	0.24	0.24	0.24			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2217	1418		2141	1379	364	305	314			
v/s Ratio Prot		0.34			c0.37		0.17	c0.18				
v/s Ratio Perm			0.15			0.26			0.17			
v/c Ratio		0.52	0.15		0.55	0.26	0.70	0.76	0.71			
Uniform Delay, d1		8.5	0.0		8.8	0.0	34.6	35.1	34.7			
Progression Factor		1.76	1.00		1.15	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.8	0.2		0.7	0.3	5.6	9.8	7.0			
Delay (s)		15.7	0.2		10.8	0.3	40.2	44.9	41.6			
Level of Service		B	A		B	A	D	D	D			
Approach Delay (s)		13.3			8.4			42.3			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1123	209	0	1161	354	278	0	520	0	0	0
Future Volume (veh/h)	0	1123	209	0	1161	354	278	0	520	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1867	1798	0	1674	1647	1527	1555	1473			
Adj Flow Rate, veh/h	0	1146	0	0	1185	0	392	0	211			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	2	7	0	2	4	2	0	6			
Cap, veh/h	0	2524		0	2263		578	0	248			
Arrive On Green	0.00	1.00	0.00	0.00	0.71	0.00	0.20	0.00	0.20			
Sat Flow, veh/h	0	3641	1524	0	3264	1395	2909	0	1248			
Grp Volume(v), veh/h	0	1146	0	0	1185	0	392	0	211			
Grp Sat Flow(s),veh/h/ln	0	1774	1524	0	1590	1395	1455	0	1248			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	17.1	0.0	12.5	0.0	16.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	17.1	0.0	12.5	0.0	16.3			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2524		0	2263		578	0	248			
V/C Ratio(X)	0.00	0.45		0.00	0.52		0.68	0.00	0.85			
Avail Cap(c_a), veh/h	0	2524		0	2263		1033	0	443			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.84	0.00	0.00	0.59	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	6.6	0.0	37.1	0.0	38.7			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.5	0.0	1.0	0.0	6.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.3	0.0	0.0	7.8	0.0	7.9	0.0	9.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	7.1	0.0	38.2	0.0	44.8			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1146	A		1185	A		603				
Approach Delay, s/veh		0.5			7.1			40.5				
Approach LOS		A			A			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		75.6				75.6		24.4				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				19.1		18.3				
Green Ext Time (p_c), s		17.4				24.2		1.5				

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	36	78	961	130	10	208	965	18	420	28	162	28
Future Volume (vph)	36	78	961	130	10	208	965	18	420	28	162	28
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1583	3197	1458		1621	3083		1548	1558	1473	1662
Flt Permitted		0.16	1.00	1.00		0.14	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		272	3197	1458		243	3083		1548	1558	1473	1662
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	38	81	1001	135	10	217	1005	19	438	29	169	29
RTOR Reduction (vph)	0	0	0	81	0	0	1	0	0	0	136	0
Lane Group Flow (vph)	0	119	1001	54	0	227	1023	0	232	235	33	29
Confl. Peds. (#/hr)									2			
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	5%	5%	4%	2%	1%	1%	6%	0%	2%	4%	1%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		54.2	40.2	40.2		54.2	45.3		19.3	19.3	19.3	9.0
Effective Green, g (s)		54.2	40.2	40.2		54.2	45.3		19.3	19.3	19.3	9.0
Actuated g/C Ratio		0.54	0.40	0.40		0.54	0.45		0.19	0.19	0.19	0.09
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		264	1285	586		324	1396		298	300	284	149
v/s Ratio Prot		0.04	c0.31			0.10	c0.33		0.15	c0.15		0.02
v/s Ratio Perm		0.20		0.04		0.28					0.02	
v/c Ratio		0.45	0.78	0.09		0.70	0.73		0.78	0.78	0.11	0.19
Uniform Delay, d1		13.7	26.0	18.6		30.0	22.4		38.3	38.4	33.3	42.1
Progression Factor		1.07	1.10	1.17		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.8	4.1	0.3		6.2	3.4		11.6	12.1	0.1	0.5
Delay (s)		15.5	32.8	22.0		36.2	25.8		50.0	50.5	33.4	42.6
Level of Service		B	C	C		D	C		D	D	C	D
Approach Delay (s)			30.0				27.7			45.8		
Approach LOS			C				C			D		

Intersection Summary			
HCM 2000 Control Delay	32.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	31	94
Future Volume (vph)	31	94
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1418	
Flt Permitted	1.00	
Satd. Flow (perm)	1418	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	32	98
RTOR Reduction (vph)	89	0
Lane Group Flow (vph)	41	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	3%	10%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	9.0	
Effective Green, g (s)	9.0	
Actuated g/C Ratio	0.09	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	127	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.32	
Uniform Delay, d1	42.6	
Progression Factor	1.00	
Incremental Delay, d2	1.1	
Delay (s)	43.7	
Level of Service	D	
Approach Delay (s)	43.5	
Approach LOS	D	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	36	78	961	130	10	208	965	18	420	28	162	28
Future Volume (veh/h)	36	78	961	130	10	208	965	18	420	28	162	28
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1682	1695	1723		1688	1619	1619	1723	1695	1736	1750
Adj Flow Rate, veh/h		81	1001	0		217	1005	19	459	0	0	29
Peak Hour Factor		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		5	4	2		1	6	6	2	4	1	0
Cap, veh/h		322	1047			520	1741	33	537	0		100
Arrive On Green		0.04	0.32	0.00		0.27	0.56	0.56	0.16	0.00	0.00	0.06
Sat Flow, veh/h		1602	3221	1460		1607	3087	58	3281	0	1471	1667
Grp Volume(v), veh/h		81	1001	0		217	501	523	459	0	0	29
Grp Sat Flow(s),veh/h/ln		1602	1611	1460		1607	1538	1607	1641	0	1471	1667
Q Serve(g_s), s		2.1	30.4	0.0		5.4	21.0	21.0	13.6	0.0	0.0	1.7
Cycle Q Clear(g_c), s		2.1	30.4	0.0		5.4	21.0	21.0	13.6	0.0	0.0	1.7
Prop In Lane		1.00		1.00		1.00		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		322	1047			520	867	906	537	0		100
V/C Ratio(X)		0.25	0.96			0.42	0.58	0.58	0.85	0.00		0.29
Avail Cap(c_a), veh/h		486	1047			520	867	906	673	0		258
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.80	0.80	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		11.0	33.1	0.0		27.4	14.1	14.1	40.7	0.0	0.0	45.0
Incr Delay (d2), s/veh		0.2	16.4	0.0		0.4	2.8	2.7	8.2	0.0	0.0	1.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		1.3	19.4	0.0		7.3	12.0	12.4	10.1	0.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		11.2	49.4	0.0		27.8	16.9	16.8	48.8	0.0	0.0	46.2
LnGrp LOS		B	D			C	B	B	D	A		D
Approach Vol, veh/h			1082	A			1241			459	A	
Approach Delay, s/veh			46.6				18.8			48.8		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	31.6	37.0		10.5	7.8	60.9		20.9
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	7.4	32.4		3.8	4.1	23.0		15.6
Green Ext Time (p_c), s	0.2	0.1		0.1	0.1	7.4		0.6

Intersection Summary	
HCM 6th Ctrl Delay	34.8
HCM 6th LOS	C

Notes

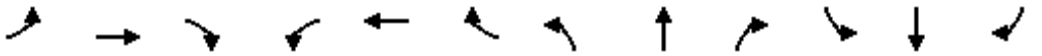
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	31	94
Future Volume (veh/h)	31	94
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1709	1709
Adj Flow Rate, veh/h	32	0
Peak Hour Factor	0.96	0.96
Percent Heavy Veh, %	3	3
Cap, veh/h	102	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1709	0
Grp Volume(v), veh/h	32	0
Grp Sat Flow(s),veh/h/ln	1709	0
Q Serve(g_s), s	1.8	0.0
Cycle Q Clear(g_c), s	1.8	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	102	
V/C Ratio(X)	0.31	
Avail Cap(c_a), veh/h	265	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	45.0	0.0
Incr Delay (d2), s/veh	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	46.3	0.0
LnGrp LOS	D	
Approach Vol, veh/h	61	A
Approach Delay, s/veh	46.2	
Approach LOS	D	

Timer - Assigned Phs

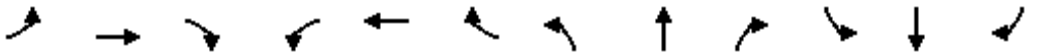
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	86	568	332	83	637	84	267	118	79	106	213	139
Future Volume (vph)	86	568	332	83	637	84	267	118	79	106	213	139
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	1651	1447	1662	1651	1400	1583	1699	1450	1599	1667	1429
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1614	1651	1447	1662	1651	1400	1583	1699	1450	1599	1667	1429
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)	91	598	349	87	671	88	281	124	83	112	224	146
RTOR Reduction (vph)	0	0	98	0	0	46	0	0	63	0	0	122
Lane Group Flow (vph)	91	598	251	87	671	42	281	124	20	112	224	24
Confl. Peds. (#/hr)			3	3			3		2	2		3
Confl. Bikes (#/hr)						1			1			2
Heavy Vehicles (%)	3%	6%	1%	0%	6%	4%	5%	3%	0%	4%	5%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.5	55.9	81.0	11.9	55.3	55.3	25.1	33.1	33.1	14.3	22.3	22.3
Effective Green, g (s)	12.5	55.9	81.0	11.9	55.3	55.3	25.1	33.1	33.1	14.3	22.3	22.3
Actuated g/C Ratio	0.09	0.42	0.60	0.09	0.41	0.41	0.19	0.25	0.25	0.11	0.17	0.17
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	150	687	873	147	680	576	296	419	357	170	277	237
v/s Ratio Prot	c0.06	0.36	0.05	0.05	c0.41		c0.18	0.07		0.07	c0.13	
v/s Ratio Perm			0.12			0.03			0.01			0.02
v/c Ratio	0.61	0.87	0.29	0.59	0.99	0.07	0.95	0.30	0.06	0.66	0.81	0.10
Uniform Delay, d1	58.5	35.8	12.8	58.8	39.1	23.9	53.9	41.1	38.6	57.6	53.9	47.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.7	12.4	0.1	5.2	31.1	0.1	38.4	0.3	0.0	8.0	15.4	0.1
Delay (s)	64.2	48.3	12.9	64.1	70.2	24.0	92.3	41.4	38.7	65.6	69.3	47.6
Level of Service	E	D	B	E	E	C	F	D	D	E	E	D
Approach Delay (s)		37.8			64.7			70.2			61.8	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	55.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	134.2	Sum of lost time (s)	19.0
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



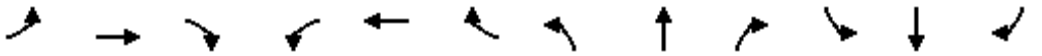
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	568	332	83	637	84	267	118	79	106	213	139
Future Volume (veh/h)	86	568	332	83	637	84	267	118	79	106	213	139
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1668	1736	1750	1668	1695	1682	1709	1750	1695	1682	1736
Adj Flow Rate, veh/h	91	598	191	87	671	88	281	124	83	112	224	83
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	6	1	0	6	4	5	3	0	4	5	1
Cap, veh/h	113	718	910	109	712	598	303	457	386	135	272	230
Arrive On Green	0.07	0.43	0.43	0.07	0.43	0.43	0.19	0.27	0.27	0.08	0.16	0.16
Sat Flow, veh/h	1628	1668	1466	1667	1668	1402	1602	1709	1443	1615	1682	1422
Grp Volume(v), veh/h	91	598	191	87	671	88	281	124	83	112	224	83
Grp Sat Flow(s),veh/h/ln	1628	1668	1466	1667	1668	1402	1602	1709	1443	1615	1682	1422
Q Serve(g_s), s	6.9	39.6	7.1	6.4	48.0	4.8	21.5	7.1	5.6	8.5	16.0	6.5
Cycle Q Clear(g_c), s	6.9	39.6	7.1	6.4	48.0	4.8	21.5	7.1	5.6	8.5	16.0	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	113	718	910	109	712	598	303	457	386	135	272	230
V/C Ratio(X)	0.81	0.83	0.21	0.80	0.94	0.15	0.93	0.27	0.21	0.83	0.82	0.36
Avail Cap(c_a), veh/h	327	738	927	335	738	620	322	457	386	325	406	343
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	57.1	31.4	10.3	57.3	34.2	21.8	49.6	36.0	35.4	56.1	50.4	46.4
Incr Delay (d2), s/veh	9.7	8.7	0.2	9.6	20.7	0.2	30.5	0.2	0.2	9.1	7.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.7	24.5	4.2	5.4	31.3	3.0	16.7	5.5	3.6	6.9	11.8	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.8	40.1	10.5	67.0	54.9	22.0	80.0	36.2	35.6	65.2	57.4	47.1
LnGrp LOS	E	D	B	E	D	C	F	D	D	E	E	D
Approach Vol, veh/h		880			846			488			419	
Approach Delay, s/veh		36.5			52.7			61.4			57.4	
Approach LOS		D			D			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	58.6	28.1	25.1	13.1	58.1	14.9	38.3
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	8.4	41.6	23.5	18.0	8.9	50.0	10.5	9.1
Green Ext Time (p_c), s	0.1	6.6	0.1	1.0	0.1	3.1	0.2	0.7

Intersection Summary	
HCM 6th Ctrl Delay	49.6
HCM 6th LOS	D

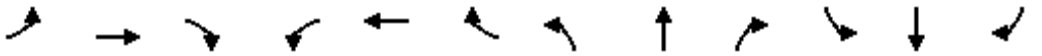
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	189	346	242	237	272	48	212	432	97	147	812	146
Future Volume (vph)	189	346	242	237	272	48	212	432	97	147	812	146
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1545	1627	1382	1630	1613		3027	3032	1192	1583	3077	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1545	1627	1382	1630	1613		3027	3032	1192	1583	3077	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	205	376	263	258	296	52	230	470	105	160	883	159
RTOR Reduction (vph)	0	0	202	0	5	0	0	0	71	0	12	0
Lane Group Flow (vph)	205	376	61	258	343	0	230	470	34	160	1030	0
Confl. Peds. (#/hr)	2		8	8		2	4		1	1		4
Heavy Vehicles (%)	4%	4%	2%	2%	6%	5%	3%	6%	18%	5%	5%	7%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	18.8	27.5	27.5	21.6	30.3		12.2	40.5	40.5	15.9	44.2	
Effective Green, g (s)	18.8	27.5	27.5	21.6	30.3		12.2	40.5	40.5	15.9	44.2	
Actuated g/C Ratio	0.15	0.22	0.22	0.17	0.24		0.10	0.32	0.32	0.13	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	232	357	304	281	390		295	982	386	201	1088	
v/s Ratio Prot	0.13	c0.23		c0.16	0.21		0.08	0.16		c0.10	c0.33	
v/s Ratio Perm			0.04						0.03			
v/c Ratio	0.88	1.05	0.20	0.92	0.88		0.78	0.48	0.09	0.80	0.95	
Uniform Delay, d1	52.0	48.8	39.8	50.8	45.6		55.1	33.8	29.4	53.0	39.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	30.2	62.3	0.4	32.6	19.9		12.3	1.7	0.5	19.2	17.2	
Delay (s)	82.2	111.1	40.2	83.5	65.5		67.3	35.5	29.9	72.2	56.4	
Level of Service	F	F	D	F	E		E	D	C	E	E	
Approach Delay (s)		82.0			73.1			43.8			58.5	
Approach LOS		F			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	63.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	189	346	242	237	272	48	212	432	97	147	812	146
Future Volume (veh/h)	189	346	242	237	272	48	212	432	97	147	812	146
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1695	1723	1723	1668	1668	1709	1668	1504	1682	1682	1682
Adj Flow Rate, veh/h	205	376	0	258	296	52	230	470	105	160	883	159
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	2	2	6	6	3	6	18	5	5	5
Cap, veh/h	248	373		281	328	58	280	1072	429	184	985	177
Arrive On Green	0.15	0.22	0.00	0.17	0.24	0.24	0.09	0.34	0.34	0.11	0.36	0.36
Sat Flow, veh/h	1615	1695	1460	1641	1379	242	3158	3169	1267	1602	2703	487
Grp Volume(v), veh/h	205	376	0	258	0	348	230	470	105	160	522	520
Grp Sat Flow(s),veh/h/ln	1615	1695	1460	1641	0	1622	1579	1585	1267	1602	1598	1592
Q Serve(g_s), s	15.4	27.5	0.0	19.3	0.0	26.0	9.0	14.4	4.7	12.3	38.5	38.6
Cycle Q Clear(g_c), s	15.4	27.5	0.0	19.3	0.0	26.0	9.0	14.4	4.7	12.3	38.5	38.6
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	248	373		281	0	385	280	1072	429	184	582	580
V/C Ratio(X)	0.83	1.01		0.92	0.00	0.90	0.82	0.44	0.25	0.87	0.90	0.90
Avail Cap(c_a), veh/h	248	373		289	0	435	316	1072	429	224	582	580
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	48.8	0.0	51.0	0.0	46.3	56.0	32.1	11.7	54.4	37.5	37.5
Incr Delay (d2), s/veh	20.2	48.6	0.0	32.2	0.0	20.8	14.5	1.3	1.4	25.3	19.0	19.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.1	23.3	0.0	15.7	0.0	18.4	7.4	9.6	4.2	10.3	24.7	24.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.5	97.4	0.0	83.2	0.0	67.0	70.5	33.4	13.1	79.7	56.5	56.6
LnGrp LOS	E	F		F	A	E	E	C	B	E	E	E
Approach Vol, veh/h		581	A		606			805			1202	
Approach Delay, s/veh		88.2			73.9			41.4			59.6	
Approach LOS		F			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.6	51.0	23.2	35.2	18.8	47.8	25.4	33.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	12.5	43.5	16.0	33.5	17.5	38.5	22.0	27.5
Max Q Clear Time (g_c+I1), s	11.0	40.6	17.4	28.0	14.3	16.4	21.3	29.5
Green Ext Time (p_c), s	0.1	2.3	0.0	1.1	0.1	6.6	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	62.9
HCM 6th LOS	E

Notes

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

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

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	12	11	169	326	14
Future Vol, veh/h	14	12	11	169	326	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	90	90	90	1	3	90
Mvmt Flow	14	12	11	172	333	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	534	340	347	0	-	0
Stage 1	340	-	-	-	-	-
Stage 2	194	-	-	-	-	-
Critical Hdwy	7.3	7.1	5	-	-	-
Critical Hdwy Stg 1	6.3	-	-	-	-	-
Critical Hdwy Stg 2	6.3	-	-	-	-	-
Follow-up Hdwy	4.31	4.11	3.01	-	-	-
Pot Cap-1 Maneuver	383	541	851	-	-	-
Stage 1	561	-	-	-	-	-
Stage 2	667	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	378	541	851	-	-	-
Mov Cap-2 Maneuver	378	-	-	-	-	-
Stage 1	553	-	-	-	-	-
Stage 2	667	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	851	-	439	-	-
HCM Lane V/C Ratio	0.013	-	0.06	-	-
HCM Control Delay (s)	9.3	0	13.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	56	120	40	67	263
Future Vol, veh/h	29	56	120	40	67	263
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	8	2	0	0	2
Mvmt Flow	34	66	141	47	79	309

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	632	165	0	0	188	0
Stage 1	165	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	7	6.58	-	-	4.1	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	403	852	-	-	1398	-
Stage 1	846	-	-	-	-	-
Stage 2	588	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	376	852	-	-	1398	-
Mov Cap-2 Maneuver	376	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	548	-	-	-	-	-

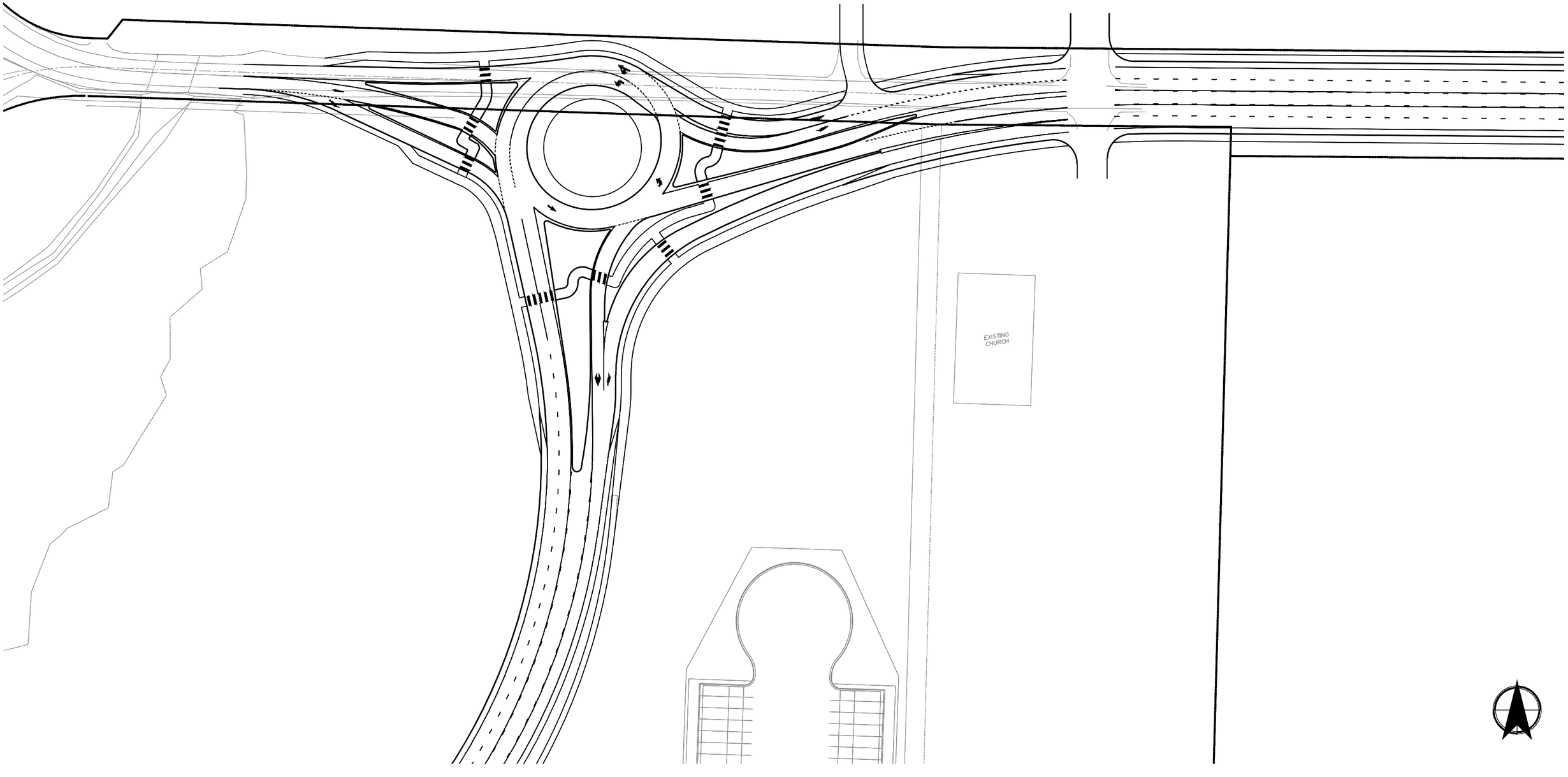
Approach	WB	NB	SB
HCM Control Delay, s	12.3	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	595	1398	-
HCM Lane V/C Ratio	-	-	0.168	0.056	-
HCM Control Delay (s)	-	-	12.3	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.2	-

Appendix F OR 219/Realigned Butteville Road Roundabout Concept Drawings

Design Layout: 1"=100'

Preliminary Design Subject to Change
Date: May 2021



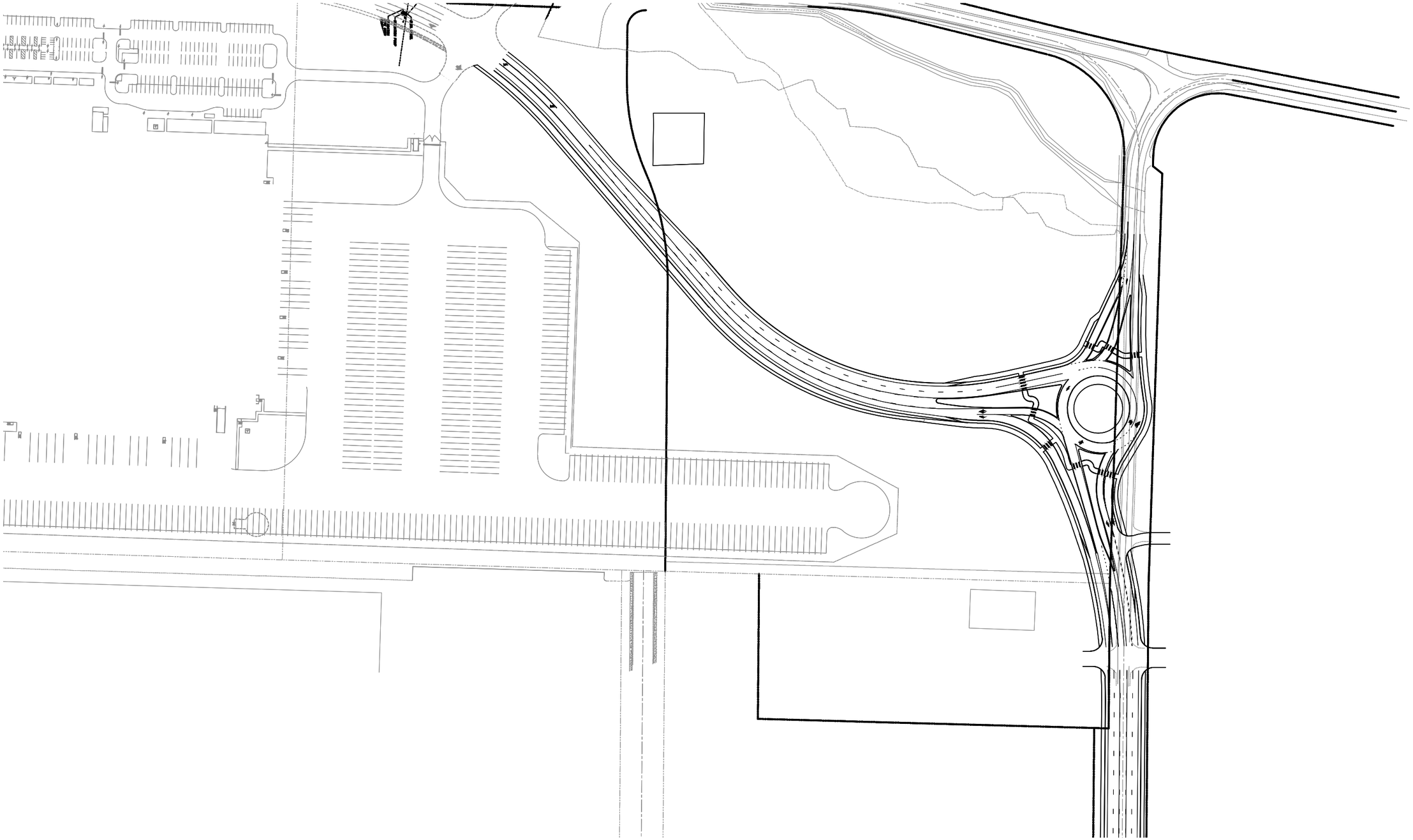
KITTELSON & ASSOCIATES
PHONE: (503) 936-1463 CONTACT: Matt Hughart

OR219/Butteville Road Roundabout Concept

Woodburn, OR

Design Layout: 1"=200'

Preliminary Design Subject to Change
Date: May 2021



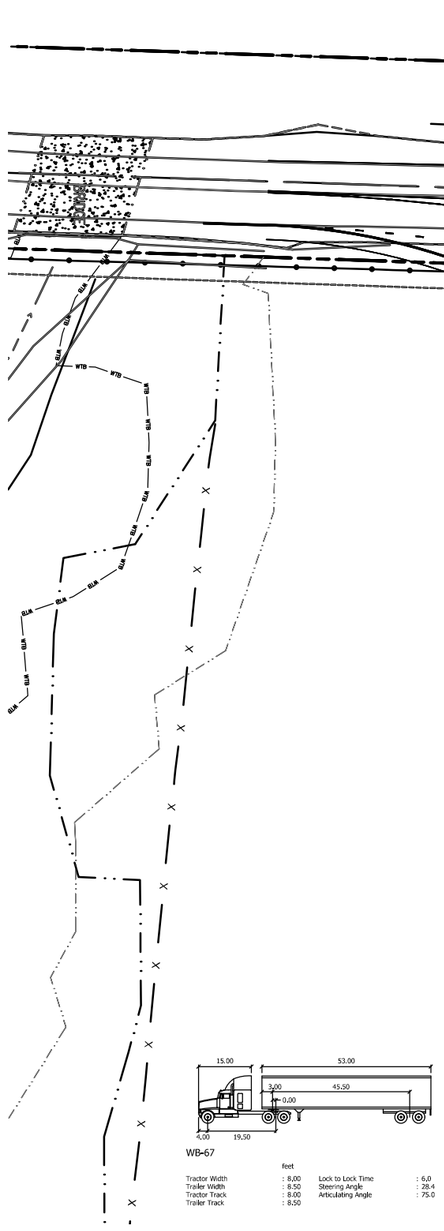
KITTELSON & ASSOCIATES
PHONE: (503) 936-1463 CONTACT: Matt Hughart

OR219/Butteville Road Roundabout Concept
Woodburn, OR

Design Vehicle Checks

Preliminary Design Subject to Change
Date: May 2021

80' R/W



WB-67

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

Vehicle Body
Rear Wheels
Front Wheels

EXISTING CHURCH

Scale: 1" = 60'

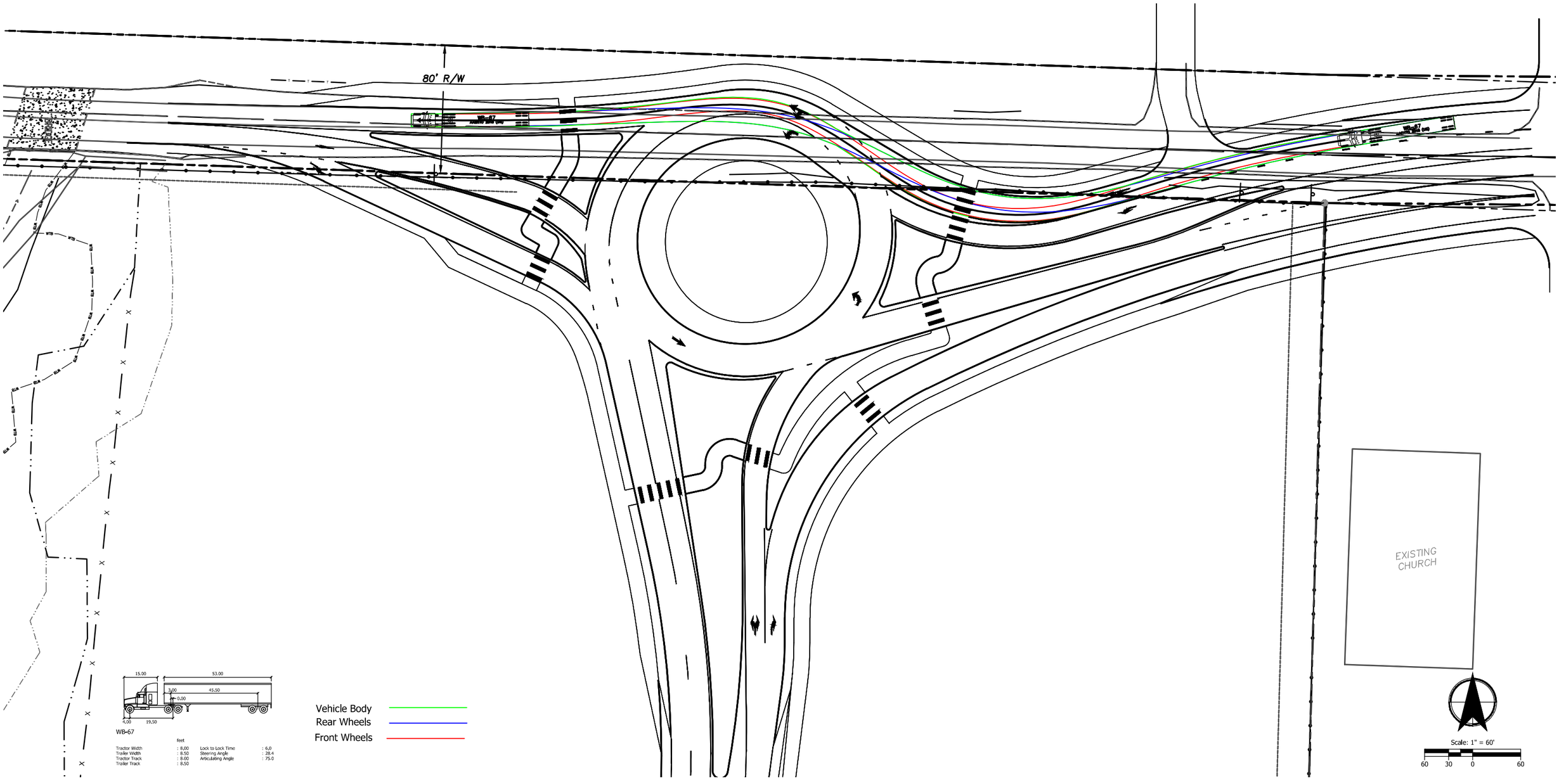
60 30 0 60

KITTELSON & ASSOCIATES
PHONE: (503) 936-1463 CONTACT: Matt Hughart

OR219/Butteville Road Roundabout Concept
Woodburn, OR

Design Vehicle Checks

Preliminary Design Subject to Change
Date: May 2021



WB-67

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

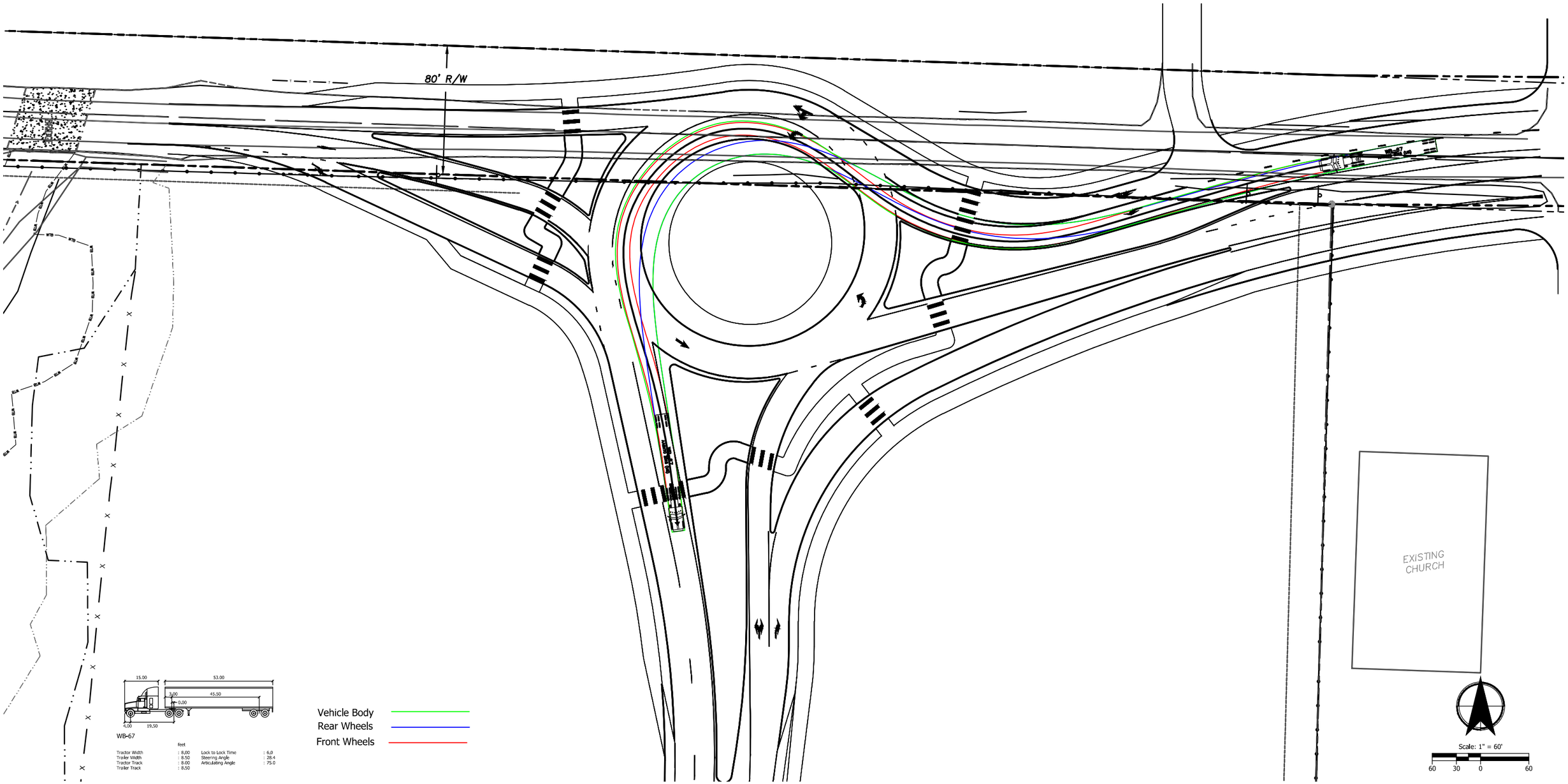
Vehicle Body
Rear Wheels
Front Wheels

KITTELSON & ASSOCIATES
PHONE: (503) 936-1463 CONTACT: Matt Hughart

OR219/Butteville Road Roundabout Concept
Woodburn, OR

Design Vehicle Checks

Preliminary Design Subject to Change
Date: May 2021



WB-67

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

Vehicle Body
Rear Wheels
Front Wheels

KITTELSON & ASSOCIATES
PHONE: (503) 936-1463 CONTACT: Matt Hughart

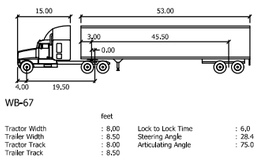
OR219/Butteville Road Roundabout Concept
Woodburn, OR

Design Vehicle Checks

Preliminary Design Subject to Change
Date: May 2021

80' R/W

EXISTING CHURCH



WB-67

feet

Tractor Width	: 8.00	Lock to Lock Time	: 6.0
Trailer Width	: 8.50	Steering Angle	: 28.4
Tractor Track	: 8.00	Articulating Angle	: 75.0
Trailer Track	: 8.50		

Vehicle Body
Rear Wheels
Front Wheels

Scale: 1" = 60'

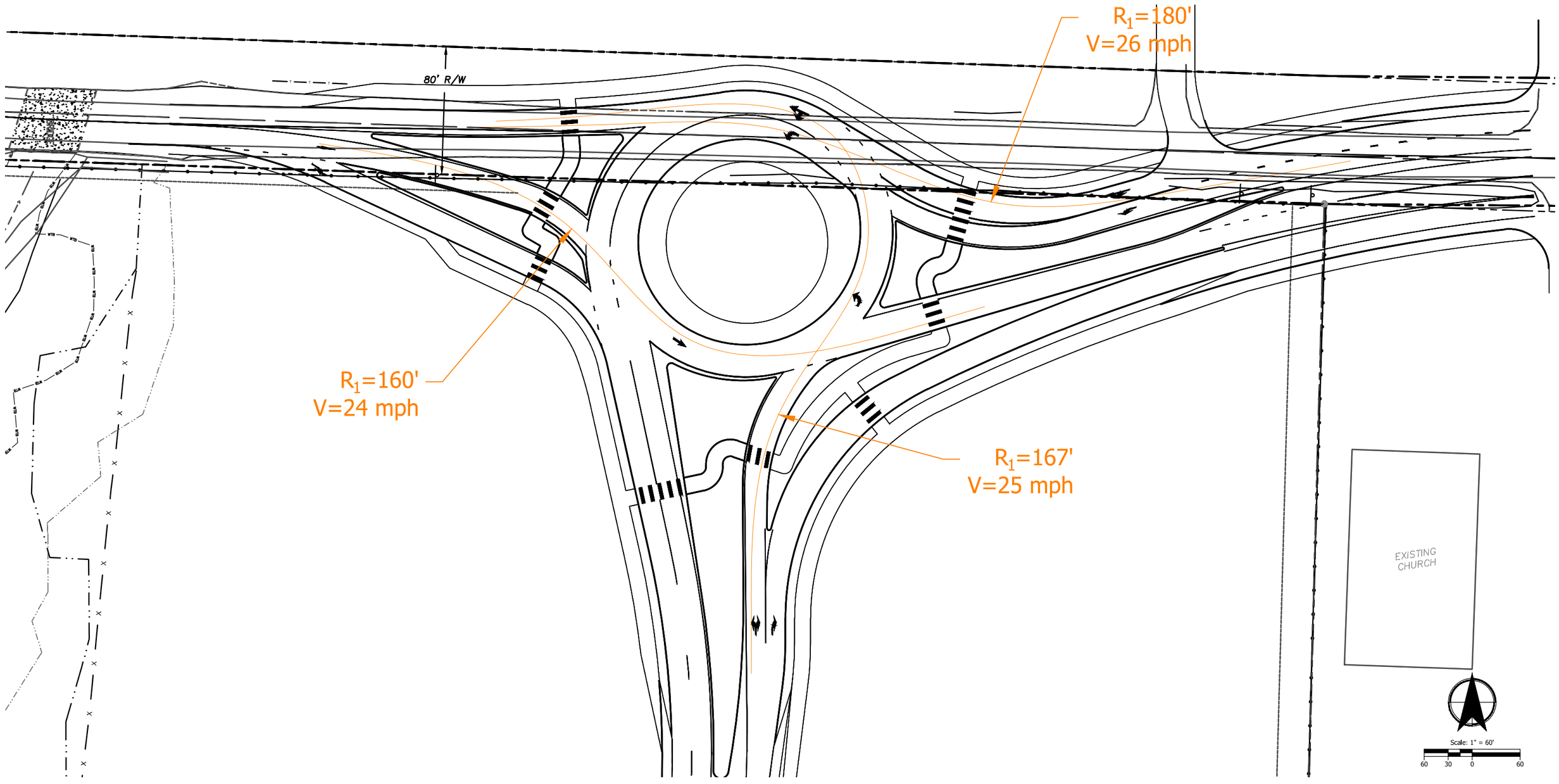
60 30 0 60

KITTELSON & ASSOCIATES
PHONE: (503) 936-1463 CONTACT: Matt Hughart

OR219/Butteville Road Roundabout Concept
Woodburn, OR

Fastest Path Entry Speeds

Preliminary Design Subject to Change
Date: May 2021



KITTELSON & ASSOCIATES
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OR219/Butteville Road Roundabout Concept

Woodburn, OR

Appendix G Project Basie Daily Trip Profile and Supplemental Trip Generation Information

AR Sortable 640K FC - Non-Peak Season

Headcount

	Total
Headcount - Day Shift	937
Headcount - Night Shift	937

Shift Structure

Adjustment below accounts for mass transit and carpool users. Adjust as needed for jurisdiction

Net Cars Factor 95%

	Start	End
Day Shift - Inbound Employees	7:00:00 AM	5:30:00 PM
Day Shift - Outbound Employees	7:30:00 AM	6:00:00 PM
Night Shift - Inbound Employees	6:00:00 PM	4:30:00 AM
Night Shift - Outbound Employees	6:30:00 PM	5:00:00 AM

Traffic Schedule

Cars

Average Weekday

Time	In	Out	Total
00:00	3	6	9
01:00	1	4	5
02:00	5	13	18
03:00	8	13	21
04:00	16	170	186
05:00	35	451	486
06:00	27	15	42
06:15	69	16	86
06:30	121	10	130
06:45	162	7	168
07:00	160	9	168
07:15	207	4	211
07:30	30	6	36
07:45	7	5	11
08:00	24	17	41
09:00	15	10	25
10:00	19	16	35
11:00	36	39	75
12:00	10	16	27
13:00	12	13	26
14:00	10	24	34
15:00	28	35	63
16:00	43	30	73
17:00	25	31	56
17:15	48	14	62
17:30	105	122	226
17:45	136	70	206
18:00	169	234	403
18:15	163	158	321
18:30	22	105	127
18:45	5	39	44
19:00	17	33	50
20:00	8	8	15
21:00	14	14	29
22:00	16	20	36
23:00	3	5	8

Trucks

Average Weekday

Time	In	Out	Total
00:00	11	11	23
01:00	19	19	38
02:00	8	8	15
03:00	15	15	30
04:00	8	8	15
05:00	11	11	23
06:00	3	3	5
06:15	3	3	5
06:30	3	3	5
06:45	3	3	5
07:00	4	4	8
07:15	4	4	8
07:30	4	4	8
07:45	4	4	8
08:00	15	15	30
09:00	27	27	53
10:00	15	15	30
11:00	16	16	33
12:00	16	16	33
13:00	10	10	20
14:00	10	10	20
15:00	10	10	20
16:00	11	11	23
17:00	3	3	5
17:15	3	3	5
17:30	3	3	5
17:45	3	3	5
18:00	3	3	5
18:15	3	3	5
18:30	3	3	5
18:45	3	3	5
19:00	9	9	18
20:00	14	14	28
21:00	10	10	20
22:00	14	14	28
23:00	10	10	20

Total Vehicles

Cars + Trucks Average Weekday

	In	Out	Total
00:00	14	17	31
01:00	20	23	43
02:00	12	21	33
03:00	23	28	51
04:00	24	178	201
05:00	47	463	509
06:00	29	18	47
06:15	72	19	91
06:30	123	12	135
06:45	164	9	173
07:00	163	12	176
07:15	211	8	218
07:30	34	9	44
07:45	10	9	19
08:00	39	32	71
09:00	42	36	78
10:00	34	31	65
11:00	53	55	108
12:00	27	33	59
13:00	22	23	46
14:00	21	34	54
15:00	38	45	83
16:00	54	42	96
17:00	27	34	61
17:15	50	17	67
17:30	107	124	231
17:45	138	73	211
18:00	172	236	408
18:15	166	160	326
18:30	24	108	132
18:45	7	41	49
19:00	26	42	68
20:00	21	21	43
21:00	24	24	49
22:00	30	34	64
23:00	13	15	28

Morning Peak Hour of Generator			
	Enter	Exit	Total
06:30-07:30	661	41	703

Evening Peak Hour of Generator			
	Enter	Exit	Total
17:30-18:30	583	593	1,176

Home Destination Report - Where Workers Live Who are Employed in the Woodburn Area - by Places (Cities, CDPs, etc.)

Total All Jobs

Year	2018	
	Count	Share
Total All Jobs	9,517	100.0%

Jobs Counts by Places (Cities, CDPs, etc.) Where Workers Live - All Jobs

	2018	
	Count	Share
Woodburn city, OR	1,690	17.8%
Salem city, OR	1,131	11.9%
Keizer city, OR	423	4.4%
Portland city, OR	382	4.0%
Hayesville CDP, OR	224	2.4%
Hillsboro city, OR	168	1.8%
Canby city, OR	148	1.6%
Silverton city, OR	148	1.6%
Gervais city, OR	137	1.4%
Wilsonville city, OR	136	1.4%
Tigard city, OR	132	1.4%
Gresham city, OR	126	1.3%
Four Corners CDP, OR	125	1.3%
Albany city, OR	109	1.1%
Hubbard city, OR	105	1.1%
Beaverton city, OR	95	1.0%
Newberg city, OR	92	1.0%
Tualatin city, OR	87	0.9%
Mount Angel city, OR	86	0.9%
McMinnville city, OR	83	0.9%
Eugene city, OR	80	0.8%
Molalla city, OR	73	0.8%
Oregon City city, OR	73	0.8%
Lake Oswego city, OR	69	0.7%
West Linn city, OR	67	0.7%
All Other Locations	3,528	37.1%
	9,517	

	Jobs	%
I-5 North	1,335	0.22
99E North	253	0.04
Butteville South	137	0.02
Woodburn	1,690	0.28
OR 219 West	175	0.03
I-5 South	2,092	0.35
211 East	73	0.01
99E South	234	0.04
	5,989	

Appendix H 2023 Total Traffic Conditions Operations and Queuing Worksheets

2023 Background AM - System Peak											
						DRAFT CALIBRATION DATA					
				Average VISSIM					1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value			GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	89	89	91	0.21	1		0	0	0
		NBT	0	0	0				0	0	0
		NBR	126	126	126	0.00	1		0	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	162	162	151	0.88	1		0	0	0
		EBR	61	61	58	0.39	1		0	0	0
	WB	WBL	111	111	109	0.19	1		0	0	0
		WBT	237	237	218	1.26	1		0	0	0
		WBR	0	0	0				0	0	0
2	NB	NBL	0	0	0		1		0	0	0
		NBT	0	0	0		1		0	0	0
		NBR	1	1	1	0.00	1		0	0	0
	SB	SBL	29	29	33	0.72	1		0	0	0
		SBT	1	1	1	0.00	1		0	0	0
		SBR	33	33	33	0.00	1		0	0	0
	EB	EBL	10	10	12	0.60	1		0	0	0
		EBT	275	275	264	0.67	1		0	0	0
		EBR	1	1	1	0.00	1		0	0	0
	WB	WBL	1	1	1	0.00	1		0	0	0
		WBT	313	313	294	1.09	1		0	0	0
		WBR	20	20	20	0.00	1		0	0	0
3	NB	NBL	1	1	1	0.00	1		0	0	0
		NBT	1	1	1	0.00	1		0	0	0
		NBR	31	31	32	0.18	1		0	0	0
	SB	SBL	391	391	381	0.51	1		0	0	0
		SBT	2	2	2	0.00	1		0	0	0
		SBR	42	42	43	0.15	1		0	0	0
	EB	EBL	28	28	27	0.19	1		0	0	0
		EBT	268	268	262	0.37	1		0	0	0
		EBR	9	9	9	0.00	1		0	0	0
	WB	WBL	73	73	66	0.84	1		0	0	0
		WBT	289	289	271	1.08	1		0	0	0
		WBR	63	63	61	0.25	1		0	0	0
		WBU	14	14	17	0.76	1		0	0	0
4	NB	NBL	0	0	0				0	0	0
		NBT	0	0	0				0	0	0
		NBR	0	0	0				0	0	0
	SB	SBL	246	246	249	0.19	1		0	0	0
		SBT	0	0	0				0	0	0
		SBR	142	142	138	0.34	1		0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	499	499	506	0.31	1		0	0	0
		EBR	205	205	186	1.36	1		0	0	0
	WB	WBL	0	0	0				0	0	0
		WBT	452	452	408	2.12	1		1	0	0
		WBR	393	393	431	1.87	1		0	0	0
5	NB	NBL	173	173	171	0.15	1		0	0	0
		NBT	0	0	0				0	0	0
		NBR	509	509	527	0.79	1		0	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	591	591	536	2.32	1		1	0	0
		EBR	154	154	219	4.76	1		1	0	0
	WB	WBL	0	0	0				0	0	0
		WBT	674	674	668	0.23	1		0	0	0
		WBR	598	598	570	1.16	1		0	0	0
6	NB	NBL	411	411	399	0.60	1		0	0	0
		NBT	17	17	17	0.00	1		0	0	0
		NBR	130	130	127	0.26	1		0	0	0
	SB	SBL	8	8	8	0.00	1		0	0	0
		SBT	21	21	20	0.22	1		0	0	0
		SBR	27	27	30	0.56	1		0	0	0
	EB	EBL	48	48	51	0.43	1		0	0	0
		EBT	819	819	803	0.56	1		0	0	0
		EBR	57	57	55	0.27	1		0	0	0
		EBU	28	28	34	1.08	1		0	0	0
	WB	WBL	96	96	97	0.10	1		0	0	0
		WBT	806	806	775	1.10	1		0	0	0
		WBR	10	10	11	0.31	1		0	0	0
		WBU	5	5	5	0.00	1		0	0	0
					Total Movements =	*57*			3	0	0
						Percent Below			95%	100%	100%
						Target Percentage			85%	98%	100%
									YES	YES	YES

2023 Background AM - Generator Peak											
						DRAFT CALIBRATION DATA					
				Average VISSIM					1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value		GEH Value > 2	GEH Value > 5	GEH Value > 10	
1	NB	NBL	89	89	92	0.32	1	0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	152	152	153	0.08	1	0	0	0	
	SB	SBL	0	0	0			0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	0	0	0			0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	123	123	116	0.64	1	0	0	0	
		EBR	58	58	55	0.40	1	0	0	0	
	WB	WBL	73	73	71	0.24	1	0	0	0	
		WBT	365	365	363	0.10	1	0	0	0	
		WBR	0	0	0			0	0	0	
2	NB	NBL	0	0	0		1	0	0	0	
		NBT	0	0	0		1	0	0	0	
		NBR	0	0	0		1	0	0	0	
	SB	SBL	32	32	34	0.35	1	0	0	0	
		SBT	0	0	0		1	0	0	0	
		SBR	20	20	20	0.00	1	0	0	0	
	EB	EBL	2	2	2	0.00	1	0	0	0	
		EBT	272	272	267	0.30	1	0	0	0	
		EBR	0	0	0		1	0	0	0	
	WB	WBL	0	0	0		1	0	0	0	
		WBT	421	421	414	0.34	1	0	0	0	
		WBR	11	11	11	0.00	1	0	0	0	
3	NB	NBL	0	0	0		1	0	0	0	
		NBT	1	1	1	0.00	1	0	0	0	
		NBR	27	27	29	0.38	1	0	0	0	
	SB	SBL	325	325	324	0.06	1	0	0	0	
		SBT	5	5	5	0.00	1	0	0	0	
		SBR	36	36	35	0.17	1	0	0	0	
	EB	EBL	37	37	36	0.17	1	0	0	0	
		EBT	264	264	262	0.12	1	0	0	0	
		EBR	3	3	3	0.00	1	0	0	0	
	WB	WBL	62	62	61	0.13	1	0	0	0	
		WBT	394	394	390	0.20	1	0	0	0	
		WBR	42	42	42	0.00	1	0	0	0	
		WBU	15	15	17	0.50	1	0	0	0	
4	NB	NBL	0	0	0			0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	0	0	0			0	0	0	
	SB	SBL	189	189	191	0.15	1	0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	120	120	124	0.36	1	0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	456	456	475	0.88	1	0	0	0	
		EBR	172	172	157	1.17	1	0	0	0	
	WB	WBL	0	0	0			0	0	0	
		WBT	551	551	508	1.87	1	0	0	0	
		WBR	328	328	382	2.87	1	1	0	0	
5	NB	NBL	237	237	239	0.13	1	0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	498	498	523	1.11	1	0	0	0	
	SB	SBL	0	0	0			0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	0	0	0			0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	468	468	411	2.72	1	1	0	0	
		EBR	177	177	255	5.31	1	1	1	0	
	WB	WBL	0	0	0			0	0	0	
		WBT	642	642	651	0.35	1	0	0	0	
		WBR	634	634	597	1.49	1	0	0	0	
6	NB	NBL	402	402	400	0.10	1	0	0	0	
		NBT	14	14	11	0.85	1	0	0	0	
		NBR	106	106	102	0.39	1	0	0	0	
	SB	SBL	9	9	8	0.34	1	0	0	0	
		SBT	17	17	16	0.25	1	0	0	0	
		SBR	21	21	25	0.83	1	0	0	0	
	EB	EBL	25	25	26	0.20	1	0	0	0	
		EBT	739	739	750	0.40	1	0	0	0	
		EBR	46	46	41	0.76	1	0	0	0	
		EBU	29	29	34	0.89	1	0	0	0	
	WB	WBL	78	78	77	0.11	1	0	0	0	
		WBT	823	823	789	1.20	1	0	0	0	
		WBR	17	17	19	0.47	1	0	0	0	
		WBU	5	5	6	0.43	1	0	0	0	
					Total Movements =	*57*		3	1	0	
						Percent Below		95%	98%	100%	
						Target Percentage		85%	98%	100%	
								YES	YES	YES	

2023 Total AM - System Peak										
				DRAFT CALIBRATION DATA						
				Average VISSIM				1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value		GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	92	92	94	0.21	1	0	0	0
		NBT	0	0	0			0	0	0
		NBR	154	154	156	0.16	1	0	0	0
	SB	SBL	0	0	0			0	0	0
		SBT	0	0	0			0	0	0
		SBR	0	0	0			0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	157	157	151	0.48	1	0	0	0
		EBR	102	102	96	0.60	1	0	0	0
	WB	WBL	467	467	435	1.51	1	0	0	0
		WBT	238	238	218	1.32	1	0	0	0
		WBR	0	0	0			0	0	0
2	NB	NBL	0	0	0		1	0	0	0
		NBT	0	0	0		1	0	0	0
		NBR	1	1	1	0.00	1	0	0	0
	SB	SBL	30	30	33	0.53	1	0	0	0
		SBT	1	1	1	0.00	1	0	0	0
		SBR	33	33	33	0.00	1	0	0	0
	EB	EBL	11	11	12	0.29	1	0	0	0
		EBT	302	302	294	0.46	1	0	0	0
		EBR	0	0	1	1.41	1	0	0	0
	WB	WBL	1	1	1	0.00	1	0	0	0
		WBT	669	669	620	1.93	1	0	0	0
		WBR	20	20	20	0.00	1	0	0	0
3	NB	NBL	1	1	1	0.00	1	0	0	0
		NBT	1	1	1	0.00	1	0	0	0
		NBR	31	31	32	0.18	1	0	0	0
	SB	SBL	390	390	381	0.46	1	0	0	0
		SBT	1	1	2	0.82	1	0	0	0
		SBR	47	47	47	0.00	1	0	0	0
	EB	EBL	30	30	27	0.56	1	0	0	0
		EBT	294	294	292	0.12	1	0	0	0
		EBR	8	8	9	0.34	1	0	0	0
	WB	WBL	70	70	66	0.49	1	0	0	0
		WBT	638	638	593	1.81	1	0	0	0
		WBR	62	62	61	0.13	1	0	0	0
		WBU	14	14	17	0.76	1	0	0	0
4	NB	NBL	0	0	0			0	0	0
		NBT	0	0	0			0	0	0
		NBR	0	0	0			0	0	0
	SB	SBL	248	248	249	0.06	1	0	0	0
		SBT	0	0	0			0	0	0
		SBR	230	230	229	0.07	1	0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	519	519	522	0.13	1	0	0	0
		EBR	210	210	200	0.70	1	0	0	0
	WB	WBL	0	0	0			0	0	0
		WBT	714	714	639	2.88	1	1	0	0
		WBR	380	380	431	2.53	1	1	0	0
5	NB	NBL	279	279	318	2.26	1	1	0	0
		NBT	0	0	0			0	0	0
		NBR	502	502	527	1.10	1	0	0	0
	SB	SBL	0	0	0			0	0	0
		SBT	0	0	0			0	0	0
		SBR	0	0	0			0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	604	604	544	2.50	1	1	0	0
		EBR	165	165	227	4.43	1	1	0	0
	WB	WBL	0	0	0			0	0	0
		WBT	787	787	752	1.26	1	0	0	0
		WBR	575	575	570	0.21	1	0	0	0
6	NB	NBL	412	412	405	0.35	1	0	0	0
		NBT	17	17	17	0.00	1	0	0	0
		NBR	130	130	127	0.26	1	0	0	0
	SB	SBL	8	8	8	0.00	1	0	0	0
		SBT	21	21	20	0.22	1	0	0	0
		SBR	27	27	30	0.56	1	0	0	0
	EB	EBL	48	48	51	0.43	1	0	0	0
		EBT	858	858	810	1.66	1	0	0	0
		EBR	60	60	56	0.53	1	0	0	0
		EBU	29	29	34	0.89	1	0	0	0
	WB	WBL	90	90	97	0.72	1	0	0	0
		WBT	886	886	853	1.12	1	0	0	0
		WBR	10	10	11	0.31	1	0	0	0
		WBU	4	4	5	0.47	1	0	0	0
					Total Movements =	*57*		5	0	0
						Percent Below		91%	100%	100%
						Target Percentage		85%	98%	100%
								YES	YES	YES

2023 Total AM - Generator Peak											
						DRAFT CALIBRATION DATA					
				Average VISSIM					1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value			GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	93	93	96	0.31	1		0	0	0
		NBT	0	0	0				0	0	0
		NBR	183	183	185	0.15	1		0	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	118	118	116	0.18	1		0	0	0
		EBR	120	120	114	0.55	1		0	0	0
	WB	WBL	575	575	587	0.50	1		0	0	0
		WBT	362	362	363	0.05	1		0	0	0
		WBR	0	0	0				0	0	0
2	NB	NBL	0	0	0		1		0	0	0
		NBT	0	0	0		1		0	0	0
		NBR	0	0	0		1		0	0	0
	SB	SBL	32	32	34	0.35	1		0	0	0
		SBT	0	0	0		1		0	0	0
		SBR	19	19	20	0.23	1		0	0	0
	EB	EBL	2	2	0	2.00	1		0	0	0
		EBT	299	299	299	0.00	1		0	0	0
		EBR	0	0	0		1		0	0	0
	WB	WBL	0	0	0		1		0	0	0
		WBT	921	921	930	0.30	1		0	0	0
		WBR	11	11	11	0.00	1		0	0	0
3	NB	NBL	0	0	0		1		0	0	0
		NBT	1	1	1	0.00	1		0	0	0
		NBR	27	27	29	0.38	1		0	0	0
	SB	SBL	325	325	324	0.06	1		0	0	0
		SBT	4	4	5	0.47	1		0	0	0
		SBR	43	43	42	0.15	1		0	0	0
	EB	EBL	36	36	37	0.17	1		0	0	0
		EBT	291	291	293	0.12	1		0	0	0
		EBR	3	3	3	0.00	1		0	0	0
	WB	WBL	63	63	61	0.25	1		0	0	0
		WBT	888	888	899	0.37	1		0	0	0
		WBR	43	43	42	0.15	1		0	0	0
		WBU	15	15	17	0.50	1		0	0	0
4	NB	NBL	0	0	0				0	0	0
		NBT	0	0	0				0	0	0
		NBR	0	0	0				0	0	0
	SB	SBL	190	190	191	0.07	1		0	0	0
		SBT	0	0	0				0	0	0
		SBR	257	257	269	0.74	1		0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	477	477	492	0.68	1		0	0	0
		EBR	179	179	171	0.60	1		0	0	0
	WB	WBL	0	0	0				0	0	0
		WBT	933	933	872	2.03	1		1	0	0
		WBR	305	305	382	4.15	1		1	0	0
5	NB	NBL	417	417	471	2.56	1		1	0	0
		NBT	0	0	0				0	0	0
		NBR	494	494	523	1.29	1		0	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	481	481	419	2.92	1		1	0	0
		EBR	187	187	264	5.13	1		1	1	0
	WB	WBL	0	0	0				0	0	0
		WBT	797	797	783	0.50	1		0	0	0
		WBR	615	615	597	0.73	1		0	0	0
6	NB	NBL	410	410	410	0.00	1		0	0	0
		NBT	14	14	11	0.85	1		0	0	0
		NBR	106	106	102	0.39	1		0	0	0
	SB	SBL	9	9	8	0.34	1		0	0	0
		SBT	17	17	16	0.25	1		0	0	0
		SBR	21	21	25	0.83	1		0	0	0
	EB	EBL	26	26	26	0.00	1		0	0	0
		EBT	783	783	757	0.94	1		0	0	0
		EBR	42	42	42	0.00	1		0	0	0
		EBU	30	30	34	0.71	1		0	0	0
	WB	WBL	72	72	77	0.58	1		0	0	0
		WBT	947	947	911	1.18	1		0	0	0
		WBR	16	16	19	0.72	1		0	0	0
		WBU	5	5	6	0.43	1		0	0	0
					Total Movements =	*57*			5	1	0
						Percent Below			91%	98%	100%
						Target Percentage			85%	98%	100%
									YES	YES	YES

2023 Background PM - System Peak				DRAFT CALIBRATION DATA						
				Average VISSIM				1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value		GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	64	64	65	0.12	1	0	0	0
		NBT	0	0	0			0	0	0
		NBR	114	114	117	0.28	1	0	0	0
	SB	SBL	0	0	0			0	0	0
		SBT	0	0	0			0	0	0
		SBR	0	0	0			0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	471	471	469	0.09	1	0	0	0
		EBR	162	162	163	0.08	1	0	0	0
	WB	WBL	188	188	182	0.44	1	0	0	0
		WBT	264	264	260	0.25	1	0	0	0
		WBR	0	0	0			0	0	0
2	NB	NBL	0	0	0		1	0	0	0
		NBT	0	0	0		1	0	0	0
		NBR	2	2	2	0.00	1	0	0	0
	SB	SBL	25	25	27	0.39	1	0	0	0
		SBT	0	0	0		1	0	0	0
		SBR	29	29	30	0.18	1	0	0	0
	EB	EBL	57	57	57	0.00	1	0	0	0
		EBT	533	533	529	0.17	1	0	0	0
		EBR	0	0	0		1	0	0	0
	WB	WBL	3	3	3	0.00	1	0	0	0
		WBT	423	423	412	0.54	1	0	0	0
		WBR	57	57	54	0.40	1	0	0	0
3	NB	NBL	6	6	6	0.00	1	0	0	0
		NBT	5	5	6	0.43	1	0	0	0
		NBR	66	66	69	0.37	1	0	0	0
	SB	SBL	636	636	627	0.36	1	0	0	0
		SBT	6	6	6	0.00	1	0	0	0
		SBR	65	65	66	0.12	1	0	0	0
	EB	EBL	91	91	89	0.21	1	0	0	0
		EBT	461	461	464	0.14	1	0	0	0
		EBR	5	5	5	0.00	1	0	0	0
	WB	WBL	59	59	58	0.13	1	0	0	0
		WBT	412	412	397	0.75	1	0	0	0
		WBR	276	276	269	0.42	1	0	0	0
		WBU	20	20	22	0.44	1	0	0	0
4	NB	NBL	0	0	0			0	0	0
		NBT	0	0	0			0	0	0
		NBR	0	0	0			0	0	0
	SB	SBL	543	543	555	0.51	1	0	0	0
		SBT	0	0	0			0	0	0
		SBR	346	346	348	0.11	1	0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	762	762	777	0.54	1	0	0	0
		EBR	422	422	405	0.84	1	0	0	0
	WB	WBL	0	0	0			0	0	0
		WBT	787	787	806	0.67	1	0	0	0
		WBR	650	650	633	0.67	1	0	0	0
5	NB	NBL	253	253	278	1.53	1	0	0	0
		NBT	0	0	0			0	0	0
		NBR	463	463	520	2.57	1	1	0	0
	SB	SBL	0	0	0			0	0	0
		SBT	0	0	0			0	0	0
		SBR	0	0	0			0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	1138	1138	1123	0.45	1	0	0	0
		EBR	169	169	209	2.91	1	1	0	0
	WB	WBL	0	0	0			0	0	0
		WBT	1160	1160	1161	0.03	1	0	0	0
		WBR	383	383	354	1.51	1	0	0	0
6	NB	NBL	429	429	420	0.44	1	0	0	0
		NBT	28	28	28	0.00	1	0	0	0
		NBR	163	163	162	0.08	1	0	0	0
	SB	SBL	29	29	28	0.19	1	0	0	0
		SBT	29	29	31	0.37	1	0	0	0
		SBR	89	89	94	0.52	1	0	0	0
	EB	EBL	79	79	78	0.11	1	0	0	0
		EBT	961	961	961	0.00	1	0	0	0
		EBR	136	136	130	0.52	1	0	0	0
		EBU	33	33	36	0.51	1	0	0	0
	WB	WBL	206	206	208	0.14	1	0	0	0
		WBT	981	981	965	0.51	1	0	0	0
		WBR	17	17	18	0.24	1	0	0	0
		WBU	9	9	10	0.32	1	0	0	0
					Total Movements =	*57*		2	0	0
						Percent Below		96%	100%	100%
						Target Percentage		85%	98%	100%
								YES	YES	YES

2023 Background PM - Generator Peak											
						DRAFT CALIBRATION DATA					
				Average VISSIM					1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value		GEH Value > 2	GEH Value > 5	GEH Value > 10	
1	NB	NBL	52	52	54	0.27	1	0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	148	148	149	0.08	1	0	0	0	
	SB	SBL	0	0	0			0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	0	0	0			0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	256	256	252	0.25	1	0	0	0	
		EBR	85	85	78	0.78	1	0	0	0	
	WB	WBL	203	203	199	0.28	1	0	0	0	
		WBT	174	174	159	1.16	1	0	0	0	
		WBR	0	0	0			0	0	0	
2	NB	NBL	0	0	0		1	0	0	0	
		NBT	2	2	2	0.00	1	0	0	0	
		NBR	2	2	2	0.00	1	0	0	0	
	SB	SBL	48	48	44	0.59	1	0	0	0	
		SBT	0	0	0		1	0	0	0	
		SBR	19	19	19	0.00	1	0	0	0	
	EB	EBL	37	37	39	0.32	1	0	0	0	
		EBT	370	370	362	0.42	1	0	0	0	
		EBR	0	0	0		1	0	0	0	
	WB	WBL	1	1	1	0.00	1	0	0	0	
		WBT	358	358	339	1.02	1	0	0	0	
		WBR	57	57	56	0.13	1	0	0	0	
3	NB	NBL	3	3	3	0.00	1	0	0	0	
		NBT	2	2	2	0.00	1	0	0	0	
		NBR	38	38	37	0.16	1	0	0	0	
	SB	SBL	677	677	660	0.66	1	0	0	0	
		SBT	1	1	1	0.00	1	0	0	0	
		SBR	66	66	66	0.00	1	0	0	0	
	EB	EBL	81	81	76	0.56	1	0	0	0	
		EBT	340	340	330	0.55	1	0	0	0	
		EBR	2	2	2	0.00	1	0	0	0	
	WB	WBL	22	22	21	0.22	1	0	0	0	
		WBT	346	346	327	1.04	1	0	0	0	
		WBR	248	248	236	0.77	1	0	0	0	
		WBU	21	21	22	0.22	1	0	0	0	
4	NB	NBL	0	0	0			0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	0	0	0			0	0	0	
	SB	SBL	555	555	542	0.56	1	0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	299	299	295	0.23	1	0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	771	771	767	0.14	1	0	0	0	
		EBR	315	315	282	1.91	1	0	0	0	
	WB	WBL	0	0	0			0	0	0	
		WBT	663	663	728	2.46	1	1	0	0	
		WBR	532	532	476	2.49	1	1	0	0	
5	NB	NBL	207	207	217	0.69	1	0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	392	392	408	0.80	1	0	0	0	
	SB	SBL	0	0	0			0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	0	0	0			0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	1176	1176	1095	2.40	1	1	0	0	
		EBR	156	156	214	4.26	1	1	0	0	
	WB	WBL	0	0	0			0	0	0	
		WBT	970	970	987	0.54	1	0	0	0	
		WBR	296	296	264	1.91	1	0	0	0	
6	NB	NBL	395	395	388	0.35	1	0	0	0	
		NBT	11	11	11	0.00	1	0	0	0	
		NBR	152	152	152	0.00	1	0	0	0	
	SB	SBL	30	30	31	0.18	1	0	0	0	
		SBT	20	20	21	0.22	1	0	0	0	
		SBR	80	80	83	0.33	1	0	0	0	
	EB	EBL	88	88	81	0.76	1	0	0	0	
		EBT	925	925	865	2.01	1	1	0	0	
		EBR	130	130	122	0.71	1	0	0	0	
		EBU	33	33	33	0.00	1	0	0	0	
	WB	WBL	149	149	147	0.16	1	0	0	0	
		WBT	751	751	747	0.15	1	0	0	0	
		WBR	19	19	17	0.47	1	0	0	0	
		WBU	10	10	11	0.31	1	0	0	0	
					Total Movements =	*57*		5	0	0	
						Percent Below		91%	100%	100%	
						Target Percentage		85%	98%	100%	
								YES	YES	YES	

2023 Total PM - System Peak										
				DRAFT CALIBRATION DATA						
				Average VISSIM				1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value		GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	68	68	71	0.36	1	0	0	0
		NBT	0	0	0			0	0	0
		NBR	172	172	173	0.08	1	0	0	0
	SB	SBL	0	0	0			0	0	0
		SBT	0	0	0			0	0	0
		SBR	0	0	0			0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	473	473	469	0.18	1	0	0	0
		EBR	172	172	172	0.00	1	0	0	0
	WB	WBL	267	267	264	0.18	1	0	0	0
		WBT	265	265	260	0.31	1	0	0	0
		WBR	0	0	0			0	0	0
2	NB	NBL	0	0	0		1	0	0	0
		NBT	0	0	0		1	0	0	0
		NBR	2	2	2	0.00	1	0	0	0
	SB	SBL	25	25	27	0.39	1	0	0	0
		SBT	0	0	0		1	0	0	0
		SBR	29	29	30	0.18	1	0	0	0
	EB	EBL	59	59	57	0.26	1	0	0	0
		EBT	587	587	585	0.08	1	0	0	0
		EBR	0	0	0		1	0	0	0
	WB	WBL	2	2	3	0.63	1	0	0	0
		WBT	502	502	494	0.36	1	0	0	0
		WBR	58	58	54	0.53	1	0	0	0
3	NB	NBL	6	6	6	0.00	1	0	0	0
		NBT	5	5	6	0.43	1	0	0	0
		NBR	66	66	69	0.37	1	0	0	0
	SB	SBL	640	640	627	0.52	1	0	0	0
		SBT	7	7	6	0.39	1	0	0	0
		SBR	66	66	67	0.12	1	0	0	0
	EB	EBL	93	93	90	0.31	1	0	0	0
		EBT	514	514	519	0.22	1	0	0	0
		EBR	4	4	5	0.47	1	0	0	0
	WB	WBL	62	62	58	0.52	1	0	0	0
		WBT	488	488	478	0.46	1	0	0	0
		WBR	265	265	269	0.24	1	0	0	0
		WBU	19	19	22	0.66	1	0	0	0
4	NB	NBL	0	0	0			0	0	0
		NBT	0	0	0			0	0	0
		NBR	0	0	0			0	0	0
	SB	SBL	544	544	555	0.47	1	0	0	0
		SBT	0	0	0			0	0	0
		SBR	369	369	371	0.10	1	0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	787	787	807	0.71	1	0	0	0
		EBR	448	448	430	0.86	1	0	0	0
	WB	WBL	0	0	0			0	0	0
		WBT	846	846	864	0.62	1	0	0	0
		WBR	639	639	633	0.24	1	0	0	0
5	NB	NBL	306	306	315	0.51	1	0	0	0
		NBT	0	0	0			0	0	0
		NBR	507	507	520	0.57	1	0	0	0
	SB	SBL	0	0	0			0	0	0
		SBT	0	0	0			0	0	0
		SBR	0	0	0			0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	1148	1148	1137	0.33	1	0	0	0
		EBR	182	182	225	3.01	1	1	0	0
	WB	WBL	0	0	0			0	0	0
		WBT	1179	1179	1182	0.09	1	0	0	0
		WBR	384	384	354	1.56	1	0	0	0
6	NB	NBL	435	435	422	0.63	1	0	0	0
		NBT	28	28	28	0.00	1	0	0	0
		NBR	164	164	162	0.16	1	0	0	0
	SB	SBL	29	29	28	0.19	1	0	0	0
		SBT	29	29	31	0.37	1	0	0	0
		SBR	89	89	94	0.52	1	0	0	0
	EB	EBL	77	77	78	0.11	1	0	0	0
		EBT	968	968	974	0.19	1	0	0	0
		EBR	136	136	131	0.43	1	0	0	0
		EBU	33	33	36	0.51	1	0	0	0
	WB	WBL	208	208	208	0.00	1	0	0	0
		WBT	1009	1009	984	0.79	1	0	0	0
		WBR	17	17	18	0.24	1	0	0	0
		WBU	9	9	10	0.32	1	0	0	0
					Total Movements =	*57*		1	0	0
						Percent Below		98%	100%	100%
						Target Percentage		85%	98%	100%
								YES	**YES**	**YES**

2023 Total PM - Generator Peak											
						DRAFT CALIBRATION DATA					
				Average VISSIM					1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value			GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	104	104	107	0.29	1		0	0	0
		NBT	0	0	0				0	0	0
		NBR	598	598	612	0.57	1		0	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	254	254	252	0.13	1		0	0	0
		EBR	137	137	130	0.61	1		0	0	0
	WB	WBL	644	644	654	0.39	1		0	0	0
		WBT	170	170	159	0.86	1		0	0	0
		WBR	0	0	0				0	0	0
2	NB	NBL	0	0	0		1		0	0	0
		NBT	2	2	2	0.00	1		0	0	0
		NBR	2	2	2	0.00	1		0	0	0
	SB	SBL	48	48	44	0.59	1		0	0	0
		SBT	0	0	0		1		0	0	0
		SBR	19	19	19	0.00	1		0	0	0
	EB	EBL	39	39	39	0.00	1		0	0	0
		EBT	821	821	825	0.14	1		0	0	0
		EBR	0	0	0		1		0	0	0
	WB	WBL	2	2	1	0.82	1		0	0	0
		WBT	797	797	794	0.11	1		0	0	0
		WBR	55	55	56	0.13	1		0	0	0
3	NB	NBL	3	3	3	0.00	1		0	0	0
		NBT	2	2	2	0.00	1		0	0	0
		NBR	38	38	37	0.16	1		0	0	0
	SB	SBL	673	673	660	0.50	1		0	0	0
		SBT	2	2	1	0.82	1		0	0	0
		SBR	72	72	72	0.00	1		0	0	0
	EB	EBL	81	81	82	0.11	1		0	0	0
		EBT	782	782	787	0.18	1		0	0	0
		EBR	2	2	2	0.00	1		0	0	0
	WB	WBL	24	24	21	0.63	1		0	0	0
		WBT	784	784	776	0.29	1		0	0	0
		WBR	242	242	236	0.39	1		0	0	0
		WBU	21	21	22	0.22	1		0	0	0
4	NB	NBL	0	0	0				0	0	0
		NBT	0	0	0				0	0	0
		NBR	0	0	0				0	0	0
	SB	SBL	555	555	542	0.56	1		0	0	0
		SBT	0	0	0				0	0	0
		SBR	422	422	423	0.05	1		0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	1006	1006	1016	0.31	1		0	0	0
		EBR	516	516	490	1.16	1		0	0	0
	WB	WBL	0	0	0				0	0	0
		WBT	1031	1031	1049	0.56	1		0	0	0
		WBR	485	485	476	0.41	1		0	0	0
5	NB	NBL	393	393	421	1.39	1		0	0	0
		NBT	0	0	0				0	0	0
		NBR	390	390	408	0.90	1		0	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	1309	1309	1214	2.67	1		1	0	0
		EBR	256	256	344	5.08	1		1	1	0
	WB	WBL	0	0	0				0	0	0
		WBT	1084	1084	1104	0.60	1		0	0	0
		WBR	296	296	264	1.91	1		0	0	0
6	NB	NBL	404	404	397	0.35	1		0	0	0
		NBT	11	11	11	0.00	1		0	0	0
		NBR	153	153	152	0.08	1		0	0	0
	SB	SBL	30	30	31	0.18	1		0	0	0
		SBT	20	20	21	0.22	1		0	0	0
		SBR	80	80	83	0.33	1		0	0	0
	EB	EBL	82	82	81	0.11	1		0	0	0
		EBT	1029	1029	975	1.71	1		0	0	0
		EBR	142	142	131	0.94	1		0	0	0
		EBU	33	33	33	0.00	1		0	0	0
	WB	WBL	147	147	147	0.00	1		0	0	0
		WBT	856	856	855	0.03	1		0	0	0
		WBR	19	19	17	0.47	1		0	0	0
		WBU	10	10	11	0.31	1		0	0	0
					Total Movements =	*57*			2	1	0
							Percent Below		96%	98%	100%
							Target Percentage		85%	98%	100%
									YES	YES	YES

Table 17 - Year 2023 Estimated 95th Percentile Queuing Analysis

Intersection	Movement	Storage (ft)	2023 Background				2023 Total				Queue Storage Adequate?
			6:30 - 7:30 AM	7:00 - 8:00 AM	5:30 - 6:30 PM	4:30 - 5:30 PM	6:30 - 7:30 AM	7:00 - 8:00 AM	5:30 - 6:30 PM	4:30 - 5:30 PM	
1: OR 219 / Arbor Grove Rd NE	SBLR		25	25	25	25	25	25	25	25	Yes
	EBLT		<25	<25	<25	<25	<25	<25	<25	<25	Yes
	WBTR		<25	<25	<25	<25	<25	<25	<25	<25	Yes
2: OR 219 / North Butteville Rd	SBLR		50	25	25	225	25	50	50	225	Yes
	EBLT		<25	<25	<25	<25	<25	<25	<25	<25	Yes
	WBTR		<25	<25	<25	<25	<25	<25	<25	<25	Yes
3: OR 219 / Butteville Rd	NBL		250	200	200	200	25	25	25	25	Yes
	NBR	100					<25	<25	<25	<25	Yes
	EBT		<25	<25	<25	<25	100	100	125	150	Yes
	EBR	170					100	100	125	150	Yes
	WBLT		125	150	250	425	200	125	200	100	Yes
4: OR 219 / Willow Ave	NBLTR		<25	25	50	25	<25	25	25	25	Yes
	EBL						25	25	50	50	Yes
	EBTR		25	50	100	200	<25	<25	<25	<25	Yes
	WBLT		<25	50	25	50	<25	25	25	25	Yes
	WBR	200	<25	<25	<25	<25	75	75	75	75	Yes
	SBLTR		125	125	125	125	100	100	100	75	Yes
5: OR 219 / Woodland Ave	EBL	230	75	75	150	175	100	75	150	150	Yes
	EBT		150	150	175	250	150	150	450	275	Yes
	EBR		25	50	25	25	25	25	25	25	Yes
	WBL	230	125	150	100	150	150	175	100	150	Yes
	WBT		375	300	375	475	450	375	525	325	Yes
	WBR	100	50	50	125	150	50	50	100	125	No
	NBL	100	<25	25	25	50	<25	25	25	50	Yes
	NBTR		50	50	50	100	50	50	50	100	Yes
	SBLTR		225	250	400	425	225	250	450	425	Yes
6: OR 219 / I-5 SB Ramps	EBT		150	175	275	250	150	150	425	275	Yes
	EBR	260	<25	<25	<25	<25	<25	<25	25	25	Yes
	WBT		200	175	300	350	300	275	450	375	Yes
	WBR	530	75	75	125	175	75	75	75	125	Yes
	SBL	690	175	200	300	300	175	200	275	300	Yes
	SBR	430	75	75	150	175	175	175	275	225	Yes
7: OR 219 / I-5 NB Ramps	EBT		200	250	450	500	250	275	550	475	Yes
	EBR	560	50	50	50	50	50	50	75	50	Yes
	WBT		200	250	400	550	275	300	400	550	Yes
	WBR	380	175	175	50	75	150	150	50	75	Yes
	NBLTR	620	200	175	225	250	225	200	275	250	Yes

Table 17 - Year 2023 Estimated 95th Percentile Queuing Analysis (Continued)

Intersection	Movement	Storage (ft)	2023 Background				2023 Total				Queue Storage Adequate?
			6:30 - 7:30 AM	7:00 - 8:00 AM	5:30 - 6:30 PM	4:30 - 5:30 PM	6:30 - 7:30 AM	7:00 - 8:00 AM	5:30 - 6:30 PM	4:30 - 5:30 PM	
8: OR 214 / Evergreen Rd	EBL	180	50	75	100	100	75	75	100	100	Yes
	EBT		275	300	325	425	250	325	450	425	Yes
	EBR	280	25	25	25	50	25	25	50	50	Yes
	WBL	370	100	125	150	225	100	100	150	200	Yes
	WBTR		400	400	325	425	425	400	375	425	Yes
	NBLT	320	350	350	275	300	350	350	275	300	No
	NBR	280	75	100	100	100	75	100	100	100	Yes
	SBL	80	50	50	75	75	50	50	75	75	Yes
	SBTR		75	75	75	75	75	75	75	75	Yes
9: OR 214/Settlemier Ave/Boones Ferry Rd	EBL	250	125	175	150	150	125	200	175	150	Yes
	EBT		375	525	500	625	375	550	625	650	Yes
	EBR	190	50	50	125	125	50	75	150	125	Yes
	WBL	230	50	75	125	150	75	75	150	150	Yes
	WBT		250	300	475	800	325	350	600	825	Yes
	WBR	150	50	50	75	75	50	50	75	75	Yes
	NBL	170	300	325	300	425	350	375	375	450	No
	NBT		125	150	125	150	125	150	125	150	Yes
	NBR	140	50	50	75	100	50	75	75	100	Yes
	SBL	170	75	100	125	175	75	100	150	175	No
	SBT		100	200	225	300	125	200	250	300	Yes
	SBR	860	100	75	125	125	125	75	150	125	Yes
10: OR 214/OR 211/OR 99E	EBL	300	225	225	275	325	125	225	250	325	No
	EBT		225	275	500	600	275	275	450	600	Yes
	EBR		<25	<25	<25	<25	<25	<25	<25	<25	Yes
	WBL	250	200	125	400	400	200	125	375	400	No
	WBTR		300	475	475	500	375	500	425	475	Yes
	NBL	250	75	100	200	200	100	125	200	200	Yes
	NBT		175	225	225	250	200	225	200	250	Yes
	NBR	190	50	50	125	125	75	50	100	125	Yes
	SBL	300	200	100	225	275	125	100	200	275	Yes
	SBTR		125	175	500	625	150	175	425	625	Yes
11: Stafney Rd (Old Butteville Rd) / North Site Access / Butteville Rd	NBLT						<25	<25	<25	<25	Yes
	EBLR						<25	<25	25	<25	Yes
	SBTR						25	25	25	<25	Yes
	WBLTR						<25	<25	25	<25	Yes
12: North Middle Site Access / Butteville Rd	NBTR						<25	<25	<25	<25	Yes
	WBLR						<25	<25	25	<25	Yes
	SBLT						25	25	25	<25	Yes
13: South Middle Site Access / Butteville Rd	NBTR						<25	<25	<25	<25	Yes
	WBL						<25	<25	25	<25	Yes
	WBR						25	25	50	25	Yes
	SBL	100					25	25	25	25	Yes
	SBT						<25	<25	<25	<25	Yes
14: South Site Access / Lebrun Rd / Butteville Rd	EBLTR		25	25	25	25	25	25	25	25	Yes
	NBL	100	<25	<25	<25	<25	<25	<25	<25	<25	Yes
	NBTR						<25	<25	<25	<25	Yes
	WBLT						25	<25	25	<25	Yes
	WBR						25	25	50	25	Yes
	SBL	100					25	25	25	25	Yes
	SBTR		<25	<25	<25	<25	<25	<25	<25	<25	Yes
15: Parr Rd / Butteville Rd	NBTR		<25	<25	<25	<25	<25	<25	<25	<25	Yes
	WBLR		25	25	25	25	25	25	25	25	Yes
	SBLT		25	25	25	25	25	25	25	25	Yes

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	99	116	82	17	3
Future Vol, veh/h	8	99	116	82	17	3
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, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	9	4	3	0	0
Mvmt Flow	9	108	126	89	18	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	215	0	-	0	297	171
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	126	-
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	1367	-	-	-	698	878
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	905	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1367	-	-	-	693	878
Mov Cap-2 Maneuver	-	-	-	-	693	-
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	905	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1367	-	-	-	716
HCM Lane V/C Ratio	0.006	-	-	-	0.03
HCM Control Delay (s)	7.7	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	125	254	205	105	7
Future Vol, veh/h	4	125	254	205	105	7
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	7	4	9	31	29
Mvmt Flow	4	136	276	223	114	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	499	0	-	0	532	388
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	144	-
Critical Hdwy	4.1	-	-	-	6.71	6.49
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.2	-	-	-	3.779	3.561
Pot Cap-1 Maneuver	1075	-	-	-	461	605
Stage 1	-	-	-	-	627	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1075	-	-	-	459	605
Mov Cap-2 Maneuver	-	-	-	-	459	-
Stage 1	-	-	-	-	624	-
Stage 2	-	-	-	-	817	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1075	-	-	-	466
HCM Lane V/C Ratio	0.004	-	-	-	0.261
HCM Control Delay (s)	8.4	0	-	-	15.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1

HCS7 Roundabouts Report

General Information		Site Information	
Analyst	ZHB	Intersection	OR 219/Butteville Rd
Agency or Co.	Kittelson	E/W Street Name	OR 219
Date Performed	4/29/2021	N/S Street Name	Butteville (Realigned)
Analysis Year	2023	Analysis Time Period (hrs)	0.25
Time Analyzed	AM Total - Generator Peak	Peak Hour Factor	0.92
Project Description	Project Basie	Jurisdiction	Woodburn, OR

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0
Lane Assignment	T		R		L		LT				L					
Volume (V), veh/h	0		116	114	0	587	363		0	96		185				
Percent Heavy Vehicles, %	0		10	19	0	7	5		0	3		4				
Flow Rate (v_{PCE}), pc/h	0		139	147	0	683	414		0	107		209				
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes	2				1				1							
Pedestrians Crossing, p/h	0				0				0							

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.3276		4.5436	4.5436			4.9763				
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.6087				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	139.00	147.00		581.41	515.59			107.00	209.00			
Entry Volume veh/h	121.45	128.44		547.28	485.32			103.88	200.96			
Circulating Flow (v_c), pc/h	683			107			139			1204		
Exiting Flow (v_{ex}), pc/h	139			521			0			830		
Capacity (c_{pce}), pc/h	720.18	794.62		1288.26	1288.26			1197.58				
Capacity (c), veh/h	629.26	694.30		1212.63	1212.63			1162.70				
v/c Ratio (x)	0.19	0.18		0.45	0.40			0.09				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	8.0	7.3		7.6	6.9			3.8				
Lane LOS	A	A		A	A			A	A			
95% Queue, veh	0.7	0.7		2.4	2.0			0.3				
Approach Delay, s/veh	7.7			7.3			1.3					
Approach LOS	A			A			A					
Intersection Delay, s/veh | LOS	6.2						A					

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	299	1	1	930	11	1	1	1	34	1	20
Future Vol, veh/h	2	299	1	1	930	11	1	1	1	34	1	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	240	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	7	0	0	6	0	0	0	0	4	0	0
Mvmt Flow	2	325	1	1	1011	12	1	1	1	37	1	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1023	0	0	326	0	0	838	1355	164	1187	1349	512
Stage 1	-	-	-	-	-	-	330	330	-	1019	1019	-
Stage 2	-	-	-	-	-	-	508	1025	-	168	330	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.58	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.58	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.58	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.54	4	3.3
Pot Cap-1 Maneuver	686	-	-	1245	-	-	262	151	858	142	152	512
Stage 1	-	-	-	-	-	-	663	649	-	250	317	-
Stage 2	-	-	-	-	-	-	521	315	-	812	649	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	686	-	-	1245	-	-	249	150	857	140	151	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	249	150	-	140	151	-
Stage 1	-	-	-	-	-	-	661	647	-	249	317	-
Stage 2	-	-	-	-	-	-	497	315	-	806	647	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	19.4	32.2
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	253	686	-	-	1245	-	-	191
HCM Lane V/C Ratio	0.013	0.003	-	-	0.001	-	-	0.313
HCM Control Delay (s)	19.4	10.3	-	-	7.9	-	-	32.2
HCM Lane LOS	C	B	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	1.3

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	37	293	3	17	61	899	42	1	1	29	324	5
Future Volume (vph)	37	293	3	17	61	899	42	1	1	29	324	5
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.85		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3107	1488		1352	3137	1417	1662	945		1526	1492
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3107	1488		1352	3137	1417	1662	945		1526	1492
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	318	3	18	66	977	46	1	1	32	352	5
RTOR Reduction (vph)	0	0	1	0	0	0	11	0	31	0	0	8
Lane Group Flow (vph)	40	318	2	0	84	977	35	1	2	0	204	191
Confl. Peds. (#/hr)								1				
Heavy Vehicles (%)	0%	7%	0%	23%	23%	6%	5%	0%	0%	60%	3%	25%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA	pt+ov	Split	NA		Split	NA
Protected Phases	5	2	2 8	1	1	6	6 4	8	8		4	4
Permitted Phases												
Actuated Green, G (s)	4.4	42.1	45.9		9.0	46.7	63.4	3.8	3.8		16.7	16.7
Effective Green, g (s)	4.4	42.1	45.9		9.0	46.7	63.4	3.8	3.8		16.7	16.7
Actuated g/C Ratio	0.05	0.48	0.52		0.10	0.53	0.72	0.04	0.04		0.19	0.19
Clearance Time (s)	4.0	4.5			4.0	4.5		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2			2.5	4.2		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	83	1484	775		138	1662	1019	71	40		289	282
v/s Ratio Prot	c0.02	0.10	0.00		0.06	c0.31	0.02	0.00	c0.00		c0.13	0.13
v/s Ratio Perm												
v/c Ratio	0.48	0.21	0.00		0.61	0.59	0.03	0.01	0.06		0.71	0.68
Uniform Delay, d1	40.7	13.4	10.1		37.9	14.1	3.6	40.4	40.4		33.4	33.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	3.2	0.1	0.0		6.3	0.7	0.0	0.1	0.5		7.1	5.7
Delay (s)	43.9	13.5	10.1		44.1	14.8	3.6	40.4	40.9		40.5	38.9
Level of Service	D	B	B		D	B	A	D	D		D	D
Approach Delay (s)		16.8				16.6			40.9			39.7
Approach LOS		B				B			D			D

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	16.5
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	42
Future Volume (vph)	42
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	46
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

08/14/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	37	293	3	17	61	899	42	1	1	29	324	5
Future Volume (veh/h)	37	293	3	17	61	899	42	1	1	29	324	5
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1654	1750		1436	1668	1682	1750	1750	1750	1704	1403
Adj Flow Rate, veh/h	40	318	3		66	977	46	1	1	32	399	0
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	7	0		23	6	5	0	0	0	3	25
Cap, veh/h	67	1448	753		76	1482	907	78	2	67	548	237
Arrive On Green	0.04	0.46	0.46		0.06	0.47	0.47	0.05	0.05	0.05	0.17	0.00
Sat Flow, veh/h	1667	3143	1483		1368	3169	1425	1667	45	1440	3245	1403
Grp Volume(v), veh/h	40	318	3		66	977	46	1	0	33	399	0
Grp Sat Flow(s),veh/h/ln	1667	1572	1483		1368	1585	1425	1667	0	1485	1623	1403
Q Serve(g_s), s	1.5	3.7	0.1		2.9	14.6	0.7	0.0	0.0	1.3	7.2	0.0
Cycle Q Clear(g_c), s	1.5	3.7	0.1		2.9	14.6	0.7	0.0	0.0	1.3	7.2	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.97	1.00	
Lane Grp Cap(c), veh/h	67	1448	753		76	1482	907	78	0	70	548	237
V/C Ratio(X)	0.60	0.22	0.00		0.87	0.66	0.05	0.01	0.00	0.47	0.73	0.00
Avail Cap(c_a), veh/h	542	2300	1154		445	2319	1283	813	0	724	2374	1027
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.0	10.0	7.5		28.8	12.6	4.2	28.0	0.0	28.6	24.2	0.0
Incr Delay (d2), s/veh	6.1	0.1	0.0		19.5	0.8	0.0	0.0	0.0	3.7	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.2	2.1	0.0		2.4	8.0	0.5	0.0	0.0	0.9	4.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.2	10.1	7.5		48.4	13.4	4.2	28.0	0.0	32.3	25.6	0.0
LnGrp LOS	D	B	A		D	B	A	C	A	C	C	A
Approach Vol, veh/h		361				1089			34			399
Approach Delay, s/veh		12.8				15.1			32.1			25.6
Approach LOS		B				B			C			C

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	32.8		14.4	7.0	33.3		6.9				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	4.9	5.7		9.2	3.5	16.6		3.3				
Green Ext Time (p_c), s	0.1	3.5		1.1	0.0	12.2		0.1				

Intersection Summary	
HCM 6th Ctrl Delay	17.2
HCM 6th LOS	B

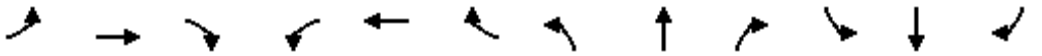
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	42
Future Volume (veh/h)	42
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1403
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	25
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

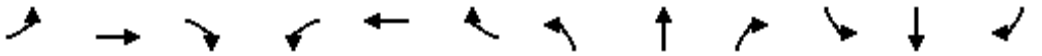
Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	492	171	0	872	382	0	0	0	191	0	269
Future Volume (vph)	0	492	171	0	872	382	0	0	0	191	0	269
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3090	1263		3140	1315				2859		1283
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3090	1263		3140	1315				2859		1283
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)	0	518	180	0	918	402	0	0	0	201	0	283
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	21
Lane Group Flow (vph)	0	518	180	0	918	402	0	0	0	201	0	262
Confl. Peds. (#/hr)						1						1
Heavy Vehicles (%)	0%	6%	16%	0%	8%	13%	0%	0%	0%	10%	0%	13%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		67.6	100.0		58.0	100.0				23.4		33.5
Effective Green, g (s)		67.6	100.0		58.0	100.0				23.4		35.5
Actuated g/C Ratio		0.68	1.00		0.58	1.00				0.23		0.36
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2088	1263		1821	1315				669		455
v/s Ratio Prot		0.17			c0.29					0.07		c0.20
v/s Ratio Perm			0.14			0.31						
v/c Ratio		0.25	0.14		0.50	0.31				0.30		0.58
Uniform Delay, d1		6.3	0.0		12.5	0.0				31.6		26.1
Progression Factor		1.00	1.00		0.74	1.00				1.00		1.00
Incremental Delay, d2		0.3	0.2		0.8	0.5				0.2		1.4
Delay (s)		6.6	0.2		10.1	0.5				31.7		27.6
Level of Service		A	A		B	A				C		C
Approach Delay (s)		5.0			7.2			0.0			29.3	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	10.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	51.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	492	171	0	872	382	0	0	0	191	0	269
Future Volume (veh/h)	0	492	171	0	872	382	0	0	0	191	0	269
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1619	1483	0	1784	1715				1478	0	1437
Adj Flow Rate, veh/h	0	518	0	0	918	0				201	0	283
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	6	16	0	8	13				10	0	13
Cap, veh/h	0	2026		0	2233					687	0	331
Arrive On Green	0.00	0.66	0.00	0.00	1.00	0.00				0.25	0.00	0.27
Sat Flow, veh/h	0	3158	1257	0	3479	1454				2731	0	1218
Grp Volume(v), veh/h	0	518	0	0	918	0				201	0	283
Grp Sat Flow(s),veh/h/ln	0	1538	1257	0	1695	1454				1365	0	1218
Q Serve(g_s), s	0.0	6.9	0.0	0.0	0.0	0.0				5.9	0.0	22.1
Cycle Q Clear(g_c), s	0.0	6.9	0.0	0.0	0.0	0.0				5.9	0.0	22.1
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2026		0	2233					687	0	331
V/C Ratio(X)	0.00	0.26		0.00	0.41					0.29	0.00	0.86
Avail Cap(c_a), veh/h	0	2026		0	2233					969	0	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.92	0.00	0.00	0.79	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.0	0.0	0.0	0.0	0.0				30.2	0.0	34.6
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.4	0.0				0.2	0.0	10.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	3.8	0.0	0.0	0.2	0.0				3.5	0.0	20.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.3	0.0	0.0	0.4	0.0				30.4	0.0	44.7
LnGrp LOS	A	A		A	A					C	A	D
Approach Vol, veh/h		518	A		918	A					484	
Approach Delay, s/veh		7.3			0.4						38.8	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		70.4		29.6		70.4						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		8.9		24.1		2.0						
Green Ext Time (p_c), s		10.2		1.1		11.1						

Intersection Summary												
HCM 6th Ctrl Delay			12.0									
HCM 6th LOS			B									

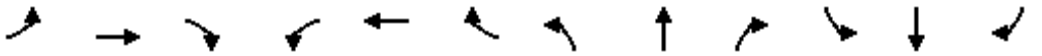
Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	419	264	0	783	597	471	0	523	0	0	0
Future Volume (vph)	0	419	264	0	783	597	471	0	523	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.91	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.98	1.00			
Satd. Flow (prot)		3111	1445		2951	1436	1445	1319	1331			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.98	1.00			
Satd. Flow (perm)		3111	1445		2951	1436	1445	1319	1331			
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)	0	441	278	0	824	628	496	0	551	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	67	232	0	0	0
Lane Group Flow (vph)	0	441	278	0	824	628	367	283	99	0	0	0
Heavy Vehicles (%)	0%	9%	5%	0%	11%	2%	6%	0%	3%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		61.0	100.0		61.0	100.0	30.0	30.0	30.0			
Effective Green, g (s)		61.0	100.0		61.0	100.0	30.0	30.0	30.0			
Actuated g/C Ratio		0.61	1.00		0.61	1.00	0.30	0.30	0.30			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1897	1445		1800	1436	433	395	399			
v/s Ratio Prot		0.14			0.28		c0.25	0.21				
v/s Ratio Perm			0.19			c0.44			0.07			
v/c Ratio		0.23	0.19		0.46	0.44	0.85	0.72	0.25			
Uniform Delay, d1		8.9	0.0		10.6	0.0	32.9	31.2	26.5			
Progression Factor		1.39	1.00		1.07	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.3	0.3		0.7	0.8	14.0	5.7	0.2			
Delay (s)		12.6	0.3		12.0	0.8	46.9	36.8	26.7			
Level of Service		B	A		B	A	D	D	C			
Approach Delay (s)		7.8			7.1			37.2			0.0	
Approach LOS		A			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



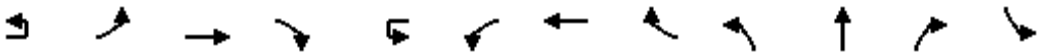
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	419	264	0	783	597	471	0	523	0	0	0
Future Volume (veh/h)	0	419	264	0	783	597	471	0	523	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1770	1826	0	1551	1674	1473	1555	1514			
Adj Flow Rate, veh/h	0	441	0	0	824	0	602	0	227			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	9	5	0	11	2	6	0	3			
Cap, veh/h	0	2231		0	1955		692	0	316			
Arrive On Green	0.00	1.00	0.00	0.00	0.44	0.00	0.25	0.00	0.25			
Sat Flow, veh/h	0	3452	1547	0	3025	1419	2805	0	1283			
Grp Volume(v), veh/h	0	441	0	0	824	0	602	0	227			
Grp Sat Flow(s),veh/h/ln	0	1682	1547	0	1473	1419	1403	0	1283			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	19.1	0.0	20.6	0.0	16.2			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	19.1	0.0	20.6	0.0	16.2			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2231		0	1955		692	0	316			
V/C Ratio(X)	0.00	0.20		0.00	0.42		0.87	0.00	0.72			
Avail Cap(c_a), veh/h	0	2231		0	1955		996	0	455			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.67	0.67	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.97	0.00	0.00	0.71	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	14.7	0.0	36.1	0.0	34.5			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.5	0.0	5.4	0.0	2.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.0	0.0	10.6	0.0	11.9	0.0	8.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	15.1	0.0	41.5	0.0	36.7			
LnGrp LOS	A	A		A	B		D	A	D			
Approach Vol, veh/h		441	A		824	A		829				
Approach Delay, s/veh		0.2			15.1			40.2				
Approach LOS		A			B			D				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		70.8				70.8		29.2				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				21.1		22.6				
Green Ext Time (p_c), s		4.9				15.9		2.1				

Intersection Summary	
HCM 6th Ctrl Delay	21.9
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	34	26	757	42	6	77	911	19	410	11	102	8
Future Volume (vph)	34	26	757	42	6	77	911	19	410	11	102	8
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95
Satd. Flow (prot)		1614	3079	1340		1502	2947		1519	1522	1347	1471
Flt Permitted		0.20	1.00	1.00		0.25	1.00		0.95	0.95	1.00	0.95
Satd. Flow (perm)		335	3079	1340		394	2947		1519	1522	1347	1471
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	37	28	823	46	7	84	990	21	446	12	111	9
RTOR Reduction (vph)	0	0	0	25	0	0	1	0	0	0	89	0
Lane Group Flow (vph)	0	65	823	21	0	91	1010	0	227	231	22	9
Confl. Peds. (#/hr)											1	1
Heavy Vehicles (%)	3%	3%	8%	11%	9%	9%	11%	0%	4%	10%	9%	13%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		57.6	46.3	46.3		57.6	51.8		20.1	20.1	20.1	4.8
Effective Green, g (s)		57.6	46.3	46.3		57.6	51.8		20.1	20.1	20.1	4.8
Actuated g/C Ratio		0.58	0.46	0.46		0.58	0.52		0.20	0.20	0.20	0.05
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		267	1425	620		352	1526		305	305	270	70
v/s Ratio Prot		0.01	c0.27			0.03	c0.34		0.15	c0.15		0.01
v/s Ratio Perm		0.13		0.02		0.12					0.02	
v/c Ratio		0.24	0.58	0.03		0.26	0.66		0.74	0.76	0.08	0.13
Uniform Delay, d1		10.8	19.7	14.7		18.1	17.7		37.5	37.7	32.5	45.6
Progression Factor		1.11	1.10	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3	1.6	0.1		0.3	2.3		9.0	9.8	0.1	0.6
Delay (s)		12.3	23.3	14.7		18.4	20.0		46.5	47.5	32.6	46.2
Level of Service		B	C	B		B	B		D	D	C	D
Approach Delay (s)			22.1				19.8			44.2		
Approach LOS			C				B			D		

Intersection Summary			
HCM 2000 Control Delay	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	16	25
Future Volume (vph)	16	25
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1502	
Flt Permitted	1.00	
Satd. Flow (perm)	1502	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	17	27
RTOR Reduction (vph)	26	0
Lane Group Flow (vph)	18	0
Confl. Peds. (#/hr)		
Heavy Vehicles (%)	7%	5%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	4.8	
Effective Green, g (s)	4.8	
Actuated g/C Ratio	0.05	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	72	
v/s Ratio Prot	c0.01	
v/s Ratio Perm		
v/c Ratio	0.25	
Uniform Delay, d1	45.9	
Progression Factor	1.00	
Incremental Delay, d2	1.4	
Delay (s)	47.2	
Level of Service	D	
Approach Delay (s)	47.1	
Approach LOS	D	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	34	26	757	42	6	77	911	19	410	11	102	8
Future Volume (veh/h)	34	26	757	42	6	77	911	19	410	11	102	8
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1709	1641	1600		1578	1551	1551	1695	1614	1627	1573
Adj Flow Rate, veh/h		28	823	0		84	990	21	455	0	0	9
Peak Hour Factor		0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %		3	8	11		9	11	11	4	10	9	13
Cap, veh/h		324	1013			558	1791	38	530	0		56
Arrive On Green		0.01	0.22	0.00		0.29	0.61	0.61	0.16	0.00	0.00	0.04
Sat Flow, veh/h		1628	3118	1356		1503	2951	63	3229	0	1379	1498
Grp Volume(v), veh/h		28	823	0		84	494	517	455	0	0	9
Grp Sat Flow(s),veh/h/ln		1628	1559	1356		1503	1473	1540	1615	0	1379	1498
Q Serve(g_s), s		0.7	25.1	0.0		0.0	19.8	19.8	13.7	0.0	0.0	0.6
Cycle Q Clear(g_c), s		0.7	25.1	0.0		0.0	19.8	19.8	13.7	0.0	0.0	0.6
Prop In Lane		1.00		1.00		1.00		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		324	1013			558	895	935	530	0		56
V/C Ratio(X)		0.09	0.81			0.15	0.55	0.55	0.86	0.00		0.16
Avail Cap(c_a), veh/h		526	1013			558	895	935	662	0		232
HCM Platoon Ratio		0.67	0.67	0.67		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.94	0.94	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		9.3	36.2	0.0		23.0	11.6	11.6	40.7	0.0	0.0	46.6
Incr Delay (d2), s/veh		0.1	6.7	0.0		0.1	2.5	2.4	8.7	0.0	0.0	1.0
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		0.4	16.1	0.0		2.6	10.8	11.1	10.1	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		9.4	42.9	0.0		23.1	14.1	14.0	49.3	0.0	0.0	47.6
LnGrp LOS		A	D			C	B	B	D	A		D
Approach Vol, veh/h			851	A			1095			455	A	
Approach Delay, s/veh			41.8				14.7			49.3		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	33.8	37.0		8.3	5.6	65.2		20.9
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	2.0	27.1		3.0	2.7	21.8		15.7
Green Ext Time (p_c), s	0.1	4.0		0.0	0.0	8.1		0.6

Intersection Summary	
HCM 6th Ctrl Delay	31.1
HCM 6th LOS	C

Notes

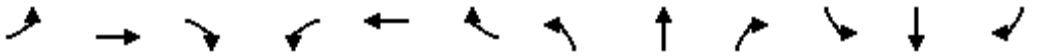
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	16	25
Future Volume (veh/h)	16	25
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1654	1654
Adj Flow Rate, veh/h	17	0
Peak Hour Factor	0.92	0.92
Percent Heavy Veh, %	7	7
Cap, veh/h	62	
Arrive On Green	0.04	0.00
Sat Flow, veh/h	1654	0
Grp Volume(v), veh/h	17	0
Grp Sat Flow(s),veh/h/ln	1654	0
Q Serve(g_s), s	1.0	0.0
Cycle Q Clear(g_c), s	1.0	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	62	
V/C Ratio(X)	0.27	
Avail Cap(c_a), veh/h	256	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	46.8	0.0
Incr Delay (d2), s/veh	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	48.5	0.0
LnGrp LOS	D	
Approach Vol, veh/h	26	A
Approach Delay, s/veh	48.2	
Approach LOS	D	

Timer - Assigned Phs

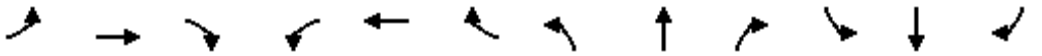
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	107	518	201	40	395	48	325	144	48	45	93	97
Future Volume (vph)	107	518	201	40	395	48	325	144	48	45	93	97
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1554	1591	1390	1363	1471	1379	1568	1699	1360	1385	1606	1288
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1554	1591	1390	1363	1471	1379	1568	1699	1360	1385	1606	1288
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	116	563	218	43	429	52	353	157	52	49	101	105
RTOR Reduction (vph)	0	0	59	0	0	31	0	0	38	0	0	93
Lane Group Flow (vph)	116	563	159	43	429	21	353	157	14	49	101	12
Confl. Peds. (#/hr)	4					4	1					1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	7%	10%	7%	22%	19%	5%	6%	3%	7%	20%	9%	13%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	13.9	53.4	79.0	7.5	47.0	47.0	25.6	31.5	31.5	7.8	13.7	13.7
Effective Green, g (s)	13.9	53.4	79.0	7.5	47.0	47.0	25.6	31.5	31.5	7.8	13.7	13.7
Actuated g/C Ratio	0.12	0.45	0.66	0.06	0.39	0.39	0.21	0.26	0.26	0.07	0.11	0.11
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	181	712	921	85	580	543	336	448	359	90	184	148
v/s Ratio Prot	c0.07	c0.35	0.04	0.03	0.29		c0.23	0.09		0.04	c0.06	
v/s Ratio Perm			0.08			0.01			0.01			0.01
v/c Ratio	0.64	0.79	0.17	0.51	0.74	0.04	1.05	0.35	0.04	0.54	0.55	0.08
Uniform Delay, d1	50.3	28.1	7.7	54.1	30.9	22.2	46.8	35.6	32.6	54.0	49.8	47.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	6.7	6.8	0.1	3.4	5.8	0.1	63.0	0.3	0.0	5.2	2.6	0.2
Delay (s)	56.9	34.9	7.7	57.5	36.7	22.3	109.8	35.9	32.6	59.2	52.5	47.3
Level of Service	E	C	A	E	D	C	F	D	C	E	D	D
Approach Delay (s)		31.1			36.9			82.0			51.6	
Approach LOS		C			D			F			D	

Intersection Summary			
HCM 2000 Control Delay	47.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	119.2	Sum of lost time (s)	19.0
Intersection Capacity Utilization	75.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



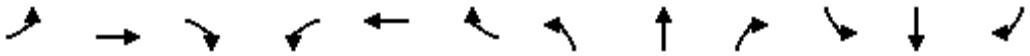
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	107	518	201	40	395	48	325	144	48	45	93	97
Future Volume (veh/h)	107	518	201	40	395	48	325	144	48	45	93	97
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1654	1614	1654	1450	1491	1682	1668	1709	1654	1477	1627	1573
Adj Flow Rate, veh/h	116	563	109	43	429	52	353	157	52	49	101	105
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	10	7	22	19	5	6	3	7	20	9	13
Cap, veh/h	143	672	917	49	539	512	381	529	424	58	179	146
Arrive On Green	0.09	0.42	0.42	0.04	0.36	0.36	0.24	0.31	0.31	0.04	0.11	0.11
Sat Flow, veh/h	1576	1614	1395	1381	1491	1417	1589	1709	1370	1407	1627	1327
Grp Volume(v), veh/h	116	563	109	43	429	52	353	157	52	49	101	105
Grp Sat Flow(s),veh/h/ln	1576	1614	1395	1381	1491	1417	1589	1709	1370	1407	1627	1327
Q Serve(g_s), s	6.9	30.0	2.8	3.0	24.8	2.3	20.8	6.7	2.6	3.3	5.7	7.3
Cycle Q Clear(g_c), s	6.9	30.0	2.8	3.0	24.8	2.3	20.8	6.7	2.6	3.3	5.7	7.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	143	672	917	49	539	512	381	529	424	58	179	146
V/C Ratio(X)	0.81	0.84	0.12	0.87	0.80	0.10	0.93	0.30	0.12	0.85	0.56	0.72
Avail Cap(c_a), veh/h	410	924	1136	359	854	812	414	534	428	366	508	414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.9	25.1	6.2	46.1	27.5	20.3	35.6	25.2	23.8	45.8	40.5	41.3
Incr Delay (d2), s/veh	8.0	7.0	0.1	27.0	5.3	0.2	25.2	0.2	0.1	21.6	2.1	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.4	18.3	1.4	2.5	14.5	1.4	16.0	5.0	1.6	2.7	4.3	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.8	32.1	6.3	73.1	32.8	20.5	60.9	25.5	23.9	67.4	42.6	46.2
LnGrp LOS	D	C	A	E	C	C	E	C	C	E	D	D
Approach Vol, veh/h		788			524			562			255	
Approach Delay, s/veh		31.3			34.8			47.5			48.8	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	7.9	45.0	27.6	15.6	13.2	39.7	8.4	34.7
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	5.0	32.0	22.8	9.3	8.9	26.8	5.3	8.7
Green Ext Time (p_c), s	0.1	7.9	0.2	0.7	0.2	6.0	0.1	0.8

Intersection Summary	
HCM 6th Ctrl Delay	38.6
HCM 6th LOS	D

Notes

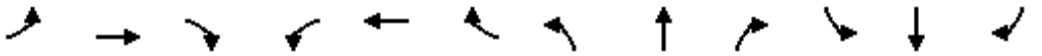
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	184	109	140	216	51	121	522	79	68	259	104
Future Volume (vph)	85	184	109	140	216	51	121	522	79	68	259	104
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1410	1524	1272	1554	1474		2941	2949	1344	1319	2737	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1410	1524	1272	1554	1474		2941	2949	1344	1319	2737	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	200	118	152	235	55	132	567	86	74	282	113
RTOR Reduction (vph)	0	0	98	0	8	0	0	0	51	0	36	0
Lane Group Flow (vph)	92	200	20	152	282	0	132	567	35	74	359	0
Heavy Vehicles (%)	14%	11%	13%	7%	14%	21%	6%	9%	7%	26%	16%	17%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	9.7	17.6	17.6	15.3	23.2		10.0	42.8	42.8	9.8	42.6	
Effective Green, g (s)	9.7	17.6	17.6	15.3	23.2		10.0	42.8	42.8	9.8	42.6	
Actuated g/C Ratio	0.09	0.17	0.17	0.15	0.22		0.10	0.41	0.41	0.09	0.41	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	130	255	213	226	325		280	1202	547	123	1110	
v/s Ratio Prot	0.07	0.13		c0.10	c0.19		0.04	c0.19		c0.06	0.13	
v/s Ratio Perm			0.02						0.03			
v/c Ratio	0.71	0.78	0.09	0.67	0.87		0.47	0.47	0.06	0.60	0.32	
Uniform Delay, d1	46.3	41.9	37.0	42.5	39.4		45.0	22.8	18.9	45.7	21.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.1	14.9	0.2	7.7	21.4		1.3	1.3	0.2	8.0	0.8	
Delay (s)	62.4	56.8	37.2	50.1	60.8		46.3	24.1	19.1	53.8	22.1	
Level of Service	E	E	D	D	E		D	C	B	D	C	
Approach Delay (s)		52.4			57.1			27.3			27.1	
Approach LOS		D			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	38.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	56.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	184	109	140	216	51	121	522	79	68	259	104
Future Volume (veh/h)	85	184	109	140	216	51	121	522	79	68	259	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1559	1600	1573	1654	1559	1559	1668	1627	1654	1395	1532	1532
Adj Flow Rate, veh/h	92	200	0	152	235	55	132	567	86	74	282	113
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	14	11	13	7	14	14	6	9	7	26	16	16
Cap, veh/h	112	232		219	255	60	191	1435	651	88	957	374
Arrive On Green	0.08	0.15	0.00	0.14	0.21	0.21	0.06	0.46	0.46	0.07	0.47	0.47
Sat Flow, veh/h	1485	1600	1333	1576	1222	286	3082	3092	1402	1329	2043	799
Grp Volume(v), veh/h	92	200	0	152	0	290	132	567	86	74	199	196
Grp Sat Flow(s),veh/h/ln	1485	1600	1333	1576	0	1507	1541	1546	1402	1329	1455	1388
Q Serve(g_s), s	6.4	12.8	0.0	9.7	0.0	19.8	4.4	12.6	2.1	5.8	8.8	9.2
Cycle Q Clear(g_c), s	6.4	12.8	0.0	9.7	0.0	19.8	4.4	12.6	2.1	5.8	8.8	9.2
Prop In Lane	1.00		1.00	1.00		0.19	1.00		1.00	1.00		0.58
Lane Grp Cap(c), veh/h	112	232		219	0	315	191	1435	651	88	681	650
V/C Ratio(X)	0.82	0.86		0.69	0.00	0.92	0.69	0.40	0.13	0.84	0.29	0.30
Avail Cap(c_a), veh/h	184	297		240	0	323	455	1435	651	196	681	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.9	43.9	0.0	43.1	0.0	40.7	48.3	18.5	5.3	48.5	17.2	17.3
Incr Delay (d2), s/veh	13.8	19.1	0.0	7.5	0.0	30.5	4.4	0.8	0.4	18.6	1.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.0	10.3	0.0	7.5	0.0	15.0	3.2	8.0	2.1	4.2	5.5	5.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	61.7	62.9	0.0	50.6	0.0	71.2	52.7	19.3	5.7	67.0	18.3	18.5
LnGrp LOS	E	E		D	A	E	D	B	A	E	B	B
Approach Vol, veh/h		292	A		442			785			469	
Approach Delay, s/veh		62.5			64.1			23.4			26.1	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.0	54.7	11.9	27.4	11.5	54.2	18.6	20.7
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	15.5	34.5	13.0	22.5	15.5	34.5	16.0	19.5
Max Q Clear Time (g_c+I1), s	6.4	11.2	8.4	21.8	7.8	14.6	11.7	14.8
Green Ext Time (p_c), s	0.2	4.6	0.1	0.1	0.1	7.3	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	38.8
HCM 6th LOS	D

Notes

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

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

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	1	1	1	1	1	3	1	277	9	58	643	1
Future Vol, veh/h	1	1	1	1	1	3	1	277	9	58	643	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	2	0
Mvmt Flow	1	1	1	1	1	3	1	301	10	63	699	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1136	1139	700	1135	1134	306	700	0	0	311	0	0
Stage 1	826	826	-	308	308	-	-	-	-	-	-	-
Stage 2	310	313	-	827	826	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	181	203	443	181	204	739	906	-	-	1261	-	-
Stage 1	369	389	-	706	664	-	-	-	-	-	-	-
Stage 2	705	661	-	369	389	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	172	193	443	173	194	739	906	-	-	1261	-	-
Mov Cap-2 Maneuver	172	193	-	173	194	-	-	-	-	-	-	-
Stage 1	369	370	-	705	663	-	-	-	-	-	-	-
Stage 2	700	660	-	349	370	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.2	16	0	0.7
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	906	-	-	226	333	1261	-	-
HCM Lane V/C Ratio	0.001	-	-	0.014	0.016	0.05	-	-
HCM Control Delay (s)	9	-	-	21.2	16	8	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	283	9	58	587
Future Vol, veh/h	1	3	283	9	58	587
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	1	3	308	10	63	638

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1077	313	0	0	318	0
Stage 1	313	-	-	-	-	-
Stage 2	764	-	-	-	-	-
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	245	732	-	-	1253	-
Stage 1	746	-	-	-	-	-
Stage 2	463	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	233	732	-	-	1253	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	746	-	-	-	-	-
Stage 2	440	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	573	1253	-
HCM Lane V/C Ratio	-	-	0.008	0.05	-
HCM Control Delay (s)	-	-	11.3	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.2	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	11	281	33	230	358
Future Vol, veh/h	2	11	281	33	230	358
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	2	12	305	36	250	389

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1212	323	0	0	341	0
Stage 1	323	-	-	-	-	-
Stage 2	889	-	-	-	-	-
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	203	723	-	-	1229	-
Stage 1	738	-	-	-	-	-
Stage 2	405	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	162	723	-	-	1229	-
Mov Cap-2 Maneuver	263	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	323	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.4	0	3.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	263	723	1229	-
HCM Lane V/C Ratio	-	-	0.008	0.017	0.203	-
HCM Control Delay (s)	-	-	18.8	10.1	8.7	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.1	0.8	-

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	1	10	2	1	18	10	282	34	230	130	1
Future Vol, veh/h	14	1	10	2	1	18	10	282	34	230	130	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	90	2	90	2	2	2	90	3	2	2	2	90
Mvmt Flow	15	1	11	2	1	20	11	307	37	250	141	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1000	1008	142	996	990	326	142	0	0	344	0	0
Stage 1	642	642	-	348	348	-	-	-	-	-	-	-
Stage 2	358	366	-	648	642	-	-	-	-	-	-	-
Critical Hdwy	8	6.52	7.1	7.12	6.52	6.22	5	-	-	4.12	-	-
Critical Hdwy Stg 1	7	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	4.31	4.018	4.11	3.518	4.018	3.318	3.01	-	-	2.218	-	-
Pot Cap-1 Maneuver	155	240	717	223	246	715	1041	-	-	1215	-	-
Stage 1	344	469	-	668	634	-	-	-	-	-	-	-
Stage 2	512	623	-	459	469	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	125	188	717	183	193	715	1041	-	-	1215	-	-
Mov Cap-2 Maneuver	125	188	-	183	193	-	-	-	-	-	-	-
Stage 1	340	372	-	661	627	-	-	-	-	-	-	-
Stage 2	492	616	-	358	372	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.1	12.3	0.3	5.6
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1041	-	-	190	186	715	1215	-	-
HCM Lane V/C Ratio	0.01	-	-	0.143	0.018	0.027	0.206	-	-
HCM Control Delay (s)	8.5	-	-	27.1	24.7	10.2	8.7	-	-
HCM Lane LOS	A	-	-	D	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.1	0.1	0.8	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	95	234	19	49	72
Future Vol, veh/h	18	95	234	19	49	72
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	10	7
Mvmt Flow	20	103	254	21	53	78

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	449	265	0	0	275	0
Stage 1	265	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Critical Hdwy	7	6.5	-	-	4.2	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.29	-
Pot Cap-1 Maneuver	530	762	-	-	1243	-
Stage 1	750	-	-	-	-	-
Stage 2	827	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	506	762	-	-	1243	-
Mov Cap-2 Maneuver	506	-	-	-	-	-
Stage 1	750	-	-	-	-	-
Stage 2	790	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.2	0	3.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	705	1243	-
HCM Lane V/C Ratio	-	-	0.174	0.043	-
HCM Control Delay (s)	-	-	11.2	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	99	100	42	25	3
Future Vol, veh/h	12	99	100	42	25	3
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, %	-	-2	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	9	6	9	11	0	0
Mvmt Flow	14	114	115	48	29	3

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	163	0	-	0	281	139
Stage 1	-	-	-	-	139	-
Stage 2	-	-	-	-	142	-
Critical Hdwy	4.19	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.281	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1374	-	-	-	713	915
Stage 1	-	-	-	-	893	-
Stage 2	-	-	-	-	890	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1374	-	-	-	705	915
Mov Cap-2 Maneuver	-	-	-	-	705	-
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	890	-

Approach	EB	WB	SB
HCM Control Delay, s	0.8	0	10.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1374	-	-	-	723
HCM Lane V/C Ratio	0.01	-	-	-	0.045
HCM Control Delay (s)	7.6	0	-	-	10.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	144	173	139	103	4
Future Vol, veh/h	5	144	173	139	103	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	80	80	80	80	80	80
Heavy Vehicles, %	0	5	9	14	28	25
Mvmt Flow	6	180	216	174	129	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	390	0	-	0	495	303
Stage 1	-	-	-	-	303	-
Stage 2	-	-	-	-	192	-
Critical Hdwy	4.1	-	-	-	6.68	6.45
Critical Hdwy Stg 1	-	-	-	-	5.68	-
Critical Hdwy Stg 2	-	-	-	-	5.68	-
Follow-up Hdwy	2.2	-	-	-	3.752	3.525
Pot Cap-1 Maneuver	1180	-	-	-	490	686
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	782	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1180	-	-	-	487	686
Mov Cap-2 Maneuver	-	-	-	-	487	-
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	782	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1180	-	-	-	492
HCM Lane V/C Ratio	0.005	-	-	-	0.272
HCM Control Delay (s)	8.1	0	-	-	15
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.1

HCS7 Roundabouts Report

General Information		Site Information	
Analyst	ZHB	Intersection	OR 219/Butteville Rd
Agency or Co.	Kittelson	E/W Street Name	OR 219
Date Performed	4/29/2021	N/S Street Name	Butteville (Realigned)
Analysis Year	2023	Analysis Time Period (hrs)	0.25
Time Analyzed	AM Total - System Peak	Peak Hour Factor	0.97
Project Description	Project Basie	Jurisdiction	Woodburn, OR

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0
Lane Assignment	T		R		L		LT				L					
Volume (V), veh/h	0		151	96	0	435	218		0	94		156				
Percent Heavy Vehicles, %	0		10	2	0	2	10		0	4		2				
Flow Rate (v_{PCE}), pc/h	0		171	101	0	457	247		0	101		164				
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes	2				1				1							
Pedestrians Crossing, p/h	0				0				0							

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.3276		4.5436	4.5436			4.9763				
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.6087				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	171.00	101.00		373.12	330.88			101.00	164.00			
Entry Volume veh/h	159.98	94.49		356.47	316.11			97.12	160.78			
Circulating Flow (v_c), pc/h	457			101			171			805		
Exiting Flow (v_{ex}), pc/h	171			348			0			558		
Capacity (c_{pce}), pc/h	886.62	962.92		1295.31	1295.31			1159.12				
Capacity (c), veh/h	829.49	900.87		1237.51	1237.51			1114.54				
v/c Ratio (x)	0.19	0.10		0.29	0.26			0.09				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	6.3	5.0		5.5	5.2			4.0				
Lane LOS	A	A		A	A			A	A			
95% Queue, veh	0.7	0.4		1.2	1.0			0.3				
Approach Delay, s/veh	5.8			5.4			1.5					
Approach LOS	A			A			A					
Intersection Delay, s/veh | LOS	4.6						A					

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	12	294	1	1	620	20	1	1	1	33	1	33
Future Vol, veh/h	12	294	1	1	620	20	1	1	1	33	1	33
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	240	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	6	0	0	10	0	0	0	0	5	0	5
Mvmt Flow	13	316	1	1	667	22	1	1	1	35	1	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	689	0	0	317	0	0	679	1034	159	865	1023	345
Stage 1	-	-	-	-	-	-	343	343	-	680	680	-
Stage 2	-	-	-	-	-	-	336	691	-	185	343	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.6	6.5	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.55	4	3.35
Pot Cap-1 Maneuver	915	-	-	1255	-	-	341	234	864	243	238	642
Stage 1	-	-	-	-	-	-	651	641	-	400	454	-
Stage 2	-	-	-	-	-	-	657	449	-	790	641	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	915	-	-	1255	-	-	317	230	864	239	234	642
Mov Cap-2 Maneuver	-	-	-	-	-	-	317	230	-	239	234	-
Stage 1	-	-	-	-	-	-	642	632	-	394	454	-
Stage 2	-	-	-	-	-	-	619	449	-	776	632	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0	15.5	18.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	346	915	-	-	1255	-	-	346
HCM Lane V/C Ratio	0.009	0.014	-	-	0.001	-	-	0.208
HCM Control Delay (s)	15.5	9	-	-	7.9	-	-	18.1
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	27	292	9	17	66	593	61	1	1	32	381	2
Future Volume (vph)	27	292	9	17	66	593	61	1	1	32	381	2
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.85		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3107	1488		1222	3167	1365	1662	968		1541	1494
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3107	1488		1222	3167	1365	1662	968		1541	1494
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)	30	321	10	19	73	652	67	1	1	35	419	2
RTOR Reduction (vph)	0	0	6	0	0	0	21	0	33	0	0	7
Lane Group Flow (vph)	30	321	4	0	92	652	46	1	3	0	239	227
Confl. Peds. (#/hr)											1	
Heavy Vehicles (%)	0%	7%	0%	36%	36%	5%	9%	0%	0%	56%	2%	50%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA	pt+ov	Split	NA		Split	NA
Protected Phases	5	2	2 8	1	1	6	6 4	8	8		4	4
Permitted Phases												
Actuated Green, G (s)	3.7	20.7	24.2		9.5	26.5	44.8	3.5	3.5		18.3	18.3
Effective Green, g (s)	3.7	20.7	24.2		9.5	26.5	44.8	3.5	3.5		18.3	18.3
Actuated g/C Ratio	0.05	0.30	0.35		0.14	0.39	0.65	0.05	0.05		0.27	0.27
Clearance Time (s)	4.0	4.5			4.0	4.5		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2			2.5	4.2		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	89	938	525		169	1225	892	84	49		411	399
v/s Ratio Prot	0.02	c0.10	0.00		0.08	c0.21	0.03	0.00	c0.00		c0.16	0.15
v/s Ratio Perm												
v/c Ratio	0.34	0.34	0.01		0.54	0.53	0.05	0.01	0.06		0.58	0.57
Uniform Delay, d1	31.2	18.6	14.4		27.5	16.2	4.2	30.9	30.9		21.8	21.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.6	0.3	0.0		2.8	0.6	0.0	0.0	0.4		1.7	1.5
Delay (s)	32.9	18.9	14.4		30.3	16.8	4.3	30.9	31.3		23.5	23.2
Level of Service	C	B	B		C	B	A	C	C		C	C
Approach Delay (s)		20.0				17.3			31.3			23.4
Approach LOS		B				B			C			C

Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	68.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	47
Future Volume (vph)	47
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.91
Adj. Flow (vph)	52
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

07/13/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	27	292	9	17	66	593	61	1	1	32	381	2
Future Volume (veh/h)	27	292	9	17	66	593	61	1	1	32	381	2
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1654	1750		1259	1682	1627	1750	1750	1750	1717	1062
Adj Flow Rate, veh/h	30	321	10		73	652	67	1	1	35	469	0
Peak Hour Factor	0.91	0.91	0.91		0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	7	0		36	5	9	0	0	0	2	50
Cap, veh/h	57	1097	589		78	1182	789	81	2	70	663	215
Arrive On Green	0.03	0.35	0.35		0.07	0.37	0.37	0.05	0.05	0.05	0.20	0.00
Sat Flow, veh/h	1667	3143	1483		1199	3195	1379	1667	41	1448	3271	1062
Grp Volume(v), veh/h	30	321	10		73	652	67	1	0	36	469	0
Grp Sat Flow(s),veh/h/ln	1667	1572	1483		1199	1598	1379	1667	0	1489	1636	1062
Q Serve(g_s), s	0.9	3.6	0.2		3.0	8.0	1.1	0.0	0.0	1.2	6.6	0.0
Cycle Q Clear(g_c), s	0.9	3.6	0.2		3.0	8.0	1.1	0.0	0.0	1.2	6.6	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.97	1.00	
Lane Grp Cap(c), veh/h	57	1097	589		78	1182	789	81	0	72	663	215
V/C Ratio(X)	0.53	0.29	0.02		0.93	0.55	0.08	0.01	0.00	0.50	0.71	0.00
Avail Cap(c_a), veh/h	676	2870	1426		486	2918	1539	1015	0	907	2987	970
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.4	11.6	9.0		22.9	12.3	4.7	22.3	0.0	22.9	18.3	0.0
Incr Delay (d2), s/veh	5.5	0.2	0.0		27.3	0.6	0.1	0.0	0.0	3.9	1.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	2.0	0.1		2.5	4.4	0.8	0.0	0.0	0.8	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.9	11.9	9.0		50.2	12.9	4.8	22.4	0.0	26.8	19.3	0.0
LnGrp LOS	C	B	A		D	B	A	C	A	C	B	A
Approach Vol, veh/h		361				792			37			469
Approach Delay, s/veh		13.2				15.7			26.7			19.3
Approach LOS		B				B			C			B

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	21.7		14.0	6.2	22.7		6.4				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	5.0	5.6		8.6	2.9	10.0		3.2				
Green Ext Time (p_c), s	0.1	3.6		1.3	0.0	8.3		0.1				

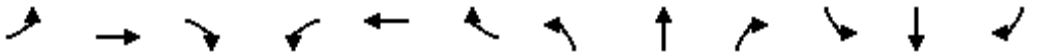
Intersection Summary		
HCM 6th Ctrl Delay		16.4
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

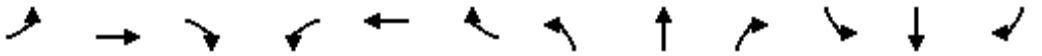
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	47
Future Volume (veh/h)	47
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1062
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.91
Percent Heavy Veh, %	50
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer - Assigned Phs
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	522	200	0	639	431	0	0	0	249	0	229
Future Volume (vph)	0	522	200	0	639	431	0	0	0	249	0	229
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3090	1308		3055	1292				2859		1261
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3090	1308		3055	1292				2859		1261
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)	0	574	220	0	702	474	0	0	0	274	0	252
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	54
Lane Group Flow (vph)	0	574	220	0	702	474	0	0	0	274	0	198
Confl. Peds. (#/hr)						1						1
Heavy Vehicles (%)	0%	6%	12%	0%	11%	15%	0%	0%	0%	10%	0%	15%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		72.4	100.0		63.0	100.0				18.6		28.5
Effective Green, g (s)		72.4	100.0		63.0	100.0				18.6		30.5
Actuated g/C Ratio		0.72	1.00		0.63	1.00				0.19		0.30
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2237	1308		1924	1292				531		384
v/s Ratio Prot		0.19			0.23					0.10		c0.16
v/s Ratio Perm			0.17			c0.37						
v/c Ratio		0.26	0.17		0.36	0.37				0.52		0.52
Uniform Delay, d1		4.7	0.0		8.9	0.0				36.6		28.7
Progression Factor		1.00	1.00		0.70	1.00				1.00		1.00
Incremental Delay, d2		0.3	0.3		0.5	0.7				0.6		0.9
Delay (s)		5.0	0.3		6.7	0.7				37.3		29.5
Level of Service		A	A		A	A				D		C
Approach Delay (s)		3.7			4.3			0.0			33.6	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	41.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



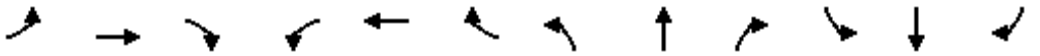
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	522	200	0	639	431	0	0	0	249	0	229
Future Volume (veh/h)	0	522	200	0	639	431	0	0	0	249	0	229
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1619	1537	0	1743	1688				1478	0	1410
Adj Flow Rate, veh/h	0	574	0	0	702	0				274	0	142
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91				0.91	0.91	0.91
Percent Heavy Veh, %	0	6	12	0	11	15				10	0	15
Cap, veh/h	0	2358		0	2537					392	0	196
Arrive On Green	0.00	0.77	0.00	0.00	1.00	0.00				0.14	0.00	0.16
Sat Flow, veh/h	0	3158	1303	0	3398	1430				2731	0	1195
Grp Volume(v), veh/h	0	574	0	0	702	0				274	0	142
Grp Sat Flow(s),veh/h/ln	0	1538	1303	0	1656	1430				1365	0	1195
Q Serve(g_s), s	0.0	5.4	0.0	0.0	0.0	0.0				9.6	0.0	11.3
Cycle Q Clear(g_c), s	0.0	5.4	0.0	0.0	0.0	0.0				9.6	0.0	11.3
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2358		0	2537					392	0	196
V/C Ratio(X)	0.00	0.24		0.00	0.28					0.70	0.00	0.73
Avail Cap(c_a), veh/h	0	2358		0	2537					969	0	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.90	0.00	0.00	0.83	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	3.4	0.0	0.0	0.0	0.0				40.7	0.0	39.7
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.2	0.0				1.7	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	2.4	0.0	0.0	0.1	0.0				5.9	0.0	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	3.6	0.0	0.0	0.2	0.0				42.4	0.0	43.5
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		574	A		702	A					416	
Approach Delay, s/veh		3.6			0.2						42.8	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		81.1		18.9		81.1						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		7.4		13.3		2.0						
Green Ext Time (p_c), s		11.6		1.1		8.0						

Intersection Summary		
HCM 6th Ctrl Delay		11.8
HCM 6th LOS		B

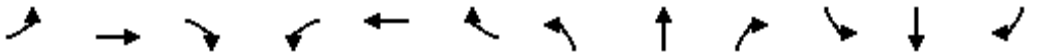
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	544	227	0	752	570	318	0	527	0	0	0
Future Volume (vph)	0	544	227	0	752	570	318	0	527	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		3111	1431		2873	1407	1405	1285	1331			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		3111	1431		2873	1407	1405	1285	1331			
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)	0	573	239	0	792	600	335	0	555	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	191	208	0	0	0
Lane Group Flow (vph)	0	573	239	0	792	600	301	104	86	0	0	0
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	0%	9%	6%	0%	14%	2%	9%	0%	3%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		64.0	100.0		64.0	100.0	27.0	27.0	27.0			
Effective Green, g (s)		64.0	100.0		64.0	100.0	27.0	27.0	27.0			
Actuated g/C Ratio		0.64	1.00		0.64	1.00	0.27	0.27	0.27			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1991	1431		1838	1407	379	346	359			
v/s Ratio Prot		0.18			0.28		c0.21	0.08				
v/s Ratio Perm			0.17			c0.43			0.06			
v/c Ratio		0.29	0.17		0.43	0.43	0.79	0.30	0.24			
Uniform Delay, d1		7.9	0.0		8.9	0.0	33.9	29.0	28.5			
Progression Factor		1.72	1.00		1.06	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.4	0.2		0.6	0.7	10.6	0.4	0.3			
Delay (s)		14.0	0.2		10.1	0.7	44.5	29.4	28.7			
Level of Service		B	A		B	A	D	C	C			
Approach Delay (s)		10.0			6.0			34.3			0.0	
Approach LOS		A			A			C			A	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰	✥	↱			
Traffic Volume (veh/h)	0	544	227	0	752	570	318	0	527	0	0	0
Future Volume (veh/h)	0	544	227	0	752	570	318	0	527	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1770	1812	0	1510	1674	1432	1555	1514			
Adj Flow Rate, veh/h	0	573	0	0	792	0	444	0	228			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	9	6	0	14	2	9	0	3			
Cap, veh/h	0	2360		0	2013		569	0	268			
Arrive On Green	0.00	1.00	0.00	0.00	0.70	0.00	0.21	0.00	0.21			
Sat Flow, veh/h	0	3452	1536	0	2945	1419	2727	0	1283			
Grp Volume(v), veh/h	0	573	0	0	792	0	444	0	228			
Grp Sat Flow(s),veh/h/ln	0	1682	1536	0	1435	1419	1364	0	1283			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	11.4	0.0	15.4	0.0	17.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	11.4	0.0	15.4	0.0	17.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2360		0	2013		569	0	268			
V/C Ratio(X)	0.00	0.24		0.00	0.39		0.78	0.00	0.85			
Avail Cap(c_a), veh/h	0	2360		0	2013		968	0	455			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.95	0.00	0.00	0.71	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	6.2	0.0	37.4	0.0	38.1			
Incr Delay (d2), s/veh	0.0	0.2	0.0	0.0	0.4	0.0	1.8	0.0	5.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.1	0.0	0.0	5.5	0.0	8.9	0.0	9.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.2	0.0	0.0	6.6	0.0	39.2	0.0	43.9			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		573	A		792	A		672				
Approach Delay, s/veh		0.2			6.6			40.8				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		74.6				74.6		25.4				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				13.4		19.1				
Green Ext Time (p_c), s		6.7				16.7		1.7				

Intersection Summary		
HCM 6th Ctrl Delay	16.1	
HCM 6th LOS	B	

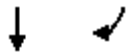
Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	34	51	810	56	5	97	853	11	405	17	127	8
Future Volume (vph)	34	51	810	56	5	97	853	11	405	17	127	8
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1630	2995	1282		1489	2922		1490	1492	1390	1662
Flt Permitted		0.22	1.00	1.00		0.21	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		375	2995	1282		330	2922		1490	1492	1390	1662
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	37	55	871	60	5	104	917	12	435	18	137	9
RTOR Reduction (vph)	0	0	0	34	0	0	1	0	0	0	110	0
Lane Group Flow (vph)	0	92	871	26	0	109	928	0	226	227	27	9
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	2%	11%	16%	10%	10%	12%	0%	6%	13%	7%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		56.1	42.7	42.7		56.1	49.5		19.8	19.8	19.8	6.6
Effective Green, g (s)		56.1	42.7	42.7		56.1	49.5		19.8	19.8	19.8	6.6
Actuated g/C Ratio		0.56	0.43	0.43		0.56	0.50		0.20	0.20	0.20	0.07
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		293	1278	547		340	1446		295	295	275	109
v/s Ratio Prot		0.02	c0.29			0.04	c0.32		0.15	c0.15		0.01
v/s Ratio Perm		0.16		0.02		0.14					0.02	
v/c Ratio		0.31	0.68	0.05		0.32	0.64		0.77	0.77	0.10	0.08
Uniform Delay, d1		11.5	23.2	16.8		22.1	18.7		37.9	37.9	32.8	43.9
Progression Factor		1.01	0.98	7.97		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.4	2.8	0.2		0.4	2.2		10.8	11.0	0.1	0.2
Delay (s)		12.0	25.4	133.6		22.5	20.9		48.7	48.9	32.9	44.1
Level of Service		B	C	F		C	C		D	D	C	D
Approach Delay (s)			30.5				21.1			45.1		
Approach LOS			C				C			D		

Intersection Summary			
HCM 2000 Control Delay	30.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	20	30
Future Volume (vph)	20	30
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.91	
Flt Protected	1.00	
Satd. Flow (prot)	1357	
Flt Permitted	1.00	
Satd. Flow (perm)	1357	
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	22	32
RTOR Reduction (vph)	30	0
Lane Group Flow (vph)	24	0
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	11%	22%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	6.6	
Effective Green, g (s)	6.6	
Actuated g/C Ratio	0.07	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	89	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.27	
Uniform Delay, d1	44.4	
Progression Factor	1.00	
Incremental Delay, d2	1.2	
Delay (s)	45.6	
Level of Service	D	
Approach Delay (s)	45.4	
Approach LOS	D	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	34	51	810	56	5	97	853	11	405	17	127	8
Future Volume (veh/h)	34	51	810	56	5	97	853	11	405	17	127	8
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1723	1600	1532		1565	1537	1537	1668	1573	1654	1750
Adj Flow Rate, veh/h		55	871	0		104	917	12	448	0	0	9
Peak Hour Factor		0.93	0.93	0.93		0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %		2	11	16		10	12	12	6	13	7	0
Cap, veh/h		363	988			533	1756	23	519	0		67
Arrive On Green		0.02	0.22	0.00		0.29	0.59	0.59	0.16	0.00	0.00	0.04
Sat Flow, veh/h		1641	3040	1298		1490	2951	39	3177	0	1402	1667
Grp Volume(v), veh/h		55	871	0		104	454	475	448	0	0	9
Grp Sat Flow(s),veh/h/ln		1641	1520	1298		1490	1461	1529	1589	0	1402	1667
Q Serve(g_s), s		1.3	27.7	0.0		0.0	18.3	18.3	13.7	0.0	0.0	0.5
Cycle Q Clear(g_c), s		1.3	27.7	0.0		0.0	18.3	18.3	13.7	0.0	0.0	0.5
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		363	988			533	869	910	519	0		67
V/C Ratio(X)		0.15	0.88			0.20	0.52	0.52	0.86	0.00		0.13
Avail Cap(c_a), veh/h		550	988			533	869	910	651	0		258
HCM Platoon Ratio		0.67	0.67	0.67		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.94	0.94	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		9.3	37.3	0.0		24.5	11.9	11.9	40.7	0.0	0.0	46.3
Incr Delay (d2), s/veh		0.1	10.6	0.0		0.1	2.2	2.1	9.0	0.0	0.0	0.7
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		0.8	17.7	0.0		3.2	10.1	10.4	10.0	0.0	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		9.5	47.9	0.0		24.6	14.2	14.1	49.8	0.0	0.0	47.0
LnGrp LOS		A	D			C	B	B	D	A		D
Approach Vol, veh/h			926	A			1033			448	A	
Approach Delay, s/veh			45.6				15.2			49.8		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	33.6	37.0		8.5	6.6	64.0		20.8
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	2.0	29.7		3.3	3.3	20.3		15.7
Green Ext Time (p_c), s	0.1	2.2		0.0	0.0	8.6		0.6

Intersection Summary	
HCM 6th Ctrl Delay	33.5
HCM 6th LOS	C

Notes

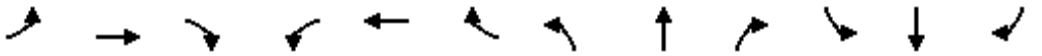
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	20	30
Future Volume (veh/h)	20	30
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1600	1600
Adj Flow Rate, veh/h	22	0
Peak Hour Factor	0.93	0.93
Percent Heavy Veh, %	11	11
Cap, veh/h	65	
Arrive On Green	0.04	0.00
Sat Flow, veh/h	1600	0
Grp Volume(v), veh/h	22	0
Grp Sat Flow(s),veh/h/ln	1600	0
Q Serve(g_s), s	1.3	0.0
Cycle Q Clear(g_c), s	1.3	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	65	
V/C Ratio(X)	0.34	
Avail Cap(c_a), veh/h	248	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	46.7	0.0
Incr Delay (d2), s/veh	2.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	49.0	0.0
LnGrp LOS	D	
Approach Vol, veh/h	31	A
Approach Delay, s/veh	48.4	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

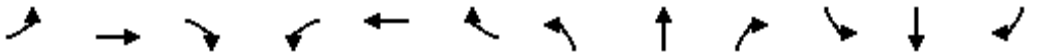
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	552	199	42	363	51	273	149	57	55	150	123
Future Volume (vph)	134	552	199	42	363	51	273	149	57	55	150	123
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1599	1535	1403	1409	1458	1444	1539	1683	1293	1458	1636	1252
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1599	1535	1403	1409	1458	1444	1539	1683	1293	1458	1636	1252
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	146	600	216	46	395	55	297	162	62	60	163	134
RTOR Reduction (vph)	0	0	57	0	0	34	0	0	45	0	0	115
Lane Group Flow (vph)	146	600	159	46	395	21	297	162	17	60	163	19
Confl. Peds. (#/hr)	5					5	2					2
Heavy Vehicles (%)	4%	14%	6%	18%	20%	0%	8%	4%	15%	14%	7%	16%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	16.5	57.9	83.3	7.9	49.3	49.3	25.4	35.2	35.2	8.8	18.6	18.6
Effective Green, g (s)	16.5	57.9	83.3	7.9	49.3	49.3	25.4	35.2	35.2	8.8	18.6	18.6
Actuated g/C Ratio	0.13	0.45	0.65	0.06	0.38	0.38	0.20	0.27	0.27	0.07	0.14	0.14
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	204	690	907	86	558	552	303	459	353	99	236	180
v/s Ratio Prot	c0.09	c0.39	0.03	0.03	0.27		c0.19	0.10		0.04	c0.10	
v/s Ratio Perm			0.08			0.01			0.01			0.02
v/c Ratio	0.72	0.87	0.18	0.53	0.71	0.04	0.98	0.35	0.05	0.61	0.69	0.11
Uniform Delay, d1	53.9	32.0	9.1	58.7	33.7	24.9	51.4	37.6	34.5	58.3	52.4	47.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	10.6	12.2	0.1	4.9	4.9	0.1	46.1	0.3	0.0	8.5	7.8	0.2
Delay (s)	64.5	44.2	9.1	63.6	38.6	25.0	97.6	38.0	34.5	66.9	60.1	48.1
Level of Service	E	D	A	E	D	C	F	D	C	E	E	D
Approach Delay (s)		39.4			39.4			71.5			56.7	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	49.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	128.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	78.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



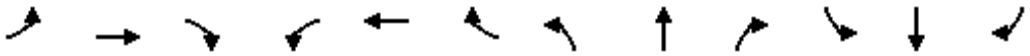
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	134	552	199	42	363	51	273	149	57	55	150	123
Future Volume (veh/h)	134	552	199	42	363	51	273	149	57	55	150	123
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1559	1668	1504	1477	1750	1641	1695	1545	1559	1654	1532
Adj Flow Rate, veh/h	146	600	151	46	395	55	297	162	62	60	163	69
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	14	6	18	20	0	8	4	15	14	7	16
Cap, veh/h	175	686	912	54	546	545	324	492	378	73	218	170
Arrive On Green	0.11	0.44	0.44	0.04	0.37	0.37	0.21	0.29	0.29	0.05	0.13	0.13
Sat Flow, veh/h	1615	1559	1406	1433	1477	1473	1563	1695	1305	1485	1654	1288
Grp Volume(v), veh/h	146	600	151	46	395	55	297	162	62	60	163	69
Grp Sat Flow(s),veh/h/ln	1615	1559	1406	1433	1477	1473	1563	1695	1305	1485	1654	1288
Q Serve(g_s), s	9.2	36.5	4.4	3.3	24.0	2.5	19.4	7.8	3.7	4.2	9.9	5.1
Cycle Q Clear(g_c), s	9.2	36.5	4.4	3.3	24.0	2.5	19.4	7.8	3.7	4.2	9.9	5.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	175	686	912	54	546	545	324	492	378	73	218	170
V/C Ratio(X)	0.83	0.87	0.17	0.84	0.72	0.10	0.92	0.33	0.16	0.82	0.75	0.41
Avail Cap(c_a), veh/h	387	823	1035	344	780	777	375	492	378	356	476	371
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.5	26.5	7.2	49.8	28.2	21.5	40.4	29.0	27.6	49.1	43.6	41.5
Incr Delay (d2), s/veh	7.5	10.6	0.2	21.9	3.6	0.2	24.0	0.3	0.1	14.9	3.8	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	7.3	21.6	2.4	2.8	13.8	1.6	14.7	5.8	2.1	3.3	7.7	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.1	37.1	7.4	71.7	31.8	21.7	64.4	29.3	27.7	63.9	47.3	42.6
LnGrp LOS	D	D	A	E	C	C	E	C	C	E	D	D
Approach Vol, veh/h		897			496			521			292	
Approach Delay, s/veh		34.7			34.4			49.1			49.6	
Approach LOS		C			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.5	50.9	26.1	18.7	15.8	43.5	9.7	35.2
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	5.3	38.5	21.4	11.9	11.2	26.0	6.2	9.8
Green Ext Time (p_c), s	0.1	7.4	0.3	0.9	0.2	5.5	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	40.0
HCM 6th LOS	D

Notes

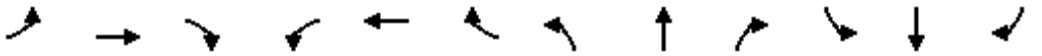
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	138	185	78	101	217	80	154	494	68	59	271	109
Future Volume (vph)	138	185	78	101	217	80	154	494	68	59	271	109
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1461	1422	1160	1446	1468		2887	2844	1141	1341	2744	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1461	1422	1160	1446	1468		2887	2844	1141	1341	2744	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	201	85	110	236	87	167	537	74	64	295	118
RTOR Reduction (vph)	0	0	70	0	13	0	0	0	45	0	38	0
Lane Group Flow (vph)	150	201	15	110	310	0	167	537	29	64	375	0
Heavy Vehicles (%)	10%	19%	24%	15%	16%	10%	8%	13%	26%	24%	16%	16%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	12.6	18.0	18.0	17.1	22.5		11.4	41.2	41.2	9.2	39.0	
Effective Green, g (s)	12.6	18.0	18.0	17.1	22.5		11.4	41.2	41.2	9.2	39.0	
Actuated g/C Ratio	0.12	0.17	0.17	0.16	0.21		0.11	0.39	0.39	0.09	0.37	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	175	243	198	235	314		313	1115	447	117	1019	
v/s Ratio Prot	c0.10	0.14		c0.08	c0.21		c0.06	c0.19		0.05	0.14	
v/s Ratio Perm			0.01						0.03			
v/c Ratio	0.86	0.83	0.07	0.47	0.99		0.53	0.48	0.06	0.55	0.37	
Uniform Delay, d1	45.3	42.0	36.5	39.8	41.1		44.3	23.9	19.9	45.9	24.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	31.5	20.5	0.2	1.5	47.3		1.7	1.5	0.3	5.1	1.0	
Delay (s)	76.8	62.5	36.7	41.3	88.4		46.0	25.4	20.2	51.0	25.0	
Level of Service	E	E	D	D	F		D	C	C	D	C	
Approach Delay (s)		62.4			76.4			29.3			28.5	
Approach LOS		E			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	45.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	185	78	101	217	80	154	494	68	59	271	109
Future Volume (veh/h)	138	185	78	101	217	80	154	494	68	59	271	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1614	1491	1422	1545	1532	1532	1641	1573	1395	1422	1532	1532
Adj Flow Rate, veh/h	150	201	0	110	236	87	167	537	74	64	295	118
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	19	24	15	16	16	8	13	26	24	16	16
Cap, veh/h	175	230		256	229	84	228	1285	508	76	840	329
Arrive On Green	0.11	0.15	0.00	0.17	0.21	0.21	0.08	0.43	0.43	0.06	0.41	0.41
Sat Flow, veh/h	1537	1491	1205	1472	1067	393	3032	2988	1182	1355	2043	799
Grp Volume(v), veh/h	150	201	0	110	0	323	167	537	74	64	208	205
Grp Sat Flow(s),veh/h/ln	1537	1491	1205	1472	0	1461	1516	1494	1182	1355	1455	1388
Q Serve(g_s), s	10.1	13.8	0.0	7.0	0.0	22.5	5.7	13.1	2.1	4.9	10.3	10.7
Cycle Q Clear(g_c), s	10.1	13.8	0.0	7.0	0.0	22.5	5.7	13.1	2.1	4.9	10.3	10.7
Prop In Lane	1.00		1.00	1.00		0.27	1.00		1.00	1.00		0.58
Lane Grp Cap(c), veh/h	175	230		256	0	313	228	1285	508	76	598	570
V/C Ratio(X)	0.86	0.88		0.43	0.00	1.03	0.73	0.42	0.15	0.84	0.35	0.36
Avail Cap(c_a), veh/h	190	277		256	0	313	448	1285	508	200	598	570
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	45.7	43.4	0.0	38.7	0.0	41.3	47.5	20.8	5.2	49.1	21.3	21.4
Incr Delay (d2), s/veh	28.7	23.2	0.0	1.1	0.0	59.3	4.5	1.0	0.6	20.9	1.6	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.9	10.7	0.0	4.6	0.0	19.3	4.1	8.1	2.0	3.7	6.6	6.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	66.6	0.0	39.8	0.0	100.6	52.0	21.8	5.8	69.9	22.9	23.1
LnGrp LOS	E	E		D	A	F	D	C	A	E	C	C
Approach Vol, veh/h		351	A		433			778			477	
Approach Delay, s/veh		69.9			85.2			26.8			29.3	
Approach LOS		E			F			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	48.7	15.9	28.0	10.4	50.6	22.3	21.7
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	15.5	34.5	13.0	22.5	15.5	34.5	16.0	19.5
Max Q Clear Time (g_c+I1), s	7.7	12.7	12.1	24.5	6.9	15.1	9.0	15.8
Green Ext Time (p_c), s	0.3	4.7	0.0	0.0	0.1	6.8	0.1	0.4

Intersection Summary	
HCM 6th Ctrl Delay	47.2
HCM 6th LOS	D

Notes

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

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

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	1	1	1	1	1	3	1	247	6	36	495	1
Future Vol, veh/h	1	1	1	1	1	3	1	247	6	36	495	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	74	74	74	74	74	74	74	74	74
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	2	0
Mvmt Flow	1	1	1	1	1	4	1	334	8	49	669	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1111	1112	670	1109	1108	338	670	0	0	342	0	0
Stage 1	768	768	-	340	340	-	-	-	-	-	-	-
Stage 2	343	344	-	769	768	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	188	211	460	189	212	709	930	-	-	1228	-	-
Stage 1	397	414	-	679	643	-	-	-	-	-	-	-
Stage 2	676	640	-	397	414	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	180	202	460	182	203	709	930	-	-	1228	-	-
Mov Cap-2 Maneuver	180	202	-	182	203	-	-	-	-	-	-	-
Stage 1	397	397	-	678	642	-	-	-	-	-	-	-
Stage 2	670	639	-	379	397	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.5	15.8	0	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	930	-	-	237	341	1228	-	-
HCM Lane V/C Ratio	0.001	-	-	0.017	0.02	0.04	-	-
HCM Control Delay (s)	8.9	-	-	20.5	15.8	8.1	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	4	249	6	73	424
Future Vol, veh/h	1	4	249	6	73	424
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	1	5	336	8	99	573

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1111	340	0	0	344	0
Stage 1	340	-	-	-	-	-
Stage 2	771	-	-	-	-	-
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	233	707	-	-	1226	-
Stage 1	725	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	214	707	-	-	1226	-
Mov Cap-2 Maneuver	331	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	423	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.3	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	576	1226	-
HCM Lane V/C Ratio	-	-	0.012	0.08	-
HCM Control Delay (s)	-	-	11.3	8.2	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.3	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	13	242	21	146	279
Future Vol, veh/h	1	13	242	21	146	279
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	1	18	327	28	197	377

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1112	341	0	0	355	0
Stage 1	341	-	-	-	-	-
Stage 2	771	-	-	-	-	-
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	233	706	-	-	1215	-
Stage 1	725	-	-	-	-	-
Stage 2	460	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	195	706	-	-	1215	-
Mov Cap-2 Maneuver	306	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	385	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	2.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	306	706	1215	-
HCM Lane V/C Ratio	-	-	0.004	0.025	0.162	-
HCM Control Delay (s)	-	-	16.8	10.2	8.5	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.1	0.6	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	1	10	2	1	13	10	236	22	109	158	13
Future Vol, veh/h	14	1	10	2	1	13	10	236	22	109	158	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	90	2	90	2	2	2	90	3	2	2	2	90
Mvmt Flow	15	1	11	2	1	14	11	259	24	120	174	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	722	726	181	720	721	271	188	0	0	283	0	0
Stage 1	421	421	-	293	293	-	-	-	-	-	-	-
Stage 2	301	305	-	427	428	-	-	-	-	-	-	-
Critical Hdwy	8	6.52	7.1	7.12	6.52	6.22	5	-	-	4.12	-	-
Critical Hdwy Stg 1	7	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	4.31	4.018	4.11	3.518	4.018	3.318	3.01	-	-	2.218	-	-
Pot Cap-1 Maneuver	251	351	678	343	353	768	995	-	-	1279	-	-
Stage 1	469	589	-	715	670	-	-	-	-	-	-	-
Stage 2	554	662	-	606	585	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	226	314	678	310	316	768	995	-	-	1279	-	-
Mov Cap-2 Maneuver	226	314	-	310	316	-	-	-	-	-	-	-
Stage 1	464	534	-	707	663	-	-	-	-	-	-	-
Stage 2	537	655	-	539	530	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.6	11.1	0.3	3.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	995	-	-	313	312	768	1279	-	-
HCM Lane V/C Ratio	0.011	-	-	0.088	0.011	0.019	0.094	-	-
HCM Control Delay (s)	8.7	-	-	17.6	16.7	9.8	8.1	-	-
HCM Lane LOS	A	-	-	C	C	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.1	0.3	-	-

Intersection	
Int Delay, s/veh	2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	60	203	29	35	92
Future Vol, veh/h	20	60	203	29	35	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	6	0	6	0	4	3
Mvmt Flow	21	64	216	31	37	98

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	404	232	0	0	247	0
Stage 1	232	-	-	-	-	-
Stage 2	172	-	-	-	-	-
Critical Hdwy	7.06	6.5	-	-	4.14	-
Critical Hdwy Stg 1	6.06	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.236	-
Pot Cap-1 Maneuver	556	797	-	-	1307	-
Stage 1	767	-	-	-	-	-
Stage 2	825	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	539	797	-	-	1307	-
Mov Cap-2 Maneuver	539	-	-	-	-	-
Stage 1	767	-	-	-	-	-
Stage 2	800	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.7	0	2.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	712	1307	-
HCM Lane V/C Ratio	-	-	0.12	0.028	-
HCM Control Delay (s)	-	-	10.7	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	5	166	107	18	28	7
Future Vol, veh/h	5	166	107	18	28	7
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, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	3	3	0	4	0
Mvmt Flow	5	180	116	20	30	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	136	0	-	0	316	126
Stage 1	-	-	-	-	126	-
Stage 2	-	-	-	-	190	-
Critical Hdwy	4.1	-	-	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.2	-	-	-	3.536	3.3
Pot Cap-1 Maneuver	1461	-	-	-	673	930
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	838	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1461	-	-	-	670	930
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	891	-
Stage 2	-	-	-	-	838	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	10.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1461	-	-	-	710
HCM Lane V/C Ratio	0.004	-	-	-	0.054
HCM Control Delay (s)	7.5	0	-	-	10.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	233	146	121	149	19
Future Vol, veh/h	12	233	146	121	149	19
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	94	94	94	94	94	94
Heavy Vehicles, %	9	3	2	4	1	18
Mvmt Flow	13	248	155	129	159	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	284	0	-	0	494	220
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	274	-
Critical Hdwy	4.19	-	-	-	6.41	6.38
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.281	-	-	-	3.509	3.462
Pot Cap-1 Maneuver	1239	-	-	-	536	781
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	774	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1239	-	-	-	530	781
Mov Cap-2 Maneuver	-	-	-	-	530	-
Stage 1	-	-	-	-	809	-
Stage 2	-	-	-	-	774	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1239	-	-	-	550
HCM Lane V/C Ratio	0.01	-	-	-	0.325
HCM Control Delay (s)	7.9	0	-	-	14.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.4

HCS7 Roundabouts Report

General Information

Analyst	ZHB
Agency or Co.	Kittelson
Date Performed	4/29/2021
Analysis Year	2023
Time Analyzed	PM Total - Generator Peak
Project Description	Project Basie

Site Information

Intersection	OR 219/Butteville Rd
E/W Street Name	OR 219
N/S Street Name	Butteville (Realigned)
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	Woodburn, OR

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0
Lane Assignment	T		R		L		LT				L					
Volume (V), veh/h	0		252	130	0	654	159		0	107		612				
Percent Heavy Vehicles, %	0		3	1	0	1	5		0	9		3				
Flow Rate (v_{PCE}), pc/h	0		282	143	0	718	181		0	127		685				
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes	2				1				1							
Pedestrians Crossing, p/h	0				0				0							

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.3276		4.5436	4.5436			4.9763				
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.6087				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	282.00	143.00		476.47	422.53			127.00	685.00			
Entry Volume veh/h	275.61	139.76		468.13	415.14			116.51	665.05			
Circulating Flow (v_c), pc/h	718			127			282			1026		
Exiting Flow (v_{ex}), pc/h	282			308			0			861		
Capacity (c_{pce}), pc/h	697.36	771.33		1265.02	1265.02			1035.05				
Capacity (c), veh/h	681.56	753.85		1242.89	1242.89			949.58				
v/c Ratio (x)	0.40	0.19		0.38	0.33			0.12				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	10.8	6.8		6.5	6.0			4.9				
Lane LOS	B	A		A	A			A	A			
95% Queue, veh	2.0	0.7		1.8	1.5			0.4				
Approach Delay, s/veh	9.5			6.3			0.7					
Approach LOS	A			A			A					
Intersection Delay, s/veh | LOS	4.8						A					

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	39	825	1	1	794	56	1	2	2	44	1	19
Future Vol, veh/h	39	825	1	1	794	56	1	2	2	44	1	19
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	240	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	2	0	0	3	2	0	0	0	0	0	0
Mvmt Flow	42	897	1	1	863	61	1	2	2	48	1	21

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	924	0	0	898	0	0	1418	1908	449	1430	1878	464
Stage 1	-	-	-	-	-	-	982	982	-	896	896	-
Stage 2	-	-	-	-	-	-	436	926	-	534	982	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	748	-	-	765	-	-	99	69	563	97	72	550
Stage 1	-	-	-	-	-	-	271	330	-	306	362	-
Stage 2	-	-	-	-	-	-	574	350	-	503	330	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	748	-	-	765	-	-	90	65	563	90	68	549
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	65	-	90	68	-
Stage 1	-	-	-	-	-	-	256	312	-	289	362	-
Stage 2	-	-	-	-	-	-	549	350	-	470	312	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0	39.4	71
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	110	748	-	-	765	-	-	119
HCM Lane V/C Ratio	0.049	0.057	-	-	0.001	-	-	0.585
HCM Control Delay (s)	39.4	10.1	-	-	9.7	-	-	71
HCM Lane LOS	E	B	-	-	A	-	-	F
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	2.9

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	82	787	2	22	21	776	236	3	2	37	660	1
Future Volume (vph)	82	787	2	22	21	776	236	3	2	37	660	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3228	1458		1108	3197	1442	1662	1220		1541	1515
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3228	1458		1108	3197	1442	1662	1220		1541	1515
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	855	2	24	23	843	257	3	2	40	717	1
RTOR Reduction (vph)	0	0	1	0	0	0	57	0	38	0	0	5
Lane Group Flow (vph)	89	855	1	0	47	843	200	3	4	0	402	389
Confl. Peds. (#/hr)	1		1		1		1	1				
Confl. Bikes (#/hr)			1							1		
Heavy Vehicles (%)	0%	3%	0%	50%	50%	4%	2%	0%	0%	22%	2%	0%
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Split	NA		Split	NA
Protected Phases	5	2	8	1	1	6	4	8	8		4	4
Permitted Phases			2				6					
Actuated Green, G (s)	12.7	43.7	48.9		8.3	39.3	76.6	5.2	5.2		37.3	37.3
Effective Green, g (s)	12.7	43.7	48.9		8.3	39.3	76.6	5.2	5.2		37.3	37.3
Actuated g/C Ratio	0.11	0.39	0.44		0.07	0.35	0.69	0.05	0.05		0.34	0.34
Clearance Time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2	2.5		2.5	4.2	2.5	2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	190	1270	642		82	1131	995	77	57		517	509
v/s Ratio Prot	0.05	c0.26	0.00		0.04	c0.26	0.07	0.00	c0.00		c0.26	0.26
v/s Ratio Perm			0.00				0.07					
v/c Ratio	0.47	0.67	0.00		0.57	0.75	0.20	0.04	0.07		0.78	0.76
Uniform Delay, d1	46.0	27.8	17.4		49.6	31.5	6.2	50.5	50.6		33.1	32.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	1.6	0.0		7.7	3.0	0.1	0.2	0.4		7.0	6.4
Delay (s)	47.3	29.4	17.4		57.3	34.4	6.3	50.7	51.0		40.1	39.3
Level of Service	D	C	B		E	C	A	D	D		D	D
Approach Delay (s)		31.0				29.1			50.9			39.7
Approach LOS		C				C			D			D

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	111.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	67.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	72
Future Volume (vph)	72
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	78
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

08/14/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	82	787	2	22	21	776	236	3	2	37	660	1
Future Volume (veh/h)	82	787	2	22	21	776	236	3	2	37	660	1
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1709	1750		1068	1695	1723	1750	1750	1750	1717	1745
Adj Flow Rate, veh/h	89	855	2		23	843	257	3	2	40	791	0
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	0		50	4	2	0	0	0	2	0
Cap, veh/h	113	1411	706		25	1241	976	85	4	71	927	494
Arrive On Green	0.07	0.43	0.43		0.03	0.39	0.39	0.05	0.05	0.05	0.28	0.00
Sat Flow, veh/h	1667	3247	1450		1017	3221	1458	1667	70	1397	3271	1745
Grp Volume(v), veh/h	89	855	2		23	843	257	3	0	42	791	0
Grp Sat Flow(s),veh/h/ln	1667	1624	1450		1017	1611	1458	1667	0	1467	1636	1745
Q Serve(g_s), s	4.2	16.2	0.1		1.8	17.5	5.7	0.1	0.0	2.2	18.3	0.0
Cycle Q Clear(g_c), s	4.2	16.2	0.1		1.8	17.5	5.7	0.1	0.0	2.2	18.3	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.95	1.00	
Lane Grp Cap(c), veh/h	113	1411	706		25	1241	976	85	0	75	927	494
V/C Ratio(X)	0.78	0.61	0.00		0.90	0.68	0.26	0.04	0.00	0.56	0.85	0.00
Avail Cap(c_a), veh/h	416	1824	890		254	1809	1232	624	0	549	1837	980
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	36.8	17.4	10.6		39.0	20.5	5.3	36.1	0.0	37.1	27.1	0.0
Incr Delay (d2), s/veh	8.5	0.6	0.0		49.9	1.0	0.2	0.1	0.0	4.8	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.5	9.7	0.0		1.4	10.5	6.2	0.1	0.0	1.6	11.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	45.3	18.0	10.6		88.8	21.5	5.6	36.3	0.0	41.9	28.9	0.0
LnGrp LOS	D	B	B		F	C	A	D	A	D	C	A
Approach Vol, veh/h		946				1123			45			791
Approach Delay, s/veh		20.6				19.2			41.6			28.9
Approach LOS		C				B			D			C

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	39.3		26.7	10.0	35.4		8.1				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	3.8	18.2		20.3	6.2	19.5		4.2				
Green Ext Time (p_c), s	0.0	9.8		2.4	0.1	11.3		0.1				

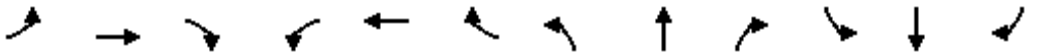
Intersection Summary	
HCM 6th Ctrl Delay	22.7
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

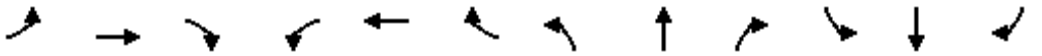
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	72
Future Volume (veh/h)	72
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1745
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	0
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1016	490	0	1049	476	0	0	0	542	0	423
Future Volume (vph)	0	1016	490	0	1049	476	0	0	0	542	0	423
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3180	1409		3325	1429				3083		1395
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3180	1409		3325	1429				3083		1395
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)	0	1069	516	0	1104	501	0	0	0	571	0	445
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	1069	516	0	1104	501	0	0	0	571	0	436
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	3%	4%	0%	2%	4%	0%	0%	0%	2%	0%	4%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		59.5	100.0		48.5	100.0				31.5		43.0
Effective Green, g (s)		59.5	100.0		48.5	100.0				31.5		45.0
Actuated g/C Ratio		0.60	1.00		0.48	1.00				0.32		0.45
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1892	1409		1612	1429				971		627
v/s Ratio Prot		0.34			c0.33					0.19		c0.31
v/s Ratio Perm			0.37			0.35						
v/c Ratio		0.57	0.37		0.68	0.35				0.59		0.70
Uniform Delay, d1		12.4	0.0		19.9	0.0				28.8		22.0
Progression Factor		1.00	1.00		0.84	1.00				1.00		1.00
Incremental Delay, d2		1.2	0.7		2.0	0.6				0.8		3.1
Delay (s)		13.6	0.7		18.6	0.6				29.6		25.1
Level of Service		B	A		B	A				C		C
Approach Delay (s)		9.4			13.0			0.0			27.6	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	67.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



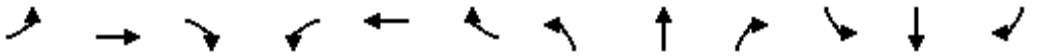
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	1016	490	0	1049	476	0	0	0	542	0	423
Future Volume (veh/h)	0	1016	490	0	1049	476	0	0	0	542	0	423
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1660	1647	0	1867	1840				1587	0	1560
Adj Flow Rate, veh/h	0	1069	0	0	1104	0				571	0	340
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	4	0	2	4				2	0	4
Cap, veh/h	0	1981		0	2228					827	0	399
Arrive On Green	0.00	0.63	0.00	0.00	1.00	0.00				0.28	0.00	0.30
Sat Flow, veh/h	0	3237	1395	0	3641	1559				2932	0	1322
Grp Volume(v), veh/h	0	1069	0	0	1104	0				571	0	340
Grp Sat Flow(s),veh/h/ln	0	1577	1395	0	1774	1559				1466	0	1322
Q Serve(g_s), s	0.0	19.1	0.0	0.0	0.0	0.0				17.4	0.0	24.2
Cycle Q Clear(g_c), s	0.0	19.1	0.0	0.0	0.0	0.0				17.4	0.0	24.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1981		0	2228					827	0	399
V/C Ratio(X)	0.00	0.54		0.00	0.50					0.69	0.00	0.85
Avail Cap(c_a), veh/h	0	1981		0	2228					1041	0	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.66	0.00	0.00	0.76	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.5	0.0	0.0	0.0	0.0				32.0	0.0	32.8
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.6	0.0				1.2	0.0	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	9.5	0.0	0.0	0.3	0.0				10.3	0.0	24.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.2	0.0	0.0	0.6	0.0				33.2	0.0	43.4
LnGrp LOS	A	B		A	A					C	A	D
Approach Vol, veh/h		1069	A		1104	A					911	
Approach Delay, s/veh		11.2			0.6						37.0	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		67.3		32.7		67.3						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		21.1		26.2		2.0						
Green Ext Time (p_c), s		21.0		2.0		14.0						

Intersection Summary												
HCM 6th Ctrl Delay			15.0									
HCM 6th LOS			B									

Notes

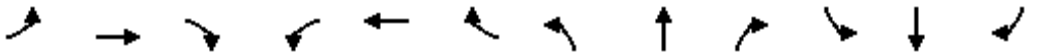
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1214	344	0	1104	264	421	0	408	0	0	0
Future Volume (vph)	0	1214	344	0	1104	264	421	0	408	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.92	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.98	1.00			
Satd. Flow (prot)		3325	1402		3180	1392	1487	1345	1318			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.98	1.00			
Satd. Flow (perm)		3325	1402		3180	1392	1487	1345	1318			
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)	0	1278	362	0	1162	278	443	0	429	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	37	37	0	0	0
Lane Group Flow (vph)	0	1278	362	0	1162	278	301	255	242	0	0	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	2%	6%	0%	3%	3%	3%	0%	4%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		64.8	100.0		64.8	100.0	26.2	26.2	26.2			
Effective Green, g (s)		64.8	100.0		64.8	100.0	26.2	26.2	26.2			
Actuated g/C Ratio		0.65	1.00		0.65	1.00	0.26	0.26	0.26			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2154	1402		2060	1392	389	352	345			
v/s Ratio Prot		c0.38			0.37		c0.20	0.19				
v/s Ratio Perm			0.26			0.20			0.18			
v/c Ratio		0.59	0.26		0.56	0.20	0.77	0.72	0.70			
Uniform Delay, d1		10.1	0.0		9.8	0.0	34.2	33.6	33.4			
Progression Factor		1.26	1.00		1.11	1.00	1.00	1.00	1.00			
Incremental Delay, d2		1.0	0.4		0.9	0.3	8.9	6.8	5.9			
Delay (s)		13.7	0.4		11.8	0.3	43.1	40.4	39.2			
Level of Service		B	A		B	A	D	D	D			
Approach Delay (s)		10.8			9.5			41.0			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	17.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1214	344	0	1104	264	421	0	408	0	0	0
Future Volume (veh/h)	0	1214	344	0	1104	264	421	0	408	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1867	1812	0	1660	1660	1514	1555	1500			
Adj Flow Rate, veh/h	0	1278	0	0	1162	0	511	0	146			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	2	6	0	3	3	3	0	4			
Cap, veh/h	0	2492		0	2215		599	0	264			
Arrive On Green	0.00	1.00	0.00	0.00	0.70	0.00	0.21	0.00	0.21			
Sat Flow, veh/h	0	3641	1536	0	3237	1407	2883	0	1271			
Grp Volume(v), veh/h	0	1278	0	0	1162	0	511	0	146			
Grp Sat Flow(s),veh/h/ln	0	1774	1536	0	1577	1407	1442	0	1271			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	17.4	0.0	17.1	0.0	10.3			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	17.4	0.0	17.1	0.0	10.3			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2492		0	2215		599	0	264			
V/C Ratio(X)	0.00	0.51		0.00	0.52		0.85	0.00	0.55			
Avail Cap(c_a), veh/h	0	2492		0	2215		1024	0	451			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.80	0.00	0.00	0.71	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	7.0	0.0	38.1	0.0	35.5			
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.6	0.0	2.7	0.0	1.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.4	0.0	0.0	8.3	0.0	10.2	0.0	5.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.6	0.0	0.0	7.7	0.0	40.8	0.0	36.8			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1278	A		1162	A		657				
Approach Delay, s/veh		0.6			7.7			39.9				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		74.7				74.7		25.3				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				19.4		19.1				
Green Ext Time (p_c), s		20.7				23.6		1.7				

Intersection Summary		
HCM 6th Ctrl Delay	11.6	
HCM 6th LOS	B	

Notes

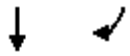
User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	33	81	975	131	11	147	855	17	397	11	152	31
Future Volume (vph)	33	81	975	131	11	147	855	17	397	11	152	31
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.98	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95
Satd. Flow (prot)		1583	3228	1382		1621	3142		1504	1516	1451	1662
Flt Permitted		0.21	1.00	1.00		0.15	1.00		0.95	0.95	1.00	0.95
Satd. Flow (perm)		350	3228	1382		254	3142		1504	1516	1451	1662
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)	35	85	1026	138	12	155	900	18	418	12	160	33
RTOR Reduction (vph)	0	0	0	79	0	0	1	0	0	0	130	0
Lane Group Flow (vph)	0	120	1026	59	0	167	917	0	213	217	30	33
Confl. Peds. (#/hr)				2		2			2		3	3
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	5%	5%	3%	5%	1%	1%	4%	0%	5%	0%	1%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		55.4	42.8	42.8		55.4	46.5		18.7	18.7	18.7	8.4
Effective Green, g (s)		55.4	42.8	42.8		55.4	46.5		18.7	18.7	18.7	8.4
Actuated g/C Ratio		0.55	0.43	0.43		0.55	0.46		0.19	0.19	0.19	0.08
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		303	1381	591		312	1461		281	283	271	139
v/s Ratio Prot		0.04	c0.32			0.07	c0.29		0.14	c0.14		0.02
v/s Ratio Perm		0.18		0.04		0.23					0.02	
v/c Ratio		0.40	0.74	0.10		0.54	0.63		0.76	0.77	0.11	0.24
Uniform Delay, d1		12.3	24.0	17.1		28.6	20.2		38.5	38.6	33.7	42.8
Progression Factor		0.90	0.95	0.71		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.5	3.0	0.3		1.4	2.1		10.6	11.3	0.1	0.6
Delay (s)		11.5	25.8	12.4		30.0	22.3		49.1	49.8	33.9	43.5
Level of Service		B	C	B		C	C		D	D	C	D
Approach Delay (s)			23.0				23.5			45.2		
Approach LOS			C				C			D		

Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	21	83
Future Volume (vph)	21	83
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.88	
Flt Protected	1.00	
Satd. Flow (prot)	1462	
Flt Permitted	1.00	
Satd. Flow (perm)	1462	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	22	87
RTOR Reduction (vph)	80	0
Lane Group Flow (vph)	29	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		1
Heavy Vehicles (%)	0%	5%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	8.4	
Effective Green, g (s)	8.4	
Actuated g/C Ratio	0.08	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	122	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.24	
Uniform Delay, d1	42.8	
Progression Factor	1.00	
Incremental Delay, d2	0.7	
Delay (s)	43.6	
Level of Service	D	
Approach Delay (s)	43.5	
Approach LOS	D	

Intersection Summary

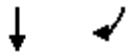
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	33	81	975	131	11	147	855	17	397	11	152	31
Future Volume (veh/h)	33	81	975	131	11	147	855	17	397	11	152	31
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1682	1709	1682		1688	1647	1647	1682	1750	1736	1750
Adj Flow Rate, veh/h		85	1026	0		155	900	18	427	0	0	33
Peak Hour Factor		0.95	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %		5	3	5		1	4	4	5	0	1	0
Cap, veh/h		369	1055			526	1786	36	506	0		98
Arrive On Green		0.04	0.32	0.00		0.28	0.57	0.57	0.16	0.00	0.00	0.06
Sat Flow, veh/h		1602	3247	1425		1607	3137	63	3203	0	1471	1667
Grp Volume(v), veh/h		85	1026	0		155	449	469	427	0	0	33
Grp Sat Flow(s),veh/h/ln		1602	1624	1425		1607	1564	1635	1602	0	1471	1667
Q Serve(g_s), s		2.2	31.2	0.0		2.3	17.3	17.3	13.0	0.0	0.0	1.9
Cycle Q Clear(g_c), s		2.2	31.2	0.0		2.3	17.3	17.3	13.0	0.0	0.0	1.9
Prop In Lane		1.00		1.00		1.00		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		369	1055			526	890	931	506	0		98
V/C Ratio(X)		0.23	0.97			0.29	0.50	0.50	0.84	0.00		0.34
Avail Cap(c_a), veh/h		531	1055			526	890	931	657	0		258
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.75	0.75	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		9.9	33.3	0.0		26.3	13.0	13.0	40.9	0.0	0.0	45.2
Incr Delay (d2), s/veh		0.2	18.2	0.0		0.2	2.0	1.9	7.2	0.0	0.0	1.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		1.3	20.0	0.0		4.9	10.3	10.6	9.4	0.0	0.0	1.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		10.0	51.5	0.0		26.5	15.0	15.0	48.1	0.0	0.0	46.6
LnGrp LOS		B	D			C	B	B	D	A		D
Approach Vol, veh/h			1111	A			1073			427	A	
Approach Delay, s/veh			48.3				16.7			48.1		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	32.3	37.0		10.4	7.9	61.4		20.3
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	4.3	33.2		3.9	4.2	19.3		15.0
Green Ext Time (p_c), s	0.2	0.0		0.1	0.1	9.1		0.6

Intersection Summary	
HCM 6th Ctrl Delay	35.5
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

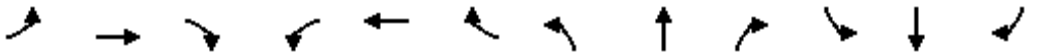


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	21	83
Future Volume (veh/h)	21	83
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1750	1750
Adj Flow Rate, veh/h	22	0
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	0	0
Cap, veh/h	103	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1750	0
Grp Volume(v), veh/h	22	0
Grp Sat Flow(s),veh/h/ln	1750	0
Q Serve(g_s), s	1.2	0.0
Cycle Q Clear(g_c), s	1.2	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	103	
V/C Ratio(X)	0.21	
Avail Cap(c_a), veh/h	271	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	44.8	0.0
Incr Delay (d2), s/veh	0.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	45.6	0.0
LnGrp LOS	D	
Approach Vol, veh/h	55	A
Approach Delay, s/veh	46.2	
Approach LOS	D	

Timer - Assigned Phs

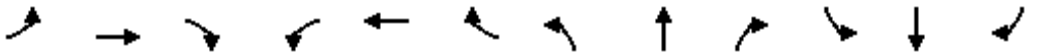
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	114	588	389	86	555	75	253	115	61	85	175	101
Future Volume (vph)	114	588	389	86	555	75	253	115	61	85	175	101
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	1683	1473	1646	1683	1441	1630	1750	1430	1646	1733	1375
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1630	1683	1473	1646	1683	1441	1630	1750	1430	1646	1733	1375
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	124	639	423	93	603	82	275	125	66	92	190	110
RTOR Reduction (vph)	0	0	113	0	0	46	0	0	50	0	0	94
Lane Group Flow (vph)	124	639	310	93	603	36	275	125	16	92	190	16
Confl. Peds. (#/hr)	1					1	4					4
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	4%	1%	1%	4%	1%	2%	0%	4%	1%	1%	5%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	15.1	57.6	82.8	12.5	55.0	55.0	25.2	32.3	32.3	12.4	19.5	19.5
Effective Green, g (s)	15.1	57.6	82.8	12.5	55.0	55.0	25.2	32.3	32.3	12.4	19.5	19.5
Actuated g/C Ratio	0.11	0.43	0.62	0.09	0.41	0.41	0.19	0.24	0.24	0.09	0.15	0.15
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	183	724	911	153	691	592	306	422	345	152	252	200
v/s Ratio Prot	c0.08	c0.38	0.06	0.06	0.36		c0.17	0.07		0.06	c0.11	
v/s Ratio Perm			0.15			0.03			0.01			0.01
v/c Ratio	0.68	0.88	0.34	0.61	0.87	0.06	0.90	0.30	0.05	0.61	0.75	0.08
Uniform Delay, d1	57.0	35.0	12.3	58.3	36.2	23.8	53.1	41.5	38.9	58.3	54.8	49.4
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	8.7	13.0	0.2	5.7	12.5	0.1	27.0	0.3	0.0	5.6	11.5	0.1
Delay (s)	65.7	48.0	12.5	63.9	48.7	23.9	80.0	41.8	39.0	64.0	66.3	49.5
Level of Service	E	D	B	E	D	C	F	D	D	E	E	D
Approach Delay (s)		37.2			47.9			63.9			61.1	
Approach LOS		D			D			E			E	

Intersection Summary			
HCM 2000 Control Delay	47.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	133.8	Sum of lost time (s)	19.0
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



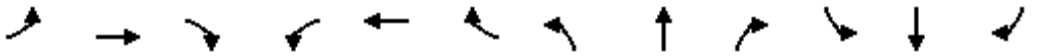
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	588	389	86	555	75	253	115	61	85	175	101
Future Volume (veh/h)	114	588	389	86	555	75	253	115	61	85	175	101
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.96
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1695	1736	1736	1695	1736	1723	1750	1695	1736	1736	1682
Adj Flow Rate, veh/h	124	639	260	93	603	82	275	125	66	92	190	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	1	1	4	1	2	0	4	1	1	5
Cap, veh/h	150	728	903	116	692	600	302	460	374	115	257	203
Arrive On Green	0.09	0.43	0.43	0.07	0.41	0.41	0.18	0.26	0.26	0.07	0.15	0.15
Sat Flow, veh/h	1641	1695	1470	1654	1695	1470	1641	1750	1426	1654	1736	1374
Grp Volume(v), veh/h	124	639	260	93	603	82	275	125	66	92	190	110
Grp Sat Flow(s),veh/h/ln	1641	1695	1470	1654	1695	1470	1641	1750	1426	1654	1736	1374
Q Serve(g_s), s	8.4	39.0	9.4	6.3	37.0	4.0	18.6	6.4	4.0	6.2	11.8	8.4
Cycle Q Clear(g_c), s	8.4	39.0	9.4	6.3	37.0	4.0	18.6	6.4	4.0	6.2	11.8	8.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	150	728	903	116	692	600	302	460	374	115	257	203
V/C Ratio(X)	0.82	0.88	0.29	0.80	0.87	0.14	0.91	0.27	0.18	0.80	0.74	0.54
Avail Cap(c_a), veh/h	363	824	986	365	824	714	363	464	378	365	460	364
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.5	29.5	10.2	51.8	30.8	21.0	45.2	33.1	32.3	51.9	46.1	44.6
Incr Delay (d2), s/veh	8.1	10.9	0.3	9.0	10.3	0.2	22.8	0.2	0.2	9.1	3.1	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.9	24.8	5.5	5.2	23.6	2.5	14.6	5.0	2.6	5.2	9.2	5.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	58.6	40.5	10.6	60.8	41.1	21.2	68.1	33.4	32.4	60.9	49.2	46.3
LnGrp LOS	E	D	B	E	D	C	E	C	C	E	D	D
Approach Vol, veh/h		1023			778			466			392	
Approach Delay, s/veh		35.1			41.3			53.7			51.2	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.5	53.6	25.3	21.7	14.9	51.2	12.4	34.7
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	8.3	41.0	20.6	13.8	10.4	39.0	8.2	8.4
Green Ext Time (p_c), s	0.1	7.6	0.3	1.1	0.2	6.8	0.1	0.7

Intersection Summary	
HCM 6th Ctrl Delay	42.5
HCM 6th LOS	D

Notes

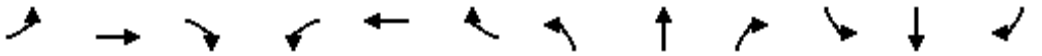
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	157	287	237	216	238	53	220	370	95	111	594	143
Future Volume (vph)	157	287	237	216	238	53	220	370	95	111	594	143
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1516	1611	1390	1646	1639		3057	3032	1339	1539	3007	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1516	1611	1390	1646	1639		3057	3032	1339	1539	3007	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	171	312	258	235	259	58	239	402	103	121	646	155
RTOR Reduction (vph)	0	0	203	0	7	0	0	0	67	0	16	0
Lane Group Flow (vph)	171	312	55	235	310	0	239	402	36	121	785	0
Confl. Peds. (#/hr)	1		2	2		1	4		1	1		4
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	6%	5%	2%	1%	3%	6%	2%	6%	5%	8%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	18.9	26.5	26.5	20.6	28.2		12.5	44.1	44.1	14.3	45.9	
Effective Green, g (s)	18.9	26.5	26.5	20.6	28.2		12.5	44.1	44.1	14.3	45.9	
Actuated g/C Ratio	0.15	0.21	0.21	0.16	0.23		0.10	0.35	0.35	0.11	0.37	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	229	341	294	271	369		305	1069	472	176	1104	
v/s Ratio Prot	0.11	c0.19		c0.14	0.19		0.08	0.13		c0.08	c0.26	
v/s Ratio Perm			0.04						0.03			
v/c Ratio	0.75	0.91	0.19	0.87	0.84		0.78	0.38	0.08	0.69	0.71	
Uniform Delay, d1	50.8	48.1	40.4	50.9	46.2		54.9	30.2	26.9	53.2	33.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	12.5	28.5	0.4	24.0	16.0		12.4	1.0	0.3	10.6	3.9	
Delay (s)	63.2	76.6	40.8	74.9	62.3		67.3	31.2	27.2	63.8	37.8	
Level of Service	E	E	D	E	E		E	C	C	E	D	
Approach Delay (s)		61.0			67.6			42.2			41.2	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	51.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	78.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	287	237	216	238	53	220	370	95	111	594	143
Future Volume (veh/h)	157	287	237	216	238	53	220	370	95	111	594	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1682	1723	1736	1709	1709	1723	1668	1682	1641	1654	1654
Adj Flow Rate, veh/h	171	312	0	235	259	58	239	402	103	121	646	155
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	5	2	1	3	3	2	6	5	8	7	7
Cap, veh/h	229	341		260	290	65	289	1245	557	144	987	237
Arrive On Green	0.14	0.20	0.00	0.16	0.22	0.22	0.09	0.39	0.39	0.09	0.39	0.39
Sat Flow, veh/h	1589	1682	1460	1654	1347	302	3183	3169	1418	1563	2506	600
Grp Volume(v), veh/h	171	312	0	235	0	317	239	402	103	121	405	396
Grp Sat Flow(s),veh/h/ln	1589	1682	1460	1654	0	1649	1591	1585	1418	1563	1572	1535
Q Serve(g_s), s	12.9	22.7	0.0	17.5	0.0	23.3	9.2	11.0	3.7	9.5	26.3	26.4
Cycle Q Clear(g_c), s	12.9	22.7	0.0	17.5	0.0	23.3	9.2	11.0	3.7	9.5	26.3	26.4
Prop In Lane	1.00		1.00	1.00		0.18	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	229	341		260	0	355	289	1245	557	144	619	605
V/C Ratio(X)	0.75	0.92		0.91	0.00	0.89	0.83	0.32	0.18	0.84	0.65	0.66
Avail Cap(c_a), veh/h	229	370		291	0	442	318	1245	557	219	619	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.3	48.8	0.0	51.8	0.0	47.7	55.9	26.4	9.4	55.9	30.9	31.0
Incr Delay (d2), s/veh	12.5	26.2	0.0	28.0	0.0	18.0	15.3	0.7	0.7	16.4	5.3	5.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.9	17.5	0.0	14.2	0.0	16.8	7.7	7.6	3.7	7.8	16.1	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.7	75.0	0.0	79.7	0.0	65.7	71.2	27.1	10.2	72.2	36.2	36.4
LnGrp LOS	E	E		E	A	E	E	C	B	E	D	D
Approach Vol, veh/h		483	A		552			744			922	
Approach Delay, s/veh		71.0			71.7			38.9			41.0	
Approach LOS		E			E			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	54.7	22.0	32.4	16.0	54.6	23.6	30.8
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	12.5	43.5	16.0	33.5	17.5	38.5	22.0	27.5
Max Q Clear Time (g_c+I1), s	11.2	28.4	14.9	25.3	11.5	13.0	19.5	24.7
Green Ext Time (p_c), s	0.1	7.7	0.0	1.3	0.1	6.0	0.2	0.5

Intersection Summary	
HCM 6th Ctrl Delay	52.1
HCM 6th LOS	D

Notes

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

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

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	4	1	3	8	1	52	4	663	8	51	728	5
Future Vol, veh/h	4	1	3	8	1	52	4	663	8	51	728	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	3	0
Mvmt Flow	4	1	3	9	1	57	4	721	9	55	791	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1667	1642	794	1640	1640	726	796	0	0	730	0	0
Stage 1	904	904	-	734	734	-	-	-	-	-	-	-
Stage 2	763	738	-	906	906	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	78	101	391	81	101	428	835	-	-	883	-	-
Stage 1	334	358	-	415	429	-	-	-	-	-	-	-
Stage 2	400	427	-	333	358	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	64	94	391	76	94	428	835	-	-	883	-	-
Mov Cap-2 Maneuver	64	94	-	76	94	-	-	-	-	-	-	-
Stage 1	332	336	-	413	427	-	-	-	-	-	-	-
Stage 2	345	425	-	309	336	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	44.8	23.8	0.1	0.6
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	835	-	-	99	257	883	-	-
HCM Lane V/C Ratio	0.005	-	-	0.088	0.258	0.063	-	-
HCM Control Delay (s)	9.3	-	-	44.8	23.8	9.3	-	-
HCM Lane LOS	A	-	-	E	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	1	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	51	624	8	51	688
Future Vol, veh/h	8	51	624	8	51	688
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	9	55	678	9	55	748

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1541	683	0	0	687	0
Stage 1	683	-	-	-	-	-
Stage 2	858	-	-	-	-	-
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	128	453	-	-	916	-
Stage 1	505	-	-	-	-	-
Stage 2	419	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	120	453	-	-	916	-
Mov Cap-2 Maneuver	256	-	-	-	-	-
Stage 1	505	-	-	-	-	-
Stage 2	394	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.4	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	410	916	-
HCM Lane V/C Ratio	-	-	0.156	0.061	-
HCM Control Delay (s)	-	-	15.4	9.2	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0.2	-

Intersection	
Int Delay, s/veh	4.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	206	426	29	203	493
Future Vol, veh/h	31	206	426	29	203	493
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	34	224	463	32	221	536

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1457	479	0	0	495	0
Stage 1	479	-	-	-	-	-
Stage 2	978	-	-	-	-	-
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	144	591	-	-	1079	-
Stage 1	627	-	-	-	-	-
Stage 2	368	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	114	591	-	-	1079	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	627	-	-	-	-	-
Stage 2	293	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16	0	2.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	225	591	1079	-
HCM Lane V/C Ratio	-	-	0.15	0.379	0.204	-
HCM Control Delay (s)	-	-	23.8	14.8	9.2	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0.5	1.8	0.8	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	1	12	31	1	206	11	230	30	203	307	14
Future Vol, veh/h	14	1	12	31	1	206	11	230	30	203	307	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	90	2	90	2	2	2	90	1	2	2	3	90
Mvmt Flow	14	1	12	32	1	210	11	235	31	207	313	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1112	1022	320	1014	1014	251	327	0	0	266	0	0
Stage 1	734	734	-	273	273	-	-	-	-	-	-	-
Stage 2	378	288	-	741	741	-	-	-	-	-	-	-
Critical Hdwy	8	6.52	7.1	7.12	6.52	6.22	5	-	-	4.12	-	-
Critical Hdwy Stg 1	7	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	4.31	4.018	4.11	3.518	4.018	3.318	3.01	-	-	2.218	-	-
Pot Cap-1 Maneuver	128	236	556	217	239	788	868	-	-	1298	-	-
Stage 1	301	426	-	733	684	-	-	-	-	-	-	-
Stage 2	498	674	-	408	423	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	81	196	556	184	198	788	868	-	-	1298	-	-
Mov Cap-2 Maneuver	81	196	-	184	198	-	-	-	-	-	-	-
Stage 1	297	358	-	723	675	-	-	-	-	-	-	-
Stage 2	360	665	-	334	356	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38.4	13.6	0.4	3.2
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	868	-	-	135	184	788	1298	-	-
HCM Lane V/C Ratio	0.013	-	-	0.204	0.177	0.267	0.16	-	-
HCM Control Delay (s)	9.2	-	-	38.4	28.7	11.2	8.3	-	-
HCM Lane LOS	A	-	-	E	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.7	0.6	1.1	0.6	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	103	167	27	110	233
Future Vol, veh/h	29	103	167	27	110	233
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	1	0	2	2
Mvmt Flow	32	112	182	29	120	253

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	690	197	0	0	211	0
Stage 1	197	-	-	-	-	-
Stage 2	493	-	-	-	-	-
Critical Hdwy	7.04	6.54	-	-	4.12	-
Critical Hdwy Stg 1	6.04	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.218	-
Pot Cap-1 Maneuver	364	825	-	-	1360	-
Stage 1	805	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	327	825	-	-	1360	-
Mov Cap-2 Maneuver	327	-	-	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	504	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	2.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	618	1360	-
HCM Lane V/C Ratio	-	-	0.232	0.088	-
HCM Control Delay (s)	-	-	12.6	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.9	0.3	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	197	110	35	88	24
Future Vol, veh/h	8	197	110	35	88	24
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, %	-	-2	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	13	4	3	0	0	14
Mvmt Flow	9	219	122	39	98	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	161	0	-	0	379	142
Stage 1	-	-	-	-	142	-
Stage 2	-	-	-	-	237	-
Critical Hdwy	4.23	-	-	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.426
Pot Cap-1 Maneuver	1354	-	-	-	627	875
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1354	-	-	-	622	875
Mov Cap-2 Maneuver	-	-	-	-	622	-
Stage 1	-	-	-	-	883	-
Stage 2	-	-	-	-	807	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1354	-	-	-	663
HCM Lane V/C Ratio	0.007	-	-	-	0.188
HCM Control Delay (s)	7.7	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Intersection	
Int Delay, s/veh	15.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	414	215	116	227	26
Future Vol, veh/h	11	414	215	116	227	26
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	83	83	83	83	83	83
Heavy Vehicles, %	0	3	2	4	2	38
Mvmt Flow	13	499	259	140	273	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	399	0	-	0	854	329
Stage 1	-	-	-	-	329	-
Stage 2	-	-	-	-	525	-
Critical Hdwy	4.1	-	-	-	6.42	6.58
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.642
Pot Cap-1 Maneuver	1171	-	-	-	329	637
Stage 1	-	-	-	-	729	-
Stage 2	-	-	-	-	593	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1171	-	-	-	324	637
Mov Cap-2 Maneuver	-	-	-	-	324	-
Stage 1	-	-	-	-	718	-
Stage 2	-	-	-	-	593	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	61.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1171	-	-	-	341
HCM Lane V/C Ratio	0.011	-	-	-	0.894
HCM Control Delay (s)	8.1	0	-	-	61.1
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	8.7

HCS7 Roundabouts Report

General Information

Analyst	ZHB
Agency or Co.	Kittelson
Date Performed	4/29/2021
Analysis Year	2023
Time Analyzed	PM Total - System Peak
Project Description	Project Basie

Site Information

Intersection	OR 219/Butteville Rd
E/W Street Name	OR 219
N/S Street Name	Butteville (Realigned)
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.95
Jurisdiction	Woodburn, OR

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0
Lane Assignment	T		R		L		LT				L					
Volume (V), veh/h	0		469	172	0	264	260		0	71		173				
Percent Heavy Vehicles, %	0		4	2	0	1	3		0	6		6				
Flow Rate (v_{PCE}), pc/h	0		513	185	0	281	282		0	79		193				
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes	2				1				1							
Pedestrians Crossing, p/h	0				0				0							

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.3276		4.5436	4.5436			4.9763				
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.6087				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	513.00	185.00		298.39	264.61			79.00	193.00			
Entry Volume veh/h	495.83	178.81		292.56	259.44			74.53	182.08			
Circulating Flow (v_c), pc/h	281			79			513			642		
Exiting Flow (v_{ex}), pc/h	513			361			0			466		
Capacity (c_{pce}), pc/h	1042.45	1118.30		1321.51	1321.51			817.77				
Capacity (c), veh/h	1007.57	1080.88		1295.70	1295.70			771.48				
v/c Ratio (x)	0.49	0.17		0.23	0.20			0.10				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	9.4	4.8		4.7	4.5			5.6				
Lane LOS	A	A		A	A			A	A			
95% Queue, veh	2.8	0.6		0.9	0.7			0.3				
Approach Delay, s/veh	8.2			4.6			1.6					
Approach LOS	A			A			A					
Intersection Delay, s/veh | LOS	5.7						A					

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	57	585	1	3	494	54	1	1	2	27	1	30
Future Vol, veh/h	57	585	1	3	494	54	1	1	2	27	1	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	240	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	5	0	0	2	2	0	0	0	5	0	6
Mvmt Flow	61	622	1	3	526	57	1	1	2	29	1	32

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	583	0	0	623	0	0	1015	1334	312	995	1306	292
Stage 1	-	-	-	-	-	-	745	745	-	561	561	-
Stage 2	-	-	-	-	-	-	270	589	-	434	745	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.6	6.5	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.55	4	3.36
Pot Cap-1 Maneuver	1001	-	-	968	-	-	195	155	690	195	161	693
Stage 1	-	-	-	-	-	-	377	424	-	472	513	-
Stage 2	-	-	-	-	-	-	718	499	-	563	424	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1001	-	-	968	-	-	176	145	690	184	151	693
Mov Cap-2 Maneuver	-	-	-	-	-	-	176	145	-	184	151	-
Stage 1	-	-	-	-	-	-	354	398	-	443	511	-
Stage 2	-	-	-	-	-	-	681	498	-	526	398	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0	19.2	20.4
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	258	1001	-	-	968	-	-	295
HCM Lane V/C Ratio	0.016	0.061	-	-	0.003	-	-	0.209
HCM Control Delay (s)	19.2	8.8	-	-	8.7	-	-	20.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	0.8

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	90	519	5	22	58	478	269	6	6	69	627	6
Future Volume (vph)	90	519	5	22	58	478	269	6	6	69	627	6
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	0.98		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		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1630	3167	1462		1269	3260	1473	1330	1264		1571	1536
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1630	3167	1462		1269	3260	1473	1330	1264		1571	1536
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	94	541	5	23	60	498	280	6	6	72	653	6
RTOR Reduction (vph)	0	0	3	0	0	0	103	0	68	0	0	5
Lane Group Flow (vph)	94	541	2	0	83	498	177	6	10	0	366	358
Confl. Peds. (#/hr)	1		1		1		1	1				
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	2%	5%	0%	31%	31%	2%	0%	25%	0%	19%	0%	20%
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Split	NA		Split	NA
Protected Phases	5	2	8	1	1	6	4	8	8		4	4
Permitted Phases			2				6					
Actuated Green, G (s)	9.9	25.2	30.6		9.5	24.8	55.0	5.4	5.4		30.2	30.2
Effective Green, g (s)	9.9	25.2	30.6		9.5	24.8	55.0	5.4	5.4		30.2	30.2
Actuated g/C Ratio	0.11	0.29	0.35		0.11	0.29	0.63	0.06	0.06		0.35	0.35
Clearance Time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2	2.5		2.5	4.2	2.5	2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	185	919	515		138	931	933	82	78		546	534
v/s Ratio Prot	0.06	c0.17	0.00		0.07	c0.15	0.07	0.00	c0.01		c0.23	0.23
v/s Ratio Perm			0.00				0.05					
v/c Ratio	0.51	0.59	0.00		0.60	0.53	0.19	0.07	0.13		0.67	0.67
Uniform Delay, d1	36.2	26.4	18.2		36.8	26.1	6.6	38.3	38.5		24.1	24.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.6	1.2	0.0		6.1	0.8	0.1	0.3	0.6		2.9	3.0
Delay (s)	37.8	27.6	18.2		42.9	27.0	6.7	38.6	39.1		27.0	27.1
Level of Service	D	C	B		D	C	A	D	D		C	C
Approach Delay (s)		29.0				21.9			39.0			27.0
Approach LOS		C				C			D			C

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	16.5
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	67
Future Volume (vph)	67
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	70
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

07/13/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	90	519	5	22	58	478	269	6	6	69	627	6
Future Volume (veh/h)	90	519	5	22	58	478	269	6	6	69	627	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1723	1682	1750		1327	1723	1750	1409	1750	1750	1745	1472
Adj Flow Rate, veh/h	94	541	5		60	498	280	6	6	72	723	0
Peak Hour Factor	0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	5	0		31	2	0	25	0	0	0	20
Cap, veh/h	119	1032	595		66	964	840	106	9	107	905	401
Arrive On Green	0.07	0.32	0.32		0.05	0.29	0.29	0.08	0.08	0.08	0.27	0.00
Sat Flow, veh/h	1641	3195	1481		1264	3273	1481	1342	114	1363	3323	1472
Grp Volume(v), veh/h	94	541	5		60	498	280	6	0	78	723	0
Grp Sat Flow(s),veh/h/ln	1641	1598	1481		1264	1637	1481	1342	0	1477	1661	1472
Q Serve(g_s), s	3.4	8.3	0.1		2.8	7.6	6.1	0.2	0.0	3.1	12.2	0.0
Cycle Q Clear(g_c), s	3.4	8.3	0.1		2.8	7.6	6.1	0.2	0.0	3.1	12.2	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.92	1.00	
Lane Grp Cap(c), veh/h	119	1032	595		66	964	840	106	0	116	905	401
V/C Ratio(X)	0.79	0.52	0.01		0.90	0.52	0.33	0.06	0.00	0.67	0.80	0.00
Avail Cap(c_a), veh/h	544	2384	1222		419	2442	1509	667	0	735	2480	1098
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	27.5	16.6	10.8		28.4	17.7	7.0	25.7	0.0	27.0	20.4	0.0
Incr Delay (d2), s/veh	8.3	0.6	0.0		25.6	0.7	0.4	0.2	0.0	4.9	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	5.1	0.1		2.3	4.9	5.7	0.1	0.0	2.1	7.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.8	17.3	10.8		54.0	18.4	7.3	25.9	0.0	31.9	21.7	0.0
LnGrp LOS	D	B	B		D	B	A	C	A	C	C	A
Approach Vol, veh/h		640				838			84			723
Approach Delay, s/veh		20.0				17.2			31.5			21.7
Approach LOS		B				B			C			C

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	24.0		20.4	8.9	22.3		8.7				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	4.8	10.3		14.2	5.4	9.6		5.1				
Green Ext Time (p_c), s	0.1	6.2		2.1	0.1	7.8		0.3				

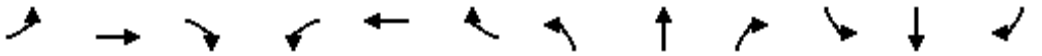
Intersection Summary		
HCM 6th Ctrl Delay		19.9
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	67
Future Volume (veh/h)	67
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1472
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.96
Percent Heavy Veh, %	20
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

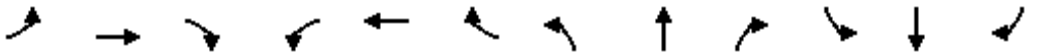
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	807	430	0	864	633	0	0	0	555	0	371
Future Volume (vph)	0	807	430	0	864	633	0	0	0	555	0	371
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3180	1409		3325	1487				3083		1381
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3180	1409		3325	1487				3083		1381
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	823	439	0	882	646	0	0	0	566	0	379
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	23
Lane Group Flow (vph)	0	823	439	0	882	646	0	0	0	566	0	356
Heavy Vehicles (%)	0%	3%	4%	0%	2%	2%	0%	0%	0%	2%	0%	5%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		63.4	100.0		53.6	100.0				27.6		37.9
Effective Green, g (s)		63.4	100.0		53.6	100.0				27.6		39.9
Actuated g/C Ratio		0.63	1.00		0.54	1.00				0.28		0.40
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2016	1409		1782	1487				850		551
v/s Ratio Prot		0.26			c0.27					0.18		c0.26
v/s Ratio Perm			0.31			0.43						
v/c Ratio		0.41	0.31		0.49	0.43				0.67		0.65
Uniform Delay, d1		9.0	0.0		14.7	0.0				32.1		24.3
Progression Factor		1.00	1.00		0.85	1.00				1.00		1.00
Incremental Delay, d2		0.6	0.6		0.8	0.8				1.8		2.3
Delay (s)		9.7	0.6		13.2	0.8				33.9		26.6
Level of Service		A	A		B	A				C		C
Approach Delay (s)		6.5			8.0			0.0			31.0	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	58.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



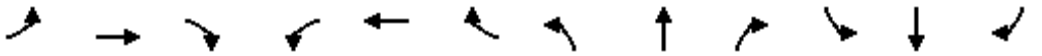
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	807	430	0	864	633	0	0	0	555	0	371
Future Volume (veh/h)	0	807	430	0	864	633	0	0	0	555	0	371
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1660	1647	0	1867	1867				1587	0	1546
Adj Flow Rate, veh/h	0	823	0	0	882	0				566	0	277
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	3	4	0	2	2				2	0	5
Cap, veh/h	0	2114		0	2378					703	0	340
Arrive On Green	0.00	0.67	0.00	0.00	1.00	0.00				0.24	0.00	0.26
Sat Flow, veh/h	0	3237	1395	0	3641	1582				2932	0	1310
Grp Volume(v), veh/h	0	823	0	0	882	0				566	0	277
Grp Sat Flow(s),veh/h/ln	0	1577	1395	0	1774	1582				1466	0	1310
Q Serve(g_s), s	0.0	11.6	0.0	0.0	0.0	0.0				18.2	0.0	19.8
Cycle Q Clear(g_c), s	0.0	11.6	0.0	0.0	0.0	0.0				18.2	0.0	19.8
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2114		0	2378					703	0	340
V/C Ratio(X)	0.00	0.39		0.00	0.37					0.80	0.00	0.81
Avail Cap(c_a), veh/h	0	2114		0	2378					1041	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.75	0.00	0.00	0.76	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	7.4	0.0	0.0	0.0	0.0				35.8	0.0	34.7
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.3	0.0				2.4	0.0	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	6.3	0.0	0.0	0.2	0.0				10.9	0.0	20.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.8	0.0	0.0	0.3	0.0				38.2	0.0	40.5
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		823	A		882	A					843	
Approach Delay, s/veh		7.8			0.3						39.0	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		71.5		28.5		71.5						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		13.6		21.8		2.0						
Green Ext Time (p_c), s		17.3		2.1		10.5						

Intersection Summary												
HCM 6th Ctrl Delay			15.5									
HCM 6th LOS			B									

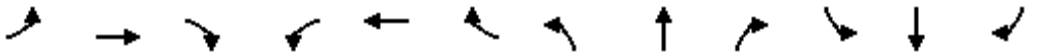
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1137	225	0	1182	354	315	0	520	0	0	0
Future Volume (vph)	0	1137	225	0	1182	354	315	0	520	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		3325	1418		3211	1379	1502	1262	1293			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		3325	1418		3211	1379	1502	1262	1293			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1160	230	0	1206	361	321	0	531	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	50	50	0	0	0
Lane Group Flow (vph)	0	1160	230	0	1206	361	289	232	231	0	0	0
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	0%	2%	7%	0%	2%	4%	2%	0%	6%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		65.6	100.0		65.6	100.0	25.4	25.4	25.4			
Effective Green, g (s)		65.6	100.0		65.6	100.0	25.4	25.4	25.4			
Actuated g/C Ratio		0.66	1.00		0.66	1.00	0.25	0.25	0.25			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2181	1418		2106	1379	381	320	328			
v/s Ratio Prot		0.35			c0.38		c0.19	0.18				
v/s Ratio Perm			0.16			0.26			0.18			
v/c Ratio		0.53	0.16		0.57	0.26	0.76	0.73	0.70			
Uniform Delay, d1		9.1	0.0		9.5	0.0	34.5	34.1	33.9			
Progression Factor		1.66	1.00		1.15	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.8	0.2		0.8	0.3	8.0	7.4	6.2			
Delay (s)		16.0	0.2		11.7	0.3	42.5	41.6	40.1			
Level of Service		B	A		B	A	D	D	D			
Approach Delay (s)		13.4			9.1			41.4			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	17.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1137	225	0	1182	354	315	0	520	0	0	0
Future Volume (veh/h)	0	1137	225	0	1182	354	315	0	520	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1867	1798	0	1674	1647	1527	1555	1473			
Adj Flow Rate, veh/h	0	1160	0	0	1206	0	424	0	217			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	2	7	0	2	4	2	0	6			
Cap, veh/h	0	2505		0	2245		594	0	255			
Arrive On Green	0.00	1.00	0.00	0.00	0.71	0.00	0.20	0.00	0.20			
Sat Flow, veh/h	0	3641	1524	0	3264	1395	2909	0	1248			
Grp Volume(v), veh/h	0	1160	0	0	1206	0	424	0	217			
Grp Sat Flow(s),veh/h/ln	0	1774	1524	0	1590	1395	1455	0	1248			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	18.0	0.0	13.6	0.0	16.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	18.0	0.0	13.6	0.0	16.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2505		0	2245		594	0	255			
V/C Ratio(X)	0.00	0.46		0.00	0.54		0.71	0.00	0.85			
Avail Cap(c_a), veh/h	0	2505		0	2245		1033	0	443			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.85	0.00	0.00	0.57	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	7.0	0.0	37.1	0.0	38.3			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.5	0.0	1.2	0.0	6.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.3	0.0	0.0	8.2	0.0	8.5	0.0	9.3			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	7.5	0.0	38.3	0.0	44.3			
LnGrp LOS	A	A		A	A		D	A	D			
Approach Vol, veh/h		1160	A		1206	A		641				
Approach Delay, s/veh		0.5			7.5			40.3				
Approach LOS		A			A			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		75.1				75.1		24.9				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				20.0		18.8				
Green Ext Time (p_c), s		17.7				24.2		1.7				

Intersection Summary												
HCM 6th Ctrl Delay			11.8									
HCM 6th LOS			B									

Notes

User approved volume balancing among the lanes for turning movement.

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

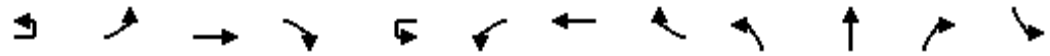
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	36	78	974	131	10	208	984	18	422	28	162	28
Future Volume (vph)	36	78	974	131	10	208	984	18	422	28	162	28
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1583	3197	1458		1621	3083		1548	1558	1473	1662
Flt Permitted		0.16	1.00	1.00		0.14	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		260	3197	1458		233	3083		1548	1558	1473	1662
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	38	81	1015	136	10	217	1025	19	440	29	169	29
RTOR Reduction (vph)	0	0	0	81	0	0	1	0	0	0	136	0
Lane Group Flow (vph)	0	119	1015	55	0	227	1043	0	233	236	33	29
Confl. Peds. (#/hr)									2			
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	5%	5%	4%	2%	1%	1%	6%	0%	2%	4%	1%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		54.2	40.2	40.2		54.2	45.3		19.3	19.3	19.3	9.0
Effective Green, g (s)		54.2	40.2	40.2		54.2	45.3		19.3	19.3	19.3	9.0
Actuated g/C Ratio		0.54	0.40	0.40		0.54	0.45		0.19	0.19	0.19	0.09
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		258	1285	586		320	1396		298	300	284	149
v/s Ratio Prot		0.04	c0.32			0.10	c0.34		0.15	c0.15		0.02
v/s Ratio Perm		0.21		0.04		0.28					0.02	
v/c Ratio		0.46	0.79	0.09		0.71	0.75		0.78	0.79	0.11	0.19
Uniform Delay, d1		13.9	26.2	18.6		30.3	22.6		38.3	38.4	33.3	42.1
Progression Factor		1.03	1.08	1.11		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.8	4.3	0.3		6.5	3.7		12.1	12.3	0.1	0.5
Delay (s)		15.2	32.6	20.9		36.9	26.3		50.5	50.7	33.4	42.6
Level of Service		B	C	C		D	C		D	D	C	D
Approach Delay (s)			29.7				28.2			46.0		
Approach LOS			C				C			D		

Intersection Summary			
HCM 2000 Control Delay	32.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	31	94
Future Volume (vph)	31	94
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1418	
Flt Permitted	1.00	
Satd. Flow (perm)	1418	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	32	98
RTOR Reduction (vph)	89	0
Lane Group Flow (vph)	41	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	3%	10%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	9.0	
Effective Green, g (s)	9.0	
Actuated g/C Ratio	0.09	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	127	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.32	
Uniform Delay, d1	42.6	
Progression Factor	1.00	
Incremental Delay, d2	1.1	
Delay (s)	43.7	
Level of Service	D	
Approach Delay (s)	43.5	
Approach LOS	D	

Intersection Summary



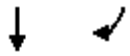
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	36	78	974	131	10	208	984	18	422	28	162	28
Future Volume (veh/h)	36	78	974	131	10	208	984	18	422	28	162	28
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1682	1695	1723		1688	1619	1619	1723	1695	1736	1750
Adj Flow Rate, veh/h		81	1015	0		217	1025	19	461	0	0	29
Peak Hour Factor		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		5	4	2		1	6	6	2	4	1	0
Cap, veh/h		315	1047			515	1740	32	539	0		100
Arrive On Green		0.04	0.32	0.00		0.27	0.56	0.56	0.16	0.00	0.00	0.06
Sat Flow, veh/h		1602	3221	1460		1607	3089	57	3281	0	1471	1667
Grp Volume(v), veh/h		81	1015	0		217	511	533	461	0	0	29
Grp Sat Flow(s),veh/h/ln		1602	1611	1460		1607	1538	1608	1641	0	1471	1667
Q Serve(g_s), s		2.1	31.1	0.0		5.6	21.7	21.7	13.7	0.0	0.0	1.7
Cycle Q Clear(g_c), s		2.1	31.1	0.0		5.6	21.7	21.7	13.7	0.0	0.0	1.7
Prop In Lane		1.00		1.00		1.00		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		315	1047			515	867	906	539	0		100
V/C Ratio(X)		0.26	0.97			0.42	0.59	0.59	0.86	0.00		0.29
Avail Cap(c_a), veh/h		479	1047			515	867	906	673	0		258
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.80	0.80	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		11.2	33.3	0.0		27.6	14.3	14.3	40.6	0.0	0.0	45.0
Incr Delay (d2), s/veh		0.3	18.6	0.0		0.4	2.9	2.8	8.3	0.0	0.0	1.2
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		1.3	20.0	0.0		7.3	12.3	12.7	10.1	0.0	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		11.4	51.8	0.0		28.0	17.2	17.1	48.9	0.0	0.0	46.2
LnGrp LOS		B	D			C	B	B	D	A		D
Approach Vol, veh/h			1096	A			1261			461	A	
Approach Delay, s/veh			48.9				19.0			48.9		
Approach LOS			D				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	31.6	37.0		10.5	7.8	60.8		20.9
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	7.6	33.1		3.8	4.1	23.7		15.7
Green Ext Time (p_c), s	0.2	0.0		0.1	0.1	7.0		0.6

Intersection Summary	
HCM 6th Ctrl Delay	35.7
HCM 6th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

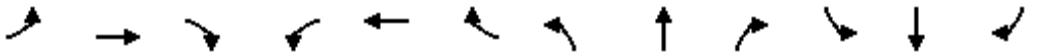


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	31	94
Future Volume (veh/h)	31	94
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1709	1709
Adj Flow Rate, veh/h	32	0
Peak Hour Factor	0.96	0.96
Percent Heavy Veh, %	3	3
Cap, veh/h	102	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1709	0
Grp Volume(v), veh/h	32	0
Grp Sat Flow(s),veh/h/ln	1709	0
Q Serve(g_s), s	1.8	0.0
Cycle Q Clear(g_c), s	1.8	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	102	
V/C Ratio(X)	0.31	
Avail Cap(c_a), veh/h	265	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	45.0	0.0
Incr Delay (d2), s/veh	1.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	46.3	0.0
LnGrp LOS	D	
Approach Vol, veh/h	61	A
Approach Delay, s/veh	46.2	
Approach LOS	D	

Timer - Assigned Phs

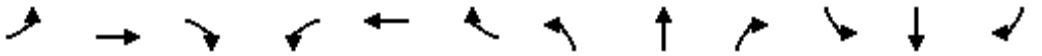
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	576	335	83	648	84	271	118	79	106	213	141
Future Volume (vph)	87	576	335	83	648	84	271	118	79	106	213	141
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	1651	1447	1662	1651	1400	1583	1699	1450	1599	1667	1429
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1614	1651	1447	1662	1651	1400	1583	1699	1450	1599	1667	1429
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)	92	606	353	87	682	88	285	124	83	112	224	148
RTOR Reduction (vph)	0	0	97	0	0	46	0	0	63	0	0	123
Lane Group Flow (vph)	92	606	256	87	682	42	285	124	20	112	224	25
Confl. Peds. (#/hr)			3	3			3		2	2		3
Confl. Bikes (#/hr)						1			1			2
Heavy Vehicles (%)	3%	6%	1%	0%	6%	4%	5%	3%	0%	4%	5%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	12.6	56.0	81.1	11.9	55.3	55.3	25.1	33.1	33.1	14.3	22.3	22.3
Effective Green, g (s)	12.6	56.0	81.1	11.9	55.3	55.3	25.1	33.1	33.1	14.3	22.3	22.3
Actuated g/C Ratio	0.09	0.42	0.60	0.09	0.41	0.41	0.19	0.25	0.25	0.11	0.17	0.17
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	151	688	873	147	679	576	295	418	357	170	276	237
v/s Ratio Prot	c0.06	0.37	0.05	0.05	c0.41		c0.18	0.07		0.07	c0.13	
v/s Ratio Perm			0.12			0.03			0.01			0.02
v/c Ratio	0.61	0.88	0.29	0.59	1.00	0.07	0.97	0.30	0.06	0.66	0.81	0.10
Uniform Delay, d1	58.5	36.1	12.8	58.9	39.5	24.0	54.2	41.1	38.7	57.7	54.0	47.5
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.8	13.4	0.1	5.2	35.6	0.1	42.8	0.3	0.0	8.0	16.0	0.1
Delay (s)	64.2	49.5	12.9	64.1	75.1	24.1	97.0	41.4	38.7	65.6	70.0	47.7
Level of Service	E	D	B	E	E	C	F	D	D	E	E	D
Approach Delay (s)		38.5			68.8			73.1			62.2	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	134.3	Sum of lost time (s)	19.0
Intersection Capacity Utilization	88.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



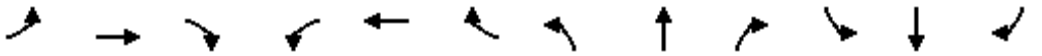
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	576	335	83	648	84	271	118	79	106	213	141
Future Volume (veh/h)	87	576	335	83	648	84	271	118	79	106	213	141
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1668	1736	1750	1668	1695	1682	1709	1750	1695	1682	1736
Adj Flow Rate, veh/h	92	606	195	87	682	88	285	124	83	112	224	85
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	6	1	0	6	4	5	3	0	4	5	1
Cap, veh/h	114	720	915	108	713	599	307	460	388	135	271	229
Arrive On Green	0.07	0.43	0.43	0.07	0.43	0.43	0.19	0.27	0.27	0.08	0.16	0.16
Sat Flow, veh/h	1628	1668	1466	1667	1668	1402	1602	1709	1443	1615	1682	1422
Grp Volume(v), veh/h	92	606	195	87	682	88	285	124	83	112	224	85
Grp Sat Flow(s),veh/h/ln	1628	1668	1466	1667	1668	1402	1602	1709	1443	1615	1682	1422
Q Serve(g_s), s	7.0	41.0	7.3	6.5	50.1	4.8	22.1	7.2	5.6	8.6	16.3	6.7
Cycle Q Clear(g_c), s	7.0	41.0	7.3	6.5	50.1	4.8	22.1	7.2	5.6	8.6	16.3	6.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	114	720	915	108	713	599	307	460	388	135	271	229
V/C Ratio(X)	0.81	0.84	0.21	0.80	0.96	0.15	0.93	0.27	0.21	0.83	0.83	0.37
Avail Cap(c_a), veh/h	322	726	920	330	726	610	317	460	388	319	399	337
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	58.0	32.0	10.3	58.3	35.1	22.1	50.3	36.4	35.8	57.0	51.3	47.3
Incr Delay (d2), s/veh	9.8	9.5	0.2	9.7	23.6	0.2	32.1	0.2	0.2	9.2	7.5	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	25.4	4.4	5.5	33.0	3.0	17.3	5.6	3.7	7.0	12.0	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	67.7	41.5	10.6	68.0	58.7	22.3	82.3	36.6	36.0	66.2	58.8	48.0
LnGrp LOS	E	D	B	E	E	C	F	D	D	E	E	D
Approach Vol, veh/h		893			857			492			421	
Approach Delay, s/veh		37.4			55.9			63.0			58.6	
Approach LOS		D			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	59.6	28.7	25.4	13.3	59.0	15.1	39.0
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	8.5	43.0	24.1	18.3	9.0	52.1	10.6	9.2
Green Ext Time (p_c), s	0.1	6.2	0.1	1.0	0.1	1.9	0.2	0.7

Intersection Summary	
HCM 6th Ctrl Delay	51.4
HCM 6th LOS	D

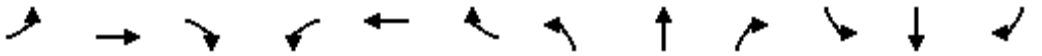
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	347	245	237	273	48	216	432	97	147	812	147
Future Volume (vph)	190	347	245	237	273	48	216	432	97	147	812	147
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1545	1627	1382	1630	1613		3027	3032	1192	1583	3077	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1545	1627	1382	1630	1613		3027	3032	1192	1583	3077	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	377	266	258	297	52	235	470	105	160	883	160
RTOR Reduction (vph)	0	0	202	0	5	0	0	0	71	0	12	0
Lane Group Flow (vph)	207	377	64	258	344	0	235	470	34	160	1031	0
Confl. Peds. (#/hr)	2		8	8		2	4		1	1		4
Heavy Vehicles (%)	4%	4%	2%	2%	6%	5%	3%	6%	18%	5%	5%	7%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	19.0	27.5	27.5	21.8	30.3		12.2	40.3	40.3	15.9	44.0	
Effective Green, g (s)	19.0	27.5	27.5	21.8	30.3		12.2	40.3	40.3	15.9	44.0	
Actuated g/C Ratio	0.15	0.22	0.22	0.17	0.24		0.10	0.32	0.32	0.13	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	234	357	304	284	390		295	977	384	201	1083	
v/s Ratio Prot	0.13	c0.23		c0.16	0.21		0.08	0.16		c0.10	c0.34	
v/s Ratio Perm			0.05						0.03			
v/c Ratio	0.88	1.06	0.21	0.91	0.88		0.80	0.48	0.09	0.80	0.95	
Uniform Delay, d1	51.9	48.8	39.9	50.6	45.6		55.2	34.0	29.5	53.0	39.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	30.1	63.2	0.4	30.4	20.5		13.8	1.7	0.5	19.2	18.0	
Delay (s)	82.1	111.9	40.3	81.0	66.1		69.0	35.7	30.0	72.2	57.5	
Level of Service	F	F	D	F	E		E	D	C	E	E	
Approach Delay (s)		82.2			72.5			44.6			59.5	
Approach LOS		F			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	63.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	89.7%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	190	347	245	237	273	48	216	432	97	147	812	147
Future Volume (veh/h)	190	347	245	237	273	48	216	432	97	147	812	147
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1695	1723	1723	1668	1668	1709	1668	1504	1682	1682	1682
Adj Flow Rate, veh/h	207	377	0	258	297	52	235	470	105	160	883	160
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	2	2	6	6	3	6	18	5	5	5
Cap, veh/h	247	373		281	329	58	284	1072	429	184	980	178
Arrive On Green	0.15	0.22	0.00	0.17	0.24	0.24	0.09	0.34	0.34	0.11	0.36	0.36
Sat Flow, veh/h	1615	1695	1460	1641	1380	242	3158	3169	1267	1602	2700	489
Grp Volume(v), veh/h	207	377	0	258	0	349	235	470	105	160	522	521
Grp Sat Flow(s),veh/h/ln	1615	1695	1460	1641	0	1622	1579	1585	1267	1602	1598	1592
Q Serve(g_s), s	15.6	27.5	0.0	19.3	0.0	26.1	9.1	14.4	4.7	12.3	38.7	38.7
Cycle Q Clear(g_c), s	15.6	27.5	0.0	19.3	0.0	26.1	9.1	14.4	4.7	12.3	38.7	38.7
Prop In Lane	1.00		1.00	1.00		0.15	1.00		1.00	1.00		0.31
Lane Grp Cap(c), veh/h	247	373		281	0	386	284	1072	429	184	580	578
V/C Ratio(X)	0.84	1.01		0.92	0.00	0.90	0.83	0.44	0.25	0.87	0.90	0.90
Avail Cap(c_a), veh/h	247	373		289	0	435	316	1072	429	224	580	578
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.4	48.8	0.0	51.0	0.0	46.2	55.9	32.1	11.7	54.4	37.7	37.7
Incr Delay (d2), s/veh	21.7	49.3	0.0	32.2	0.0	20.9	15.2	1.3	1.4	25.3	19.6	19.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.3	23.4	0.0	15.7	0.0	18.5	7.6	9.6	4.2	10.3	24.9	24.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	73.1	98.1	0.0	83.2	0.0	67.2	71.1	33.4	13.1	79.7	57.3	57.4
LnGrp LOS	E	F		F	A	E	E	C	B	E	E	E
Approach Vol, veh/h		584	A		607			810			1203	
Approach Delay, s/veh		89.2			74.0			41.7			60.3	
Approach LOS		F			E			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.8	50.9	23.1	35.3	18.8	47.8	25.4	33.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	12.5	43.5	16.0	33.5	17.5	38.5	22.0	27.5
Max Q Clear Time (g_c+I1), s	11.1	40.7	17.6	28.1	14.3	16.4	21.3	29.5
Green Ext Time (p_c), s	0.1	2.2	0.0	1.1	0.1	6.6	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	63.5
HCM 6th LOS	E

Notes

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

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1	1	1	1	6	2	237	1	9	422	5
Future Vol, veh/h	1	1	1	1	1	6	2	237	1	9	422	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	3	0
Mvmt Flow	1	1	1	1	1	7	2	279	1	11	496	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	809	805	499	806	808	280	502	0	0	280	0	0
Stage 1	521	521	-	284	284	-	-	-	-	-	-	-
Stage 2	288	284	-	522	524	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	301	318	576	303	317	764	1073	-	-	1294	-	-
Stage 1	542	535	-	727	680	-	-	-	-	-	-	-
Stage 2	724	680	-	542	533	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	295	315	576	299	314	764	1073	-	-	1294	-	-
Mov Cap-2 Maneuver	295	315	-	299	314	-	-	-	-	-	-	-
Stage 1	541	530	-	726	679	-	-	-	-	-	-	-
Stage 2	715	679	-	535	528	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	15.1	11.6	0.1	0.2
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1073	-	-	361	556	1294	-	-
HCM Lane V/C Ratio	0.002	-	-	0.01	0.017	0.008	-	-
HCM Control Delay (s)	8.4	-	-	15.1	11.6	7.8	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	6	234	1	10	413
Future Vol, veh/h	1	6	234	1	10	413
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	1	7	275	1	12	486

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	786	276	0	0	276	0
Stage 1	276	-	-	-	-	-
Stage 2	510	-	-	-	-	-
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	364	768	-	-	1299	-
Stage 1	775	-	-	-	-	-
Stage 2	607	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	361	768	-	-	1299	-
Mov Cap-2 Maneuver	469	-	-	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	602	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	704	1299	-
HCM Lane V/C Ratio	-	-	0.012	0.009	-
HCM Control Delay (s)	-	-	10.2	7.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	25	210	5	36	378
Future Vol, veh/h	4	25	210	5	36	378
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	5	29	247	6	42	445

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	779	250	0	0	253	0
Stage 1	250	-	-	-	-	-
Stage 2	529	-	-	-	-	-
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	367	794	-	-	1324	-
Stage 1	796	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	355	794	-	-	1324	-
Mov Cap-2 Maneuver	458	-	-	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	576	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	458	794	1324	-
HCM Lane V/C Ratio	-	-	0.01	0.037	0.032	-
HCM Control Delay (s)	-	-	12.9	9.7	7.8	-
HCM Lane LOS	-	-	B	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	14	1	12	4	1	25	11	176	6	36	332	14
Future Vol, veh/h	14	1	12	4	1	25	11	176	6	36	332	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	90	2	90	2	2	2	90	1	2	2	3	90
Mvmt Flow	14	1	12	4	1	26	11	180	6	37	339	14

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	639	628	346	632	632	183	353	0	0	186	0	0
Stage 1	420	420	-	205	205	-	-	-	-	-	-	-
Stage 2	219	208	-	427	427	-	-	-	-	-	-	-
Critical Hdwy	8	6.52	7.1	7.12	6.52	6.22	5	-	-	4.12	-	-
Critical Hdwy Stg 1	7	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	7	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	4.31	4.018	4.11	3.518	4.018	3.318	3.01	-	-	2.218	-	-
Pot Cap-1 Maneuver	289	400	536	393	398	859	846	-	-	1388	-	-
Stage 1	470	589	-	797	732	-	-	-	-	-	-	-
Stage 2	620	730	-	606	585	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	271	384	536	372	382	859	846	-	-	1388	-	-
Mov Cap-2 Maneuver	271	384	-	372	382	-	-	-	-	-	-	-
Stage 1	464	573	-	787	722	-	-	-	-	-	-	-
Stage 2	593	721	-	575	569	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.1	10.2	0.5	0.7
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	846	-	-	352	374	859	1388	-	-
HCM Lane V/C Ratio	0.013	-	-	0.078	0.014	0.03	0.026	-	-
HCM Control Delay (s)	9.3	-	-	16.1	14.8	9.3	7.7	-	-
HCM Lane LOS	A	-	-	C	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	29	64	125	40	73	267
Future Vol, veh/h	29	64	125	40	73	267
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	8	2	0	0	2
Mvmt Flow	34	75	147	47	86	314

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	657	171	0	0	194	0
Stage 1	171	-	-	-	-	-
Stage 2	486	-	-	-	-	-
Critical Hdwy	7	6.58	-	-	4.1	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	388	845	-	-	1391	-
Stage 1	840	-	-	-	-	-
Stage 2	574	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	359	845	-	-	1391	-
Mov Cap-2 Maneuver	359	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	531	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.4	0	1.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	594	1391	-
HCM Lane V/C Ratio	-	-	0.184	0.062	-
HCM Control Delay (s)	-	-	12.4	7.8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-

Appendix I 2040 Background Traffic Conditions Operations Worksheets

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	85	149	109	22	4
Future Vol, veh/h	12	85	149	109	22	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, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	9	4	3	0	0
Mvmt Flow	13	92	162	118	24	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	280	0	-	0	339	221
Stage 1	-	-	-	-	221	-
Stage 2	-	-	-	-	118	-
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	1294	-	-	-	661	824
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	912	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1294	-	-	-	654	824
Mov Cap-2 Maneuver	-	-	-	-	654	-
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	912	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1294	-	-	-	675
HCM Lane V/C Ratio	0.01	-	-	-	0.042
HCM Control Delay (s)	7.8	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	286	313	250	90	10
Future Vol, veh/h	6	286	313	250	90	10
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	7	4	9	31	29
Mvmt Flow	7	311	340	272	98	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	612	0	-	0	801	476
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	325	-
Critical Hdwy	4.1	-	-	-	6.71	6.49
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.2	-	-	-	3.779	3.561
Pot Cap-1 Maneuver	977	-	-	-	317	537
Stage 1	-	-	-	-	569	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	977	-	-	-	314	537
Mov Cap-2 Maneuver	-	-	-	-	314	-
Stage 1	-	-	-	-	564	-
Stage 2	-	-	-	-	671	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	21.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	977	-	-	-	328
HCM Lane V/C Ratio	0.007	-	-	-	0.331
HCM Control Delay (s)	8.7	0	-	-	21.3
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.4

Intersection	
Int Delay, s/veh	38.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	259	120	90	443	120	355
Future Vol, veh/h	259	120	90	443	120	355
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, %	12	9	8	5	3	4
Mvmt Flow	282	130	98	482	130	386

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	412	0	1025	347
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	678	-
Critical Hdwy	-	-	4.18	-	6.43	6.24
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.272	-	3.527	3.336
Pot Cap-1 Maneuver	-	-	1115	-	259	692
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	502	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1115	-	228	692
Mov Cap-2 Maneuver	-	-	-	-	228	-
Stage 1	-	-	-	-	713	-
Stage 2	-	-	-	-	442	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	111.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	457	-	-	1115	-
HCM Lane V/C Ratio	1.13	-	-	0.088	-
HCM Control Delay (s)	111.8	-	-	8.5	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	18.1	-	-	0.3	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Vol, veh/h	7	607	1	1	507	16	1	1	1	45	1	26
Future Vol, veh/h	7	607	1	1	507	16	1	1	1	45	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	7	0	0	6	0	0	0	0	4	0	0
Mvmt Flow	8	660	1	1	551	17	1	1	1	49	1	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	568	0	0	661	0	0	1253	1247	662	1232	1230	551
Stage 1	-	-	-	-	-	-	677	677	-	553	553	-
Stage 2	-	-	-	-	-	-	576	570	-	679	677	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.3
Pot Cap-1 Maneuver	1014	-	-	937	-	-	150	175	465	152	179	538
Stage 1	-	-	-	-	-	-	446	455	-	514	518	-
Stage 2	-	-	-	-	-	-	506	509	-	438	455	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1014	-	-	937	-	-	140	173	465	149	176	538
Mov Cap-2 Maneuver	-	-	-	-	-	-	140	173	-	149	176	-
Stage 1	-	-	-	-	-	-	441	450	-	508	517	-
Stage 2	-	-	-	-	-	-	477	508	-	430	450	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	23.4	33.7
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	199	1014	-	-	937	-	-	202
HCM Lane V/C Ratio	0.016	0.008	-	-	0.001	-	-	0.387
HCM Control Delay (s)	23.4	8.6	0	-	8.8	0	-	33.7
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	1.7

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	38	610	4	17	85	488	173	1	4	39	347	12
Future Volume (vph)	38	610	4	17	85	488	173	1	4	39	347	12
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3107	1488		1352	3137	1417	1662	976		1526	1491
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3107	1488		1352	3137	1417	1662	976		1526	1491
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	41	663	4	18	92	530	188	1	4	42	377	13
RTOR Reduction (vph)	0	0	2	0	0	0	73	0	39	0	0	5
Lane Group Flow (vph)	41	663	2	0	110	530	115	1	7	0	215	208
Confl. Peds. (#/hr)								1				
Heavy Vehicles (%)	0%	7%	0%	23%	23%	6%	5%	0%	0%	60%	3%	25%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA	pt+ov	Split	NA		Split	NA
Protected Phases	5	2	2 8	1	1	6	6 4	8	8		4	4
Permitted Phases												
Actuated Green, G (s)	9.9	28.6	34.0		13.1	31.8	50.5	5.4	5.4		18.7	18.7
Effective Green, g (s)	9.9	28.6	34.0		13.1	31.8	50.5	5.4	5.4		18.7	18.7
Actuated g/C Ratio	0.12	0.35	0.41		0.16	0.39	0.61	0.07	0.07		0.23	0.23
Clearance Time (s)	4.0	4.5			4.0	4.5		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2			2.5	4.2		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	199	1079	614		215	1212	869	109	64		346	338
v/s Ratio Prot	0.02	c0.21	0.00		c0.08	0.17	0.08	0.00	c0.01		c0.14	0.14
v/s Ratio Perm												
v/c Ratio	0.21	0.61	0.00		0.51	0.44	0.13	0.01	0.11		0.62	0.61
Uniform Delay, d1	32.7	22.3	14.2		31.7	18.6	6.7	35.9	36.2		28.6	28.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.4	1.3	0.0		1.5	0.4	0.1	0.0	0.5		3.0	2.8
Delay (s)	33.0	23.5	14.2		33.2	19.0	6.8	36.0	36.7		31.6	31.4
Level of Service	C	C	B		C	B	A	D	D		C	C
Approach Delay (s)		24.0				18.1			36.7			31.5
Approach LOS		C				B			D			C

Intersection Summary			
HCM 2000 Control Delay	23.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	82.3	Sum of lost time (s)	16.5
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	35
Future Volume (vph)	35
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	38
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

08/12/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	38	610	4	17	85	488	173	1	4	39	347	12
Future Volume (veh/h)	38	610	4	17	85	488	173	1	4	39	347	12
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1654	1750		1436	1668	1682	1750	1750	1750	1704	1403
Adj Flow Rate, veh/h	41	663	4		92	530	188	1	4	42	422	0
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	7	0		23	6	5	0	0	0	3	25
Cap, veh/h	185	1133	624		108	1010	717	101	8	83	599	259
Arrive On Green	0.11	0.36	0.36		0.08	0.32	0.32	0.06	0.06	0.06	0.18	0.00
Sat Flow, veh/h	1667	3143	1483		1368	3169	1425	1667	130	1369	3245	1403
Grp Volume(v), veh/h	41	663	4		92	530	188	1	0	46	422	0
Grp Sat Flow(s),veh/h/ln	1667	1572	1483		1368	1585	1425	1667	0	1499	1623	1403
Q Serve(g_s), s	1.2	8.9	0.1		3.5	7.2	3.9	0.0	0.0	1.6	6.4	0.0
Cycle Q Clear(g_c), s	1.2	8.9	0.1		3.5	7.2	3.9	0.0	0.0	1.6	6.4	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.91	1.00	
Lane Grp Cap(c), veh/h	185	1133	624		108	1010	717	101	0	91	599	259
V/C Ratio(X)	0.22	0.59	0.01		0.85	0.52	0.26	0.01	0.00	0.51	0.70	0.00
Avail Cap(c_a), veh/h	637	2705	1366		523	2727	1489	956	0	860	2792	1207
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	21.2	13.6	8.8		23.8	14.6	7.4	23.1	0.0	23.8	20.0	0.0
Incr Delay (d2), s/veh	0.4	0.7	0.0		12.9	0.6	0.3	0.0	0.0	3.2	1.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	5.0	0.0		2.6	4.2	2.8	0.0	0.0	1.1	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.6	14.3	8.8		36.7	15.2	7.7	23.1	0.0	27.0	21.1	0.0
LnGrp LOS	C	B	A		D	B	A	C	A	C	C	A
Approach Vol, veh/h		708				810			47			422
Approach Delay, s/veh		14.7				15.9			26.9			21.1
Approach LOS		B				B			C			C

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	23.3		13.7	10.3	21.2		7.2				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	5.5	10.9		8.4	3.2	9.2		3.6				
Green Ext Time (p_c), s	0.1	7.9		1.2	0.0	7.5		0.2				

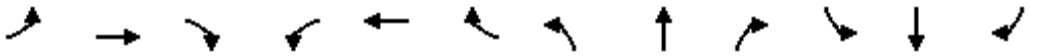
Intersection Summary		
HCM 6th Ctrl Delay		16.8
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

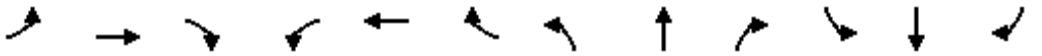
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	35
Future Volume (veh/h)	35
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1403
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	25
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer - Assigned Phs
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	683	330	0	737	696	0	0	0	414	0	196
Future Volume (vph)	0	683	330	0	737	696	0	0	0	414	0	196
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3090	1263		3140	1315				2859		1283
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3090	1263		3140	1315				2859		1283
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)	0	719	347	0	776	733	0	0	0	436	0	206
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	719	347	0	776	733	0	0	0	436	0	167
Confl. Peds. (#/hr)						1						1
Heavy Vehicles (%)	0%	6%	16%	0%	8%	13%	0%	0%	0%	10%	0%	13%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		70.7	100.0		61.4	100.0				20.3		30.1
Effective Green, g (s)		70.7	100.0		61.4	100.0				20.3		32.1
Actuated g/C Ratio		0.71	1.00		0.61	1.00				0.20		0.32
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2184	1263		1927	1315				580		411
v/s Ratio Prot		0.23			0.25					c0.15		0.13
v/s Ratio Perm			0.27			c0.56						
v/c Ratio		0.33	0.27		0.40	0.56				0.75		0.41
Uniform Delay, d1		5.6	0.0		9.9	0.0				37.5		26.5
Progression Factor		1.00	1.00		0.79	1.00				1.00		1.00
Incremental Delay, d2		0.4	0.5		0.4	1.2				5.2		0.5
Delay (s)		6.0	0.5		8.3	1.2				42.7		27.0
Level of Service		A	A		A	A				D		C
Approach Delay (s)		4.2			4.8			0.0			37.6	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



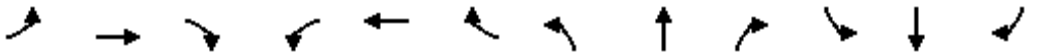
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	683	330	0	737	696	0	0	0	414	0	196
Future Volume (veh/h)	0	683	330	0	737	696	0	0	0	414	0	196
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1619	1483	0	1784	1715				1478	0	1437
Adj Flow Rate, veh/h	0	719	0	0	776	0				436	0	206
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	6	16	0	8	13				10	0	13
Cap, veh/h	0	2195		0	2419					537	0	264
Arrive On Green	0.00	0.71	0.00	0.00	1.00	0.00				0.20	0.00	0.22
Sat Flow, veh/h	0	3158	1257	0	3479	1454				2731	0	1218
Grp Volume(v), veh/h	0	719	0	0	776	0				436	0	206
Grp Sat Flow(s),veh/h/ln	0	1538	1257	0	1695	1454				1365	0	1218
Q Serve(g_s), s	0.0	8.7	0.0	0.0	0.0	0.0				15.3	0.0	16.0
Cycle Q Clear(g_c), s	0.0	8.7	0.0	0.0	0.0	0.0				15.3	0.0	16.0
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2195		0	2419					537	0	264
V/C Ratio(X)	0.00	0.33		0.00	0.32					0.81	0.00	0.78
Avail Cap(c_a), veh/h	0	2195		0	2419					969	0	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.72	0.00	0.00	0.67	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	5.4	0.0	0.0	0.0	0.0				38.4	0.0	36.9
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.2	0.0				2.3	0.0	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	4.4	0.0	0.0	0.1	0.0				9.0	0.0	15.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	5.6	0.0	0.0	0.2	0.0				40.7	0.0	40.7
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		719	A		776	A					642	
Approach Delay, s/veh		5.6			0.2						40.7	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		75.8		24.2		75.8						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		10.7		18.0		2.0						
Green Ext Time (p_c), s		15.1		1.7		9.0						

Intersection Summary	
HCM 6th Ctrl Delay	14.2
HCM 6th LOS	B

Notes

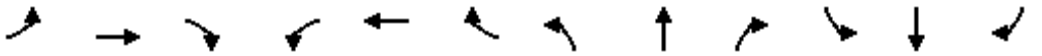
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	676	421	0	853	792	580	0	726	0	0	0
Future Volume (vph)	0	676	421	0	853	792	580	0	726	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.89	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		3111	1445		2951	1436	1445	1310	1331			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		3111	1445		2951	1436	1445	1310	1331			
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)	0	712	443	0	898	834	611	0	764	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	88	133	0	0	0
Lane Group Flow (vph)	0	712	443	0	898	834	477	367	310	0	0	0
Heavy Vehicles (%)	0%	9%	5%	0%	11%	2%	6%	0%	3%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		56.3	100.0		56.3	100.0	34.7	34.7	34.7			
Effective Green, g (s)		56.3	100.0		56.3	100.0	34.7	34.7	34.7			
Actuated g/C Ratio		0.56	1.00		0.56	1.00	0.35	0.35	0.35			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1751	1445		1661	1436	501	454	461			
v/s Ratio Prot		0.23			0.30		c0.33	0.28				
v/s Ratio Perm			0.31			c0.58			0.23			
v/c Ratio		0.41	0.31		0.54	0.58	0.95	0.81	0.67			
Uniform Delay, d1		12.4	0.0		13.7	0.0	31.8	29.6	27.8			
Progression Factor		1.73	1.00		1.08	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.7	0.5		0.8	1.1	28.4	10.0	3.5			
Delay (s)		22.1	0.5		15.7	1.1	60.2	39.6	31.3			
Level of Service		C	A		B	A	E	D	C			
Approach Delay (s)		13.8			8.7			44.1			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	676	421	0	853	792	580	0	726	0	0	0
Future Volume (veh/h)	0	676	421	0	853	792	580	0	726	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1770	1826	0	1551	1674	1473	1555	1514			
Adj Flow Rate, veh/h	0	712	0	0	898	0	783	0	369			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	9	5	0	11	2	6	0	3			
Cap, veh/h	0	1996		0	1749		888	0	406			
Arrive On Green	0.00	1.00	0.00	0.00	0.20	0.00	0.32	0.00	0.32			
Sat Flow, veh/h	0	3452	1547	0	3025	1419	2805	0	1283			
Grp Volume(v), veh/h	0	712	0	0	898	0	783	0	369			
Grp Sat Flow(s),veh/h/ln	0	1682	1547	0	1473	1419	1403	0	1283			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	27.2	0.0	26.5	0.0	27.6			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	27.2	0.0	26.5	0.0	27.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1996		0	1749		888	0	406			
V/C Ratio(X)	0.00	0.36		0.00	0.51		0.88	0.00	0.91			
Avail Cap(c_a), veh/h	0	1996		0	1749		996	0	455			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.87	0.00	0.00	0.51	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	27.3	0.0	32.4	0.0	32.8			
Incr Delay (d2), s/veh	0.0	0.4	0.0	0.0	0.6	0.0	8.4	0.0	20.2			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.2	0.0	0.0	14.7	0.0	14.9	0.0	16.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.4	0.0	0.0	27.9	0.0	40.8	0.0	53.0			
LnGrp LOS	A	A		A	C		D	A	D			
Approach Vol, veh/h		712	A		898	A		1152				
Approach Delay, s/veh		0.4			27.9			44.7				
Approach LOS		A			C			D				

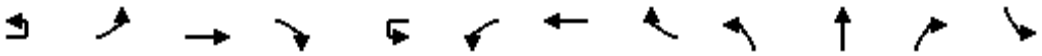
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		63.8				63.8		36.2				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				29.2		29.6				
Green Ext Time (p_c), s		8.8				14.9		2.1				

Intersection Summary		
HCM 6th Ctrl Delay	27.8	
HCM 6th LOS	C	

Notes

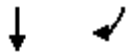
User approved volume balancing among the lanes for turning movement.

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



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	34	37	1147	392	6	252	1137	32	421	22	257	14
Future Volume (vph)	34	37	1147	392	6	252	1137	32	421	22	257	14
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1614	3079	1340		1502	2946		1519	1521	1347	1471
Flt Permitted		0.12	1.00	1.00		0.10	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		208	3079	1340		155	2946		1519	1521	1347	1471
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	35	39	1195	408	6	262	1184	33	439	23	268	15
RTOR Reduction (vph)	0	0	0	241	0	0	2	0	0	0	214	0
Lane Group Flow (vph)	0	74	1195	167	0	269	1215	0	228	234	54	15
Confl. Peds. (#/hr)											1	1
Heavy Vehicles (%)	3%	3%	8%	11%	9%	9%	11%	0%	4%	10%	9%	13%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		55.7	40.9	40.9		55.7	49.6		20.1	20.1	20.1	6.7
Effective Green, g (s)		55.7	40.9	40.9		55.7	49.6		20.1	20.1	20.1	6.7
Actuated g/C Ratio		0.56	0.41	0.41		0.56	0.50		0.20	0.20	0.20	0.07
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		201	1259	548		285	1461		305	305	270	98
v/s Ratio Prot		0.02	c0.39			0.14	c0.41		0.15	c0.15		0.01
v/s Ratio Perm		0.18		0.12		0.39					0.04	
v/c Ratio		0.37	0.95	0.30		0.94	0.83		0.75	0.77	0.20	0.15
Uniform Delay, d1		13.6	28.5	19.9		34.7	21.6		37.6	37.7	33.3	44.0
Progression Factor		1.14	1.12	2.23		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7	14.2	1.2		38.2	5.7		9.1	10.5	0.3	0.5
Delay (s)		16.3	46.1	45.7		72.9	27.3		46.7	48.3	33.5	44.5
Level of Service		B	D	D		E	C		D	D	C	D
Approach Delay (s)			44.7				35.6			42.4		
Approach LOS			D				D			D		

Intersection Summary			
HCM 2000 Control Delay	40.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	88.0%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	21	53
Future Volume (vph)	21	53
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1480	
Flt Permitted	1.00	
Satd. Flow (perm)	1480	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	22	55
RTOR Reduction (vph)	51	0
Lane Group Flow (vph)	26	0
Confl. Peds. (#/hr)		
Heavy Vehicles (%)	7%	5%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	6.7	
Effective Green, g (s)	6.7	
Actuated g/C Ratio	0.07	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	99	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.26	
Uniform Delay, d1	44.3	
Progression Factor	1.00	
Incremental Delay, d2	1.0	
Delay (s)	45.3	
Level of Service	D	
Approach Delay (s)	45.2	
Approach LOS	D	

Intersection Summary

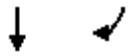
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	34	37	1147	392	6	252	1137	32	421	22	257	14
Future Volume (veh/h)	34	37	1147	392	6	252	1137	32	421	22	257	14
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1709	1641	1600		1578	1551	1551	1695	1614	1627	1573
Adj Flow Rate, veh/h		39	1195	0		262	1184	33	455	0	0	15
Peak Hour Factor		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		3	8	11		9	11	11	4	10	9	13
Cap, veh/h		250	1013			500	1741	49	530	0		70
Arrive On Green		0.02	0.32	0.00		0.28	0.59	0.59	0.16	0.00	0.00	0.05
Sat Flow, veh/h		1628	3118	1356		1503	2928	82	3229	0	1379	1498
Grp Volume(v), veh/h		39	1195	0		262	596	621	455	0	0	15
Grp Sat Flow(s),veh/h/ln		1628	1559	1356		1503	1473	1536	1615	0	1379	1498
Q Serve(g_s), s		0.9	32.5	0.0		9.3	27.5	27.5	13.7	0.0	0.0	1.0
Cycle Q Clear(g_c), s		0.9	32.5	0.0		9.3	27.5	27.5	13.7	0.0	0.0	1.0
Prop In Lane		1.00		1.00		1.00		0.05	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		250	1013			500	876	914	530	0		70
V/C Ratio(X)		0.16	1.18			0.52	0.68	0.68	0.86	0.00		0.22
Avail Cap(c_a), veh/h		445	1013			500	876	914	662	0		232
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.83	0.83	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		11.8	33.8	0.0		27.6	13.8	13.8	40.7	0.0	0.0	45.9
Incr Delay (d2), s/veh		0.2	89.5	0.0		0.8	4.2	4.1	8.7	0.0	0.0	1.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		0.6	35.3	0.0		8.8	14.4	14.9	10.1	0.0	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		11.9	123.2	0.0		28.4	18.0	17.9	49.3	0.0	0.0	47.1
LnGrp LOS		B	F			C	B	B	D	A		D
Approach Vol, veh/h			1234	A			1479			455	A	
Approach Delay, s/veh			119.7				19.8			49.3		
Approach LOS			F				B			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	33.0	37.0		9.2	6.0	64.0		20.9
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	11.3	34.5		3.3	2.9	29.5		15.7
Green Ext Time (p_c), s	0.2	0.0		0.0	0.0	2.7		0.6

Intersection Summary	
HCM 6th Ctrl Delay	62.8
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

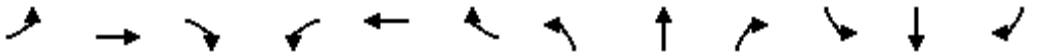


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	21	53
Future Volume (veh/h)	21	53
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1654	1654
Adj Flow Rate, veh/h	22	0
Peak Hour Factor	0.96	0.96
Percent Heavy Veh, %	7	7
Cap, veh/h	77	
Arrive On Green	0.05	0.00
Sat Flow, veh/h	1654	0
Grp Volume(v), veh/h	22	0
Grp Sat Flow(s),veh/h/ln	1654	0
Q Serve(g_s), s	1.3	0.0
Cycle Q Clear(g_c), s	1.3	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	77	
V/C Ratio(X)	0.29	
Avail Cap(c_a), veh/h	256	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	46.1	0.0
Incr Delay (d2), s/veh	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	47.6	0.0
LnGrp LOS	D	
Approach Vol, veh/h	37	A
Approach Delay, s/veh	47.4	
Approach LOS	D	

Timer - Assigned Phs

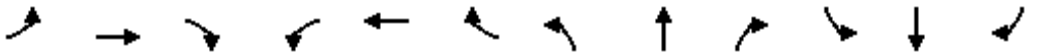
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	143	696	255	52	653	97	440	193	67	66	123	117
Future Volume (vph)	143	696	255	52	653	97	440	193	67	66	123	117
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1554	1591	1390	1363	1471	1378	1568	1699	1360	1385	1606	1288
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1554	1591	1390	1363	1471	1378	1568	1699	1360	1385	1606	1288
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	147	718	263	54	673	100	454	199	69	68	127	121
RTOR Reduction (vph)	0	0	54	0	0	45	0	0	53	0	0	106
Lane Group Flow (vph)	147	718	209	54	673	55	454	199	16	68	127	15
Confl. Peds. (#/hr)	4					4	1					1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	7%	10%	7%	22%	19%	5%	6%	3%	7%	20%	9%	13%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	17.2	64.6	89.7	8.9	56.3	56.3	25.1	31.5	31.5	10.0	16.4	16.4
Effective Green, g (s)	17.2	64.6	89.7	8.9	56.3	56.3	25.1	31.5	31.5	10.0	16.4	16.4
Actuated g/C Ratio	0.13	0.48	0.67	0.07	0.42	0.42	0.19	0.24	0.24	0.07	0.12	0.12
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	199	767	930	90	618	578	293	399	319	103	196	157
v/s Ratio Prot	c0.09	c0.45	0.04	0.04	c0.46		c0.29	0.12		0.05	c0.08	
v/s Ratio Perm			0.11			0.04			0.01			0.01
v/c Ratio	0.74	0.94	0.22	0.60	1.09	0.09	1.55	0.50	0.05	0.66	0.65	0.09
Uniform Delay, d1	56.2	32.8	8.6	60.8	38.9	23.5	54.5	44.4	39.7	60.3	56.0	52.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.7	19.1	0.1	8.7	62.8	0.1	263.5	0.7	0.0	13.4	6.4	0.2
Delay (s)	68.9	51.9	8.7	69.5	101.6	23.6	318.0	45.1	39.7	73.7	62.4	52.4
Level of Service	E	D	A	E	F	C	F	D	D	E	E	D
Approach Delay (s)		44.0			90.1			216.2			61.0	
Approach LOS		D			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	100.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	134.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	96.1%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



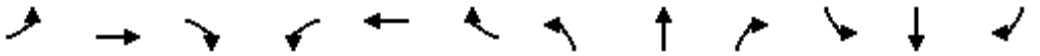
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	696	255	52	653	97	440	193	67	66	123	117
Future Volume (veh/h)	143	696	255	52	653	97	440	193	67	66	123	117
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1654	1614	1654	1450	1491	1682	1668	1709	1654	1477	1627	1573
Adj Flow Rate, veh/h	147	718	160	54	673	100	454	199	69	68	127	121
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	10	7	22	19	5	6	3	7	20	9	13
Cap, veh/h	171	795	963	65	643	612	311	432	346	82	187	153
Arrive On Green	0.11	0.49	0.49	0.05	0.43	0.43	0.20	0.25	0.25	0.06	0.12	0.12
Sat Flow, veh/h	1576	1614	1396	1381	1491	1419	1589	1709	1369	1407	1627	1327
Grp Volume(v), veh/h	147	718	160	54	673	100	454	199	69	68	127	121
Grp Sat Flow(s),veh/h/ln	1576	1614	1396	1381	1491	1419	1589	1709	1369	1407	1627	1327
Q Serve(g_s), s	11.7	51.9	5.1	4.9	55.0	5.5	25.0	12.6	5.1	6.1	9.6	11.3
Cycle Q Clear(g_c), s	11.7	51.9	5.1	4.9	55.0	5.5	25.0	12.6	5.1	6.1	9.6	11.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	171	795	963	65	643	612	311	432	346	82	187	153
V/C Ratio(X)	0.86	0.90	0.17	0.83	1.05	0.16	1.46	0.46	0.20	0.83	0.68	0.79
Avail Cap(c_a), veh/h	309	795	963	271	643	612	311	432	346	276	383	312
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.9	29.5	7.0	60.3	36.3	22.2	51.3	40.3	37.5	59.4	54.1	54.9
Incr Delay (d2), s/veh	9.1	14.1	0.2	18.0	48.3	0.2	223.0	0.6	0.2	14.2	3.2	6.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.8	30.8	2.8	3.7	38.4	3.5	45.1	9.2	3.1	4.5	7.4	7.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	65.0	43.7	7.1	78.3	84.6	22.4	274.2	40.9	37.7	73.6	57.3	61.6
LnGrp LOS	E	D	A	E	F	C	F	D	D	E	E	E
Approach Vol, veh/h		1025			827			722			316	
Approach Delay, s/veh		41.0			76.7			187.3			62.5	
Approach LOS		D			E			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	67.9	29.5	19.7	18.3	60.0	12.0	37.2
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	6.9	53.9	27.0	13.3	13.7	57.0	8.1	14.6
Green Ext Time (p_c), s	0.1	0.8	0.0	0.8	0.2	0.0	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	90.1
HCM 6th LOS	F

Notes

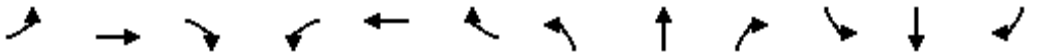
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	110	285	339	222	391	151	173	1027	388	106	471	142
Future Volume (vph)	110	285	339	222	391	151	173	1027	388	106	471	142
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1410	1524	1272	1554	1446		2941	2949	1344	1319	2762	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1410	1524	1272	1554	1446		2941	2949	1344	1319	2762	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	113	294	349	229	403	156	178	1059	400	109	486	146
RTOR Reduction (vph)	0	0	284	0	13	0	0	0	203	0	25	0
Lane Group Flow (vph)	113	294	65	229	546	0	178	1059	197	109	607	0
Heavy Vehicles (%)	14%	11%	13%	7%	14%	21%	6%	9%	7%	26%	16%	17%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	13.0	19.5	19.5	16.0	22.5		11.6	37.2	37.2	12.8	38.4	
Effective Green, g (s)	13.0	19.5	19.5	16.0	22.5		11.6	37.2	37.2	12.8	38.4	
Actuated g/C Ratio	0.12	0.19	0.19	0.15	0.21		0.11	0.35	0.35	0.12	0.37	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	174	283	236	236	309		324	1044	476	160	1010	
v/s Ratio Prot	0.08	0.19		c0.15	c0.38		0.06	c0.36		c0.08	0.22	
v/s Ratio Perm			0.05						0.15			
v/c Ratio	0.65	1.04	0.27	0.97	1.77		0.55	1.01	0.41	0.68	0.60	
Uniform Delay, d1	43.8	42.8	36.7	44.3	41.2		44.2	33.9	25.6	44.1	27.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.1	64.0	0.7	50.0	357.6		1.9	31.5	2.6	11.3	2.6	
Delay (s)	51.9	106.7	37.4	94.3	398.8		46.1	65.4	28.3	55.5	29.7	
Level of Service	D	F	D	F	F		D	E	C	E	C	
Approach Delay (s)		66.5			310.3			54.2			33.5	
Approach LOS		E			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	104.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	92.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	285	339	222	391	151	173	1027	388	106	471	142
Future Volume (veh/h)	110	285	339	222	391	151	173	1027	388	106	471	142
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1559	1600	1573	1654	1559	1559	1668	1627	1654	1395	1532	1532
Adj Flow Rate, veh/h	113	294	0	229	403	104	178	1059	245	109	486	94
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	14	11	13	7	14	14	6	9	7	26	16	16
Cap, veh/h	184	297		240	256	66	241	1174	532	128	969	186
Arrive On Green	0.12	0.19	0.00	0.15	0.21	0.21	0.08	0.38	0.38	0.10	0.40	0.40
Sat Flow, veh/h	1485	1600	1333	1576	1195	308	3082	3092	1402	1329	2434	468
Grp Volume(v), veh/h	113	294	0	229	0	507	178	1059	245	109	289	291
Grp Sat Flow(s),veh/h/ln	1485	1600	1333	1576	0	1503	1541	1546	1402	1329	1455	1447
Q Serve(g_s), s	7.6	19.2	0.0	15.1	0.0	22.5	5.9	33.9	8.4	8.5	15.7	15.9
Cycle Q Clear(g_c), s	7.6	19.2	0.0	15.1	0.0	22.5	5.9	33.9	8.4	8.5	15.7	15.9
Prop In Lane	1.00		1.00	1.00		0.21	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	184	297		240	0	322	241	1174	532	128	579	576
V/C Ratio(X)	0.61	0.99		0.95	0.00	1.57	0.74	0.90	0.46	0.85	0.50	0.50
Avail Cap(c_a), veh/h	184	297		240	0	322	455	1174	532	196	579	576
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.6	42.6	0.0	44.1	0.0	41.3	47.4	30.7	9.1	46.7	23.7	23.8
Incr Delay (d2), s/veh	6.0	49.2	0.0	45.2	0.0	272.7	4.4	11.3	2.9	18.8	3.1	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.5	17.1	0.0	13.7	0.0	50.9	4.3	20.0	5.0	6.2	9.6	9.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.6	91.9	0.0	89.3	0.0	314.0	51.8	42.0	11.9	65.5	26.8	26.9
LnGrp LOS	D	F		F	A	F	D	D	B	E	C	C
Approach Vol, veh/h		407	A		736			1482			689	
Approach Delay, s/veh		80.1			244.1			38.2			33.0	
Approach LOS		F			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	47.3	17.0	28.0	14.6	45.4	20.0	25.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	15.5	34.5	13.0	22.5	15.5	34.5	16.0	19.5
Max Q Clear Time (g_c+I1), s	7.9	17.9	9.6	24.5	10.5	35.9	17.1	21.2
Green Ext Time (p_c), s	0.3	5.9	0.1	0.0	0.1	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	88.0
HCM 6th LOS	F

Notes

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

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	20	20	454	191	20
Future Vol, veh/h	20	20	20	454	191	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	30	30	30	3	2	30
Mvmt Flow	22	22	22	493	208	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	756	219	230	0	-	0
Stage 1	219	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Critical Hdwy	6.7	6.5	4.4	-	-	-
Critical Hdwy Stg 1	5.7	-	-	-	-	-
Critical Hdwy Stg 2	5.7	-	-	-	-	-
Follow-up Hdwy	3.77	3.57	2.47	-	-	-
Pot Cap-1 Maneuver	338	755	1189	-	-	-
Stage 1	755	-	-	-	-	-
Stage 2	533	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	330	755	1189	-	-	-
Mov Cap-2 Maneuver	330	-	-	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	533	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.7	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1189	-	459	-	-
HCM Lane V/C Ratio	0.018	-	0.095	-	-
HCM Control Delay (s)	8.1	0	13.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	55	368	25	61	213
Future Vol, veh/h	23	55	368	25	61	213
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	10	7
Mvmt Flow	25	60	400	27	66	232

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	778	414	0	0	427	0
Stage 1	414	-	-	-	-	-
Stage 2	364	-	-	-	-	-
Critical Hdwy	7	6.5	-	-	4.2	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.29	-
Pot Cap-1 Maneuver	323	621	-	-	1091	-
Stage 1	627	-	-	-	-	-
Stage 2	666	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	301	621	-	-	1091	-
Mov Cap-2 Maneuver	301	-	-	-	-	-
Stage 1	627	-	-	-	-	-
Stage 2	620	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.3	0	1.9
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	473	1091	-
HCM Lane V/C Ratio	-	-	0.179	0.061	-
HCM Control Delay (s)	-	-	14.3	8.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.2	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	101	129	55	33	4
Future Vol, veh/h	17	101	129	55	33	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, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	6	9	11	0	0
Mvmt Flow	18	110	140	60	36	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	200	0	-	0	316	170
Stage 1	-	-	-	-	170	-
Stage 2	-	-	-	-	146	-
Critical Hdwy	4.19	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.281	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1331	-	-	-	681	879
Stage 1	-	-	-	-	865	-
Stage 2	-	-	-	-	886	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1331	-	-	-	671	879
Mov Cap-2 Maneuver	-	-	-	-	671	-
Stage 1	-	-	-	-	853	-
Stage 2	-	-	-	-	886	-

Approach	EB	WB	SB
HCM Control Delay, s	1.1	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1331	-	-	-	689
HCM Lane V/C Ratio	0.014	-	-	-	0.058
HCM Control Delay (s)	7.7	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	2.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	365	216	170	109	6
Future Vol, veh/h	7	365	216	170	109	6
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	5	9	14	28	25
Mvmt Flow	8	397	235	185	118	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	420	0	-	0	741	328
Stage 1	-	-	-	-	328	-
Stage 2	-	-	-	-	413	-
Critical Hdwy	4.1	-	-	-	6.68	6.45
Critical Hdwy Stg 1	-	-	-	-	5.68	-
Critical Hdwy Stg 2	-	-	-	-	5.68	-
Follow-up Hdwy	2.2	-	-	-	3.752	3.525
Pot Cap-1 Maneuver	1150	-	-	-	348	663
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	615	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1150	-	-	-	345	663
Mov Cap-2 Maneuver	-	-	-	-	345	-
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	615	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	20.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1150	-	-	-	354
HCM Lane V/C Ratio	0.007	-	-	-	0.353
HCM Control Delay (s)	8.2	0	-	-	20.6
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.6

Intersection	
Int Delay, s/veh	21.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	345	129	130	268	119	274
Future Vol, veh/h	345	129	130	268	119	274
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	97	97	97	97	97	97
Heavy Vehicles, %	10	2	2	10	4	2
Mvmt Flow	356	133	134	276	123	282

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	489	0	967	423
Stage 1	-	-	-	-	423	-
Stage 2	-	-	-	-	544	-
Critical Hdwy	-	-	4.12	-	6.44	6.22
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.218	-	3.536	3.318
Pot Cap-1 Maneuver	-	-	1074	-	280	631
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	578	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1074	-	239	631
Mov Cap-2 Maneuver	-	-	-	-	239	-
Stage 1	-	-	-	-	657	-
Stage 2	-	-	-	-	493	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	65.9
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	422	-	-	1074	-
HCM Lane V/C Ratio	0.96	-	-	0.125	-
HCM Control Delay (s)	65.9	-	-	8.8	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	11.3	-	-	0.4	-

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↗		↕			↕	
Traffic Vol, veh/h	17	601	1	1	354	27	1	1	1	44	1	44
Future Vol, veh/h	17	601	1	1	354	27	1	1	1	44	1	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	6	0	0	10	0	0	0	0	5	0	5
Mvmt Flow	18	646	1	1	381	29	1	1	1	47	1	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	410	0	0	647	0	0	1105	1095	647	1067	1066	381
Stage 1	-	-	-	-	-	-	683	683	-	383	383	-
Stage 2	-	-	-	-	-	-	422	412	-	684	683	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.15	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.545	4	3.345
Pot Cap-1 Maneuver	1160	-	-	948	-	-	190	215	475	197	224	660
Stage 1	-	-	-	-	-	-	442	452	-	634	616	-
Stage 2	-	-	-	-	-	-	613	598	-	434	452	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1160	-	-	948	-	-	172	210	475	192	218	660
Mov Cap-2 Maneuver	-	-	-	-	-	-	172	210	-	192	218	-
Stage 1	-	-	-	-	-	-	431	441	-	619	615	-
Stage 2	-	-	-	-	-	-	567	597	-	422	441	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	20.4	22.9
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	237	1160	-	-	948	-	-	296
HCM Lane V/C Ratio	0.014	0.016	-	-	0.001	-	-	0.323
HCM Control Delay (s)	20.4	8.2	0	-	8.8	0	-	22.9
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	1.4

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	36	598	12	17	92	337	210	2	4	42	381	6
Future Volume (vph)	36	598	12	17	92	337	210	2	4	42	381	6
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3107	1488		1222	3167	1365	1662	996		1541	1484
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3107	1488		1222	3167	1365	1662	996		1541	1484
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	650	13	18	100	366	228	2	4	46	414	7
RTOR Reduction (vph)	0	0	8	0	0	0	95	0	43	0	0	6
Lane Group Flow (vph)	39	650	5	0	118	366	133	2	7	0	236	226
Confl. Peds. (#/hr)											1	
Heavy Vehicles (%)	0%	7%	0%	36%	36%	5%	9%	0%	0%	56%	2%	50%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA	pt+ov	Split	NA		Split	NA
Protected Phases	5	2	2 8	1	1	6	6 4	8	8		4	4
Permitted Phases												
Actuated Green, G (s)	14.0	29.2	34.7		15.2	30.4	50.8	5.5	5.5		20.4	20.4
Effective Green, g (s)	14.0	29.2	34.7		15.2	30.4	50.8	5.5	5.5		20.4	20.4
Actuated g/C Ratio	0.16	0.34	0.40		0.18	0.35	0.59	0.06	0.06		0.24	0.24
Clearance Time (s)	4.0	4.5			4.0	4.5		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2			2.5	4.2		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	268	1045	594		213	1109	798	105	63		362	348
v/s Ratio Prot	0.02	c0.21	0.00		c0.10	0.12	0.10	0.00	c0.01		c0.15	0.15
v/s Ratio Perm												
v/c Ratio	0.15	0.62	0.01		0.55	0.33	0.17	0.02	0.11		0.65	0.65
Uniform Delay, d1	31.3	24.2	15.7		32.7	20.7	8.3	38.1	38.3		30.0	30.0
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.2	1.4	0.0		2.5	0.3	0.2	0.1	0.6		3.7	3.7
Delay (s)	31.4	25.5	15.7		35.2	21.0	8.4	38.2	38.9		33.7	33.6
Level of Service	C	C	B		D	C	A	D	D		C	C
Approach Delay (s)		25.7				19.3			38.9			33.7
Approach LOS		C				B			D			C

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	86.8	Sum of lost time (s)	16.5
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	43
Future Volume (vph)	43
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	47
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

08/14/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	36	598	12	17	92	337	210	2	4	42	381	6
Future Volume (veh/h)	36	598	12	17	92	337	210	2	4	42	381	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1654	1750		1259	1682	1627	1750	1750	1750	1717	1062
Adj Flow Rate, veh/h	39	650	13		100	366	228	2	4	46	463	0
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	7	0		36	5	9	0	0	0	2	50
Cap, veh/h	307	1095	606		114	799	614	100	7	83	638	207
Arrive On Green	0.18	0.35	0.35		0.09	0.25	0.25	0.06	0.06	0.06	0.20	0.00
Sat Flow, veh/h	1667	3143	1483		1199	3195	1379	1667	120	1381	3271	1062
Grp Volume(v), veh/h	39	650	13		100	366	228	2	0	50	463	0
Grp Sat Flow(s),veh/h/ln	1667	1572	1483		1199	1598	1379	1667	0	1501	1636	1062
Q Serve(g_s), s	1.1	9.3	0.3		4.5	5.3	6.0	0.1	0.0	1.8	7.3	0.0
Cycle Q Clear(g_c), s	1.1	9.3	0.3		4.5	5.3	6.0	0.1	0.0	1.8	7.3	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.92	1.00	
Lane Grp Cap(c), veh/h	307	1095	606		114	799	614	100	0	90	638	207
V/C Ratio(X)	0.13	0.59	0.02		0.88	0.46	0.37	0.02	0.00	0.56	0.73	0.00
Avail Cap(c_a), veh/h	610	2587	1309		438	2629	1404	914	0	824	2692	874
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.6	14.6	9.7		24.4	17.4	10.1	24.2	0.0	25.0	20.6	0.0
Incr Delay (d2), s/veh	0.1	0.8	0.0		14.5	0.6	0.6	0.1	0.0	3.9	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	5.4	0.2		3.0	3.3	4.4	0.0	0.0	1.2	4.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	15.4	9.7		38.9	18.0	10.7	24.3	0.0	28.9	21.8	0.0
LnGrp LOS	B	B	A		D	B	B	C	A	C	C	A
Approach Vol, veh/h		702				694			52			463
Approach Delay, s/veh		15.5				18.6			28.8			21.8
Approach LOS		B				B			C			C

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.2	23.6		14.7	14.6	18.2		7.3				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	6.5	11.3		9.3	3.1	8.0		3.8				
Green Ext Time (p_c), s	0.1	7.8		1.3	0.0	5.7		0.2				

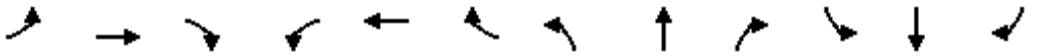
Intersection Summary	
HCM 6th Ctrl Delay	18.5
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

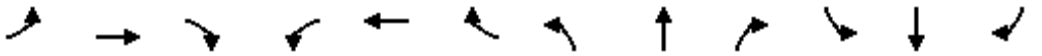
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	43
Future Volume (veh/h)	43
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1062
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	50
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer - Assigned Phs
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	655	383	0	537	705	0	0	0	450	0	222
Future Volume (vph)	0	655	383	0	537	705	0	0	0	450	0	222
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3090	1308		3055	1292				2859		1261
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3090	1308		3055	1292				2859		1261
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)	0	689	403	0	565	742	0	0	0	474	0	234
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	89
Lane Group Flow (vph)	0	689	403	0	565	742	0	0	0	474	0	145
Confl. Peds. (#/hr)						1						1
Heavy Vehicles (%)	0%	6%	12%	0%	11%	15%	0%	0%	0%	10%	0%	15%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		69.4	100.0		60.2	100.0				21.6		31.3
Effective Green, g (s)		69.4	100.0		60.2	100.0				21.6		33.3
Actuated g/C Ratio		0.69	1.00		0.60	1.00				0.22		0.33
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2144	1308		1839	1292				617		419
v/s Ratio Prot		0.22			0.18					c0.17		0.12
v/s Ratio Perm			0.31			c0.57						
v/c Ratio		0.32	0.31		0.31	0.57				0.77		0.35
Uniform Delay, d1		6.0	0.0		9.7	0.0				36.8		25.1
Progression Factor		1.00	1.00		0.88	1.00				1.00		1.00
Incremental Delay, d2		0.4	0.6		0.4	1.5				5.5		0.4
Delay (s)		6.4	0.6		8.9	1.5				42.3		25.5
Level of Service		A	A		A	A				D		C
Approach Delay (s)		4.3			4.7			0.0			36.8	
Approach LOS		A			A			A			D	

Intersection Summary			
HCM 2000 Control Delay	11.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	40.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	655	383	0	537	705	0	0	0	450	0	222
Future Volume (veh/h)	0	655	383	0	537	705	0	0	0	450	0	222
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1619	1537	0	1743	1688				1478	0	1410
Adj Flow Rate, veh/h	0	689	0	0	565	0				474	0	234
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	6	12	0	11	15				10	0	15
Cap, veh/h	0	2114		0	2275					608	0	290
Arrive On Green	0.00	0.69	0.00	0.00	1.00	0.00				0.22	0.00	0.24
Sat Flow, veh/h	0	3158	1303	0	3398	1430				2731	0	1195
Grp Volume(v), veh/h	0	689	0	0	565	0				474	0	234
Grp Sat Flow(s),veh/h/ln	0	1538	1303	0	1656	1430				1365	0	1195
Q Serve(g_s), s	0.0	9.0	0.0	0.0	0.0	0.0				16.3	0.0	18.4
Cycle Q Clear(g_c), s	0.0	9.0	0.0	0.0	0.0	0.0				16.3	0.0	18.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2114		0	2275					608	0	290
V/C Ratio(X)	0.00	0.33		0.00	0.25					0.78	0.00	0.81
Avail Cap(c_a), veh/h	0	2114		0	2275					969	0	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.67	1.67				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.71	0.00	0.00	0.76	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.3	0.0	0.0	0.0	0.0				36.5	0.0	35.6
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.2	0.0				1.6	0.0	4.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	4.8	0.0	0.0	0.1	0.0				9.4	0.0	17.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.6	0.0	0.0	0.2	0.0				38.2	0.0	40.5
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		689	A		565	A					708	
Approach Delay, s/veh		6.6			0.2						39.0	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		73.2		26.8		73.2						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		11.0		20.4		2.0						
Green Ext Time (p_c), s		14.3		1.8		6.1						

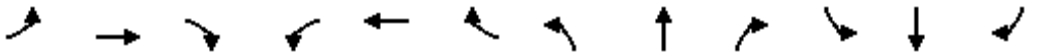
Intersection Summary		
HCM 6th Ctrl Delay		16.4
HCM 6th LOS		B

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	749	356	0	875	756	367	0	733	0	0	0
Future Volume (vph)	0	749	356	0	875	756	367	0	733	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.86	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3111	1431		2873	1407	1405	1283	1331			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3111	1431		2873	1407	1405	1283	1331			
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)	0	788	375	0	921	796	386	0	772	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	118	118	0	0	0
Lane Group Flow (vph)	0	788	375	0	921	796	347	292	283	0	0	0
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	0%	9%	6%	0%	14%	2%	9%	0%	3%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		60.9	100.0		60.9	100.0	30.1	30.1	30.1			
Effective Green, g (s)		60.9	100.0		60.9	100.0	30.1	30.1	30.1			
Actuated g/C Ratio		0.61	1.00		0.61	1.00	0.30	0.30	0.30			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1894	1431		1749	1407	422	386	400			
v/s Ratio Prot		0.25			0.32		c0.25	0.23				
v/s Ratio Perm			0.26			c0.57			0.21			
v/c Ratio		0.42	0.26		0.53	0.57	0.82	0.76	0.71			
Uniform Delay, d1		10.2	0.0		11.3	0.0	32.5	31.6	31.0			
Progression Factor		1.82	1.00		1.06	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.6	0.4		0.6	0.9	11.9	7.8	5.2			
Delay (s)		19.3	0.4		12.6	0.9	44.4	39.5	36.3			
Level of Service		B	A		B	A	D	D	D			
Approach Delay (s)		13.2			7.2			39.8			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	18.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	749	356	0	875	756	367	0	733	0	0	0
Future Volume (veh/h)	0	749	356	0	875	756	367	0	733	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1770	1812	0	1510	1674	1432	1555	1514			
Adj Flow Rate, veh/h	0	788	0	0	921	0	257	0	699			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	9	6	0	14	2	9	0	3			
Cap, veh/h	0	2046		0	1745		411	0	774			
Arrive On Green	0.00	1.00	0.00	0.00	0.41	0.00	0.30	0.00	0.30			
Sat Flow, veh/h	0	3452	1536	0	2945	1419	1364	0	2566			
Grp Volume(v), veh/h	0	788	0	0	921	0	257	0	699			
Grp Sat Flow(s),veh/h/ln	0	1682	1536	0	1435	1419	1364	0	1283			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	24.2	0.0	16.2	0.0	26.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	24.2	0.0	16.2	0.0	26.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2046		0	1745		411	0	774			
V/C Ratio(X)	0.00	0.39		0.00	0.53		0.62	0.00	0.90			
Avail Cap(c_a), veh/h	0	2046		0	1745		484	0	911			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.67	0.67	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.86	0.00	0.00	0.37	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	18.8	0.0	30.0	0.0	33.5			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.4	0.0	1.5	0.0	10.6			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.2	0.0	0.0	11.5	0.0	9.2	0.0	14.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	19.2	0.0	31.6	0.0	44.1			
LnGrp LOS	A	A		A	B		C	A	D			
Approach Vol, veh/h		788	A		921	A		956				
Approach Delay, s/veh		0.5			19.2			40.7				
Approach LOS		A			B			D				

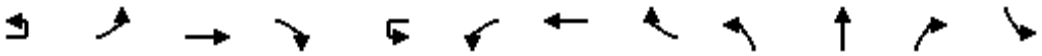
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		65.3				65.3		34.7				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				26.2		28.1				
Green Ext Time (p_c), s		10.1				16.4		2.0				

Intersection Summary												
HCM 6th Ctrl Delay			21.4									
HCM 6th LOS			C									

Notes

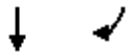
User approved volume balancing among the lanes for turning movement.

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



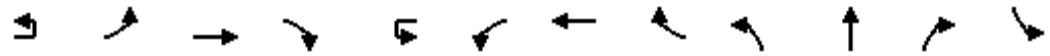
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	34	72	1230	530	5	320	1115	19	418	33	320	14
Future Volume (vph)	34	72	1230	530	5	320	1115	19	418	33	320	14
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1630	2995	1282		1489	2921		1490	1490	1390	1662
Flt Permitted		0.10	1.00	1.00		0.10	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		176	2995	1282		155	2921		1490	1490	1390	1662
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	37	77	1323	570	5	344	1199	20	449	35	344	15
RTOR Reduction (vph)	0	0	0	318	0	0	1	0	0	0	273	0
Lane Group Flow (vph)	0	114	1323	252	0	349	1218	0	242	242	71	15
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	2%	11%	16%	10%	10%	12%	0%	6%	13%	7%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		54.4	40.4	40.4		54.4	45.9		20.7	20.7	20.7	7.4
Effective Green, g (s)		54.4	40.4	40.4		54.4	45.9		20.7	20.7	20.7	7.4
Actuated g/C Ratio		0.54	0.40	0.40		0.54	0.46		0.21	0.21	0.21	0.07
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		219	1209	517		271	1340		308	308	287	122
v/s Ratio Prot		0.04	0.44			c0.18	0.42		c0.16	0.16		0.01
v/s Ratio Perm		0.24		0.20		c0.52					0.05	
v/c Ratio		0.52	1.09	0.49		1.29	0.91		0.79	0.79	0.25	0.12
Uniform Delay, d1		15.7	29.8	22.1		38.3	25.1		37.5	37.5	33.1	43.3
Progression Factor		1.00	1.13	2.00		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		1.6	54.7	3.0		154.4	10.6		12.0	12.0	0.3	0.3
Delay (s)		17.3	88.4	47.1		192.7	35.7		49.5	49.5	33.5	43.6
Level of Service		B	F	D		F	D		D	D	C	D
Approach Delay (s)			72.7				70.7			42.9		
Approach LOS			E				E			D		

Intersection Summary			
HCM 2000 Control Delay	65.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	26	64
Future Volume (vph)	26	64
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1316	
Flt Permitted	1.00	
Satd. Flow (perm)	1316	
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	28	69
RTOR Reduction (vph)	64	0
Lane Group Flow (vph)	33	0
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	11%	22%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.4	
Effective Green, g (s)	7.4	
Actuated g/C Ratio	0.07	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	97	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.34	
Uniform Delay, d1	44.0	
Progression Factor	1.00	
Incremental Delay, d2	1.5	
Delay (s)	45.5	
Level of Service	D	
Approach Delay (s)	45.3	
Approach LOS	D	

Intersection Summary



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	34	72	1230	530	5	320	1115	19	418	33	320	14
Future Volume (veh/h)	34	72	1230	530	5	320	1115	19	418	33	320	14
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1723	1600	1532		1565	1537	1537	1668	1573	1654	1750
Adj Flow Rate, veh/h		77	1323	0		344	1199	20	474	0	0	15
Peak Hour Factor		0.93	0.93	0.93		0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %		2	11	16		10	12	12	6	13	7	0
Cap, veh/h		255	988			482	1674	28	544	0		81
Arrive On Green		0.04	0.32	0.00		0.28	0.57	0.57	0.17	0.00	0.00	0.05
Sat Flow, veh/h		1641	3040	1298		1490	2939	49	3177	0	1402	1667
Grp Volume(v), veh/h		77	1323	0		344	596	623	474	0	0	15
Grp Sat Flow(s),veh/h/ln		1641	1520	1298		1490	1461	1527	1589	0	1402	1667
Q Serve(g_s), s		1.9	32.5	0.0		15.5	29.6	29.7	14.5	0.0	0.0	0.9
Cycle Q Clear(g_c), s		1.9	32.5	0.0		15.5	29.6	29.7	14.5	0.0	0.0	0.9
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		255	988			482	832	870	544	0		81
V/C Ratio(X)		0.30	1.34			0.71	0.72	0.72	0.87	0.00		0.18
Avail Cap(c_a), veh/h		427	988			482	832	870	651	0		258
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.83	0.83	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		13.5	33.7	0.0		30.3	15.6	15.6	40.4	0.0	0.0	45.7
Incr Delay (d2), s/veh		0.4	158.4	0.0		4.7	5.2	5.0	10.4	0.0	0.0	0.8
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		1.2	49.6	0.0		12.3	15.6	16.2	10.5	0.0	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		13.9	192.1	0.0		34.9	20.9	20.7	50.7	0.0	0.0	46.5
LnGrp LOS		B	F			C	C	C	D	A		D
Approach Vol, veh/h			1400	A			1563			474	A	
Approach Delay, s/veh			182.3				23.9			50.7		
Approach LOS			F				C			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	32.0	37.0		9.4	7.5	61.5		21.6
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	17.5	34.5		3.7	3.9	31.7		16.5
Green Ext Time (p_c), s	0.0	0.0		0.1	0.1	0.8		0.6

Intersection Summary	
HCM 6th Ctrl Delay	91.6
HCM 6th LOS	F

Notes

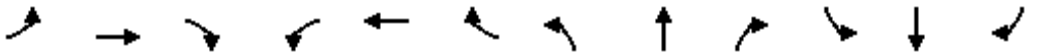
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	26	64
Future Volume (veh/h)	26	64
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1600	1600
Adj Flow Rate, veh/h	28	0
Peak Hour Factor	0.93	0.93
Percent Heavy Veh, %	11	11
Cap, veh/h	78	
Arrive On Green	0.05	0.00
Sat Flow, veh/h	1600	0
Grp Volume(v), veh/h	28	0
Grp Sat Flow(s),veh/h/ln	1600	0
Q Serve(g_s), s	1.7	0.0
Cycle Q Clear(g_c), s	1.7	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	78	
V/C Ratio(X)	0.36	
Avail Cap(c_a), veh/h	248	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	46.0	0.0
Incr Delay (d2), s/veh	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	48.1	0.0
LnGrp LOS	D	
Approach Vol, veh/h	43	A
Approach Delay, s/veh	47.5	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

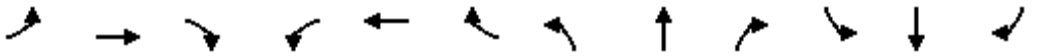
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	744	253	55	644	104	374	200	79	80	199	163
Future Volume (vph)	180	744	253	55	644	104	374	200	79	80	199	163
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1599	1535	1403	1409	1458	1443	1539	1683	1293	1458	1636	1252
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1599	1535	1403	1409	1458	1443	1539	1683	1293	1458	1636	1252
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	809	275	60	700	113	407	217	86	87	216	177
RTOR Reduction (vph)	0	0	55	0	0	48	0	0	59	0	0	149
Lane Group Flow (vph)	196	809	220	60	700	65	407	217	27	87	216	28
Confl. Peds. (#/hr)	5					5	2					2
Heavy Vehicles (%)	4%	14%	6%	18%	20%	0%	8%	4%	15%	14%	7%	16%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	21.1	67.7	92.8	9.7	56.3	56.3	25.1	34.7	34.7	13.5	23.1	23.1
Effective Green, g (s)	21.1	67.7	92.8	9.7	56.3	56.3	25.1	34.7	34.7	13.5	23.1	23.1
Actuated g/C Ratio	0.15	0.47	0.64	0.07	0.39	0.39	0.17	0.24	0.24	0.09	0.16	0.16
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	233	718	900	94	567	561	267	403	310	136	261	200
v/s Ratio Prot	c0.12	c0.53	0.04	0.04	c0.48		c0.26	0.13		0.06	c0.13	
v/s Ratio Perm			0.11			0.05			0.02			0.02
v/c Ratio	0.84	1.13	0.24	0.64	1.23	0.12	1.52	0.54	0.09	0.64	0.83	0.14
Uniform Delay, d1	60.1	38.4	11.0	65.7	44.1	28.2	59.8	48.0	42.6	63.2	58.8	52.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.7	74.2	0.1	11.8	120.2	0.2	254.2	1.1	0.1	8.4	18.6	0.2
Delay (s)	82.8	112.6	11.1	77.5	164.4	28.4	313.9	49.0	42.7	71.6	77.4	52.5
Level of Service	F	F	B	E	F	C	F	D	D	E	E	D
Approach Delay (s)		86.3			140.8			200.1			67.2	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	121.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.17		
Actuated Cycle Length (s)	144.6	Sum of lost time (s)	19.0
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



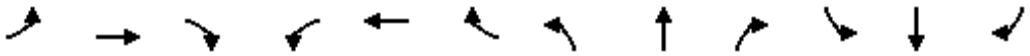
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	744	253	55	644	104	374	200	79	80	199	163
Future Volume (veh/h)	180	744	253	55	644	104	374	200	79	80	199	163
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1559	1668	1504	1477	1750	1641	1695	1545	1559	1654	1532
Adj Flow Rate, veh/h	196	809	166	60	700	113	407	217	86	87	216	112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	14	6	18	20	0	8	4	15	14	7	16
Cap, veh/h	218	747	928	73	583	582	281	445	343	105	254	198
Arrive On Green	0.14	0.48	0.48	0.05	0.40	0.40	0.18	0.26	0.26	0.07	0.15	0.15
Sat Flow, veh/h	1615	1559	1406	1433	1477	1474	1563	1695	1305	1485	1654	1290
Grp Volume(v), veh/h	196	809	166	60	700	113	407	217	86	87	216	112
Grp Sat Flow(s),veh/h/ln	1615	1559	1406	1433	1477	1474	1563	1695	1305	1485	1654	1290
Q Serve(g_s), s	16.6	66.8	6.4	5.8	55.0	7.0	25.0	15.1	7.2	8.1	17.7	11.2
Cycle Q Clear(g_c), s	16.6	66.8	6.4	5.8	55.0	7.0	25.0	15.1	7.2	8.1	17.7	11.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	218	747	928	73	583	582	281	445	343	105	254	198
V/C Ratio(X)	0.90	1.08	0.18	0.82	1.20	0.19	1.45	0.49	0.25	0.83	0.85	0.57
Avail Cap(c_a), veh/h	290	747	928	257	583	582	281	445	343	267	356	278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.2	36.2	9.2	65.5	42.1	27.6	57.1	43.4	40.5	63.9	57.4	54.6
Incr Delay (d2), s/veh	22.2	57.5	0.2	15.4	105.6	0.3	221.6	0.6	0.3	11.7	11.6	1.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.9	50.0	3.6	4.4	53.2	4.7	42.0	10.7	4.3	6.2	13.0	6.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.4	93.7	9.4	80.9	147.8	27.9	278.7	44.0	40.8	75.6	68.9	56.5
LnGrp LOS	F	F	A	F	F	C	F	D	D	E	E	E
Approach Vol, veh/h		1171			873			710			415	
Approach Delay, s/veh		79.7			127.7			178.2			67.0	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	71.8	29.5	26.4	23.3	60.0	14.3	41.6
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	7.8	68.8	27.0	19.7	18.6	57.0	10.1	17.1
Green Ext Time (p_c), s	0.1	0.0	0.0	1.0	0.2	0.0	0.1	1.0

Intersection Summary		
HCM 6th Ctrl Delay		113.3
HCM 6th LOS		F

Notes

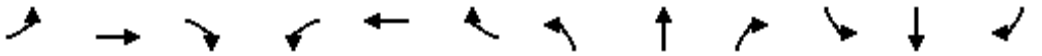
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	287	239	158	399	234	253	971	334	92	495	153
Future Volume (vph)	179	287	239	158	399	234	253	971	334	92	495	153
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1461	1422	1160	1446	1453		2887	2844	1141	1341	2765	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1461	1422	1160	1446	1453		2887	2844	1141	1341	2765	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	195	312	260	172	434	254	275	1055	363	100	538	166
RTOR Reduction (vph)	0	0	212	0	20	0	0	0	180	0	27	0
Lane Group Flow (vph)	195	312	48	172	668	0	275	1055	183	100	677	0
Heavy Vehicles (%)	10%	19%	24%	15%	16%	10%	8%	13%	26%	24%	16%	16%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	13.0	19.5	19.5	16.0	22.5		14.1	39.1	39.1	10.9	35.9	
Effective Green, g (s)	13.0	19.5	19.5	16.0	22.5		14.1	39.1	39.1	10.9	35.9	
Actuated g/C Ratio	0.12	0.19	0.19	0.15	0.21		0.13	0.37	0.37	0.10	0.34	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	180	264	215	220	311		387	1059	424	139	945	
v/s Ratio Prot	c0.13	0.22		c0.12	c0.46		c0.10	c0.37		0.07	0.24	
v/s Ratio Perm			0.04						0.16			
v/c Ratio	1.08	1.18	0.22	0.78	2.15		0.71	1.00	0.43	0.72	0.72	
Uniform Delay, d1	46.0	42.8	36.3	42.8	41.2		43.5	32.9	24.6	45.6	30.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	91.0	113.7	0.6	16.4	526.6		6.0	26.8	3.2	16.3	4.6	
Delay (s)	137.0	156.5	37.0	59.2	567.8		49.5	59.6	27.8	61.9	34.8	
Level of Service	F	F	D	E	F		D	E	C	E	C	
Approach Delay (s)		111.0			466.1			51.2			38.1	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	146.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	100.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	179	287	239	158	399	234	253	971	334	92	495	153
Future Volume (veh/h)	179	287	239	158	399	234	253	971	334	92	495	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1614	1491	1422	1545	1532	1532	1641	1573	1395	1422	1532	1532
Adj Flow Rate, veh/h	195	312	0	172	434	200	275	1055	200	100	538	112
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	19	24	15	16	16	8	13	26	24	16	16
Cap, veh/h	190	277		224	213	98	337	1161	459	119	876	182
Arrive On Green	0.12	0.19	0.00	0.15	0.21	0.21	0.11	0.39	0.39	0.09	0.37	0.37
Sat Flow, veh/h	1537	1491	1205	1472	992	457	3032	2988	1182	1355	2399	498
Grp Volume(v), veh/h	195	312	0	172	0	634	275	1055	200	100	325	325
Grp Sat Flow(s),veh/h/ln	1537	1491	1205	1472	0	1449	1516	1494	1182	1355	1455	1442
Q Serve(g_s), s	13.0	19.5	0.0	11.8	0.0	22.5	9.3	35.0	7.9	7.6	19.2	19.4
Cycle Q Clear(g_c), s	13.0	19.5	0.0	11.8	0.0	22.5	9.3	35.0	7.9	7.6	19.2	19.4
Prop In Lane	1.00		1.00	1.00		0.32	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	190	277		224	0	311	337	1161	459	119	531	526
V/C Ratio(X)	1.02	1.13		0.77	0.00	2.04	0.82	0.91	0.44	0.84	0.61	0.62
Avail Cap(c_a), veh/h	190	277		224	0	311	448	1161	459	200	531	526
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	42.8	0.0	42.7	0.0	41.3	45.6	30.3	8.6	47.2	27.3	27.3
Incr Delay (d2), s/veh	71.9	92.7	0.0	14.7	0.0	479.7	8.5	12.0	3.0	14.5	5.2	5.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.6	21.5	0.0	8.8	0.0	78.2	6.9	20.1	0.7	5.4	11.6	11.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	117.9	135.5	0.0	57.4	0.0	521.0	54.1	42.3	11.6	61.7	32.5	32.7
LnGrp LOS	F	F		E	A	F	D	D	B	E	C	C
Approach Vol, veh/h		507	A		806			1530			750	
Approach Delay, s/veh		128.7			422.1			40.4			36.4	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.2	43.8	17.0	28.0	13.7	46.3	20.0	25.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	15.5	34.5	13.0	22.5	15.5	34.5	16.0	19.5
Max Q Clear Time (g_c+I1), s	11.3	21.4	15.0	24.5	9.6	37.0	13.8	21.5
Green Ext Time (p_c), s	0.4	5.7	0.0	0.0	0.1	0.0	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	137.7
HCM 6th LOS	F

Notes

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

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	20	20	373	240	20
Future Vol, veh/h	20	20	20	373	240	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	50	50	50	3	2	50
Mvmt Flow	22	22	22	405	261	22

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	721	272	283	0	-	0
Stage 1	272	-	-	-	-	-
Stage 2	449	-	-	-	-	-
Critical Hdwy	6.9	6.7	4.6	-	-	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.75	2.65	-	-	-
Pot Cap-1 Maneuver	331	665	1048	-	-	-
Stage 1	675	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	322	665	1048	-	-	-
Mov Cap-2 Maneuver	322	-	-	-	-	-
Stage 1	657	-	-	-	-	-
Stage 2	553	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	0.4	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1048	-	434	-	-
HCM Lane V/C Ratio	0.021	-	0.1	-	-
HCM Control Delay (s)	8.5	0	14.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	35	368	39	43	193
Future Vol, veh/h	26	35	368	39	43	193
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	6	0	6	0	4	3
Mvmt Flow	28	37	391	41	46	205

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	709	412	0	0	432	0
Stage 1	412	-	-	-	-	-
Stage 2	297	-	-	-	-	-
Critical Hdwy	7.06	6.5	-	-	4.14	-
Critical Hdwy Stg 1	6.06	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.236	-
Pot Cap-1 Maneuver	351	623	-	-	1117	-
Stage 1	616	-	-	-	-	-
Stage 2	709	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	335	623	-	-	1117	-
Mov Cap-2 Maneuver	335	-	-	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	676	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.2	0	1.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	456	1117	-
HCM Lane V/C Ratio	-	-	0.142	0.041	-
HCM Control Delay (s)	-	-	14.2	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	171	95	24	38	10
Future Vol, veh/h	7	171	95	24	38	10
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, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	3	3	0	4	0
Mvmt Flow	8	186	103	26	41	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	129	0	-	0	318	116
Stage 1	-	-	-	-	116	-
Stage 2	-	-	-	-	202	-
Critical Hdwy	4.1	-	-	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.2	-	-	-	3.536	3.3
Pot Cap-1 Maneuver	1469	-	-	-	671	942
Stage 1	-	-	-	-	904	-
Stage 2	-	-	-	-	827	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1469	-	-	-	667	942
Mov Cap-2 Maneuver	-	-	-	-	667	-
Stage 1	-	-	-	-	899	-
Stage 2	-	-	-	-	827	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1469	-	-	-	710
HCM Lane V/C Ratio	0.005	-	-	-	0.073
HCM Control Delay (s)	7.5	0	-	-	10.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	273	183	117	140	25
Future Vol, veh/h	17	273	183	117	140	25
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	94	94	94	94	94	94
Heavy Vehicles, %	9	3	2	4	1	18
Mvmt Flow	18	290	195	124	149	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	319	0	-	0	583	257
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	326	-
Critical Hdwy	4.19	-	-	-	6.41	6.38
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.281	-	-	-	3.509	3.462
Pot Cap-1 Maneuver	1202	-	-	-	476	744
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	734	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1202	-	-	-	467	744
Mov Cap-2 Maneuver	-	-	-	-	467	-
Stage 1	-	-	-	-	774	-
Stage 2	-	-	-	-	734	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	16.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1202	-	-	-	495
HCM Lane V/C Ratio	0.015	-	-	-	0.355
HCM Control Delay (s)	8	0	-	-	16.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.6

Intersection	
Int Delay, s/veh	41.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	311	102	301	199	101	183
Future Vol, veh/h	311	102	301	199	101	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	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	1	1	5	9	3
Mvmt Flow	338	111	327	216	110	199

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	449	0	1264	394
Stage 1	-	-	-	-	394	-
Stage 2	-	-	-	-	870	-
Critical Hdwy	-	-	4.11	-	6.49	6.23
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	-	-	2.209	-	3.581	3.327
Pot Cap-1 Maneuver	-	-	1117	-	181	653
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	399	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1117	-	121	653
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	666	-
Stage 2	-	-	-	-	266	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.8	166.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	255	-	-	1117	-
HCM Lane V/C Ratio	1.211	-	-	0.293	-
HCM Control Delay (s)	166.2	-	-	9.6	0
HCM Lane LOS	F	-	-	A	A
HCM 95th %tile Q(veh)	14.6	-	-	1.2	-

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↰	↱		↕			↕	
Traffic Vol, veh/h	50	444	1	1	475	76	1	3	3	59	1	25
Future Vol, veh/h	50	444	1	1	475	76	1	3	3	59	1	25
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	2	0	0	3	2	0	0	0	0	0	0
Mvmt Flow	54	483	1	1	516	83	1	3	3	64	1	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	599	0	0	484	0	0	1168	1193	484	1113	1110	518
Stage 1	-	-	-	-	-	-	592	592	-	518	518	-
Stage 2	-	-	-	-	-	-	576	601	-	595	592	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	988	-	-	1089	-	-	172	188	587	187	211	562
Stage 1	-	-	-	-	-	-	496	497	-	544	536	-
Stage 2	-	-	-	-	-	-	506	493	-	494	497	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	988	-	-	1089	-	-	153	174	587	173	195	561
Mov Cap-2 Maneuver	-	-	-	-	-	-	153	174	-	173	195	-
Stage 1	-	-	-	-	-	-	459	460	-	503	535	-
Stage 2	-	-	-	-	-	-	479	493	-	451	460	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	20.4	33.1
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	242	988	-	-	1089	-	-	218
HCM Lane V/C Ratio	0.031	0.055	-	-	0.001	-	-	0.424
HCM Control Delay (s)	20.4	8.9	0	-	8.3	0	-	33.1
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.1	0.2	-	-	0	-	-	2

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	76	418	12	22	28	471	237	11	4	51	799	1
Future Volume (vph)	76	418	12	22	28	471	237	11	4	51	799	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.98
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3228	1460		1108	3197	1447	1662	1230		1541	1520
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3228	1460		1108	3197	1447	1662	1230		1541	1520
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	83	454	13	24	30	512	258	12	4	55	868	1
RTOR Reduction (vph)	0	0	9	0	0	0	78	0	52	0	0	3
Lane Group Flow (vph)	83	454	4	0	54	512	180	12	7	0	477	465
Confl. Peds. (#/hr)	1		1		1		1	1				
Confl. Bikes (#/hr)			1							1		
Heavy Vehicles (%)	0%	3%	0%	50%	50%	4%	2%	0%	0%	22%	2%	0%
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Split	NA		Split	NA
Protected Phases	5	2	8	1	1	6	4	8	8		4	4
Permitted Phases			2				6					
Actuated Green, G (s)	8.5	24.0	29.4		8.5	24.0	70.6	5.4	5.4		46.6	46.6
Effective Green, g (s)	8.5	24.0	29.4		8.5	24.0	70.6	5.4	5.4		46.6	46.6
Actuated g/C Ratio	0.08	0.24	0.29		0.08	0.24	0.70	0.05	0.05		0.46	0.46
Clearance Time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2	2.5		2.5	4.2	2.5	2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	139	767	424		93	759	1011	88	65		710	701
v/s Ratio Prot	0.05	c0.14	0.00		0.05	c0.16	0.08	c0.01	0.01		c0.31	0.31
v/s Ratio Perm			0.00				0.04					
v/c Ratio	0.60	0.59	0.01		0.58	0.67	0.18	0.14	0.11		0.67	0.66
Uniform Delay, d1	44.6	34.2	25.4		44.5	35.0	5.2	45.6	45.5		21.2	21.1
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.7	1.5	0.0		7.4	2.7	0.1	0.5	0.5		2.3	2.1
Delay (s)	50.3	35.7	25.5		52.0	37.6	5.3	46.1	46.0		23.5	23.2
Level of Service	D	D	C		D	D	A	D	D		C	C
Approach Delay (s)		37.6				28.4			46.0			23.4
Approach LOS		D				C			D			C

Intersection Summary			
HCM 2000 Control Delay	29.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	101.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	70
Future Volume (vph)	70
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	76
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

08/12/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	76	418	12	22	28	471	237	11	4	51	799	1
Future Volume (veh/h)	76	418	12	22	28	471	237	11	4	51	799	1
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1709	1750		1068	1695	1723	1750	1750	1750	1717	1745
Adj Flow Rate, veh/h	83	454	13		30	512	258	12	4	55	940	0
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	0		50	4	2	0	0	0	2	0
Cap, veh/h	106	1043	567		32	909	906	114	7	94	1107	591
Arrive On Green	0.06	0.32	0.32		0.03	0.28	0.28	0.07	0.07	0.07	0.34	0.00
Sat Flow, veh/h	1667	3247	1449		1017	3221	1457	1667	100	1373	3271	1745
Grp Volume(v), veh/h	83	454	13		30	512	258	12	0	59	940	0
Grp Sat Flow(s),veh/h/ln	1667	1624	1449		1017	1611	1457	1667	0	1473	1636	1745
Q Serve(g_s), s	3.4	7.6	0.4		2.0	9.3	5.6	0.5	0.0	2.7	18.3	0.0
Cycle Q Clear(g_c), s	3.4	7.6	0.4		2.0	9.3	5.6	0.5	0.0	2.7	18.3	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.93	1.00	
Lane Grp Cap(c), veh/h	106	1043	567		32	909	906	114	0	101	1107	591
V/C Ratio(X)	0.79	0.44	0.02		0.93	0.56	0.28	0.11	0.00	0.59	0.85	0.00
Avail Cap(c_a), veh/h	485	2127	1051		296	2110	1449	728	0	643	2143	1143
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.7	18.4	12.9		33.2	21.0	6.0	30.0	0.0	31.1	21.1	0.0
Incr Delay (d2), s/veh	9.2	0.4	0.0		47.5	0.8	0.3	0.3	0.0	4.0	1.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.8	4.9	0.2		1.6	6.1	6.2	0.3	0.0	1.8	10.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	40.9	18.8	12.9		80.6	21.9	6.3	30.3	0.0	35.0	22.5	0.0
LnGrp LOS	D	B	B		F	C	A	C	A	D	C	A
Approach Vol, veh/h		550				800			71			940
Approach Delay, s/veh		22.0				19.1			34.2			22.5
Approach LOS		C				B			C			C

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	26.6		27.3	8.9	23.9		8.7				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	4.0	9.6		20.3	5.4	11.3		4.7				
Green Ext Time (p_c), s	0.0	5.1		2.9	0.1	7.7		0.3				

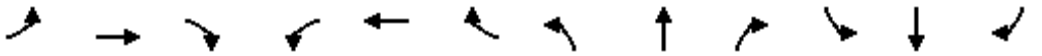
Intersection Summary		
HCM 6th Ctrl Delay		21.6
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

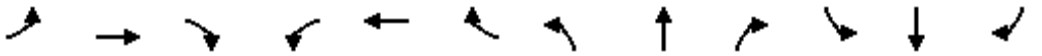
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	70
Future Volume (veh/h)	70
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1745
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	0
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	945	345	0	929	632	0	0	0	760	0	351
Future Volume (vph)	0	945	345	0	929	632	0	0	0	760	0	351
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3180	1409		3325	1429				3083		1395
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3180	1409		3325	1429				3083		1395
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)	0	995	363	0	978	665	0	0	0	800	0	369
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	15
Lane Group Flow (vph)	0	995	363	0	978	665	0	0	0	800	0	354
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	3%	4%	0%	2%	4%	0%	0%	0%	2%	0%	4%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		60.5	100.0		50.7	100.0				30.5		40.8
Effective Green, g (s)		60.5	100.0		50.7	100.0				30.5		42.8
Actuated g/C Ratio		0.60	1.00		0.51	1.00				0.30		0.43
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1923	1409		1685	1429				940		597
v/s Ratio Prot		0.31			c0.29					c0.26		c0.25
v/s Ratio Perm			0.26			0.47						
v/c Ratio		0.52	0.26		0.58	0.47				0.85		0.59
Uniform Delay, d1		11.4	0.0		17.2	0.0				32.6		21.9
Progression Factor		1.00	1.00		0.99	1.00				1.00		1.00
Incremental Delay, d2		1.0	0.4		1.1	0.8				7.4		1.3
Delay (s)		12.4	0.4		18.1	0.8				40.0		23.3
Level of Service		B	A		B	A				D		C
Approach Delay (s)		9.2			11.1			0.0			34.7	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	59.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



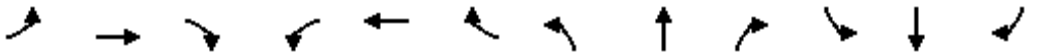
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	945	345	0	929	632	0	0	0	760	0	351
Future Volume (veh/h)	0	945	345	0	929	632	0	0	0	760	0	351
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1660	1647	0	1867	1840				1587	0	1560
Adj Flow Rate, veh/h	0	995	0	0	978	0				800	0	264
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	4	0	2	4				2	0	4
Cap, veh/h	0	1915		0	2154					888	0	427
Arrive On Green	0.00	0.61	0.00	0.00	1.00	0.00				0.30	0.00	0.32
Sat Flow, veh/h	0	3237	1395	0	3641	1559				2932	0	1322
Grp Volume(v), veh/h	0	995	0	0	978	0				800	0	264
Grp Sat Flow(s),veh/h/ln	0	1577	1395	0	1774	1559				1466	0	1322
Q Serve(g_s), s	0.0	18.1	0.0	0.0	0.0	0.0				26.2	0.0	16.9
Cycle Q Clear(g_c), s	0.0	18.1	0.0	0.0	0.0	0.0				26.2	0.0	16.9
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1915		0	2154					888	0	427
V/C Ratio(X)	0.00	0.52		0.00	0.45					0.90	0.00	0.62
Avail Cap(c_a), veh/h	0	1915		0	2154					1041	0	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.74	0.00	0.00	0.70	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	11.3	0.0	0.0	0.0	0.0				33.4	0.0	28.6
Incr Delay (d2), s/veh	0.0	0.7	0.0	0.0	0.5	0.0				9.3	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	9.5	0.0	0.0	0.3	0.0				15.5	0.0	18.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	12.0	0.0	0.0	0.5	0.0				42.7	0.0	30.1
LnGrp LOS	A	B		A	A					D	A	C
Approach Vol, veh/h		995	A		978	A					1064	
Approach Delay, s/veh		12.0			0.5						39.6	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		65.2		34.8		65.2						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		20.1		28.2		2.0						
Green Ext Time (p_c), s		19.8		2.1		12.0						

Intersection Summary												
HCM 6th Ctrl Delay			18.0									
HCM 6th LOS			B									

Notes

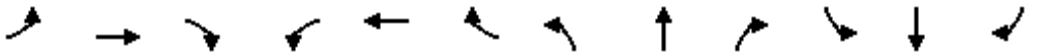
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1450	255	0	1277	351	284	0	545	0	0	0
Future Volume (vph)	0	1450	255	0	1277	351	284	0	545	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.86	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (prot)		3325	1402		3180	1392	1487	1279	1318			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	1.00	1.00			
Satd. Flow (perm)		3325	1402		3180	1392	1487	1279	1318			
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)	0	1526	268	0	1344	369	299	0	574	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	19	19	0	0	0
Lane Group Flow (vph)	0	1526	268	0	1344	369	269	287	279	0	0	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	2%	6%	0%	3%	3%	3%	0%	4%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		63.6	100.0		63.6	100.0	27.4	27.4	27.4			
Effective Green, g (s)		63.6	100.0		63.6	100.0	27.4	27.4	27.4			
Actuated g/C Ratio		0.64	1.00		0.64	1.00	0.27	0.27	0.27			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2114	1402		2022	1392	407	350	361			
v/s Ratio Prot		c0.46			0.42		0.18	c0.22				
v/s Ratio Perm			0.19			0.27			0.21			
v/c Ratio		0.72	0.19		0.66	0.27	0.66	0.82	0.77			
Uniform Delay, d1		12.2	0.0		11.5	0.0	32.2	34.0	33.4			
Progression Factor		1.57	1.00		0.90	1.00	1.00	1.00	1.00			
Incremental Delay, d2		1.7	0.2		1.1	0.3	3.6	13.9	9.5			
Delay (s)		20.9	0.2		11.4	0.3	35.8	47.9	43.0			
Level of Service		C	A		B	A	D	D	D			
Approach Delay (s)		17.8			9.0			42.5			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	75.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰	✥	↱			
Traffic Volume (veh/h)	0	1450	255	0	1277	351	284	0	545	0	0	0
Future Volume (veh/h)	0	1450	255	0	1277	351	284	0	545	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1867	1812	0	1660	1660	1514	1555	1500			
Adj Flow Rate, veh/h	0	1526	0	0	1344	0	422	0	232			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	2	6	0	3	3	3	0	4			
Cap, veh/h	0	2475		0	2200		613	0	270			
Arrive On Green	0.00	1.00	0.00	0.00	0.47	0.00	0.21	0.00	0.21			
Sat Flow, veh/h	0	3641	1536	0	3237	1407	2883	0	1271			
Grp Volume(v), veh/h	0	1526	0	0	1344	0	422	0	232			
Grp Sat Flow(s),veh/h/ln	0	1774	1536	0	1577	1407	1442	0	1271			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	31.8	0.0	13.5	0.0	17.6			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	31.8	0.0	13.5	0.0	17.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2475		0	2200		613	0	270			
V/C Ratio(X)	0.00	0.62		0.00	0.61		0.69	0.00	0.86			
Avail Cap(c_a), veh/h	0	2475		0	2200		1024	0	451			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.67	0.67	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.69	0.00	0.00	0.47	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	16.5	0.0	36.3	0.0	37.9			
Incr Delay (d2), s/veh	0.0	0.8	0.0	0.0	0.6	0.0	1.0	0.0	6.7			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.5	0.0	0.0	16.2	0.0	8.4	0.0	9.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.8	0.0	0.0	17.1	0.0	37.4	0.0	44.7			
LnGrp LOS	A	A		A	B		D	A	D			
Approach Vol, veh/h		1526	A		1344	A		654				
Approach Delay, s/veh		0.8			17.1			40.0				
Approach LOS		A			B			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		74.3				74.3		25.7				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				33.8		19.6				
Green Ext Time (p_c), s		27.4				17.8		1.7				

Intersection Summary												
HCM 6th Ctrl Delay			14.3									
HCM 6th LOS			B									

Notes

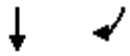
User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	33	108	1285	193	11	226	967	22	517	15	299	41
Future Volume (vph)	33	108	1285	193	11	226	967	22	517	15	299	41
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.98	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95
Satd. Flow (prot)		1583	3228	1382		1621	3141		1504	1516	1451	1662
Flt Permitted		0.13	1.00	1.00		0.11	1.00		0.95	0.95	1.00	0.95
Satd. Flow (perm)		211	3228	1382		188	3141		1504	1516	1451	1662
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)	35	114	1353	203	12	238	1018	23	544	16	315	43
RTOR Reduction (vph)	0	0	0	118	0	0	1	0	0	0	242	0
Lane Group Flow (vph)	0	149	1353	85	0	250	1040	0	277	283	73	43
Confl. Peds. (#/hr)				2		2			2		3	3
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	5%	5%	3%	5%	1%	1%	4%	0%	5%	0%	1%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		50.3	36.3	36.3		50.3	40.2		23.2	23.2	23.2	9.0
Effective Green, g (s)		50.3	36.3	36.3		50.3	40.2		23.2	23.2	23.2	9.0
Actuated g/C Ratio		0.50	0.36	0.36		0.50	0.40		0.23	0.23	0.23	0.09
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		244	1171	501		295	1262		348	351	336	149
v/s Ratio Prot		0.06	c0.42			0.12	c0.33		0.18	c0.19		0.03
v/s Ratio Perm		0.24		0.06		0.31					0.05	
v/c Ratio		0.61	1.16	0.17		0.85	0.82		0.80	0.81	0.22	0.29
Uniform Delay, d1		17.1	31.9	21.6		38.4	26.7		36.2	36.3	31.1	42.5
Progression Factor		0.94	0.98	0.67		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		2.7	77.2	0.5		19.4	6.2		11.5	12.3	0.2	0.8
Delay (s)		18.8	108.6	14.9		57.8	32.9		47.7	48.6	31.3	43.3
Level of Service		B	F	B		E	C		D	D	C	D
Approach Delay (s)			89.6				37.7			42.1		
Approach LOS			F				D			D		

Intersection Summary			
HCM 2000 Control Delay	60.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	98.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	28	111
Future Volume (vph)	28	111
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.88	
Flt Protected	1.00	
Satd. Flow (prot)	1461	
Flt Permitted	1.00	
Satd. Flow (perm)	1461	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	29	117
RTOR Reduction (vph)	106	0
Lane Group Flow (vph)	40	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		1
Heavy Vehicles (%)	0%	5%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	9.0	
Effective Green, g (s)	9.0	
Actuated g/C Ratio	0.09	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	131	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.30	
Uniform Delay, d1	42.6	
Progression Factor	1.00	
Incremental Delay, d2	0.9	
Delay (s)	43.5	
Level of Service	D	
Approach Delay (s)	43.5	
Approach LOS	D	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	33	108	1285	193	11	226	967	22	517	15	299	41
Future Volume (veh/h)	33	108	1285	193	11	226	967	22	517	15	299	41
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1682	1709	1682		1688	1647	1647	1682	1750	1736	1750
Adj Flow Rate, veh/h		114	1353	0		238	1018	23	555	0	0	43
Peak Hour Factor		0.95	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %		5	3	5		1	4	4	5	0	1	0
Cap, veh/h		305	1055			454	1611	36	618	0		107
Arrive On Green		0.07	0.43	0.00		0.24	0.52	0.52	0.19	0.00	0.00	0.06
Sat Flow, veh/h		1602	3247	1425		1607	3127	71	3203	0	1471	1667
Grp Volume(v), veh/h		114	1353	0		238	509	532	555	0	0	43
Grp Sat Flow(s),veh/h/ln		1602	1624	1425		1607	1564	1634	1602	0	1471	1667
Q Serve(g_s), s		3.3	32.5	0.0		8.0	23.4	23.4	16.9	0.0	0.0	2.5
Cycle Q Clear(g_c), s		3.3	32.5	0.0		8.0	23.4	23.4	16.9	0.0	0.0	2.5
Prop In Lane		1.00		1.00		1.00		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		305	1055			454	806	842	618	0		107
V/C Ratio(X)		0.37	1.28			0.52	0.63	0.63	0.90	0.00		0.40
Avail Cap(c_a), veh/h		445	1055			454	806	842	657	0		258
HCM Platoon Ratio		1.33	1.33	1.33		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.61	0.61	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		13.3	28.4	0.0		30.9	17.4	17.4	39.4	0.0	0.0	44.9
Incr Delay (d2), s/veh		0.3	131.5	0.0		0.9	3.7	3.6	14.4	0.0	0.0	1.8
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		2.0	43.5	0.0		8.5	13.7	14.1	12.4	0.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		13.6	159.9	0.0		31.8	21.2	21.0	53.8	0.0	0.0	46.7
LnGrp LOS		B	F			C	C	C	D	A		D
Approach Vol, veh/h			1467	A			1279			555	A	
Approach Delay, s/veh			148.5				23.1			53.8		
Approach LOS			F				C			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.3	37.0		10.9	9.2	56.0		23.8
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	10.0	34.5		4.5	5.3	25.4		18.9
Green Ext Time (p_c), s	0.2	0.0		0.1	0.1	5.7		0.3

Intersection Summary	
HCM 6th Ctrl Delay	83.2
HCM 6th LOS	F

Notes

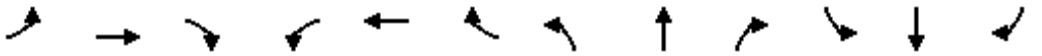
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	28	111
Future Volume (veh/h)	28	111
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1750	1750
Adj Flow Rate, veh/h	29	0
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	0	0
Cap, veh/h	113	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1750	0
Grp Volume(v), veh/h	29	0
Grp Sat Flow(s),veh/h/ln	1750	0
Q Serve(g_s), s	1.6	0.0
Cycle Q Clear(g_c), s	1.6	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	113	
V/C Ratio(X)	0.26	
Avail Cap(c_a), veh/h	271	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	44.5	0.0
Incr Delay (d2), s/veh	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	45.4	0.0
LnGrp LOS	D	
Approach Vol, veh/h	72	A
Approach Delay, s/veh	46.2	
Approach LOS	D	

Timer - Assigned Phs

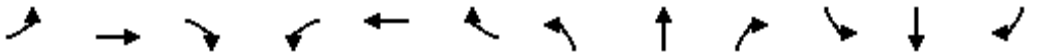
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	682	479	115	635	99	298	153	81	113	232	116
Future Volume (vph)	194	682	479	115	635	99	298	153	81	113	232	116
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	1683	1473	1646	1683	1440	1630	1750	1430	1646	1733	1375
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1630	1683	1473	1646	1683	1440	1630	1750	1430	1646	1733	1375
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	211	741	521	125	690	108	324	166	88	123	252	126
RTOR Reduction (vph)	0	0	117	0	0	49	0	0	67	0	0	104
Lane Group Flow (vph)	211	741	404	125	690	59	324	166	21	123	252	22
Confl. Peds. (#/hr)	1					1	4					4
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	4%	1%	1%	4%	1%	2%	0%	4%	1%	1%	5%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	22.1	61.3	86.4	16.0	55.2	55.2	25.1	34.3	34.3	15.8	25.0	25.0
Effective Green, g (s)	22.1	61.3	86.4	16.0	55.2	55.2	25.1	34.3	34.3	15.8	25.0	25.0
Actuated g/C Ratio	0.15	0.42	0.59	0.11	0.38	0.38	0.17	0.23	0.23	0.11	0.17	0.17
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	246	704	869	179	634	542	279	410	335	177	295	234
v/s Ratio Prot	c0.13	c0.44	0.08	0.08	0.41		c0.20	0.09		0.07	c0.15	
v/s Ratio Perm			0.19			0.04			0.01			0.02
v/c Ratio	0.86	1.05	0.46	0.70	1.09	0.11	1.16	0.40	0.06	0.69	0.85	0.09
Uniform Delay, d1	60.6	42.6	16.9	62.9	45.6	29.6	60.6	47.4	43.5	63.0	58.9	51.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	24.0	48.6	0.3	10.4	62.1	0.2	104.8	0.5	0.1	10.4	20.4	0.1
Delay (s)	84.7	91.1	17.2	73.3	107.7	29.8	165.4	47.9	43.6	73.4	79.4	51.3
Level of Service	F	F	B	E	F	C	F	D	D	E	E	D
Approach Delay (s)		64.1			93.9			113.1			70.8	
Approach LOS		E			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	81.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	146.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			



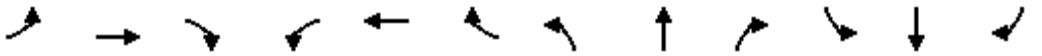
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	194	682	479	115	635	99	298	153	81	113	232	116
Future Volume (veh/h)	194	682	479	115	635	99	298	153	81	113	232	116
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1695	1736	1736	1695	1736	1723	1750	1695	1736	1736	1682
Adj Flow Rate, veh/h	211	741	358	125	690	108	324	166	88	123	252	126
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	1	1	4	1	2	0	4	1	1	5
Cap, veh/h	233	739	896	147	649	563	286	447	364	145	293	233
Arrive On Green	0.14	0.44	0.44	0.09	0.38	0.38	0.17	0.26	0.26	0.09	0.17	0.17
Sat Flow, veh/h	1641	1695	1470	1654	1695	1470	1641	1750	1426	1654	1736	1377
Grp Volume(v), veh/h	211	741	358	125	690	108	324	166	88	123	252	126
Grp Sat Flow(s),veh/h/ln	1641	1695	1470	1654	1695	1470	1641	1750	1426	1654	1736	1377
Q Serve(g_s), s	18.2	62.6	18.1	10.7	55.0	7.0	25.0	11.2	7.0	10.5	20.3	12.0
Cycle Q Clear(g_c), s	18.2	62.6	18.1	10.7	55.0	7.0	25.0	11.2	7.0	10.5	20.3	12.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	233	739	896	147	649	563	286	447	364	145	293	233
V/C Ratio(X)	0.91	1.00	0.40	0.85	1.06	0.19	1.13	0.37	0.24	0.85	0.86	0.54
Avail Cap(c_a), veh/h	286	739	896	288	649	563	286	447	364	288	363	288
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.7	40.5	14.5	64.5	44.3	29.5	59.3	44.0	42.5	64.6	58.0	54.6
Incr Delay (d2), s/veh	26.0	33.9	0.6	9.7	53.3	0.3	94.7	0.4	0.3	9.7	14.8	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	14.3	42.5	10.3	8.6	44.0	4.7	26.5	8.7	4.6	8.5	15.4	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.7	74.4	15.0	74.2	97.6	29.8	154.0	44.4	42.7	74.3	72.8	56.1
LnGrp LOS	F	F	B	E	F	C	F	D	D	E	E	E
Approach Vol, veh/h		1310			923			578			501	
Approach Delay, s/veh		60.2			86.5			105.6			68.9	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.3	67.6	29.5	29.3	24.9	60.0	17.1	41.7
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	12.7	64.6	27.0	22.3	20.2	57.0	12.5	13.2
Green Ext Time (p_c), s	0.2	0.0	0.0	1.0	0.2	0.0	0.2	0.9

Intersection Summary	
HCM 6th Ctrl Delay	76.8
HCM 6th LOS	E

Notes

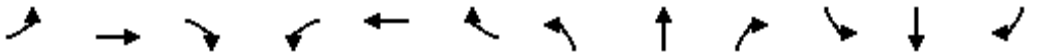
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	199	371	277	305	306	102	254	431	154	178	788	181
Future Volume (vph)	199	371	277	305	306	102	254	431	154	178	788	181
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1516	1611	1390	1646	1618		3057	3032	1339	1539	3010	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1516	1611	1390	1646	1618		3057	3032	1339	1539	3010	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	216	403	301	332	333	111	276	468	167	193	857	197
RTOR Reduction (vph)	0	0	190	0	10	0	0	0	115	0	16	0
Lane Group Flow (vph)	216	403	111	332	434	0	276	468	52	193	1038	0
Confl. Peds. (#/hr)	1		2	2		1	4		1	1		4
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	6%	5%	2%	1%	3%	6%	2%	6%	5%	8%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	16.0	27.5	27.5	22.0	33.5		12.5	38.8	38.8	17.2	43.5	
Effective Green, g (s)	16.0	27.5	27.5	22.0	33.5		12.5	38.8	38.8	17.2	43.5	
Actuated g/C Ratio	0.13	0.22	0.22	0.18	0.27		0.10	0.31	0.31	0.14	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	194	354	305	289	433		305	941	415	211	1047	
v/s Ratio Prot	0.14	c0.25		c0.20	0.27		0.09	0.15		c0.13	c0.34	
v/s Ratio Perm			0.08						0.04			
v/c Ratio	1.11	1.14	0.36	1.15	1.00		0.90	0.50	0.12	0.91	0.99	
Uniform Delay, d1	54.5	48.8	41.3	51.5	45.8		55.7	35.1	30.9	53.2	40.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	98.3	90.9	0.9	99.4	44.1		28.4	1.9	0.6	38.9	25.9	
Delay (s)	152.8	139.7	42.2	150.9	89.9		84.0	37.0	31.5	92.1	66.5	
Level of Service	F	F	D	F	F		F	D	C	F	E	
Approach Delay (s)		110.9			116.0			50.3			70.4	
Approach LOS		F			F			D			E	

Intersection Summary			
HCM 2000 Control Delay	84.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	94.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	199	371	277	305	306	102	254	431	154	178	788	181
Future Volume (veh/h)	199	371	277	305	306	102	254	431	154	178	788	181
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1682	1723	1736	1709	1709	1723	1668	1682	1641	1654	1654
Adj Flow Rate, veh/h	216	403	0	332	333	111	276	468	113	193	857	143
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	5	2	1	3	3	2	6	5	8	7	7
Cap, veh/h	203	370		291	327	109	318	984	440	215	935	156
Arrive On Green	0.13	0.22	0.00	0.18	0.27	0.27	0.10	0.31	0.31	0.14	0.35	0.35
Sat Flow, veh/h	1589	1682	1460	1654	1221	407	3183	3169	1416	1563	2688	449
Grp Volume(v), veh/h	216	403	0	332	0	444	276	468	113	193	501	499
Grp Sat Flow(s),veh/h/ln	1589	1682	1460	1654	0	1628	1591	1585	1416	1563	1572	1565
Q Serve(g_s), s	16.0	27.5	0.0	22.0	0.0	33.5	10.7	14.9	4.7	15.2	38.1	38.1
Cycle Q Clear(g_c), s	16.0	27.5	0.0	22.0	0.0	33.5	10.7	14.9	4.7	15.2	38.1	38.1
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		0.29
Lane Grp Cap(c), veh/h	203	370		291	0	436	318	984	440	215	547	545
V/C Ratio(X)	1.06	1.09		1.14	0.00	1.02	0.87	0.48	0.26	0.90	0.92	0.92
Avail Cap(c_a), veh/h	203	370		291	0	436	318	984	440	219	547	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	48.8	0.0	51.5	0.0	45.8	55.4	34.9	13.0	53.0	39.0	39.0
Incr Delay (d2), s/veh	80.5	72.9	0.0	96.3	0.0	47.5	21.5	1.6	1.4	34.4	22.5	22.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.7	27.2	0.0	25.1	0.0	26.5	8.9	9.9	4.8	12.6	24.7	24.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	135.0	121.6	0.0	147.8	0.0	93.3	76.9	36.5	14.4	87.5	61.5	61.6
LnGrp LOS	F	F		F	A	F	E	D	B	F	E	E
Approach Vol, veh/h		619	A		776			857			1193	
Approach Delay, s/veh		126.3			116.6			46.6			65.8	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	49.0	20.0	39.0	21.7	44.3	26.0	33.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	12.5	43.5	16.0	33.5	17.5	38.5	22.0	27.5
Max Q Clear Time (g_c+I1), s	12.7	40.1	18.0	35.5	17.2	16.9	24.0	29.5
Green Ext Time (p_c), s	0.0	2.6	0.0	0.0	0.0	6.6	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	83.3
HCM 6th LOS	F

Notes

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

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	20	20	264	380	20
Future Vol, veh/h	20	20	20	264	380	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	30	30	30	1	3	30
Mvmt Flow	20	20	20	269	388	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	707	398	408	0	-	0
Stage 1	398	-	-	-	-	-
Stage 2	309	-	-	-	-	-
Critical Hdwy	6.7	6.5	4.4	-	-	-
Critical Hdwy Stg 1	5.7	-	-	-	-	-
Critical Hdwy Stg 2	5.7	-	-	-	-	-
Follow-up Hdwy	3.77	3.57	2.47	-	-	-
Pot Cap-1 Maneuver	363	595	1015	-	-	-
Stage 1	622	-	-	-	-	-
Stage 2	685	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	355	595	1015	-	-	-
Mov Cap-2 Maneuver	355	-	-	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	685	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.9	0.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1015	-	445	-	-
HCM Lane V/C Ratio	0.02	-	0.092	-	-
HCM Control Delay (s)	8.6	0	13.9	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	75	237	36	84	336
Future Vol, veh/h	39	75	237	36	84	336
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	1	0	2	2
Mvmt Flow	42	82	258	39	91	365

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	825	278	0	0	297	0
Stage 1	278	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Critical Hdwy	7.04	6.54	-	-	4.12	-
Critical Hdwy Stg 1	6.04	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.218	-
Pot Cap-1 Maneuver	296	739	-	-	1264	-
Stage 1	730	-	-	-	-	-
Stage 2	526	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	269	739	-	-	1264	-
Mov Cap-2 Maneuver	269	-	-	-	-	-
Stage 1	730	-	-	-	-	-
Stage 2	479	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.6	0	1.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	463	1264	-
HCM Lane V/C Ratio	-	-	0.268	0.072	-
HCM Control Delay (s)	-	-	15.6	8.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	240	131	47	117	32
Future Vol, veh/h	11	240	131	47	117	32
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, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	4	3	0	0	14
Mvmt Flow	12	261	142	51	127	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	193	0	-	0	453	168
Stage 1	-	-	-	-	168	-
Stage 2	-	-	-	-	285	-
Critical Hdwy	4.23	-	-	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.426
Pot Cap-1 Maneuver	1317	-	-	-	568	846
Stage 1	-	-	-	-	867	-
Stage 2	-	-	-	-	768	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1317	-	-	-	562	846
Mov Cap-2 Maneuver	-	-	-	-	562	-
Stage 1	-	-	-	-	857	-
Stage 2	-	-	-	-	768	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1317	-	-	-	606
HCM Lane V/C Ratio	0.009	-	-	-	0.267
HCM Control Delay (s)	7.8	0	-	-	13.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.1

Intersection	
Int Delay, s/veh	39.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	555	343	144	255	35
Future Vol, veh/h	15	555	343	144	255	35
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	3	2	4	2	38
Mvmt Flow	16	603	373	157	277	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	530	0	-	0	1087	452
Stage 1	-	-	-	-	452	-
Stage 2	-	-	-	-	635	-
Critical Hdwy	4.1	-	-	-	6.42	6.58
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.642
Pot Cap-1 Maneuver	1048	-	-	-	~ 239	539
Stage 1	-	-	-	-	641	-
Stage 2	-	-	-	-	528	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1048	-	-	-	~ 234	539
Mov Cap-2 Maneuver	-	-	-	-	~ 234	-
Stage 1	-	-	-	-	626	-
Stage 2	-	-	-	-	528	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	183.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1048	-	-	-	251
HCM Lane V/C Ratio	0.016	-	-	-	1.256
HCM Control Delay (s)	8.5	0	-	-	183.8
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	15.6

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	149.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	596	214	275	359	129	141
Future Vol, veh/h	596	214	275	359	129	141
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	95	95	95	95	95	95
Heavy Vehicles, %	4	2	1	3	6	6
Mvmt Flow	627	225	289	378	136	148

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	852	0	1696	740
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	956	-
Critical Hdwy	-	-	4.11	-	6.46	6.26
Critical Hdwy Stg 1	-	-	-	-	5.46	-
Critical Hdwy Stg 2	-	-	-	-	5.46	-
Follow-up Hdwy	-	-	2.209	-	3.554	3.354
Pot Cap-1 Maneuver	-	-	791	-	~ 100	410
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	367	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	791	-	~ 54	410
Mov Cap-2 Maneuver	-	-	-	-	~ 54	-
Stage 1	-	-	-	-	465	-
Stage 2	-	-	-	-	197	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.3	$ 935.8
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	99	-	-	791	-
HCM Lane V/C Ratio	2.871	-	-	0.366	-
HCM Control Delay (s)	$ 935.8	-	-	12.2	0
HCM Lane LOS	F	-	-	B	A
HCM 95th %tile Q(veh)	27.1	-	-	1.7	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇃	↱		⇕			⇕	
Traffic Vol, veh/h	76	661	1	6	594	73	1	1	3	36	1	40
Future Vol, veh/h	76	661	1	6	594	73	1	1	3	36	1	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	5	0	0	2	2	0	0	0	5	0	6
Mvmt Flow	81	703	1	6	632	78	1	1	3	38	1	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	710	0	0	704	0	0	1571	1588	704	1512	1510	632
Stage 1	-	-	-	-	-	-	866	866	-	644	644	-
Stage 2	-	-	-	-	-	-	705	722	-	868	866	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.15	6.5	6.26
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.15	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.545	4	3.354
Pot Cap-1 Maneuver	899	-	-	903	-	-	91	109	440	97	122	473
Stage 1	-	-	-	-	-	-	351	373	-	456	471	-
Stage 2	-	-	-	-	-	-	430	434	-	343	373	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	899	-	-	903	-	-	72	92	440	84	103	473
Mov Cap-2 Maneuver	-	-	-	-	-	-	72	92	-	84	103	-
Stage 1	-	-	-	-	-	-	299	318	-	389	466	-
Stage 2	-	-	-	-	-	-	386	429	-	289	318	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.1	28.6	56.6
HCM LOS			D	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	158	899	-	-	903	-	-	147
HCM Lane V/C Ratio	0.034	0.09	-	-	0.007	-	-	0.557
HCM Control Delay (s)	28.6	9.4	0	-	9	0	-	56.6
HCM Lane LOS	D	A	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	2.8

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	91	602	7	22	77	585	270	14	8	92	759	8
Future Volume (vph)	91	602	7	22	77	585	270	14	8	92	759	8
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	0.98		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		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1630	3167	1462		1269	3260	1474	1330	1265		1571	1539
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1630	3167	1462		1269	3260	1474	1330	1265		1571	1539
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	95	627	7	23	80	609	281	15	8	96	791	8
RTOR Reduction (vph)	0	0	5	0	0	0	97	0	89	0	0	4
Lane Group Flow (vph)	95	627	2	0	103	609	184	15	15	0	443	427
Confl. Peds. (#/hr)	1		1		1		1	1				
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	2%	5%	0%	31%	31%	2%	0%	25%	0%	19%	0%	20%
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Split	NA		Split	NA
Protected Phases	5	2	8	1	1	6	4	8	8		4	4
Permitted Phases			2				6					
Actuated Green, G (s)	14.2	29.7	37.6		14.1	29.6	71.6	7.9	7.9		42.0	42.0
Effective Green, g (s)	14.2	29.7	37.6		14.1	29.6	71.6	7.9	7.9		42.0	42.0
Actuated g/C Ratio	0.13	0.27	0.34		0.13	0.27	0.65	0.07	0.07		0.38	0.38
Clearance Time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2	2.5		2.5	4.2	2.5	2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	210	853	498		162	875	957	95	90		598	586
v/s Ratio Prot	0.06	c0.20	0.00		0.08	c0.19	0.07	0.01	c0.01		c0.28	0.28
v/s Ratio Perm			0.00				0.05					
v/c Ratio	0.45	0.74	0.00		0.64	0.70	0.19	0.16	0.17		0.74	0.73
Uniform Delay, d1	44.4	36.7	24.0		45.6	36.3	7.7	48.0	48.1		29.4	29.2
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.1	3.6	0.0		7.0	2.7	0.1	0.6	0.6		4.7	4.2
Delay (s)	45.5	40.3	24.0		52.6	38.9	7.8	48.6	48.7		34.1	33.4
Level of Service	D	D	C		D	D	A	D	D		C	C
Approach Delay (s)		40.8				31.5			48.7			33.8
Approach LOS		D				C			D			C

Intersection Summary			
HCM 2000 Control Delay	35.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	110.2	Sum of lost time (s)	16.5
Intersection Capacity Utilization	66.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	72
Future Volume (vph)	72
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	75
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	91	602	7	22	77	585	270	14	8	92	759	8
Future Volume (veh/h)	91	602	7	22	77	585	270	14	8	92	759	8
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1723	1682	1750		1327	1723	1750	1409	1750	1750	1745	1472
Adj Flow Rate, veh/h	95	627	7		80	609	281	15	8	96	867	0
Peak Hour Factor	0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	5	0		31	2	0	25	0	0	0	20
Cap, veh/h	120	996	604		93	1000	905	129	11	131	1014	449
Arrive On Green	0.07	0.31	0.31		0.07	0.31	0.31	0.10	0.10	0.10	0.31	0.00
Sat Flow, veh/h	1641	3195	1481		1264	3273	1481	1342	114	1363	3323	1472
Grp Volume(v), veh/h	95	627	7		80	609	281	15	0	104	867	0
Grp Sat Flow(s),veh/h/ln	1641	1598	1481		1264	1637	1481	1342	0	1476	1661	1472
Q Serve(g_s), s	4.4	13.0	0.2		4.8	12.3	7.1	0.8	0.0	5.3	19.0	0.0
Cycle Q Clear(g_c), s	4.4	13.0	0.2		4.8	12.3	7.1	0.8	0.0	5.3	19.0	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.92	1.00	
Lane Grp Cap(c), veh/h	120	996	604		93	1000	905	129	0	142	1014	449
V/C Ratio(X)	0.79	0.63	0.01		0.86	0.61	0.31	0.12	0.00	0.73	0.85	0.00
Avail Cap(c_a), veh/h	424	1859	1004		327	1904	1314	520	0	573	1933	856
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	35.2	22.8	13.6		35.4	22.9	7.2	32.0	0.0	34.0	25.3	0.0
Incr Delay (d2), s/veh	8.2	1.0	0.0		15.2	0.9	0.3	0.3	0.0	5.3	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.6	8.4	0.2		3.3	8.2	7.6	0.5	0.0	3.7	11.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.5	23.8	13.6		50.7	23.8	7.5	32.2	0.0	39.3	26.9	0.0
LnGrp LOS	D	C	B		D	C	A	C	A	D	C	A
Approach Vol, veh/h		729				970			119			867
Approach Delay, s/veh		26.3				21.3			38.4			26.9
Approach LOS		C				C			D			C

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.7	28.6		27.6	10.2	28.1		11.4				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	6.8	15.0		21.0	6.4	14.3		7.3				
Green Ext Time (p_c), s	0.1	7.1		2.6	0.1	9.1		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	25.2
HCM 6th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	72
Future Volume (veh/h)	72
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1472
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.96
Percent Heavy Veh, %	20
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

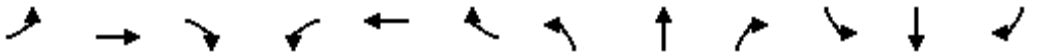
Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	973	502	0	1034	840	0	0	0	737	0	413
Future Volume (vph)	0	973	502	0	1034	840	0	0	0	737	0	413
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3180	1409		3325	1487				3083		1381
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3180	1409		3325	1487				3083		1381
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	993	512	0	1055	857	0	0	0	752	0	421
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	11
Lane Group Flow (vph)	0	993	512	0	1055	857	0	0	0	752	0	410
Heavy Vehicles (%)	0%	3%	4%	0%	2%	2%	0%	0%	0%	2%	0%	5%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		60.7	100.0		50.3	100.0				30.3		41.2
Effective Green, g (s)		60.7	100.0		50.3	100.0				30.3		43.2
Actuated g/C Ratio		0.61	1.00		0.50	1.00				0.30		0.43
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1930	1409		1672	1487				934		596
v/s Ratio Prot		0.31			c0.32					c0.24		c0.30
v/s Ratio Perm			0.36			0.58						
v/c Ratio		0.51	0.36		0.63	0.58				0.81		0.69
Uniform Delay, d1		11.2	0.0		18.1	0.0				32.1		23.0
Progression Factor		1.00	1.00		1.16	1.00				1.00		1.00
Incremental Delay, d2		1.0	0.7		1.1	1.0				5.0		3.0
Delay (s)		12.2	0.7		22.0	1.0				37.1		26.0
Level of Service		B	A		C	A				D		C
Approach Delay (s)		8.3			12.6			0.0			33.1	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	16.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	973	502	0	1034	840	0	0	0	737	0	413
Future Volume (veh/h)	0	973	502	0	1034	840	0	0	0	737	0	413
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1660	1647	0	1867	1867				1587	0	1546
Adj Flow Rate, veh/h	0	993	0	0	1055	0				752	0	319
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	3	4	0	2	2				2	0	5
Cap, veh/h	0	1958		0	2203					848	0	405
Arrive On Green	0.00	0.62	0.00	0.00	1.00	0.00				0.29	0.00	0.31
Sat Flow, veh/h	0	3237	1395	0	3641	1582				2932	0	1310
Grp Volume(v), veh/h	0	993	0	0	1055	0				752	0	319
Grp Sat Flow(s),veh/h/ln	0	1577	1395	0	1774	1582				1466	0	1310
Q Serve(g_s), s	0.0	17.4	0.0	0.0	0.0	0.0				24.5	0.0	22.2
Cycle Q Clear(g_c), s	0.0	17.4	0.0	0.0	0.0	0.0				24.5	0.0	22.2
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1958		0	2203					848	0	405
V/C Ratio(X)	0.00	0.51		0.00	0.48					0.89	0.00	0.79
Avail Cap(c_a), veh/h	0	1958		0	2203					1041	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.59	0.00	0.00	0.51	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.5	0.0	0.0	0.0	0.0				34.0	0.0	31.5
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.4	0.0				7.7	0.0	6.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	8.7	0.0	0.0	0.2	0.0				14.5	0.0	22.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.0	0.0	0.0	0.4	0.0				41.7	0.0	37.9
LnGrp LOS	A	B		A	A					D	A	D
Approach Vol, veh/h		993	A		1055	A					1071	
Approach Delay, s/veh		11.0			0.4						40.6	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		66.6		33.4		66.6						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		19.4		26.5		2.0						
Green Ext Time (p_c), s		20.0		2.4		13.2						

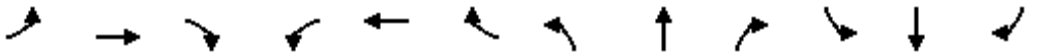
Intersection Summary												
HCM 6th Ctrl Delay			17.6									
HCM 6th LOS			B									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1466	244	0	1505	469	369	0	690	0	0	0
Future Volume (vph)	0	1466	244	0	1505	469	369	0	690	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		3325	1418		3211	1379	1502	1259	1293			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		3325	1418		3211	1379	1502	1259	1293			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1496	249	0	1536	479	377	0	704	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	19	19	0	0	0
Lane Group Flow (vph)	0	1496	249	0	1536	479	339	357	347	0	0	0
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	0%	2%	7%	0%	2%	4%	2%	0%	6%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		59.1	100.0		59.1	100.0	31.9	31.9	31.9			
Effective Green, g (s)		59.1	100.0		59.1	100.0	31.9	31.9	31.9			
Actuated g/C Ratio		0.59	1.00		0.59	1.00	0.32	0.32	0.32			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1965	1418		1897	1379	479	401	412			
v/s Ratio Prot		0.45			c0.48		0.23	c0.28				
v/s Ratio Perm			0.18			0.35			0.27			
v/c Ratio		0.76	0.18		0.81	0.35	0.71	0.89	0.84			
Uniform Delay, d1		15.2	0.0		16.0	0.0	29.9	32.4	31.7			
Progression Factor		1.51	1.00		0.90	1.00	1.00	1.00	1.00			
Incremental Delay, d2		2.3	0.2		0.9	0.2	4.4	21.0	14.2			
Delay (s)		25.3	0.2		15.4	0.2	34.4	53.4	45.9			
Level of Service		C	A		B	A	C	D	D			
Approach Delay (s)		21.7			11.8			44.9			0.0	
Approach LOS		C			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1466	244	0	1505	469	369	0	690	0	0	0
Future Volume (veh/h)	0	1466	244	0	1505	469	369	0	690	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1867	1798	0	1674	1647	1527	1555	1473			
Adj Flow Rate, veh/h	0	1496	0	0	1536	0	552	0	313			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	2	7	0	2	4	2	0	6			
Cap, veh/h	0	2235		0	2003		815	0	350			
Arrive On Green	0.00	1.00	0.00	0.00	0.21	0.00	0.28	0.00	0.28			
Sat Flow, veh/h	0	3641	1524	0	3264	1395	2909	0	1248			
Grp Volume(v), veh/h	0	1496	0	0	1536	0	552	0	313			
Grp Sat Flow(s),veh/h/ln	0	1774	1524	0	1590	1395	1455	0	1248			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	45.5	0.0	16.9	0.0	24.1			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	45.5	0.0	16.9	0.0	24.1			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2235		0	2003		815	0	350			
V/C Ratio(X)	0.00	0.67		0.00	0.77		0.68	0.00	0.90			
Avail Cap(c_a), veh/h	0	2235		0	2003		1033	0	443			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.72	0.00	0.00	0.09	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	32.7	0.0	32.0	0.0	34.6			
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.0	0.3	0.0	1.0	0.0	16.5			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.7	0.0	0.0	21.5	0.0	9.9	0.0	13.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.2	0.0	0.0	33.0	0.0	33.0	0.0	51.1			
LnGrp LOS	A	A		A	C		C	A	D			
Approach Vol, veh/h		1496	A		1536	A		865				
Approach Delay, s/veh		1.2			33.0			39.5				
Approach LOS		A			C			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		67.5				67.5		32.5				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				47.5		26.1				
Green Ext Time (p_c), s		26.6				7.5		1.9				

Intersection Summary		
HCM 6th Ctrl Delay	22.2	
HCM 6th LOS	C	

Notes

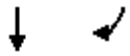
User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	36	104	1434	207	10	260	1250	23	563	37	320	37
Future Volume (vph)	36	104	1434	207	10	260	1250	23	563	37	320	37
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1583	3197	1458		1621	3083		1548	1558	1473	1662
Flt Permitted		0.11	1.00	1.00		0.12	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		176	3197	1458		201	3083		1548	1558	1473	1662
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	38	108	1494	216	10	271	1302	24	586	39	333	39
RTOR Reduction (vph)	0	0	0	118	0	0	1	0	0	0	251	0
Lane Group Flow (vph)	0	146	1494	98	0	281	1325	0	311	314	82	39
Confl. Peds. (#/hr)									2			
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	5%	5%	4%	2%	1%	1%	6%	0%	2%	4%	1%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		48.0	33.9	33.9		48.0	37.8		24.7	24.7	24.7	9.8
Effective Green, g (s)		48.0	33.9	33.9		48.0	37.8		24.7	24.7	24.7	9.8
Actuated g/C Ratio		0.48	0.34	0.34		0.48	0.38		0.25	0.25	0.25	0.10
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		227	1083	494		296	1165		382	384	363	162
v/s Ratio Prot		0.07	c0.47			0.13	c0.43		0.20	c0.20		0.02
v/s Ratio Perm		0.24		0.07		0.32					0.06	
v/c Ratio		0.64	1.38	0.20		0.95	1.14		0.81	0.82	0.23	0.24
Uniform Delay, d1		21.2	33.0	23.4		39.2	31.1		35.5	35.5	30.0	41.7
Progression Factor		0.89	0.95	0.71		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		3.4	174.4	0.6		38.4	72.6		12.2	12.4	0.2	0.6
Delay (s)		22.2	205.9	17.3		77.6	103.7		47.7	47.9	30.3	42.2
Level of Service		C	F	B		E	F		D	D	C	D
Approach Delay (s)			169.5				99.1			41.7		
Approach LOS			F				F			D		

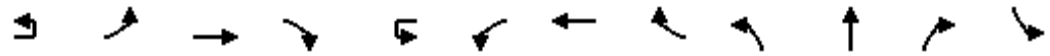
Intersection Summary			
HCM 2000 Control Delay	112.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	107.1%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	41	125
Future Volume (vph)	41	125
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1419	
Flt Permitted	1.00	
Satd. Flow (perm)	1419	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	43	130
RTOR Reduction (vph)	116	0
Lane Group Flow (vph)	57	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	3%	10%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	9.8	
Effective Green, g (s)	9.8	
Actuated g/C Ratio	0.10	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	139	
v/s Ratio Prot	c0.04	
v/s Ratio Perm		
v/c Ratio	0.41	
Uniform Delay, d1	42.4	
Progression Factor	1.00	
Incremental Delay, d2	1.4	
Delay (s)	43.8	
Level of Service	D	
Approach Delay (s)	43.5	
Approach LOS	D	

Intersection Summary



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	36	104	1434	207	10	260	1250	23	563	37	320	37
Future Volume (veh/h)	36	104	1434	207	10	260	1250	23	563	37	320	37
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1682	1695	1723		1688	1619	1619	1723	1695	1736	1750
Adj Flow Rate, veh/h		108	1494	0		271	1302	24	614	0	0	39
Peak Hour Factor		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		5	4	2		1	6	6	2	4	1	0
Cap, veh/h		212	1047			435	1560	29	669	0		109
Arrive On Green		0.07	0.43	0.00		0.23	0.51	0.51	0.20	0.00	0.00	0.07
Sat Flow, veh/h		1602	3221	1460		1607	3089	57	3281	0	1471	1667
Grp Volume(v), veh/h		108	1494	0		271	648	678	614	0	0	39
Grp Sat Flow(s),veh/h/ln		1602	1611	1460		1607	1538	1608	1641	0	1471	1667
Q Serve(g_s), s		3.2	32.5	0.0		10.3	36.0	36.1	18.3	0.0	0.0	2.2
Cycle Q Clear(g_c), s		3.2	32.5	0.0		10.3	36.0	36.1	18.3	0.0	0.0	2.2
Prop In Lane		1.00		1.00		1.00		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		212	1047			435	777	812	669	0		109
V/C Ratio(X)		0.51	1.43			0.62	0.83	0.83	0.92	0.00		0.36
Avail Cap(c_a), veh/h		354	1047			435	777	812	673	0		258
HCM Platoon Ratio		1.33	1.33	1.33		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.53	0.53	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		19.1	28.4	0.0		32.6	21.2	21.2	39.0	0.0	0.0	44.7
Incr Delay (d2), s/veh		0.8	195.2	0.0		2.5	10.2	9.9	17.5	0.0	0.0	1.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		2.0	57.4	0.0		10.0	20.6	21.3	13.8	0.0	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		19.8	223.6	0.0		35.1	31.4	31.1	56.5	0.0	0.0	46.2
LnGrp LOS		B	F			D	C	C	E	A		D
Approach Vol, veh/h			1602	A			1597			614	A	
Approach Delay, s/veh			209.8				31.9			56.5		
Approach LOS			F				C			E		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	27.1	37.0		11.0	9.1	55.0		24.9
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	12.3	34.5		4.4	5.2	38.1		20.3
Green Ext Time (p_c), s	0.1	0.0		0.1	0.1	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	109.3
HCM 6th LOS	F

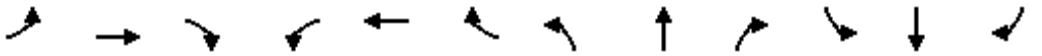
Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	41	125
Future Volume (veh/h)	41	125
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1709	1709
Adj Flow Rate, veh/h	43	0
Peak Hour Factor	0.96	0.96
Percent Heavy Veh, %	3	3
Cap, veh/h	112	
Arrive On Green	0.07	0.00
Sat Flow, veh/h	1709	0
Grp Volume(v), veh/h	43	0
Grp Sat Flow(s),veh/h/ln	1709	0
Q Serve(g_s), s	2.4	0.0
Cycle Q Clear(g_c), s	2.4	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	112	
V/C Ratio(X)	0.38	
Avail Cap(c_a), veh/h	265	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	44.8	0.0
Incr Delay (d2), s/veh	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	46.4	0.0
LnGrp LOS	D	
Approach Vol, veh/h	82	A
Approach Delay, s/veh	46.3	
Approach LOS	D	

Timer - Assigned Phs

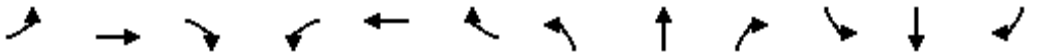
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	741	435	110	822	112	346	156	105	141	283	181
Future Volume (vph)	163	741	435	110	822	112	346	156	105	141	283	181
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	1651	1446	1662	1651	1400	1583	1699	1449	1599	1667	1429
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1614	1651	1446	1662	1651	1400	1583	1699	1449	1599	1667	1429
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)	172	780	458	116	865	118	364	164	111	148	298	191
RTOR Reduction (vph)	0	0	105	0	0	49	0	0	84	0	0	154
Lane Group Flow (vph)	172	780	353	116	865	69	364	164	27	148	298	37
Confl. Peds. (#/hr)			3	3			3		2	2		3
Confl. Bikes (#/hr)						1			1			2
Heavy Vehicles (%)	3%	6%	1%	0%	6%	4%	5%	3%	0%	4%	5%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	19.7	59.7	84.8	15.2	55.2	55.2	25.1	35.5	35.5	18.2	28.6	28.6
Effective Green, g (s)	19.7	59.7	84.8	15.2	55.2	55.2	25.1	35.5	35.5	18.2	28.6	28.6
Actuated g/C Ratio	0.13	0.40	0.57	0.10	0.37	0.37	0.17	0.24	0.24	0.12	0.19	0.19
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	215	667	830	171	617	523	269	408	348	197	323	276
v/s Ratio Prot	c0.11	c0.47	0.07	0.07	c0.52		c0.23	0.10		0.09	c0.18	
v/s Ratio Perm			0.17			0.05			0.02			0.03
v/c Ratio	0.80	1.17	0.43	0.68	1.40	0.13	1.35	0.40	0.08	0.75	0.92	0.13
Uniform Delay, d1	62.0	43.9	17.7	63.8	46.2	30.4	61.2	47.1	43.4	62.5	58.4	49.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.4	91.7	0.3	9.3	190.5	0.2	181.4	0.5	0.1	14.2	30.8	0.2
Delay (s)	80.4	135.7	17.9	73.1	236.7	30.7	242.6	47.6	43.4	76.7	89.2	49.4
Level of Service	F	F	B	E	F	C	F	D	D	E	F	D
Approach Delay (s)		90.7			197.3			158.0			74.4	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	130.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.20		
Actuated Cycle Length (s)	147.6	Sum of lost time (s)	19.0
Intersection Capacity Utilization	111.1%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



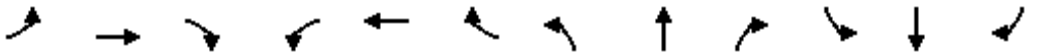
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	163	741	435	110	822	112	346	156	105	141	283	181
Future Volume (veh/h)	163	741	435	110	822	112	346	156	105	141	283	181
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1668	1736	1750	1668	1695	1682	1709	1750	1695	1682	1736
Adj Flow Rate, veh/h	172	780	300	116	865	118	364	164	111	148	298	128
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	6	1	0	6	4	5	3	0	4	5	1
Cap, veh/h	194	698	869	138	637	535	278	447	378	170	325	276
Arrive On Green	0.12	0.42	0.42	0.08	0.38	0.38	0.17	0.26	0.26	0.11	0.19	0.19
Sat Flow, veh/h	1628	1668	1466	1667	1668	1401	1602	1709	1443	1615	1682	1425
Grp Volume(v), veh/h	172	780	300	116	865	118	364	164	111	148	298	128
Grp Sat Flow(s),veh/h/ln	1628	1668	1466	1667	1668	1401	1602	1709	1443	1615	1682	1425
Q Serve(g_s), s	15.0	60.3	15.1	9.9	55.0	8.2	25.0	11.3	8.9	13.0	25.0	11.5
Cycle Q Clear(g_c), s	15.0	60.3	15.1	9.9	55.0	8.2	25.0	11.3	8.9	13.0	25.0	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	698	869	138	637	535	278	447	378	170	325	276
V/C Ratio(X)	0.89	1.12	0.35	0.84	1.36	0.22	1.31	0.37	0.29	0.87	0.92	0.46
Avail Cap(c_a), veh/h	282	698	869	289	637	535	278	447	378	280	350	297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.5	41.9	15.1	65.1	44.5	30.1	59.5	43.4	42.5	63.5	56.9	51.5
Incr Delay (d2), s/veh	18.2	71.3	0.5	9.7	171.3	0.4	162.8	0.4	0.3	12.3	26.5	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.7	52.9	9.0	8.1	78.3	5.2	34.6	8.6	5.9	10.0	19.1	7.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	80.7	113.2	15.6	74.8	215.8	30.5	222.3	43.8	42.8	75.7	83.5	52.4
LnGrp LOS	F	F	B	E	F	C	F	D	D	E	F	D
Approach Vol, veh/h		1252			1099			639			574	
Approach Delay, s/veh		85.3			181.0			145.3			74.5	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	65.3	29.5	32.9	21.7	60.0	19.7	42.7
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	11.9	62.3	27.0	27.0	17.0	57.0	15.0	13.3
Green Ext Time (p_c), s	0.2	0.0	0.0	0.6	0.2	0.0	0.2	1.0

Intersection Summary	
HCM 6th Ctrl Delay	123.9
HCM 6th LOS	F

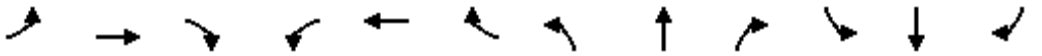
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	458	316	334	360	92	273	573	158	234	1078	192
Future Volume (vph)	250	458	316	334	360	92	273	573	158	234	1078	192
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1545	1627	1382	1630	1599		3027	3032	1192	1583	3078	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1545	1627	1382	1630	1599		3027	3032	1192	1583	3078	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	272	498	343	363	391	100	297	623	172	254	1172	209
RTOR Reduction (vph)	0	0	174	0	7	0	0	0	119	0	12	0
Lane Group Flow (vph)	272	498	169	363	484	0	297	623	53	254	1369	0
Confl. Peds. (#/hr)	2		8	8		2	4		1	1		4
Heavy Vehicles (%)	4%	4%	2%	2%	6%	5%	3%	6%	18%	5%	5%	7%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	16.0	27.5	27.5	22.0	33.5		12.5	38.5	38.5	17.5	43.5	
Effective Green, g (s)	16.0	27.5	27.5	22.0	33.5		12.5	38.5	38.5	17.5	43.5	
Actuated g/C Ratio	0.13	0.22	0.22	0.18	0.27		0.10	0.31	0.31	0.14	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	197	357	304	286	428		302	933	367	221	1071	
v/s Ratio Prot	0.18	c0.31		c0.22	0.30		0.10	0.21		c0.16	c0.44	
v/s Ratio Perm			0.12						0.04			
v/c Ratio	1.38	1.39	0.56	1.27	1.13		0.98	0.67	0.14	1.15	1.28	
Uniform Delay, d1	54.5	48.8	43.3	51.5	45.8		56.1	37.7	31.3	53.8	40.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	199.7	194.0	2.4	145.8	84.0		46.9	3.8	0.8	106.7	132.6	
Delay (s)	254.2	242.8	45.7	197.3	129.8		103.1	41.5	32.1	160.4	173.4	
Level of Service	F	F	D	F	F		F	D	C	F	F	
Approach Delay (s)		184.9			158.5			56.8			171.4	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	145.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	111.7%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	250	458	316	334	360	92	273	573	158	234	1078	192
Future Volume (veh/h)	250	458	316	334	360	92	273	573	158	234	1078	192
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1695	1723	1723	1668	1668	1709	1668	1504	1682	1682	1682
Adj Flow Rate, veh/h	272	498	0	363	391	100	297	623	118	254	1172	155
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	2	2	6	6	3	6	18	5	5	5
Cap, veh/h	207	373		289	343	88	316	976	390	224	987	130
Arrive On Green	0.13	0.22	0.00	0.18	0.27	0.27	0.10	0.31	0.31	0.14	0.35	0.35
Sat Flow, veh/h	1615	1695	1460	1641	1279	327	3158	3169	1267	1602	2837	374
Grp Volume(v), veh/h	272	498	0	363	0	491	297	623	118	254	659	668
Grp Sat Flow(s),veh/h/ln	1615	1695	1460	1641	0	1606	1579	1585	1267	1602	1598	1613
Q Serve(g_s), s	16.0	27.5	0.0	22.0	0.0	33.5	11.7	21.2	5.7	17.5	43.5	43.5
Cycle Q Clear(g_c), s	16.0	27.5	0.0	22.0	0.0	33.5	11.7	21.2	5.7	17.5	43.5	43.5
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	207	373		289	0	430	316	976	390	224	556	561
V/C Ratio(X)	1.32	1.34		1.26	0.00	1.14	0.94	0.64	0.30	1.13	1.18	1.19
Avail Cap(c_a), veh/h	207	373		289	0	430	316	976	390	224	556	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	48.8	0.0	51.5	0.0	45.8	55.9	37.3	13.3	53.8	40.8	40.8
Incr Delay (d2), s/veh	172.2	168.1	0.0	140.8	0.0	87.9	35.3	3.2	2.0	100.5	100.2	102.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.6	43.5	0.0	30.7	0.0	34.1	10.2	13.3	5.1	20.3	46.2	47.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	226.7	216.8	0.0	192.3	0.0	133.6	91.2	40.4	15.3	154.2	141.0	143.4
LnGrp LOS	F	F		F	A	F	F	D	B	F	F	F
Approach Vol, veh/h		770	A		854			1038			1581	
Approach Delay, s/veh		220.3			158.5			52.1			144.1	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	49.0	20.0	39.0	22.0	44.0	26.0	33.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	12.5	43.5	16.0	33.5	17.5	38.5	22.0	27.5
Max Q Clear Time (g_c+I1), s	13.7	45.5	18.0	35.5	19.5	23.2	24.0	29.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	138.3
HCM 6th LOS	F

Notes

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

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

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	20	20	250	465	20
Future Vol, veh/h	20	20	20	250	465	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	50	50	50	1	3	50
Mvmt Flow	20	20	20	255	474	20

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	779	484	494	0	-	0
Stage 1	484	-	-	-	-	-
Stage 2	295	-	-	-	-	-
Critical Hdwy	6.9	6.7	4.6	-	-	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.75	2.65	-	-	-
Pot Cap-1 Maneuver	305	497	862	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	658	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	297	497	862	-	-	-
Mov Cap-2 Maneuver	297	-	-	-	-	-
Stage 1	517	-	-	-	-	-
Stage 2	658	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.9	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	862	-	372	-	-
HCM Lane V/C Ratio	0.024	-	0.11	-	-
HCM Control Delay (s)	9.3	0	15.9	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.4	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	75	192	52	88	412
Future Vol, veh/h	39	75	192	52	88	412
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	8	2	0	0	2
Mvmt Flow	42	82	209	57	96	448

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	878	238	0	0	266	0
Stage 1	238	-	-	-	-	-
Stage 2	640	-	-	-	-	-
Critical Hdwy	7	6.58	-	-	4.1	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	277	771	-	-	1310	-
Stage 1	775	-	-	-	-	-
Stage 2	475	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	250	771	-	-	1310	-
Mov Cap-2 Maneuver	250	-	-	-	-	-
Stage 1	775	-	-	-	-	-
Stage 2	428	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	450	1310	-
HCM Lane V/C Ratio	-	-	0.275	0.073	-
HCM Control Delay (s)	-	-	16	8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-

Appendix J 2040 Total Traffic Conditions Operations and Queuing Worksheets

2040 Background AM - System Peak											
						DRAFT CALIBRATION DATA					
				Average VISSIM					1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value			GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	99	99	119	1.92	1		0	0	0
		NBT	0	0	0				0	0	0
		NBR	229	229	274	2.84	1		1	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	353	353	345	0.43	1		0	0	0
		EBR	131	131	129	0.18	1		0	0	0
	WB	WBL	132	132	130	0.17	1		0	0	0
		WBT	264	264	268	0.25	1		0	0	0
		WBR	0	0	0				0	0	0
2	NB	NBL	0	0	0		1		0	0	0
		NBT	0	0	0		1		0	0	0
		NBR	1	1	1	0.00	1		0	0	0
	SB	SBL	41	41	44	0.46	1		0	0	0
		SBT	1	1	1	0.00	1		0	0	0
		SBR	41	41	44	0.46	1		0	0	0
	EB	EBL	15	15	17	0.50	1		0	0	0
		EBT	618	618	601	0.69	1		0	0	0
		EBR	1	1	1	0.00	1		0	0	0
	WB	WBL	1	1	1	0.00	1		0	0	0
		WBT	356	356	354	0.11	1		0	0	0
		WBR	27	27	27	0.00	1		0	0	0
3	NB	NBL	2	2	2	0.00	1		0	0	0
		NBT	3	3	4	0.53	1		0	0	0
		NBR	39	39	42	0.47	1		0	0	0
	SB	SBL	389	389	381	0.41	1		0	0	0
		SBT	6	6	6	0.00	1		0	0	0
		SBR	41	41	43	0.31	1		0	0	0
	EB	EBL	39	39	36	0.49	1		0	0	0
		EBT	605	605	598	0.29	1		0	0	0
		EBR	12	12	12	0.00	1		0	0	0
	WB	WBL	99	99	92	0.72	1		0	0	0
		WBT	338	338	337	0.05	1		0	0	0
		WBR	224	224	210	0.95	1		0	0	0
		WBU	14	14	17	0.76	1		0	0	0
4	NB	NBL	0	0	0				0	0	0
		NBT	0	0	0				0	0	0
		NBR	0	0	0				0	0	0
	SB	SBL	444	444	450	0.28	1		0	0	0
		SBT	0	0	0				0	0	0
		SBR	222	222	222	0.00	1		0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	651	651	655	0.16	1		0	0	0
		EBR	394	394	383	0.56	1		0	0	0
	WB	WBL	0	0	0				0	0	0
		WBT	643	643	537	4.36	1		1	0	0
		WBR	611	611	705	3.66	1		1	0	0
5	NB	NBL	316	316	367	2.76	1		1	0	0
		NBT	0	0	0				0	0	0
		NBR	807	807	733	2.67	1		1	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	783	783	749	1.23	1		0	0	0
		EBR	313	313	356	2.35	1		1	0	0
	WB	WBL	0	0	0				0	0	0
		WBT	911	911	875	1.20	1		0	0	0
		WBR	750	750	756	0.22	1		0	0	0
6	NB	NBL	430	430	418	0.58	1		0	0	0
		NBT	35	35	33	0.34	1		0	0	0
		NBR	317	317	320	0.17	1		0	0	0
	SB	SBL	13	13	14	0.27	1		0	0	0
		SBT	27	27	26	0.19	1		0	0	0
		SBR	60	60	64	0.51	1		0	0	0
	EB	EBL	58	58	72	1.74	1		0	0	0
		EBT	1151	1151	1230	2.29	1		1	0	0
		EBR	525	525	530	0.22	1		0	0	0
		EBU	33	33	34	0.17	1		0	0	0
	WB	WBL	305	305	320	0.85	1		0	0	0
		WBT	1139	1139	1115	0.71	1		0	0	0
		WBR	18	18	19	0.23	1		0	0	0
		WBU	5	5	5	0.00	1		0	0	0
					Total Movements =	*57*			7	0	0
						Percent Below			88%	100%	100%
						Target Percentage			85%	98%	100%
									YES	YES	YES

2040 Background AM - Generator Peak											
						DRAFT CALIBRATION DATA					
				Average VISSIM					1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value			GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	93	93	120	2.62	1		1	0	0
		NBT	0	0	0				0	0	0
		NBR	275	275	355	4.51	1		1	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	263	263	259	0.25	1		0	0	0
		EBR	122	122	120	0.18	1		0	0	0
	WB	WBL	90	90	90	0.00	1		0	0	0
		WBT	408	408	443	1.70	1		0	0	0
		WBR	0	0	0				0	0	0
2	NB	NBL	0	0	0		1		0	0	0
		NBT	0	0	0		1		0	0	0
		NBR	0	0	0		1		0	0	0
	SB	SBL	43	43	45	0.30	1		0	0	0
		SBT	0	0	0		1		0	0	0
		SBR	25	25	26	0.20	1		0	0	0
	EB	EBL	5	5	7	0.82	1		0	0	0
		EBT	566	566	607	1.69	1		0	0	0
		EBR	0	0	0		1		0	0	0
	WB	WBL	0	0	0		1		0	0	0
		WBT	473	473	507	1.54	1		0	0	0
		WBR	18	18	16	0.49	1		0	0	0
3	NB	NBL	0	0	0		1		0	0	0
		NBT	4	4	4	0.00	1		0	0	0
		NBR	36	36	39	0.49	1		0	0	0
	SB	SBL	348	348	347	0.05	1		0	0	0
		SBT	12	12	12	0.00	1		0	0	0
		SBR	35	35	35	0.00	1		0	0	0
	EB	EBL	38	38	38	0.00	1		0	0	0
		EBT	563	563	610	1.94	1		0	0	0
		EBR	4	4	4	0.00	1		0	0	0
	WB	WBL	83	83	85	0.22	1		0	0	0
		WBT	456	456	488	1.47	1		0	0	0
		WBR	179	179	173	0.45	1		0	0	0
		WBU	14	14	17	0.76	1		0	0	0
4	NB	NBL	0	0	0				0	0	0
		NBT	0	0	0				0	0	0
		NBR	0	0	0				0	0	0
	SB	SBL	400	400	414	0.69	1		0	0	0
		SBT	0	0	0				0	0	0
		SBR	194	194	196	0.14	1		0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	635	635	683	1.87	1		0	0	0
		EBR	321	321	330	0.50	1		0	0	0
	WB	WBL	0	0	0				0	0	0
		WBT	791	791	737	1.95	1		0	0	0
		WBR	596	596	696	3.93	1		1	0	0
5	NB	NBL	484	484	580	4.16	1		1	0	0
		NBT	0	0	0				0	0	0
		NBR	761	761	726	1.28	1		0	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	691	691	676	0.57	1		0	0	0
		EBR	334	334	421	4.48	1		1	0	0
	WB	WBL	0	0	0				0	0	0
		WBT	895	895	853	1.42	1		0	0	0
		WBR	771	771	792	0.75	1		0	0	0
6	NB	NBL	427	427	421	0.29	1		0	0	0
		NBT	23	23	22	0.21	1		0	0	0
		NBR	264	264	257	0.43	1		0	0	0
	SB	SBL	12	12	14	0.55	1		0	0	0
		SBT	22	22	21	0.22	1		0	0	0
		SBR	52	52	53	0.14	1		0	0	0
	EB	EBL	39	39	37	0.32	1		0	0	0
		EBT	1059	1059	1147	2.65	1		1	0	0
		EBR	391	391	392	0.05	1		0	0	0
		EBU	21	21	34	2.48	1		1	0	0
	WB	WBL	258	258	252	0.38	1		0	0	0
		WBT	1169	1169	1137	0.94	1		0	0	0
		WBR	32	32	32	0.00	1		0	0	0
		WBU	5	5	6	0.43	1		0	0	0
					Total Movements =	*57*			7	0	0
						Percent Below			88%	100%	100%
						Target Percentage			85%	98%	100%
									YES	YES	YES

2040 Total AM - System Peak										
					DRAFT CALIBRATION DATA					
				Average VISSIM				1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value		GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	118	118	122	0.37	1	0	0	0
		NBT	0	0	0			0	0	0
		NBR	292	292	304	0.70	1	0	0	0
	SB	SBL	0	0	0			0	0	0
		SBT	0	0	0			0	0	0
		SBR	0	0	0			0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	349	349	345	0.21	1	0	0	0
		EBR	166	166	167	0.08	1	0	0	0
	WB	WBL	483	483	456	1.25	1	0	0	0
		WBT	255	255	268	0.80	1	0	0	0
		WBR	0	0	0			0	0	0
2	NB	NBL	0	0	0		1	0	0	0
		NBT	0	0	0		1	0	0	0
		NBR	1	1	1	0.00	1	0	0	0
	SB	SBL	42	42	44	0.30	1	0	0	0
		SBT	1	1	1	0.00	1	0	0	0
		SBR	42	42	44	0.30	1	0	0	0
	EB	EBL	17	17	17	0.00	1	0	0	0
		EBT	631	631	631	0.00	1	0	0	0
		EBR	1	1	1	0.00	1	0	0	0
	WB	WBL	1	1	1	0.00	1	0	0	0
		WBT	693	693	680	0.50	1	0	0	0
		WBR	29	29	27	0.38	1	0	0	0
3	NB	NBL	2	2	2	0.00	1	0	0	0
		NBT	3	3	4	0.53	1	0	0	0
		NBR	39	39	42	0.47	1	0	0	0
	SB	SBL	390	390	381	0.46	1	0	0	0
		SBT	6	6	6	0.00	1	0	0	0
		SBR	46	46	47	0.15	1	0	0	0
	EB	EBL	35	35	36	0.17	1	0	0	0
		EBT	625	625	628	0.12	1	0	0	0
		EBR	11	11	12	0.29	1	0	0	0
	WB	WBL	92	92	92	0.00	1	0	0	0
		WBT	668	668	659	0.35	1	0	0	0
		WBR	219	219	210	0.61	1	0	0	0
		WBU	14	14	17	0.76	1	0	0	0
4	NB	NBL	0	0	0			0	0	0
		NBT	0	0	0			0	0	0
		NBR	0	0	0			0	0	0
	SB	SBL	445	445	450	0.24	1	0	0	0
		SBT	0	0	0			0	0	0
		SBR	315	315	313	0.11	1	0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	664	664	671	0.27	1	0	0	0
		EBR	404	404	397	0.35	1	0	0	0
	WB	WBL	0	0	0			0	0	0
		WBT	981	981	768	7.20	1	1	1	0
		WBR	583	583	705	4.81	1	1	0	0
5	NB	NBL	533	533	514	0.83	1	0	0	0
		NBT	0	0	0			0	0	0
		NBR	753	753	733	0.73	1	0	0	0
	SB	SBL	0	0	0			0	0	0
		SBT	0	0	0			0	0	0
		SBR	0	0	0			0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	784	784	757	0.97	1	0	0	0
		EBR	319	319	364	2.44	1	1	0	0
	WB	WBL	0	0	0			0	0	0
		WBT	988	988	959	0.93	1	0	0	0
		WBR	736	736	756	0.73	1	0	0	0
6	NB	NBL	435	435	424	0.53	1	0	0	0
		NBT	35	35	33	0.34	1	0	0	0
		NBR	312	312	320	0.45	1	0	0	0
	SB	SBL	13	13	14	0.27	1	0	0	0
		SBT	27	27	26	0.19	1	0	0	0
		SBR	60	60	64	0.51	1	0	0	0
	EB	EBL	58	58	72	1.74	1	0	0	0
		EBT	1226	1226	1237	0.31	1	0	0	0
		EBR	502	502	531	1.28	1	0	0	0
		EBU	35	35	34	0.17	1	0	0	0
	WB	WBL	297	297	320	1.31	1	0	0	0
		WBT	1193	1193	1193	0.00	1	0	0	0
		WBR	20	20	19	0.23	1	0	0	0
		WBU	4	4	5	0.47	1	0	0	0
					Total Movements =	*57*		3	1	0
						Percent Below		95%	98%	100%
						Target Percentage		85%	98%	100%
								YES	YES	YES

2040 Total AM - Generator Peak				DRAFT CALIBRATION DATA							
				Average VISSIM				1 = Above Given GEH Value			
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value		GEH Value > 2	GEH Value > 5	GEH Value > 10	
1	NB	NBL	119	119	124	0.45	1	0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	367	367	387	1.03	1	0	0	0	
	SB	SBL	0	0	0			0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	0	0	0			0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	257	257	259	0.12	1	0	0	0	
		EBR	178	178	179	0.07	1	0	0	0	
	WB	WBL	579	579	606	1.11	1	0	0	0	
		WBT	417	417	443	1.25	1	0	0	0	
		WBR	0	0	0			0	0	0	
2	NB	NBL	0	0	0		1	0	0	0	
		NBT	0	0	0		1	0	0	0	
		NBR	0	0	0		1	0	0	0	
	SB	SBL	6	6	5	0.43	1	0	0	0	
		SBT	0	0	0		1	0	0	0	
		SBR	26	26	26	0.00	1	0	0	0	
	EB	EBL	6	6	7	0.39	1	0	0	0	
		EBT	622	622	639	0.68	1	0	0	0	
		EBR	0	0	0		1	0	0	0	
	WB	WBL	0	0	0		1	0	0	0	
		WBT	974	974	1023	1.55	1	0	0	0	
		WBR	16	16	16	0.00	1	0	0	0	
3	NB	NBL	0	0	0		1	0	0	0	
		NBT	4	4	4	0.00	1	0	0	0	
		NBR	36	36	39	0.49	1	0	0	0	
	SB	SBL	389	389	387	0.10	1	0	0	0	
		SBT	12	12	12	0.00	1	0	0	0	
		SBR	42	42	42	0.00	1	0	0	0	
	EB	EBL	34	34	39	0.83	1	0	0	0	
		EBT	588	588	601	0.53	1	0	0	0	
		EBR	3	3	4	0.53	1	0	0	0	
	WB	WBL	78	78	85	0.78	1	0	0	0	
		WBT	948	948	997	1.57	1	0	0	0	
		WBR	160	160	173	1.01	1	0	0	0	
		WBU	15	15	17	0.50	1	0	0	0	
4	NB	NBL	0	0	0			0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	0	0	0			0	0	0	
	SB	SBL	400	400	414	0.69	1	0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	337	337	341	0.22	1	0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	676	676	700	0.91	1	0	0	0	
		EBR	350	350	344	0.32	1	0	0	0	
	WB	WBL	0	0	0			0	0	0	
		WBT	1170	1170	1101	2.05	1	1	0	0	
		WBR	570	570	696	5.01	1	1	1	0	
5	NB	NBL	692	692	812	4.38	1	1	0	0	
		NBT	0	0	0			0	0	0	
		NBR	636	636	726	3.45	1	1	0	0	
	SB	SBL	0	0	0			0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	0	0	0			0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	704	704	684	0.76	1	0	0	0	
		EBR	357	357	430	3.68	1	1	0	0	
	WB	WBL	0	0	0			0	0	0	
		WBT	1027	1027	985	1.32	1	0	0	0	
		WBR	765	765	792	0.97	1	0	0	0	
6	NB	NBL	437	437	431	0.29	1	0	0	0	
		NBT	22	22	22	0.00	1	0	0	0	
		NBR	265	265	257	0.50	1	0	0	0	
	SB	SBL	13	13	14	0.27	1	0	0	0	
		SBT	22	22	21	0.22	1	0	0	0	
		SBR	52	52	53	0.14	1	0	0	0	
	EB	EBL	33	33	37	0.68	1	0	0	0	
		EBT	1107	1107	1154	1.40	1	0	0	0	
		EBR	359	359	393	1.75	1	0	0	0	
		EBU	24	24	34	1.86	1	0	0	0	
	WB	WBL	255	255	252	0.19	1	0	0	0	
		WBT	1288	1288	1259	0.81	1	0	0	0	
		WBR	32	32	32	0.00	1	0	0	0	
		WBU	5	5	6	0.43	1	0	0	0	
					Total Movements =	*57*		5	1	0	
						Percent Below		91%	98%	100%	
						Target Percentage		85%	98%	100%	
								YES	YES	YES	

2040 Background PM - System Peak											
						DRAFT CALIBRATION DATA					
				Average VISSIM					1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value		GEH Value > 2	GEH Value > 5	GEH Value > 10	
1	NB	NBL	115	115	129	1.27	1	0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	130	130	141	0.94	1	0	0	0	
	SB	SBL	0	0	0			0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	0	0	0			0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	588	588	596	0.33	1	0	0	0	
		EBR	216	216	214	0.14	1	0	0	0	
	WB	WBL	268	268	275	0.42	1	0	0	0	
		WBT	346	346	359	0.69	1	0	0	0	
		WBR	0	0	0			0	0	0	
2	NB	NBL	0	0	0		1	0	0	0	
		NBT	0	0	0		1	0	0	0	
		NBR	3	3	3	0.00	1	0	0	0	
	SB	SBL	33	33	36	0.51	1	0	0	0	
		SBT	0	0	0		1	0	0	0	
		SBR	39	39	40	0.16	1	0	0	0	
	EB	EBL	79	79	76	0.34	1	0	0	0	
		EBT	654	654	661	0.27	1	0	0	0	
		EBR	0	0	0		1	0	0	0	
	WB	WBL	5	5	4	0.47	1	0	0	0	
		WBT	587	587	594	0.29	1	0	0	0	
		WBR	70	70	73	0.35	1	0	0	0	
3	NB	NBL	15	15	14	0.26	1	0	0	0	
		NBT	7	7	8	0.37	1	0	0	0	
		NBR	88	88	92	0.42	1	0	0	0	
	SB	SBL	744	744	759	0.55	1	0	0	0	
		SBT	8	8	8	0.00	1	0	0	0	
		SBR	70	70	72	0.24	1	0	0	0	
	EB	EBL	92	92	91	0.10	1	0	0	0	
		EBT	592	592	602	0.41	1	0	0	0	
		EBR	6	6	7	0.39	1	0	0	0	
	WB	WBL	73	73	77	0.46	1	0	0	0	
		WBT	588	588	585	0.12	1	0	0	0	
		WBR	262	262	270	0.49	1	0	0	0	
		WBU	17	17	22	1.13	1	0	0	0	
4	NB	NBL	0	0	0			0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	0	0	0			0	0	0	
	SB	SBL	718	718	737	0.70	1	0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	411	411	413	0.10	1	0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	933	933	973	1.30	1	0	0	0	
		EBR	509	509	502	0.31	1	0	0	0	
	WB	WBL	0	0	0			0	0	0	
		WBT	990	990	1034	1.38	1	0	0	0	
		WBR	833	833	840	0.24	1	0	0	0	
5	NB	NBL	341	341	369	1.49	1	0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	637	637	690	2.06	1	1	0	0	
	SB	SBL	0	0	0			0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	0	0	0			0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	1465	1465	1466	0.03	1	0	0	0	
		EBR	181	181	244	4.32	1	1	0	0	
	WB	WBL	0	0	0			0	0	0	
		WBT	1471	1471	1505	0.88	1	0	0	0	
		WBR	490	490	469	0.96	1	0	0	0	
6	NB	NBL	573	573	563	0.42	1	0	0	0	
		NBT	37	37	37	0.00	1	0	0	0	
		NBR	321	321	320	0.06	1	0	0	0	
	SB	SBL	37	37	37	0.00	1	0	0	0	
		SBT	38	38	41	0.48	1	0	0	0	
		SBR	115	115	125	0.91	1	0	0	0	
	EB	EBL	101	101	104	0.30	1	0	0	0	
		EBT	1392	1392	1434	1.12	1	0	0	0	
		EBR	199	199	207	0.56	1	0	0	0	
		EBU	30	30	36	1.04	1	0	0	0	
	WB	WBL	266	266	260	0.37	1	0	0	0	
		WBT	1249	1249	1250	0.03	1	0	0	0	
		WBR	22	22	23	0.21	1	0	0	0	
		WBU	11	11	10	0.31	1	0	0	0	
					Total Movements =	*57*		2	0	0	
						Percent Below		96%	100%	100%	
						Target Percentage		85%	98%	100%	
								YES	YES	YES	

2040 Background PM - Generator Peak											
						DRAFT CALIBRATION DATA					
				Average VISSIM					1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value		GEH Value > 2	GEH Value > 5	GEH Value > 10	
1	NB	NBL	100	100	101	0.10	1	0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	174	174	183	0.67	1	0	0	0	
	SB	SBL	0	0	0			0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	0	0	0			0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	315	315	311	0.23	1	0	0	0	
		EBR	111	111	102	0.87	1	0	0	0	
	WB	WBL	330	330	301	1.63	1	0	0	0	
		WBT	242	242	199	2.90	1	1	0	0	
		WBR	0	0	0			0	0	0	
2	NB	NBL	0	0	0		1	0	0	0	
		NBT	3	3	3	0.00	1	0	0	0	
		NBR	2	2	3	0.63	1	0	0	0	
	SB	SBL	61	61	59	0.26	1	0	0	0	
		SBT	0	0	0		1	0	0	0	
		SBR	28	28	25	0.58	1	0	0	0	
	EB	EBL	53	53	50	0.42	1	0	0	0	
		EBT	449	449	444	0.24	1	0	0	0	
		EBR	0	0	0		1	0	0	0	
	WB	WBL	2	2	1	0.82	1	0	0	0	
		WBT	529	529	475	2.41	1	1	0	0	
		WBR	75	75	76	0.12	1	0	0	0	
3	NB	NBL	11	11	11	0.00	1	0	0	0	
		NBT	4	4	4	0.00	1	0	0	0	
		NBR	51	51	51	0.00	1	0	0	0	
	SB	SBL	814	814	799	0.53	1	0	0	0	
		SBT	1	1	1	0.00	1	0	0	0	
		SBR	71	71	70	0.12	1	0	0	0	
	EB	EBL	80	80	76	0.45	1	0	0	0	
		EBT	423	423	418	0.24	1	0	0	0	
		EBR	14	14	12	0.55	1	0	0	0	
	WB	WBL	33	33	28	0.91	1	0	0	0	
		WBT	511	511	471	1.81	1	0	0	0	
		WBR	255	255	227	1.80	1	0	0	0	
		WBU	21	21	22	0.22	1	0	0	0	
4	NB	NBL	0	0	0			0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	0	0	0			0	0	0	
	SB	SBL	796	796	760	1.29	1	0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	356	356	351	0.27	1	0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	968	968	945	0.74	1	0	0	0	
		EBR	371	371	345	1.37	1	0	0	0	
	WB	WBL	0	0	0			0	0	0	
		WBT	901	901	929	0.93	1	0	0	0	
		WBR	725	725	632	3.57	1	1	0	0	
5	NB	NBL	286	286	284	0.12	1	0	0	0	
		NBT	0	0	0			0	0	0	
		NBR	553	553	545	0.34	1	0	0	0	
	SB	SBL	0	0	0			0	0	0	
		SBT	0	0	0			0	0	0	
		SBR	0	0	0			0	0	0	
	EB	EBL	0	0	0			0	0	0	
		EBT	1606	1606	1450	3.99	1	1	0	0	
		EBR	169	169	255	5.91	1	1	1	0	
	WB	WBL	0	0	0			0	0	0	
		WBT	1312	1312	1277	0.97	1	0	0	0	
		WBR	393	393	351	2.18	1	1	0	0	
6	NB	NBL	538	538	517	0.91	1	0	0	0	
		NBT	16	16	15	0.25	1	0	0	0	
		NBR	319	319	299	1.14	1	0	0	0	
	SB	SBL	40	40	41	0.16	1	0	0	0	
		SBT	29	29	28	0.19	1	0	0	0	
		SBR	107	107	111	0.38	1	0	0	0	
	EB	EBL	112	112	108	0.38	1	0	0	0	
		EBT	1416	1416	1285	3.56	1	1	0	0	
		EBR	204	204	193	0.78	1	0	0	0	
		EBU	33	33	33	0.00	1	0	0	0	
	WB	WBL	233	233	226	0.46	1	0	0	0	
		WBT	1015	1015	967	1.52	1	0	0	0	
		WBR	26	26	22	0.82	1	0	0	0	
		WBU	9	9	11	0.63	1	0	0	0	
					Total Movements =	*57*		7	1	0	
						Percent Below		88%	98%	100%	
						Target Percentage		85%	98%	100%	
								YES	YES	YES	

2040 Total PM - System Peak										
					DRAFT CALIBRATION DATA					
				Average VISSIM				1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value		GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	133	133	135	0.17	1	0	0	0
		NBT	0	0	0			0	0	0
		NBR	193	193	197	0.29	1	0	0	0
	SB	SBL	0	0	0			0	0	0
		SBT	0	0	0			0	0	0
		SBR	0	0	0			0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	579	579	596	0.70	1	0	0	0
		EBR	222	222	223	0.07	1	0	0	0
	WB	WBL	358	358	357	0.05	1	0	0	0
		WBT	361	361	359	0.11	1	0	0	0
		WBR	0	0	0			0	0	0
2	NB	NBL	0	0	0		1	0	0	0
		NBT	0	0	0		1	0	0	0
		NBR	3	3	3	0.00	1	0	0	0
	SB	SBL	33	33	36	0.51	1	0	0	0
		SBT	0	0	0		1	0	0	0
		SBR	39	39	40	0.16	1	0	0	0
	EB	EBL	75	75	76	0.12	1	0	0	0
		EBT	709	709	717	0.30	1	0	0	0
		EBR	0	0	0		1	0	0	0
	WB	WBL	4	4	4	0.00	1	0	0	0
		WBT	687	687	676	0.42	1	0	0	0
		WBR	67	67	73	0.72	1	0	0	0
3	NB	NBL	15	15	14	0.26	1	0	0	0
		NBT	8	8	8	0.00	1	0	0	0
		NBR	89	89	92	0.32	1	0	0	0
	SB	SBL	747	747	759	0.44	1	0	0	0
		SBT	8	8	8	0.00	1	0	0	0
		SBR	71	71	73	0.24	1	0	0	0
	EB	EBL	97	97	92	0.51	1	0	0	0
		EBT	641	641	657	0.63	1	0	0	0
		EBR	6	6	7	0.39	1	0	0	0
	WB	WBL	77	77	77	0.00	1	0	0	0
		WBT	670	670	666	0.15	1	0	0	0
		WBR	264	264	270	0.37	1	0	0	0
		WBU	19	19	22	0.66	1	0	0	0
4	NB	NBL	0	0	0			0	0	0
		NBT	0	0	0			0	0	0
		NBR	0	0	0			0	0	0
	SB	SBL	710	710	737	1.00	1	0	0	0
		SBT	0	0	0			0	0	0
		SBR	432	432	436	0.19	1	0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	955	955	1003	1.53	1	0	0	0
		EBR	535	535	527	0.35	1	0	0	0
	WB	WBL	0	0	0			0	0	0
		WBT	1057	1057	1092	1.07	1	0	0	0
		WBR	836	836	840	0.14	1	0	0	0
5	NB	NBL	369	369	406	1.88	1	0	0	0
		NBT	0	0	0			0	0	0
		NBR	625	625	690	2.53	1	1	0	0
	SB	SBL	0	0	0			0	0	0
		SBT	0	0	0			0	0	0
		SBR	0	0	0			0	0	0
	EB	EBL	0	0	0			0	0	0
		EBT	1474	1474	1480	0.16	1	0	0	0
		EBR	188	188	260	4.81	1	1	0	0
	WB	WBL	0	0	0			0	0	0
		WBT	1509	1509	1526	0.44	1	0	0	0
		WBR	494	494	469	1.14	1	0	0	0
6	NB	NBL	573	573	565	0.34	1	0	0	0
		NBT	37	37	37	0.00	1	0	0	0
		NBR	318	318	320	0.11	1	0	0	0
	SB	SBL	39	39	37	0.32	1	0	0	0
		SBT	39	39	41	0.32	1	0	0	0
		SBR	118	118	125	0.64	1	0	0	0
	EB	EBL	100	100	104	0.40	1	0	0	0
		EBT	1390	1390	1447	1.51	1	0	0	0
		EBR	202	202	208	0.42	1	0	0	0
		EBU	30	30	36	1.04	1	0	0	0
	WB	WBL	268	268	260	0.49	1	0	0	0
		WBT	1286	1286	1269	0.48	1	0	0	0
		WBR	22	22	23	0.21	1	0	0	0
		WBU	11	11	10	0.31	1	0	0	0
					Total Movements =	*57*		2	0	0
						Percent Below		96%	100%	100%
						Target Percentage		85%	98%	100%
								YES	YES	YES

2040 Total PM - Generator Peak											
						DRAFT CALIBRATION DATA					
				Average VISSIM					1 = Above Given GEH Value		
Intersection	Approach	Movement	Volume	Volumes	Synchro Volumes	GEH Value			GEH Value > 2	GEH Value > 5	GEH Value > 10
1	NB	NBL	150	150	154	0.32	1		0	0	0
		NBT	0	0	0				0	0	0
		NBR	631	631	646	0.59	1		0	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	313	313	311	0.11	1		0	0	0
		EBR	161	161	154	0.56	1		0	0	0
	WB	WBL	750	750	756	0.22	1		0	0	0
		WBT	214	214	199	1.04	1		0	0	0
		WBR	0	0	0				0	0	0
2	NB	NBL	0	0	0			1	0	0	0
		NBT	3	3	3	0.00	1		0	0	0
		NBR	2	2	3	0.63	1		0	0	0
	SB	SBL	22	22	19	0.66	1		0	0	0
		SBT	0	0	0			1	0	0	0
		SBR	24	24	25	0.20	1		0	0	0
	EB	EBL	55	55	50	0.69	1		0	0	0
		EBT	900	900	907	0.23	1		0	0	0
		EBR	0	0	0			1	0	0	0
	WB	WBL	2	2	1	0.82	1		0	0	0
		WBT	939	939	930	0.29	1		0	0	0
		WBR	75	75	76	0.12	1		0	0	0
3	NB	NBL	11	11	11	0.00	1		0	0	0
		NBT	4	4	4	0.00	1		0	0	0
		NBR	51	51	51	0.00	1		0	0	0
	SB	SBL	747	747	839	3.27	1		1	0	0
		SBT	1	1	1	0.00	1		0	0	0
		SBR	58	58	76	2.20	1		1	0	0
	EB	EBL	85	85	82	0.33	1		0	0	0
		EBT	822	822	845	0.80	1		0	0	0
		EBR	11	11	12	0.29	1		0	0	0
	WB	WBL	32	32	28	0.73	1		0	0	0
		WBT	942	942	920	0.72	1		0	0	0
		WBR	241	241	237	0.26	1		0	0	0
		WBU	22	22	22	0.00	1		0	0	0
4	NB	NBL	0	0	0				0	0	0
		NBT	0	0	0				0	0	0
		NBR	0	0	0				0	0	0
	SB	SBL	801	801	760	1.47	1		0	0	0
		SBT	0	0	0				0	0	0
		SBR	479	479	479	0.00	1		0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	1181	1181	1194	0.38	1		0	0	0
		EBR	536	536	553	0.73	1		0	0	0
	WB	WBL	0	0	0				0	0	0
		WBT	1271	1271	1250	0.59	1		0	0	0
		WBR	657	657	632	0.98	1		0	0	0
5	NB	NBL	489	489	488	0.05	1		0	0	0
		NBT	0	0	0				0	0	0
		NBR	565	565	545	0.85	1		0	0	0
	SB	SBL	0	0	0				0	0	0
		SBT	0	0	0				0	0	0
		SBR	0	0	0				0	0	0
	EB	EBL	0	0	0				0	0	0
		EBT	1494	1494	1569	1.92	1		0	0	0
		EBR	493	493	385	5.15	1		1	1	0
	WB	WBL	0	0	0				0	0	0
		WBT	1409	1409	1394	0.40	1		0	0	0
		WBR	383	383	351	1.67	1		0	0	0
6	NB	NBL	550	550	526	1.03	1		0	0	0
		NBT	17	17	15	0.50	1		0	0	0
		NBR	324	324	299	1.42	1		0	0	0
	SB	SBL	39	39	41	0.32	1		0	0	0
		SBT	28	28	28	0.00	1		0	0	0
		SBR	104	104	111	0.68	1		0	0	0
	EB	EBL	116	116	108	0.76	1		0	0	0
		EBT	1300	1300	1395	2.59	1		1	0	0
		EBR	207	207	202	0.35	1		0	0	0
		EBU	34	34	33	0.17	1		0	0	0
	WB	WBL	232	232	226	0.40	1		0	0	0
		WBT	1100	1100	1075	0.76	1		0	0	0
		WBR	25	25	22	0.62	1		0	0	0
		WBU	10	10	11	0.31	1		0	0	0
					Total Movements =	*57*			4	1	0
						Percent Below			93%	98%	100%
						Target Percentage			85%	98%	100%
									YES	YES	YES

Table 18 – Year 2040 Estimated 95th Percentile Queuing Analysis

Intersection	Movement	Storage (ft)	2040 Background				2040 Total				Queue Storage Adequate?
			6:30 - 7:30 AM	7:00 - 8:00 AM	5:30 - 6:30 PM	4:30 - 5:30 PM	6:30 - 7:30 AM	7:00 - 8:00 AM	5:30 - 6:30 PM	4:30 - 5:30 PM	
1: OR 219 / Arbor Grove Rd NE	SBLR		25	25	25	50	25	25	25	50	Yes
	EBLT		<25	<25	<25	<25	<25	<25	<25	<25	Yes
	WBTR		<25	<25	<25	<25	<25	<25	<25	<25	Yes
2: OR 219 / North Butteville Rd	SBLR		50	50	50	400	75	50	75	425	Yes
	EBLT		<25	<25	<25	<25	<25	<25	<25	<25	Yes
	WBTR		<25	<25	<25	<25	<25	<25	<25	<25	Yes
3: OR 219 / Butteville Rd	NBL		500	500	375	450	250	25	50	50	Yes
	NBR	100					25	25	50	50	Yes
	EBT		<25	<25	<25	75	250	275	250	375	Yes
	EBR	170					250	275	250	375	No
	WBLT		225	250	800	1500	300	175	350	200	Yes
4: OR 219 / Willow Ave	NBLTR		<25	25	50	50	<25	25	50	25	Yes
	EBL						25	25	75	75	Yes
	EBTR		75	100	225	550	<25	<25	<25	<25	Yes
	WBLT		<25	25	375	1,500	<25	25	25	25	Yes
	WBR	200	<25	<25	<25	<25	75	75	200	175	Yes
	SBLTR		125	125	125	125	75	100	75	100	Yes
5: OR 219 / Woodland Ave	EBL	230	100	100	150	200	75	75	175	175	Yes
	EBT		250	300	225	325	300	325	625	375	Yes
	EBR		25	50	25	25	25	50	25	25	Yes
	WBL	230	175	200	125	200	200	225	125	175	Yes
	WBT		500	375	725	1,075	650	525	925	600	Yes
	WBR	100	100	125	150	425	100	125	150	125	No
	NBL	100	<25	25	50	75	<25	50	50	75	Yes
	NBTR		75	75	75	125	75	75	75	125	Yes
	SBLTR		250	275	650	650	300	300	850	600	Yes
6: OR 219 / I-5 SB Ramps	EBT		250	275	1,000	675	350	375	1,275	775	Yes
	EBR	260	<25	25	25	25	<25	<25	25	25	Yes
	WBT		325	250	725	725	500	425	925	700	Yes
	WBR	530	275	350	300	300	225	300	250	200	Yes
	SBL	690	450	500	1,775	1,025	425	525	1,650	1,100	No
	SBR	430	100	125	475	850	325	300	850	600	No
7: OR 219 / I-5 NB Ramps	EBT		500	550	975	925	500	600	925	950	Yes
	EBR	560	75	75	50	75	125	100	275	50	Yes
	WBT		875	850	875	1,000	875	900	1,000	975	Yes
	WBR	380	250	250	75	75	350	350	75	75	Yes
	NBLTR	620	625	550	1,275	1,225	750	600	1,250	1,350	No

Table 18 – Year 2040 Estimated 95th Percentile Queuing Analysis (continued)

Intersection	Movement	Storage (ft)	2023 Background				2023 Total				Queue Storage Adequate?
			6:30 - 7:30 AM	7:00 - 8:00 AM	5:30 - 6:30 PM	4:30 - 5:30 PM	6:30 - 7:30 AM	7:00 - 8:00 AM	5:30 - 6:30 PM	4:30 - 5:30 PM	
8: OR 214 / Evergreen Rd	EBL	180	100	125	200	225	100	300	175	300	No
	EBT		1,025	1,150	1,150	1,150	1,000	1,125	1,025	1,150	Yes
	EBR	280	450	900	125	125	500	825	100	125	No
	WBL	370	500	825	925	1,675	525	1,225	1,225	1,850	No
	WBTR		875	950	1,025	1,800	900	1,225	1,350	1,875	Yes
	NBLT	320	825	1,125	1,625	1,800	775	1,125	1,475	1,700	No
	NBR	280	450	1,125	1,900	1,875	425	1,275	1,775	1,850	No
	SBL	80	50	75	125	100	50	75	125	125	No
	SBTR		100	125	250	325	100	125	275	300	Yes
9: OR 214/Settlemier Ave/Boones Ferry Rd	EBL	250	225	325	375	300	225	325	400	300	Yes
	EBT		775	1,250	1,075	1,325	750	1,275	1,325	1,375	Yes
	EBR	190	75	100	275	225	75	100	200	250	Yes
	WBL	230	100	125	225	225	100	125	225	225	Yes
	WBT		975	1,350	1,100	1,975	1,225	1,575	1,425	2,025	Yes
	WBR	150	100	125	125	150	100	125	125	150	Yes
	NBL	170	1,150	1,050	675	875	1,250	1,150	800	900	No
	NBT		250	275	225	225	250	275	225	225	Yes
	NBR	140	100	125	125	150	100	125	125	150	Yes
	SBL	170	125	175	225	250	125	175	225	250	No
	SBT		200	325	400	500	200	325	400	500	Yes
	SBR	860	200	175	200	200	125	200	125	200	Yes
10: OR 214/OR 211/OR 99E	EBL	300	150	350	425	650	150	350	450	650	No
	EBT		450	550	700	1,100	450	550	725	1,100	Yes
	EBR		<25	<25	<25	<25	<25	<25	<25	<25	Yes
	WBL	250	350	225	650	775	350	225	650	775	No
	WBTR		1,275	1,975	675	875	1,325	1,975	700	875	Yes
	NBL	250	125	175	225	275	125	200	275	275	Yes
	NBT		500	525	250	350	500	525	300	350	Yes
	NBR	190	125	175	125	150	125	25	125	150	Yes
	SBL	300	175	150	325	525	175	150	325	525	No
	SBTR		250	300	625	1,200	250	300	625	1,200	Yes
11: Stafney Rd (Old Butteville Rd) / North Site Access / Butteville Rd	NBLT						<25	<25	<25	<25	Yes
	EBLR						25	<25	25	25	Yes
	SBTR						25	25	25	<25	Yes
	WBLTR						25	25	50	25	Yes
12: North Middle Site Access / Butteville Rd	NBTR						<25	<25	<25	<25	Yes
	WBLR						<25	<25	25	<25	Yes
	SBLT						25	25	25	<25	Yes
13: South Middle Site Access / Butteville Rd	NBTR						<25	<25	<25	<25	Yes
	WBL						<25	<25	25	<25	Yes
	WBR						25	25	75	25	Yes
	SBL	100					25	25	25	25	Yes
	SBT						<25	<25	<25	<25	Yes
14: South Site Access / Lebrun Rd / Butteville Rd	EBLTR		25	25	25	25	50	25	50	25	Yes
	NBL	100	25	25	25	25	25	25	25	25	Yes
	NBTR						<25	<25	<25	<25	Yes
	WBLT						25	<25	25	25	Yes
	WBR						25	25	50	25	Yes
	SBL	100					25	25	25	25	Yes
	SBTR		<25	<25	<25	<25	<25	<25	<25	<25	Yes
15: Parr Rd / Butteville Rd	NBTR		<25	<25	<25	<25	<25	<25	<25	<25	Yes
	WBLR		25	25	50	50	50	25	50	50	Yes
	SBLT		25	25	25	25	25	25	25	25	Yes

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	118	151	109	22	4
Future Vol, veh/h	12	118	151	109	22	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, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	9	4	3	0	0
Mvmt Flow	13	128	164	118	24	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	282	0	-	0	377	223
Stage 1	-	-	-	-	223	-
Stage 2	-	-	-	-	154	-
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	1292	-	-	-	629	822
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	879	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1292	-	-	-	622	822
Mov Cap-2 Maneuver	-	-	-	-	622	-
Stage 1	-	-	-	-	810	-
Stage 2	-	-	-	-	879	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1292	-	-	-	646
HCM Lane V/C Ratio	0.01	-	-	-	0.044
HCM Control Delay (s)	7.8	0	-	-	10.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	3.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	6	319	315	252	116	10
Future Vol, veh/h	6	319	315	252	116	10
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	7	4	9	31	29
Mvmt Flow	7	347	342	274	126	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	616	0	-	0	840	479
Stage 1	-	-	-	-	479	-
Stage 2	-	-	-	-	361	-
Critical Hdwy	4.1	-	-	-	6.71	6.49
Critical Hdwy Stg 1	-	-	-	-	5.71	-
Critical Hdwy Stg 2	-	-	-	-	5.71	-
Follow-up Hdwy	2.2	-	-	-	3.779	3.561
Pot Cap-1 Maneuver	974	-	-	-	300	535
Stage 1	-	-	-	-	567	-
Stage 2	-	-	-	-	646	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	974	-	-	-	297	535
Mov Cap-2 Maneuver	-	-	-	-	297	-
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	646	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	25.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	974	-	-	-	308
HCM Lane V/C Ratio	0.007	-	-	-	0.445
HCM Control Delay (s)	8.7	0	-	-	25.7
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0	-	-	-	2.2

HCS7 Roundabouts Report

General Information

Analyst	ZHB
Agency or Co.	Kittelson
Date Performed	4/29/2021
Analysis Year	2040
Time Analyzed	AM Total - Generator Peak
Project Description	Project Basie

Site Information

Intersection	OR 219/Butteville Rd
E/W Street Name	OR 219
N/S Street Name	Butteville (Realigned)
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	Woodburn, OR

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0
Lane Assignment	T		R		L		LT				L					
Volume (V), veh/h	0		259	179	0	606	443		0	124		387				
Percent Heavy Vehicles, %	0		10	19	0	7	5		0	3		4				
Flow Rate (v_{PCE}), pc/h	0		310	232	0	705	506		0	139		437				
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes	2				1				1							
Pedestrians Crossing, p/h	0				0				0							

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.3276		4.5436	4.5436			4.9763				
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.6087				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	310.00	232.00		641.83	569.17			139.00	437.00			
Entry Volume veh/h	272.69	204.08		604.62	536.17			134.95	420.19			
Circulating Flow (v_c), pc/h	705			139			310			1350		
Exiting Flow (v_{ex}), pc/h	310			645			0			937		
Capacity (c_{pce}), pc/h	705.75	779.90		1251.29	1251.29			1005.90				
Capacity (c), veh/h	620.82	686.05		1178.73	1178.73			976.61				
v/c Ratio (x)	0.44	0.30		0.51	0.45			0.14				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	12.5	8.9		8.8	7.9			5.0				
Lane LOS	B	A		A	A			A	A			
95% Queue, veh	2.2	1.2		3.0	2.4			0.5				
Approach Delay, s/veh	11.0			8.3			1.2					
Approach LOS	B			A			A					
Intersection Delay, s/veh | LOS	7.1						A					

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	639	1	1	1023	16	1	1	1	5	1	26
Future Vol, veh/h	7	639	1	1	1023	16	1	1	1	5	1	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	240	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	7	0	0	6	0	0	0	0	4	0	0
Mvmt Flow	8	695	1	1	1112	17	1	1	1	5	1	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1129	0	0	696	0	0	1271	1843	349	1488	1835	565
Stage 1	-	-	-	-	-	-	712	712	-	1123	1123	-
Stage 2	-	-	-	-	-	-	559	1131	-	365	712	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.58	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.58	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.58	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.54	4	3.3
Pot Cap-1 Maneuver	626	-	-	909	-	-	127	76	653	84	77	473
Stage 1	-	-	-	-	-	-	394	439	-	216	283	-
Stage 2	-	-	-	-	-	-	486	281	-	621	439	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	626	-	-	909	-	-	117	75	652	82	76	473
Mov Cap-2 Maneuver	-	-	-	-	-	-	117	75	-	82	76	-
Stage 1	-	-	-	-	-	-	389	433	-	213	283	-
Stage 2	-	-	-	-	-	-	455	281	-	610	433	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0	33.9	21.9
HCM LOS			D	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	128	626	-	-	909	-	-	248
HCM Lane V/C Ratio	0.025	0.012	-	-	0.001	-	-	0.14
HCM Control Delay (s)	33.9	10.8	-	-	9	-	-	21.9
HCM Lane LOS	D	B	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.5

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	39	601	4	17	85	997	173	1	4	39	387	12
Future Volume (vph)	39	601	4	17	85	997	173	1	4	39	387	12
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3107	1488		1352	3137	1417	1662	976		1526	1490
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3107	1488		1352	3137	1417	1662	976		1526	1490
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	42	653	4	18	92	1084	188	1	4	42	421	13
RTOR Reduction (vph)	0	0	2	0	0	0	30	0	40	0	0	6
Lane Group Flow (vph)	42	653	2	0	110	1084	158	1	6	0	244	230
Confl. Peds. (#/hr)								1				
Heavy Vehicles (%)	0%	7%	0%	23%	23%	6%	5%	0%	0%	60%	3%	25%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA	pt+ov	Split	NA		Split	NA
Protected Phases	5	2	2 8	1	1	6	6 4	8	8		4	4
Permitted Phases												
Actuated Green, G (s)	5.3	39.4	45.0		13.1	47.2	68.1	5.6	5.6		20.9	20.9
Effective Green, g (s)	5.3	39.4	45.0		13.1	47.2	68.1	5.6	5.6		20.9	20.9
Actuated g/C Ratio	0.06	0.41	0.47		0.14	0.49	0.71	0.06	0.06		0.22	0.22
Clearance Time (s)	4.0	4.5			4.0	4.5		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2			2.5	4.2		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	92	1281	701		185	1550	1010	97	57		333	326
v/s Ratio Prot	0.03	c0.21	0.00		0.08	c0.35	0.11	0.00	c0.01		c0.16	0.15
v/s Ratio Perm												
v/c Ratio	0.46	0.51	0.00		0.59	0.70	0.16	0.01	0.11		0.73	0.70
Uniform Delay, d1	43.7	20.9	13.4		38.7	18.7	4.4	42.3	42.6		34.7	34.5
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.6	0.5	0.0		4.2	1.6	0.1	0.0	0.6		7.6	6.3
Delay (s)	46.3	21.3	13.4		42.9	20.2	4.5	42.4	43.2		42.3	40.7
Level of Service	D	C	B		D	C	A	D	D		D	D
Approach Delay (s)		22.8				19.9			43.2			41.6
Approach LOS		C				B			D			D

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	95.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	42
Future Volume (vph)	42
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	46
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	39	601	4	17	85	997	173	1	4	39	387	12
Future Volume (veh/h)	39	601	4	17	85	997	173	1	4	39	387	12
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1654	1750		1436	1668	1682	1750	1750	1750	1704	1403
Adj Flow Rate, veh/h	42	653	4		92	1084	188	1	4	42	473	0
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	7	0		23	6	5	0	0	0	3	25
Cap, veh/h	66	1409	746		110	1528	954	91	7	75	606	262
Arrive On Green	0.04	0.45	0.45		0.08	0.48	0.48	0.05	0.05	0.05	0.19	0.00
Sat Flow, veh/h	1667	3143	1483		1368	3169	1425	1667	130	1368	3245	1403
Grp Volume(v), veh/h	42	653	4		92	1084	188	1	0	46	473	0
Grp Sat Flow(s),veh/h/ln	1667	1572	1483		1368	1585	1425	1667	0	1498	1623	1403
Q Serve(g_s), s	1.8	10.4	0.1		4.8	19.3	3.6	0.0	0.0	2.2	10.0	0.0
Cycle Q Clear(g_c), s	1.8	10.4	0.1		4.8	19.3	3.6	0.0	0.0	2.2	10.0	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.91	1.00	
Lane Grp Cap(c), veh/h	66	1409	746		110	1528	954	91	0	82	606	262
V/C Ratio(X)	0.64	0.46	0.01		0.84	0.71	0.20	0.01	0.00	0.56	0.78	0.00
Avail Cap(c_a), veh/h	464	1970	1011		381	1987	1160	696	0	626	2034	880
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	34.0	13.8	8.9		32.5	14.6	4.5	32.1	0.0	33.1	27.8	0.0
Incr Delay (d2), s/veh	7.4	0.4	0.0		11.5	1.1	0.2	0.0	0.0	4.4	1.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.5	6.2	0.1		3.4	10.5	3.0	0.0	0.0	1.5	6.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.4	14.2	8.9		44.0	15.7	4.7	32.1	0.0	37.5	29.4	0.0
LnGrp LOS	D	B	A		D	B	A	C	A	D	C	A
Approach Vol, veh/h		699				1364			47			473
Approach Delay, s/veh		15.8				16.1			37.4			29.4
Approach LOS		B				B			D			C

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.8	36.7		17.4	7.3	39.1		7.9				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	6.8	12.4		12.0	3.8	21.3		4.2				
Green Ext Time (p_c), s	0.1	7.7		1.3	0.0	13.3		0.2				

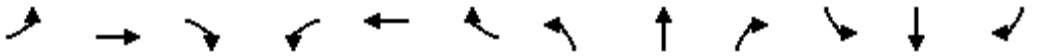
Intersection Summary		
HCM 6th Ctrl Delay		18.9
HCM 6th LOS		B

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

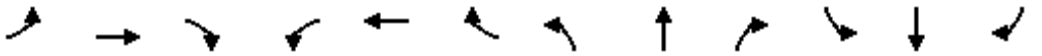
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	42
Future Volume (veh/h)	42
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1403
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	25
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer - Assigned Phs
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	700	344	0	1101	696	0	0	0	414	0	341
Future Volume (vph)	0	700	344	0	1101	696	0	0	0	414	0	341
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3090	1263		3140	1315				2859		1283
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3090	1263		3140	1315				2859		1283
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)	0	737	362	0	1159	733	0	0	0	436	0	359
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	737	362	0	1159	733	0	0	0	436	0	350
Confl. Peds. (#/hr)						1						1
Heavy Vehicles (%)	0%	6%	16%	0%	8%	13%	0%	0%	0%	10%	0%	13%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		61.9	100.0		52.0	100.0				29.1		39.5
Effective Green, g (s)		61.9	100.0		52.0	100.0				29.1		41.5
Actuated g/C Ratio		0.62	1.00		0.52	1.00				0.29		0.42
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1912	1263		1632	1315				831		532
v/s Ratio Prot		0.24			c0.37					0.15		c0.27
v/s Ratio Perm			0.29			0.56						
v/c Ratio		0.39	0.29		0.71	0.56				0.52		0.66
Uniform Delay, d1		9.5	0.0		18.3	0.0				29.7		23.5
Progression Factor		1.00	1.00		0.83	1.00				1.00		1.00
Incremental Delay, d2		0.6	0.6		1.4	0.9				0.5		2.6
Delay (s)		10.1	0.6		16.5	0.9				30.1		26.1
Level of Service		B	A		B	A				C		C
Approach Delay (s)		7.0			10.5			0.0			28.3	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	13.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	700	344	0	1101	696	0	0	0	414	0	341
Future Volume (veh/h)	0	700	344	0	1101	696	0	0	0	414	0	341
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1619	1483	0	1784	1715				1478	0	1437
Adj Flow Rate, veh/h	0	737	0	0	1159	0				436	0	359
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	6	16	0	8	13				10	0	13
Cap, veh/h	0	1839		0	2026					853	0	405
Arrive On Green	0.00	0.60	0.00	0.00	1.00	0.00				0.31	0.00	0.33
Sat Flow, veh/h	0	3158	1257	0	3479	1454				2731	0	1218
Grp Volume(v), veh/h	0	737	0	0	1159	0				436	0	359
Grp Sat Flow(s),veh/h/ln	0	1538	1257	0	1695	1454				1365	0	1218
Q Serve(g_s), s	0.0	12.7	0.0	0.0	0.0	0.0				13.1	0.0	27.9
Cycle Q Clear(g_c), s	0.0	12.7	0.0	0.0	0.0	0.0				13.1	0.0	27.9
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1839		0	2026					853	0	405
V/C Ratio(X)	0.00	0.40		0.00	0.57					0.51	0.00	0.89
Avail Cap(c_a), veh/h	0	1839		0	2026					969	0	457
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.79	0.00	0.00	0.50	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.6	0.0	0.0	0.0	0.0				28.1	0.0	31.6
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.6	0.0				0.4	0.0	16.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	7.1	0.0	0.0	0.3	0.0				7.6	0.0	25.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.2	0.0	0.0	0.6	0.0				28.5	0.0	48.4
LnGrp LOS	A	B		A	A					C	A	D
Approach Vol, veh/h		737	A		1159	A					795	
Approach Delay, s/veh		11.2			0.6						37.5	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		64.3		35.7		64.3						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		14.7		29.9		2.0						
Green Ext Time (p_c), s		15.0		1.3		15.0						

Intersection Summary												
HCM 6th Ctrl Delay			14.4									
HCM 6th LOS			B									

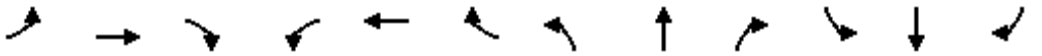
Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	684	430	0	985	792	812	0	726	0	0	0
Future Volume (vph)	0	684	430	0	985	792	812	0	726	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frt		1.00	0.85		1.00	0.85	1.00	0.93	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.97	1.00			
Satd. Flow (prot)		3111	1445		2951	1436	1445	1338	1331			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.97	1.00			
Satd. Flow (perm)		3111	1445		2951	1436	1445	1338	1331			
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)	0	720	453	0	1037	834	855	0	764	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	31	129	0	0	0
Lane Group Flow (vph)	0	720	453	0	1037	834	564	512	383	0	0	0
Heavy Vehicles (%)	0%	9%	5%	0%	11%	2%	6%	0%	3%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		55.5	100.0		55.5	100.0	35.5	35.5	35.5			
Effective Green, g (s)		55.5	100.0		55.5	100.0	35.5	35.5	35.5			
Actuated g/C Ratio		0.56	1.00		0.56	1.00	0.36	0.36	0.36			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1726	1445		1637	1436	512	474	472			
v/s Ratio Prot		0.23			c0.35		c0.39	0.38				
v/s Ratio Perm			0.31			0.58			0.29			
v/c Ratio		0.42	0.31		0.63	0.58	1.10	1.08	0.81			
Uniform Delay, d1		12.9	0.0		15.3	0.0	32.2	32.2	29.2			
Progression Factor		1.46	1.00		1.07	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.7	0.5		1.1	1.0	70.4	64.7	10.0			
Delay (s)		19.5	0.5		17.4	1.0	102.7	96.9	39.2			
Level of Service		B	A		B	A	F	F	D			
Approach Delay (s)		12.2			10.1			80.7			0.0	
Approach LOS		B			B			F			A	

Intersection Summary			
HCM 2000 Control Delay	35.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰	✥	↱			
Traffic Volume (veh/h)	0	684	430	0	985	792	812	0	726	0	0	0
Future Volume (veh/h)	0	684	430	0	985	792	812	0	726	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1770	1826	0	1551	1674	1473	1555	1514			
Adj Flow Rate, veh/h	0	720	0	0	1037	0	1027	0	369			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	9	5	0	11	2	6	0	3			
Cap, veh/h	0	1867		0	1636		996	0	455			
Arrive On Green	0.00	1.00	0.00	0.00	0.18	0.00	0.35	0.00	0.35			
Sat Flow, veh/h	0	3452	1547	0	3025	1419	2805	0	1283			
Grp Volume(v), veh/h	0	720	0	0	1037	0	1027	0	369			
Grp Sat Flow(s),veh/h/ln	0	1682	1547	0	1473	1419	1403	0	1283			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	32.5	0.0	35.5	0.0	26.0			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	32.5	0.0	35.5	0.0	26.0			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1867		0	1636		996	0	455			
V/C Ratio(X)	0.00	0.39		0.00	0.63		1.03	0.00	0.81			
Avail Cap(c_a), veh/h	0	1867		0	1636		996	0	455			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.90	0.00	0.00	0.37	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	31.5	0.0	32.3	0.0	29.2			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.7	0.0	36.8	0.0	10.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.3	0.0	0.0	16.5	0.0	23.9	0.0	14.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	32.2	0.0	69.1	0.0	39.5			
LnGrp LOS	A	A		A	C		F	A	D			
Approach Vol, veh/h		720	A		1037	A		1396				
Approach Delay, s/veh		0.5			32.2			61.3				
Approach LOS		A			C			E				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		60.0				60.0		40.0				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				34.5		37.5				
Green Ext Time (p_c), s		8.9				14.4		0.0				

Intersection Summary		
HCM 6th Ctrl Delay	37.8	
HCM 6th LOS	D	

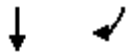
Notes

User approved volume balancing among the lanes for turning movement.

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

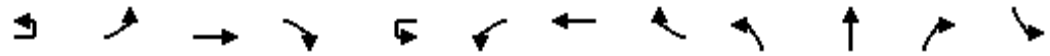
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	34	37	1154	393	6	252	1259	32	431	22	257	14
Future Volume (vph)	34	37	1154	393	6	252	1259	32	431	22	257	14
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1614	3079	1340		1502	2947		1519	1521	1347	1471
Flt Permitted		0.09	1.00	1.00		0.10	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		147	3079	1340		156	2947		1519	1521	1347	1471
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	35	39	1202	409	6	262	1311	33	449	23	268	15
RTOR Reduction (vph)	0	0	0	243	0	0	2	0	0	0	213	0
Lane Group Flow (vph)	0	74	1202	166	0	269	1342	0	233	239	55	15
Confl. Peds. (#/hr)											1	1
Heavy Vehicles (%)	3%	3%	8%	11%	9%	9%	11%	0%	4%	10%	9%	13%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		55.4	40.6	40.6		55.4	49.3		20.4	20.4	20.4	6.7
Effective Green, g (s)		55.4	40.6	40.6		55.4	49.3		20.4	20.4	20.4	6.7
Actuated g/C Ratio		0.55	0.41	0.41		0.55	0.49		0.20	0.20	0.20	0.07
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		170	1250	544		285	1452		309	310	274	98
v/s Ratio Prot		0.03	c0.39			0.14	c0.46		0.15	c0.16		0.01
v/s Ratio Perm		0.21		0.12		0.38					0.04	
v/c Ratio		0.44	0.96	0.31		0.94	0.92		0.75	0.77	0.20	0.15
Uniform Delay, d1		15.5	28.9	20.1		35.0	23.6		37.4	37.6	33.0	44.0
Progression Factor		1.16	1.13	2.32		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		1.0	15.4	1.2		38.2	11.4		9.5	10.8	0.3	0.5
Delay (s)		19.0	48.2	47.8		73.2	35.0		47.0	48.4	33.3	44.5
Level of Service		B	D	D		E	C		D	D	C	D
Approach Delay (s)			46.8				41.4			42.5		
Approach LOS			D				D			D		

Intersection Summary			
HCM 2000 Control Delay	43.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	21	53
Future Volume (vph)	21	53
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1480	
Flt Permitted	1.00	
Satd. Flow (perm)	1480	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	22	55
RTOR Reduction (vph)	51	0
Lane Group Flow (vph)	26	0
Confl. Peds. (#/hr)		
Heavy Vehicles (%)	7%	5%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	6.7	
Effective Green, g (s)	6.7	
Actuated g/C Ratio	0.07	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	99	
v/s Ratio Prot	c0.02	
v/s Ratio Perm		
v/c Ratio	0.26	
Uniform Delay, d1	44.3	
Progression Factor	1.00	
Incremental Delay, d2	1.0	
Delay (s)	45.3	
Level of Service	D	
Approach Delay (s)	45.2	
Approach LOS	D	

Intersection Summary



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	34	37	1154	393	6	252	1259	32	431	22	257	14
Future Volume (veh/h)	34	37	1154	393	6	252	1259	32	431	22	257	14
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1709	1641	1600		1578	1551	1551	1695	1614	1627	1573
Adj Flow Rate, veh/h		39	1202	0		262	1311	33	465	0	0	15
Peak Hour Factor		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		3	8	11		9	11	11	4	10	9	13
Cap, veh/h		210	1013			495	1738	44	539	0		70
Arrive On Green		0.02	0.32	0.00		0.28	0.59	0.59	0.17	0.00	0.00	0.05
Sat Flow, veh/h		1628	3118	1356		1503	2937	74	3229	0	1379	1498
Grp Volume(v), veh/h		39	1202	0		262	657	687	465	0	0	15
Grp Sat Flow(s),veh/h/ln		1628	1559	1356		1503	1473	1538	1615	0	1379	1498
Q Serve(g_s), s		1.0	32.5	0.0		9.4	32.9	32.9	14.0	0.0	0.0	1.0
Cycle Q Clear(g_c), s		1.0	32.5	0.0		9.4	32.9	32.9	14.0	0.0	0.0	1.0
Prop In Lane		1.00		1.00		1.00		0.05	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		210	1013			495	872	910	539	0		70
V/C Ratio(X)		0.19	1.19			0.53	0.75	0.75	0.86	0.00		0.22
Avail Cap(c_a), veh/h		406	1013			495	872	910	662	0		232
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.77	0.77	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		13.7	33.8	0.0		27.9	15.0	15.1	40.5	0.0	0.0	45.9
Incr Delay (d2), s/veh		0.2	91.8	0.0		0.8	6.0	5.8	9.2	0.0	0.0	1.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		0.6	35.6	0.0		8.8	17.1	17.6	10.3	0.0	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		14.0	125.6	0.0		28.7	21.0	20.8	49.7	0.0	0.0	47.1
LnGrp LOS		B	F			C	C	C	D	A		D
Approach Vol, veh/h			1241	A			1606			465	A	
Approach Delay, s/veh			122.1				22.2			49.7		
Approach LOS			F				C			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	32.7	37.0		9.2	6.0	63.7		21.2
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	11.4	34.5		3.3	3.0	34.9		16.0
Green Ext Time (p_c), s	0.2	0.0		0.0	0.0	0.0		0.6

Intersection Summary	
HCM 6th Ctrl Delay	63.3
HCM 6th LOS	E

Notes

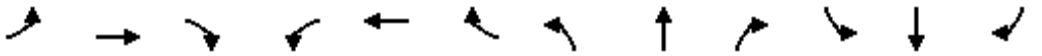
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	21	53
Future Volume (veh/h)	21	53
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1654	1654
Adj Flow Rate, veh/h	22	0
Peak Hour Factor	0.96	0.96
Percent Heavy Veh, %	7	7
Cap, veh/h	77	
Arrive On Green	0.05	0.00
Sat Flow, veh/h	1654	0
Grp Volume(v), veh/h	22	0
Grp Sat Flow(s),veh/h/ln	1654	0
Q Serve(g_s), s	1.3	0.0
Cycle Q Clear(g_c), s	1.3	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	77	
V/C Ratio(X)	0.29	
Avail Cap(c_a), veh/h	256	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	46.1	0.0
Incr Delay (d2), s/veh	1.5	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	47.6	0.0
LnGrp LOS	D	
Approach Vol, veh/h	37	A
Approach Delay, s/veh	47.4	
Approach LOS	D	

Timer - Assigned Phs

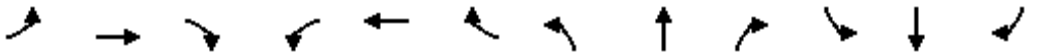
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	700	257	52	726	97	466	193	67	66	123	130
Future Volume (vph)	144	700	257	52	726	97	466	193	67	66	123	130
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	0.98	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1554	1591	1390	1363	1471	1378	1568	1699	1360	1385	1606	1288
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1554	1591	1390	1363	1471	1378	1568	1699	1360	1385	1606	1288
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	148	722	265	54	748	100	480	199	69	68	127	134
RTOR Reduction (vph)	0	0	55	0	0	45	0	0	53	0	0	118
Lane Group Flow (vph)	148	722	210	54	748	55	480	199	16	68	127	16
Confl. Peds. (#/hr)	4					4	1					1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	7%	10%	7%	22%	19%	5%	6%	3%	7%	20%	9%	13%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	17.2	64.6	89.7	8.9	56.3	56.3	25.1	31.5	31.5	10.0	16.4	16.4
Effective Green, g (s)	17.2	64.6	89.7	8.9	56.3	56.3	25.1	31.5	31.5	10.0	16.4	16.4
Actuated g/C Ratio	0.13	0.48	0.67	0.07	0.42	0.42	0.19	0.24	0.24	0.07	0.12	0.12
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	199	767	930	90	618	578	293	399	319	103	196	157
v/s Ratio Prot	c0.10	c0.45	0.04	0.04	c0.51		c0.31	0.12		0.05	c0.08	
v/s Ratio Perm			0.11			0.04			0.01			0.01
v/c Ratio	0.74	0.94	0.23	0.60	1.21	0.09	1.64	0.50	0.05	0.66	0.65	0.10
Uniform Delay, d1	56.3	32.9	8.6	60.8	38.9	23.5	54.5	44.4	39.7	60.3	56.0	52.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	13.3	20.0	0.1	8.7	109.2	0.1	302.2	0.7	0.0	13.4	6.4	0.2
Delay (s)	69.6	52.9	8.7	69.5	148.0	23.6	356.6	45.1	39.7	73.7	62.4	52.5
Level of Service	E	D	A	E	F	C	F	D	D	E	E	D
Approach Delay (s)		44.8			129.5			244.5			60.7	
Approach LOS		D			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	119.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.16		
Actuated Cycle Length (s)	134.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	101.8%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



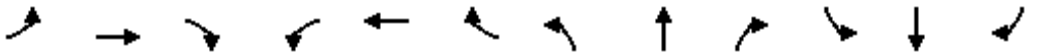
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	144	700	257	52	726	97	466	193	67	66	123	130
Future Volume (veh/h)	144	700	257	52	726	97	466	193	67	66	123	130
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1654	1614	1654	1450	1491	1682	1668	1709	1654	1477	1627	1573
Adj Flow Rate, veh/h	148	722	162	54	748	100	480	199	69	68	127	72
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	7	10	7	22	19	5	6	3	7	20	9	13
Cap, veh/h	172	807	978	65	653	621	316	415	333	82	167	136
Arrive On Green	0.11	0.50	0.50	0.05	0.44	0.44	0.20	0.24	0.24	0.06	0.10	0.10
Sat Flow, veh/h	1576	1614	1396	1381	1491	1419	1589	1709	1369	1407	1627	1326
Grp Volume(v), veh/h	148	722	162	54	748	100	480	199	69	68	127	72
Grp Sat Flow(s),veh/h/ln	1576	1614	1396	1381	1491	1419	1589	1709	1369	1407	1627	1326
Q Serve(g_s), s	11.6	50.8	5.0	4.9	55.0	5.4	25.0	12.5	5.0	6.0	9.5	6.5
Cycle Q Clear(g_c), s	11.6	50.8	5.0	4.9	55.0	5.4	25.0	12.5	5.0	6.0	9.5	6.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	172	807	978	65	653	621	316	415	333	82	167	136
V/C Ratio(X)	0.86	0.89	0.17	0.83	1.15	0.16	1.52	0.48	0.21	0.83	0.76	0.53
Avail Cap(c_a), veh/h	314	807	978	275	653	621	316	415	333	280	389	317
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	55.0	28.4	6.4	59.4	35.3	21.3	50.3	40.7	37.9	58.5	54.9	53.5
Incr Delay (d2), s/veh	9.0	13.0	0.2	18.1	82.8	0.2	248.6	0.6	0.2	14.1	5.3	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.8	29.9	2.6	3.7	48.9	3.4	49.2	9.2	3.1	4.5	7.5	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	63.9	41.4	6.6	77.4	118.1	21.6	298.9	41.4	38.1	72.6	60.2	55.9
LnGrp LOS	E	D	A	E	F	C	F	D	D	E	E	E
Approach Vol, veh/h		1032			902			748			267	
Approach Delay, s/veh		39.1			104.9			206.4			62.2	
Approach LOS		D			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.4	67.8	29.5	17.9	18.2	60.0	11.8	35.5
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	6.9	52.8	27.0	11.5	13.6	57.0	8.0	14.5
Green Ext Time (p_c), s	0.1	1.6	0.0	0.7	0.2	0.0	0.1	1.0

Intersection Summary	
HCM 6th Ctrl Delay	103.8
HCM 6th LOS	F

Notes

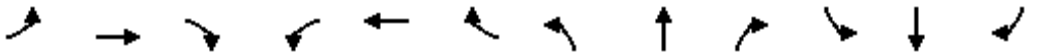
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	286	341	222	398	151	189	1027	388	106	471	149
Future Volume (vph)	111	286	341	222	398	151	189	1027	388	106	471	149
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1410	1524	1272	1554	1447		2941	2949	1344	1319	2757	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1410	1524	1272	1554	1447		2941	2949	1344	1319	2757	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	114	295	352	229	410	156	195	1059	400	109	486	154
RTOR Reduction (vph)	0	0	287	0	13	0	0	0	203	0	27	0
Lane Group Flow (vph)	114	295	65	229	553	0	195	1059	197	109	613	0
Heavy Vehicles (%)	14%	11%	13%	7%	14%	21%	6%	9%	7%	26%	16%	17%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	13.0	19.5	19.5	16.0	22.5		12.1	37.2	37.2	12.8	37.9	
Effective Green, g (s)	13.0	19.5	19.5	16.0	22.5		12.1	37.2	37.2	12.8	37.9	
Actuated g/C Ratio	0.12	0.19	0.19	0.15	0.21		0.12	0.35	0.35	0.12	0.36	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	174	283	236	236	310		338	1044	476	160	995	
v/s Ratio Prot	0.08	0.19		c0.15	c0.38		0.07	c0.36		c0.08	0.22	
v/s Ratio Perm			0.05						0.15			
v/c Ratio	0.66	1.04	0.28	0.97	1.78		0.58	1.01	0.41	0.68	0.62	
Uniform Delay, d1	43.9	42.8	36.7	44.3	41.2		44.0	33.9	25.6	44.1	27.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.6	65.0	0.8	50.0	365.0		2.4	31.5	2.6	11.3	2.9	
Delay (s)	52.4	107.7	37.5	94.3	406.2		46.4	65.4	28.3	55.5	30.4	
Level of Service	D	F	D	F	F		D	E	C	E	C	
Approach Delay (s)		66.9			316.4			54.2			34.1	
Approach LOS		E			F			D			C	

Intersection Summary			
HCM 2000 Control Delay	105.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.19		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	92.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	286	341	222	398	151	189	1027	388	106	471	149
Future Volume (veh/h)	111	286	341	222	398	151	189	1027	388	106	471	149
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1559	1600	1573	1654	1559	1559	1668	1627	1654	1395	1532	1532
Adj Flow Rate, veh/h	114	295	0	229	410	104	195	1059	245	109	486	102
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	14	11	13	7	14	14	6	9	7	26	16	16
Cap, veh/h	184	297		240	257	65	258	1174	532	128	940	196
Arrive On Green	0.12	0.19	0.00	0.15	0.21	0.21	0.08	0.38	0.38	0.10	0.39	0.39
Sat Flow, veh/h	1485	1600	1333	1576	1200	304	3082	3092	1402	1329	2396	500
Grp Volume(v), veh/h	114	295	0	229	0	514	195	1059	245	109	294	294
Grp Sat Flow(s),veh/h/ln	1485	1600	1333	1576	0	1504	1541	1546	1402	1329	1455	1442
Q Serve(g_s), s	7.7	19.3	0.0	15.1	0.0	22.5	6.5	33.9	8.4	8.5	16.2	16.3
Cycle Q Clear(g_c), s	7.7	19.3	0.0	15.1	0.0	22.5	6.5	33.9	8.4	8.5	16.2	16.3
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		0.35
Lane Grp Cap(c), veh/h	184	297		240	0	322	258	1174	532	128	571	566
V/C Ratio(X)	0.62	0.99		0.95	0.00	1.59	0.75	0.90	0.46	0.85	0.52	0.52
Avail Cap(c_a), veh/h	184	297		240	0	322	455	1174	532	196	571	566
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.7	42.7	0.0	44.1	0.0	41.3	47.0	30.7	9.1	46.7	24.3	24.4
Incr Delay (d2), s/veh	6.2	50.2	0.0	45.2	0.0	281.8	4.4	11.3	2.9	18.8	3.3	3.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.6	17.2	0.0	13.7	0.0	52.3	4.7	20.0	5.0	6.2	9.9	9.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.9	92.9	0.0	89.3	0.0	323.1	51.5	42.0	11.9	65.5	27.6	27.7
LnGrp LOS	D	F		F	A	F	D	D	B	E	C	C
Approach Vol, veh/h		409	A		743			1499			697	
Approach Delay, s/veh		80.9			251.1			38.3			33.6	
Approach LOS		F			F			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.3	46.7	17.0	28.0	14.6	45.4	20.0	25.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	15.5	34.5	13.0	22.5	15.5	34.5	16.0	19.5
Max Q Clear Time (g_c+I1), s	8.5	18.3	9.7	24.5	10.5	35.9	17.1	21.3
Green Ext Time (p_c), s	0.3	5.9	0.1	0.0	0.1	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	89.7
HCM 6th LOS	F

Notes

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

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

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↱		↰	↱	
Traffic Vol, veh/h	1	1	1	1	1	3	1	507	9	58	727	1
Future Vol, veh/h	1	1	1	1	1	3	1	507	9	58	727	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	3	0	0	2	0
Mvmt Flow	1	1	1	1	1	3	1	551	10	63	790	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1477	1480	791	1476	1475	556	791	0	0	561	0	0
Stage 1	917	917	-	558	558	-	-	-	-	-	-	-
Stage 2	560	563	-	918	917	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	105	127	393	105	128	534	838	-	-	1020	-	-
Stage 1	329	354	-	518	515	-	-	-	-	-	-	-
Stage 2	516	512	-	328	354	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	99	119	393	99	120	534	838	-	-	1020	-	-
Mov Cap-2 Maneuver	99	119	-	99	120	-	-	-	-	-	-	-
Stage 1	329	332	-	517	514	-	-	-	-	-	-	-
Stage 2	511	511	-	306	332	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	30.8	22.8	0	0.6
HCM LOS	D	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	838	-	-	143	208	1020	-	-
HCM Lane V/C Ratio	0.001	-	-	0.023	0.026	0.062	-	-
HCM Control Delay (s)	9.3	-	-	30.8	22.8	8.8	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.2	-	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	513	9	58	671
Future Vol, veh/h	1	3	513	9	58	671
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	1	3	558	10	63	729

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1418	563	0	0	568	0
Stage 1	563	-	-	-	-	-
Stage 2	855	-	-	-	-	-
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	152	530	-	-	1014	-
Stage 1	574	-	-	-	-	-
Stage 2	420	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	143	530	-	-	1014	-
Mov Cap-2 Maneuver	275	-	-	-	-	-
Stage 1	574	-	-	-	-	-
Stage 2	394	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	430	1014	-
HCM Lane V/C Ratio	-	-	0.01	0.062	-
HCM Control Delay (s)	-	-	13.5	8.8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.2	-

Intersection	
Int Delay, s/veh	2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	11	511	33	230	442
Future Vol, veh/h	2	11	511	33	230	442
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	3	0	0	2
Mvmt Flow	2	12	555	36	250	480

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1553	573	0	0	591	0
Stage 1	573	-	-	-	-	-
Stage 2	980	-	-	-	-	-
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	126	523	-	-	995	-
Stage 1	568	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	94	523	-	-	995	-
Mov Cap-2 Maneuver	205	-	-	-	-	-
Stage 1	568	-	-	-	-	-
Stage 2	275	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	3.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	205	523	995	-
HCM Lane V/C Ratio	-	-	0.011	0.023	0.251	-
HCM Control Delay (s)	-	-	22.7	12	9.8	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.1	1	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1	20	2	1	18	20	506	34	230	194	20
Future Vol, veh/h	20	1	20	2	1	18	20	506	34	230	194	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	30	2	30	2	2	2	30	3	2	2	2	30
Mvmt Flow	22	1	22	2	1	20	22	550	37	250	211	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1345	1353	222	1347	1346	569	233	0	0	587	0	0
Stage 1	722	722	-	613	613	-	-	-	-	-	-	-
Stage 2	623	631	-	734	733	-	-	-	-	-	-	-
Critical Hdwy	7.4	6.52	6.5	7.12	6.52	6.22	4.4	-	-	4.12	-	-
Critical Hdwy Stg 1	6.4	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.4	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.77	4.018	3.57	3.518	4.018	3.318	2.47	-	-	2.218	-	-
Pot Cap-1 Maneuver	112	150	752	128	151	522	1186	-	-	988	-	-
Stage 1	377	431	-	480	483	-	-	-	-	-	-	-
Stage 2	429	474	-	412	426	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	85	110	752	98	111	522	1186	-	-	988	-	-
Mov Cap-2 Maneuver	85	110	-	98	111	-	-	-	-	-	-	-
Stage 1	370	322	-	471	474	-	-	-	-	-	-	-
Stage 2	404	465	-	298	318	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	38.5	16.4	0.3	5.1
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1186	-	-	151	102	522	988	-	-
HCM Lane V/C Ratio	0.018	-	-	0.295	0.032	0.037	0.253	-	-
HCM Control Delay (s)	8.1	-	-	38.5	41.5	12.2	9.9	-	-
HCM Lane LOS	A	-	-	E	E	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.2	0.1	0.1	1	-	-

Intersection	
Int Delay, s/veh	3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	108	401	25	64	215
Future Vol, veh/h	23	108	401	25	64	215
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	10	7
Mvmt Flow	25	117	436	27	70	234

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	824	450	0	0	463	0
Stage 1	450	-	-	-	-	-
Stage 2	374	-	-	-	-	-
Critical Hdwy	7	6.5	-	-	4.2	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.29	-
Pot Cap-1 Maneuver	301	591	-	-	1057	-
Stage 1	600	-	-	-	-	-
Stage 2	658	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	278	591	-	-	1057	-
Mov Cap-2 Maneuver	278	-	-	-	-	-
Stage 1	600	-	-	-	-	-
Stage 2	608	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.2	0	2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	493	1057	-
HCM Lane V/C Ratio	-	-	0.289	0.066	-
HCM Control Delay (s)	-	-	15.2	8.6	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.2	-

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	122	131	55	33	4
Future Vol, veh/h	17	122	131	55	33	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, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	6	9	11	0	0
Mvmt Flow	18	133	142	60	36	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	202	0	-	0	341	172
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	169	-
Critical Hdwy	4.19	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.281	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1329	-	-	-	659	877
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	866	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1329	-	-	-	649	877
Mov Cap-2 Maneuver	-	-	-	-	649	-
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	866	-

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	10.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1329	-	-	-	668
HCM Lane V/C Ratio	0.014	-	-	-	0.06
HCM Control Delay (s)	7.7	0	-	-	10.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	386	218	171	126	6
Future Vol, veh/h	7	386	218	171	126	6
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	5	9	14	28	25
Mvmt Flow	8	420	237	186	137	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	423	0	-	0	766	330
Stage 1	-	-	-	-	330	-
Stage 2	-	-	-	-	436	-
Critical Hdwy	4.1	-	-	-	6.68	6.45
Critical Hdwy Stg 1	-	-	-	-	5.68	-
Critical Hdwy Stg 2	-	-	-	-	5.68	-
Follow-up Hdwy	2.2	-	-	-	3.752	3.525
Pot Cap-1 Maneuver	1147	-	-	-	336	662
Stage 1	-	-	-	-	674	-
Stage 2	-	-	-	-	600	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1147	-	-	-	333	662
Mov Cap-2 Maneuver	-	-	-	-	333	-
Stage 1	-	-	-	-	668	-
Stage 2	-	-	-	-	600	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	23
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1147	-	-	-	341
HCM Lane V/C Ratio	0.007	-	-	-	0.421
HCM Control Delay (s)	8.2	0	-	-	23
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	2

HCS7 Roundabouts Report

General Information

Analyst	ZHB
Agency or Co.	Kittelson
Date Performed	4/29/2021
Analysis Year	2040
Time Analyzed	AM Total - System Peak
Project Description	Project Basie

Site Information

Intersection	OR 219/Butteville Rd
E/W Street Name	OR 219
N/S Street Name	Butteville (Realigned)
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.97
Jurisdiction	Woodburn, OR

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0
Lane Assignment	T		R		L		LT				L					
Volume (V), veh/h	0		345	167	0	456	268		0	122		304				
Percent Heavy Vehicles, %	0		10	2	0	2	10		0	4		2				
Flow Rate (v_{PCE}), pc/h	0		391	176	0	480	304		0	131		320				
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes	2				1				1							
Pedestrians Crossing, p/h	0				0				0							

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.3276		4.5436	4.5436			4.9763				
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.6087				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	391.00	176.00		415.52	368.48			131.00	320.00			
Entry Volume veh/h	364.11	163.90		395.88	351.07			125.96	313.73			
Circulating Flow (v_c), pc/h	480			131			391			915		
Exiting Flow (v_{ex}), pc/h	391			435			0			656		
Capacity (c_{pce}), pc/h	868.05	944.27		1260.43	1260.43			926.14				
Capacity (c), veh/h	808.35	879.33		1200.87	1200.87			890.52				
v/c Ratio (x)	0.45	0.19		0.33	0.29			0.14				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	10.3	6.0		6.1	5.7			5.4				
Lane LOS	B	A		A	A			A	A			
95% Queue, veh	2.4	0.7		1.5	1.2			0.5				
Approach Delay, s/veh	9.0			5.9			1.6					
Approach LOS	A			A			A					
Intersection Delay, s/veh | LOS	5.7						A					

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	17	631	1	1	680	27	1	1	1	44	1	44
Future Vol, veh/h	17	631	1	1	680	27	1	1	1	44	1	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	240	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	0	6	0	0	10	0	0	0	0	5	0	5
Mvmt Flow	18	678	1	1	731	29	1	1	1	47	1	47

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	760	0	0	679	0	0	1083	1477	340	1124	1463	380
Stage 1	-	-	-	-	-	-	715	715	-	748	748	-
Stage 2	-	-	-	-	-	-	368	762	-	376	715	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.6	6.5	7
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.55	4	3.35
Pot Cap-1 Maneuver	861	-	-	923	-	-	174	127	662	156	130	609
Stage 1	-	-	-	-	-	-	392	438	-	364	423	-
Stage 2	-	-	-	-	-	-	630	416	-	609	438	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	861	-	-	923	-	-	157	124	662	152	127	609
Mov Cap-2 Maneuver	-	-	-	-	-	-	157	124	-	152	127	-
Stage 1	-	-	-	-	-	-	384	429	-	356	423	-
Stage 2	-	-	-	-	-	-	579	416	-	594	429	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0	24.5	29.4
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	188	861	-	-	923	-	-	241
HCM Lane V/C Ratio	0.017	0.021	-	-	0.001	-	-	0.397
HCM Control Delay (s)	24.5	9.3	-	-	8.9	-	-	29.4
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1.8

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	36	628	12	17	92	659	210	2	4	42	381	6
Future Volume (vph)	36	628	12	17	92	659	210	2	4	42	381	6
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.5		4.0	4.5	4.5	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3107	1488		1222	3167	1365	1662	996		1541	1481
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3107	1488		1222	3167	1365	1662	996		1541	1481
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	683	13	18	100	716	228	2	4	46	414	7
RTOR Reduction (vph)	0	0	8	0	0	0	64	0	43	0	0	7
Lane Group Flow (vph)	39	683	5	0	118	716	164	2	7	0	240	225
Confl. Peds. (#/hr)											1	
Heavy Vehicles (%)	0%	7%	0%	36%	36%	5%	9%	0%	0%	56%	2%	50%
Turn Type	Prot	NA	pt+ov	Prot	Prot	NA	pt+ov	Split	NA		Split	NA
Protected Phases	5	2	2 8	1	1	6	6 4	8	8		4	4
Permitted Phases												
Actuated Green, G (s)	8.2	30.7	36.2		15.4	37.9	58.9	5.5	5.5		21.0	21.0
Effective Green, g (s)	8.2	30.7	36.2		15.4	37.9	58.9	5.5	5.5		21.0	21.0
Actuated g/C Ratio	0.09	0.34	0.41		0.17	0.43	0.66	0.06	0.06		0.24	0.24
Clearance Time (s)	4.0	4.5			4.0	4.5		4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2			2.5	4.2		2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	152	1070	604		211	1347	902	102	61		363	349
v/s Ratio Prot	0.02	c0.22	0.00		0.10	c0.23	0.12	0.00	c0.01		c0.16	0.15
v/s Ratio Perm												
v/c Ratio	0.26	0.64	0.01		0.56	0.53	0.18	0.02	0.11		0.66	0.65
Uniform Delay, d1	37.6	24.5	15.8		33.7	19.0	5.8	39.3	39.5		30.8	30.7
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	0.7	1.5	0.0		2.6	0.6	0.1	0.1	0.6		4.0	3.6
Delay (s)	38.3	26.0	15.8		36.3	19.6	6.0	39.3	40.1		34.9	34.3
Level of Service	D	C	B		D	B	A	D	D		C	C
Approach Delay (s)		26.5				18.5			40.1			34.6
Approach LOS		C				B			D			C

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	89.1	Sum of lost time (s)	16.5
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	47
Future Volume (vph)	47
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	51
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM 6th Signalized Intersection Summary
5: Woodland Ave & OR 219

08/12/2021

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	36	628	12	17	92	659	210	2	4	42	381	6
Future Volume (veh/h)	36	628	12	17	92	659	210	2	4	42	381	6
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1654	1750		1259	1682	1627	1750	1750	1750	1717	1062
Adj Flow Rate, veh/h	39	683	13		100	716	228	2	4	46	467	0
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	7	0		36	5	9	0	0	0	2	50
Cap, veh/h	83	1127	620		114	1263	813	99	7	82	637	207
Arrive On Green	0.05	0.36	0.36		0.10	0.40	0.40	0.06	0.06	0.06	0.19	0.00
Sat Flow, veh/h	1667	3143	1483		1199	3195	1379	1667	120	1381	3271	1062
Grp Volume(v), veh/h	39	683	13		100	716	228	2	0	50	467	0
Grp Sat Flow(s),veh/h/ln	1667	1572	1483		1199	1598	1379	1667	0	1501	1636	1062
Q Serve(g_s), s	1.3	10.1	0.3		4.6	9.9	4.6	0.1	0.0	1.8	7.6	0.0
Cycle Q Clear(g_c), s	1.3	10.1	0.3		4.6	9.9	4.6	0.1	0.0	1.8	7.6	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.92	1.00	
Lane Grp Cap(c), veh/h	83	1127	620		114	1263	813	99	0	89	637	207
V/C Ratio(X)	0.47	0.61	0.02		0.88	0.57	0.28	0.02	0.00	0.56	0.73	0.00
Avail Cap(c_a), veh/h	590	2506	1270		425	2547	1368	886	0	798	2607	847
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.1	14.8	9.7		25.2	13.3	5.7	25.0	0.0	25.8	21.4	0.0
Incr Delay (d2), s/veh	3.1	0.8	0.0		14.2	0.6	0.3	0.1	0.0	4.1	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	5.9	0.2		3.0	5.7	3.4	0.0	0.0	1.3	5.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.2	15.6	9.7		39.5	13.9	6.0	25.1	0.0	29.9	22.6	0.0
LnGrp LOS	C	B	A		D	B	A	C	A	C	C	A
Approach Vol, veh/h		735				1044			52			467
Approach Delay, s/veh		16.3				14.6			29.7			22.6
Approach LOS		B				B			C			C

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	24.7		15.0	7.3	26.8		7.3				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	6.6	12.1		9.6	3.3	11.9		3.8				
Green Ext Time (p_c), s	0.1	8.2		1.3	0.0	10.4		0.2				

Intersection Summary	
HCM 6th Ctrl Delay	17.1
HCM 6th LOS	B

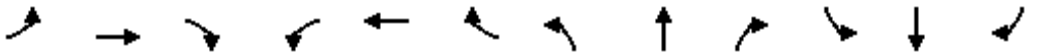
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	47
Future Volume (veh/h)	47
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1062
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	50
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

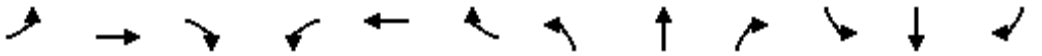
Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	671	397	0	768	705	0	0	0	450	0	313
Future Volume (vph)	0	671	397	0	768	705	0	0	0	450	0	313
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3090	1308		3055	1292				2859		1261
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3090	1308		3055	1292				2859		1261
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)	0	706	418	0	808	742	0	0	0	474	0	329
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	32
Lane Group Flow (vph)	0	706	418	0	808	742	0	0	0	474	0	297
Confl. Peds. (#/hr)						1						1
Heavy Vehicles (%)	0%	6%	12%	0%	11%	15%	0%	0%	0%	10%	0%	15%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		65.1	100.0		55.4	100.0				25.9		36.1
Effective Green, g (s)		65.1	100.0		55.4	100.0				25.9		38.1
Actuated g/C Ratio		0.65	1.00		0.55	1.00				0.26		0.38
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		2011	1308		1692	1292				740		480
v/s Ratio Prot		0.23			0.26					0.17		c0.24
v/s Ratio Perm			0.32			c0.57						
v/c Ratio		0.35	0.32		0.48	0.57				0.64		0.62
Uniform Delay, d1		7.9	0.0		13.5	0.0				32.9		25.1
Progression Factor		1.00	1.00		0.95	1.00				1.00		1.00
Incremental Delay, d2		0.5	0.6		0.7	1.3				1.7		2.0
Delay (s)		8.4	0.6		13.5	1.3				34.6		27.1
Level of Service		A	A		B	A				C		C
Approach Delay (s)		5.5			7.6			0.0			31.5	
Approach LOS		A			A			A			C	

Intersection Summary			
HCM 2000 Control Delay	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



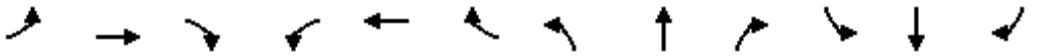
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	671	397	0	768	705	0	0	0	450	0	313
Future Volume (veh/h)	0	671	397	0	768	705	0	0	0	450	0	313
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1619	1537	0	1743	1688				1478	0	1410
Adj Flow Rate, veh/h	0	706	0	0	808	0				474	0	224
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	6	12	0	11	15				10	0	15
Cap, veh/h	0	2139		0	2302					587	0	281
Arrive On Green	0.00	0.70	0.00	0.00	1.00	0.00				0.21	0.00	0.23
Sat Flow, veh/h	0	3158	1303	0	3398	1430				2731	0	1195
Grp Volume(v), veh/h	0	706	0	0	808	0				474	0	224
Grp Sat Flow(s),veh/h/ln	0	1538	1303	0	1656	1430				1365	0	1195
Q Serve(g_s), s	0.0	9.1	0.0	0.0	0.0	0.0				16.5	0.0	17.7
Cycle Q Clear(g_c), s	0.0	9.1	0.0	0.0	0.0	0.0				16.5	0.0	17.7
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	2139		0	2302					587	0	281
V/C Ratio(X)	0.00	0.33		0.00	0.35					0.81	0.00	0.80
Avail Cap(c_a), veh/h	0	2139		0	2302					969	0	448
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.69	0.00	0.00	0.62	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	6.0	0.0	0.0	0.0	0.0				37.3	0.0	36.0
Incr Delay (d2), s/veh	0.0	0.3	0.0	0.0	0.3	0.0				2.0	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	4.7	0.0	0.0	0.2	0.0				9.5	0.0	16.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.3	0.0	0.0	0.3	0.0				39.3	0.0	39.9
LnGrp LOS	A	A		A	A					D	A	D
Approach Vol, veh/h		706	A		808	A					698	
Approach Delay, s/veh		6.3			0.3						39.5	
Approach LOS		A			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		74.0		26.0		74.0						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		11.1		19.7		2.0						
Green Ext Time (p_c), s		14.7		1.8		9.5						

Intersection Summary	
HCM 6th Ctrl Delay	14.6
HCM 6th LOS	B

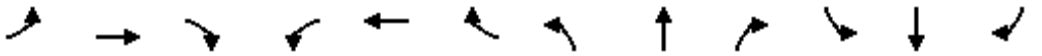
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	757	364	0	959	756	514	0	733	0	0	0
Future Volume (vph)	0	757	364	0	959	756	514	0	733	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.88	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		3111	1431		2873	1407	1405	1292	1331			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		3111	1431		2873	1407	1405	1292	1331			
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)	0	797	383	0	1009	796	541	0	772	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	108	108	0	0	0
Lane Group Flow (vph)	0	797	383	0	1009	796	454	326	317	0	0	0
Confl. Peds. (#/hr)						1						
Heavy Vehicles (%)	0%	9%	6%	0%	14%	2%	9%	0%	3%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		56.6	100.0		56.6	100.0	34.4	34.4	34.4			
Effective Green, g (s)		56.6	100.0		56.6	100.0	34.4	34.4	34.4			
Actuated g/C Ratio		0.57	1.00		0.57	1.00	0.34	0.34	0.34			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1760	1431		1626	1407	483	444	457			
v/s Ratio Prot		0.26			c0.35		c0.32	0.25				
v/s Ratio Perm			0.27			0.57			0.24			
v/c Ratio		0.45	0.27		0.62	0.57	0.94	0.73	0.69			
Uniform Delay, d1		12.7	0.0		14.5	0.0	31.8	28.8	28.3			
Progression Factor		1.64	1.00		1.08	1.00	1.00	1.00	1.00			
Incremental Delay, d2		0.8	0.4		0.8	0.8	26.3	5.8	4.2			
Delay (s)		21.5	0.4		16.5	0.8	58.1	34.6	32.4			
Level of Service		C	A		B	A	E	C	C			
Approach Delay (s)		14.7			9.5			42.0			0.0	
Approach LOS		B			A			D			A	

Intersection Summary			
HCM 2000 Control Delay	20.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱	↰	✣	↱			
Traffic Volume (veh/h)	0	757	364	0	959	756	514	0	733	0	0	0
Future Volume (veh/h)	0	757	364	0	959	756	514	0	733	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1770	1812	0	1510	1674	1432	1555	1514			
Adj Flow Rate, veh/h	0	797	0	0	1009	0	719	0	371			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	9	6	0	14	2	9	0	3			
Cap, veh/h	0	1995		0	1702		864	0	407			
Arrive On Green	0.00	1.00	0.00	0.00	0.20	0.00	0.32	0.00	0.32			
Sat Flow, veh/h	0	3452	1536	0	2945	1419	2727	0	1283			
Grp Volume(v), veh/h	0	797	0	0	1009	0	719	0	371			
Grp Sat Flow(s),veh/h/ln	0	1682	1536	0	1435	1419	1364	0	1283			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	32.0	0.0	24.5	0.0	27.8			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	32.0	0.0	24.5	0.0	27.8			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	1995		0	1702		864	0	407			
V/C Ratio(X)	0.00	0.40		0.00	0.59		0.83	0.00	0.91			
Avail Cap(c_a), veh/h	0	1995		0	1702		968	0	455			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.88	0.00	0.00	0.25	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	29.2	0.0	31.7	0.0	32.8			
Incr Delay (d2), s/veh	0.0	0.5	0.0	0.0	0.4	0.0	5.5	0.0	20.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.3	0.0	0.0	15.2	0.0	13.3	0.0	16.1			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	0.5	0.0	0.0	29.6	0.0	37.1	0.0	53.6			
LnGrp LOS	A	A		A	C		D	A	D			
Approach Vol, veh/h		797	A		1009	A		1090				
Approach Delay, s/veh		0.5			29.6			42.8				
Approach LOS		A			C			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		63.8				63.8		36.2				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				34.0		29.8				
Green Ext Time (p_c), s		10.2				14.4		1.9				

Intersection Summary		
HCM 6th Ctrl Delay	26.6	
HCM 6th LOS	C	

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	34	72	1237	531	5	320	1193	19	424	33	320	14
Future Volume (vph)	34	72	1237	531	5	320	1193	19	424	33	320	14
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1630	2995	1282		1489	2921		1490	1490	1390	1662
Flt Permitted		0.09	1.00	1.00		0.10	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		151	2995	1282		156	2921		1490	1490	1390	1662
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	37	77	1330	571	5	344	1283	20	456	35	344	15
RTOR Reduction (vph)	0	0	0	318	0	0	1	0	0	0	272	0
Lane Group Flow (vph)	0	114	1330	253	0	349	1302	0	246	245	72	15
Confl. Bikes (#/hr)								1				
Heavy Vehicles (%)	2%	2%	11%	16%	10%	10%	12%	0%	6%	13%	7%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		54.1	40.1	40.1		54.1	45.5		21.0	21.0	21.0	7.4
Effective Green, g (s)		54.1	40.1	40.1		54.1	45.5		21.0	21.0	21.0	7.4
Actuated g/C Ratio		0.54	0.40	0.40		0.54	0.46		0.21	0.21	0.21	0.07
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		208	1200	514		271	1329		312	312	291	122
v/s Ratio Prot		0.05	0.44			c0.18	0.45		c0.17	0.16		0.01
v/s Ratio Perm		0.25		0.20		c0.52					0.05	
v/c Ratio		0.55	1.11	0.49		1.29	0.98		0.79	0.79	0.25	0.12
Uniform Delay, d1		17.1	29.9	22.4		38.6	26.8		37.4	37.4	32.9	43.3
Progression Factor		0.90	1.08	1.82		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		2.1	60.0	3.0		154.4	20.3		12.0	11.8	0.3	0.3
Delay (s)		17.5	92.5	43.6		193.1	47.1		49.4	49.2	33.2	43.6
Level of Service		B	F	D		F	D		D	D	C	D
Approach Delay (s)			74.4				77.9			42.7		
Approach LOS			E				E			D		

Intersection Summary			
HCM 2000 Control Delay	69.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	98.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	26	64
Future Volume (vph)	26	64
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1316	
Flt Permitted	1.00	
Satd. Flow (perm)	1316	
Peak-hour factor, PHF	0.93	0.93
Adj. Flow (vph)	28	69
RTOR Reduction (vph)	64	0
Lane Group Flow (vph)	33	0
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	11%	22%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	7.4	
Effective Green, g (s)	7.4	
Actuated g/C Ratio	0.07	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	97	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.34	
Uniform Delay, d1	44.0	
Progression Factor	1.00	
Incremental Delay, d2	1.5	
Delay (s)	45.5	
Level of Service	D	
Approach Delay (s)	45.3	
Approach LOS	D	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	34	72	1237	531	5	320	1193	19	424	33	320	14
Future Volume (veh/h)	34	72	1237	531	5	320	1193	19	424	33	320	14
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1723	1600	1532		1565	1537	1537	1668	1573	1654	1750
Adj Flow Rate, veh/h		77	1330	0		344	1283	20	481	0	0	15
Peak Hour Factor		0.93	0.93	0.93		0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %		2	11	16		10	12	12	6	13	7	0
Cap, veh/h		229	988			479	1670	26	550	0		81
Arrive On Green		0.04	0.32	0.00		0.27	0.57	0.57	0.17	0.00	0.00	0.05
Sat Flow, veh/h		1641	3040	1298		1490	2943	46	3177	0	1402	1667
Grp Volume(v), veh/h		77	1330	0		344	637	666	481	0	0	15
Grp Sat Flow(s),veh/h/ln		1641	1520	1298		1490	1461	1528	1589	0	1402	1667
Q Serve(g_s), s		2.0	32.5	0.0		15.5	33.4	33.5	14.7	0.0	0.0	0.9
Cycle Q Clear(g_c), s		2.0	32.5	0.0		15.5	33.4	33.5	14.7	0.0	0.0	0.9
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		229	988			479	829	867	550	0		81
V/C Ratio(X)		0.34	1.35			0.72	0.77	0.77	0.87	0.00		0.18
Avail Cap(c_a), veh/h		400	988			479	829	867	651	0		258
HCM Platoon Ratio		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.81	0.81	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		15.1	33.7	0.0		30.4	16.6	16.6	40.3	0.0	0.0	45.7
Incr Delay (d2), s/veh		0.5	161.4	0.0		4.9	6.8	6.5	10.7	0.0	0.0	0.8
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		1.2	50.2	0.0		12.4	17.5	18.1	10.7	0.0	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		15.6	195.1	0.0		35.3	23.3	23.1	51.0	0.0	0.0	46.5
LnGrp LOS		B	F			D	C	C	D	A		D
Approach Vol, veh/h			1407	A			1647			481	A	
Approach Delay, s/veh			185.3				25.7			51.0		
Approach LOS			F				C			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	31.8	37.0		9.4	7.6	61.2		21.8
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	17.5	34.5		3.7	4.0	35.5		16.7
Green Ext Time (p_c), s	0.0	0.0		0.1	0.1	0.0		0.6

Intersection Summary		
HCM 6th Ctrl Delay		92.1
HCM 6th LOS		F

Notes

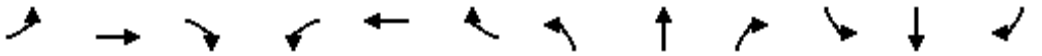
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	26	64
Future Volume (veh/h)	26	64
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1600	1600
Adj Flow Rate, veh/h	28	0
Peak Hour Factor	0.93	0.93
Percent Heavy Veh, %	11	11
Cap, veh/h	78	
Arrive On Green	0.05	0.00
Sat Flow, veh/h	1600	0
Grp Volume(v), veh/h	28	0
Grp Sat Flow(s),veh/h/ln	1600	0
Q Serve(g_s), s	1.7	0.0
Cycle Q Clear(g_c), s	1.7	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	78	
V/C Ratio(X)	0.36	
Avail Cap(c_a), veh/h	248	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	46.0	0.0
Incr Delay (d2), s/veh	2.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	48.1	0.0
LnGrp LOS	D	
Approach Vol, veh/h	43	A
Approach Delay, s/veh	47.5	
Approach LOS	D	

Timer - Assigned Phs

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

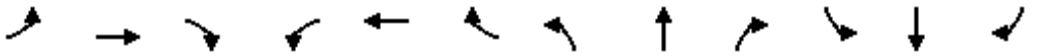
Unsignalized Delay for [NBR, EBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	748	255	55	690	104	391	200	79	80	199	171
Future Volume (vph)	181	748	255	55	690	104	391	200	79	80	199	171
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1599	1535	1403	1409	1458	1443	1539	1683	1293	1458	1636	1252
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1599	1535	1403	1409	1458	1443	1539	1683	1293	1458	1636	1252
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	197	813	277	60	750	113	425	217	86	87	216	186
RTOR Reduction (vph)	0	0	55	0	0	48	0	0	59	0	0	156
Lane Group Flow (vph)	197	813	222	60	750	65	425	217	27	87	216	30
Confl. Peds. (#/hr)	5					5	2					2
Heavy Vehicles (%)	4%	14%	6%	18%	20%	0%	8%	4%	15%	14%	7%	16%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	21.2	67.8	92.9	9.7	56.3	56.3	25.1	34.7	34.7	13.5	23.1	23.1
Effective Green, g (s)	21.2	67.8	92.9	9.7	56.3	56.3	25.1	34.7	34.7	13.5	23.1	23.1
Actuated g/C Ratio	0.15	0.47	0.64	0.07	0.39	0.39	0.17	0.24	0.24	0.09	0.16	0.16
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	234	719	900	94	567	561	266	403	310	136	261	199
v/s Ratio Prot	c0.12	c0.53	0.04	0.04	c0.51		c0.28	0.13		0.06	c0.13	
v/s Ratio Perm			0.12			0.05			0.02			0.02
v/c Ratio	0.84	1.13	0.25	0.64	1.32	0.12	1.60	0.54	0.09	0.64	0.83	0.15
Uniform Delay, d1	60.1	38.4	11.0	65.8	44.2	28.3	59.8	48.0	42.7	63.3	58.9	52.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	22.7	75.7	0.1	11.8	157.3	0.2	286.0	1.1	0.1	8.4	18.6	0.3
Delay (s)	82.8	114.1	11.1	77.6	201.5	28.5	345.8	49.1	42.8	71.6	77.5	52.6
Level of Service	F	F	B	E	F	C	F	D	D	E	E	D
Approach Delay (s)		87.2			172.2			221.6			67.0	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	135.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	144.7	Sum of lost time (s)	19.0
Intersection Capacity Utilization	102.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



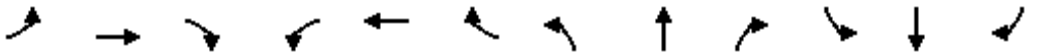
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	748	255	55	690	104	391	200	79	80	199	171
Future Volume (veh/h)	181	748	255	55	690	104	391	200	79	80	199	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1559	1668	1504	1477	1750	1641	1695	1545	1559	1654	1532
Adj Flow Rate, veh/h	197	813	168	60	750	113	425	217	86	87	216	121
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	14	6	18	20	0	8	4	15	14	7	16
Cap, veh/h	219	748	928	73	583	582	280	445	343	105	254	198
Arrive On Green	0.14	0.48	0.48	0.05	0.39	0.39	0.18	0.26	0.26	0.07	0.15	0.15
Sat Flow, veh/h	1615	1559	1406	1433	1477	1474	1563	1695	1305	1485	1654	1290
Grp Volume(v), veh/h	197	813	168	60	750	113	425	217	86	87	216	121
Grp Sat Flow(s),veh/h/ln	1615	1559	1406	1433	1477	1474	1563	1695	1305	1485	1654	1290
Q Serve(g_s), s	16.7	66.8	6.4	5.8	55.0	7.0	25.0	15.1	7.3	8.1	17.7	12.2
Cycle Q Clear(g_c), s	16.7	66.8	6.4	5.8	55.0	7.0	25.0	15.1	7.3	8.1	17.7	12.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	219	748	928	73	583	582	280	445	343	105	254	198
V/C Ratio(X)	0.90	1.09	0.18	0.82	1.29	0.19	1.52	0.49	0.25	0.83	0.85	0.61
Avail Cap(c_a), veh/h	290	748	928	257	583	582	280	445	343	266	356	278
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	59.3	36.3	9.2	65.5	42.2	27.7	57.2	43.5	40.6	63.9	57.4	55.1
Incr Delay (d2), s/veh	22.4	59.2	0.2	15.4	141.6	0.3	249.8	0.6	0.3	11.7	11.5	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.0	50.6	3.7	4.4	63.0	4.7	45.5	10.7	4.3	6.2	13.0	7.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.7	95.4	9.4	81.0	183.8	28.0	307.0	44.1	40.9	75.6	68.9	57.3
LnGrp LOS	F	F	A	F	F	C	F	D	D	E	E	E
Approach Vol, veh/h		1178			923			728			424	
Approach Delay, s/veh		80.9			158.1			197.2			67.0	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.6	71.8	29.5	26.4	23.4	60.0	14.3	41.6
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	7.8	68.8	27.0	19.7	18.7	57.0	10.1	17.1
Green Ext Time (p_c), s	0.1	0.0	0.0	1.0	0.2	0.0	0.1	1.0

Intersection Summary		
HCM 6th Ctrl Delay		127.0
HCM 6th LOS		F

Notes

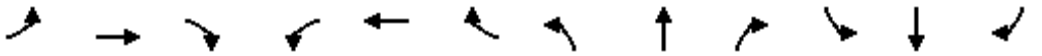
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	180	288	241	158	403	234	270	971	334	92	495	157
Future Volume (vph)	180	288	241	158	403	234	270	971	334	92	495	157
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1461	1422	1160	1446	1453		2887	2844	1141	1341	2763	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1461	1422	1160	1446	1453		2887	2844	1141	1341	2763	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	196	313	262	172	438	254	293	1055	363	100	538	171
RTOR Reduction (vph)	0	0	213	0	20	0	0	0	180	0	28	0
Lane Group Flow (vph)	196	313	49	172	672	0	293	1055	183	100	681	0
Heavy Vehicles (%)	10%	19%	24%	15%	16%	10%	8%	13%	26%	24%	16%	16%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	13.0	19.5	19.5	16.0	22.5		14.3	39.1	39.1	10.9	35.7	
Effective Green, g (s)	13.0	19.5	19.5	16.0	22.5		14.3	39.1	39.1	10.9	35.7	
Actuated g/C Ratio	0.12	0.19	0.19	0.15	0.21		0.14	0.37	0.37	0.10	0.34	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	180	264	215	220	311		393	1059	424	139	939	
v/s Ratio Prot	c0.13	0.22		c0.12	c0.46		c0.10	c0.37		0.07	0.25	
v/s Ratio Perm			0.04						0.16			
v/c Ratio	1.09	1.19	0.23	0.78	2.16		0.75	1.00	0.43	0.72	0.72	
Uniform Delay, d1	46.0	42.8	36.3	42.8	41.2		43.6	32.9	24.6	45.6	30.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	92.8	115.1	0.6	16.4	533.4		7.5	26.8	3.2	16.3	4.9	
Delay (s)	138.8	157.9	37.0	59.2	574.7		51.1	59.6	27.8	61.9	35.2	
Level of Service	F	F	D	E	F		D	E	C	E	D	
Approach Delay (s)		111.9			472.1			51.4			38.5	
Approach LOS		F			F			D			D	

Intersection Summary			
HCM 2000 Control Delay	147.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	105.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	180	288	241	158	403	234	270	971	334	92	495	157
Future Volume (veh/h)	180	288	241	158	403	234	270	971	334	92	495	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1614	1491	1422	1545	1532	1532	1641	1573	1395	1422	1532	1532
Adj Flow Rate, veh/h	196	313	0	172	438	200	293	1055	200	100	538	117
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	10	19	24	15	16	16	8	13	26	24	16	16
Cap, veh/h	190	277		224	213	97	354	1161	459	119	855	185
Arrive On Green	0.12	0.19	0.00	0.15	0.21	0.21	0.12	0.39	0.39	0.09	0.36	0.36
Sat Flow, veh/h	1537	1491	1205	1472	995	454	3032	2988	1182	1355	2379	515
Grp Volume(v), veh/h	196	313	0	172	0	638	293	1055	200	100	328	327
Grp Sat Flow(s),veh/h/ln	1537	1491	1205	1472	0	1450	1516	1494	1182	1355	1455	1439
Q Serve(g_s), s	13.0	19.5	0.0	11.8	0.0	22.5	9.9	35.0	7.9	7.6	19.6	19.8
Cycle Q Clear(g_c), s	13.0	19.5	0.0	11.8	0.0	22.5	9.9	35.0	7.9	7.6	19.6	19.8
Prop In Lane	1.00		1.00	1.00		0.31	1.00		1.00	1.00		0.36
Lane Grp Cap(c), veh/h	190	277		224	0	311	354	1161	459	119	523	517
V/C Ratio(X)	1.03	1.13		0.77	0.00	2.05	0.83	0.91	0.44	0.84	0.63	0.63
Avail Cap(c_a), veh/h	190	277		224	0	311	448	1161	459	200	523	517
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.0	42.8	0.0	42.7	0.0	41.3	45.3	30.3	8.6	47.2	27.8	27.9
Incr Delay (d2), s/veh	73.4	94.0	0.0	14.7	0.0	485.2	9.9	12.0	3.0	14.5	5.6	5.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	13.8	21.7	0.0	8.8	0.0	79.0	7.5	20.1	0.7	5.4	11.9	11.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	119.4	136.7	0.0	57.4	0.0	526.4	55.2	42.3	11.6	61.7	33.4	33.7
LnGrp LOS	F	F		E	A	F	E	D	B	E	C	C
Approach Vol, veh/h		509	A		810			1548			755	
Approach Delay, s/veh		130.0			426.8			40.8			37.3	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.8	43.2	17.0	28.0	13.7	46.3	20.0	25.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	15.5	34.5	13.0	22.5	15.5	34.5	16.0	19.5
Max Q Clear Time (g_c+I1), s	11.9	21.8	15.0	24.5	9.6	37.0	13.8	21.5
Green Ext Time (p_c), s	0.4	5.6	0.0	0.0	0.1	0.0	0.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	138.9
HCM 6th LOS	F

Notes

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

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↰	↑		↰	↑	
Traffic Vol, veh/h	1	1	1	1	1	3	1	423	6	36	587	1
Future Vol, veh/h	1	1	1	1	1	3	1	423	6	36	587	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	2	0	2	2	2	0	3	2	2	2	0
Mvmt Flow	1	1	1	1	1	3	1	460	7	39	638	1

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1185	1186	639	1184	1183	464	639	0	0	467	0	0
Stage 1	717	717	-	466	466	-	-	-	-	-	-	-
Stage 2	468	469	-	718	717	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	167	189	480	166	189	598	955	-	-	1094	-	-
Stage 1	424	434	-	577	562	-	-	-	-	-	-	-
Stage 2	579	561	-	420	434	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	161	182	480	160	182	598	955	-	-	1094	-	-
Mov Cap-2 Maneuver	161	182	-	160	182	-	-	-	-	-	-	-
Stage 1	424	418	-	576	561	-	-	-	-	-	-	-
Stage 2	574	560	-	403	418	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	21.8	17.3	0	0.5
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	955	-	-	218	298	1094	-	-
HCM Lane V/C Ratio	0.001	-	-	0.015	0.018	0.036	-	-
HCM Control Delay (s)	8.8	-	-	21.8	17.3	8.4	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	4	425	6	73	516
Future Vol, veh/h	1	4	425	6	73	516
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	4	462	7	79	561

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1185	466	0	0	469	0
Stage 1	466	-	-	-	-	-
Stage 2	719	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	209	597	-	-	1093	-
Stage 1	632	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	194	597	-	-	1093	-
Mov Cap-2 Maneuver	324	-	-	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	448	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	511	1093	-
HCM Lane V/C Ratio	-	-	0.011	0.073	-
HCM Control Delay (s)	-	-	12.1	8.6	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.2	-

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	13	418	21	146	371
Future Vol, veh/h	1	13	418	21	146	371
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	14	454	23	159	403

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1187	466	0	0	477	0
Stage 1	466	-	-	-	-	-
Stage 2	721	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	208	597	-	-	1085	-
Stage 1	632	-	-	-	-	-
Stage 2	482	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	177	597	-	-	1085	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	411	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	2.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	303	597	1085	-
HCM Lane V/C Ratio	-	-	0.004	0.024	0.146	-
HCM Control Delay (s)	-	-	16.9	11.2	8.9	-
HCM Lane LOS	-	-	C	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.1	0.5	-

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1	20	2	1	13	20	406	22	109	243	20
Future Vol, veh/h	20	1	20	2	1	13	20	406	22	109	243	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	50	2	50	2	2	2	50	3	2	2	2	50
Mvmt Flow	22	1	22	2	1	14	22	441	24	118	264	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1016	1020	275	1020	1019	453	286	0	0	465	0	0
Stage 1	511	511	-	497	497	-	-	-	-	-	-	-
Stage 2	505	509	-	523	522	-	-	-	-	-	-	-
Critical Hdwy	7.6	6.52	6.7	7.12	6.52	6.22	4.6	-	-	4.12	-	-
Critical Hdwy Stg 1	6.6	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.018	3.75	3.518	4.018	3.318	2.65	-	-	2.218	-	-
Pot Cap-1 Maneuver	177	237	662	215	237	607	1045	-	-	1096	-	-
Stage 1	467	537	-	555	545	-	-	-	-	-	-	-
Stage 2	470	538	-	537	531	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	156	207	662	187	207	607	1045	-	-	1096	-	-
Mov Cap-2 Maneuver	156	207	-	187	207	-	-	-	-	-	-	-
Stage 1	457	479	-	543	534	-	-	-	-	-	-	-
Stage 2	448	527	-	462	474	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	22.4	13.5	0.4	2.5
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1045	-	-	251	193	607	1096	-	-
HCM Lane V/C Ratio	0.021	-	-	0.178	0.017	0.023	0.108	-	-
HCM Control Delay (s)	8.5	-	-	22.4	24	11.1	8.7	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.1	0.1	0.4	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	69	389	39	46	195
Future Vol, veh/h	26	69	389	39	46	195
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	6	0	6	0	4	3
Mvmt Flow	28	73	414	41	49	207

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	740	435	0	0	455	0
Stage 1	435	-	-	-	-	-
Stage 2	305	-	-	-	-	-
Critical Hdwy	7.06	6.5	-	-	4.14	-
Critical Hdwy Stg 1	6.06	-	-	-	-	-
Critical Hdwy Stg 2	6.06	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.236	-
Pot Cap-1 Maneuver	334	603	-	-	1095	-
Stage 1	599	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	317	603	-	-	1095	-
Mov Cap-2 Maneuver	317	-	-	-	-	-
Stage 1	599	-	-	-	-	-
Stage 2	666	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	1.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	484	1095	-
HCM Lane V/C Ratio	-	-	0.209	0.045	-
HCM Control Delay (s)	-	-	14.4	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0.1	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	7	200	125	24	38	10
Future Vol, veh/h	7	200	125	24	38	10
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, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	3	3	0	4	0
Mvmt Flow	8	217	136	26	41	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	162	0	-	0	382	149
Stage 1	-	-	-	-	149	-
Stage 2	-	-	-	-	233	-
Critical Hdwy	4.1	-	-	-	6.44	6.2
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	2.2	-	-	-	3.536	3.3
Pot Cap-1 Maneuver	1429	-	-	-	617	903
Stage 1	-	-	-	-	874	-
Stage 2	-	-	-	-	801	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1429	-	-	-	613	903
Mov Cap-2 Maneuver	-	-	-	-	613	-
Stage 1	-	-	-	-	869	-
Stage 2	-	-	-	-	801	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1429	-	-	-	657
HCM Lane V/C Ratio	0.005	-	-	-	0.079
HCM Control Delay (s)	7.5	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	17	302	213	141	163	25
Future Vol, veh/h	17	302	213	141	163	25
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	94	94	94	94	94	94
Heavy Vehicles, %	9	3	2	4	1	18
Mvmt Flow	18	321	227	150	173	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	377	0	-	0	659	302
Stage 1	-	-	-	-	302	-
Stage 2	-	-	-	-	357	-
Critical Hdwy	4.19	-	-	-	6.41	6.38
Critical Hdwy Stg 1	-	-	-	-	5.41	-
Critical Hdwy Stg 2	-	-	-	-	5.41	-
Follow-up Hdwy	2.281	-	-	-	3.509	3.462
Pot Cap-1 Maneuver	1144	-	-	-	430	702
Stage 1	-	-	-	-	752	-
Stage 2	-	-	-	-	710	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1144	-	-	-	422	702
Mov Cap-2 Maneuver	-	-	-	-	422	-
Stage 1	-	-	-	-	738	-
Stage 2	-	-	-	-	710	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	19.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1144	-	-	-	446
HCM Lane V/C Ratio	0.016	-	-	-	0.448
HCM Control Delay (s)	8.2	0	-	-	19.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	2.3

HCS7 Roundabouts Report

General Information

Analyst	ZHB
Agency or Co.	Kittelson
Date Performed	4/29/2021
Analysis Year	2040
Time Analyzed	PM Total - Generator Peak
Project Description	Project Basie

Site Information

Intersection	OR 219/Butteville Rd
E/W Street Name	OR 219
N/S Street Name	Butteville (Realigned)
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.92
Jurisdiction	Woodburn, OR

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0
Lane Assignment	T		R		L		LT				L					
Volume (V), veh/h	0		311	154	0	756	199		0	154		646				
Percent Heavy Vehicles, %	0		3	1	0	1	5		0	9		3				
Flow Rate (v_{PCE}), pc/h	0		348	169	0	830	227		0	182		723				
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes	2				1				1							
Pedestrians Crossing, p/h	0				0				0							

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.3276		4.5436	4.5436			4.9763				
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.6087				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	348.00	169.00		560.21	496.79			182.00	723.00			
Entry Volume veh/h	340.05	165.14		550.13	487.85			166.97	701.94			
Circulating Flow (v_c), pc/h	830			182			348			1239		
Exiting Flow (v_{ex}), pc/h	348			409			0			999		
Capacity (c_{pce}), pc/h	629.08	701.29		1203.27	1203.27			967.66				
Capacity (c), veh/h	614.71	685.27		1181.61	1181.61			887.76				
v/c Ratio (x)	0.55	0.24		0.47	0.41			0.19				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	15.6	8.1		8.0	7.2			5.9				
Lane LOS	C	A		A	A			A	A			
95% Queue, veh	3.4	0.9		2.5	2.1			0.7				
Approach Delay, s/veh	13.2			7.6			1.1					
Approach LOS	B			A			A					
Intersection Delay, s/veh | LOS	6.5						A					

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	907	1	1	930	76	1	3	3	19	1	25
Future Vol, veh/h	50	907	1	1	930	76	1	3	3	19	1	25
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	0	0	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	240	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	2	0	0	3	2	0	0	0	0	0	0
Mvmt Flow	54	986	1	1	1011	83	1	3	3	21	1	27

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1094	0	0	987	0	0	1605	2191	494	1658	2150	549
Stage 1	-	-	-	-	-	-	1095	1095	-	1055	1055	-
Stage 2	-	-	-	-	-	-	510	1096	-	603	1095	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.5	6.5	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.5	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	645	-	-	708	-	-	72	46	526	65	49	485
Stage 1	-	-	-	-	-	-	231	292	-	245	305	-
Stage 2	-	-	-	-	-	-	519	292	-	458	292	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	645	-	-	708	-	-	62	42	526	57	45	484
Mov Cap-2 Maneuver	-	-	-	-	-	-	62	42	-	57	45	-
Stage 1	-	-	-	-	-	-	212	267	-	224	305	-
Stage 2	-	-	-	-	-	-	486	292	-	412	267	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0	58.3	60.8
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	75	645	-	-	708	-	-	111
HCM Lane V/C Ratio	0.101	0.084	-	-	0.002	-	-	0.441
HCM Control Delay (s)	58.3	11.1	-	-	10.1	-	-	60.8
HCM Lane LOS	F	B	-	-	B	-	-	F
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0	-	-	1.9

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	82	835	12	22	28	920	237	11	4	51	839	1
Future Volume (vph)	82	835	12	22	28	920	237	11	4	51	839	1
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00	0.99	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1662	3228	1457		1108	3197	1442	1662	1230		1541	1520
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1662	3228	1457		1108	3197	1442	1662	1230		1541	1520
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	89	908	13	24	30	1000	258	12	4	55	912	1
RTOR Reduction (vph)	0	0	7	0	0	0	43	0	52	0	0	4
Lane Group Flow (vph)	89	908	6	0	54	1000	215	12	7	0	502	490
Confl. Peds. (#/hr)	1		1		1		1	1				
Confl. Bikes (#/hr)			1							1		
Heavy Vehicles (%)	0%	3%	0%	50%	50%	4%	2%	0%	0%	22%	2%	0%
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Split	NA		Split	NA
Protected Phases	5	2	8	1	1	6	4	8	8		4	4
Permitted Phases			2				6					
Actuated Green, G (s)	12.4	48.0	53.8		9.6	45.2	90.4	5.8	5.8		45.2	45.2
Effective Green, g (s)	12.4	48.0	53.8		9.6	45.2	90.4	5.8	5.8		45.2	45.2
Actuated g/C Ratio	0.10	0.38	0.43		0.08	0.36	0.72	0.05	0.05		0.36	0.36
Clearance Time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2	2.5		2.5	4.2	2.5	2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	164	1238	626		85	1155	1042	77	57		556	549
v/s Ratio Prot	0.05	c0.28	0.00		0.05	c0.31	0.07	c0.01	0.01		c0.33	0.32
v/s Ratio Perm			0.00				0.07					
v/c Ratio	0.54	0.73	0.01		0.64	0.87	0.21	0.16	0.11		0.90	0.89
Uniform Delay, d1	53.7	33.1	20.4		56.1	37.1	5.7	57.3	57.2		37.9	37.6
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	2.9	2.5	0.0		12.8	7.3	0.1	0.7	0.7		17.9	16.6
Delay (s)	56.5	35.6	20.4		68.8	44.4	5.7	58.0	57.8		55.8	54.2
Level of Service	E	D	C		E	D	A	E	E		E	D
Approach Delay (s)		37.2				37.8			57.9			55.0
Approach LOS		D				D			E			E

Intersection Summary			
HCM 2000 Control Delay	43.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	125.1	Sum of lost time (s)	16.5
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	76
Future Volume (vph)	76
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	83
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	82	835	12	22	28	920	237	11	4	51	839	1
Future Volume (veh/h)	82	835	12	22	28	920	237	11	4	51	839	1
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1750	1709	1750		1068	1695	1723	1750	1750	1750	1717	1745
Adj Flow Rate, veh/h	89	908	13		30	1000	258	12	4	55	990	0
Peak Hour Factor	0.92	0.92	0.92		0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	3	0		50	4	2	0	0	0	2	0
Cap, veh/h	112	1381	701		28	1228	1043	94	6	78	1091	582
Arrive On Green	0.07	0.43	0.43		0.03	0.38	0.38	0.06	0.06	0.06	0.33	0.00
Sat Flow, veh/h	1667	3247	1450		1017	3221	1458	1667	100	1369	3271	1745
Grp Volume(v), veh/h	89	908	13		30	1000	258	12	0	59	990	0
Grp Sat Flow(s),veh/h/ln	1667	1624	1450		1017	1611	1458	1667	0	1469	1636	1745
Q Serve(g_s), s	5.5	23.5	0.5		2.9	29.3	6.5	0.7	0.0	4.2	30.5	0.0
Cycle Q Clear(g_c), s	5.5	23.5	0.5		2.9	29.3	6.5	0.7	0.0	4.2	30.5	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.93	1.00	
Lane Grp Cap(c), veh/h	112	1381	701		28	1228	1043	94	0	83	1091	582
V/C Ratio(X)	0.79	0.66	0.02		1.06	0.81	0.25	0.13	0.00	0.71	0.91	0.00
Avail Cap(c_a), veh/h	317	1388	704		193	1376	1110	475	0	418	1398	745
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.4	24.1	14.3		51.2	29.2	5.2	47.2	0.0	48.8	33.5	0.0
Incr Delay (d2), s/veh	9.1	1.3	0.0		85.8	3.9	0.2	0.4	0.0	8.0	7.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.6	14.0	0.3		2.5	17.3	8.4	0.6	0.0	3.1	18.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	57.4	25.5	14.3		137.0	33.1	5.4	47.6	0.0	56.8	40.6	0.0
LnGrp LOS	E	C	B		F	C	A	D	A	E	D	A
Approach Vol, veh/h		1010				1288			71			990
Approach Delay, s/veh		28.1				30.0			55.3			40.6
Approach LOS		C				C			E			D

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.9	49.3		39.1	11.6	44.6		10.0				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	4.9	25.5		32.5	7.5	31.3		6.2				
Green Ext Time (p_c), s	0.0	9.0		2.7	0.1	8.8		0.2				

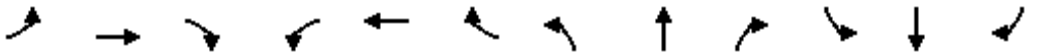
Intersection Summary		
HCM 6th Ctrl Delay		33.1
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

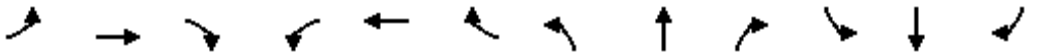
Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	76
Future Volume (veh/h)	76
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1745
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.92
Percent Heavy Veh, %	0
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	
Timer - Assigned Phs	

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1194	553	0	1250	632	0	0	0	760	0	479
Future Volume (vph)	0	1194	553	0	1250	632	0	0	0	760	0	479
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98				1.00		1.00
Flpb, ped/bikes		1.00	1.00		1.00	1.00				1.00		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3180	1409		3325	1429				3083		1395
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3180	1409		3325	1429				3083		1395
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)	0	1257	582	0	1316	665	0	0	0	800	0	504
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	8
Lane Group Flow (vph)	0	1257	582	0	1316	665	0	0	0	800	0	496
Confl. Bikes (#/hr)						2						
Heavy Vehicles (%)	0%	3%	4%	0%	2%	4%	0%	0%	0%	2%	0%	4%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		58.1	100.0		45.9	100.0				32.9		45.6
Effective Green, g (s)		58.1	100.0		45.9	100.0				32.9		47.6
Actuated g/C Ratio		0.58	1.00		0.46	1.00				0.33		0.48
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1847	1409		1526	1429				1014		664
v/s Ratio Prot		0.40			c0.40					0.26		c0.36
v/s Ratio Perm			0.41			0.47						
v/c Ratio		0.68	0.41		0.86	0.47				0.79		0.75
Uniform Delay, d1		14.5	0.0		24.2	0.0				30.4		21.3
Progression Factor		1.00	1.00		0.99	1.00				1.00		1.00
Incremental Delay, d2		2.0	0.9		4.4	0.7				4.0		4.3
Delay (s)		16.6	0.9		28.4	0.7				34.4		25.6
Level of Service		B	A		C	A				C		C
Approach Delay (s)		11.6			19.1			0.0			31.0	
Approach LOS		B			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (veh/h)	0	1194	553	0	1250	632	0	0	0	760	0	479
Future Volume (veh/h)	0	1194	553	0	1250	632	0	0	0	760	0	479
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1660	1647	0	1867	1840				1587	0	1560
Adj Flow Rate, veh/h	0	1257	0	0	1316	0				800	0	399
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95				0.95	0.95	0.95
Percent Heavy Veh, %	0	3	4	0	2	4				2	0	4
Cap, veh/h	0	1851		0	2082					948	0	454
Arrive On Green	0.00	0.59	0.00	0.00	1.00	0.00				0.32	0.00	0.34
Sat Flow, veh/h	0	3237	1395	0	3641	1559				2932	0	1322
Grp Volume(v), veh/h	0	1257	0	0	1316	0				800	0	399
Grp Sat Flow(s),veh/h/ln	0	1577	1395	0	1774	1559				1466	0	1322
Q Serve(g_s), s	0.0	27.4	0.0	0.0	0.0	0.0				25.4	0.0	28.4
Cycle Q Clear(g_c), s	0.0	27.4	0.0	0.0	0.0	0.0				25.4	0.0	28.4
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1851		0	2082					948	0	454
V/C Ratio(X)	0.00	0.68		0.00	0.63					0.84	0.00	0.88
Avail Cap(c_a), veh/h	0	1851		0	2082					1041	0	496
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.53	0.00	0.00	0.53	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	14.2	0.0	0.0	0.0	0.0				31.5	0.0	30.9
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.8	0.0				5.8	0.0	15.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	12.9	0.0	0.0	0.4	0.0				14.6	0.0	27.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	15.3	0.0	0.0	0.8	0.0				37.3	0.0	46.1
LnGrp LOS	A	B		A	A					D	A	D
Approach Vol, veh/h		1257	A		1316	A					1199	
Approach Delay, s/veh		15.3			0.8						40.2	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		63.2		36.8		63.2						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		29.4		30.4		2.0						
Green Ext Time (p_c), s		19.8		1.9		17.5						

Intersection Summary	
HCM 6th Ctrl Delay	18.1
HCM 6th LOS	B

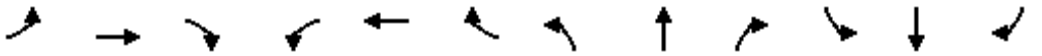
Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1569	385	0	1394	351	488	0	545	0	0	0
Future Volume (vph)	0	1569	385	0	1394	351	488	0	545	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	0.98		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.91	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.98	1.00			
Satd. Flow (prot)		3325	1402		3180	1392	1487	1325	1318			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.98	1.00			
Satd. Flow (perm)		3325	1402		3180	1392	1487	1325	1318			
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)	0	1652	405	0	1467	369	514	0	574	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	13	13	0	0	0
Lane Group Flow (vph)	0	1652	405	0	1467	369	380	351	331	0	0	0
Confl. Peds. (#/hr)						2						
Confl. Bikes (#/hr)			1			1						
Heavy Vehicles (%)	0%	2%	6%	0%	3%	3%	3%	0%	4%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		60.2	100.0		60.2	100.0	30.8	30.8	30.8			
Effective Green, g (s)		60.2	100.0		60.2	100.0	30.8	30.8	30.8			
Actuated g/C Ratio		0.60	1.00		0.60	1.00	0.31	0.31	0.31			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		2001	1402		1914	1392	457	408	405			
v/s Ratio Prot		c0.50			0.46		0.26	c0.26				
v/s Ratio Perm			0.29			0.27			0.25			
v/c Ratio		0.83	0.29		0.77	0.27	0.83	0.86	0.82			
Uniform Delay, d1		15.7	0.0		14.7	0.0	32.2	32.6	32.0			
Progression Factor		1.27	1.00		0.92	1.00	1.00	1.00	1.00			
Incremental Delay, d2		2.9	0.4		1.5	0.2	12.0	16.2	11.8			
Delay (s)		22.9	0.4		15.1	0.2	44.2	48.7	43.8			
Level of Service		C	A		B	A	D	D	D			
Approach Delay (s)		18.4			12.1			45.6			0.0	
Approach LOS		B			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	79.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1569	385	0	1394	351	488	0	545	0	0	0
Future Volume (veh/h)	0	1569	385	0	1394	351	488	0	545	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1867	1812	0	1660	1660	1514	1555	1500			
Adj Flow Rate, veh/h	0	1652	0	0	1467	0	627	0	242			
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95			
Percent Heavy Veh, %	0	2	6	0	3	3	3	0	4			
Cap, veh/h	0	2341		0	2081		721	0	318			
Arrive On Green	0.00	1.00	0.00	0.00	0.22	0.00	0.25	0.00	0.25			
Sat Flow, veh/h	0	3641	1536	0	3237	1407	2883	0	1271			
Grp Volume(v), veh/h	0	1652	0	0	1467	0	627	0	242			
Grp Sat Flow(s),veh/h/ln	0	1774	1536	0	1577	1407	1442	0	1271			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	43.0	0.0	20.8	0.0	17.6			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	43.0	0.0	20.8	0.0	17.6			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2341		0	2081		721	0	318			
V/C Ratio(X)	0.00	0.71		0.00	0.70		0.87	0.00	0.76			
Avail Cap(c_a), veh/h	0	2341		0	2081		1024	0	451			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.62	0.00	0.00	0.32	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	30.1	0.0	35.9	0.0	34.7			
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.7	0.0	5.3	0.0	3.8			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.7	0.0	0.0	22.2	0.0	12.3	0.0	9.6			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.1	0.0	0.0	30.8	0.0	41.2	0.0	38.6			
LnGrp LOS	A	A		A	C		D	A	D			
Approach Vol, veh/h		1652	A		1467	A		869				
Approach Delay, s/veh		1.1			30.8			40.5				
Approach LOS		A			C			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		70.5				70.5		29.5				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				45.0		22.8				
Green Ext Time (p_c), s		30.9				9.6		2.2				

Intersection Summary												
HCM 6th Ctrl Delay			20.6									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

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

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	33	108	1395	202	11	226	1075	22	526	15	299	41
Future Volume (vph)	33	108	1395	202	11	226	1075	22	526	15	299	41
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	0.98		1.00	1.00		1.00	1.00	0.98	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.95	1.00	0.95
Satd. Flow (prot)		1583	3228	1382		1621	3142		1504	1516	1451	1662
Flt Permitted		0.10	1.00	1.00		0.11	1.00		0.95	0.95	1.00	0.95
Satd. Flow (perm)		168	3228	1382		190	3142		1504	1516	1451	1662
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)	35	114	1468	213	12	238	1132	23	554	16	315	43
RTOR Reduction (vph)	0	0	0	115	0	0	1	0	0	0	241	0
Lane Group Flow (vph)	0	149	1468	98	0	250	1154	0	283	287	74	43
Confl. Peds. (#/hr)				2		2			2		3	3
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	5%	5%	3%	5%	1%	1%	4%	0%	5%	0%	1%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		49.9	35.9	35.9		49.9	39.8		23.6	23.6	23.6	9.0
Effective Green, g (s)		49.9	35.9	35.9		49.9	39.8		23.6	23.6	23.6	9.0
Actuated g/C Ratio		0.50	0.36	0.36		0.50	0.40		0.24	0.24	0.24	0.09
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		226	1158	496		295	1250		354	357	342	149
v/s Ratio Prot		0.07	c0.45			0.12	c0.37		0.19	c0.19		0.03
v/s Ratio Perm		0.26		0.07		0.30					0.05	
v/c Ratio		0.66	1.27	0.20		0.85	0.92		0.80	0.80	0.22	0.29
Uniform Delay, d1		18.8	32.0	22.1		38.4	28.6		36.0	36.0	30.8	42.5
Progression Factor		0.90	0.87	0.45		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		3.5	124.5	0.5		19.4	12.6		11.6	12.0	0.2	0.8
Delay (s)		20.5	152.3	10.5		57.8	41.3		47.5	48.0	31.0	43.3
Level of Service		C	F	B		E	D		D	D	C	D
Approach Delay (s)			125.1				44.2			41.8		
Approach LOS			F				D			D		

Intersection Summary			
HCM 2000 Control Delay	78.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	101.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	28	111
Future Volume (vph)	28	111
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.88	
Flt Protected	1.00	
Satd. Flow (prot)	1461	
Flt Permitted	1.00	
Satd. Flow (perm)	1461	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	29	117
RTOR Reduction (vph)	106	0
Lane Group Flow (vph)	40	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		1
Heavy Vehicles (%)	0%	5%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	9.0	
Effective Green, g (s)	9.0	
Actuated g/C Ratio	0.09	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	131	
v/s Ratio Prot	c0.03	
v/s Ratio Perm		
v/c Ratio	0.30	
Uniform Delay, d1	42.6	
Progression Factor	1.00	
Incremental Delay, d2	0.9	
Delay (s)	43.5	
Level of Service	D	
Approach Delay (s)	43.5	
Approach LOS	D	

Intersection Summary

Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	33	108	1395	202	11	226	1075	22	526	15	299	41
Future Volume (veh/h)	33	108	1395	202	11	226	1075	22	526	15	299	41
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		1.00	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1682	1709	1682		1688	1647	1647	1682	1750	1736	1750
Adj Flow Rate, veh/h		114	1468	0		238	1132	23	565	0	0	43
Peak Hour Factor		0.95	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %		5	3	5		1	4	4	5	0	1	0
Cap, veh/h		269	1055			450	1607	33	626	0		107
Arrive On Green		0.07	0.43	0.00		0.24	0.51	0.51	0.20	0.00	0.00	0.06
Sat Flow, veh/h		1602	3247	1425		1607	3135	64	3203	0	1471	1667
Grp Volume(v), veh/h		114	1468	0		238	565	590	565	0	0	43
Grp Sat Flow(s),veh/h/ln		1602	1624	1425		1607	1564	1635	1602	0	1471	1667
Q Serve(g_s), s		3.4	32.5	0.0		8.0	27.5	27.5	17.2	0.0	0.0	2.5
Cycle Q Clear(g_c), s		3.4	32.5	0.0		8.0	27.5	27.5	17.2	0.0	0.0	2.5
Prop In Lane		1.00		1.00		1.00		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		269	1055			450	802	838	626	0		107
V/C Ratio(X)		0.42	1.39			0.53	0.70	0.70	0.90	0.00		0.40
Avail Cap(c_a), veh/h		409	1055			450	802	838	657	0		258
HCM Platoon Ratio		1.33	1.33	1.33		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.46	0.46	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		14.9	28.4	0.0		31.1	18.6	18.6	39.3	0.0	0.0	44.9
Incr Delay (d2), s/veh		0.4	178.7	0.0		0.9	5.1	4.9	15.1	0.0	0.0	1.8
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		2.0	53.5	0.0		8.5	15.9	16.4	12.6	0.0	0.0	1.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		15.2	207.1	0.0		32.1	23.7	23.5	54.4	0.0	0.0	46.7
LnGrp LOS		B	F			C	C	C	D	A		D
Approach Vol, veh/h			1582	A			1393			565	A	
Approach Delay, s/veh			193.3				25.1			54.4		
Approach LOS			F				C			D		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.0	37.0		10.9	9.2	55.8		24.0
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	10.0	34.5		4.5	5.4	29.5		19.2
Green Ext Time (p_c), s	0.2	0.0		0.1	0.1	2.6		0.3

Intersection Summary		
HCM 6th Ctrl Delay		103.7
HCM 6th LOS		F

Notes

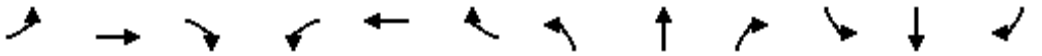
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	28	111
Future Volume (veh/h)	28	111
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1750	1750
Adj Flow Rate, veh/h	29	0
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	0	0
Cap, veh/h	113	
Arrive On Green	0.06	0.00
Sat Flow, veh/h	1750	0
Grp Volume(v), veh/h	29	0
Grp Sat Flow(s),veh/h/ln	1750	0
Q Serve(g_s), s	1.6	0.0
Cycle Q Clear(g_c), s	1.6	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	113	
V/C Ratio(X)	0.26	
Avail Cap(c_a), veh/h	271	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	44.5	0.0
Incr Delay (d2), s/veh	0.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.3	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	45.4	0.0
LnGrp LOS	D	
Approach Vol, veh/h	72	A
Approach Delay, s/veh	46.2	
Approach LOS	D	

Timer - Assigned Phs

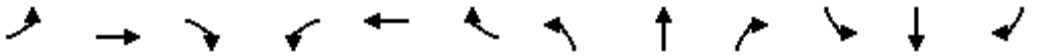
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	747	503	115	699	99	321	153	81	113	232	128
Future Volume (vph)	206	747	503	115	699	99	321	153	81	113	232	128
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.98	1.00	1.00	1.00	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1630	1683	1473	1646	1683	1440	1630	1750	1430	1646	1733	1375
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1630	1683	1473	1646	1683	1440	1630	1750	1430	1646	1733	1375
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	224	812	547	125	760	108	349	166	88	123	252	139
RTOR Reduction (vph)	0	0	117	0	0	49	0	0	68	0	0	115
Lane Group Flow (vph)	224	812	430	125	760	59	349	166	20	123	252	24
Confl. Peds. (#/hr)	1					1	4					4
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	4%	1%	1%	4%	1%	2%	0%	4%	1%	1%	5%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	22.9	62.1	87.2	16.0	55.2	55.2	25.1	34.3	34.3	15.9	25.1	25.1
Effective Green, g (s)	22.9	62.1	87.2	16.0	55.2	55.2	25.1	34.3	34.3	15.9	25.1	25.1
Actuated g/C Ratio	0.16	0.42	0.59	0.11	0.37	0.37	0.17	0.23	0.23	0.11	0.17	0.17
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	253	709	872	178	630	539	277	407	332	177	295	234
v/s Ratio Prot	c0.14	c0.48	0.08	0.08	c0.45		c0.21	0.09		0.07	c0.15	
v/s Ratio Perm			0.21			0.04			0.01			0.02
v/c Ratio	0.89	1.15	0.49	0.70	1.21	0.11	1.26	0.41	0.06	0.69	0.85	0.10
Uniform Delay, d1	60.9	42.6	17.3	63.4	46.1	30.0	61.1	47.9	44.0	63.4	59.3	51.6
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	28.5	81.4	0.3	11.0	107.3	0.2	142.8	0.5	0.1	10.4	20.4	0.1
Delay (s)	89.4	124.0	17.6	74.4	153.4	30.2	203.9	48.4	44.0	73.7	79.8	51.7
Level of Service	F	F	B	E	F	C	F	D	D	E	E	D
Approach Delay (s)		82.4			130.0			137.7			70.7	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	102.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	147.3	Sum of lost time (s)	19.0
Intersection Capacity Utilization	103.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



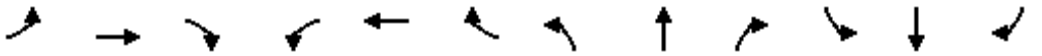
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	206	747	503	115	699	99	321	153	81	113	232	128
Future Volume (veh/h)	206	747	503	115	699	99	321	153	81	113	232	128
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1723	1695	1736	1736	1695	1736	1723	1750	1695	1736	1736	1682
Adj Flow Rate, veh/h	224	812	275	125	760	108	349	166	88	123	252	74
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	4	1	1	4	1	2	0	4	1	1	5
Cap, veh/h	245	746	900	147	643	557	283	442	360	145	292	231
Arrive On Green	0.15	0.44	0.44	0.09	0.38	0.38	0.17	0.25	0.25	0.09	0.17	0.17
Sat Flow, veh/h	1641	1695	1470	1654	1695	1470	1641	1750	1425	1654	1736	1377
Grp Volume(v), veh/h	224	812	275	125	760	108	349	166	88	123	252	74
Grp Sat Flow(s),veh/h/ln	1641	1695	1470	1654	1695	1470	1641	1750	1425	1654	1736	1377
Q Serve(g_s), s	19.5	63.8	12.9	10.8	55.0	7.1	25.0	11.4	7.1	10.6	20.5	6.9
Cycle Q Clear(g_c), s	19.5	63.8	12.9	10.8	55.0	7.1	25.0	11.4	7.1	10.6	20.5	6.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	245	746	900	147	643	557	283	442	360	145	292	231
V/C Ratio(X)	0.91	1.09	0.31	0.85	1.18	0.19	1.23	0.38	0.24	0.85	0.86	0.32
Avail Cap(c_a), veh/h	283	746	900	285	643	557	283	442	360	285	359	285
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.8	40.6	13.4	65.1	45.0	30.2	60.0	44.7	43.2	65.2	58.7	53.1
Incr Delay (d2), s/veh	29.0	59.9	0.4	9.7	97.2	0.3	132.0	0.4	0.3	9.8	15.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	15.4	52.4	7.9	8.7	57.0	4.8	31.3	8.8	4.7	8.6	15.6	4.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.8	100.5	13.8	74.9	142.2	30.5	192.1	45.1	43.4	75.0	74.3	53.6
LnGrp LOS	F	F	B	E	F	C	F	D	D	E	E	D
Approach Vol, veh/h		1311			993			603			449	
Approach Delay, s/veh		80.5			121.6			129.9			71.1	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.4	68.8	29.5	29.4	26.2	60.0	17.2	41.6
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	12.8	65.8	27.0	22.5	21.5	57.0	12.6	13.4
Green Ext Time (p_c), s	0.2	0.0	0.0	0.9	0.2	0.0	0.2	0.9

Intersection Summary	
HCM 6th Ctrl Delay	100.3
HCM 6th LOS	F

Notes

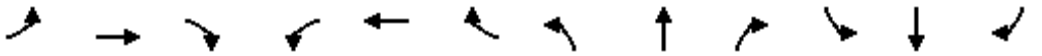
User approved pedestrian interval to be less than phase max green.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	377	301	305	312	102	277	491	154	178	788	187
Future Volume (vph)	205	377	301	305	312	102	277	491	154	178	788	187
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.97	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1516	1611	1390	1646	1619		3057	3032	1339	1539	3008	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1516	1611	1390	1646	1619		3057	3032	1339	1539	3008	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	223	410	327	332	339	111	301	534	167	193	857	203
RTOR Reduction (vph)	0	0	190	0	10	0	0	0	115	0	16	0
Lane Group Flow (vph)	223	410	137	332	440	0	301	534	52	193	1044	0
Confl. Peds. (#/hr)	1		2	2		1	4		1	1		4
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	6%	5%	2%	1%	3%	6%	2%	6%	5%	8%	7%	7%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	16.0	27.5	27.5	22.0	33.5		12.5	38.8	38.8	17.2	43.5	
Effective Green, g (s)	16.0	27.5	27.5	22.0	33.5		12.5	38.8	38.8	17.2	43.5	
Actuated g/C Ratio	0.13	0.22	0.22	0.18	0.27		0.10	0.31	0.31	0.14	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	194	354	305	289	433		305	941	415	211	1046	
v/s Ratio Prot	0.15	c0.25		c0.20	0.27		0.10	0.18		c0.13	c0.35	
v/s Ratio Perm			0.10						0.04			
v/c Ratio	1.15	1.16	0.45	1.15	1.02		0.99	0.57	0.12	0.91	1.00	
Uniform Delay, d1	54.5	48.8	42.2	51.5	45.8		56.2	36.1	30.9	53.2	40.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	110.6	98.2	1.2	99.4	47.7		47.5	2.5	0.6	38.9	27.3	
Delay (s)	165.1	146.9	43.4	150.9	93.4		103.7	38.6	31.5	92.1	68.0	
Level of Service	F	F	D	F	F		F	D	C	F	E	
Approach Delay (s)		115.9			117.8			56.9			71.7	
Approach LOS		F			F			E			E	

Intersection Summary			
HCM 2000 Control Delay	87.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.08		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	95.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	205	377	301	305	312	102	277	491	154	178	788	187
Future Volume (veh/h)	205	377	301	305	312	102	277	491	154	178	788	187
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1668	1682	1723	1736	1709	1709	1723	1668	1682	1641	1654	1654
Adj Flow Rate, veh/h	223	410	0	332	339	111	301	534	113	193	857	149
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	5	2	1	3	3	2	6	5	8	7	7
Cap, veh/h	203	370		291	329	108	318	984	440	215	929	161
Arrive On Green	0.13	0.22	0.00	0.18	0.27	0.27	0.10	0.31	0.31	0.14	0.35	0.35
Sat Flow, veh/h	1589	1682	1460	1654	1228	402	3183	3169	1416	1563	2669	464
Grp Volume(v), veh/h	223	410	0	332	0	450	301	534	113	193	505	501
Grp Sat Flow(s),veh/h/ln	1589	1682	1460	1654	0	1629	1591	1585	1416	1563	1572	1562
Q Serve(g_s), s	16.0	27.5	0.0	22.0	0.0	33.5	11.8	17.5	4.7	15.2	38.5	38.5
Cycle Q Clear(g_c), s	16.0	27.5	0.0	22.0	0.0	33.5	11.8	17.5	4.7	15.2	38.5	38.5
Prop In Lane	1.00		1.00	1.00		0.25	1.00		1.00	1.00		0.30
Lane Grp Cap(c), veh/h	203	370		291	0	437	318	984	440	215	547	543
V/C Ratio(X)	1.10	1.11		1.14	0.00	1.03	0.95	0.54	0.26	0.90	0.92	0.92
Avail Cap(c_a), veh/h	203	370		291	0	437	318	984	440	219	547	543
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	48.8	0.0	51.5	0.0	45.8	55.9	35.7	13.0	53.0	39.1	39.1
Incr Delay (d2), s/veh	91.3	79.3	0.0	96.3	0.0	51.1	36.3	2.1	1.4	34.4	23.4	23.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.7	28.3	0.0	25.1	0.0	27.3	10.4	11.3	4.8	12.6	25.0	24.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	145.8	128.0	0.0	147.8	0.0	96.9	92.2	37.9	14.4	87.5	62.6	62.7
LnGrp LOS	F	F		F	A	F	F	D	B	F	E	E
Approach Vol, veh/h		633	A		782			948			1199	
Approach Delay, s/veh		134.3			118.5			52.3			66.6	
Approach LOS		F			F			D			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	49.0	20.0	39.0	21.7	44.3	26.0	33.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	12.5	43.5	16.0	33.5	17.5	38.5	22.0	27.5
Max Q Clear Time (g_c+I1), s	13.8	40.5	18.0	35.5	17.2	19.5	24.0	29.5
Green Ext Time (p_c), s	0.0	2.3	0.0	0.0	0.0	6.9	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	86.2
HCM 6th LOS	F

Notes

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

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

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↰	↑		↰	↑	
Traffic Vol, veh/h	6	1	4	8	1	52	6	742	8	51	852	7
Future Vol, veh/h	6	1	4	8	1	52	6	742	8	51	852	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	3	0
Mvmt Flow	7	1	4	9	1	57	7	807	9	55	926	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1895	1870	930	1869	1870	812	934	0	0	816	0	0
Stage 1	1040	1040	-	826	826	-	-	-	-	-	-	-
Stage 2	855	830	-	1043	1044	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	54	73	327	56	73	382	741	-	-	820	-	-
Stage 1	281	310	-	369	389	-	-	-	-	-	-	-
Stage 2	356	388	-	280	309	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	43	68	327	51	68	382	741	-	-	820	-	-
Mov Cap-2 Maneuver	43	68	-	51	68	-	-	-	-	-	-	-
Stage 1	278	289	-	366	385	-	-	-	-	-	-	-
Stage 2	300	385	-	257	288	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	71.2	32.1	0.1	0.5
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	741	-	-	66	198	820	-	-
HCM Lane V/C Ratio	0.009	-	-	0.181	0.335	0.068	-	-
HCM Control Delay (s)	9.9	-	-	71.2	32.1	9.7	-	-
HCM Lane LOS	A	-	-	F	D	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6	1.4	0.2	-	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	51	705	8	51	813
Future Vol, veh/h	8	51	705	8	51	813
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	9	55	766	9	55	884

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1765	771	0	0	775	0
Stage 1	771	-	-	-	-	-
Stage 2	994	-	-	-	-	-
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	93	403	-	-	850	-
Stage 1	460	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	87	403	-	-	850	-
Mov Cap-2 Maneuver	216	-	-	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	338	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.1	0	0.6
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	361	850	-
HCM Lane V/C Ratio	-	-	0.178	0.065	-
HCM Control Delay (s)	-	-	17.1	9.5	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.6	0.2	-

Intersection	
Int Delay, s/veh	4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	31	206	507	29	203	618
Future Vol, veh/h	31	206	507	29	203	618
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	34	224	551	32	221	672

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1681	567	0	0	583	0
Stage 1	567	-	-	-	-	-
Stage 2	1114	-	-	-	-	-
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	105	527	-	-	1001	-
Stage 1	572	-	-	-	-	-
Stage 2	317	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	82	527	-	-	1001	-
Mov Cap-2 Maneuver	188	-	-	-	-	-
Stage 1	572	-	-	-	-	-
Stage 2	247	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.3	0	2.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	188	527	1001	-
HCM Lane V/C Ratio	-	-	0.179	0.425	0.22	-
HCM Control Delay (s)	-	-	28.3	16.8	9.6	-
HCM Lane LOS	-	-	D	C	A	-
HCM 95th %tile Q(veh)	-	-	0.6	2.1	0.8	-

Intersection	
Int Delay, s/veh	6.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1	20	31	1	206	20	310	30	203	426	20
Future Vol, veh/h	20	1	20	31	1	206	20	310	30	203	426	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	30	2	30	2	2	2	30	1	2	2	3	30
Mvmt Flow	20	1	20	32	1	210	20	316	31	207	435	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1336	1246	445	1242	1241	332	455	0	0	347	0	0
Stage 1	859	859	-	372	372	-	-	-	-	-	-	-
Stage 2	477	387	-	870	869	-	-	-	-	-	-	-
Critical Hdwy	7.4	6.52	6.5	7.12	6.52	6.22	4.4	-	-	4.12	-	-
Critical Hdwy Stg 1	6.4	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.4	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.77	4.018	3.57	3.518	4.018	3.318	2.47	-	-	2.218	-	-
Pot Cap-1 Maneuver	114	174	558	152	175	710	973	-	-	1212	-	-
Stage 1	314	373	-	648	619	-	-	-	-	-	-	-
Stage 2	520	610	-	346	369	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	68	141	558	125	142	710	973	-	-	1212	-	-
Mov Cap-2 Maneuver	68	141	-	125	142	-	-	-	-	-	-	-
Stage 1	307	309	-	634	606	-	-	-	-	-	-	-
Stage 2	358	597	-	275	306	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	49.2	16.4	0.5	2.7
HCM LOS	E	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	973	-	-	122	125	710	1212	-	-
HCM Lane V/C Ratio	0.021	-	-	0.343	0.261	0.296	0.171	-	-
HCM Control Delay (s)	8.8	-	-	49.2	43.7	12.2	8.6	-	-
HCM Lane LOS	A	-	-	E	E	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.4	1	1.2	0.6	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	122	266	36	131	366
Future Vol, veh/h	39	122	266	36	131	366
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	4	4	1	0	2	2
Mvmt Flow	42	133	289	39	142	398

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	991	309	0	0	328	0
Stage 1	309	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Critical Hdwy	7.04	6.54	-	-	4.12	-
Critical Hdwy Stg 1	6.04	-	-	-	-	-
Critical Hdwy Stg 2	6.04	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.218	-
Pot Cap-1 Maneuver	229	708	-	-	1232	-
Stage 1	703	-	-	-	-	-
Stage 2	445	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	195	708	-	-	1232	-
Mov Cap-2 Maneuver	195	-	-	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	379	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	2.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	432	1232	-
HCM Lane V/C Ratio	-	-	0.405	0.116	-
HCM Control Delay (s)	-	-	18.9	8.3	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.9	0.4	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	245	135	47	117	32
Future Vol, veh/h	11	245	135	47	117	32
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, %	-	-2	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	13	4	3	0	0	14
Mvmt Flow	12	266	147	51	127	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	198	0	-	0	463	173
Stage 1	-	-	-	-	173	-
Stage 2	-	-	-	-	290	-
Critical Hdwy	4.23	-	-	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.317	-	-	-	3.5	3.426
Pot Cap-1 Maneuver	1311	-	-	-	561	840
Stage 1	-	-	-	-	862	-
Stage 2	-	-	-	-	764	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1311	-	-	-	555	840
Mov Cap-2 Maneuver	-	-	-	-	555	-
Stage 1	-	-	-	-	853	-
Stage 2	-	-	-	-	764	-

Approach	EB	WB	SB
HCM Control Delay, s	0.3	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1311	-	-	-	599
HCM Lane V/C Ratio	0.009	-	-	-	0.27
HCM Control Delay (s)	7.8	0	-	-	13.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1.1

Intersection	
Int Delay, s/veh	43.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	560	347	146	259	35
Future Vol, veh/h	15	560	347	146	259	35
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	3	2	4	2	38
Mvmt Flow	16	609	377	159	282	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	536	0	-	0	1098	457
Stage 1	-	-	-	-	457	-
Stage 2	-	-	-	-	641	-
Critical Hdwy	4.1	-	-	-	6.42	6.58
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.2	-	-	-	3.518	3.642
Pot Cap-1 Maneuver	1042	-	-	-	~ 235	535
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	525	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1042	-	-	-	~ 230	535
Mov Cap-2 Maneuver	-	-	-	-	~ 230	-
Stage 1	-	-	-	-	623	-
Stage 2	-	-	-	-	525	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	199.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1042	-	-	-	247
HCM Lane V/C Ratio	0.016	-	-	-	1.294
HCM Control Delay (s)	8.5	0	-	-	199.1
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	16.4

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

HCS7 Roundabouts Report

General Information

Analyst	ZHB
Agency or Co.	Kittelson
Date Performed	4/29/2021
Analysis Year	2040
Time Analyzed	PM Total - System Peak
Project Description	Project Basie

Site Information

Intersection	OR 219/Butteville Rd
E/W Street Name	OR 219
N/S Street Name	Butteville (Realigned)
Analysis Time Period (hrs)	0.25
Peak Hour Factor	0.95
Jurisdiction	Woodburn, OR

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0	0
Lane Assignment	T		R		L		LT				L					
Volume (V), veh/h	0		596	223	0	357	359		0	135		197				
Percent Heavy Vehicles, %	0		4	2	0	1	3		0	6		6				
Flow Rate (v_{PCE}), pc/h	0		652	239	0	380	389		0	151		220				
Right-Turn Bypass	None				None				Non-Yielding				None			
Conflicting Lanes	2				1				1							
Pedestrians Crossing, p/h	0				0				0							

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)	4.6453	4.3276		4.5436	4.5436			4.9763				
Follow-Up Headway (s)	2.6667	2.5352		2.5352	2.5352			2.6087				

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h	652.00	239.00		407.57	361.43			151.00	220.00			
Entry Volume veh/h	630.22	231.02		399.57	354.34			142.45	207.55			
Circulating Flow (v_c), pc/h	380			151			652			920		
Exiting Flow (v_{ex}), pc/h	652			540			0			619		
Capacity (c_{pce}), pc/h	951.70	1028.05		1237.70	1237.70			709.67				
Capacity (c), veh/h	919.91	993.71		1213.40	1213.40			669.50				
v/c Ratio (x)	0.69	0.23		0.33	0.29			0.21				

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh	15.4	5.9		6.1	5.6			7.9				
Lane LOS	C	A		A	A			A	A			
95% Queue, veh	5.6	0.9		1.5	1.2			0.8				
Approach Delay, s/veh	12.8			5.9			3.2					
Approach LOS	B			A			A					
Intersection Delay, s/veh | LOS	8.5						A					

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	76	717	1	4	676	73	1	1	3	36	1	40
Future Vol, veh/h	76	717	1	4	676	73	1	1	3	36	1	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	250	-	-	240	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	5	0	0	2	2	0	0	0	5	0	6
Mvmt Flow	81	763	1	4	719	78	1	1	3	38	1	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	797	0	0	764	0	0	1294	1731	382	1310	1692	399
Stage 1	-	-	-	-	-	-	926	926	-	766	766	-
Stage 2	-	-	-	-	-	-	368	805	-	544	926	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.5	6.5	6.9	7.6	6.5	7.02
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	6.6	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.55	4	3.36
Pot Cap-1 Maneuver	834	-	-	858	-	-	122	89	622	114	94	589
Stage 1	-	-	-	-	-	-	293	350	-	355	415	-
Stage 2	-	-	-	-	-	-	630	398	-	483	350	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	834	-	-	858	-	-	103	80	622	104	84	589
Mov Cap-2 Maneuver	-	-	-	-	-	-	103	80	-	104	84	-
Stage 1	-	-	-	-	-	-	265	316	-	321	413	-
Stage 2	-	-	-	-	-	-	580	396	-	432	316	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.9	0	25	40.4
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	185	834	-	-	858	-	-	181
HCM Lane V/C Ratio	0.029	0.097	-	-	0.005	-	-	0.453
HCM Control Delay (s)	25	9.8	-	-	9.2	-	-	40.4
HCM Lane LOS	D	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	2.1

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	92	657	7	22	77	666	270	14	8	92	759	8
Future Volume (vph)	92	657	7	22	77	666	270	14	8	92	759	8
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		0%				0%			0%			1%
Total Lost time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Lane Util. Factor	1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		0.95	0.95
Frpb, ped/bikes	1.00	1.00	0.98		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		1.00	1.00
Frt	1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.86		1.00	0.97
Flt Protected	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (prot)	1630	3167	1462		1269	3260	1473	1330	1265		1571	1539
Flt Permitted	0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95	0.96
Satd. Flow (perm)	1630	3167	1462		1269	3260	1473	1330	1265		1571	1539
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	96	684	7	23	80	694	281	15	8	96	791	8
RTOR Reduction (vph)	0	0	5	0	0	0	81	0	89	0	0	4
Lane Group Flow (vph)	96	684	2	0	103	694	200	15	15	0	443	428
Confl. Peds. (#/hr)	1		1		1		1	1				
Confl. Bikes (#/hr)										1		
Heavy Vehicles (%)	2%	5%	0%	31%	31%	2%	0%	25%	0%	19%	0%	20%
Turn Type	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Split	NA		Split	NA
Protected Phases	5	2	8	1	1	6	4	8	8		4	4
Permitted Phases			2				6					
Actuated Green, G (s)	13.4	32.4	40.3		14.3	33.3	75.7	7.9	7.9		42.4	42.4
Effective Green, g (s)	13.4	32.4	40.3		14.3	33.3	75.7	7.9	7.9		42.4	42.4
Actuated g/C Ratio	0.12	0.29	0.36		0.13	0.29	0.67	0.07	0.07		0.37	0.37
Clearance Time (s)	4.0	4.5	4.0		4.0	4.5	4.0	4.0	4.0		4.0	4.0
Vehicle Extension (s)	2.5	4.2	2.5		2.5	4.2	2.5	2.5	2.5		2.5	2.5
Lane Grp Cap (vph)	192	904	519		159	956	982	92	88		586	574
v/s Ratio Prot	0.06	c0.22	0.00		0.08	c0.21	0.08	0.01	c0.01		c0.28	0.28
v/s Ratio Perm			0.00				0.06					
v/c Ratio	0.50	0.76	0.00		0.65	0.73	0.20	0.16	0.17		0.76	0.74
Uniform Delay, d1	46.9	37.0	23.6		47.2	36.0	7.3	49.7	49.7		31.0	30.9
Progression Factor	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.5	4.0	0.0		7.8	3.0	0.1	0.6	0.7		5.3	5.0
Delay (s)	48.4	40.9	23.6		55.0	39.0	7.4	50.3	50.4		36.3	35.8
Level of Service	D	D	C		D	D	A	D	D		D	D
Approach Delay (s)		41.7				32.3			50.3			36.1
Approach LOS		D				C			D			D

Intersection Summary			
HCM 2000 Control Delay	36.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	113.5	Sum of lost time (s)	16.5
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	73
Future Volume (vph)	73
Ideal Flow (vphpl)	1750
Grade (%)	
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.96
Adj. Flow (vph)	76
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	1
Confl. Bikes (#/hr)	
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (veh/h)	92	657	7	22	77	666	270	14	8	92	759	8
Future Volume (veh/h)	92	657	7	22	77	666	270	14	8	92	759	8
Initial Q (Qb), veh	0	0	0		0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00		1.00		1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No				No			No			No
Adj Sat Flow, veh/h/ln	1723	1682	1750		1327	1723	1750	1409	1750	1750	1745	1472
Adj Flow Rate, veh/h	96	684	7		80	694	281	15	8	96	868	0
Peak Hour Factor	0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	5	0		31	2	0	25	0	0	0	20
Cap, veh/h	121	1061	633		94	1067	930	128	11	130	1003	444
Arrive On Green	0.07	0.33	0.33		0.07	0.33	0.33	0.10	0.10	0.10	0.30	0.00
Sat Flow, veh/h	1641	3195	1481		1264	3273	1481	1342	114	1363	3323	1472
Grp Volume(v), veh/h	96	684	7		80	694	281	15	0	104	868	0
Grp Sat Flow(s),veh/h/ln	1641	1598	1481		1264	1637	1481	1342	0	1476	1661	1472
Q Serve(g_s), s	4.8	15.2	0.2		5.2	15.2	7.3	0.9	0.0	5.7	20.7	0.0
Cycle Q Clear(g_c), s	4.8	15.2	0.2		5.2	15.2	7.3	0.9	0.0	5.7	20.7	0.0
Prop In Lane	1.00		1.00		1.00		1.00	1.00		0.92	1.00	
Lane Grp Cap(c), veh/h	121	1061	633		94	1067	930	128	0	141	1003	444
V/C Ratio(X)	0.79	0.64	0.01		0.86	0.65	0.30	0.12	0.00	0.74	0.87	0.00
Avail Cap(c_a), veh/h	392	1717	937		302	1759	1243	481	0	529	1785	791
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00		1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	38.1	23.8	13.8		38.3	24.1	7.2	34.7	0.0	36.9	27.6	0.0
Incr Delay (d2), s/veh	8.3	1.0	0.0		14.8	1.0	0.3	0.3	0.0	5.6	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	9.6	0.2		3.6	9.7	8.0	0.5	0.0	4.0	12.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.4	24.8	13.8		53.2	25.2	7.4	35.0	0.0	42.5	29.4	0.0
LnGrp LOS	D	C	B		D	C	A	C	A	D	C	A
Approach Vol, veh/h		787				1055			119			868
Approach Delay, s/veh		27.3				22.6			41.5			29.4
Approach LOS		C				C			D			C

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.2	32.3		29.3	10.7	31.8		12.0				
Change Period (Y+Rc), s	4.0	4.5		4.0	4.5	* 4.5		4.0				
Max Green Setting (Gmax), s	20.0	45.0		45.0	20.0	* 45		30.0				
Max Q Clear Time (g_c+I1), s	7.2	17.2		22.7	6.8	17.2		7.7				
Green Ext Time (p_c), s	0.1	7.7		2.6	0.1	9.9		0.5				

Intersection Summary		
HCM 6th Ctrl Delay		26.8
HCM 6th LOS		C

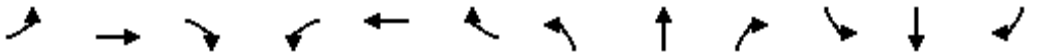
Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBR
Lane Configurations	
Traffic Volume (veh/h)	73
Future Volume (veh/h)	73
Initial Q (Qb), veh	0
Ped-Bike Adj(A_pbT)	1.00
Parking Bus, Adj	1.00
Work Zone On Approach	
Adj Sat Flow, veh/h/ln	1472
Adj Flow Rate, veh/h	0
Peak Hour Factor	0.96
Percent Heavy Veh, %	20
Cap, veh/h	0
Arrive On Green	0.00
Sat Flow, veh/h	0
Grp Volume(v), veh/h	0
Grp Sat Flow(s),veh/h/ln	0
Q Serve(g_s), s	0.0
Cycle Q Clear(g_c), s	0.0
Prop In Lane	0.00
Lane Grp Cap(c), veh/h	0
V/C Ratio(X)	0.00
Avail Cap(c_a), veh/h	0
HCM Platoon Ratio	1.00
Upstream Filter(I)	0.00
Uniform Delay (d), s/veh	0.0
Incr Delay (d2), s/veh	0.0
Initial Q Delay(d3),s/veh	0.0
%ile BackOfQ(95%),veh/ln	0.0
Unsig. Movement Delay, s/veh	
LnGrp Delay(d),s/veh	0.0
LnGrp LOS	A
Approach Vol, veh/h	
Approach Delay, s/veh	
Approach LOS	

Timer - Assigned Phs

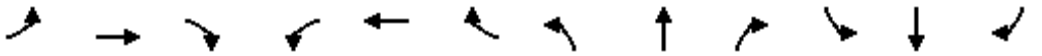
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
User approved changes to right turn type.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑	↱		↑↑	↱				↰↰		↱
Traffic Volume (vph)	0	1003	527	0	1092	840	0	0	0	737	0	436
Future Volume (vph)	0	1003	527	0	1092	840	0	0	0	737	0	436
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		3%			-4%			0%			5%	
Total Lost time (s)		4.5	4.0		4.5	4.0				4.5		2.5
Lane Util. Factor		0.95	1.00		0.95	1.00				0.97		1.00
Frt		1.00	0.85		1.00	0.85				1.00		0.85
Flt Protected		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (prot)		3180	1409		3325	1487				3083		1381
Flt Permitted		1.00	1.00		1.00	1.00				0.95		1.00
Satd. Flow (perm)		3180	1409		3325	1487				3083		1381
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1023	538	0	1114	857	0	0	0	752	0	445
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	9
Lane Group Flow (vph)	0	1023	538	0	1114	857	0	0	0	752	0	436
Heavy Vehicles (%)	0%	3%	4%	0%	2%	2%	0%	0%	0%	2%	0%	5%
Turn Type		NA	Free		NA	Free				Prot		custom
Protected Phases		2			6					4		4 5
Permitted Phases			Free			Free						
Actuated Green, G (s)		59.8	100.0		48.6	100.0				31.2		42.9
Effective Green, g (s)		59.8	100.0		48.6	100.0				31.2		44.9
Actuated g/C Ratio		0.60	1.00		0.49	1.00				0.31		0.45
Clearance Time (s)		4.5			4.5					4.5		
Vehicle Extension (s)		6.0			4.0					2.5		
Lane Grp Cap (vph)		1901	1409		1615	1487				961		620
v/s Ratio Prot		0.32			c0.34					c0.24		c0.32
v/s Ratio Perm			0.38			0.58						
v/c Ratio		0.54	0.38		0.69	0.58				0.78		0.70
Uniform Delay, d1		11.9	0.0		19.9	0.0				31.3		22.2
Progression Factor		1.00	1.00		1.12	1.00				1.00		1.00
Incremental Delay, d2		1.1	0.8		1.4	0.9				4.1		3.4
Delay (s)		13.0	0.8		23.7	0.9				35.4		25.5
Level of Service		B	A		C	A				D		C
Approach Delay (s)		8.8			13.8			0.0			31.7	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	16.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1003	527	0	1092	840	0	0	0	737	0	436
Future Volume (veh/h)	0	1003	527	0	1092	840	0	0	0	737	0	436
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Work Zone On Approach		No			No						No	
Adj Sat Flow, veh/h/ln	0	1660	1647	0	1867	1867				1587	0	1546
Adj Flow Rate, veh/h	0	1023	0	0	1114	0				752	0	343
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98				0.98	0.98	0.98
Percent Heavy Veh, %	0	3	4	0	2	2				2	0	5
Cap, veh/h	0	1957		0	2201					849	0	406
Arrive On Green	0.00	0.62	0.00	0.00	1.00	0.00				0.29	0.00	0.31
Sat Flow, veh/h	0	3237	1395	0	3641	1582				2932	0	1310
Grp Volume(v), veh/h	0	1023	0	0	1114	0				752	0	343
Grp Sat Flow(s),veh/h/ln	0	1577	1395	0	1774	1582				1466	0	1310
Q Serve(g_s), s	0.0	18.2	0.0	0.0	0.0	0.0				24.5	0.0	24.5
Cycle Q Clear(g_c), s	0.0	18.2	0.0	0.0	0.0	0.0				24.5	0.0	24.5
Prop In Lane	0.00		1.00	0.00		1.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	1957		0	2201					849	0	406
V/C Ratio(X)	0.00	0.52		0.00	0.51					0.89	0.00	0.85
Avail Cap(c_a), veh/h	0	1957		0	2201					1041	0	491
HCM Platoon Ratio	1.00	1.00	1.00	1.00	2.00	2.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	0.56	0.00	0.00	0.48	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	10.7	0.0	0.0	0.0	0.0				33.9	0.0	32.3
Incr Delay (d2), s/veh	0.0	0.6	0.0	0.0	0.4	0.0				7.6	0.0	10.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.0	8.9	0.0	0.0	0.2	0.0				14.5	0.0	24.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	11.2	0.0	0.0	0.4	0.0				41.6	0.0	42.7
LnGrp LOS	A	B		A	A					D	A	D
Approach Vol, veh/h		1023	A		1114	A					1095	
Approach Delay, s/veh		11.2			0.4						41.9	
Approach LOS		B			A						D	

Timer - Assigned Phs		2		4		6						
Phs Duration (G+Y+Rc), s		66.5		33.5		66.5						
Change Period (Y+Rc), s		4.5		4.5		4.5						
Max Green Setting (Gmax), s		55.5		35.5		35.5						
Max Q Clear Time (g_c+I1), s		20.2		26.5		2.0						
Green Ext Time (p_c), s		20.4		2.5		14.2						

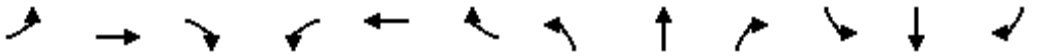
Intersection Summary												
HCM 6th Ctrl Delay			17.9									
HCM 6th LOS			B									

Notes

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	1480	260	0	1526	469	406	0	690	0	0	0
Future Volume (vph)	0	1480	260	0	1526	469	406	0	690	0	0	0
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)		-4%			3%			6%			0%	
Total Lost time (s)		4.5	4.0		4.5	4.0	4.5	4.5	4.5			
Lane Util. Factor		0.95	1.00		0.95	1.00	0.95	0.91	0.95			
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	1.00			
Flpb, ped/bikes		1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Frt		1.00	0.85		1.00	0.85	1.00	0.87	0.85			
Flt Protected		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (prot)		3325	1418		3211	1379	1502	1261	1293			
Flt Permitted		1.00	1.00		1.00	1.00	0.95	0.99	1.00			
Satd. Flow (perm)		3325	1418		3211	1379	1502	1261	1293			
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	0	1510	265	0	1557	479	414	0	704	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	18	18	0	0	0
Lane Group Flow (vph)	0	1510	265	0	1557	479	373	354	355	0	0	0
Confl. Peds. (#/hr)						2						
Heavy Vehicles (%)	0%	2%	7%	0%	2%	4%	2%	0%	6%	0%	0%	0%
Turn Type		NA	Free		NA	Free	Split	NA	Perm			
Protected Phases		2			6		8	8				
Permitted Phases			Free			Free			8			
Actuated Green, G (s)		59.0	100.0		59.0	100.0	32.0	32.0	32.0			
Effective Green, g (s)		59.0	100.0		59.0	100.0	32.0	32.0	32.0			
Actuated g/C Ratio		0.59	1.00		0.59	1.00	0.32	0.32	0.32			
Clearance Time (s)		4.5			4.5		4.5	4.5	4.5			
Vehicle Extension (s)		4.0			6.0		2.5	2.5	2.5			
Lane Grp Cap (vph)		1961	1418		1894	1379	480	403	413			
v/s Ratio Prot		0.45			c0.48		0.25	c0.28				
v/s Ratio Perm			0.19			0.35			0.27			
v/c Ratio		0.77	0.19		0.82	0.35	0.78	0.88	0.86			
Uniform Delay, d1		15.4	0.0		16.3	0.0	30.8	32.1	31.9			
Progression Factor		1.46	1.00		0.90	1.00	1.00	1.00	1.00			
Incremental Delay, d2		2.4	0.2		0.4	0.1	7.4	18.8	15.9			
Delay (s)		25.0	0.2		15.1	0.1	38.2	50.9	47.8			
Level of Service		C	A		B	A	D	D	D			
Approach Delay (s)		21.3			11.6			45.6			0.0	
Approach LOS		C			B			D			A	

Intersection Summary			
HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	9.0
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1480	260	0	1526	469	406	0	690	0	0	0
Future Volume (veh/h)	0	1480	260	0	1526	469	406	0	690	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1867	1798	0	1674	1647	1527	1555	1473			
Adj Flow Rate, veh/h	0	1510	0	0	1557	0	583	0	319			
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98			
Percent Heavy Veh, %	0	2	7	0	2	4	2	0	6			
Cap, veh/h	0	2217		0	1987		829	0	356			
Arrive On Green	0.00	1.00	0.00	0.00	0.21	0.00	0.29	0.00	0.29			
Sat Flow, veh/h	0	3641	1524	0	3264	1395	2909	0	1248			
Grp Volume(v), veh/h	0	1510	0	0	1557	0	583	0	319			
Grp Sat Flow(s),veh/h/ln	0	1774	1524	0	1590	1395	1455	0	1248			
Q Serve(g_s), s	0.0	0.0	0.0	0.0	46.3	0.0	17.9	0.0	24.5			
Cycle Q Clear(g_c), s	0.0	0.0	0.0	0.0	46.3	0.0	17.9	0.0	24.5			
Prop In Lane	0.00		1.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	2217		0	1987		829	0	356			
V/C Ratio(X)	0.00	0.68		0.00	0.78		0.70	0.00	0.90			
Avail Cap(c_a), veh/h	0	2217		0	1987		1033	0	443			
HCM Platoon Ratio	1.00	2.00	2.00	1.00	0.33	0.33	1.00	1.00	1.00			
Upstream Filter(I)	0.00	0.72	0.00	0.00	0.09	0.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	0.0	0.0	0.0	33.3	0.0	32.0	0.0	34.3			
Incr Delay (d2), s/veh	0.0	1.2	0.0	0.0	0.3	0.0	1.4	0.0	17.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(95%),veh/ln	0.0	0.7	0.0	0.0	21.9	0.0	10.5	0.0	13.9			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	1.2	0.0	0.0	33.6	0.0	33.3	0.0	51.3			
LnGrp LOS	A	A		A	C		C	A	D			
Approach Vol, veh/h		1510	A		1557	A		902				
Approach Delay, s/veh		1.2			33.6			39.7				
Approach LOS		A			C			D				

Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		67.0				67.0		33.0				
Change Period (Y+Rc), s		4.5				4.5		4.5				
Max Green Setting (Gmax), s		55.5				55.5		35.5				
Max Q Clear Time (g_c+I1), s		2.0				48.3		26.5				
Green Ext Time (p_c), s		26.9				6.7		2.0				

Intersection Summary												
HCM 6th Ctrl Delay			22.7									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

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

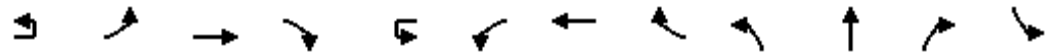
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	36	104	1447	208	10	260	1269	23	565	37	320	37
Future Volume (vph)	36	104	1447	208	10	260	1269	23	565	37	320	37
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Grade (%)			0%				3%			0%		
Total Lost time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95		0.95	0.95	1.00	1.00
Frpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	1.00	0.85		1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00		0.95	0.96	1.00	0.95
Satd. Flow (prot)		1583	3197	1458		1621	3083		1548	1558	1473	1662
Flt Permitted		0.11	1.00	1.00		0.12	1.00		0.95	0.96	1.00	0.95
Satd. Flow (perm)		177	3197	1458		203	3083		1548	1558	1473	1662
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	38	108	1507	217	10	271	1322	24	589	39	333	39
RTOR Reduction (vph)	0	0	0	118	0	0	1	0	0	0	250	0
Lane Group Flow (vph)	0	146	1507	99	0	281	1345	0	312	316	83	39
Confl. Peds. (#/hr)									2			
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	5%	5%	4%	2%	1%	1%	6%	0%	2%	4%	1%	0%
Turn Type	D.P+P	D.P+P	NA	Perm	D.P+P	D.P+P	NA		Split	NA	Perm	Split
Protected Phases	5	5	2		1	1	6		8	8		4
Permitted Phases	6	6		2	2	2					8	
Actuated Green, G (s)		47.8	33.7	33.7		47.8	37.6		24.9	24.9	24.9	9.8
Effective Green, g (s)		47.8	33.7	33.7		47.8	37.6		24.9	24.9	24.9	9.8
Actuated g/C Ratio		0.48	0.34	0.34		0.48	0.38		0.25	0.25	0.25	0.10
Clearance Time (s)		4.0	4.5	4.5		4.0	4.5		4.5	4.5	4.5	4.5
Vehicle Extension (s)		2.5	6.2	6.2		2.5	6.2		2.5	2.5	2.5	2.5
Lane Grp Cap (vph)		228	1077	491		296	1159		385	387	366	162
v/s Ratio Prot		0.07	c0.47			0.13	c0.44		0.20	c0.20		0.02
v/s Ratio Perm		0.24		0.07		0.32					0.06	
v/c Ratio		0.64	1.40	0.20		0.95	1.16		0.81	0.82	0.23	0.24
Uniform Delay, d1		21.2	33.1	23.6		39.2	31.2		35.3	35.4	29.9	41.7
Progression Factor		0.89	0.95	0.70		1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		3.3	183.1	0.6		38.4	82.0		11.9	12.2	0.2	0.6
Delay (s)		22.2	214.6	17.1		77.6	113.2		47.2	47.6	30.1	42.2
Level of Service		C	F	B		E	F		D	D	C	D
Approach Delay (s)			176.6				107.1			41.4		
Approach LOS			F				F			D		

Intersection Summary			
HCM 2000 Control Delay	118.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.5
Intersection Capacity Utilization	107.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	41	125
Future Volume (vph)	41	125
Ideal Flow (vphpl)	1750	1750
Grade (%)	0%	
Total Lost time (s)	4.5	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1419	
Flt Permitted	1.00	
Satd. Flow (perm)	1419	
Peak-hour factor, PHF	0.96	0.96
Adj. Flow (vph)	43	130
RTOR Reduction (vph)	116	0
Lane Group Flow (vph)	57	0
Confl. Peds. (#/hr)		2
Confl. Bikes (#/hr)		
Heavy Vehicles (%)	3%	10%
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	9.8	
Effective Green, g (s)	9.8	
Actuated g/C Ratio	0.10	
Clearance Time (s)	4.5	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	139	
v/s Ratio Prot	c0.04	
v/s Ratio Perm		
v/c Ratio	0.41	
Uniform Delay, d1	42.4	
Progression Factor	1.00	
Incremental Delay, d2	1.4	
Delay (s)	43.8	
Level of Service	D	
Approach Delay (s)	43.5	
Approach LOS	D	

Intersection Summary



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	36	104	1447	208	10	260	1269	23	565	37	320	37
Future Volume (veh/h)	36	104	1447	208	10	260	1269	23	565	37	320	37
Initial Q (Qb), veh		0	0	0		0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00		1.00		1.00		0.98	1.00		1.00	1.00
Parking Bus, Adj		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach			No				No			No		
Adj Sat Flow, veh/h/ln		1682	1695	1723		1688	1619	1619	1723	1695	1736	1750
Adj Flow Rate, veh/h		108	1507	0		271	1322	24	617	0	0	39
Peak Hour Factor		0.96	0.96	0.96		0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %		5	4	2		1	6	6	2	4	1	0
Cap, veh/h		206	1047			434	1558	28	671	0		109
Arrive On Green		0.07	0.43	0.00		0.23	0.50	0.50	0.20	0.00	0.00	0.07
Sat Flow, veh/h		1602	3221	1460		1607	3090	56	3281	0	1471	1667
Grp Volume(v), veh/h		108	1507	0		271	658	688	617	0	0	39
Grp Sat Flow(s),veh/h/ln		1602	1611	1460		1607	1538	1608	1641	0	1471	1667
Q Serve(g_s), s		3.2	32.5	0.0		10.3	37.0	37.1	18.4	0.0	0.0	2.2
Cycle Q Clear(g_c), s		3.2	32.5	0.0		10.3	37.0	37.1	18.4	0.0	0.0	2.2
Prop In Lane		1.00		1.00		1.00		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		206	1047			434	776	811	671	0		109
V/C Ratio(X)		0.52	1.44			0.62	0.85	0.85	0.92	0.00		0.36
Avail Cap(c_a), veh/h		349	1047			434	776	811	673	0		258
HCM Platoon Ratio		1.33	1.33	1.33		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.52	0.52	0.00		1.00	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh		19.7	28.4	0.0		32.6	21.5	21.5	39.0	0.0	0.0	44.7
Incr Delay (d2), s/veh		0.8	200.7	0.0		2.5	11.1	10.8	17.7	0.0	0.0	1.5
Initial Q Delay(d3),s/veh		0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln		2.0	58.6	0.0		10.0	21.2	22.0	13.9	0.0	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		20.5	229.0	0.0		35.2	32.6	32.2	56.7	0.0	0.0	46.2
LnGrp LOS		C	F			D	C	C	E	A		D
Approach Vol, veh/h			1615	A			1617			617	A	
Approach Delay, s/veh			215.1				32.9			56.7		
Approach LOS			F				C			E		

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	27.0	37.0		11.0	9.1	54.9		24.9
Change Period (Y+Rc), s	4.5	* 4.5		4.5	4.0	4.5		4.5
Max Green Setting (Gmax), s	14.0	* 33		15.5	14.0	32.5		20.5
Max Q Clear Time (g_c+I1), s	12.3	34.5		4.4	5.2	39.1		20.4
Green Ext Time (p_c), s	0.1	0.0		0.1	0.1	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	111.8
HCM 6th LOS	F

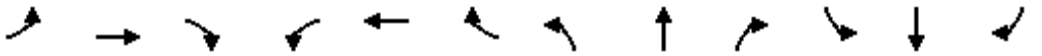
Notes
User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
User approved ignoring U-Turning movement.

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	41	125
Future Volume (veh/h)	41	125
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		1.00
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1709	1709
Adj Flow Rate, veh/h	43	0
Peak Hour Factor	0.96	0.96
Percent Heavy Veh, %	3	3
Cap, veh/h	112	
Arrive On Green	0.07	0.00
Sat Flow, veh/h	1709	0
Grp Volume(v), veh/h	43	0
Grp Sat Flow(s),veh/h/ln	1709	0
Q Serve(g_s), s	2.4	0.0
Cycle Q Clear(g_c), s	2.4	0.0
Prop In Lane		0.00
Lane Grp Cap(c), veh/h	112	
V/C Ratio(X)	0.38	
Avail Cap(c_a), veh/h	265	
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	0.00
Uniform Delay (d), s/veh	44.8	0.0
Incr Delay (d2), s/veh	1.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.9	0.0
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	46.4	0.0
LnGrp LOS	D	
Approach Vol, veh/h	82	A
Approach Delay, s/veh	46.3	
Approach LOS	D	

Timer - Assigned Phs

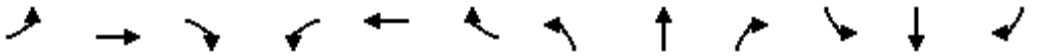
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	164	749	438	110	833	112	350	156	105	141	283	183
Future Volume (vph)	164	749	438	110	833	112	350	156	105	141	283	183
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00	0.98	1.00	1.00	0.97	1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1614	1651	1446	1662	1651	1400	1583	1699	1449	1599	1667	1429
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1614	1651	1446	1662	1651	1400	1583	1699	1449	1599	1667	1429
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)	173	788	461	116	877	118	368	164	111	148	298	193
RTOR Reduction (vph)	0	0	105	0	0	49	0	0	84	0	0	156
Lane Group Flow (vph)	173	788	356	116	877	69	368	164	27	148	298	37
Confl. Peds. (#/hr)			3	3			3		2	2		3
Confl. Bikes (#/hr)						1			1			2
Heavy Vehicles (%)	3%	6%	1%	0%	6%	4%	5%	3%	0%	4%	5%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	5	2	3	1	6		3	8		7	4	
Permitted Phases			2			6			8			4
Actuated Green, G (s)	19.8	59.8	84.9	15.2	55.2	55.2	25.1	35.5	35.5	18.2	28.6	28.6
Effective Green, g (s)	19.8	59.8	84.9	15.2	55.2	55.2	25.1	35.5	35.5	18.2	28.6	28.6
Actuated g/C Ratio	0.13	0.40	0.57	0.10	0.37	0.37	0.17	0.24	0.24	0.12	0.19	0.19
Clearance Time (s)	4.5	5.0	4.5	4.5	5.0	5.0	4.5	5.0	5.0	4.5	5.0	5.0
Vehicle Extension (s)	2.5	4.8	2.5	2.5	4.8	4.8	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	216	668	831	171	617	523	269	408	348	197	322	276
v/s Ratio Prot	c0.11	c0.48	0.07	0.07	c0.53		c0.23	0.10		0.09	c0.18	
v/s Ratio Perm			0.17			0.05			0.02			0.03
v/c Ratio	0.80	1.18	0.43	0.68	1.42	0.13	1.37	0.40	0.08	0.75	0.93	0.14
Uniform Delay, d1	62.0	43.9	17.7	63.9	46.2	30.5	61.3	47.2	43.4	62.6	58.5	49.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	18.4	95.8	0.3	9.3	199.0	0.2	187.6	0.5	0.1	14.2	31.3	0.2
Delay (s)	80.4	139.7	18.0	73.2	245.3	30.7	248.9	47.6	43.5	76.8	89.8	49.5
Level of Service	F	F	B	E	F	C	F	D	D	E	F	D
Approach Delay (s)		93.0			204.5			162.1			74.6	
Approach LOS		F			F			F			E	

Intersection Summary			
HCM 2000 Control Delay	134.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.21		
Actuated Cycle Length (s)	147.7	Sum of lost time (s)	19.0
Intersection Capacity Utilization	112.0%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



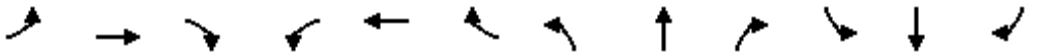
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	164	749	438	110	833	112	350	156	105	141	283	183
Future Volume (veh/h)	164	749	438	110	833	112	350	156	105	141	283	183
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1709	1668	1736	1750	1668	1695	1682	1709	1750	1695	1682	1736
Adj Flow Rate, veh/h	173	788	303	116	877	118	368	164	111	148	298	130
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	6	1	0	6	4	5	3	0	4	5	1
Cap, veh/h	195	698	869	138	636	534	278	447	378	170	325	276
Arrive On Green	0.12	0.42	0.42	0.08	0.38	0.38	0.17	0.26	0.26	0.11	0.19	0.19
Sat Flow, veh/h	1628	1668	1466	1667	1668	1401	1602	1709	1443	1615	1682	1425
Grp Volume(v), veh/h	173	788	303	116	877	118	368	164	111	148	298	130
Grp Sat Flow(s),veh/h/ln	1628	1668	1466	1667	1668	1401	1602	1709	1443	1615	1682	1425
Q Serve(g_s), s	15.1	60.3	15.3	9.9	55.0	8.2	25.0	11.3	8.9	13.0	25.0	11.7
Cycle Q Clear(g_c), s	15.1	60.3	15.3	9.9	55.0	8.2	25.0	11.3	8.9	13.0	25.0	11.7
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	698	869	138	636	534	278	447	378	170	325	276
V/C Ratio(X)	0.89	1.13	0.35	0.84	1.38	0.22	1.33	0.37	0.29	0.87	0.92	0.47
Avail Cap(c_a), veh/h	282	698	869	289	636	534	278	447	378	280	350	297
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	62.5	41.9	15.1	65.2	44.6	30.1	59.6	43.5	42.6	63.5	57.0	51.6
Incr Delay (d2), s/veh	18.5	75.3	0.5	9.7	179.9	0.4	169.1	0.4	0.3	12.3	26.6	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.7	54.2	9.1	8.1	80.9	5.2	35.4	8.6	5.9	10.0	19.1	7.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	81.0	117.2	15.6	74.9	224.5	30.5	228.7	43.8	42.9	75.8	83.6	52.5
LnGrp LOS	F	F	B	E	F	C	F	D	D	E	F	D
Approach Vol, veh/h		1264			1111			643			576	
Approach Delay, s/veh		87.9			188.3			149.5			74.6	
Approach LOS		F			F			F			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.4	65.3	29.5	32.9	21.8	60.0	19.7	42.7
Change Period (Y+Rc), s	4.5	5.0	4.5	5.0	4.5	5.0	4.5	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	30.0	25.0	55.0	25.0	30.0
Max Q Clear Time (g_c+I1), s	11.9	62.3	27.0	27.0	17.1	57.0	15.0	13.3
Green Ext Time (p_c), s	0.2	0.0	0.0	0.6	0.2	0.0	0.2	1.0

Intersection Summary	
HCM 6th Ctrl Delay	127.8
HCM 6th LOS	F

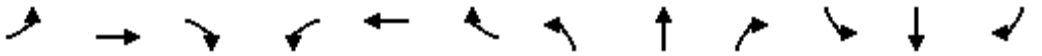
Notes

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	251	459	319	334	361	92	277	573	158	234	1078	193
Future Volume (vph)	251	459	319	334	361	92	277	573	158	234	1078	193
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Lane Width	11	11	11	12	12	12	11	11	11	12	12	12
Total Lost time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.98	1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1545	1627	1382	1630	1599		3027	3032	1192	1583	3077	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1545	1627	1382	1630	1599		3027	3032	1192	1583	3077	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	273	499	347	363	392	100	301	623	172	254	1172	210
RTOR Reduction (vph)	0	0	174	0	7	0	0	0	119	0	12	0
Lane Group Flow (vph)	273	499	173	363	485	0	301	623	53	254	1370	0
Confl. Peds. (#/hr)	2		8	8		2	4		1	1		4
Heavy Vehicles (%)	4%	4%	2%	2%	6%	5%	3%	6%	18%	5%	5%	7%
Turn Type	Prot	NA	Perm	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases			8						6			
Actuated Green, G (s)	16.0	27.5	27.5	22.0	33.5		12.5	38.5	38.5	17.5	43.5	
Effective Green, g (s)	16.0	27.5	27.5	22.0	33.5		12.5	38.5	38.5	17.5	43.5	
Actuated g/C Ratio	0.13	0.22	0.22	0.18	0.27		0.10	0.31	0.31	0.14	0.35	
Clearance Time (s)	4.0	5.5	5.5	4.0	5.5		4.5	5.5	5.5	4.5	5.5	
Vehicle Extension (s)	3.0	3.5	3.5	3.0	3.5		3.0	5.2	5.2	3.0	5.2	
Lane Grp Cap (vph)	197	357	304	286	428		302	933	367	221	1070	
v/s Ratio Prot	0.18	c0.31		c0.22	0.30		0.10	0.21		c0.16	c0.45	
v/s Ratio Perm			0.13						0.04			
v/c Ratio	1.39	1.40	0.57	1.27	1.13		1.00	0.67	0.14	1.15	1.28	
Uniform Delay, d1	54.5	48.8	43.5	51.5	45.8		56.2	37.7	31.3	53.8	40.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	201.8	195.2	2.7	145.8	84.9		50.5	3.8	0.8	106.7	133.5	
Delay (s)	256.3	244.0	46.1	197.3	130.6		106.8	41.5	32.1	160.4	174.3	
Level of Service	F	F	D	F	F		F	D	C	F	F	
Approach Delay (s)		185.6			158.9			57.9			172.1	
Approach LOS		F			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	146.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	19.5
Intersection Capacity Utilization	111.9%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	251	459	319	334	361	92	277	573	158	234	1078	193
Future Volume (veh/h)	251	459	319	334	361	92	277	573	158	234	1078	193
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.99	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1695	1695	1723	1723	1668	1668	1709	1668	1504	1682	1682	1682
Adj Flow Rate, veh/h	273	499	0	363	392	100	301	623	118	254	1172	156
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	2	2	6	6	3	6	18	5	5	5
Cap, veh/h	207	373		289	343	87	316	976	390	224	986	131
Arrive On Green	0.13	0.22	0.00	0.18	0.27	0.27	0.10	0.31	0.31	0.14	0.35	0.35
Sat Flow, veh/h	1615	1695	1460	1641	1279	326	3158	3169	1267	1602	2834	376
Grp Volume(v), veh/h	273	499	0	363	0	492	301	623	118	254	659	669
Grp Sat Flow(s),veh/h/ln	1615	1695	1460	1641	0	1606	1579	1585	1267	1602	1598	1613
Q Serve(g_s), s	16.0	27.5	0.0	22.0	0.0	33.5	11.9	21.2	5.7	17.5	43.5	43.5
Cycle Q Clear(g_c), s	16.0	27.5	0.0	22.0	0.0	33.5	11.9	21.2	5.7	17.5	43.5	43.5
Prop In Lane	1.00		1.00	1.00		0.20	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	207	373		289	0	430	316	976	390	224	556	561
V/C Ratio(X)	1.32	1.34		1.26	0.00	1.14	0.95	0.64	0.30	1.13	1.19	1.19
Avail Cap(c_a), veh/h	207	373		289	0	430	316	976	390	224	556	561
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	48.8	0.0	51.5	0.0	45.8	56.0	37.3	13.3	53.8	40.8	40.8
Incr Delay (d2), s/veh	174.1	169.2	0.0	140.8	0.0	88.7	38.2	3.2	2.0	100.5	100.6	103.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.7	43.7	0.0	30.7	0.0	34.3	10.5	13.3	5.1	20.3	46.3	47.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	228.6	218.0	0.0	192.3	0.0	134.4	94.2	40.4	15.3	154.2	141.4	143.8
LnGrp LOS	F	F		F	A	F	F	D	B	F	F	F
Approach Vol, veh/h		772	A		855			1042			1582	
Approach Delay, s/veh		221.7			159.0			53.1			144.5	
Approach LOS		F			F			D			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	17.0	49.0	20.0	39.0	22.0	44.0	26.0	33.0
Change Period (Y+Rc), s	4.5	5.5	4.0	5.5	4.5	5.5	4.0	5.5
Max Green Setting (Gmax), s	12.5	43.5	16.0	33.5	17.5	38.5	22.0	27.5
Max Q Clear Time (g_c+I1), s	13.9	45.5	18.0	35.5	19.5	23.2	24.0	29.5
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	7.1	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	139.0
HCM 6th LOS	F

Notes

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

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

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	1	3	1	1	6	4	322	1	9	564	7
Future Vol, veh/h	4	1	3	1	1	6	4	322	1	9	564	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	3	0
Mvmt Flow	4	1	3	1	1	7	4	350	1	10	613	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1000	996	617	998	1000	351	621	0	0	351	0	0
Stage 1	637	637	-	359	359	-	-	-	-	-	-	-
Stage 2	363	359	-	639	641	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	224	246	494	224	245	697	969	-	-	1219	-	-
Stage 1	469	475	-	663	631	-	-	-	-	-	-	-
Stage 2	660	631	-	468	473	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	219	243	494	220	242	697	969	-	-	1219	-	-
Mov Cap-2 Maneuver	219	243	-	220	242	-	-	-	-	-	-	-
Stage 1	467	471	-	660	628	-	-	-	-	-	-	-
Stage 2	650	628	-	460	469	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	18.2	12.9	0.1	0.1
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	969	-	-	281	463	1219	-	-
HCM Lane V/C Ratio	0.004	-	-	0.031	0.019	0.008	-	-
HCM Control Delay (s)	8.7	-	-	18.2	12.9	8	-	-
HCM Lane LOS	A	-	-	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	6	321	1	10	558
Future Vol, veh/h	1	6	321	1	10	558
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	1	7	349	1	11	607

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	979	350	0	0	350	0
Stage 1	350	-	-	-	-	-
Stage 2	629	-	-	-	-	-
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	280	698	-	-	1220	-
Stage 1	718	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	277	698	-	-	1220	-
Mov Cap-2 Maneuver	400	-	-	-	-	-
Stage 1	718	-	-	-	-	-
Stage 2	530	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	631	1220	-
HCM Lane V/C Ratio	-	-	0.012	0.009	-
HCM Control Delay (s)	-	-	10.8	8	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	25	297	5	36	523
Future Vol, veh/h	4	25	297	5	36	523
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	100	-	-	100	-
Veh in Median Storage, #	1	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	1	0	0	3
Mvmt Flow	4	27	323	5	39	568

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	972	326	0	0	328	0
Stage 1	326	-	-	-	-	-
Stage 2	646	-	-	-	-	-
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	282	720	-	-	1243	-
Stage 1	736	-	-	-	-	-
Stage 2	526	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	273	720	-	-	1243	-
Mov Cap-2 Maneuver	392	-	-	-	-	-
Stage 1	736	-	-	-	-	-
Stage 2	510	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.8	0	0.5
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	392	720	1243	-
HCM Lane V/C Ratio	-	-	0.011	0.038	0.031	-
HCM Control Delay (s)	-	-	14.3	10.2	8	-
HCM Lane LOS	-	-	B	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	1	20	4	1	25	20	257	6	36	471	20
Future Vol, veh/h	20	1	20	4	1	25	20	257	6	36	471	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	100	100	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	50	2	50	2	2	2	50	1	2	2	3	50
Mvmt Flow	20	1	20	4	1	26	20	262	6	37	481	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	884	873	491	881	880	265	501	0	0	268	0	0
Stage 1	565	565	-	305	305	-	-	-	-	-	-	-
Stage 2	319	308	-	576	575	-	-	-	-	-	-	-
Critical Hdwy	7.6	6.52	6.7	7.12	6.52	6.22	4.6	-	-	4.12	-	-
Critical Hdwy Stg 1	6.6	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.6	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.95	4.018	3.75	3.518	4.018	3.318	2.65	-	-	2.218	-	-
Pot Cap-1 Maneuver	220	289	492	267	286	774	856	-	-	1296	-	-
Stage 1	434	508	-	705	662	-	-	-	-	-	-	-
Stage 2	602	660	-	503	503	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	204	274	492	245	271	774	856	-	-	1296	-	-
Mov Cap-2 Maneuver	204	274	-	245	271	-	-	-	-	-	-	-
Stage 1	424	493	-	689	647	-	-	-	-	-	-	-
Stage 2	568	645	-	467	488	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	19.6	11.5	0.7	0.5
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	856	-	-	288	250	774	1296	-	-
HCM Lane V/C Ratio	0.024	-	-	0.145	0.02	0.033	0.028	-	-
HCM Control Delay (s)	9.3	-	-	19.6	19.7	9.8	7.9	-	-
HCM Lane LOS	A	-	-	C	C	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.1	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	83	197	52	94	416
Future Vol, veh/h	39	83	197	52	94	416
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	3	-	3	-	-	-3
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	8	2	0	0	2
Mvmt Flow	42	90	214	57	102	452

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	899	243	0	0	271	0
Stage 1	243	-	-	-	-	-
Stage 2	656	-	-	-	-	-
Critical Hdwy	7	6.58	-	-	4.1	-
Critical Hdwy Stg 1	6	-	-	-	-	-
Critical Hdwy Stg 2	6	-	-	-	-	-
Follow-up Hdwy	3.5	3.372	-	-	2.2	-
Pot Cap-1 Maneuver	269	766	-	-	1304	-
Stage 1	770	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	241	766	-	-	1304	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	418	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.2	0	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	452	1304	-
HCM Lane V/C Ratio	-	-	0.293	0.078	-
HCM Control Delay (s)	-	-	16.2	8	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	1.2	0.3	-

Appendix K OR 219/Butteville Road Intersection Improvements Design Concepts Report

Transportation Management Plan (TMP)

The following document identifies an initial list of Transportation Demand Management (TDM) and Transportation Management Plan (TMP) strategies/practices that will be considered for the Project Basie site. These strategies/practices are consistent with programs used at other similar sites owned by the tenant and will be refined and formally approved (if necessary) in coordination with the City of Woodburn, Marion County, ODOT, and other local/regional transportation providers.

Transportation Management Plan (TMP) Strategies for (Project Basie) PDX8 Woodburn, OR

1. Carpool Program
   If available, the employer will partner with the local Transportation Management Organization (TMO) or transit agency to provide a carpool matching tool to help employees find a carpool partner.

2. Guaranteed Ride Home ("GRH" Program)
   The employer will implement a GRH program, which will provide employees who are utilizing drive alone alternatives with a guaranteed ride home should their alternative commuting option fall through. This guaranteed ride home will be provided through app-based ride-sharing services.

3. Pre-tax Commuter Benefits
   Allows employees to exclude their transit or vanpool costs from taxable income up to the maximum amount allowed by federal law.

4. Transit Service
   The employer will engage with the local transit agency to request bus service to the site.

Infrastructure Strategies

5. On-site Amenities
   The site facility includes four break rooms on each floor, each providing food and beverage options to reduce the need to drive offsite for lunch. Microwaves, refrigerators, ice/water machines, coffee machines, and sinks will be available for employee use.

6. Preferential Carpool / Vanpool Parking
   The site will offer reserved parking close to the site entrance for employees who carpool or vanpool. The goal of offering preferential parking is to make it more convenient and advantageous for employees to ride to work together by providing a benefit not available to single occupancy vehicle (SOV) commuters.

7. Transportation Infrastructure

Bicycle racks, shelters, and pedestrian infrastructure leading to/from the surrounding sidewalk network will be available to employees.

Marketing Strategies

8. Transportation Coordinator
   The employer will designate a Transportation Coordinator (TC) in charge of implementing and promoting commuter programs on-site.

9. Employee Notification
   Each employee at the Facility will be provided information about commute options and amenities available to them. Information will be provided via the benefits website, new hire orientations, newsletters, all-hands meetings, and / or on TV monitors at the site. The goal is to encourage employees to actively pursue commuting alternatives by providing them easy access to materials, information, and resources.

10. Information Boards
    The Transportation Coordinator will post employee commute information on a bulletin board, TV monitors, and / or flyers posted in the break room or other high profile location.

11. Transportation Fair
    If available, employer will partner with the local Transportation Management Organization (TMO) and / or transit agency to host onsite transportation fairs and promote commute alternatives.

Appendix L Preliminary Transportation Management Plan