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February 5, 2019 Project #: 21399

Bob Galati & Joy Chang
City of Sherwood
22560 SW Pine Street
Sherwood, OR 97140

RE: Middlebrook Residential Subdivision Transportation Impact Analysis – Sherwood, Oregon

This letter presents the transportation impact analysis prepared for the Middlebrook Residential Subdivision project. This study concludes that the proposed residential uses can be developed in accordance with traffic operations requirements of the City of Sherwood Municipal Code as well as applicable Washington County and Oregon Department of Transportation (ODOT) standards assuming provision of recommended transportation improvements. The study recommends:

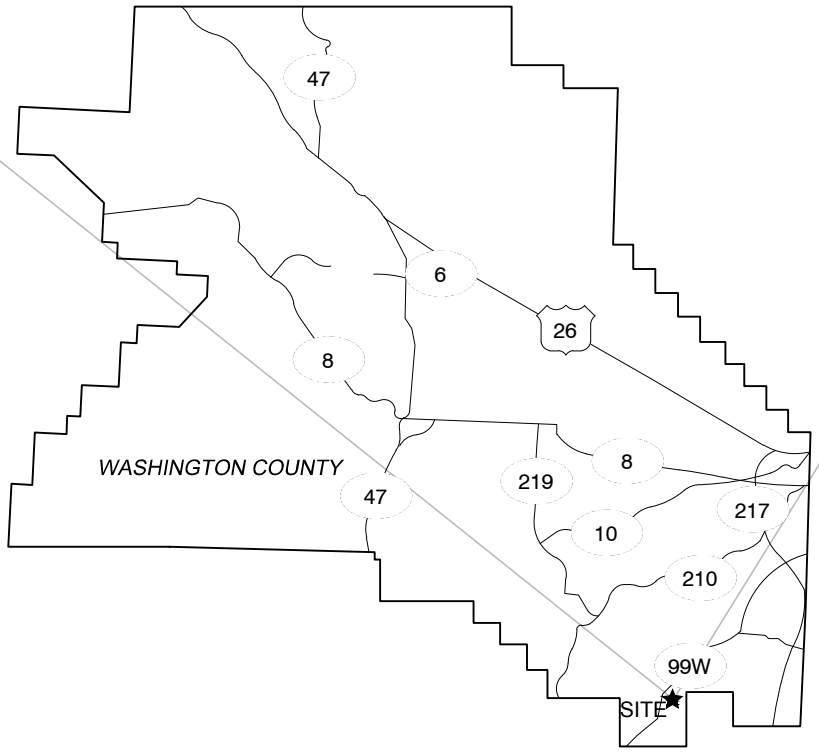
- With site development, provide either a westbound right-turn lane with 200 feet of storage on SW Brookman Road at the Highway 99W/SW Brookman Road-SW Chapman Road intersection or pay a proportionate share contribution (estimated to be $329,197 per the City's assessment methodology) towards future improvements at the intersection.

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

INTRODUCTION

The Applicant, Brookman Development, LLC, is proposing to develop up to 145 detached single-family homes within a residential subdivision on land located along the north side of SW Brookman Road that was previously annexed into the City of Sherwood. The site is situated north of SW Brookman Road with access proposed at a new public street aligned with SW Oberst Road on SW Brookman Road. The site vicinity is shown in Figure 1 and a conceptual site plan is provided in Figure 2.

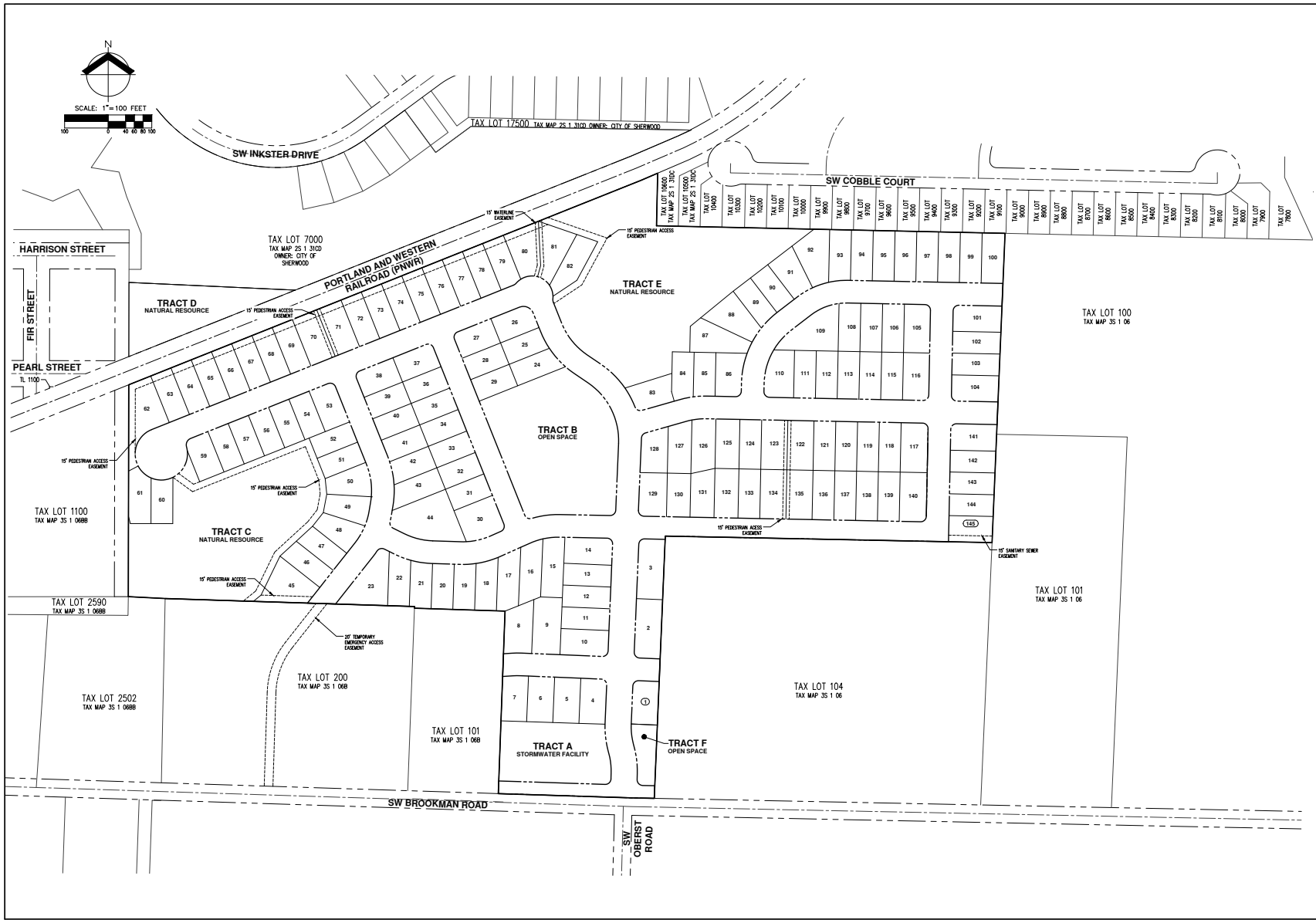
Today, the site has two private driveway connections to SW Brookman Road. With redevelopment, both existing private driveway accesses to the site would be vacated and access to the site would be provided by a single new public roadway connection to SW Brookman Road, aligned with the existing intersection at SW Oberst Road. As shown in Figure 2, some of the new public roads through the site will be stubbed for future extension off-site to surrounding properties in conjunction with other future development activities by others. No roadway connections to existing homes off-site to the north are proposed. Construction is expected to begin in 2019 with buildout and occupancy anticipated by 2020.



(#) - Study Intersections

Site Vicinity Map
Sherwood, Oregon

Figure
1



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BROOKMAN SUBDIVISION
SHERWOOD OREGON
WASHINGTON COUNTY TAX MAP 3 1 06
TAX LOTS 100, 200

PRELIMINARY SUBDIVISION PLAN

DESIGNED BY:	ARS/PAS
DRAWN BY:	ARS
CHECKED BY:	AAH
SCALE:	AS NOTED
DATE:	3-22-2018

PRELIMINARY NOT FOR CONSTRUCTION

REVISIONS

JOB NUMBER 3591

SHEET SUB

AKS DRAWING FILE: 3591LOTS LAYOUNG | LAYOUT: ARSAS

\\kittelson.com\ls\H_Projects\21\21399 - Brookman Residential Development\dwgs\figs\21399 figs_updated site plan.dwg Jan 24, 2019 - 10:49am - klaustsen Layout Tab: 2_SP_landscape

Site plan provided by AKS Engineering, April 5, 2018

Conceptual Site Plan
Sherwood, Oregon

Figure 2

STUDY METHODOLOGY

The Traffic Impact Analysis (TIA) addresses the requirements of City of Sherwood Municipal Code Section 16.106.080 as well as applicable Washington County and ODOT review requirements. The study methodology, assumptions and scope were determined based on a review of existing travel patterns, the City of Sherwood's Development Code, direction provided by DKS Associates (the City's traffic engineer), as well as discussions with Washington County and ODOT staff. A scoping memo was provided for review and confirmation of the study scope and methodology prior to preparation of this study. A copy of the scoping memo is provided for reference in *Appendix A*, along with comments received from the City and ODOT. Note that the proposed development area and residential unit count has been reduced by approximately 60 percent since the scoping memo was prepared and approved.

Analysis Scenarios

In accordance with review agency requirements, weekday AM and PM peak hour traffic conditions were assessed for the following analysis scenarios:

- Existing conditions
- Year 2020 background conditions (without the proposed development)
- Year 2020 total conditions (with buildout of the proposed development)

Study Intersections

City of Sherwood Development Code Section 16.106.080 requires analysis of all intersections where the analysis shows that fifty (50) or more peak hour vehicle trips can be expected to result from the development. The intersections included in this study were identified based on the City Code requirements as well as review agency feedback during the study scoping process. Some of the study intersections do not experience 50 or more peak hour vehicle trips and are provided for illustrative purposes based on the initial City scoping direction when the project unit count was over twice as large as the number of homes currently proposed.

The study intersections are listed below, including a numerical ID corresponding with report figures:

1. Highway 99W/SW Elwert Road-SW Sunset Boulevard
2. SW Woodhaven Drive/SW Sunset Boulevard
3. SW Timbrel Lane/SW Sunset Boulevard
4. SW Ladd Hill Road-SW Main Street/SW Sunset Boulevard
5. SW Baker Road-SW Murdock Road/SW Sunset Boulevard
6. Highway 99W/SW Brookman Road-SW Chapman Road
7. Old Highway 99 W/SW Brookman Road
8. SW Middleton Road/SW Brookman Road
9. SW Oberst Road-Future Site Access/SW Brookman Road
10. SW Ladd Hill Road/SW Brookman Road

All level-of-service analyses described in this report were performed in accordance with the procedures stated in the *2000 Highway Capacity Manual* (HCM, Reference 1)[1].

Performance Measures & Operating Standards

The volume-to-capacity (V/C) ratio is the principle performance measure documented in this report. V/C operating standards adopted by Washington County, ODOT and the City are summarized below.

Washington County Operating Standards

Washington County has jurisdiction over SW Brookman Road. The County has defined operating standards for signalized and stop controlled intersections assuming a peak hour (60-minute analysis) period as follows:

- **Signalized intersections:** the maximum peak hour intersection V/C ratio shall be no greater than 0.99.
- **Unsignalized intersections:** no movement shall experience a V/C ratio greater than 0.99.

ODOT Operating Standards

ODOT operates and maintains OR 99W (Pacific Highway West). ODOT's operating standard for signalized intersections along Highway OR 99W in the study area is an intersection V/C ratio no greater than 0.99 during the peak 15-minutes as identified in Table 7 of the *Oregon Highway Plan* (Reference 2). For unsignalized intersections, ODOT requires the state highway approaches to operate at a V/C ratio no greater than 0.99 during the peak 15-minutes. Non-state highway approaches are expected to operate at a V/C ratio no greater than identified in Table 6 of the *Oregon Highway Plan* for district/local interest roads (Reference 2). The standard for the Brookman Road and Chapman Road approaches to Highway 99W is a V/C ratio no greater than 0.95.

Sherwood Operating Standards

The City defers to ODOT and Washington County standards for facilities under their jurisdiction. For intersections in the City but on the Metro-designated Arterial and Throughway Network, standards require a V/C ratio less than or equal to 0.99 in both the highest hour and the second hour during the PM peak period. Roadways on the Arterial and Throughway Network include Sunset Boulevard, Murdock Road, Elwert Road, Main Street, and Ladd Hill Road (*City of Sherwood Transportation System Plan,* Reference 3). Table 1 summarizes the minimum operating thresholds by study intersection.

[1] All of the study intersection operational analyses presented in this report were prepared using the Synchro 9 software, which implements the *Highway Capacity Manual* methodology.

Table 1. Study Intersection Performance Standard

	Intersection	Traffic Control	Responsible Agency	Performance Standard
1	Highway 99W/SW Elwert Road-SW Sunset Boulevard	Signal	ODOT	Intersection V/C ≤ 0.99
2	SW Woodhaven Drive/ SW Sunset Boulevard	TWSC	City	Movement V/C ≤ 0.99[1]
3	SW Timbrel Lane/SW Sunset Boulevard	TWSC	City	Movement V/C ≤ 0.99[1]
4	SW Ladd Hill Road-SW Main Street/ SW Sunset Boulevard	AWSC	City	Movement V/C ≤ 0.99[1]
5	SW Baker Road-SW Murdock Road/ SW Sunset Boulevard	AWSC	City	Movement V/C ≤ 0.99[1]
6	Highway 99W/SW Brookman Road-SW Chapman Road	TWSC	ODOT	Movement V/C ≤ 0.99 for Highway 99W approaches, movement V/C ≤ 0.95 for SW Brookman Road and SW Chapman Road
7	Old Highway 99 W/SW Brookman Road	TWSC	County	Movement V/C ≤ 0.99
8	SW Middleton Road/SW Brookman Road	TWSC	County	Movement V/C ≤ 0.99
9	SW Oberst Road-Future Site Access/ SW Brookman Road	TWSC	County	Movement V/C ≤ 0.99
10	SW Ladd Hill Road/SW Brookman Road	TWSC	County	Movement V/C ≤ 0.99[1]

[1]These roadways are located on the Arterial and Throughway Network (Metro Designation, Reference 3)
TWSC = Two-way stop-control, AWSC = All-way stop-control

Turn Lane Warrants

Left-turn lane needs along SW Brookman Road were assessed using turn lane warrants contained in the *ODOT Analysis Procedures Manual* (*APM*, Reference 4) and Harmelink left-turn warrant thresholds (Reference 5). Washington County policy's is to require a right-turn deceleration lane on roadways with a daily traffic volume greater than 10,000 and with a posted speed of 35 miles per hour (mph) or more in situations where the inbound right-turn movement exceeds 40 vehicles during the AM or PM peak hour.

REPORT FORMAT

This report addresses the following transportation issues:

- Existing land use and transportation system conditions within the site vicinity;
- Planned developments and transportation improvements in the study area;
- Forecast year 2020 background traffic conditions (prior to site development) during the weekday AM and PM peak hours;
- Weekday AM and PM peak hour trip generation and trip distribution estimates for site development;
- Forecast year 2020 total traffic conditions (with site development) during the weekday AM and PM peak hours;
- Turn lane and vehicle queuing needs at key study area intersections;
- Site access compliance with Washington County access management requirements; and
- Conclusions and recommendations.

EXISTING CONDITIONS

The existing conditions analysis identifies site conditions and the current operational and geometric characteristics of roadways within the study area. The purpose of this section is to set the stage for a basis of comparison to future conditions.

Site Conditions and Adjacent Land Uses

Today, the parcels comprising the site include a combination of properties occupied by two single-family homes with private driveway access to SW Brookman Road as well as undeveloped lots.

The site is bordered to the south by SW Brookman Road and single family homes across the roadway, to the west by private properties (generally single family homes) and the Portland & Western Railroad corridor, to the north by existing residential subdivisions, and to the east by additional single family homes.

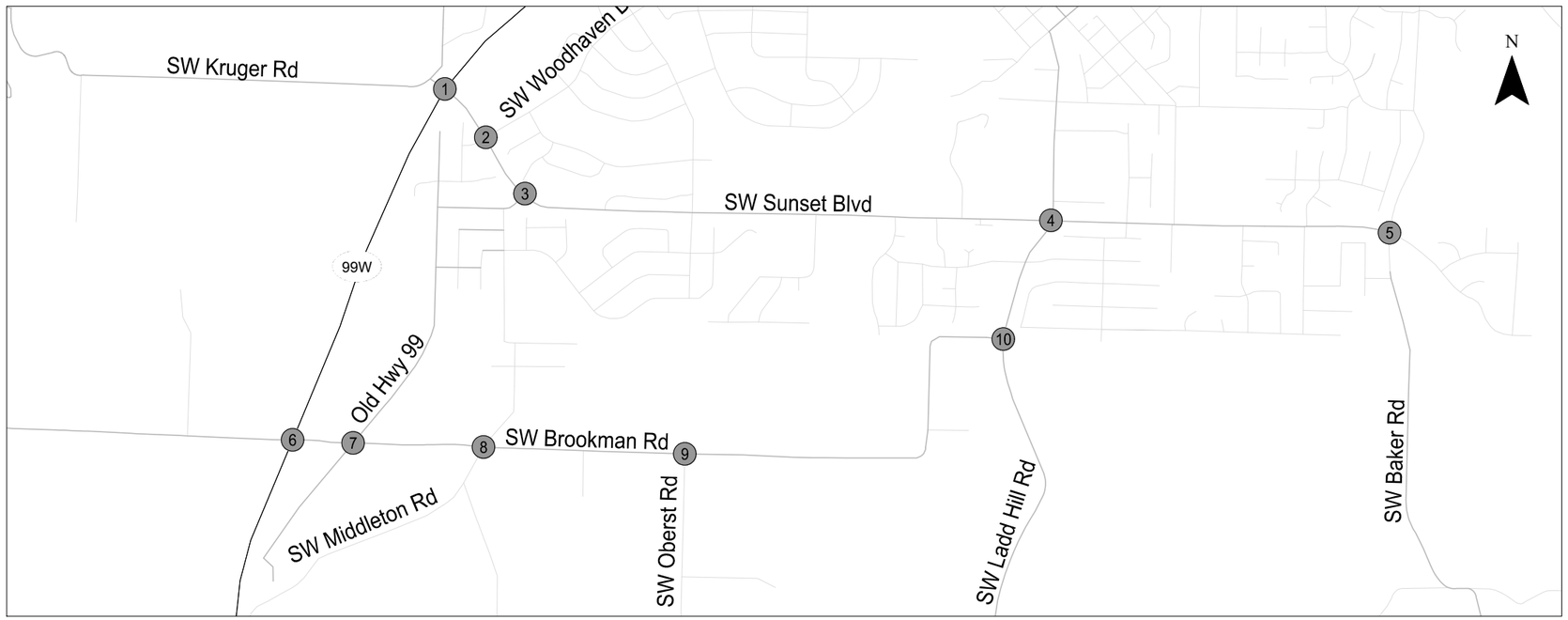
Transportation Facilities

Table 2 provides a summary of transportation facilities (including pedestrian and bicycle facilities) in the site vicinity while Figure 3 illustrates the existing lane configurations and traffic control devices at the identified study intersections.

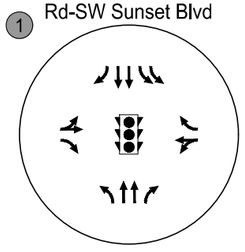
Table 2. Existing Transportation Facilities

Roadway	Classification[1]	Jurisdiction	Vehicle Lanes	Posted Speed	Sidewalks Present?	Bike Lanes Present?	On-Street Parking Allowed?
SW Pacific Highway 99W	Principal Arterial	ODOT	4 lanes	45-55 mph[2]	No	Yes	No
SW Sunset Boulevard	Arterial	City	2 lanes	35 mph	Yes	Yes	No
SW Woodhaven Drive	Neighborhood[3]	City	2 lanes	25 mph	Partial[4]	No	Yes
SW Timbrel Lane	Collector	City	2 lanes	Unposted	Yes	No	No
SW Main Street	Arterial	City	2 lanes	20 mph	Yes	No	No
SW Ladd Hill Road	Arterial	City	2 lanes	25 mph	Yes	Partial[5]	No
SW Murdock Road	Arterial	City	2 lanes	35 mph	Partial[6]	No	No
SW Baker Road	Arterial	City	2 lanes	35 mph	Partial[7]	No	No
SW Brookman Road	Arterial	County	2 lanes	35 mph	No	No	No
Old Highway 99W	Collector	City	2 lanes	35 mph	No	No	No
SW Middleton Road	Neighborhood[8]	City	2 lanes	Unposted	No	No	No
SW Oberst Road	Local	City	2 lanes	Unposted	No	No	No

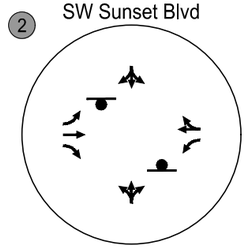
[1] Source: *City of Sherwood Transportation System Plan,* Reference 3.
[2]The speed limit on SW Pacific Highway 99W changes between SW Sunset Boulevard and SW Brookman Road. The posted speed is 45 miles per hour at the intersection of Sunset Boulevard and 55 miles per hour at the intersection of SW Brookman Road.
[3]SW Woodhaven Drive is classified as a neighborhood roadway north of SW Sunset Boulevard. It is designated a local street to the south.
[4]There is a gap in sidewalk on the north side of SW Woodhaven Drive between SW Sunset Boulevard and SW Fitch Drive.
[5]There are bike lanes on SW Ladd Hill Road between SW Willow Drive and SW Sunset Boulevard.
[6]There are sidewalks on the west side of SW Murdock Road.
[7]There are sidewalks on the west side of SW Baker Road.
[8]SW Middleton Road is classified as a neighborhood roadway north of SW Brookman Road. It is designated a local street to the south.



Hwy 99W/SW Elwert Rd-SW Sunset Blvd



SW Woodhaven Dr/ SW Sunset Blvd



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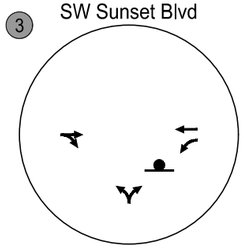
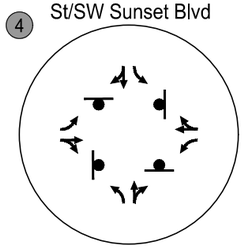


SW Ladd Hill Rd-SW Main St/SW Sunset Blvd



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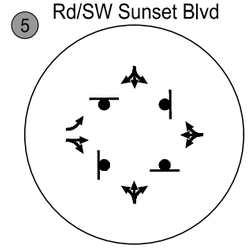
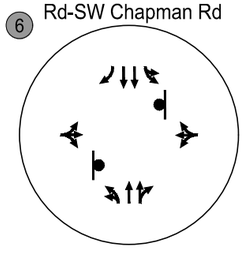
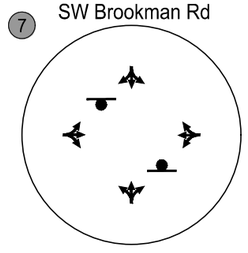


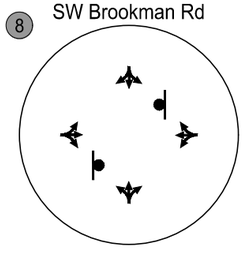
Hwy 99W/SW Brookman Rd-SW Chapman Rd



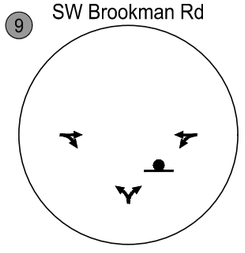
Old Hwy 99W/ SW Brookman Rd



SW Middleton Rd/ SW Brookman Rd



SW Oberst Rd/ SW Brookman Rd



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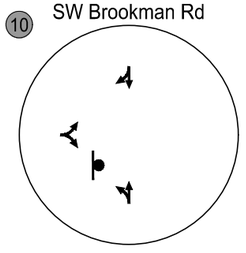

- STOP SIGN
- TRAFFIC SIGNAL

Existing Lane Configurations and Traffic Control Devices
Sherwood, Oregon

Figure 3

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Pedestrian and Bicycle Facilities

Table 1 highlights pedestrian and bicycle facilities available in the larger area surrounding the site. There are no sidewalks or bicycle lanes provided along SW Brookman Road serving the site.

Transit Facilities

Transit service in Sherwood is currently provided by TriMet; however, there is no scheduled fixed route service along SW Brookman Road or Highway 99W near the site. The closest fixed route transit service is currently available at the Sherwood Park and Ride located in the downtown area north of SW Sunset Boulevard (Reference 6).

TRAFFIC SAFETY

Crash history was reviewed for the study intersections in an effort to identify potential intersection safety issues. Crash data for the study intersections were obtained from ODOT for the five-year period from January 1, 2012 through December 31, 2016. Table 3 illustrates the crashes reported at the study intersections. *Appendix B* contains the ODOT crash data.

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

Location		Collision Type						Severity		Total
		Rear-end	Turning	Angle	Backing	Bicyclist	Fixed Object	PDO[1]	Injury	
1	Highway 99W/SW Elwert Road-SW Sunset Boulevard	15	4	0	0	0	0	8	11	19
2	SW Woodhaven Drive/ SW Sunset Boulevard	0	1	0	0	1	0	1	1	2
3	SW Timbrel Lane/ SW Sunset Boulevard	0	0	0	0	0	0	0	0	0
4	SW Ladd Hill Rd.-SW Main St./ SW Sunset Boulevard	2	2	0	0	0	1	2	3	5
5	SW Baker Road-SW Murdock Road/SW Sunset Boulevard	0	0	0	0	0	0	0	0	0
6	Highway 99W/SW Brookman Road-SW Chapman Road	2	5	6	0	0	0	9	4	13
7	Old Highway 99 W/ SW Brookman Road	0	0	0	0	0	0	0	0	0
8	SW Middleton Road/ SW Brookman Road	0	0	0	0	1	0	0	1	0
9	SW Oberst Road-Future Site Access/SW Brookman Road	0	0	0	0	0	0	0	0	0
10	SW Ladd Hill Road/ SW Brookman Road	0	0	0	0	0	0	0	0	0

[1]PDO – Property damage only

Critical crash rates were calculated for each of the study intersections following the analysis methodology presented in ODOT's *SPR 667 Assessment of Statewide Intersection Safety Performance* (Reference 7). SPR 667 provided average crash rates at a variety of intersection configurations in Oregon based on number of approaches and traffic control types. The average crash rate represents the approximate number of crashes that are "expected" at a study intersection. Additionally, this average crash rate was used to calculate the critical crash rate for each study intersection, based on

the *Highway Safety Manual* methodology (Reference 8). The critical crash rate is calculated for each intersection based on the average crash rate for each facility and serves as a threshold for further analysis.

Table 4 summarizes the critical crash rate for each intersection and compares those values to the observed crash rate. Per ODOT, if the observed crash rate at the study location exceeds the critical rate, it is a possible indication that the location is exceeding average crash rates.

Table 4. Intersection Crash Rate Assessment

Location		Total Crashes	Critical Crash Rate by Intersection	Critical Crash Rate by Volume	Observed Crash Rate at Intersection	Observed Crash Rate>Critical Crash Rate?
1	Highway 99W/SW Elwert Road-SW Sunset Boulevard	19	0.62	0.53	0.25	No
2	SW Woodhaven Drive/ SW Sunset Boulevard	2	0.40	0.40	0.11	No
3	SW Timbrel Lane/ SW Sunset Boulevard	0	0.31	0.42	0.00	No
4	SW Ladd Hill Rd.-SW Main St./ SW Sunset Boulevard	5	0.38	0.39	0.23	No
5	SW Baker Road-SW Murdock Road/SW Sunset Boulevard	0	0.38	0.39	0.00	No
6	Highway 99W/SW Brookman Road-SW Chapman Road	13	0.30	0.54	0.20	No
7	Old Highway 99 W/ SW Brookman Road	0	0.88	0.75	0.00	No
8	SW Middleton Road/ SW Brookman Road	0	0.80	0.67	0.00	No
9	SW Oberst Road-Future Site Access/SW Brookman Road	0	0.92	0.79	0.00	No
10	SW Ladd Hill Road/ SW Brookman Road	0	0.49	0.51	0.00	No

As shown in Table 4, the observed crash rate is below the critical crash rate at all of the study intersections.

Field observation of at the SW Oberst Road/SW Brookman Road intersection noted that sight distance is currently limited at the intersection due to the horizontal curvature of the roadway (crest vertical curve on SW Brookman Road west of the intersection). The SW Oberst Road/SW Brookman Road intersection will be reconstructed in conjunction with the proposed site development, improving intersection sight lines and modifying the intersection to add a northern approach. With this site-development related improvement planned, no safety-based mitigations are recommended based on review of the crash data alone.

ODOT SPIS List

ODOT provides an annual list of safety priority index system (SPIS) locations which are based on reported crash data. The intent of the SPIS list is to identify roadway segments exhibiting an unusually high occurrence of crashes. It is used to select locations for investigation. The segment on Highway 99W in the vicinity of SW Elwert Road-SW Sunset Boulevard is listed in the top 5% SPIS sites and the

segment of Highway 99W in the vicinity of SW Brookman Road-SW Chapman Road is listed in the top 10% SPIS sites. The majority of reported crashes at Highway 99W/SW Elwert Road-SW Sunset Boulevard were rear-end crashes. At Highway 99W/SW Brookman Road-SW Chapman Road, the majority of crashes were angle or turning crashes. The City of Sherwood TSP (Reference 3) includes a medium-term project to realign SW Brookman Road to intersect with Highway 99W approximately ¼ mile north of its current location and signalize the intersection. The realignment project is not currently funded.

Washington County SPIS List

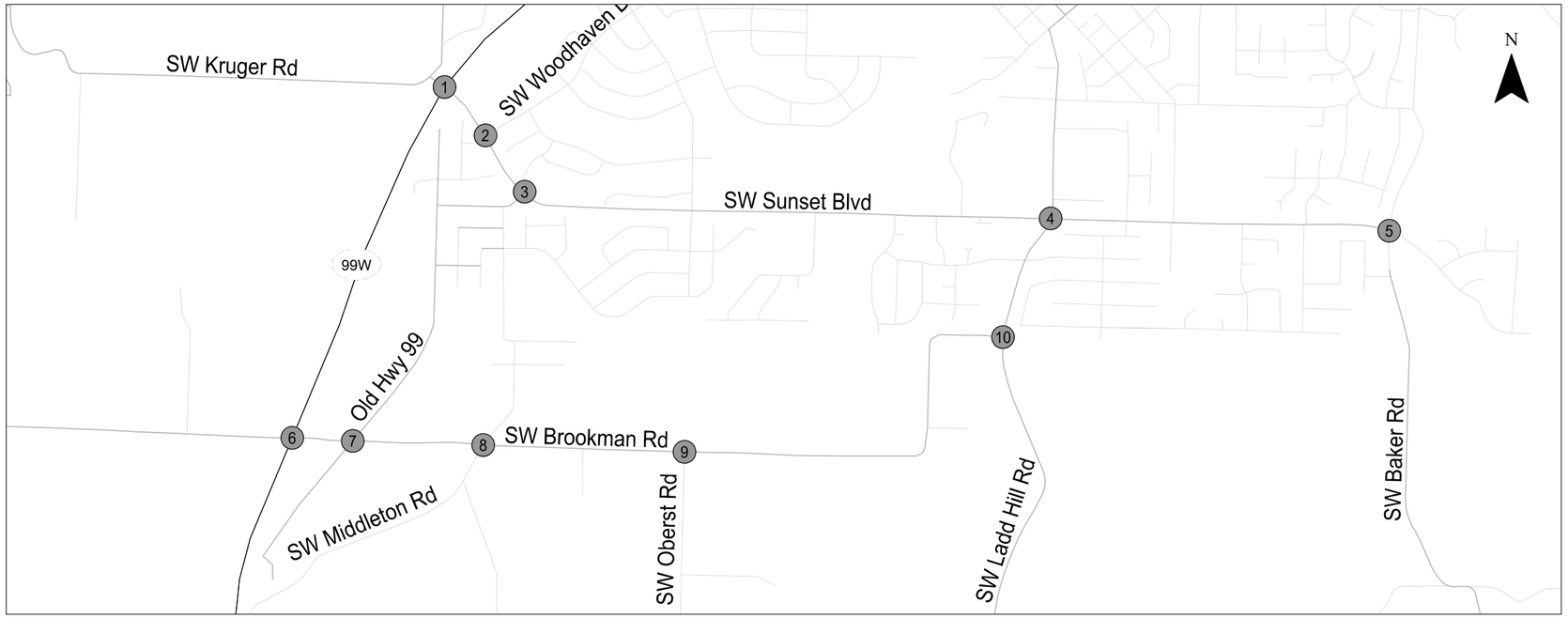
Washington County also maintains a SPIS list to identify existing hazardous intersections for potential safety improvements. Intersections are included in the County SPIS list if they have three or more crashes or if they have one or more severe injury or fatal crashes within three consecutive years. The intersection of Highway 99W/SW Brookman Road-SW Chapman Road appears on the most recent Washington County SPIS list (2013-2015). As noted above, the City of Sherwood TSP includes an unfunded project to realign SW Brookman Road to intersect with Highway 99W approximately ¼ mile north of its current location and signalize the intersection.

TRAFFIC VOLUMES AND PEAK HOUR OPERATIONS

Traffic counts were obtained at the study intersections on a typical mid-week day 2017[2]. These counts were conducted during the morning (7:00 – 9:00 AM) and evening (4:00 - 6:00 PM) hours. *Appendix C* contains the traffic count sheets used in this study.

Figures 4 and 5 present the existing traffic conditions for the weekday AM and PM peak hours, respectively. Each of the study intersections operate in compliance with the respective mobility standards today, though the Highway 99W/SW Elwert Road-SW Sunset Boulevard intersection is approaching capacity during the weekday PM peak hour. *Appendix D* includes the existing conditions level-of-service worksheets.

[2] Refer to the traffic count summaries in *Appendix C* for specific count dates which occurred in May, September, October and November of 2017.



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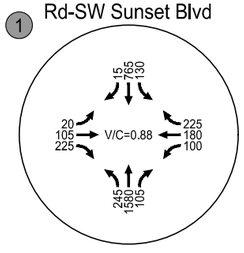

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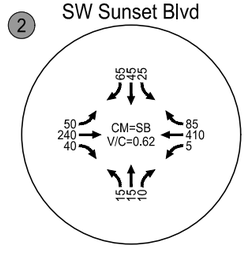
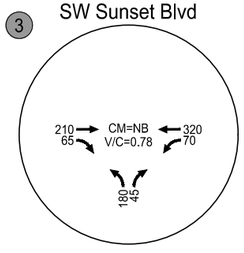
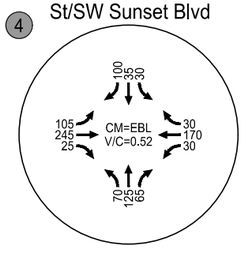


3 SW Timbrel Ln/ SW Sunset Blvd


4 SW Ladd Hill Rd-SW Main St/SW Sunset Blvd


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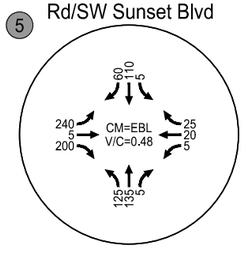

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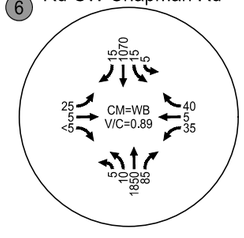

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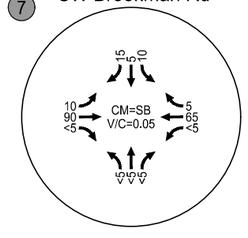

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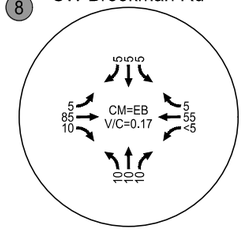

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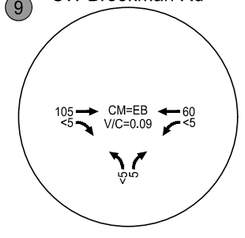

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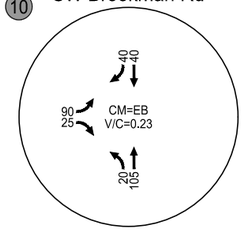

CM = CRITICAL MOVEMENT (TWSC & AWSC)
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TWSC = TWO-WAY STOP CONTROL
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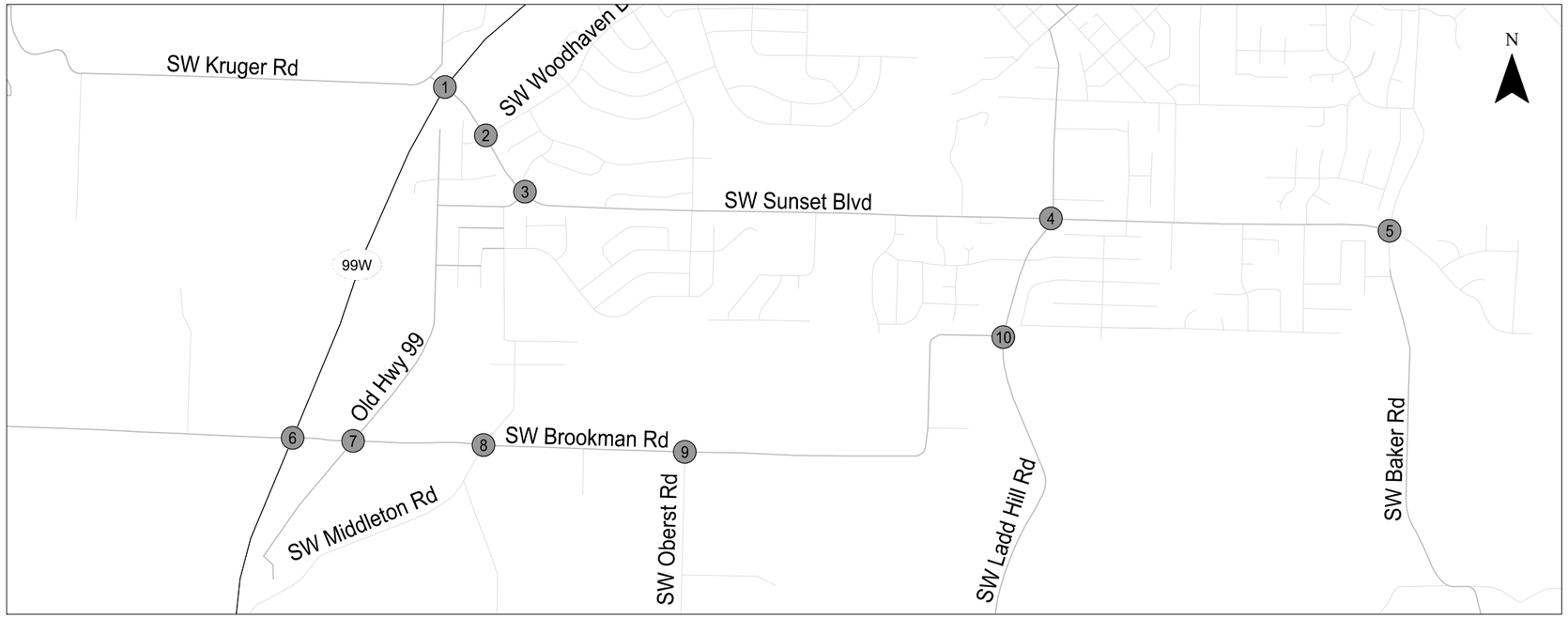
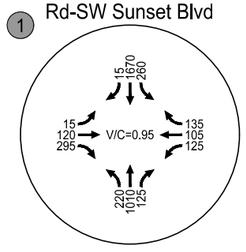
Existing Intersection Operations
Weekday AM Peak Hour
Sherwood, Oregon

Figure 4



Hwy 99W/SW Elwert Rd-SW Sunset Blvd



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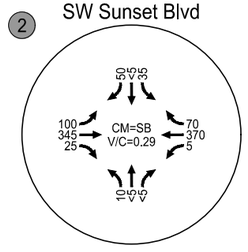

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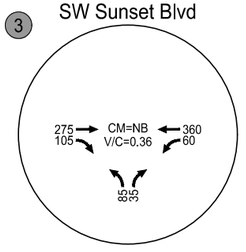

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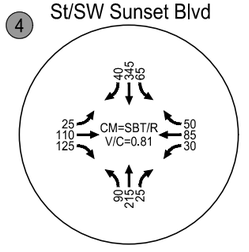

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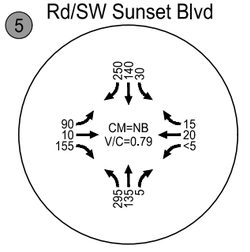

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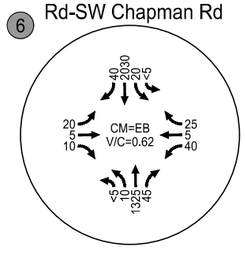

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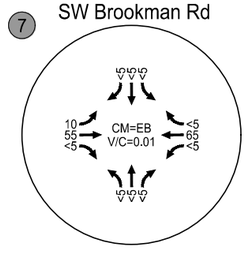

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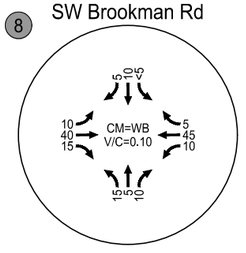

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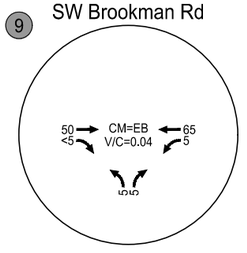

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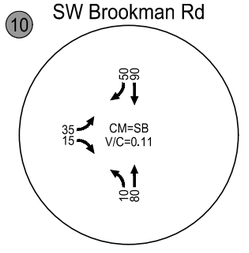

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Existing Intersection Operations
Weekday PM Peak Hour
Sherwood, Oregon

Figure 5

An assessment of 95th percentile queues under all scenarios is provided in *Appendix E*. Queues were reported from Synchro. As indicated in the summary, all 95th percentile queues can be accommodated within available storage except for the following:

- The eastbound left-turn/through movement and eastbound right-turn movement at the intersection of Highway 99W/SW Elwert Road-SW Sunset Boulevard extend beyond the adjacent intersection at SW Kruger Road/SW Elwert Road during the weekday AM or weekday PM peak hour, respectively.
- The northbound left-turn movement at the intersection of Highway 99W/SW Elwert Road-SW Sunset Boulevard exceeds the available stripped storage by one to two vehicles during the weekday PM peak hour.
- The 95th percentile queue for the southbound through/right-turn movement at the intersection of SW Ladd Hill Rd.-SW Main St./SW Sunset Boulevard extends beyond the adjacent intersection at SW Cornerstone Lane during the weekday PM peak hour.

YEAR 2020 BACKGROUND TRAFFIC CONDITIONS

The background traffic analysis identifies how the study area's transportation system will operate in 2020, the year the proposed development will be built out. This analysis includes traffic growth due to development within the study area but does not include traffic from the proposed subdivision.

Planned Developments and Transportation Improvements

Through the scoping process, the review agencies identified two in-process developments, the Sherwood Hotel located on SW Meinecke Road at Highway 99W and the Sherwood High School relocation to a site northeast of the intersection of SW Elwert Road and SW Kruger Road, east of Highway 99W.

The following improvements at the Highway 99W/SW Elwert Road-SW Sunset Boulevard intersection were included in the year 2020 background and total traffic conditions scenarios per City staff direction:

- Addition of a second northbound left turn lane (required as part of the Sherwood High School Transportation Planning Rule Analysis, as documented in the Sherwood High School Transportation Impact Study, Reference 9)
- Widening the west leg of the intersection to provide a left-turn, through lane, and through/right-turn lane (per conceptual drawings provided by City staff)
- Widening the east leg of the intersection to provide a left-turn, through lane, and through/right-turn lane (per conceptual drawings provided by City staff)

Background Traffic Volumes and Conditions

Year 2020 background traffic volumes were developed by increasing existing study intersection traffic volumes by 1% annually along Highway 99 and 2% annually on all other approaches as per City direction

during the scoping process. Traffic volumes from the in-process hotel development and the high school relocation were then added.

Figures 6 and 7 report the 2020 background traffic volumes and operating conditions at the study intersections during the weekday AM and PM peak hours, respectively. As seen in the figure, the following intersections are projected to exceed operational standards during the weekday AM peak hour:

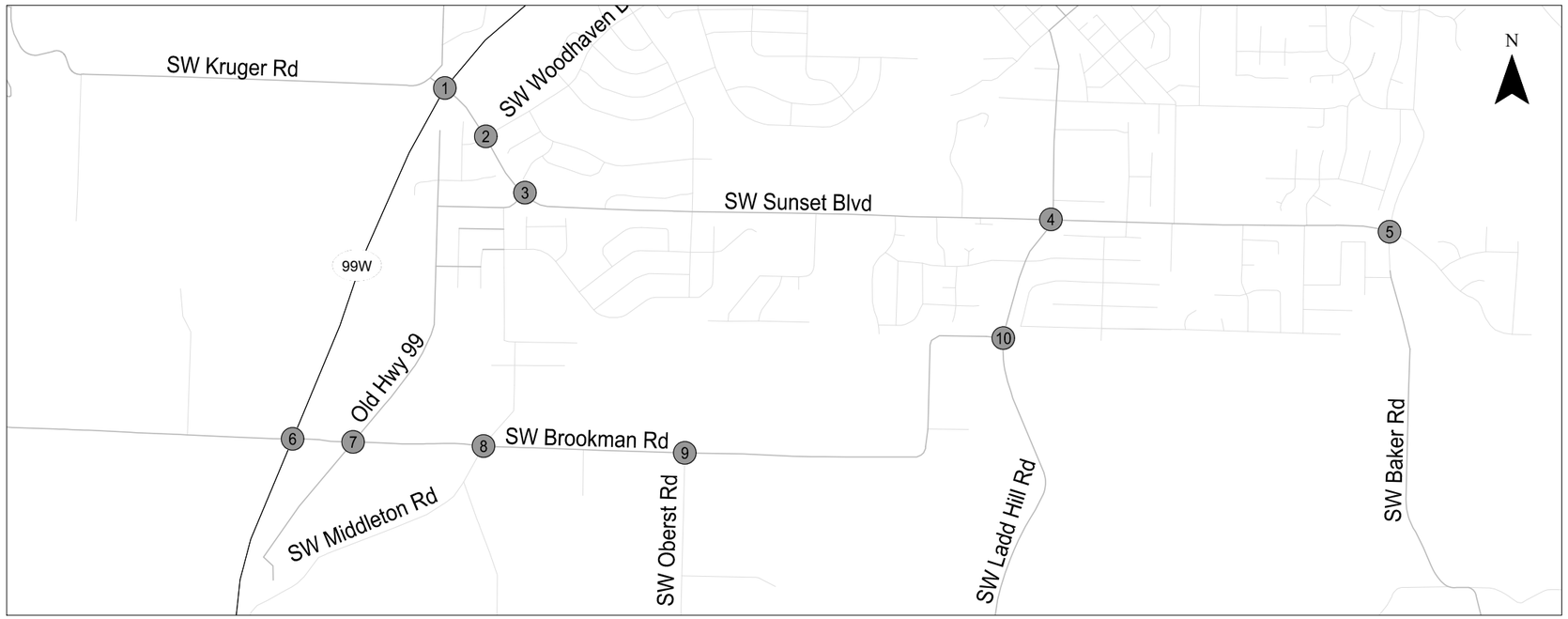
- The southbound approach to the stop-controlled SW Woodhaven Drive/SW Sunset Boulevard intersection is projected to operate with a V/C ratio of 1.30 and at a LOS F, exceeding the City's standard requiring a V/C ratio less than or equal to 0.99.
- The northbound approach to the stop-controlled SW Timbrel Lane/SW Sunset Boulevard intersection is projected to operate with a V/C ratio of 1.26 and at a LOS F, exceeding the City's standard requiring a V/C ratio less than or equal to 0.99.
- The westbound SW Brookman Road approach to the unsignalized Highway 99W/SW Brookman Road-SW Chapman Road intersection is projected to operate with a V/C ratio of 1.08

Potential future mitigations are further discussed under total traffic conditions. *Appendix F* includes the year 2020 background conditions level-of-service worksheets.

An assessment of 95th percentile queues under all scenarios is provided in *Appendix E*. Queues were reported from Synchro. As indicated in the summary, beyond the locations discussed under existing conditions, all 95th percentile queues can be accommodated within available storage except for the following:

- The westbound left-turn movement at the intersection of Highway 99W/SW Elwert Road-SW Sunset Boulevard extends beyond the adjacent intersection at SW Woodhaven Drive during the weekday PM peak hour.
- The southbound left-turn movement at the intersection of Highway 99W/SW Elwert Road-SW Sunset Boulevard exceeds the available stripped storage by one to two vehicles during the weekday AM peak hour.
- The 95th percentile queue for the northbound left-turn/through movement at the intersection of SW Timbrel Lane/SW Sunset Boulevard extends beyond the adjacent intersection at SW Middleton Road during the weekday AM peak hour.

The queue for the northbound left-turn movement at the intersection of Highway 99W/SW Elwert Road-SW Sunset Boulevard is no longer projected to exceed storage with the planned second turn-lane.



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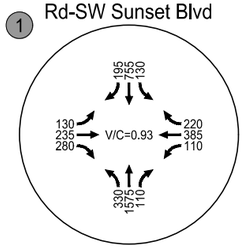

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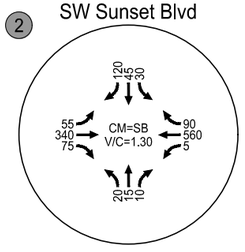

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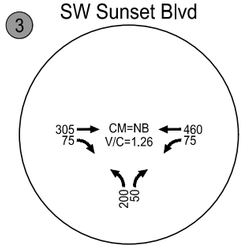

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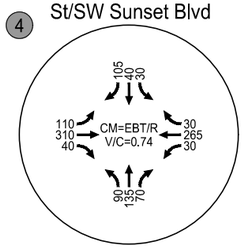

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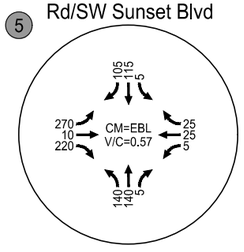

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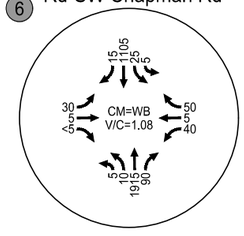

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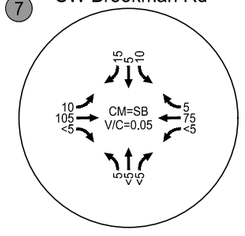

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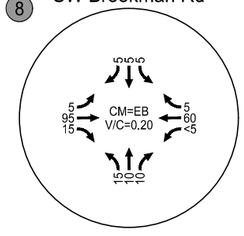

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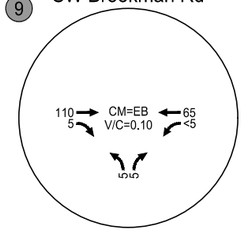

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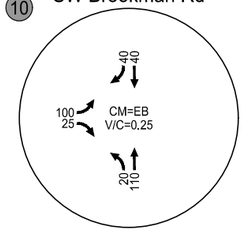

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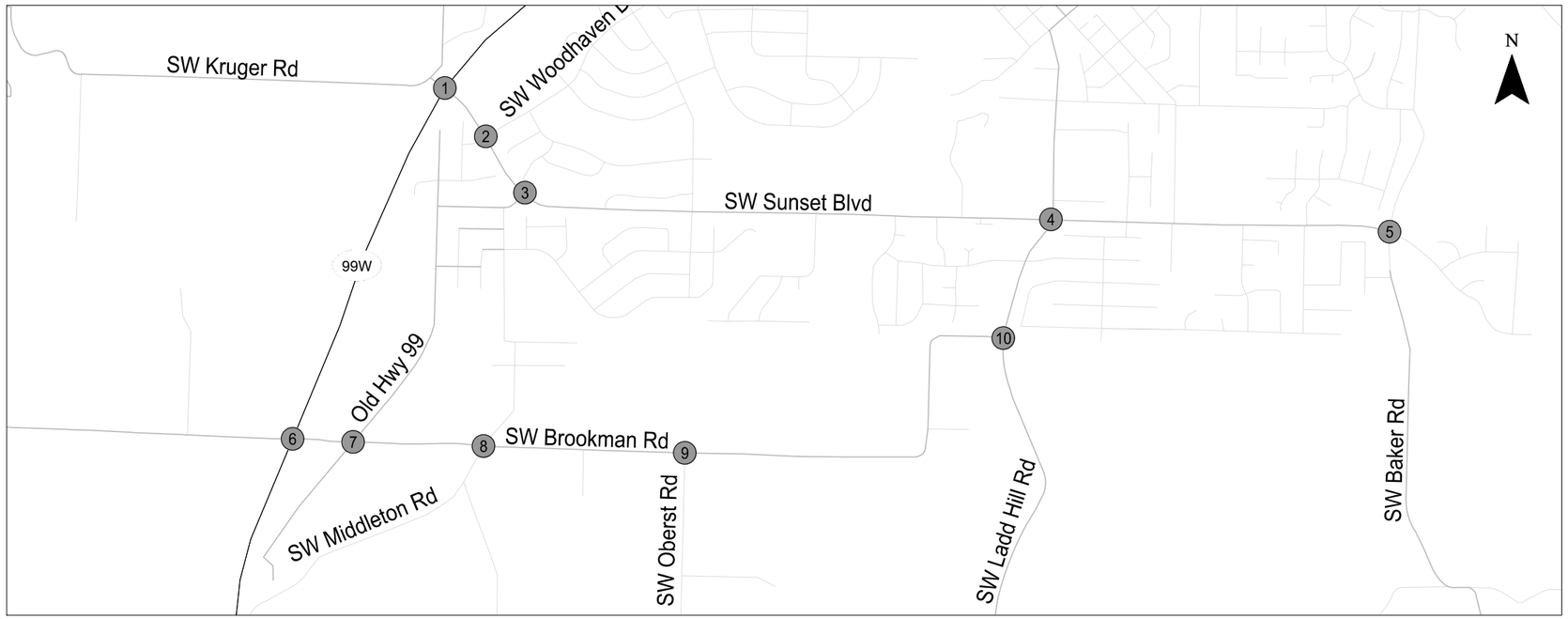
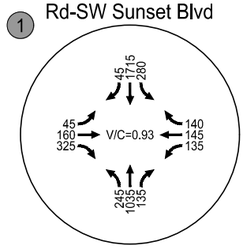
Year 2020 Background Intersection Operations
Weekday AM Peak Hour
Sherwood, Oregon

Figure 6



Hwy 99W/SW Elwert Rd-SW Sunset Blvd



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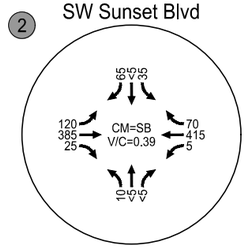

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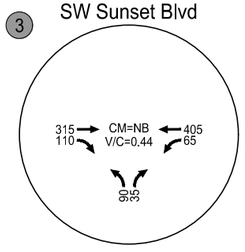

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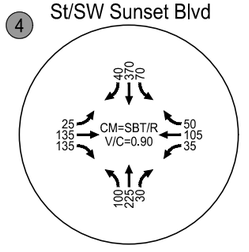
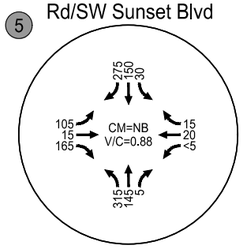


SW Baker Rd-SW Murdock Rd/SW Sunset Blvd



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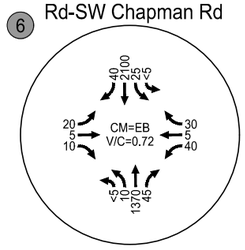

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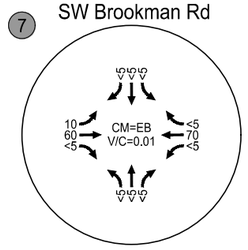

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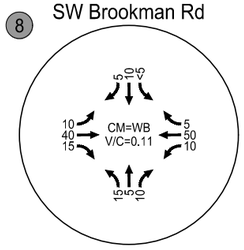
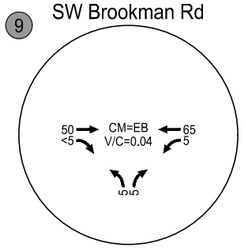


SW Oberst Rd/ SW Brookman Rd



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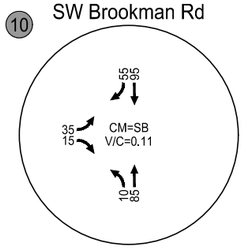

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Year 2020 Background Intersection Operations
Weekday PM Peak Hour
Sherwood, Oregon

Figure 7

PROPOSED DEVELOPMENT PLAN

The development as proposed consists of 145 detached single-family homes. A network of on-site roadways is proposed to provide access to individual homes with one public street connection on SW Brookman Road, aligning with the existing intersection at SW Oberst Road. The lane configurations and traffic control devices assumed for the year 2020 total traffic conditions are shown in Figure 8. The two existing single-family homes on site will be removed and the existing accesses to SW Brookman Road vacated. Site development is expected to be complete by 2020.

Trip Generation Estimate

Trip generation estimates for the proposed development were prepared based on information presented in the *Trip Generation Manual* (Reference 10) and are shown in Table 5.

Table 5. Trip Generation Estimate

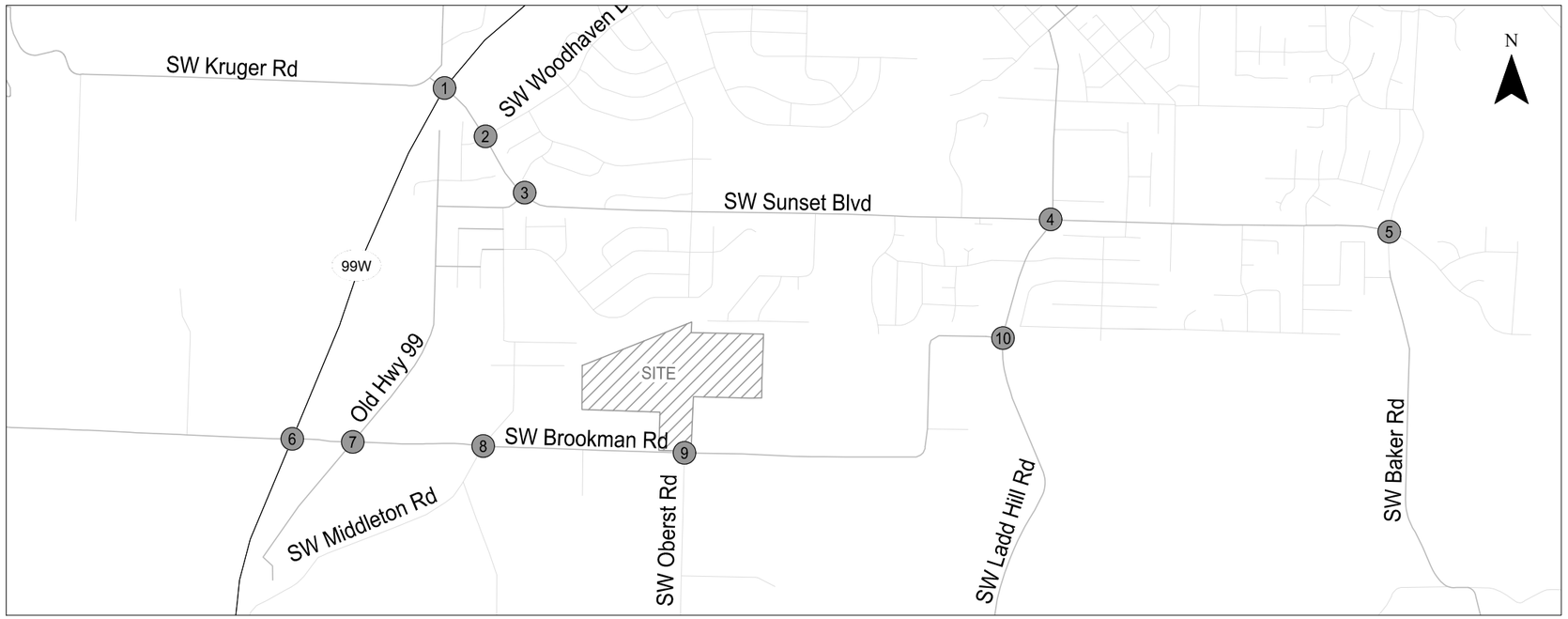
Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Single-Family Detached	210	143 units[1]	1,362	110	28	82	145	91	54

Note: Per direction from ODOT and the City, the average rate was used for the daily trip generation and the fitted curve equation for the weekday AM and PM peak hour trip generation.
[1]There are two single-family detached homes on-site currently, so the trip generation is based on 143 units (145 proposed units minus 2 existing units).

As shown in Table 5, the proposed development is estimated to generate an additional 1,362 daily trips, including 110 trips during the weekday AM peak hour and 145 trips during the weekday PM peak.

Trip Distribution & Assignment

The trip distribution pattern for the site was developed considering existing traffic patterns and roadway connectivity. The trip distribution pattern was approved by the review agencies during project scoping and was used to assign the weekday AM and PM peak hour site trips to the study intersections as shown in Figures 9 and 10.



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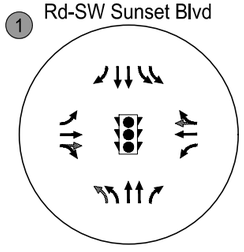
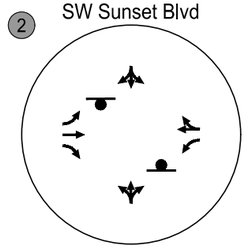


2 SW Woodhaven Dr/ SW Sunset Blvd



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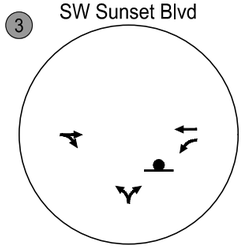
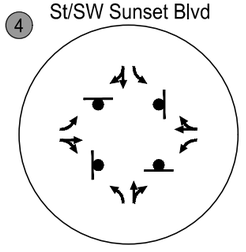
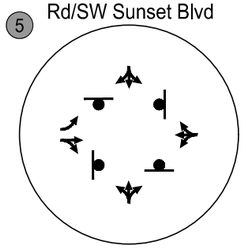


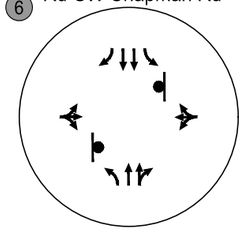
4 SW Ladd Hill Rd-SW Main St/SW Sunset Blvd



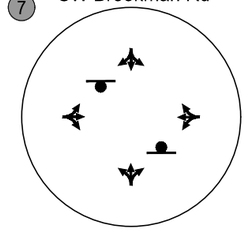
5 SW Baker Rd-SW Murdock Rd/SW Sunset Blvd



6 Hwy 99W/SW Brookman Rd-SW Chapman Rd



7 Old Hwy 99W/ SW Brookman Rd



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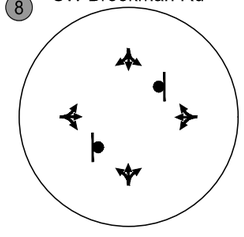

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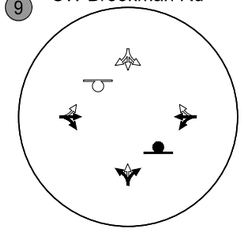

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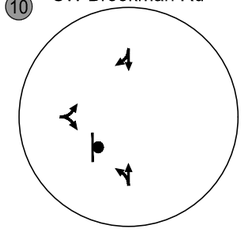
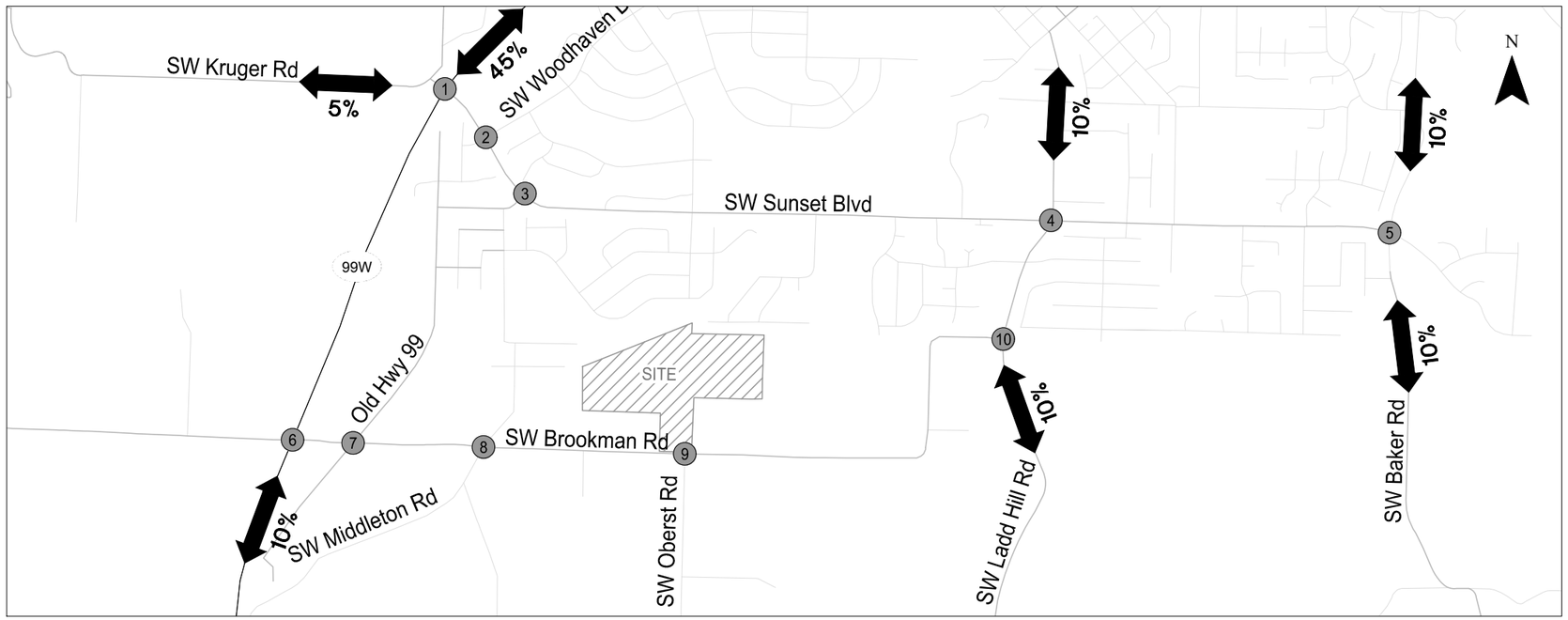
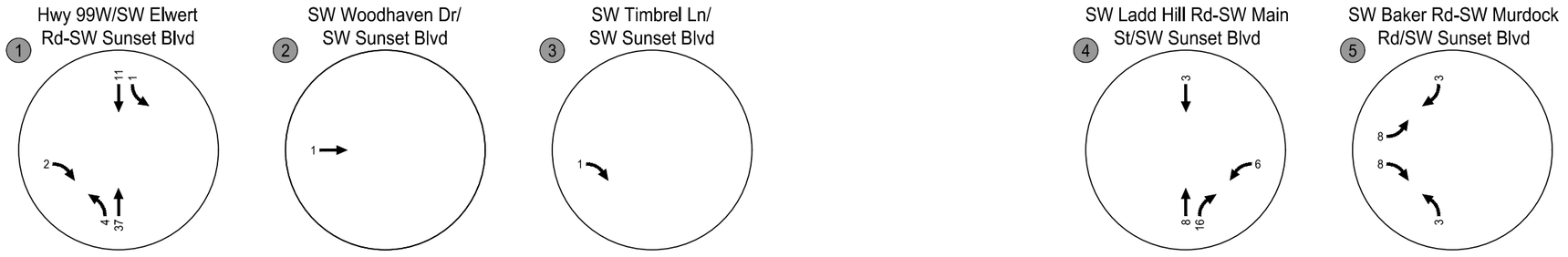


- STOP SIGN
- TRAFFIC SIGNAL
- PLANNED IMPROVEMENT
- MOVEMENT ADDED WITH DEVELOPMENT

Year 2020 Total Traffic Assumed Lane Configurations and Traffic Control Devices
Sherwood, Oregon

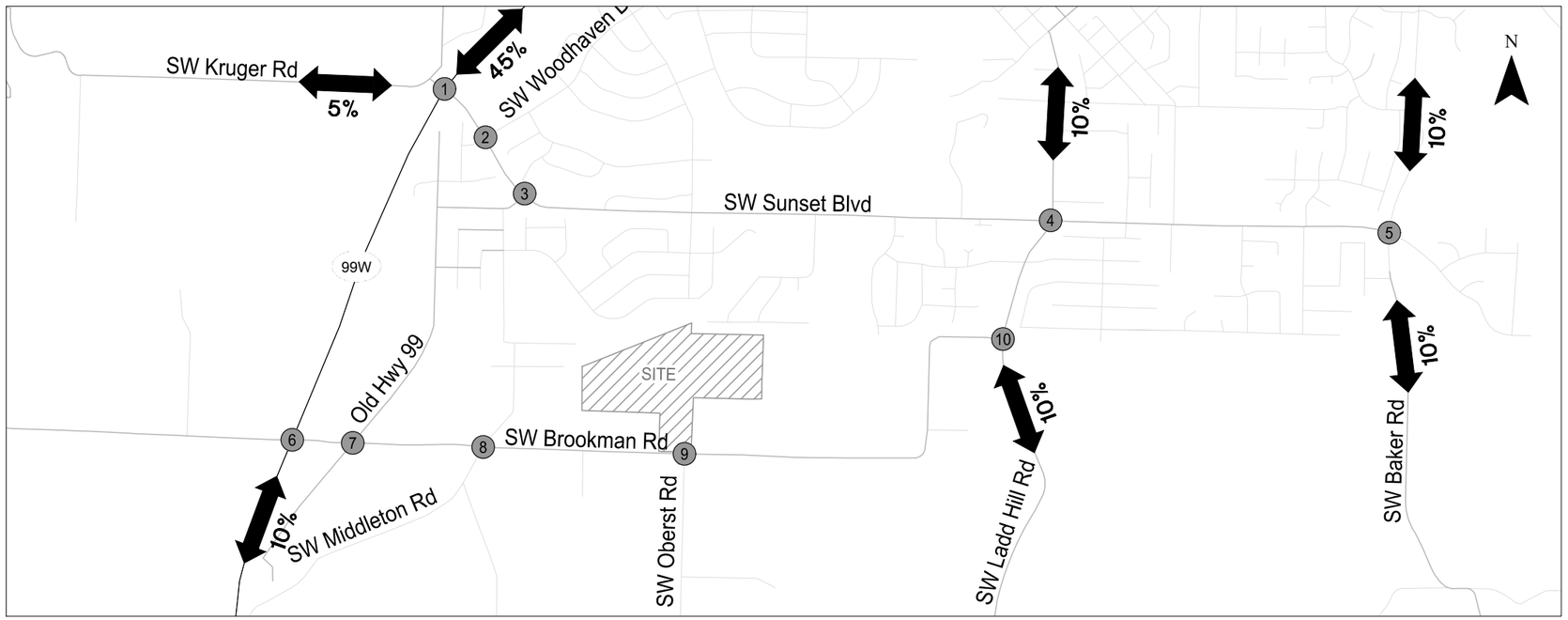
Figure 8

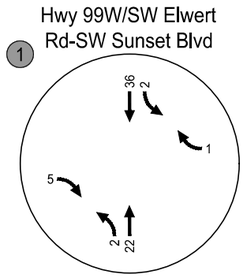


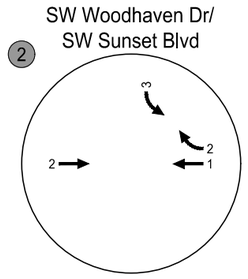


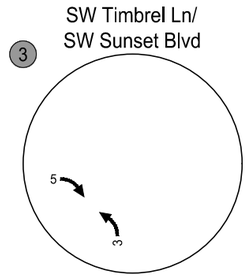
Assumed Trip Distribution and Assignment
Weekday AM Peak Hour
Sherwood, Oregon

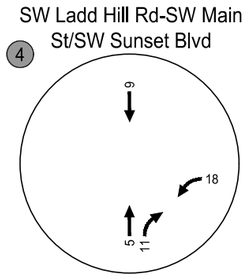
Figure
9

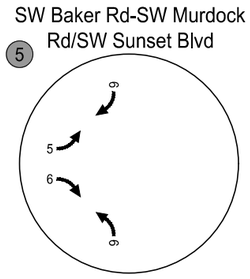


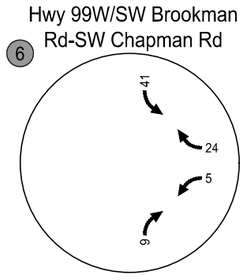


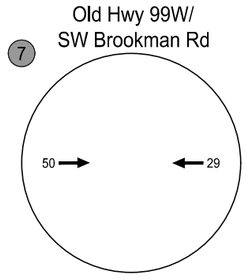


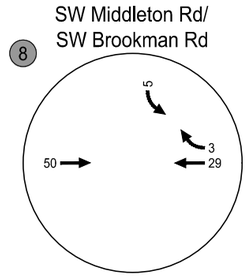


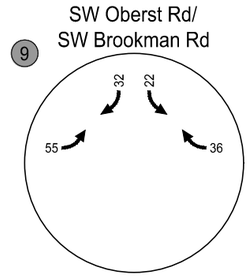


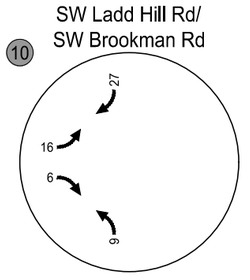












Assumed Trip Distribution and Assignment
Weekday PM Peak Hour
Sherwood, Oregon

Figure
10

YEAR 2020 TOTAL TRAFFIC CONDITIONS

The 2020 total traffic conditions analysis forecasts how the study area's transportation system will operate with the inclusion of traffic from the proposed development and identifies traffic mitigation measures required to support the site. Future traffic conditions were estimated by adding site-generated traffic to the 2020 background traffic volumes for the weekday AM and PM peak hours to arrive at the 2020 total traffic volumes.

Figures 11 and 12 report the 2020 total traffic volumes and operating conditions for the weekday AM and PM peak hours with site development. As seen in the figures, as under background conditions, the following intersections are projected to not satisfy operational standards during the weekday AM peak hour:

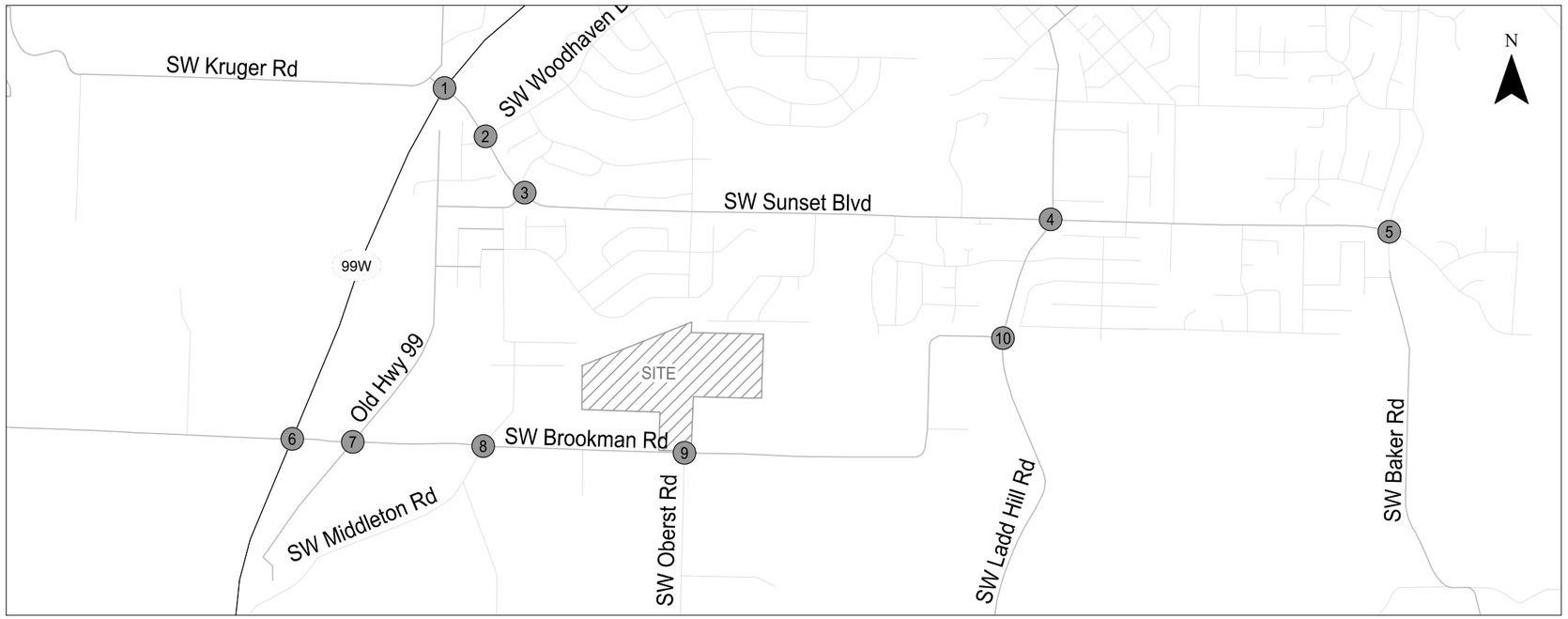
- The southbound approach to the stop-controlled SW Woodhaven Drive/SW Sunset Boulevard intersection is projected to operate with a V/C ratio of 1.30 and at a LOS F (no change from background conditions and the proposed development adds no trips to the southbound approach).
- The northbound approach to the stop-controlled SW Timbrel Lane/SW Sunset Boulevard intersection is projected to operate with a V/C ratio of 1.26 and at a LOS F (no change from background conditions and the proposed development adds no trips to the northbound approach).
- The westbound SW Brookman Road approach to the unsignalized Highway 99W/SW Brookman Road-SW Chapman Road intersection is projected to operate with a V/C ratio of 1.45.

Operations at these three intersections are discussed further below. *Appendix G* includes the year 2020 total traffic conditions level-of-service worksheets.

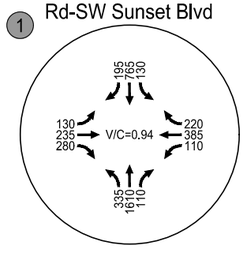
An assessment of 95th percentile queues under all scenarios is provided in *Appendix E*. Queues were reported from Synchro. As indicated in the summary, beyond the locations discussed under existing and background conditions, all 95th percentile queues can be accommodated within available storage. The only queuing mitigation needs identified in conjunction with site development are at the unsignalized Highway 99W/SW Brookman Road-SW Chapman Road intersection.

SW Woodhaven Drive/SW Sunset Boulevard

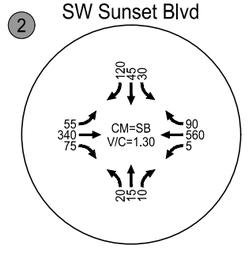
The southbound approach to the stop-controlled intersection of SW Woodhaven Drive/SW Sunset Boulevard is projected to operate at a LOS F and V/C ratio of 1.30 under both background and total traffic conditions during the weekday AM peak hour. The site is anticipated to add one eastbound through-trip to the intersection and therefore have a negligible impact on the intersection. Given that the intersection does not meet standards under background conditions, no site trips are added to the critical stop controlled approach, and the site's impact on the critical approach V/C ratio is negligible, no mitigations are recommended.



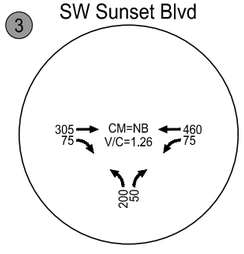
Hwy 99W/SW Elwert Rd-SW Sunset Blvd



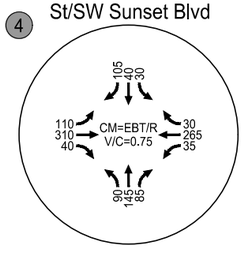
SW Woodhaven Dr/ SW Sunset Blvd



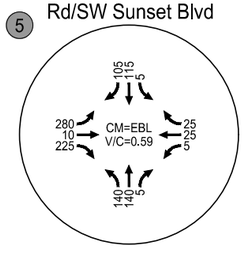
SW Timbrel Ln/ SW Sunset Blvd



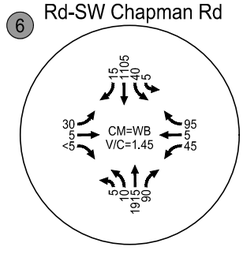
SW Ladd Hill Rd-SW Main St/SW Sunset Blvd



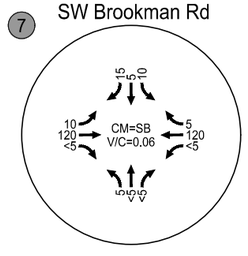
SW Baker Rd-SW Murdock Rd/SW Sunset Blvd



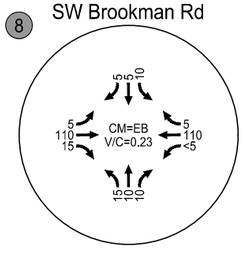
Hwy 99W/SW Brookman Rd-SW Chapman Rd



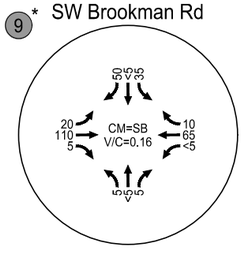
Old Hwy 99W/ SW Brookman Rd



SW Middleton Rd/ SW Brookman Rd



SW Oberst Rd/ SW Brookman Rd



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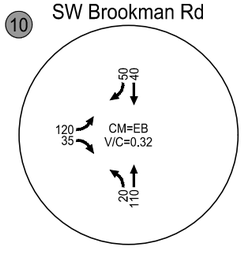
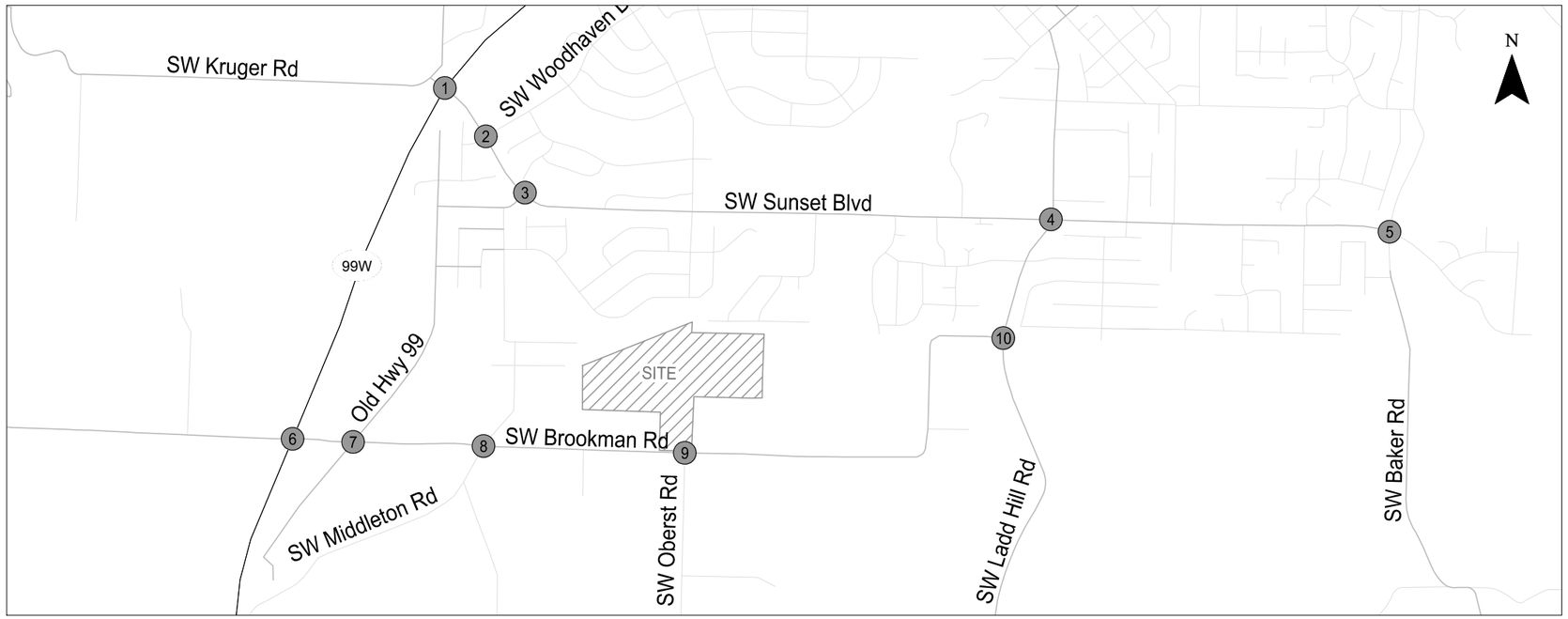


* Note: Trips were added to intersection 9 to account for rerouted trips associated with the existing two homes on site.

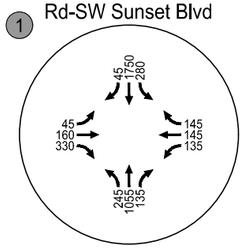
CM = CRITICAL MOVEMENT (TWSC & AWSC)
V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
TWSC = TWO-WAY STOP CONTROL
AWSC = ALL-WAY STOP CONTROL

Year 2020 Total Traffic Intersection Operations Weekday AM Peak Hour Sherwood, Oregon

Figure 11



1 Hwy 99W/SW Elwert Rd-SW Sunset Blvd



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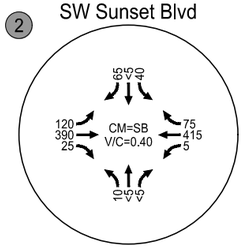
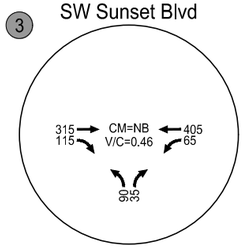
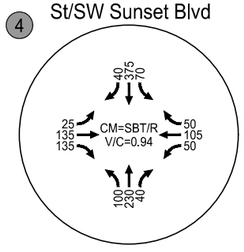


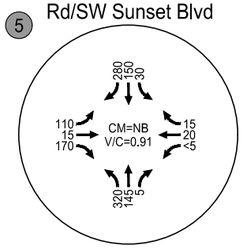
3 SW Timbrel Ln/ SW Sunset Blvd



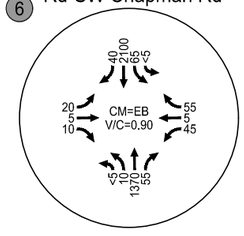
4 SW Ladd Hill Rd-SW Main St/SW Sunset Blvd



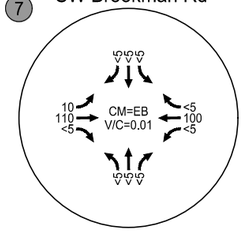
5 SW Baker Rd-SW Murdock Rd/SW Sunset Blvd



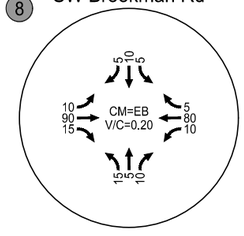
6 Hwy 99W/SW Brookman Rd-SW Chapman Rd



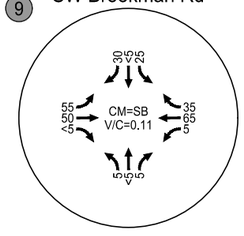
7 Old Hwy 99W/ SW Brookman Rd



8 SW Middleton Rd/ SW Brookman Rd



9 * SW Oberst Rd/ SW Brookman Rd



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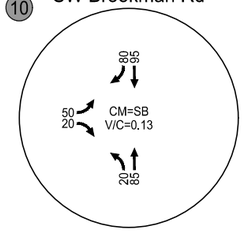

* Note: Trips were added to intersection 9 to account for rerouted trips associated with the existing two homes on site.

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V/C = CRITICAL VOLUME-TO-CAPACITY RATIO
TWSC = TWO-WAY STOP CONTROL
AWSC = ALL-WAY STOP CONTROL

Year 2020 Total Traffic Intersection Operations
Weekday PM Peak Hour
Sherwood, Oregon

Figure 12

SW Timbrel Lane/SW Sunset Boulevard

The northbound approach to the stop-controlled intersection of SW Timbrel Lane/SW Sunset Boulevard intersection is projected to operate at a LOS F and V/C ratio of 1.26 under both background and total traffic conditions during the weekday AM peak hour. The site is anticipated to add one eastbound right-turn trip to the intersection and therefore have a negligible impact on the intersection. Given that the intersection does not meet standards under background conditions, no site trips are added to the critical stop-controlled approach, and the site's impact on the critical approach V/C ratio is negligible, no mitigations are recommended.

Highway 99W/SW Brookman Road-SW Chapman Road

The SW Brookman Road westbound approach to the Highway 99W/SW Brookman Road-SW Chapman Road intersection is projected to operate with a V/C ratio of 1.45 under total traffic conditions during the weekday AM peak hour, compared to a V/C ratio of 1.08 under background conditions. ODOT's standards require a V/C ratio equal to or less than 0.95 for the Brookman Road and SW Chapman Road approaches to the intersection.

Site-impact mitigation is recommended through either provision of an exclusive right-turn lane on the SW Brookman Road approach in conjunction with site development or payment of a proportionate share contribution to planned future intersection improvements. Both options are discussed below.

Option #1. Westbound Right-Turn Lane on SW Brookman Road

One option identified to mitigate the site's impact at Highway 99W/SW Brookman Road-SW Chapman Road is provision of a westbound right-turn lane with 200 feet of storage. The right-turn lane mitigation will enable right-turning vehicles to bypass queued left-turning or through vehicles and will reduce projected queueing on the westbound approach to the intersection, as shown in Table 6. *Appendix H* includes the year 2020 total traffic conditions level-of-service worksheets for the mitigated scenario.

Table 6. Projected Operations at Highway 99W/SW Brookman Road-SW Chapman Road

Scenario	Weekday AM Peak Hour			Weekday PM Peak Hour		
	Critical Movement	V/C Ratio	95th %ile Queue	Critical Movement	V/C Ratio	95th %ile Queue
Year 2020 Background Conditions	WB	1.08	175 feet	EB	0.72	100 feet
Year 2020 Total Traffic Conditions	WB	1.45	275 feet	EB	0.90	100 feet
Year 2020 Total Traffic Conditions - Mitigated	WB	0.97	200 feet	EB	0.90	100 feet

Shading indicates ODOT standard not met

Given the recommended right-turn lane mitigates the site impact to V/C ratio (background traffic weekday AM peak hour westbound approach V/C of 1.08 reduced to 0.97 under mitigated total traffic), no additional capacity improvements are recommended at the Highway 99W/SW Brookman Road-SW Chapman Road intersection in conjunction with site development recognizing that the existing

intersection is likely to be relocated and signalized in the future as per the City TSP. The timing and location of the future realignment and signalization is not currently programmed.

Option #2. Proportionate Share Contribution

The City's TSP includes a project to realign Brookman Road and install a traffic signal Highway 99W/SW Brookman Road-SW Chapman Road. The Sherwood High School Transportation Impact Study (Reference 9) recommended a proportionate share contribution to the intersection to mitigate the site's impact, which was conditioned with the development. The same approach could be followed to mitigate the Middlebrook Subdivision's impact. Table 7 illustrates the application of the proportionate share methodology established by the Sherwood High School study. As seen in the table, the methodology results in a proportionate share cost of $329,197 for the Middlebrook subdivision.

Table 7. Proportionate Share Methodology at Highway 99W/SW Brookman Road-SW Chapman Road

Peak Hour	Scenario When Mitigation is Triggered	Existing TEV (X)	2020 Background (Y)	2020 Project Trips (PT)	Growth (Z=Y-X)	Proportionate Share (%)*	Mitigation Cost Estimate ($)	Proportionate Share Cost ($) **
AM	No Build	3,157	3,288	61	131	31.77%	$1,936,000	$329,197
PM	Existing	3,576	3,701	80	125	2.24%		

* if 2020 mitigation is triggered in: Existing Proportionate Share % = PT / X

No Build/Build Proportionate Share % = PT /(PT+Z)

** if intersection fails in AM and PM, use average of AM and PM proportionate share (%) to estimate share cost ($)

Note: Methodology applied directly from Sherwood High School Transportation Impact Study (Reference 9) with volumes from Middlebrook Traffic Study

Site Access-SW Oberst Road/SW Brookman Road Intersection Turn Lane Considerations

The public street providing SW Brookman Road access to the new residential subdivision will be aligned with SW Oberst Road in conjunction with site development. Site development and frontage improvements will include reconstruction of the existing SW Oberst Road/SW Brookman Road intersection. Intersection sight distance is being assessed by AKS under a separate cover.

The need for an eastbound left-turn lane on SW Brookman Road into the site access was assessed using ODOT APM volume-based criterion for left-turn lanes as well as Harmelink left-turn warrants. Considering the two volume-based warrants, the intersection does not warrant provision of a separate left-turn lane with site development. In the future, SW Brookman Road is expected to be widened to a three- or five-lane arterial at which point a left-turn lane will be provided. The proposed development will provide half-street right-of-way dedication to Washington County consistent with a future five-lane arterial.

The projected total traffic volumes at the Site Access-SW Oberst Road/SW Brookman Road intersection also do not warrant an eastbound right-turn deceleration lane at the site access per Washington County criteria.

The turn lane warrant analysis worksheets are provided in *Appendix I.*

Site Access-SW Oberst Road/SW Brookman Road Intersection Vehicle Queuing Analysis

Vehicle queuing conditions were assessed at the proposed site access on SW Brookwood Road. Synchro 9 and the *2000 Highway Capacity Manual* (Reference 1) procedures were used to project 95th percentile queues, shown in Table 8. *Appendix E* contains the queue analysis worksheets generated by the Synchro software.

Table 8. Projected 95th Percentile Vehicle Queues for 2020 Total Traffic Conditions

Intersection		Movement	Assumed Storage Length	Weekday AM Peak Queue	Weekday PM Peak Queue	Storage Adequate? (Yes/No)
9	SW Oberst Road-Future Site Access/ SW Brookman Road	Southbound	250[1] feet	25 feet	<25 feet	Yes
		Eastbound	100[2] feet	<25 feet	<25 feet	Yes
		Westbound	100[2] feet	<25 feet	<25 feet	Yes

Queues rounded up to the nearest 25 feet
[1]Approximate distance to first internal intersection
[2]Approximate distance to adjacent access/intersection

The queuing results indicate there will be adequate storage at the site access upon site development.

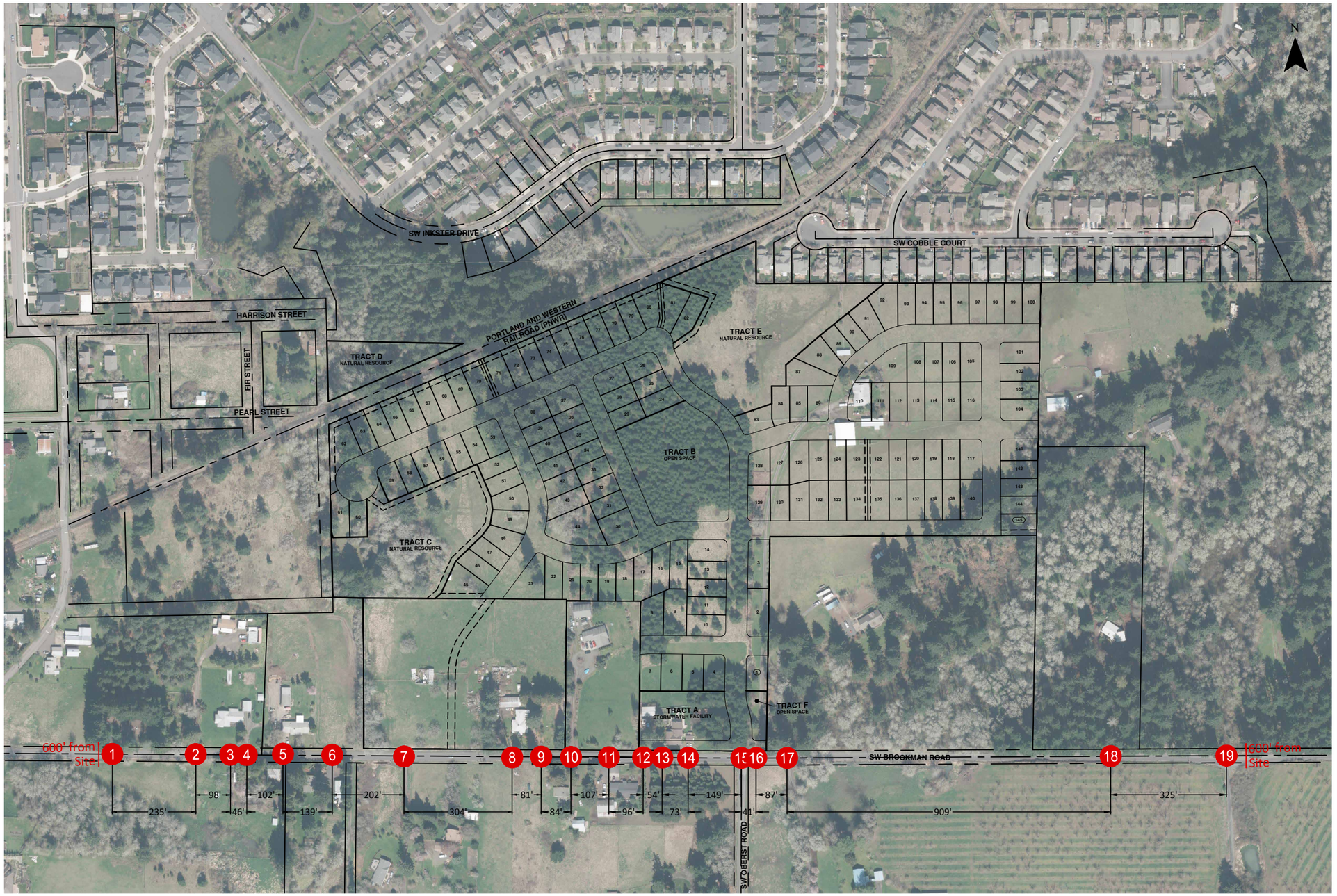
SW BROOKMAN ROAD ACCESS MANAGEMENT

Washington County *Community Development Code* (Reference 11) Section 501 provides standards for access spacing along arterial roads. Per the code, when allowed, accesses to arterial facilities such as SW Brookman Road should be spaced at least six hundred feet apart.

Figure 13 is an influence area map that shows existing site driveways, the proposed site access as well as other existing accesses in the vicinity within 600 feet of the site frontage. The existing site driveways serving single family homes will each be closed as noted.

The proposed new connection to SW Brookman Road is aligned with SW Oberst Road and will necessitate regrading of SW Brookman and the existing intersection of SW Oberst Road. As proposed, the public street location aligned with SW Oberst Road satisfies Washington County's minimum 600-foot spacing standard along SW Brookman Road and thus complies with the *Community Development Code* spacing requirements.

Referring to Figure 2, the proposed site plan provides for future connectivity to the east and west along SW Brookman Road, allowing for future public roadway connections to SW Brookman Road to meet or exceed the County's 600-foot minimum spacing standard east and west of the proposed Site Access-SW Oberst Road.



1. Existing Access - Private
2. Existing Access - Private
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4. Existing Access - Private
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7. Existing Access - Private
8. Existing Access - Private
9. Existing Access - Private
10. Existing Access - Private
11. Existing Access - Private
12. Existing Access - Private (To Be Closed)
13. Existing Access - Private (To Be Closed)
14. Existing Access - Private (To Be Closed)
15. SW Oberst Road-Future Site Access/SW Brookman Road
16. Existing Access - Private (To Be Closed)
17. Existing Access - Private
18. Existing Access - Private
19. Existing Access - Private

Influence Area Map
Sherwood, Oregon

Figure
13

KITTELSON & ASSOCIATES

Local Street Exception

Washington County will need to process an exception to allow the proposed local street connection to SW Brookman Road per CDC Section 501-8.5 which requires that direct access to arterials be from collector and other streets. Per the CDC 501-8.5, exceptions for local streets may be allowed through a Type II process when collector access is found to be unavailable and impracticable by the Director.

Support for granting the proposed local street connection is provided by multiple adopted documents guiding local area transportation needs. First, the City of Sherwood's adopted *Brookman Addition Concept Plan* (Reference 12) identifies only local street connections to SW Brookman Road in the area of the site. Further, the City's *Transportation System Plan* as well as the recently adopted minor amendments to the Transportation System Plan (Ordinance 2018-03) each show local street connections to SW Brookman Road along the site frontage as well as to the east and west. No planned north-south collector or arterial through the proposed site area is identified in any of the City's guiding documents. Considering the adopted planning documents, the Washington County Director should make a determination that collector access is both unavailable and impracticable and that local access can be allowed as proposed in accordance with CDC 501-8.5. As noted above, the proposed local access will satisfy County access spacing standards for SW Brookman Road.

COMPLIANCE WITH REQUIREMENTS IN THE SHERWOOD MUNICIPAL CODE

Section 16.106.080 of the Sherwood Municipal Code outlines the purpose, applicability, requirements, and approval criteria for a traffic impact analysis. The approval criteria provided in 16.106.080F are listed below with specific application to the proposed development.

1. The analysis complies with the requirements of 16.106.080.C

   Per 16.106.080.C:

   - *A pre-application conference was held involving the City, Washington County and ODOT (on July 13, 2017)*
   - *This TIA has been prepared by an Oregon Registered Professional Engineer*
   - *The latest edition of the Trip Generation Manual (9th Edition) was used when the traffic study was scoped (Note that a more recent 10th Edition is now available, however the latest available data has a negligible impact to the rates utilized in this study; for example, the 9th Edition daily trip rate used in this study was 9.52 trips per home whereas the 10th Edition documents a daily rate of 9.44 trips per home; similarly, the average AM peak hour and PM peak hour rates in the 9th Edition were each reduced by 0.01 trips per home in the 10th Edition). Per direction from ODOT and the City, the average rate was used for the daily trip generation and the fitted curve equation for the weekday AM and PM peak hour trip generation.*
   - *Intersection-level analysis was conducted at ten study intersections identified in coordination with City staff. The study locations include all public intersections*

anticipated to have fifty or more peak hour vehicle trips generated by the development. Subsequent to the traffic study scoping, the size of the site and proposed unit count was reduced; however, the original study intersections identified by City staff were analyzed even if they no longer were impacted by 50 or more peak hour trips.

- *The Transportation Planning Rule is not applicable to a land division application, per OAR 660-012-0060*

2. The analysis demonstrates that adequate transportation facilities exist to serve the proposed development or identifies mitigation measures that resolve identified traffic safety problems in a manner that is satisfactory to the City Engineer and, when County or State highway facilities are affected, to Washington County and ODOT

   This study addresses the adequacy of the transportation facilities and recommends mitigation at the intersection of Highway 99W/SW Brookman Road-SW Chapman Road, through construction of a westbound right-turn lane or payment of a proportionate share contribution.

3. For affected non-highway facilities, the TIA demonstrates that mobility and other applicable performance standards established in the adopted City TSP have been met

   The City's mobility performance standards have been applied, as documented in this study.

4. Proposed public improvements are designed and will be constructed to the street standards specified in Section 16.106.010 and the Engineering Design Manual, and to the access standards in Section 16.106.040.

   The appropriate street and access standards will be applied to the development. The development plans will be subject to review by the City.

5. Proposed public improvements and mitigation measures will provide safe connections across adjacent right-of-way (e.g., protected crossings) when pedestrian or bicycle facilities are present or planned on the far side of the right-of-way.

   The project will provide a sidewalk and bike lane along the site frontage on Brookman Road. Off-site bicycle and pedestrian facilities are expected to be constructed in conjunction with future off-site development by others consistent with County and City frontage improvement requirements.

FINDINGS AND RECOMMENDATIONS

Based on the results of the transportation impact analysis, the proposed site can be developed while maintaining acceptable operations at the study intersections. The analysis developed the following findings and recommendations.

Findings

- All study intersection operations currently satisfy City, County, and ODOT standards.
- The proposed residential development is estimated to generate approximately 1,362 daily trips, including 110 trips during the weekday AM peak hour and 145 weekday PM peak trips after accounting for the two existing detached single-family homes on the site.
- Under background and total traffic conditions, three of the study intersections were found to not operate in accordance with the standards during the weekday AM peak hour.
    - During the weekday AM peak hour, the westbound approach to the Highway 99W/SW Brookman Road-SW Chapman Road intersection is projected to operate with a V/C ratio of 1.08 under background conditions and with a V/C ratio of 1.45 under total traffic conditions.
        - Provision of a westbound right-turn lane with 200 feet of queue storage would mitigate the proposed development's impact to the intersection.
        - Future relocation and signalization of the intersection is identified as a long-term need in the City's Transportation System Plan but is not currently programmed or funded. A proportionate share methodology for contributions to the future improvement was established as part of the Sherwood High School Transportation Impact Study (Reference 9) and conditioned with the development.
    - During the weekday AM peak hour, the southbound approach to the stop-controlled intersection of SW Woodhaven Drive/SW Sunset Boulevard is projected to operate at a LOS F and V/C ratio of 1.30 under both background and total traffic conditions.
        - The site is anticipated to add one eastbound through trip to the intersection and therefore have a negligible impact on the intersection.
    - During the weekday AM peak hour, the northbound approach to the stop-controlled intersection of SW Timbrel Lane/SW Sunset Boulevard intersection is projected to operate at a LOS F and V/C ratio of 1.26 under both background and total traffic conditions.
        - The site is anticipated to add one eastbound right-turn trip to the intersection and therefore have a negligible impact on the intersection.
- The proposed site access on SW Brookman Road aligns with SW Oberst Road and complies with the Washington County *Community Development Code* minimum access spacing requirements.

Recommendations

Recommended transportation improvements to be implemented with site development include:

- Provide either a westbound right-turn lane with 200 feet of storage on SW Brookman Road at the Highway 99W/SW Brookman Road-SW Chapman Road intersection with site development

or pay a proportionate share contribution of $329,197 to future improvements at the intersection.

We trust that this letter adequately documents the transportation impacts associated with the proposed development. Please contact us if you have any questions or comments regarding the contents of this letter or the analyses performed.

Sincerely,
KITTELSON & ASSOCIATES, INC.

Chris Brehmer, PE
Senior Principal Engineer

Kelly Laustsen, PE
Senior Engineer

REFERENCES

1. Transportation Research Board. *Highway Capacity Manual*. 2000.
2. Oregon Department of Transportation. *Oregon Highway Plan.* Amended May 2015.
3. City of Sherwood. *Sherwood Transportation System Plan.* Adopted June 17, 2014.
4. Oregon Department of Transportation. *Analysis Procedures Manual.* 2017.
5. M.D. Harmelink. *Volume Warrants for Left-turn Storage Lanes at Unsignalized Intersections* from *Aspects of Traffic Control Devices*. Transportation Research Board Highway Research Record 211. 1990.
6. Tri Met. *Available on-line at http://trimet.org/ Accessed January 2019.*
7. Oregon Department of Transportation Research Section. *SPR 667 Assessment of Statewide Intersection Safety Performance*. June 2011.
8. American Association of State Highway and Transportation Officials. *Highway Safety Manual*. 2010.
9. DKS Associates. *Sherwood High School Transportation Impact Study.* April 25, 2018
10. Institute of Transportation Engineers. *Trip Generation, 9th Edition.* 2012.
11. Washington County. *Community Development Code.*
12. City of Sherwood. *Brookman Addition Concept Plan.* 2009.

Appendix A
Scoping Memo

KITTELSON & ASSOCIATES
610 SW ALDER STREET, SUITE 700
PORTLAND, OR 97205
P 503.228.5230 F 503.273.8169

MEMORANDUM

Date: August 23, 2017

Project #: 21399

To: Bob Galati, PE, City of Sherwood
Jinde Zhu, Washington County
Avi Tayar, PE and Marah Danielson, ODOT Region 1

From: Kelly Laustsen, PE and Chris Brehmer, PE

Project: Brookman Area Residential Development

Subject: Transportation Study Scope of Work

The Holt Group is proposing to develop residentially zone land situated north of Brookman Road in Sherwood, Oregon as a multi-phase residential development. This memorandum identifies the anticipated trip generation associated with the development and outlines a proposed study scope for the transportation impact study. The Traffic Impact Analysis (TIA) will be prepared to address the requirements of City of Sherwood Development Code Section 16.106.080 as well as applicable Washington County and Oregon Department of Transportation (ODOT) review requirements.

Project Background

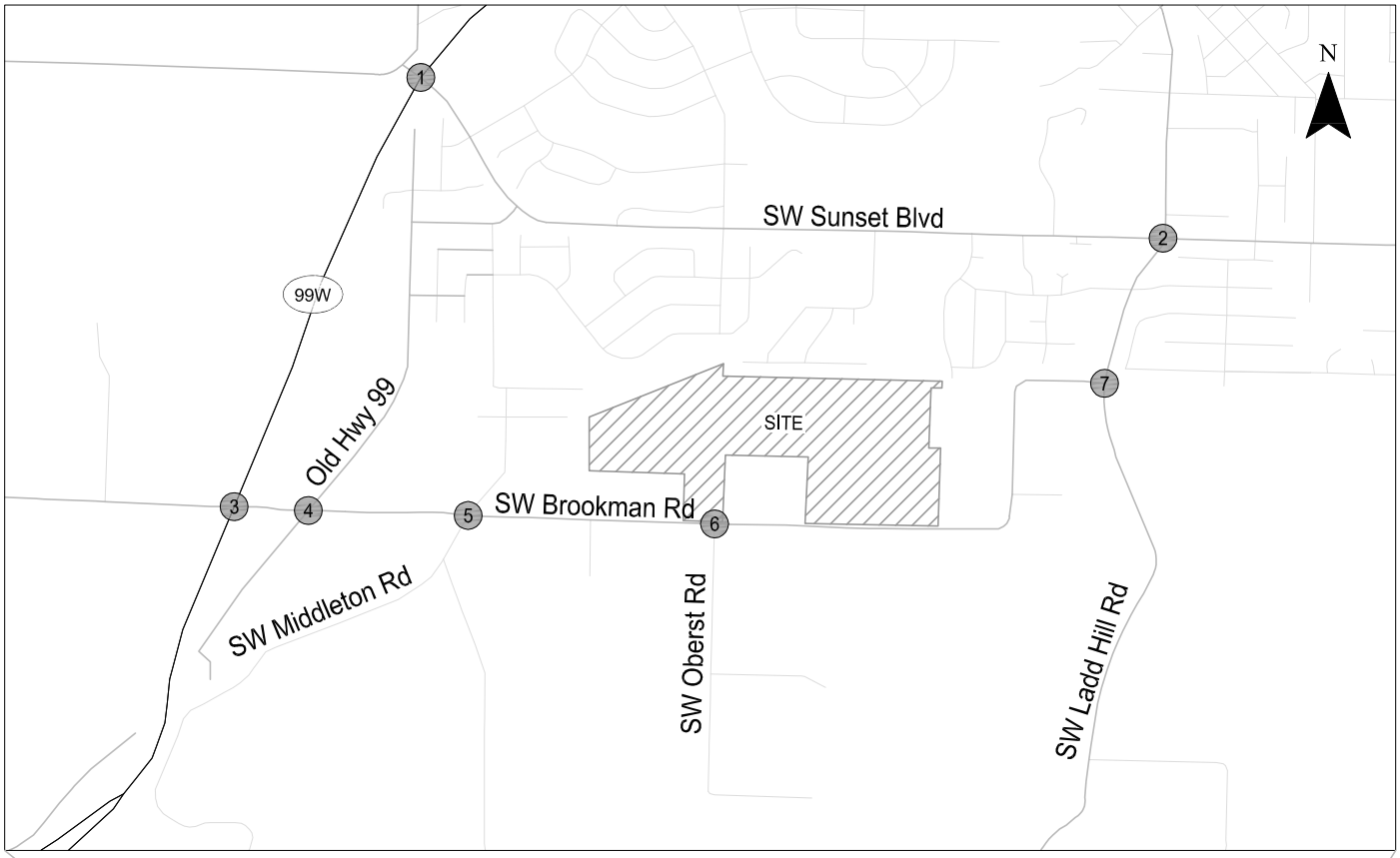
The site is located north of Brookman Road with access proposed at multiple locations along Brookman Road. The site vicinity is shown in Figure 1 and a conceptual site plan is provided in Figure 2.

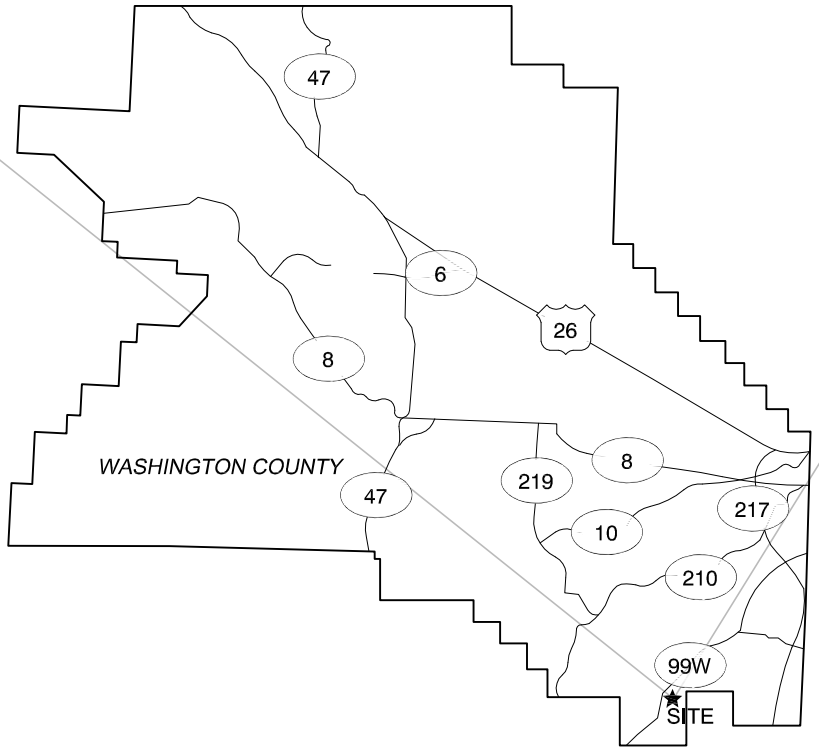
As shown in Figure 2, seven phases of development are proposed, with internal connections between phases 1 through 5. The full site is anticipated to be built out by 2023, with development starting in 2018 with buildout of Phase 1.

Analysis Periods

The TIS will evaluate traffic operations for the following periods:

- 2017 Existing conditions
- Year 2018 background conditions (without the proposed development)
- Year 2018 total traffic conditions (with phase 1 of the proposed development)
- Year 2019 background conditions (with phase 1 of the proposed development)
- Year 2019 total traffic conditions (with phases 1-2 of the proposed development)

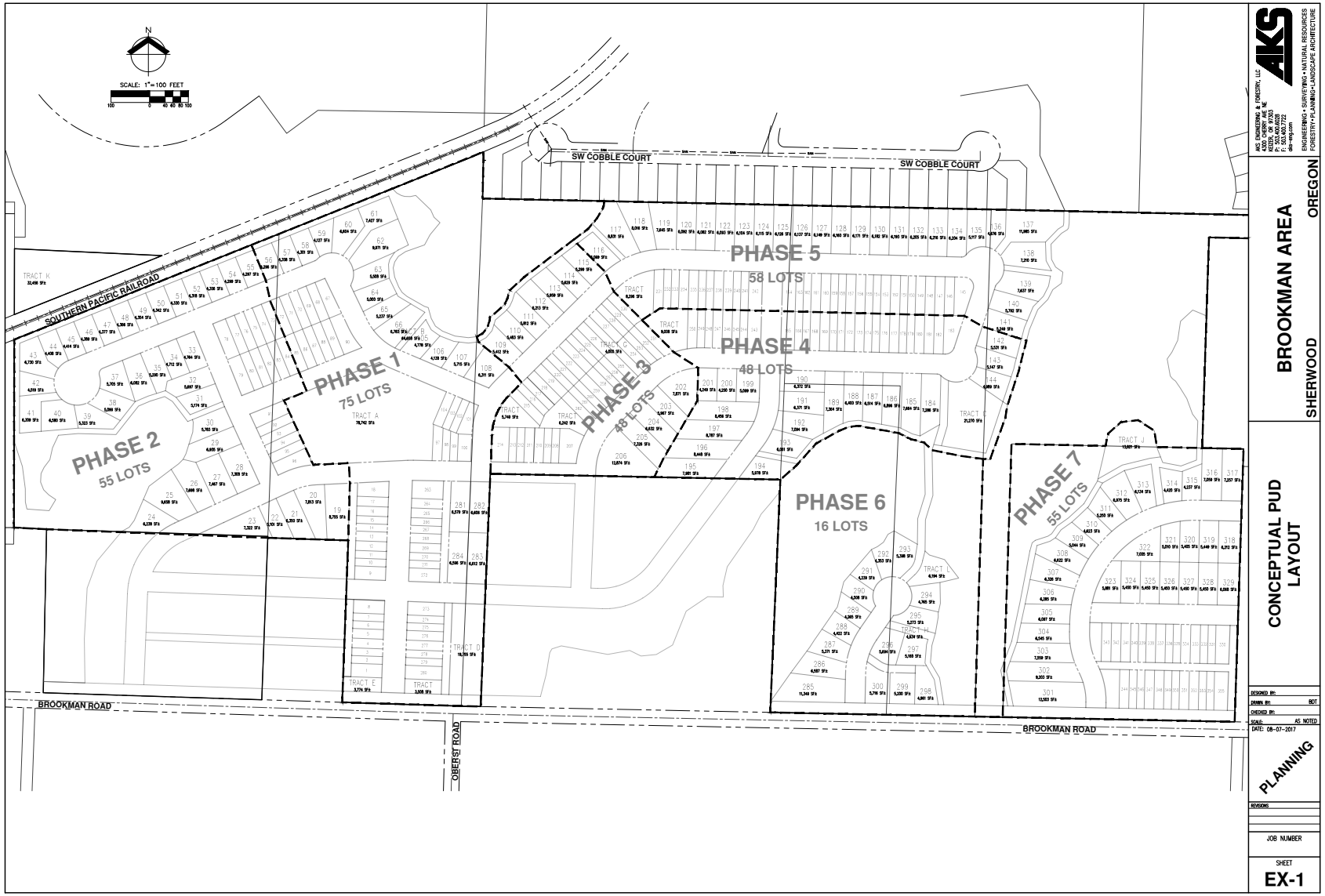




- Study Intersections

Site Vicinity Map
Sherwood, Oregon

Figure
1



Site plan received from AKS Engineering on August 7, 2017

Conceptual Site Plan
Sherwood, Oregon

Figure
2

- Year 2020 background conditions (with phases 1-2 of the proposed development)
- Year 2020 total traffic conditions (with phases 1-3 of the proposed development)
- Year 2021 background conditions (with phases 1-3 of the proposed development)
- Year 2021 total traffic conditions (with phases 1-4 of the proposed development)
- Year 2022 background conditions (with phases 1-4 of the proposed development)
- Year 2022 total traffic conditions (with phases 1-5 of the proposed development)
- Year 2023 background conditions (with phases 1-5 of the proposed development)
- Year 2023 total traffic conditions (with phases 1-7 of the proposed development)

The traffic analysis will evaluate intersection operations during the weekday AM and PM peak hours.

Trip Generation

Preliminary trip generation estimates for the proposed development were prepared based on information presented in the *Trip Generation Manual* (Reference 1). The estimated trip generation is shown in Table 1.

Table 1. Trip Generation Estimate

Phase	Land Use	ITE Code	Size	Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
					Total	In	Out	Total	In	Out
1	Single-Family Detached	210	19 units	181	14	4	11	19	12	7
	Res. Condo/Townhouse	230	56 units	325	25	4	20	29	19	10
	Net New Phase 1 Trips			**506**	**39**	**8**	**31**	**48**	**31**	**17**
2	Single-Family Detached	210	37 units	352	28	7	21	37	23	14
	Res. Condo/Townhouse	230	18 units	105	8	1	7	9	6	3
	Net New Phase 2 Trips			**457**	**36**	**8**	**28**	**46**	**29**	**17**
3	Single-Family Detached	210	12 units	114	9	2	7	12	8	4
	Res. Condo/Townhouse	230	36 units	209	16	3	13	19	13	6
	Net New Phase 3 Trips			**323**	**25**	**5**	**20**	**31**	**21**	**10**
4	Single-Family Detached	210	21 units	200	16	4	12	21	13	8
	Res. Condo/Townhouse	230	27 units	157	12	2	10	14	9	5
	Net New Phase 4 Trips			**357**	**28**	**6**	**22**	**35**	**22**	**13**
5	Single-Family Detached	210	26 units	248	20	5	15	26	16	10
	Res. Condo/Townhouse	230	32 units	186	14	2	12	17	11	6
	Net New Phase 5 Trips			**434**	**34**	**7**	**27**	**43**	**27**	**16**
6	Single-Family Detached	210	16 units	152	12	3	9	16	10	6
	Net New Phase 6 Trips			**152**	**12**	**3**	**9**	**16**	**10**	**6**
7	Single-Family Detached	210	29 units	276	22	6	16	29	18	11
	Res. Condo/Townhouse	230	26 units	151	11	2	9	14	9	5
	Net New Phase 7 Trips			**427**	**33**	**8**	**25**	**43**	**27**	**16**
	Net New Phases 1-7 Trips			***2,656***	***207***	***45***	***162***	***262***	***167***	***95***

As shown in Table 1, the proposed development is estimated to generate 2,656 daily trips, including 207 trips during the weekday AM peak hour and 262 trips during the weekday PM peak.

Study Intersections

City of Sherwood Development Code Section 16.106.080 requires analysis of all intersections of where the analysis shows that fifty (50) or more peak hour vehicle trips can be expected to result from the development. Based on these requirements, anticipated trip generation, and initial discussions with City, County, and ODOT staff, we propose to study the following intersections:

1. Highway 99W/SW Sunset Boulevard
2. SW Ladd Hill Road/SW Sunset Boulevard
3. Highway 99W/SW Brookman Road
4. Old Highway 99 W/SW Brookman Road
5. SW Middleton Road/SW Brookman Road
6. SW Oberst Road/SW Brookman Road
7. SW Ladd Hill Road/SW Brookman Road

- All proposed site accesses on SW Brookman Road

These intersections are also shown on Figure 1. We will analyze operations and request the most recent five years of crash data from ODOT at the study area intersections.

Trip Distribution

Existing traffic count data, surrounding land uses, and the *Brookman Addition Concept Plan* (Reference 2) were used to generate a trip distribution pattern, shown in Figure 3. This distribution pattern will be used for the assignment of weekday AM and PM peak hour site trips.

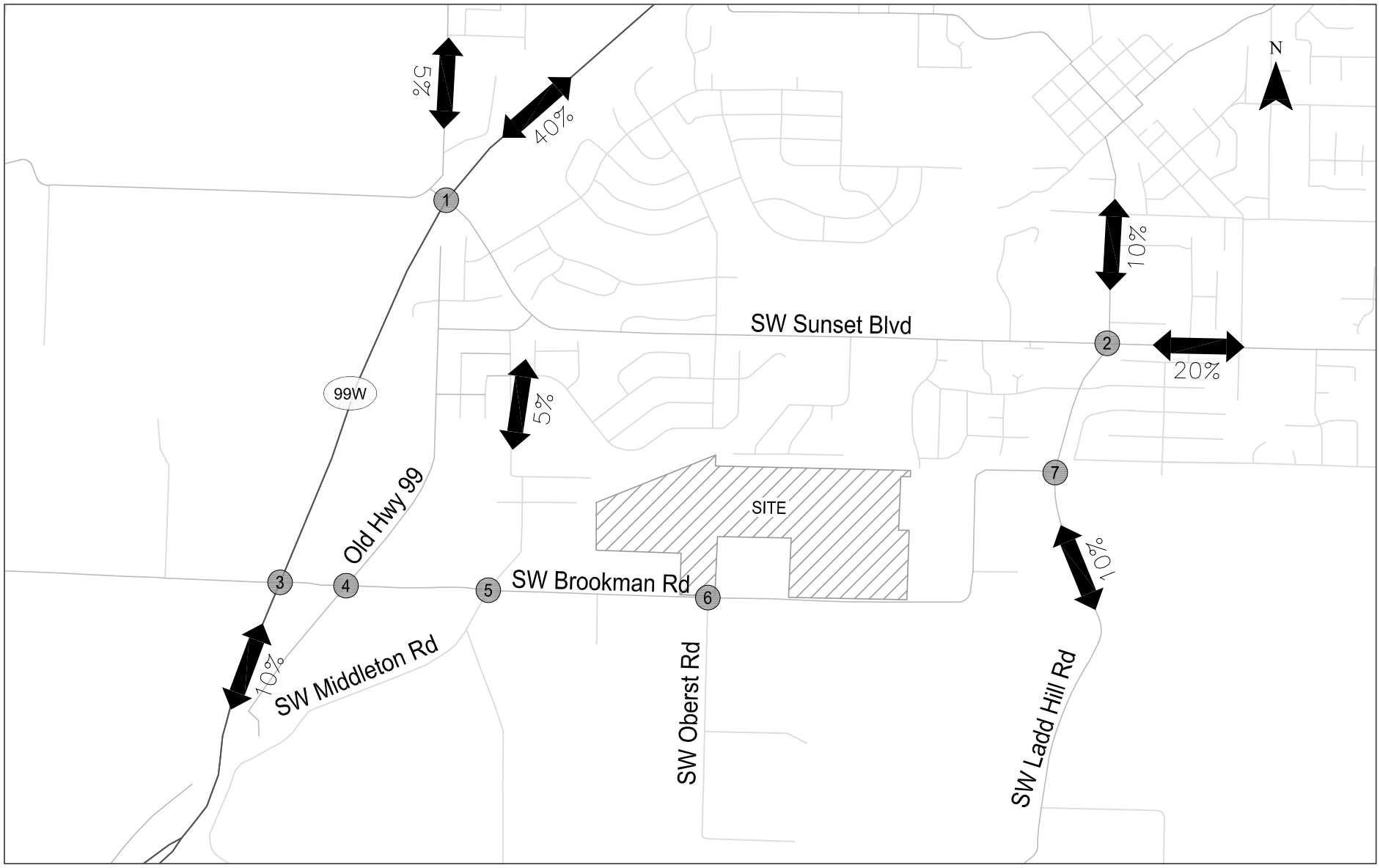
Existing and Forecast Traffic Volumes

Existing traffic volumes will be determined from manual turn movement counts at the study intersections on a typical weekday during the morning peak period (7:00 – 9:00 AM) and evening peak period (4:00 – 6:00 PM).

Forecast traffic volumes will be developed based on regional traffic growth within the study area as well as growth related to City-identified approved in-process developments. ***Would you please provide the preferred annual growth rate, any approved developments that should be assumed as "in-process," as well as any planned improvements in the study area that should be accounted for?***

Analysis Methodology

All intersections will be analyzed using Synchro 9 and the 2000 *Highway Capacity Manual (HCM)*.



Trip Distribution
Sherwood, Oregon

Figure
3

KITTELSON & ASSOCIATES

Performance Measures & Operating Standards

Intersection performance measures used will include level of service (LOS), volume-to-capacity ratio (V/C), and delay. Intersection operating standards adopted by Washington County, ODOT and the City are summarized below.

Washington County Operating Standards

Washington County has jurisdiction over Brookman Road. The County has defined operating standards for signalized and stop controlled intersections assuming a peak hour (60-minute analysis) period as follows:

- **Signalized intersections:** the maximum peak hour intersection volume-to-capacity ratio shall be no greater than 0.99.
- **Unsignalized intersections:** no movement shall experience a volume-to-capacity ratio greater than 0.99.

ODOT Operating Standards

ODOT operates and maintains OR 99W (Pacific Highway West). ODOT's operating standard for signalized intersections along Highway OR 99W in the study area is an intersection V/C ratio no greater than 0.99 during the peak 15-minutes as identified in Table 7 of the *Oregon Highway Plan* (Reference 3).

Sherwood Operating Standards

The City defers to ODOT and Washington County standards for facilities under the jurisdiction of ODOT or Washington County. For other intersections, the following local city targets apply:

- **Signalized intersections:** level of service D or a volume to capacity ratio equal to or less than 0.85.
- **Unsignalized two-way stop-control (TWSC) intersections:** level of service E or a volume to capacity ratio equal to or less than 0.90.

For all intersections, level of service performance should first be assessed and if it is not met the v/c target is considered.

Next Steps

We look forward to working with you on this project. Please let us know if you have any questions, comments, or additional direction related to the scoping information presented in this memorandum.

Thank you in advance for your assistance.

References

1. Institute of Transportation Engineers. *Trip Generation, 9th Edition.* 2012.

2. DKS Associates. *Brookman Addition Concept Plan: Committee Recommended Plan – Transportation Analysis.* April 22, 2008.

3. Oregon Department of Transportation. *1999 Oregon Highway Plan.* Amended May 2015.

Kelly Laustsen

From: Garth Appanaitis <gaa@dksassociates.com>
Sent: Wednesday, October 18, 2017 4:31 PM
To: Kelly Laustsen
Cc: Chris Brehmer; GalatiB@SherwoodOregon.gov
Subject: Re: Brookman Scope

Hi Kelly,

Here are the comments on the scoping memo:

- Trip Generation - Using the average trip rate rather than the equation for those residential uses is sufficient. For this size of overall use, the difference is nominal and would add unnecessary complexity and confusion with the TDT.
- Study intersections - In addition to the intersections shown, the following intersections should be included:
    - Intersections requested by ODOT on OR99W. Based on the initial trip generation and distribution, I would anticipate that they may ask for other intersections to the north. However, this is ODOT discretion.
    - Sunset/Timbrel
    - Sunset/Woodhaven
    - Sunset/Baker/Murdock
- In Process Development - The hotel site on Meinecke should be included and the traffic study can be found here: https://www.sherwoodoregon.gov/planning/project/sherwood-hotel If ODOT requests additional study intersections on OR 99W to the north, you should also include trips from the Cedar Creek Plaza. Links to other traffic studies are included here: https://www.sherwoodoregon.gov/projects?tid=All&field_project_status_value=All&field_project_type_tid=93&keys=&=Apply
- Future background traffic growth - Based on Sherwood's TSP and travel model, use 1% per year growth on ODOT highway approaches and 2% for all other approaches.
- Trip Distribution - The 5% internal distribution should be clarified and may not be appropriate given the existing mix of uses in the area (residential) and the proposed uses (residential). In order to assume 5% internal distribution, please clarify the intended origin/destination from these proposed households, or shift the 5% to other external gateways.
- Scope of traffic study - The Aug 23 memo describes some of the methods and assumptions for the TIA, but does not comprehensively indicate what other items will be included in the study - such as safety analysis, description of ped/bike/transit network, assessment of pedestrian crossing safety, etc. Providing a full list of these items that are planned to include in the TIA will facilitate the completeness review.

Bob - Do you have anything else to add?

Thanks,
Garth

On Tue, Oct 17, 2017 at 3:38 PM, Kelly Laustsen <klaustsen@kittelson.com> wrote:

> Hi Garth,
>
> I wanted to follow-up on our call from the week before last. I believe you were going to send a summary of comments on the scope, preferred growth rate, and list of in-process developments to include. Can you please send this information at your earliest convenience?

Kelly Laustsen

From: TAYAR Abraham * Avi <Abraham.TAYAR@odot.state.or.us>
Sent: Thursday, September 14, 2017 4:15 PM
To: 'Joe Schiewe'; GalatiB@SherwoodOregon.gov; Jinde_Zhu@co.washington.or.us
Cc: Alex Hurley; Chris Goodell; Chris Brehmer; Robinson, Michael C. (Perkins Coie); Brandt Thissell; Rian Tuttle; DANIELSON Marah B; Kelly Laustsen
Subject: RE: Scoping Memo: Brookman Area Residential Development

I have responded to KIA directly as indicated below; ODOT accept the proposed methodology as listed below:

- We could assess the AM and PM peak hour trip generation for the single family homes and townhomes using the equation for buildout of the site. Using the peak hour equations results in a net increase of 4 AM peak hour trips and 3 PM peak hour trips, as shown in the table below.

Thanks,

Avi Tayar. P.E. | Oregon Department of Transportation | Region 1 | Planning & Research Program | Development Review Engineering Team Lead
123 NW Flanders St | Portland, OR 97209 | ☎: 503-731-8221 | 🖷: 503-731-8259 | ✉: Abraham.tayar@ODOT.state.or.us

Work Schedule: M-TH 7:30 AM through 6:00

From: Joe Schiewe [mailto:Joe@holtgroupinc.com]
Sent: Thursday, September 14, 2017 3:33 PM
To: GalatiB@SherwoodOregon.gov; Jinde_Zhu@co.washington.or.us; TAYAR Abraham * Avi
Cc: Alex Hurley; Chris Goodell; Chris Brehmer; Robinson, Michael C. (Perkins Coie); Brandt Thissell; Rian Tuttle; DANIELSON Marah B; Kelly Laustsen
Subject: RE: Scoping Memo: Brookman Area Residential Development

Bob, Jinde and Avi: Please provide your review of the scoping memo for our phased development. We would like to get Kittelson started on this study as soon as we can. Thank you for your assistance.

From: Kelly Laustsen [mailto:klaustsen@kittelson.com]
Sent: Thursday, September 7, 2017 11:52 AM
To: GalatiB@SherwoodOregon.gov; Jinde_Zhu@co.washington.or.us
Cc: Alex Hurley <alex@aks-eng.com>; Joe Schiewe <Joe@holtgroupinc.com>; Chris Goodell <chrisg@aks-eng.com>; Chris Brehmer <CBREHMER@kittelson.com>; Robinson, Michael C. (Perkins Coie) <MRobinson@perkinscoie.com>; Brandt Thissell <brandtt@aks-eng.com>; Rian Tuttle <rian@holtgroupinc.com>; Monty Hurley <monty@aks-eng.com>; TAYAR Abraham * Avi <Abraham.TAYAR@odot.state.or.us>; DANIELSON Marah B <Marah.B.DANIELSON@odot.state.or.us>
Subject: RE: Scoping Memo: Brookman Area Residential Development

Hi Bob and Jinde,

I'd like to follow-up your review of the scoping memo we prepared (attached) for the proposed residential development north of Brookman Road. Please provide any comments as soon as possible so we can move forward with the study. We appreciate your assistance.

Best,

Kelly M Laustsen, PE
Senior Engineer

Kittelson & Associates, Inc.
Transportation Engineering / Planning
503.535.7439 (direct)
214.886.5338 (cell)

From: Kelly Laustsen
Sent: Wednesday, August 30, 2017 5:32 PM
To: 'TAYAR Abraham * Avi'; DANIELSON Marah B; GalatiB@SherwoodOregon.gov; Jinde_Zhu@co.washington.or.us
Cc: Alex Hurley; Joe Schiewe; Chris Goodell; Chris Brehmer; Robinson, Michael C. (Perkins Coie); Brandt Thissell; Rian Tuttle; Monty Hurley
Subject: RE: Scoping Memo: Brookman Area Residential Development

Avi, thank you for your review and prompt reply. We appreciate understanding your stated preference regarding use of the average rate for estimating trips associated with single family homes and townhomes. We would appreciate confirmation from the City as to their preferences as well given the other studies we have seen in the area have used the average rates.

A few observations:

- We agree the correlation coefficient is high for the fitted equations.
- Our suggestion is to continue to use the average rate for daily trip generation to maintain consistency with the County/City Transportation Development Tax which was developed based on average daily trip rates.
- We could assess the AM and PM peak hour trip generation for the single family homes and townhomes using the equation for buildout of the site. Using the peak hour equations results in a net increase of 4 AM peak hour trips and 3 PM peak hour trips, as shown in the table below.

Trip Generation with Site Buildout

Land Use	ITE Code	Size (units)	Weekday AM Peak Hour			Weekday PM Peak Hour		
			Total	In	Out	Total	In	Out
Average Rate								
Single-Family Detached Housing (AVG)	210	160	120	30	90	160	101	59
Residential Condominium/Townhouse (Average)	230	195	86	15	71	101	68	33
Net New Trips (using average rate)			**206**	**45**	**161**	**261**	**169**	**92**
Fitted Curve Equation								
Single-Family Detached Housing (AVG)	210	160	122	30	92	160	101	59
Residential Condominium/Townhouse (Average)	230	195	88	15	73	104	70	34
Net New Trips (using fitted curve equation)			**210**	**45**	**165**	**264**	**171**	**93**
Difference in Net New Trips (fitted curve - average)			***+4***	***0***	***+4***	***+3***	***+2***	***+1***

- We suggest proportionating the total trips in the table above by phase based on the ratio of homes. We don't think applying the equation by individual phases make sense – By way of example, applying the AM peak hour single family equation to a project phase with zero single family homes results in 10 trips which is clearly inappropriate (Trips = 0.70 x 0 homes + 9.74 = 9.74 trips).

Please let us know if you would like to further discuss.

Kelly M Laustsen, PE
Senior Engineer

Kittelson & Associates, Inc.
Transportation Engineering / Planning
503.535.7439 (direct)
214.886.5338 (cell)

From: TAYAR Abraham * Avi [mailto:Abraham.TAYAR@odot.state.or.us]
Sent: Friday, August 25, 2017 5:07 PM
To: Kelly Laustsen; DANIELSON Marah B; GalatiB@SherwoodOregon.gov; Jinde_Zhu@co.washington.or.us
Cc: Alex Hurley; Joe Schiewe; Chris Goodell; Chris Brehmer; Robinson, Michael C. (Perkins Coie); Brandt Thissell; Rian Tuttle; Monty Hurley
Subject: RE: Scoping Memo: Brookman Area Residential Development

Hi Kelly,

I have reviewed your proposed Scoping Memo for the Phased Brookman Area Development and have the following comment:

Table 1. Trip Generation Estimate – The table proposes to use the "Average Rate" of the Trip Generation Manual to determine the trip generation per dwelling unit for a Single-Family Detached land use and for a Residential Condominium/Townhouse land use. In both land use cases, the Manual guides/provides a fitted Curve Equation with a very core for deviation factor that strongly support using the equations especially when multi-phased (total of 7) development over a period of 5-6 years. ODOT strongly suggest that he Fitted Curve Equations be used in both land use cases to determine Trip Generation in Table 1.

Otherwise, ODOT accept the proposed Scoping Memo once Table 1 Trip Generation Estimate is revised.

Thanks,

Avi Tayar. P.E. | Oregon Department of Transportation | Region 1 | Planning & Research Program | Development Review Engineering Team Lead
123 NW Flanders St | Portland, OR 97209 | ☎: 503-731-8221 | 🖷: 503-731-8259 | ✉: Abraham.tayar@ODOT.state.or.us

Work Schedule: M-TH 7:30 AM through 6:00

From: Kelly Laustsen [mailto:klaustsen@kittelson.com]
Sent: Wednesday, August 23, 2017 5:37 PM
To: DANIELSON Marah B; GalatiB@SherwoodOregon.gov; TAYAR Abraham * Avi; Jinde_Zhu@co.washington.or.us
Cc: Alex Hurley; Joe Schiewe; Chris Goodell; Chris Brehmer; Robinson, Michael C. (Perkins Coie); Brandt Thissell; Rian Tuttle; Monty Hurley
Subject: Scoping Memo: Brookman Area Residential Development

Dear Bob, Jinde, Avi and Marah,

We've developed the attached scoping memo for the proposed residential development north of Brookman Road. Please review and provide any questions, comments or additional direction. We'd appreciate your response by the end of the month.

Best,

Kelly M Laustsen, PE
Senior Engineer

Kittelson & Associates, Inc.
Transportation Engineering / Planning
610 SW Alder St, Suite 700
Portland, Oregon 97205
503.228.5230
503.535.7439 (direct)
214.886.5338 (cell)

Appendix B
ODOT Crash Data

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

091 PACIFIC HIGHWAY WEST

Crashes Occurring at the Intersection of Sunset Blvd, Elwert Rd, and 99W (Pacific Hwy 91), Sherwood OR, 2012-2016

SER# / INVEST / UNLOC?	SPEED ALC 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 / 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
07197	N N N N N	10/23/2014	WASHINGTON	1 14		INTER	CROSS	N	N	RAIN	S-1STOP	01 NONE 0	STRGHT										27,29
CITY		Thu 4P	SHERWOOD	MN 0	SW PACIFIC HY 99W	NE		TRF SIGNAL	N	WET	REAR	PRVTE	NE SW									000	00
			PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	33	F	SUSP		016,026	038	27,29
No		45 21 11.85 -122 52 4.18		009100100S00	1														OR<25				
												02 NONE 0	STOP										
												PRVTE	NE SW									011	00
												PSNGR CAR		01	DRVR	NONE	43	F	OR-Y		000	000	00
																			OR<25				
04491	N N N	04/13/2016	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 9	STRGHT										29
NONE		Wed 5P	SHERWOOD	MN 0	SW PACIFIC HY 99W	NE		TRF SIGNAL	N	DRY	REAR	N/A	NE SW									000	00
			PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
No		45 21 11.45 -122 52 3.31		009100200S00	1														UNK				
												02 NONE 9	STOP										
												N/A	NE SW									011	00
												PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000	00
																			UNK				
03377	N N N N N	07/02/2012	WASHINGTON	2 14		INTER	CROSS	N	N	CLD	S-1STOP	01 NONE 0	STRGHT										07
CITY		Mon 4P	SHERWOOD	MN 0	SW PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR	PRVTE	SW NE									000	00
			PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	INJ	PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		043,026	000	07
No		45 21 11.45 -122 52 3.31		009100200S00	1														OR>25				
												02 NONE 0	STOP										
												PRVTE	SW NE									011	00
												PSNGR CAR		01	DRVR	INJC	63	M	OR-Y		000	000	00
																			OR<25				
03115	N N N	06/12/2013	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT										07
NONE		Wed 9A	SHERWOOD	MN 0	LEG TO ELWERT	SW		TRF SIGNAL	N	DRY	REAR	PRVTE	SW NE									000	00
			PORTLAND UA	16.66	SW PACIFIC HY 99W	06	0		N	DAY	PDO	PSNGR CAR		01	DRVR	NONE	00	F	UNK		043	000	07
No		45 21 11.45 -122 52 3.31		009100200S00	1														UNK				
												02 NONE 0	STOP										
												PRVTE	SW NE									011	00
												PSNGR CAR		01	DRVR	NONE	50	F	OR-Y		000	000	00
																			OR<25				
05133	N N N N N	09/13/2013	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	S-1STOP	01 NONE 0	STRGHT										27,07
CITY		Fri 9P	SHERWOOD	MN 0	SW PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR	PRVTE	SW NE									000	00
			PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DLIT	INJ	PSNGR CAR		01	DRVR	NONE	22	M	OR-Y		016,043,026	038	27,07
No		45 21 11.45 -122 52 3.31		009100200S00	1														OR<25				
												02 NONE 0	STOP										
												PRVTE	SW NE									011	00
												PSNGR CAR		01	DRVR	INJC	79	M	OR-Y		000	000	00
																			OR<25				
														02	PSNG	INJC	60	F			000	000	00

091 PACIFIC HIGHWAY WEST — Crashes Occurring at the Intersection of Sunset Blvd, Elwert Rd, and 99W (Pacific Hwy 91), Sherwood OR, 2012-2016

SER# / INVEST / UNLOC?	SPEED	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
																			03	PSNG	INJC	77	F			000	000		00
07058	N	N	N	N	N	12/04/2013	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	27,07
CITY						Wed 8A	SHERWOOD	MN 0	SW PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									000		00
							PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	61	M	OR-Y		016,043,026	038		27,07
No						*45 21 11.45 -122 52 3.31*		009100200S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SW NE									011	013	00
																	PSNGR CAR		01	DRVR	INJC	64	F	OR-Y		000	000		00
																								OR<25					
																03	NONE 0	STOP											
																	PRVTE	SW NE									022	013	00
																	PSNGR CAR		01	DRVR	NONE	20	F	OR-Y		000	000		00
																								OR<25					
																04	NONE 0	STOP											
																	PRVTE	SW NE									022		00
																	PSNGR CAR		01	DRVR	INJC	49	F	OR-Y		000	000		00
																								OR<25					
01988	N	N	N	N	N	03/05/2014	WASHINGTON	2 14		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											29
CITY						Wed 3P	SHERWOOD	MN 0	SW PACIFIC HY 99W	SW		TRF SIGNAL	N	WET	REAR		PRVTE	SW NE									000		00
							PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	51	M	SUSP		026	000		29
No						*45 21 11.45 -122 52 3.31*		009100200S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SW NE									011		00
																	PSNGR CAR		01	DRVR	NONE	42	F	EXP		000	000		00
																								OR<25					
06054	N	N	N			10/15/2014	WASHINGTON	2 14		INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											29
NO RPT						Wed 7A	SHERWOOD	MN 0	SW PACIFIC HY 99W	SW		TRF SIGNAL	N	WET	REAR		PRVTE	SW NE									000		00
							PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		026	000		29
No						*45 21 11.45 -122 52 3.31*		009100200S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SW NE									011		00
																	PSNGR CAR		01	DRVR	INJC	39	M	OR-Y		000	000		00
																								OR<25					
04990	N	N	N	N	N	07/21/2015	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
CITY						Tue 4P	SHERWOOD	MN 0	SW ELWERT RD	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									000		00
							PORTLAND UA	16.66	SW PACIFIC HY 99W	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	29	F	SUSP		043	000		07
No						*45 21 11.45 -122 52 3.31*		009100200S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SW NE									011		00
																	PSNGR CAR		01	DRVR	NONE	61	M	OR-Y		000	000		00
																								OR<25					

091 PACIFIC HIGHWAY WEST — Crashes Occurring at the Intersection of Sunset Blvd, Elwert Rd, and 99W (Pacific Hwy 91), Sherwood OR, 2012-2016

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# FC / CMPT/MLG / 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
05463	N	N	N			09/04/2015	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						Fri 11A	SHERWOOD	MN 0	SW PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE										000		00
							PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	18	M	OR-Y		026	000		29
No	*45 21 11.45*		*-122 52 3.31*					009100200S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SW NE									011		00
																	PSNGR CAR		01	DRVR	NONE	00	M	OR-Y		000	000		00
																								OR<25					
01834	Y	Y	N	N	N	03/19/2016	WASHINGTON	2 14		INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT										013	07,30
CITY						Sat 6P	SHERWOOD	MN 0	SW PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									000		00
							PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	23	M	NONE		043,050	000		07,30
No	*45 21 11.45*		*-122 52 3.31*					009100200S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SW NE									012	013	00
																	PSNGR CAR		01	DRVR	INJC	46	M	OR-Y		000	000		00
																								OR<25					
																			02	PSNG	INJC	28	F			000	000		00
																03	NONE 0	STOP											
																	PRVTE	SW NE									022		00
																	PSNGR CAR		01	DRVR	NONE	34	M	OR-Y		000	000		00
																								OR<25					
02965	N	N	N			05/06/2016	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						Fri 8A	SHERWOOD	MN 0	SW PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									000		00
							PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	32	M	OR-Y		026	000		29
No	*45 21 11.45*		*-122 52 3.31*					009100200S00	1															OR<25					
																02	NONE 0	STOP											
																	PRVTE	SW NE									011		00
																	PSNGR CAR		01	DRVR	INJC	40	M	OR-Y		000	000		00
																								OR<25					
06420	N	N	N	N	N	09/22/2016	WASHINGTON	2 14		INTER	CROSS	N	N	CLD	S-STRGHT	01	NONE 0	STRGHT										087	07
CITY						Thu 5P	SHERWOOD	MN 0	SW PACIFIC HY 99W	SW		TRF SIGNAL	N	SNO	REAR		PRVTE	SW NE									000	087	00
							PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	17	M	OR-Y		043	000		07
No	*45 21 11.45*		*-122 52 3.31*					009100200S00	1															OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	SW NE									006	087	00
																	PSNGR CAR		01	DRVR	INJC	28	F	OR-Y		000	000		00
																								OR<25					
08928	N	N	N			12/25/2016	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						Sun 12P	SHERWOOD	MN 0	SW PACIFIC HY 99W	SW		TRF SIGNAL	N	DRY	REAR		PRVTE	SW NE									000		00
							PORTLAND UA	16.66	SW SUNSET BLVD	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	58	M	OR-Y		026	000		29
No	*45 21 11.45*		*-122 52 3.31*					009100200S00	1															OR<25					

091 PACIFIC HIGHWAY WEST — Crashes Occurring at the Intersection of Sunset Blvd, Elwert Rd, and 99W (Pacific Hwy 91), Sherwood OR, 2012-2016

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 / 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 SW NE									011	00
																	PSNGR CAR		01	DRVR	INJC	59	F	OR-Y OR<25		000	000	00
																			02	PSNG	INJC	40	M			000	000	00
																			03	PSNG	INJC	54	M			000	000	00
07352	N	N	N	N	N	12/21/2012	WASHINGTON	2 14		INTER	CROSS	N	N	RAIN	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY						Fri 7A	SHERWOOD	MN 0	SW PACIFIC HY 99W	CN		TRF SIGNAL	N	WET	TURN		PRVTE	NW NE									000	00
							PORTLAND UA	16.66	SW SUNSET BLVD	02	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	INJC	18	F	OR-Y OR<25		004,028	000	02
No						*45 21 11.45 -122 52 3.31*		009100200S00	1																			
																02	NONE 0 PRVTE	STRGHT SE NW									000	00
																	PSNGR CAR		01	DRVR	INJB	50	F	OR-Y OR<25		000	000	00
04827	N	N	N	N	N	08/24/2015	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT										04
CITY						Mon 1P	SHERWOOD	MN 0	SW PACIFIC HY 99W	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	SW NE									000	00
							PORTLAND UA	16.66	SW SUNSET BLVD	02	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	93	F	OR-Y OR<25		020	000	04
No						*45 21 11.45 -122 52 3.31*		009100200S00	1																			
																02	NONE 0 PRVTE	TURN-L SE SW									000	00
																	PSNGR CAR		01	DRVR	INJB	35	F	OR-Y OR<25		000	000	00
																			02	PSNG	INJC	05	M			000	000	00
03522	N	N	N			07/10/2012	WASHINGTON	2 14		INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	TURN-L										02
CITY						Tue 11P	SHERWOOD	MN 0	SW PACIFIC HY 99W	CN		L-GRN-SIG	N	DRY	TURN		PRVTE	NE SE									016	00
							PORTLAND UA	16.66	SW SUNSET BLVD	04	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJC	18	F	OR-Y OR<25		003,004	088	14
No						*45 21 11.45 -122 52 3.31*		009100200S00	1																			
																			02	PSNG	INJC	18	M			000	000	00
																02	NONE 0 PRVTE	STRGHT SW NE									000	00
																	PSNGR CAR		01	DRVR	INJB	19	F	OR-Y OR<25		000	000	00
00574	N	N	N	N	N	01/31/2014	WASHINGTON	2 14		INTER	CROSS	N	N	CLD	O-1 L-TURN	01	NONE 0	STRGHT										04
CITY						Fri 2P	SHERWOOD	MN 0	SW PACIFIC HY 99W	CN		L-GRN-SIG	N	WET	TURN		PRVTE	SW NE									000	00
							PORTLAND UA	16.66	SW SUNSET BLVD	04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	16	F	OR-Y OR<25		020	000	04
No						*45 21 11.45 -122 52 3.31*		009100200S00	1																			
																02	NONE 0 PRVTE	TURN-L NE SE									000	00
																	PSNGR CAR		01	DRVR	NONE	37	F	OR-Y OR<25		000	000	00

CITY OF SHERWOOD, WASHINGTON COUNTY — Crashes Occurring at the Intersection of Sunset Blvd, Elwert Rd, and 99W (Pacific Hwy 91), Sherwood OR, 2012-2016

SER# / INVEST / UNLOC?	SPED	ALC	DRUGS	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 / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
02740	N	N	N			05/20/2015	17	SW PACIFIC HY 99W	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
NONE						Wed 1P	0	SW SUNSET BLVD	SE		TRF SIGNAL	N	DRY	REAR		PRVTE	SE NW										000		00
No						*45 21 11.45*	*-122 52 3.31*	1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	M	UNK UNK		026	000		29
															02	NONE 0	STOP										011		00
																PRVTE	SE NW												
																PSNGR CAR		01	DRVR	NONE	23	F	OR-Y OR>25		000	000		00

CITY OF SHERWOOD, WASHINGTON COUNTY — Crashes Occurring at the Intersection of Sunset Blvd and Woodhaven Dr, Sherwood OR, 2012-2016

SER# / INVEST / UNLOC?	SPED	ALC	DRUGS	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 / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00110	N	N	N	N	N	01/07/2012	16	SW SUNSET BLVD	INTER	CROSS	N	N	CLD	BIKE	01	NONE 0	TURN-L										001	32,02
CITY						Sat 10A	0	SW WOODHAVEN DR	CN		STOP SIGN	N	WET	TURN		PRVTE	N E									000		00
No	*45 21*		*6.37*			*-122 51 57.09*	1		04	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJB	86	M	OR-Y OR<25		052,004,027	000		32,02
																	STRGHT S N	01	BIKE	INJB	41	M		02	000	000		00
05401	N	N	N			10/10/2012	16	SW SUNSET BLVD	INTER	CROSS	N	N	CLR	S-1TURN	01	NONE 0	STRGHT										004	10
NONE						Wed 2P	0	SW WOODHAVEN DR	CN		STOP SIGN	N	DRY	TURN		PRVTE	S N									000		00
No	*45 21*		*6.37*			*-122 51 57.09*	1		04	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	38	F	OR-Y OR<25		014,026	000		10
															02	NONE 0	TURN-R											
																PRVTE	S E									013	004	00
																PSNGR CAR		01	DRVR	NONE	41	F	OR-Y OR<25		000	000		00

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

Crashes Occurring at the Intersection of Sunset Blvd and Timbrel Ln, Sherwood OR, 2012-2016

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

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

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CITY OF SHERWOOD, WASHINGTON COUNTY — Crashes Occurring at the Intersection of Sunset Blvd, Main St, and Ladd Hill Rd, Sherwood OR, 2012-2016

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	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 / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
06745	N	N	N			04/20/2013	16	SW LADD HILL RD	INTER	CROSS	N	Y	CLR	FIX OBJ	01	NONE 0	TURN-L										079	
NO RPT						Sat 9P	0	SW SUNSET BLVD	S		STOP SIGN	N	DRY	FIX		PRVTE	E S									000	079	00
No	*45 20 59.00*		*-122 50 29.11*				1		05	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	INJB	18	M	OR-Y OR<25		001	000		08
00519	N	Y	N	N	N	01/22/2016	17	SW LADD HILL RD	INTER	CROSS	N	N	CLR	ANGL-STP	01	NONE 0	TURN-R											08
CITY						Fri 8P	0	SW SUNSET BLVD	S		STOP SIGN	N	DRY	TURN		PRVTE	W S									000		00
No	*45 20 59.00*		*-122 50 29.11*				1		06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	44	F	OR-Y OR<25		001	000		08
															02	NONE 0	STOP											
																PRVTE	S N									012		00
																PSNGR CAR		01	DRVR	NONE	37	M	OTH-Y N-RES		000	000		00
															03	NONE 0	STOP											
																PRVTE	S N									012		00
																PSNGR CAR		01	DRVR	INJC	38	M	OR-Y OR<25		000	000		00
05834	N	N	N			08/30/2016	16	SW LADD HILL RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 9	STRGHT											29
NONE						Tue 7A	0	SW SUNSET BLVD	W		STOP SIGN	N	DRY	REAR		N/A	W E									000		00
No	*45 20 59.00*		*-122 50 29.11*				1		06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
															02	NONE 9	STOP											
																N/A	W E									011		00
																PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000		00
01656	N	N	N	N	N	03/30/2015	16	SW MAIN ST	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											29
CITY						Mon 7P	0	SW SUNSET BLVD	E		STOP SIGN	N	DRY	REAR		PRVTE	E W									000		00
No	*45 20 59.00*		*-122 50 29.11*				1		06	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	22	F	OR-Y OR<25		026	000		29
															02	NONE 0	STOP											
																PRVTE	E W									011		00
																PSNGR CAR		01	DRVR	INJC	37	F	OR-Y OR<25		000	000		00
03798	N	N	N	N	N	07/07/2015	16	SW MAIN ST	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 0	STRGHT											02
CITY						Tue 5P	0	SW SUNSET BLVD	CN		STOP SIGN	N	DRY	TURN		PRVTE	W E									015		00
No	*45 20 59.00*		*-122 50 29.11*				1		03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	50	F	OR-Y OR<25		000	000		00
															02	NONE 0	TURN-L											
																PRVTE	E S									015		00
																PSNGR CAR		01	DRVR	NONE	61	F	OR-Y OR<25		004,028	000		02

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

Crashes Occurring at the Intersection of Sunset Blvd, Baker Rd, and Murdock Rd, Sherwood OR, 2012-2016

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

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

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091 PACIFIC HIGHWAY WEST — Crashes Occurring at the Intersection of Brookman Rd Chapman Rd & OR99W (Pacific Hwy 91), Sherwood OR 2012-2016

SER# / INVEST / UNLOC?	SPEED	ALCHL	DRUGS	SCHL	WORK	DATE / DAY/TIME / *LAT/LONG*	COUNTY / CITY / URBAN AREA	RD# / CMPT/MLG / LRS	FC / MILEPNT	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
91883	N	N	N			04/03/2014 Thu 8P	WASHINGTON	1 MN	14 0		STRGHT UN	N (DIVMD)	NONE	N	N RAIN WET	S-STRGHT REAR	01	NONE 0 PRVTE	STRGHT N S											000	07 00
							PORTLAND UA	17.46			03				N DARK	PDO		PSNGR CAR		01	DRVR	NONE	35	F	OR-Y		042	000		07
No	*45 20 33.38*		*-122 52 25.87*					009100100S00				(04)														OR<25					
																	02	NONE 0 PRVTE	STRGHT N S										006	00
																		PSNGR CAR		01	DRVR	NONE	59	F	OR-Y		000	000		00
																									OR<25					
04896	N	N	N			09/15/2012 Sat 11A	WASHINGTON	2 MN	14 0		INTER N	CROSS 0	N STOP SIGN	N	N CLR DRY	PRKD MV REAR	01	NONE 0 PRVTE	TURN-R W S											015	08 00
NO RPT							PORTLAND UA	17.46			05				N DAY	PDO		PSNGR CAR		01	DRVR	NONE	63	M	OR-Y		002,080,081	000		08
No	*45 20 32.90*		*-122 52 24.87*					009100200S00																		OR<25					
																	02	NONE 0 PRVTE	PRKD-P N S										008	00
																		PSNGR CAR												
07009	N	N	N			12/08/2012 Sat 1P	WASHINGTON	2 MN	14 0		INTER CN	CROSS 0	N ONE-WAY	N	N CLR DRY	S-1TURN TURN	01	NONE 0 UNKN	TURN-L S W											000	08 00
NONE							PORTLAND UA	17.46			01				N DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OTH-Y		006	000		08
No	*45 20 32.90*		*-122 52 24.87*					009100200S00																		UNK					
																	02	NONE 0 PRVTE	STRGHT S N										000	00
																		PSNGR CAR		01	DRVR	NONE	55	F	OR-Y		000	000		00
																									OR<25					
02243	N	N	N	N	N	04/27/2015 Mon 2P	WASHINGTON	2 MN	14 0		INTER CN	CROSS 0	N STOP SIGN	N	N CLR DRY	ANGL-OTH ANGL	01	NONE 0 PRVTE	STRGHT S N											000	02 00
COUNTY							PORTLAND UA	17.46			01				N DAY	INJ		MTRCYCLE		01	DRVR	INJA	68	M	OTH-Y		000	000		00
No	*45 20 32.90*		*-122 52 24.87*					009100200S00																		N-RES					
																	02	NONE 0 PRVTE	STRGHT E W										015	00
																		PSNGR CAR		01	DRVR	NONE	74	F	OR-Y		028	000		02
																									OR<25					
05349	N	N	N			09/22/2013 Sun 11A	WASHINGTON	2 MN	14 0		INTER CN	CROSS 0	N STOP SIGN	N	N RAIN WET	ANGL-OTH ANGL	01	NONE 0 PRVTE	STRGHT E W											000	02 00
NONE							PORTLAND UA	17.46			02				N DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	OR-Y		028	000		02
No	*45 20 32.90*		*-122 52 24.87*					009100200S00																		OR>25					
																	02	NONE 0 PRVTE	STRGHT S N										000	00
																		PSNGR CAR		01	DRVR	NONE	73	F	OR-Y		000	000		00
																									OR<25					
																				02	PSNG	NO<5	03	F			000	000		00

091 PACIFIC HIGHWAY WEST — Crashes Occurring at the Intersection of Brookman Rd Chapman Rd & OR99W (Pacific Hwy 91), Sherwood OR 2012-2016

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	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
03099	N	N	N			06/03/2014	WASHINGTON	2	14	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											08
NO RPT						Tue 5P		MN 0		CN		STOP SIGN	N	DRY	TURN		PRVTE	W N										000		00
							PORTLAND UA	17.46		02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	F	UNK		001	000		08
No	*45 20 32.90*		*-122 52 24.87*					009100200S00																OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	S N									000		00
																	PSNGR CAR		01	DRVR	NONE	32	F	OTH-Y		000	000		00
																								N-RES					
03254	N	N	N			05/18/2016	WASHINGTON	2	14	INTER	CROSS	N	N	CLR	O-1 L-TURN	01	NONE 9	TURN-L											02
NO RPT						Wed 6A		MN 0		CN		STOP SIGN	N	DRY	TURN		N/A	W N									000		00
							PORTLAND UA	17.46		02	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45 20 32.90*		*-122 52 24.87*					009100200S00																UNK					
																02	NONE 9	STRGHT											
																	N/A	E W									000		00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
																								UNK					
07267	N	N	N	N	N	12/17/2012	WASHINGTON	1	14	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT										013	02
COUNTY						Mon 4P		MN 0		CN		STOP SIGN	N	WET	ANGL		PRVTE	N S									000		00
							PORTLAND UA	17.47		01	0		N	DUSK	INJ		PSNGR CAR		01	DRVR	INJC	32	F	OR-Y		000	000		00
No	*45 20 32.89*		*-122 52 26.13*					009100100S00																OR<25					
																02	NONE 0	STRGHT											
																	PRVTE	E W									015	013	00
																	PSNGR CAR		01	DRVR	INJB	20	F	OR-Y		028	000		02
																								OR<25					
																			02	PSNG	INJB	19	F			000	000		00
																03	NONE 0	STOP											
																	PRVTE	W E									022		00
																	PSNGR CAR		01	DRVR	NONE	32	F	OR-Y		000	000		00
																								OR>25					
00236	N	N	N			01/15/2015	WASHINGTON	1	14	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 0	STRGHT											02
COUNTY						Thu 5P		MN 0		CN		STOP SIGN	N	WET	TURN		PRVTE	N S									000		00
							PORTLAND UA	17.47		01	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y		000	000		00
No	*45 20 32.89*		*-122 52 26.13*					009100100S00																OR<25					
																02	NONE 0	TURN-L											
																	PRVTE	E S									015		00
																	PSNGR CAR		01	DRVR	NONE	25	F	OR-Y		028	000		02
																								OR<25					
08443	N	N	N	N	N	12/09/2016	WASHINGTON	1	14	INTER	CROSS	N	N	RAIN	ANGL-OTH	01	NONE 9	STRGHT											03
COUNTY						Fri 3P		MN 0		CN		STOP SIGN	N	WET	ANGL		N/A	N S									000		00
							PORTLAND UA	17.47		01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	U	UNK		000	000		00
No	*45 20 32.89*		*-122 52 26.13*					009100100S00																UNK					

091 PACIFIC HIGHWAY WEST — Crashes Occurring at the Intersection of Brookman Rd Chapman Rd & OR99W (Pacific Hwy 91), Sherwood OR 2012-2016

SER# / INVEST / UNLOC?	SPEED	ALCOHOL	DRUGS	SCHL BUS	WORK ZONE	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 E W									000	00
																	PSNGR CAR		01	DRVR	NONE	00	U	UNK UNK		000	000	00
07202	N	N	N	N	N	12/01/2014	WASHINGTON	1 14		INTER	CROSS	N		N CLD	ANGL-OTH	01	NONE 0	STRGHT										02
COUNTY						Mon 10A		MN 0		CN		STOP SIGN		N DRY	ANGL		PRVTE	W E									015	00
							PORTLAND UA	17.47		03	0			N DAY	INJ		PSNGR CAR		01	DRVR	INJA	56	F	OR-Y		028	000	02
No	*45 20 32.89*		*-122 52 26.13*					009100100S00																OR>25				
																02	NONE 0 PRVTE	STRGHT N S									000	00
																	PSNGR CAR		01	DRVR	NONE	29	F	OR-Y OR<25		000	000	00
																			02	PSNG	INJC	00	F			000	000	00
02701	N	N	N			05/18/2015	WASHINGTON	1 14		INTER	CROSS	N		N CLR	O-1 L-TURN	01	NONE 0	STRGHT										02
NO RPT						Mon 5P		MN 0		CN		STOP SIGN		N DRY	TURN		PRVTE	W E									000	00
							PORTLAND UA	17.47		03	0			N DAY	PDO		PSNGR CAR		01	DRVR	NONE	40	F	OR-Y OR<25		000	000	00
No	*45 20 32.89*		*-122 52 26.13*					009100100S00																				
																02	NONE 0 PRVTE	TURN-L E S									000	00
																	PSNGR CAR		01	DRVR	NONE	30	M	OR-Y OR<25		004,028	000	02
00180	N	N	N	N	N	01/11/2014	WASHINGTON	1 14		INTER	CROSS	N		N RAIN	ANGL-OTH	01	NONE 0	STRGHT										02
COUNTY						Sat 11P		MN 0		CN		STOP SIGN		N WET	ANGL		PRVTE	S N									000	00
							PORTLAND UA	17.47		04	0			N DARK	INJ		PSNGR CAR		01	DRVR	INJC	30	F	OR-Y OR<25		000	000	00
No	*45 20 32.89*		*-122 52 26.13*					009100100S00																				
																02	NONE 0 PRVTE	STRGHT W E									015	00
																	PSNGR CAR		01	DRVR	NONE	16	M	OR-Y OR<25		028	000	02

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

Crashes Occurring at the Intersection of Brookman Rd & Old Pacific Hwy, Sherwood OR 2012-2016

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

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WASHINGTON COUNTY

Crashes Occurring at the Intersection of Brookman Rd & Middleton Rd, Sherwood OR 2012-2016

SER# / INVEST / UNLOC?	SPEED	ALC	DRUGS	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 / VEH TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	AGE	SEX	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
08516	N	N	N	N	N	12/12/2016		SW BROOKMAN RD	INTER	CROSS	N	N	CLR	BIKE	01	NONE 0	TURN-L											02
COUNTY						Mon 6P	0	SW MIDDLETON RD	SW		STOP SIGN	N	DRY	TURN		PRVTE	SE SW									000		00
No						*45 20 32.70 -122 51 55.93*		1	05	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	40	M	OR-Y OR<25		027	000		02
																	STRGHT NW SE	01	BIKE	INJB	15	M		01	000	035		00

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

Crashes Occurring at the Intersection of Brookman Rd & Oberst Rd, Sherwood OR, 2012-2016

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

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

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

Crashes Occurring at the Intersection of Brookman Rd & Ladd Hill Rd, Sherwood OR 2012-2016

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

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

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

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)

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
2	INJA	INCAPACITATING INJURY - BLEEDING, BROKEN BONES
3	INJB	NON-INCAPACITATING INJURY
4	INJC	POSSIBLE INJURY - COMPLAINT OF PAIN
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	PARTICIPANT UNINJURED, OVER THE AGE OF 4

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	UNK	UNKNOWN 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 C
Traffic Counts

Type of peak hour being reported: Intersection Peak

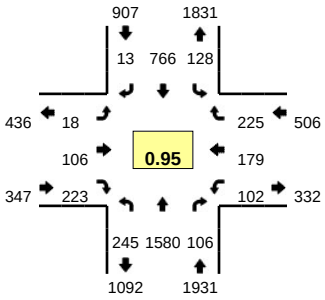
Method for determining peak hour: Total Entering Volume

LOCATION: SW Pacific Hwy -- SW Elwert Rd/SW Sunset Blvd

QC JOB #: 14401717

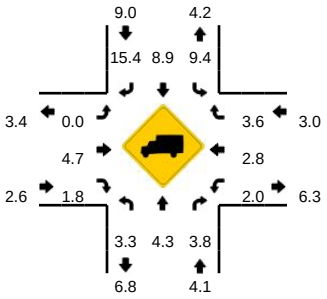
CITY/STATE: Sherwood, OR

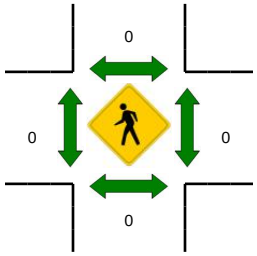
DATE: Thu, May 11 2017

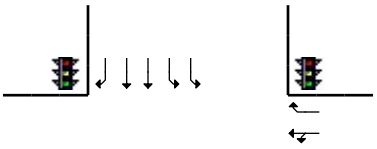


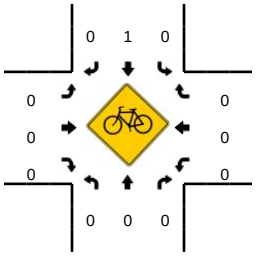
Peak-Hour: 7:05 AM -- 8:05 AM

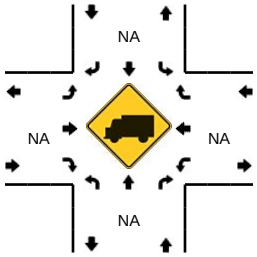
Peak 15-Min: 7:40 AM -- 7:55 AM

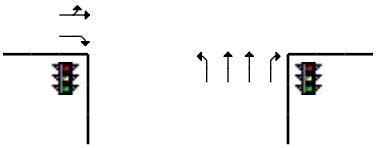


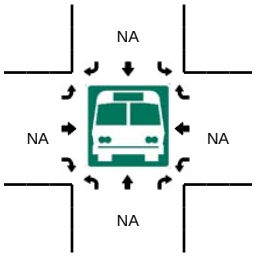












5-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Elwert Rd/SW Sunset Blvd (Eastbound)				SW Elwert Rd/SW Sunset Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	22	126	6	0	2	43	0	1	0	5	15	0	11	13	12	0	256	
7:05 AM	10	136	9	0	3	71	2	0	3	5	19	0	8	8	17	0	291	
7:10 AM	20	118	8	0	8	54	1	1	1	7	25	0	14	19	12	0	288	
7:15 AM	34	127	9	0	6	44	1	1	1	9	17	0	9	15	19	0	292	
7:20 AM	23	140	8	0	5	60	0	0	3	5	16	0	16	8	16	0	300	
7:25 AM	22	154	14	0	7	76	1	0	0	5	14	0	3	15	16	0	327	
7:30 AM	19	119	7	0	11	50	1	1	4	14	20	0	4	21	17	0	288	
7:35 AM	22	123	5	0	12	52	1	1	1	9	14	0	13	25	16	0	294	
7:40 AM	20	139	9	0	13	64	0	1	1	9	14	0	7	19	19	0	315	
7:45 AM	23	122	7	0	20	69	2	2	2	9	21	0	7	15	23	0	322	
7:50 AM	14	121	8	0	11	100	2	0	0	13	24	0	8	14	23	0	338	
7:55 AM	26	115	10	0	17	59	1	1	2	10	20	0	7	11	29	0	308	3619
8:00 AM	11	166	12	1	7	67	1	0	0	11	19	0	6	9	18	0	328	3691
8:05 AM	8	79	9	0	8	63	0	1	1	5	26	0	10	5	15	0	230	3630
8:10 AM	16	81	4	0	6	48	0	3	2	2	11	0	7	14	12	0	206	3548
8:15 AM	12	133	6	0	6	83	0	1	1	4	12	0	5	7	12	0	282	3538
8:20 AM	23	98	8	0	6	40	0	4	0	6	16	0	7	8	7	0	223	3461
8:25 AM	11	110	9	0	6	55	0	2	2	2	19	0	7	8	9	0	240	3374
8:30 AM	16	76	5	0	13	51	0	3	0	3	10	0	7	6	14	0	204	3290
8:35 AM	17	128	7	0	7	66	2	1	1	8	13	0	5	9	11	0	275	3271
8:40 AM	9	112	11	0	9	62	1	1	1	3	10	0	3	4	3	0	229	3185
8:45 AM	8	93	8	0	7	60	0	0	1	4	10	0	11	8	17	0	227	3090
8:50 AM	9	96	11	0	3	59	0	1	1	7	23	0	7	6	12	0	235	2987
8:55 AM	9	86	6	0	8	74	1	3	1	8	8	0	5	3	11	0	223	2902

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	228	1528	96	0	176	932	16	12	12	124	236	0	88	192	260	0	3900
Heavy Trucks	12	68	4		12	60	4		0	4	0		0	4	16		184
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/19/2017 4:01 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Woodhaven Dr -- SW Sunset Blvd

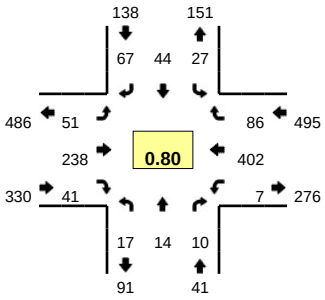
CITY/STATE: Sherwood, OR

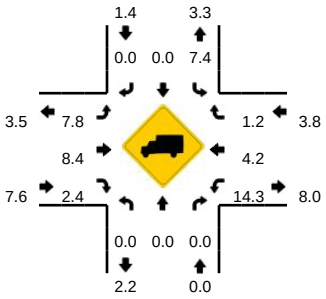
QC JOB #: 14538801

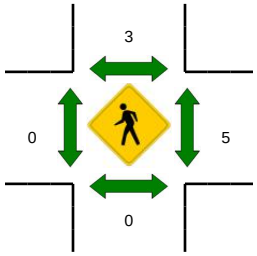
DATE: Thu, Oct 12 2017

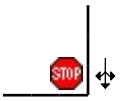
Peak-Hour: 7:10 AM -- 8:10 AM

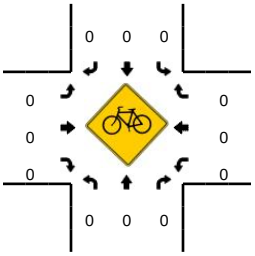
Peak 15-Min: 7:45 AM -- 8:00 AM

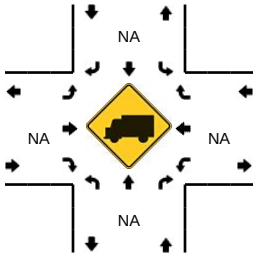


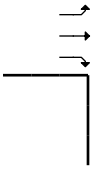


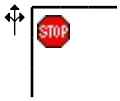


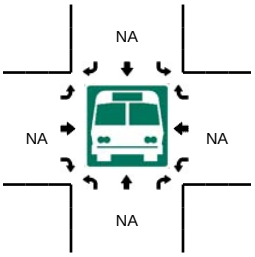












5-Min Count Period Beginning At	SW Woodhaven Dr (Northbound)				SW Woodhaven Dr (Southbound)				SW Sunset Blvd (Eastbound)				SW Sunset Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	1	4	0	4	7	1	0	0	32	3	0	53	
7:05 AM	6	1	1	0	0	0	3	0	2	17	0	0	0	27	2	0	59	
7:10 AM	1	0	0	0	4	0	7	0	1	13	1	0	0	32	0	1	60	
7:15 AM	0	0	0	0	1	0	6	0	0	19	2	0	0	31	2	0	61	
7:20 AM	0	0	0	0	0	0	3	0	3	15	3	0	0	36	5	0	65	
7:25 AM	2	1	0	0	2	4	9	0	1	20	0	0	1	29	7	0	76	
7:30 AM	1	1	1	0	2	6	5	0	3	14	3	0	0	38	9	0	83	
7:35 AM	4	0	1	0	3	6	5	0	2	25	10	0	0	32	11	0	99	
7:40 AM	1	1	0	0	2	11	5	0	2	27	10	0	2	31	5	0	97	
7:45 AM	2	2	0	0	1	13	10	0	5	26	7	0	1	39	9	0	115	
7:50 AM	1	3	2	0	7	2	3	0	7	21	1	0	1	31	12	0	91	
7:55 AM	3	3	4	0	1	0	7	0	11	26	3	0	1	36	13	0	108	967
8:00 AM	2	3	2	0	2	0	3	0	10	18	0	0	0	42	7	0	89	1003
8:05 AM	0	0	0	0	2	2	4	0	6	14	1	0	0	25	6	0	60	1004
8:10 AM	3	0	0	0	2	0	4	0	3	13	1	0	1	21	0	0	48	992
8:15 AM	1	1	0	0	1	0	2	0	3	16	1	0	0	17	1	0	43	974
8:20 AM	0	0	0	0	1	0	5	0	2	15	0	0	1	17	1	0	42	951
8:25 AM	1	0	0	0	0	1	2	0	7	10	0	0	0	24	1	0	46	921
8:30 AM	2	0	0	0	1	0	4	0	4	17	0	0	0	18	3	0	49	887
8:35 AM	1	1	0	0	0	0	3	0	7	11	0	0	0	21	3	0	47	835
8:40 AM	0	1	0	0	0	0	2	0	9	15	0	0	1	18	4	0	50	788
8:45 AM	2	0	1	0	0	1	5	0	2	7	0	0	0	27	6	0	51	724
8:50 AM	0	2	0	0	1	0	7	0	7	9	1	1	1	21	2	0	52	685
8:55 AM	1	0	0	0	3	0	4	0	11	9	0	0	0	13	3	0	44	621

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	24	32	24	0	36	60	80	0	92	292	44	0	12	424	136	0	1256
Heavy Trucks	0	0	0		4	0	0		4	28	0		0	24	4		64
Pedestrians		0				4				0				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/31/2017 8:48 AM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

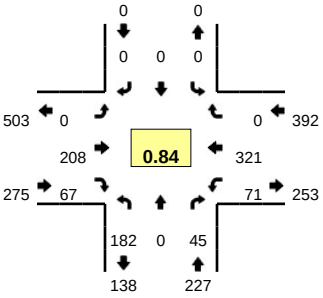
LOCATION: SW Timbrel Ln -- SW Sunset Blvd

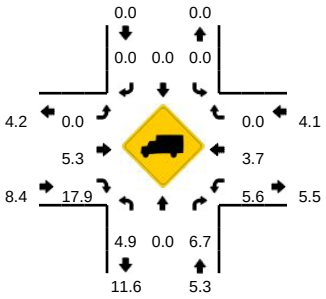
QC JOB #: 14538803

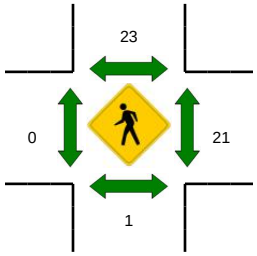
CITY/STATE: Sherwood, OR

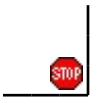
DATE: Thu, Oct 12 2017

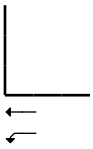
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

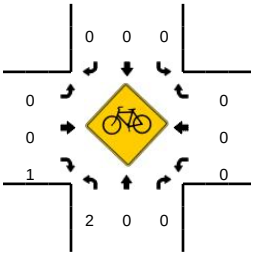


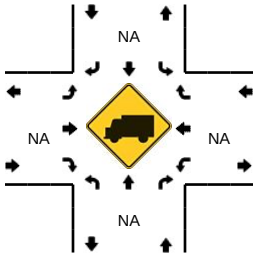


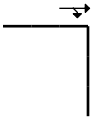


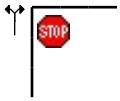


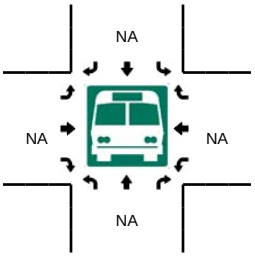












5-Min Count Period Beginning At	SW Timbrel Ln (Northbound)				SW Timbrel Ln (Southbound)				SW Sunset Blvd (Eastbound)				SW Sunset Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	9	0	1	0	0	0	0	0	0	9	0	0	0	25	0	0	44	
7:05 AM	8	0	3	0	0	0	0	0	0	16	2	0	1	20	0	0	50	
7:10 AM	11	0	2	0	0	0	0	0	0	12	4	0	3	25	0	0	57	
7:15 AM	8	0	1	0	0	0	0	0	0	20	2	0	2	23	0	0	56	
7:20 AM	11	0	4	0	0	0	0	0	0	13	1	0	5	31	0	0	65	
7:25 AM	15	0	3	0	0	0	0	0	0	15	8	0	7	22	0	0	70	
7:30 AM	24	0	4	0	0	0	0	0	0	15	2	0	8	25	0	0	78	
7:35 AM	14	0	4	0	0	0	0	0	0	21	7	0	13	24	0	0	83	
7:40 AM	18	0	5	0	0	0	0	0	0	21	8	0	13	32	0	0	97	
7:45 AM	19	0	3	0	0	0	0	0	0	17	7	0	11	27	0	0	84	
7:50 AM	25	0	4	0	0	0	0	0	0	19	10	0	7	19	0	0	84	
7:55 AM	20	0	12	0	0	0	0	0	0	22	9	0	1	29	0	0	93	861
8:00 AM	8	0	3	0	0	0	0	0	0	18	5	0	1	40	0	0	75	892
8:05 AM	9	0	0	0	0	0	0	0	0	15	4	0	0	24	0	0	52	894
8:10 AM	7	0	3	0	0	0	0	0	0	11	3	0	2	11	0	0	37	874
8:15 AM	5	0	0	0	0	0	0	0	0	16	0	0	1	14	0	0	36	854
8:20 AM	4	0	0	0	0	0	0	0	0	13	2	0	1	14	0	0	34	823
8:25 AM	8	0	3	0	0	0	0	0	0	11	2	0	1	17	0	0	42	795
8:30 AM	6	0	1	0	0	0	0	0	0	17	1	0	1	16	0	0	42	759
8:35 AM	6	0	0	0	0	0	0	0	0	9	1	0	3	18	0	0	37	713
8:40 AM	4	0	2	0	0	0	0	0	0	13	0	0	3	20	0	0	42	658
8:45 AM	4	0	2	0	0	0	0	0	0	9	1	0	2	25	0	0	43	617
8:50 AM	8	0	0	0	0	0	0	0	0	7	3	0	1	17	0	0	36	569
8:55 AM	5	0	3	0	0	0	0	0	0	7	5	0	0	10	0	0	30	506

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	248	0	48	0	0	0	0	0	0	228	100	0	124	312	0	0	1060
Heavy Trucks	16	0	8		0	0	0		0	8	20		8	16	0		76
Pedestrians		0				64				0				64			128
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/31/2017 8:48 AM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

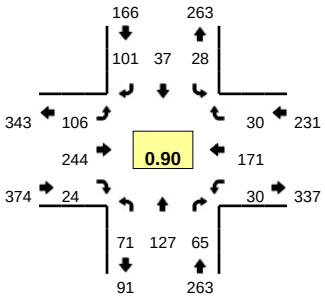
LOCATION: SW Main St/SW Ladd Hill Rd -- SW Sunset Blvd

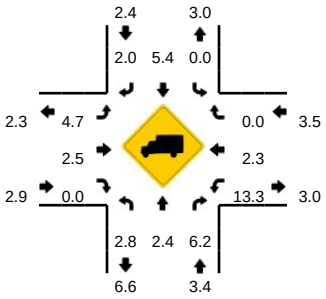
QC JOB #: 14487601

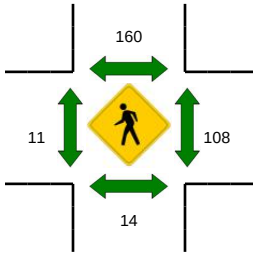
CITY/STATE: Sherwood, OR

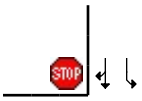
DATE: Tue, Sep 12 2017

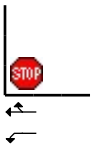
Peak-Hour: 7:05 AM -- 8:05 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

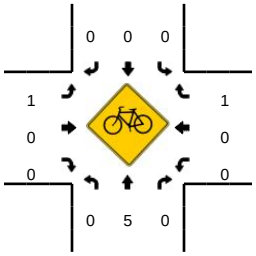


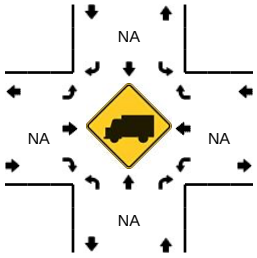


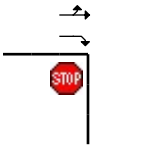


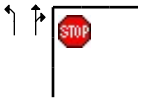


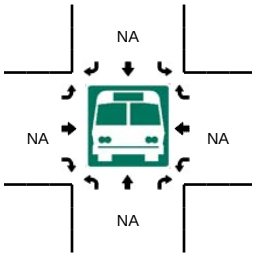












5-Min Count Period Beginning At	SW Main St/SW Ladd Hill Rd (Northbound)				SW Main St/SW Ladd Hill Rd (Southbound)				SW Sunset Blvd (Eastbound)				SW Sunset Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	8	2	0	0	2	2	0	7	16	1	0	1	8	2	0	52	
7:05 AM	4	6	7	0	0	2	2	0	4	19	1	0	1	12	2	0	60	
7:10 AM	4	11	3	0	1	3	5	0	5	19	1	0	1	14	4	0	71	
7:15 AM	1	12	6	0	1	3	8	0	6	21	1	0	1	11	3	0	74	
7:20 AM	8	12	6	0	0	1	10	0	9	17	4	0	2	24	2	0	95	
7:25 AM	9	11	6	0	0	2	7	0	9	23	1	0	2	17	4	0	91	
7:30 AM	5	13	8	0	4	1	11	0	11	22	2	0	5	14	2	0	98	
7:35 AM	8	10	4	0	4	2	13	0	13	21	0	0	1	13	4	0	93	
7:40 AM	17	11	1	0	3	2	14	0	12	14	1	0	6	14	2	0	97	
7:45 AM	8	12	2	0	5	5	9	0	15	15	1	0	2	15	0	0	89	
7:50 AM	3	14	8	0	2	2	8	0	14	23	4	0	1	12	4	0	95	
7:55 AM	1	8	8	0	3	9	7	0	3	23	3	0	4	11	0	0	80	995
8:00 AM	3	7	6	0	5	5	7	0	5	27	5	0	4	14	3	0	91	1034
8:05 AM	4	2	7	0	0	4	4	0	5	14	2	0	3	12	1	0	58	1032
8:10 AM	3	3	3	0	1	3	3	0	4	13	2	0	0	6	1	0	42	1003
8:15 AM	2	4	3	0	1	3	4	0	5	14	1	0	1	10	2	0	50	979
8:20 AM	2	6	1	0	1	2	3	0	5	14	5	0	2	9	1	0	51	935
8:25 AM	2	6	5	0	0	0	3	0	2	16	0	0	2	9	0	0	45	889
8:30 AM	2	1	4	0	0	2	2	0	1	8	0	0	2	6	1	0	29	820
8:35 AM	5	0	6	0	0	2	1	0	2	9	2	0	1	11	2	0	41	768
8:40 AM	3	4	5	0	0	1	3	0	2	11	0	0	3	8	2	0	42	713
8:45 AM	4	6	2	0	0	3	4	0	3	10	1	0	1	8	0	0	42	666
8:50 AM	5	5	2	0	1	3	3	0	4	10	3	0	3	12	3	0	54	625
8:55 AM	1	9	5	0	1	3	0	0	9	20	1	0	0	0	0	0	49	594

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	120	136	52	0	44	20	152	0	144	228	12	0	48	164	32	0	1152
Heavy Trucks	8	8	4		0	0	4		12	8	0		4	8	0		56
Pedestrians		24				360				4				236			624
Bicycles	0	0	0		0	0	0		1	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 9/20/2017 8:46 AM

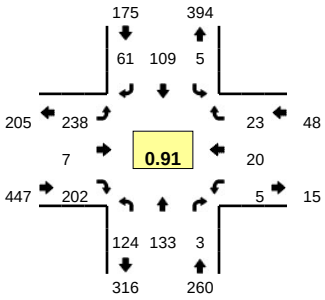
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

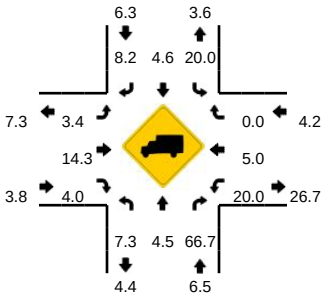
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

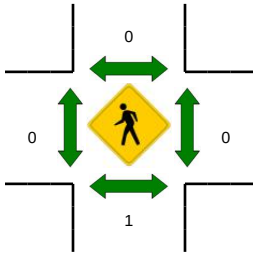
LOCATION: SW Murdock Rd/SW Baker Rd -- SW Sunset Blvd/McKinley Dr | **QC JOB #:** 14548501

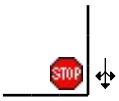
CITY/STATE: Sherwood, OR | **DATE:** Wed, Oct 25 2017

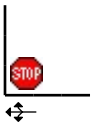
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:35 AM -- 7:50 AM

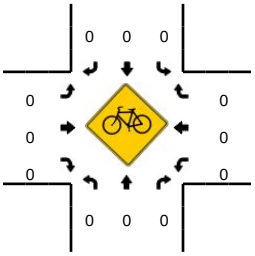


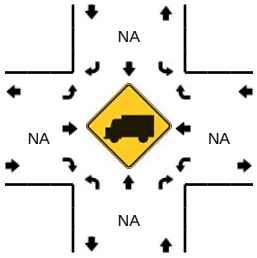


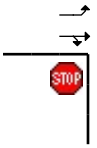


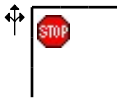


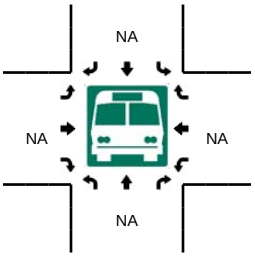












5-Min Count Period Beginning At	SW Murdock Rd/SW Baker Rd (Northbound)				SW Murdock Rd/SW Baker Rd (Southbound)				SW Sunset Blvd/McKinley Dr (Eastbound)				SW Sunset Blvd/McKinley Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	14	5	0	0	0	8	6	0	22	0	8	0	0	0	1	0	64	
7:05 AM	10	9	0	0	0	5	3	0	18	0	9	0	0	0	4	0	58	
7:10 AM	11	6	0	0	1	6	3	0	17	0	11	0	0	0	2	0	57	
7:15 AM	12	8	0	0	0	6	5	0	15	1	16	0	0	1	3	0	67	
7:20 AM	20	10	1	0	0	6	6	0	22	0	20	0	0	2	1	0	88	
7:25 AM	8	12	2	0	0	5	5	0	17	0	18	0	1	4	4	0	76	
7:30 AM	12	7	0	0	1	9	2	0	23	1	16	0	2	0	1	0	74	
7:35 AM	11	14	0	0	0	11	7	0	24	1	22	0	0	6	2	0	98	
7:40 AM	13	8	0	0	0	12	1	0	20	0	17	0	1	2	1	0	75	
7:45 AM	13	14	0	0	0	13	7	0	17	0	13	0	0	3	3	0	83	
7:50 AM	10	19	0	0	0	10	8	0	19	1	10	0	1	0	5	0	83	
7:55 AM	5	12	0	0	2	7	7	0	17	0	18	0	0	0	2	0	70	893
8:00 AM	2	6	0	0	1	11	4	0	25	1	20	0	0	1	0	0	71	900
8:05 AM	11	11	0	0	0	7	7	0	24	1	20	0	0	1	0	0	82	924
8:10 AM	7	12	0	0	1	12	2	0	15	1	12	0	0	0	1	0	63	930
8:15 AM	8	11	0	0	0	8	3	0	11	2	14	0	0	1	3	0	61	924
8:20 AM	9	9	0	0	0	7	6	0	9	0	16	0	0	1	2	0	59	895
8:25 AM	5	7	0	0	0	5	9	0	13	1	7	0	0	1	1	0	49	868
8:30 AM	3	10	0	0	2	5	3	0	17	0	13	0	0	0	0	0	53	847
8:35 AM	1	5	0	0	1	4	4	0	12	0	9	0	0	0	1	0	37	786
8:40 AM	4	7	0	0	0	6	6	0	21	0	13	0	0	1	2	0	60	771
8:45 AM	8	8	0	0	1	10	3	0	13	0	8	0	0	2	2	0	55	743
8:50 AM	6	12	0	0	1	7	6	0	17	0	15	0	0	0	0	0	64	724
8:55 AM	6	6	0	0	0	5	3	0	12	1	8	0	0	1	0	0	42	696

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	148	144	0	0	0	144	60	0	244	4	208	0	4	44	24	0	1024
Heavy Trucks	4	4	0		0	4	4		4	0	0		0	0	0		20
Pedestrians		4				0				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/31/2017 3:00 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Pacific Hwy -- SW Chapman Rd

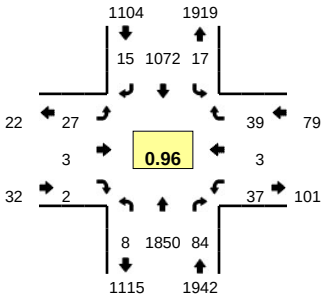
CITY/STATE: Sherwood, OR

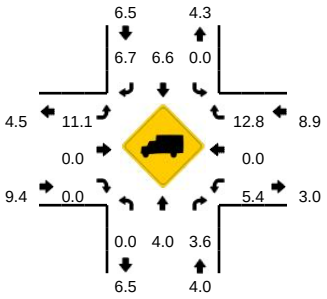
QC JOB #: 14401706

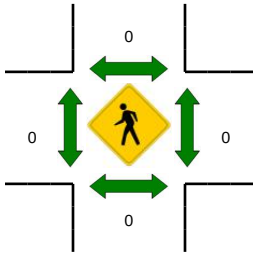
DATE: Thu, May 11 2017

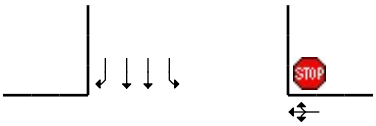
Peak-Hour: 7:05 AM -- 8:05 AM

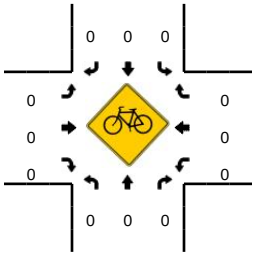
Peak 15-Min: 7:30 AM -- 7:45 AM

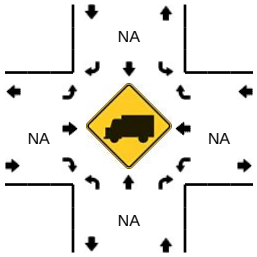


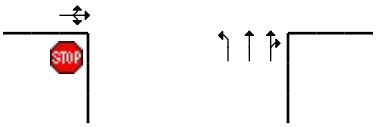


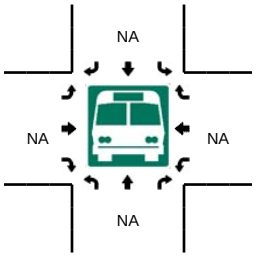












5-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Chapman Rd (Eastbound)				SW Chapman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	133	2	0	0	74	0	0	1	0	0	0	4	0	3	0	217	
7:05 AM	0	169	5	1	0	81	4	0	0	0	0	0	2	0	0	0	262	
7:10 AM	0	159	6	0	0	99	1	1	1	0	0	0	1	0	1	0	269	
7:15 AM	1	165	11	0	1	75	0	0	0	1	0	0	2	0	2	0	258	
7:20 AM	0	174	7	0	0	100	0	1	1	1	0	0	3	0	1	0	288	
7:25 AM	0	141	8	1	1	78	1	0	3	0	0	0	4	0	2	0	239	
7:30 AM	0	177	8	0	1	84	0	0	4	0	1	0	0	1	4	0	280	
7:35 AM	0	177	8	0	0	85	1	0	0	0	0	0	4	0	3	0	278	
7:40 AM	1	147	14	1	1	85	1	0	4	0	0	0	3	1	5	0	263	
7:45 AM	1	142	9	0	4	99	2	0	3	0	0	0	2	0	4	0	266	
7:50 AM	0	147	6	0	1	125	1	1	2	0	0	0	4	1	3	0	291	
7:55 AM	1	133	1	0	3	82	2	0	1	1	1	0	8	0	6	0	239	3150
8:00 AM	0	119	1	1	2	79	2	0	8	0	0	0	4	0	8	0	224	3157
8:05 AM	0	98	4	0	2	85	4	0	5	0	0	0	2	1	1	0	202	3097
8:10 AM	0	127	2	0	1	82	1	0	0	1	0	0	3	0	1	0	218	3046
8:15 AM	0	130	3	0	2	72	2	0	3	0	1	0	2	0	2	0	217	3005
8:20 AM	1	135	6	0	1	89	1	1	0	1	0	0	3	0	2	0	240	2957
8:25 AM	0	115	5	0	3	63	0	0	0	0	0	0	0	0	1	0	187	2905
8:30 AM	0	127	3	0	1	71	0	0	1	0	0	0	3	1	3	0	210	2835
8:35 AM	0	118	3	0	1	83	2	0	2	0	0	0	0	1	1	0	211	2768
8:40 AM	1	143	0	1	1	68	2	1	1	0	0	0	3	0	0	0	221	2726
8:45 AM	0	108	1	0	1	87	4	1	0	1	0	0	3	0	2	0	208	2668
8:50 AM	1	127	3	0	0	88	1	0	0	1	1	0	1	0	1	0	224	2601
8:55 AM	0	93	4	0	1	89	3	0	2	1	1	0	3	1	1	0	199	2561

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	2004	120	4	8	1016	8	0	32	0	4	0	28	8	48	0	3284
Heavy Trucks	0	64	4		0	100	0		0	0	0		4	0	4		176
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/19/2017 4:01 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Old Hwy 99W -- SW Brookman Rd

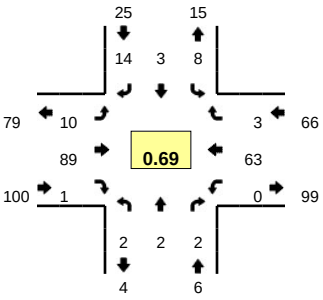
CITY/STATE: Sherwood, OR

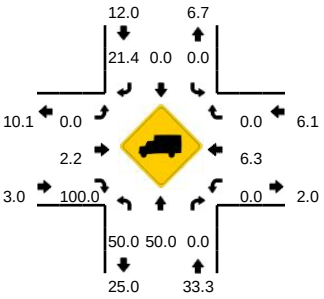
QC JOB #: 14401709

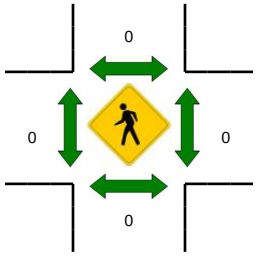
DATE: Thu, May 11 2017

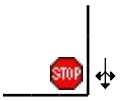
Peak-Hour: 7:10 AM -- 8:10 AM

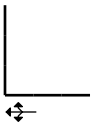
Peak 15-Min: 7:40 AM -- 7:55 AM

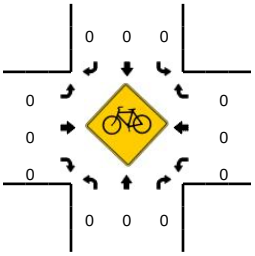


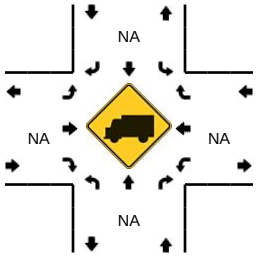


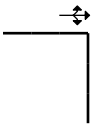


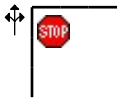


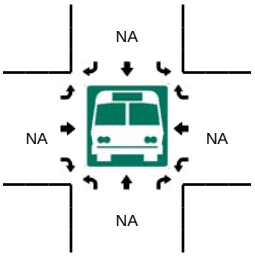












5-Min Count Period Beginning At	SW Old Hwy 99W (Northbound)				SW Old Hwy 99W (Southbound)				SW Brookman Rd (Eastbound)				SW Brookman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	1	0	0	0	0	0	0	0	1	1	0	0	4	0	0	7	
7:05 AM	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0	0	4	
7:10 AM	0	0	0	0	0	0	0	0	1	6	0	0	0	1	0	0	8	
7:15 AM	1	1	0	0	0	0	1	0	2	11	0	0	0	2	0	0	18	
7:20 AM	0	0	1	0	0	0	0	0	1	5	0	0	0	6	0	0	13	
7:25 AM	0	0	0	0	0	0	0	0	0	11	0	0	0	5	0	0	16	
7:30 AM	0	0	0	0	0	0	0	0	0	9	0	0	0	3	0	0	12	
7:35 AM	0	0	0	0	1	0	1	0	1	7	0	0	0	8	0	0	18	
7:40 AM	0	0	0	0	2	1	2	0	1	11	1	0	0	4	2	0	24	
7:45 AM	1	0	0	0	2	0	3	0	2	11	0	0	0	3	0	0	22	
7:50 AM	0	0	1	0	2	0	5	0	0	7	0	0	0	10	0	0	25	
7:55 AM	0	0	0	0	0	1	0	0	2	4	0	0	0	10	1	0	18	185
8:00 AM	0	1	0	0	0	0	1	0	0	1	0	0	0	8	0	0	11	189
8:05 AM	0	0	0	0	1	1	1	0	0	6	0	0	0	3	0	0	12	197
8:10 AM	0	0	0	0	0	0	1	0	0	5	0	0	0	2	0	0	8	197
8:15 AM	0	0	0	0	0	0	2	0	0	4	0	0	0	2	0	0	8	187
8:20 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	5	0	0	12	186
8:25 AM	0	2	0	0	0	0	0	0	0	6	0	0	0	0	0	0	8	178
8:30 AM	0	0	0	0	0	0	1	0	1	3	0	0	0	4	0	0	9	175
8:35 AM	0	0	0	0	0	0	0	0	1	3	0	0	0	2	0	0	6	163
8:40 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	3	0	0	6	145
8:45 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0	0	8	131
8:50 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	4	0	0	8	114
8:55 AM	0	0	0	0	0	0	1	0	0	6	0	0	0	2	0	0	9	105

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	4	0	24	4	40	0	12	116	4	0	0	68	8	0	284
Heavy Trucks	4	0	0		0	0	12		0	0	4		0	4	0		24
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/19/2017 4:01 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Middleton Rd -- SW Brookman Rd

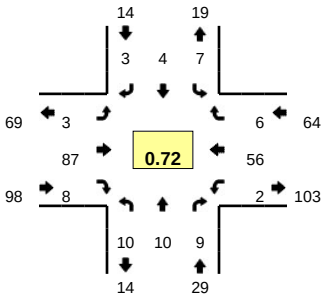
CITY/STATE: Sherwood, OR

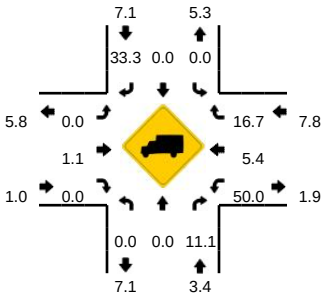
QC JOB #: 14401711

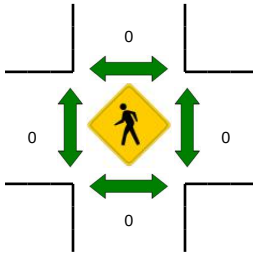
DATE: Thu, May 11 2017

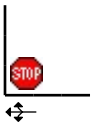
Peak-Hour: 7:15 AM -- 8:15 AM

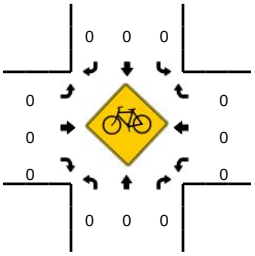
Peak 15-Min: 7:40 AM -- 7:55 AM

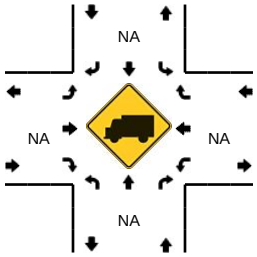


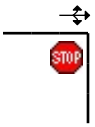


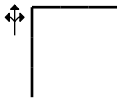


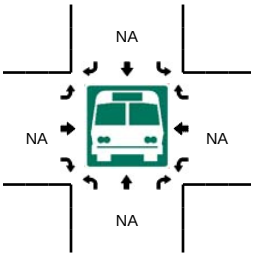












5-Min Count Period Beginning At	SW Middleton Rd (Northbound)				SW Middleton Rd (Southbound)				SW Brookman Rd (Eastbound)				SW Brookman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	
7:05 AM	0	0	0	0	1	0	0	0	0	2	1	0	0	1	0	0	5	
7:10 AM	0	1	0	0	0	0	0	0	0	5	0	0	0	1	0	0	7	
7:15 AM	0	0	0	0	1	0	0	0	1	10	0	0	0	4	0	0	16	
7:20 AM	1	2	1	0	0	0	0	0	0	8	0	0	1	3	0	0	16	
7:25 AM	1	0	0	0	0	0	0	0	0	9	1	0	0	5	0	0	16	
7:30 AM	1	2	1	0	2	1	0	0	0	9	0	0	0	4	0	0	20	
7:35 AM	0	0	1	0	0	0	0	0	1	8	0	0	0	8	0	0	18	
7:40 AM	1	5	1	0	2	0	1	0	0	10	0	0	0	4	2	0	26	
7:45 AM	0	0	2	0	1	1	0	0	1	12	2	0	1	5	1	0	26	
7:50 AM	2	0	0	0	1	0	0	0	0	10	1	0	0	5	0	0	19	
7:55 AM	0	0	1	0	0	2	1	0	0	3	1	0	0	8	1	0	17	189
8:00 AM	3	1	1	0	0	0	1	0	0	0	2	0	0	5	1	0	14	200
8:05 AM	1	0	0	0	0	0	0	0	0	5	1	0	0	2	0	0	9	204
8:10 AM	0	0	1	0	0	0	0	0	0	3	0	0	0	3	1	0	8	205
8:15 AM	1	0	0	0	0	0	0	0	0	5	1	0	0	1	0	0	8	197
8:20 AM	3	0	0	0	0	0	0	0	0	4	0	0	1	1	0	0	9	190
8:25 AM	0	0	1	0	0	0	0	0	2	6	1	0	0	0	0	0	10	184
8:30 AM	1	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	7	171
8:35 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	2	0	0	6	159
8:40 AM	2	1	0	0	1	0	0	0	0	0	0	0	0	4	0	0	8	141
8:45 AM	1	0	0	0	0	0	0	0	0	2	0	0	1	2	1	0	7	122
8:50 AM	0	0	0	0	0	0	0	0	0	2	1	0	0	3	0	0	6	109
8:55 AM	0	0	0	0	0	0	1	0	0	6	0	0	0	1	0	0	8	100

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	12	20	12	0	16	4	4	0	4	128	12	0	4	56	12	0	284
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	4		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/19/2017 4:01 PM

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

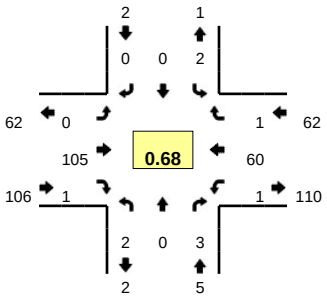
Type of peak hour being reported: Intersection Peak

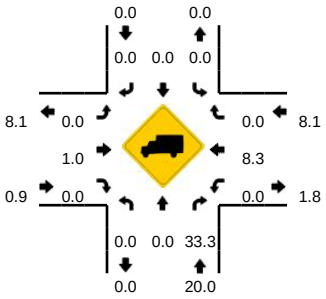
Method for determining peak hour: Total Entering Volume

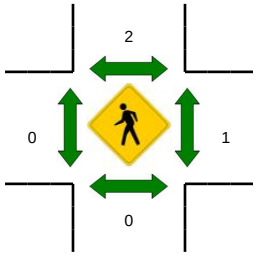
LOCATION: SW Oberst Rd -- SW Brookman Rd
CITY/STATE: Sherwood, OR

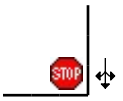
QC JOB #: 14401713
DATE: Thu, May 11 2017

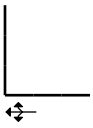
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:40 AM -- 7:55 AM

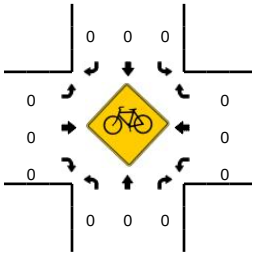


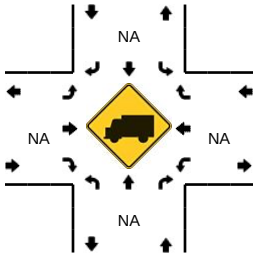


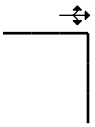


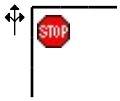


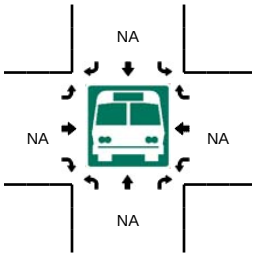












5-Min Count Period Beginning At	SW Oberst Rd (Northbound)				SW Oberst Rd (Southbound)				SW Brookman Rd (Eastbound)				SW Brookman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	
7:05 AM	0	0	1	0	0	0	0	0	0	3	0	0	0	1	0	0	5	
7:10 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	1	1	0	8	
7:15 AM	0	0	0	0	1	0	0	0	0	9	0	0	0	5	0	0	15	
7:20 AM	0	0	0	0	0	0	0	0	0	9	0	0	0	3	0	0	12	
7:25 AM	0	0	1	0	0	0	0	0	0	11	1	0	0	5	0	0	18	
7:30 AM	0	0	1	0	0	0	0	0	0	10	0	0	1	5	0	0	17	
7:35 AM	1	0	1	0	0	0	0	0	0	8	0	0	0	5	0	0	15	
7:40 AM	0	0	0	0	0	0	0	0	0	16	0	0	0	7	0	0	23	
7:45 AM	0	0	0	0	0	0	0	0	0	16	0	0	0	7	0	0	23	
7:50 AM	1	0	0	0	0	0	0	0	0	10	0	0	0	7	0	0	18	
7:55 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	6	0	0	10	166
8:00 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	6	0	0	8	172
8:05 AM	0	0	0	0	1	0	0	0	0	4	0	0	0	3	0	0	8	175
8:10 AM	1	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	7	174
8:15 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	6	165
8:20 AM	0	0	1	0	0	0	0	0	0	2	0	0	0	2	0	0	5	158
8:25 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	1	0	0	8	148
8:30 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	6	137
8:35 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	6	128
8:40 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0	0	6	111
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	3	0	0	5	93
8:50 AM	0	0	0	0	1	0	0	0	0	3	0	0	0	2	0	0	6	81
8:55 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	76

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	0	0	0	0	0	0	0	168	0	0	0	84	0	0	256
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	8	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/23/2017 9:22 AM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Ladd Hill Rd -- SW Brookman Rd

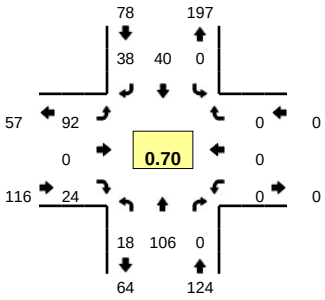
CITY/STATE: Sherwood, OR

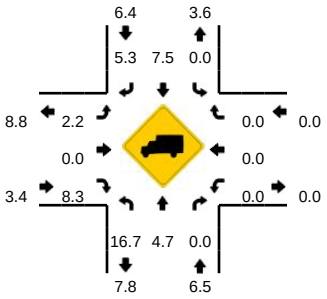
QC JOB #: 14401715

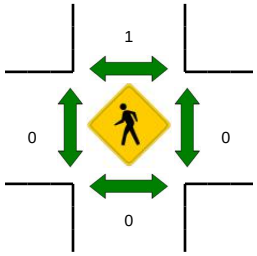
DATE: Thu, May 11 2017

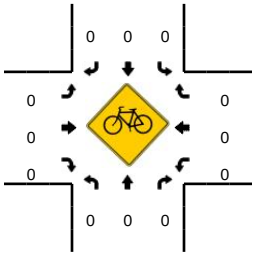
Peak-Hour: 7:10 AM -- 8:10 AM

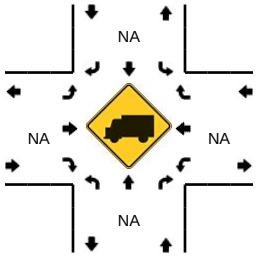
Peak 15-Min: 7:40 AM -- 7:55 AM

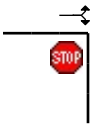


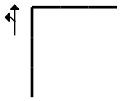


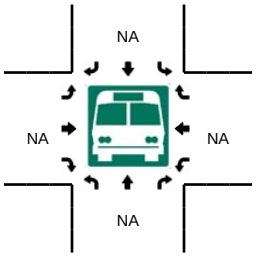












5-Min Count Period Beginning At	SW Ladd Hill Rd (Northbound)				SW Ladd Hill Rd (Southbound)				SW Brookman Rd (Eastbound)				SW Brookman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	2	0	0	0	0	0	0	2	0	1	0	0	0	0	0	5	
7:05 AM	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	6	
7:10 AM	1	7	0	0	0	3	2	0	7	0	2	0	0	0	0	0	22	
7:15 AM	0	5	0	0	0	3	3	0	5	0	3	0	0	0	0	0	19	
7:20 AM	2	8	0	0	0	1	1	0	4	0	3	0	0	0	0	0	19	
7:25 AM	1	4	0	0	0	2	4	0	4	0	1	0	0	0	0	0	16	
7:30 AM	3	12	0	0	0	5	2	0	13	0	3	0	0	0	0	0	38	
7:35 AM	3	8	0	0	0	0	2	0	10	0	2	0	0	0	0	0	25	
7:40 AM	0	17	0	0	0	5	5	0	10	0	3	1	0	0	0	0	41	
7:45 AM	2	12	0	0	0	2	5	0	13	0	2	0	0	0	0	0	36	
7:50 AM	5	9	0	0	0	4	4	0	13	0	1	0	0	0	0	0	36	
7:55 AM	1	11	0	0	0	6	3	0	5	0	4	0	0	0	0	0	30	293
8:00 AM	0	5	0	0	0	6	2	0	2	0	0	0	0	0	0	0	15	303
8:05 AM	0	8	0	0	0	3	5	0	5	0	0	0	0	0	0	0	21	318
8:10 AM	0	7	0	0	0	5	0	0	4	0	1	0	0	0	0	0	17	313
8:15 AM	0	7	0	0	0	1	1	0	3	0	1	0	0	0	0	0	13	307
8:20 AM	1	3	0	0	0	3	0	0	2	0	2	0	0	0	0	0	11	299
8:25 AM	0	5	0	0	0	3	3	0	6	0	1	0	0	0	0	0	18	301
8:30 AM	0	2	0	0	0	4	0	0	4	0	0	0	0	0	0	0	10	273
8:35 AM	0	5	0	0	0	6	3	0	1	0	0	0	0	0	0	0	15	263
8:40 AM	2	3	0	0	0	5	2	0	3	0	2	0	0	0	0	0	17	239
8:45 AM	0	4	0	0	0	5	3	0	0	0	1	0	0	0	0	0	13	216
8:50 AM	1	4	0	0	0	4	1	0	1	0	1	0	0	0	0	0	12	192
8:55 AM	1	7	0	0	0	6	0	0	5	0	0	0	0	0	0	0	19	181

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	152	0	0	0	44	56	0	144	0	24	4	0	0	0	0	452
Heavy Trucks	0	0	0		0	0	8		0	0	4		0	0	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/19/2017 4:01 PM

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

Type of peak hour being reported: Intersection Peak

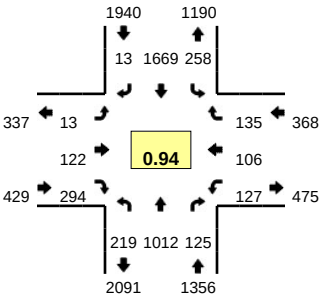
Method for determining peak hour: Total Entering Volume

LOCATION: SW Pacific Hwy -- SW Elwert Rd/SW Sunset Blvd

QC JOB #: 14401718

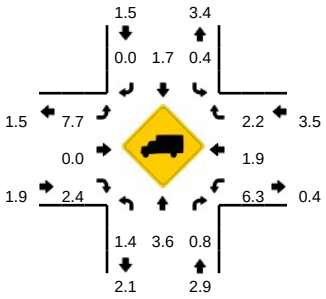
CITY/STATE: Sherwood, OR

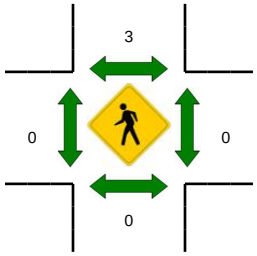
DATE: Thu, May 11 2017

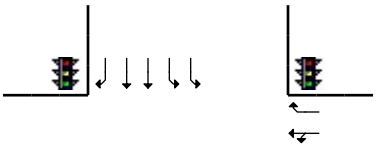


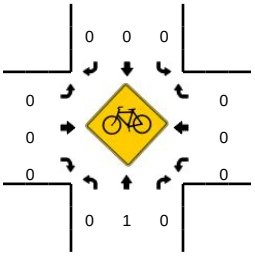
Peak-Hour: 4:40 PM -- 5:40 PM

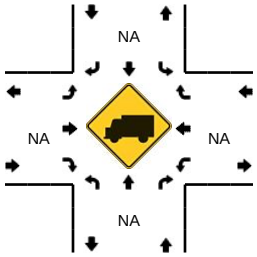
Peak 15-Min: 5:10 PM -- 5:25 PM

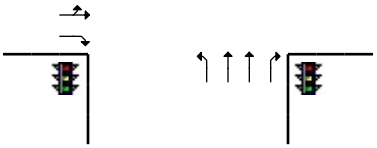


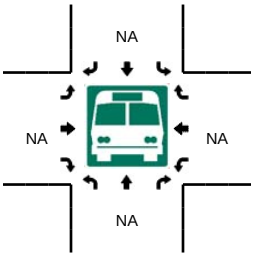












5-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Elwert Rd/SW Sunset Blvd (Eastbound)				SW Elwert Rd/SW Sunset Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	15	71	6	1	11	141	3	4	3	11	27	0	10	6	6	0	315	
4:05 PM	4	62	14	0	14	154	0	1	0	12	26	0	7	5	11	0	310	
4:10 PM	12	76	3	0	11	132	0	2	0	10	27	0	9	8	10	0	300	
4:15 PM	13	96	13	1	10	111	3	3	1	7	25	0	11	8	15	0	317	
4:20 PM	16	91	13	1	13	149	0	5	0	12	18	0	13	7	11	0	349	
4:25 PM	13	82	5	0	12	140	2	3	1	9	21	0	12	10	16	0	326	
4:30 PM	22	73	10	0	12	110	3	2	0	11	28	0	6	7	11	0	295	
4:35 PM	16	82	8	0	19	121	2	6	0	11	26	0	10	8	11	0	320	
4:40 PM	24	100	17	1	13	129	1	2	0	7	29	0	12	8	9	0	352	
4:45 PM	23	79	9	0	19	136	0	3	1	7	22	0	11	19	15	0	344	
4:50 PM	22	87	11	0	22	124	1	3	2	12	27	0	11	10	12	0	344	
4:55 PM	14	78	16	0	25	136	1	1	2	6	28	0	12	8	18	0	345	3917
5:00 PM	19	77	8	0	10	117	0	5	2	11	29	0	9	11	10	0	308	3910
5:05 PM	13	63	8	0	16	153	2	2	0	12	22	0	17	6	16	0	330	3930
5:10 PM	16	80	9	0	22	158	0	0	1	13	23	0	13	4	10	0	349	3979
5:15 PM	15	95	17	0	14	157	2	2	5	7	22	0	11	10	8	0	365	4027
5:20 PM	14	108	4	0	25	154	1	4	0	12	22	0	12	9	12	0	377	4055
5:25 PM	22	75	7	0	16	142	1	5	0	13	24	0	6	8	7	0	326	4055
5:30 PM	21	93	11	0	25	110	2	1	0	9	27	0	7	6	11	0	323	4083
5:35 PM	15	77	8	0	21	153	2	2	0	13	19	0	6	7	7	0	330	4093
5:40 PM	17	89	9	0	21	131	0	7	0	10	25	0	4	8	8	0	329	4070
5:45 PM	17	88	13	0	8	136	3	1	1	5	26	0	7	8	11	0	324	4050
5:50 PM	19	87	15	0	22	134	0	3	1	11	25	0	10	5	11	0	343	4049
5:55 PM	17	64	8	0	31	134	4	2	0	12	15	0	11	6	11	0	315	4019

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	180	1132	120	0	244	1876	12	24	24	128	268	0	144	92	120	0	4364
Heavy Trucks	8	40	4		0	20	0		4	0	8		8	0	0		92
Pedestrians		0				8				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/19/2017 4:01 PM

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

Type of peak hour being reported: Intersection Peak

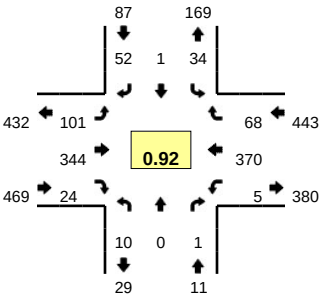
Method for determining peak hour: Total Entering Volume

LOCATION: SW Woodhaven Dr -- SW Sunset Blvd

CITY/STATE: Sherwood, OR

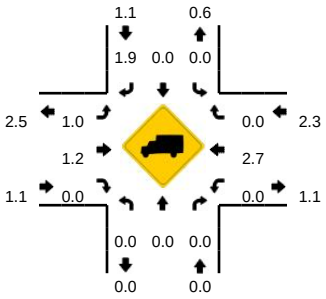
QC JOB #: 14538802

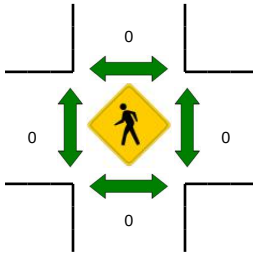
DATE: Thu, Oct 12 2017

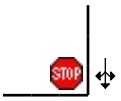


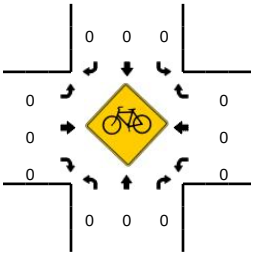
Peak-Hour: 4:45 PM -- 5:45 PM

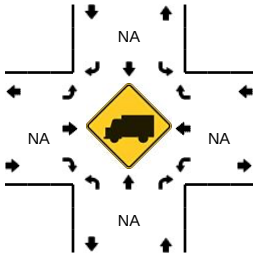
Peak 15-Min: 5:15 PM -- 5:30 PM

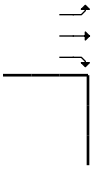


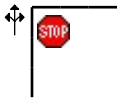


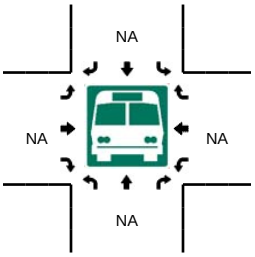












5-Min Count Period Beginning At	SW Woodhaven Dr (Northbound)				SW Woodhaven Dr (Southbound)				SW Sunset Blvd (Eastbound)				SW Sunset Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	2	0	3	0	8	20	1	0	0	20	2	0	56	
4:05 PM	0	2	1	0	4	0	3	0	7	19	1	0	0	21	3	0	61	
4:10 PM	0	0	0	0	1	0	6	0	3	19	1	0	0	19	3	0	52	
4:15 PM	0	0	0	0	3	0	2	0	6	20	1	0	2	33	5	0	72	
4:20 PM	0	0	0	0	2	0	2	0	3	18	1	0	0	25	3	0	54	
4:25 PM	1	0	0	0	4	0	3	0	7	15	0	0	0	22	6	0	58	
4:30 PM	0	0	0	0	3	0	3	0	6	20	2	0	0	26	0	0	60	
4:35 PM	0	0	1	0	2	0	2	0	9	30	0	0	1	22	1	0	68	
4:40 PM	1	0	0	0	4	0	5	0	5	24	2	1	1	27	3	0	73	
4:45 PM	1	0	0	0	5	0	2	0	8	24	3	0	1	31	5	0	80	
4:50 PM	3	0	0	0	3	0	6	0	10	21	1	0	0	28	4	1	77	
4:55 PM	1	0	1	0	1	0	1	0	5	28	1	0	1	28	10	0	77	788
5:00 PM	1	0	0	0	1	0	6	0	11	35	2	0	1	26	4	0	87	819
5:05 PM	0	0	0	0	2	0	5	0	10	34	3	0	1	30	5	0	90	848
5:10 PM	0	0	0	0	4	0	5	0	3	21	1	0	0	29	7	0	70	866
5:15 PM	1	0	0	0	2	0	4	0	8	26	4	0	0	42	3	0	90	884
5:20 PM	0	0	0	0	2	0	2	0	9	40	1	0	0	35	9	0	98	928
5:25 PM	1	0	0	0	7	1	9	0	8	25	3	0	0	27	4	0	85	955
5:30 PM	2	0	0	0	1	0	2	0	10	31	2	0	0	30	6	0	84	979
5:35 PM	0	0	0	0	4	0	4	0	8	28	2	0	0	35	3	0	84	995
5:40 PM	0	0	0	0	2	0	6	0	11	31	1	0	0	29	8	0	88	1010
5:45 PM	0	0	0	0	3	0	6	0	9	17	2	0	0	21	9	0	67	997
5:50 PM	2	0	0	0	0	0	7	0	9	17	2	0	0	28	6	0	71	991
5:55 PM	0	0	0	0	3	0	4	0	9	32	2	0	0	16	3	0	69	983

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	0	0	0	44	4	60	0	100	364	32	0	0	416	64	0	1092
Heavy Trucks	0	0	0		0	0	4		0	0	0		0	20	0		24
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/31/2017 8:48 AM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Timbrel Ln -- SW Sunset Blvd

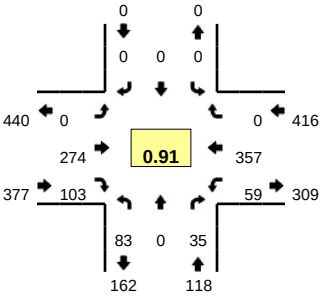
CITY/STATE: Sherwood, OR

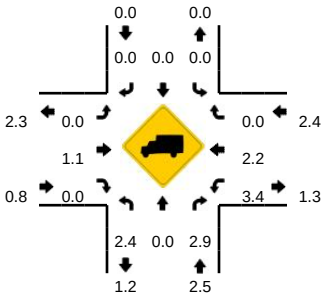
QC JOB #: 14538804

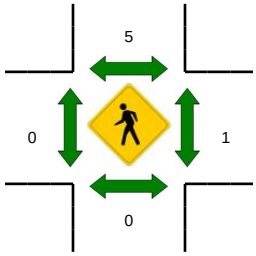
DATE: Thu, Oct 12 2017

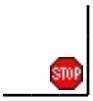
Peak-Hour: 4:45 PM -- 5:45 PM

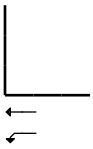
Peak 15-Min: 5:15 PM -- 5:30 PM

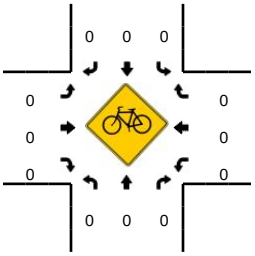


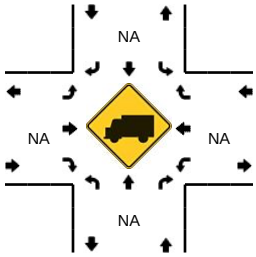


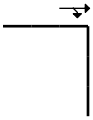


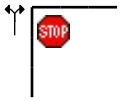


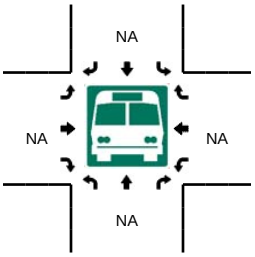












5-Min Count Period Beginning At	SW Timbrel Ln (Northbound)				SW Timbrel Ln (Southbound)				SW Sunset Blvd (Eastbound)				SW Sunset Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	5	0	2	0	0	0	0	0	0	15	5	0	1	17	0	0	45	
4:05 PM	6	0	0	0	0	0	0	0	0	21	5	0	0	16	0	0	48	
4:10 PM	1	0	1	0	0	0	0	0	0	13	9	0	5	24	0	0	53	
4:15 PM	10	0	1	0	0	0	0	0	0	21	3	0	4	26	0	0	65	
4:20 PM	12	0	7	0	0	0	0	0	0	18	3	0	2	18	0	0	60	
4:25 PM	9	0	4	0	0	0	0	0	0	15	5	0	4	21	0	0	58	
4:30 PM	5	0	4	0	0	0	0	0	0	16	6	0	4	21	0	0	56	
4:35 PM	4	0	2	0	0	0	0	0	0	25	8	0	4	22	0	0	65	
4:40 PM	3	0	4	0	0	0	0	0	0	20	10	0	3	29	0	0	69	
4:45 PM	14	0	1	0	0	0	0	0	0	17	12	0	4	21	0	0	69	
4:50 PM	7	0	2	0	0	0	0	0	0	17	8	0	5	25	0	0	64	
4:55 PM	10	0	2	0	0	0	0	0	0	27	2	0	4	34	0	0	79	731
5:00 PM	3	0	5	0	0	0	0	0	0	24	12	0	6	25	0	0	75	761
5:05 PM	4	0	2	0	0	0	0	0	0	33	3	0	8	32	0	0	82	795
5:10 PM	8	0	1	0	0	0	0	0	0	15	11	0	4	29	0	0	68	810
5:15 PM	6	0	3	0	0	0	0	0	0	18	10	0	8	37	0	0	82	827
5:20 PM	8	0	6	0	0	0	0	0	0	31	7	0	4	38	0	0	94	861
5:25 PM	4	0	5	0	0	0	0	0	0	22	13	0	3	26	0	0	73	876
5:30 PM	7	0	2	0	0	0	0	0	0	25	7	0	7	27	0	0	75	895
5:35 PM	7	0	4	0	0	0	0	0	0	24	5	0	3	32	0	0	75	905
5:40 PM	5	0	2	0	0	0	0	0	0	21	13	0	3	31	0	0	75	911
5:45 PM	6	0	1	0	0	0	0	0	0	14	4	0	4	23	0	0	52	894
5:50 PM	9	0	1	0	0	0	0	0	0	13	7	0	6	26	0	0	62	892
5:55 PM	3	0	1	0	0	0	0	0	0	22	7	0	3	15	0	0	51	864

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	72	0	56	0	0	0	0	0	0	284	120	0	60	404	0	0	996
Heavy Trucks	4	0	4		0	0	0		0	0	0		0	16	0		24
Pedestrians		0				4				0				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/31/2017 8:48 AM

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

Type of peak hour being reported: User-Defined

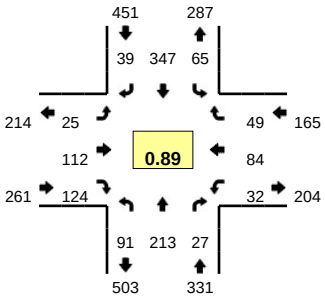
Method for determining peak hour: Total Entering Volume

LOCATION: SW Main St/SW Ladd Hill Rd -- SW Sunset Blvd

QC JOB #: 14487602

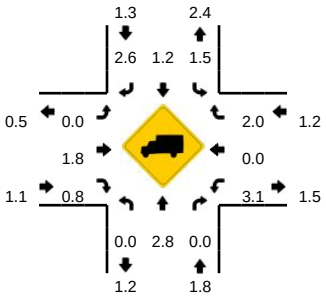
CITY/STATE: Sherwood, OR

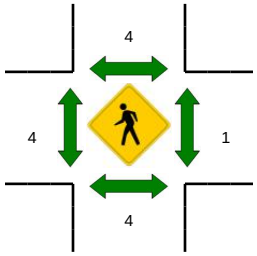
DATE: Tue, Sep 12 2017

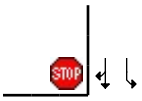


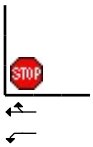
Peak-Hour: 4:40 PM -- 5:40 PM

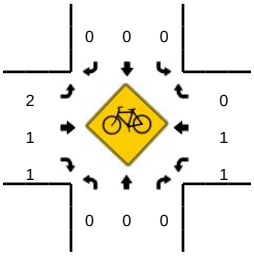
Peak 15-Min: 5:15 PM -- 5:30 PM

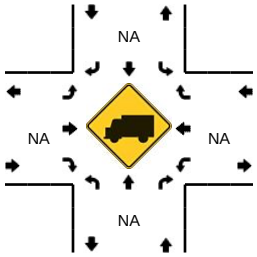


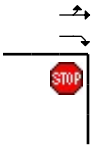


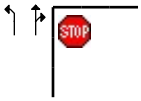


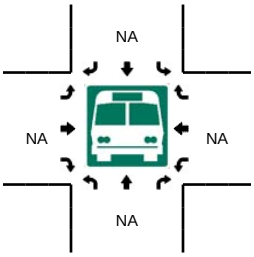












5-Min Count Period Beginning At	SW Main St/SW Ladd Hill Rd (Northbound)				SW Main St/SW Ladd Hill Rd (Southbound)				SW Sunset Blvd (Eastbound)				SW Sunset Blvd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	12	3	0	5	22	2	0	1	5	8	0	3	3	2	0	68	
4:05 PM	5	10	2	0	7	18	1	0	3	5	14	0	4	4	3	0	76	
4:10 PM	6	10	2	0	1	25	2	0	3	7	9	0	3	5	3	0	76	
4:15 PM	1	8	3	0	6	19	2	0	3	6	8	0	2	3	1	0	62	
4:20 PM	7	14	3	0	6	21	2	0	1	3	8	0	2	3	2	1	73	
4:25 PM	6	13	1	0	5	20	3	0	4	4	7	0	3	5	4	0	75	
4:30 PM	10	14	2	0	9	31	4	0	0	5	5	0	2	4	3	0	89	
4:35 PM	2	15	3	0	5	24	3	0	1	7	12	0	2	3	4	0	81	
4:40 PM	3	14	1	0	3	35	6	0	2	10	8	0	4	5	3	0	94	
4:45 PM	2	26	2	0	6	27	4	0	4	10	9	0	2	8	4	0	104	
4:50 PM	10	15	3	0	3	36	2	0	1	6	13	0	1	4	6	0	100	
4:55 PM	3	17	2	0	5	34	4	0	0	10	8	0	3	7	3	0	96	994
5:00 PM	6	17	4	0	6	26	3	0	2	7	10	0	3	12	3	0	99	1025
5:05 PM	6	13	2	0	5	28	7	0	2	10	14	0	2	5	9	0	103	1052
5:10 PM	5	22	2	0	6	23	0	0	1	11	12	0	2	3	4	0	91	1067
5:15 PM	13	18	4	0	5	26	3	0	1	9	10	0	5	9	2	0	105	1110
5:20 PM	13	27	0	0	9	34	2	0	4	12	12	0	3	8	1	0	125	1162
5:25 PM	17	14	1	0	8	29	1	0	5	8	13	0	1	11	1	0	109	1196
5:30 PM	7	17	5	0	2	27	2	0	2	8	11	0	1	6	6	0	94	1201
5:35 PM	6	13	1	0	7	22	5	0	1	11	4	0	5	6	7	0	88	1208
5:40 PM	12	20	2	0	3	19	2	0	1	10	7	0	1	3	2	0	82	1196
5:45 PM	6	22	1	0	2	20	4	0	3	5	9	0	5	5	5	0	87	1179
5:50 PM	6	11	1	0	2	30	2	0	2	10	10	0	4	7	1	0	86	1165
5:55 PM	9	22	0	0	4	23	4	0	2	10	13	0	5	4	3	0	99	1168

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	172	236	20	0	88	356	24	0	40	116	140	0	36	112	16	0	1356
Heavy Trucks	0	12	0		0	0	0		0	4	0		4	0	0		20
Pedestrians		0				12				0				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	1	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 2/23/2018 2:12 PM

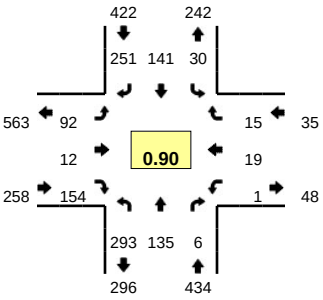
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

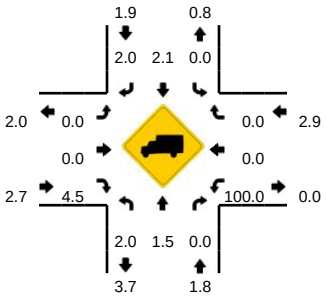
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: SW Murdock Rd/SW Baker Rd -- SW Sunset Blvd/McKinley Dr | **QC JOB #:** 14548502

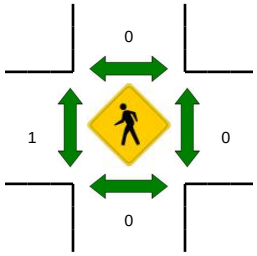
CITY/STATE: Sherwood, OR | **DATE:** Wed, Oct 25 2017

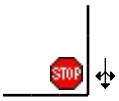
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

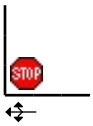


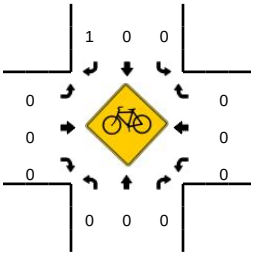


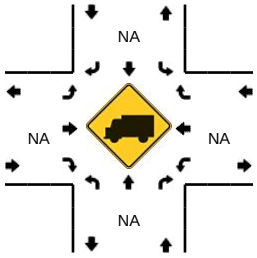
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

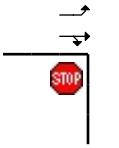


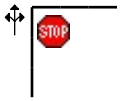


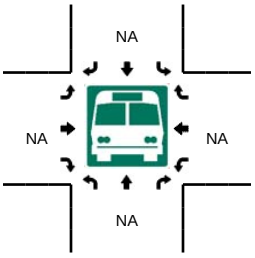












5-Min Count Period Beginning At	SW Murdock Rd/SW Baker Rd (Northbound)				SW Murdock Rd/SW Baker Rd (Southbound)				SW Sunset Blvd/McKinley Dr (Eastbound)				SW Sunset Blvd/McKinley Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	16	9	0	0	1	8	14	0	10	0	10	0	0	2	1	0	71	
4:05 PM	13	11	0	0	2	10	17	0	8	2	12	0	0	0	0	0	75	
4:10 PM	16	11	0	0	4	11	18	0	4	3	9	0	0	0	0	0	76	
4:15 PM	21	6	0	0	3	8	16	0	9	0	7	0	0	1	0	0	71	
4:20 PM	14	7	1	0	1	15	23	0	8	0	9	0	0	0	1	0	79	
4:25 PM	24	6	1	0	1	5	12	0	7	1	2	0	0	0	0	0	59	
4:30 PM	19	12	0	0	1	13	10	0	6	0	16	0	0	1	0	0	78	
4:35 PM	14	8	0	0	1	14	18	0	7	0	13	0	0	0	0	0	75	
4:40 PM	24	11	1	0	1	11	16	0	2	0	10	0	0	0	0	0	76	
4:45 PM	25	13	0	0	0	17	28	0	12	0	9	0	0	2	1	0	107	
4:50 PM	26	12	0	0	2	11	27	0	6	1	17	0	0	2	3	0	107	
4:55 PM	25	14	1	0	3	8	26	0	11	1	10	0	0	1	2	0	102	976
5:00 PM	14	9	1	0	1	12	14	0	5	0	11	0	0	1	3	0	71	976
5:05 PM	25	13	0	0	5	11	19	0	9	1	17	0	0	2	0	0	102	1003
5:10 PM	34	14	1	0	5	14	15	0	6	2	16	0	1	4	0	0	112	1039
5:15 PM	19	14	0	0	5	14	22	0	9	0	16	0	0	2	3	0	104	1072
5:20 PM	29	4	1	0	0	6	20	0	4	3	10	0	0	1	1	0	79	1072
5:25 PM	27	6	0	0	5	14	17	0	10	2	14	0	0	0	0	0	95	1108
5:30 PM	20	12	1	0	2	12	21	0	9	0	16	0	0	1	2	0	96	1126
5:35 PM	23	10	1	0	1	9	20	0	5	1	7	0	0	1	0	0	78	1129
5:40 PM	26	14	0	0	1	13	22	0	6	1	11	0	0	2	0	0	96	1149
5:45 PM	21	11	0	0	0	15	16	0	6	0	10	0	0	0	2	0	81	1123
5:50 PM	20	7	0	0	3	8	16	0	9	2	10	0	0	0	0	0	75	1091
5:55 PM	15	9	0	0	2	9	20	0	6	1	8	0	0	0	2	0	72	1061

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	312	164	4	0	60	156	224	0	96	12	196	0	4	32	12	0	1272
Heavy Trucks	8	0	0		0	8	0		0	0	8		4	0	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	1		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/31/2017 3:00 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

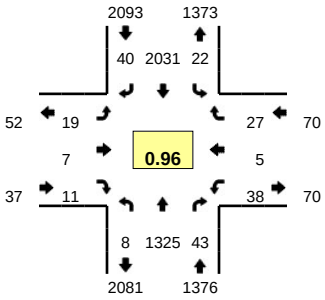
LOCATION: SW Pacific Hwy -- SW Chapman Rd

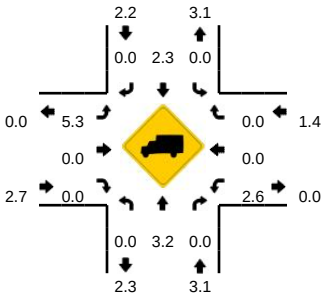
CITY/STATE: Sherwood, OR

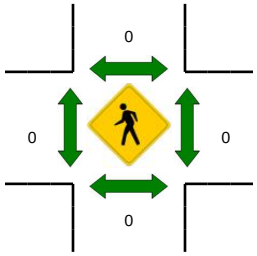
QC JOB #: 14401707

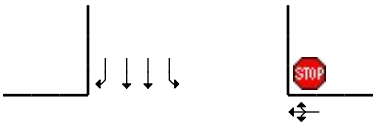
DATE: Thu, May 11 2017

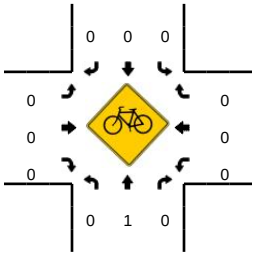
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:10 PM -- 5:25 PM

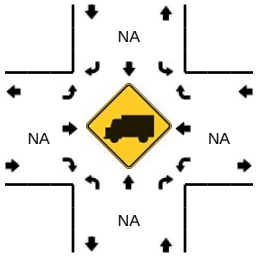


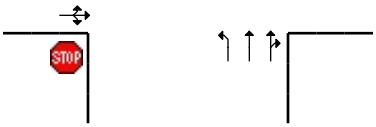


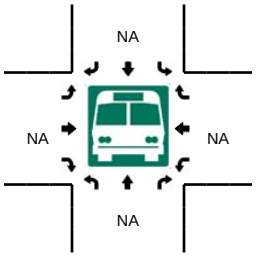












5-Min Count Period Beginning At	SW Pacific Hwy (Northbound)				SW Pacific Hwy (Southbound)				SW Chapman Rd (Eastbound)				SW Chapman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	89	1	0	1	184	2	0	1	1	0	0	2	0	0	0	281	
4:05 PM	0	72	6	1	0	166	3	0	0	0	1	0	5	0	0	0	254	
4:10 PM	1	103	2	1	1	160	1	0	1	0	1	0	3	0	1	0	275	
4:15 PM	0	126	4	0	1	163	4	0	4	0	0	0	4	0	2	0	308	
4:20 PM	0	124	1	0	1	153	1	0	1	0	0	0	4	0	0	0	285	
4:25 PM	1	92	5	0	1	172	4	0	1	0	0	0	4	0	2	0	282	
4:30 PM	1	102	2	0	3	149	0	0	0	0	0	0	4	0	2	0	263	
4:35 PM	2	114	0	0	1	153	3	0	2	2	0	0	1	0	4	0	282	
4:40 PM	0	117	2	0	3	149	4	0	5	1	3	0	6	0	4	0	294	
4:45 PM	0	108	2	0	0	176	3	0	3	1	1	0	3	0	5	0	302	
4:50 PM	0	117	5	0	2	177	4	0	0	1	1	0	4	1	1	0	313	
4:55 PM	2	121	3	0	1	173	5	0	0	0	1	0	1	0	3	0	310	3449
5:00 PM	0	102	6	0	4	159	1	1	0	0	2	0	3	0	1	0	279	3447
5:05 PM	0	91	2	0	2	183	3	0	1	0	1	0	0	1	0	0	284	3477
5:10 PM	0	110	6	0	4	187	2	1	4	0	0	0	5	0	1	0	320	3522
5:15 PM	2	119	3	0	1	189	5	0	0	1	1	0	2	1	1	0	325	3539
5:20 PM	1	107	1	1	0	161	3	0	2	0	0	0	6	0	5	0	287	3541
5:25 PM	0	114	6	0	2	177	5	0	1	0	1	0	4	0	0	0	310	3569
5:30 PM	0	105	7	0	0	147	2	0	1	1	0	0	3	2	2	0	270	3576
5:35 PM	0	100	0	0	1	164	2	1	1	0	1	0	4	1	2	0	277	3571
5:40 PM	0	132	4	0	0	156	2	0	1	0	1	0	0	0	1	0	297	3574
5:45 PM	0	114	4	0	0	149	1	0	4	0	0	0	5	0	2	0	279	3551
5:50 PM	0	93	3	0	3	158	1	0	0	4	0	0	5	1	1	0	269	3507
5:55 PM	0	82	3	0	2	151	0	0	1	2	0	0	5	0	1	0	247	3444

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	12	1344	40	4	20	2148	40	4	24	4	4	0	52	4	28	0	3728
Heavy Trucks	0	44	0		0	40	0		0	0	0		0	0	0		84
Pedestrians		0				0				0				0			0
Bicycles	0	1	0		0	0	0		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/19/2017 4:01 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

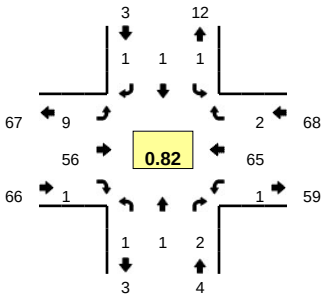
LOCATION: SW Old Hwy 99W -- SW Brookman Rd

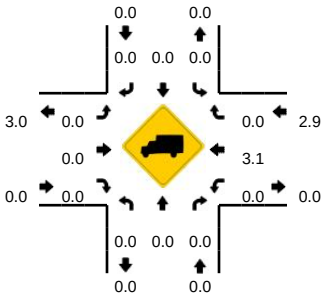
QC JOB #: 14401710

CITY/STATE: Sherwood, OR

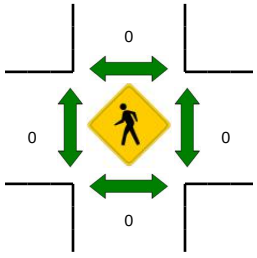
DATE: Thu, May 11 2017

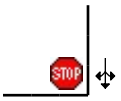
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

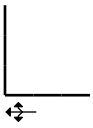


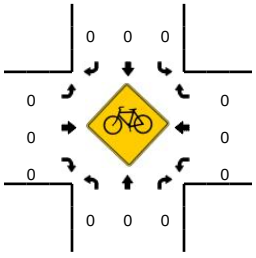


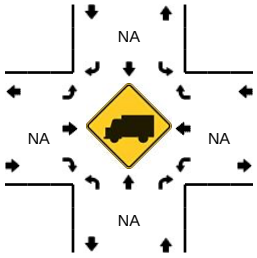
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

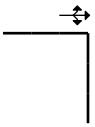


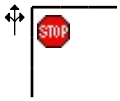


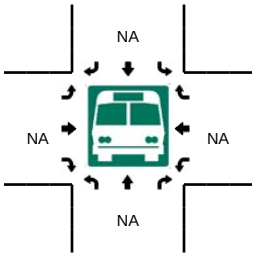












5-Min Count Period Beginning At	SW Old Hwy 99W (Northbound)				SW Old Hwy 99W (Southbound)				SW Brookman Rd (Eastbound)				SW Brookman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	4	
4:05 PM	0	0	1	0	0	0	0	0	0	6	0	0	1	5	0	0	13	
4:10 PM	0	0	0	0	1	0	0	0	0	3	0	0	0	4	0	0	8	
4:15 PM	0	0	0	0	1	0	2	0	2	4	0	0	0	3	0	0	12	
4:20 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5	
4:25 PM	0	0	0	0	0	0	0	0	1	2	0	0	0	5	0	0	8	
4:30 PM	0	0	0	0	0	0	1	0	1	4	0	0	0	3	0	0	9	
4:35 PM	0	0	0	0	0	0	0	0	0	1	0	0	1	3	1	0	6	
4:40 PM	0	0	0	0	0	0	1	0	1	3	0	0	0	9	0	0	14	
4:45 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	0	9	
4:50 PM	0	0	0	0	1	0	0	0	1	5	0	0	0	5	0	0	12	
4:55 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	6	0	0	11	111
5:00 PM	0	0	0	0	0	1	0	0	4	4	1	0	0	5	0	0	15	122
5:05 PM	0	0	2	0	0	0	0	0	0	6	0	0	0	2	0	0	10	119
5:10 PM	0	1	0	0	0	0	0	0	0	8	0	0	0	4	1	0	14	125
5:15 PM	0	0	0	0	0	0	0	0	2	5	0	0	0	12	0	0	19	132
5:20 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	6	0	0	8	135
5:25 PM	1	0	0	0	0	0	0	0	0	7	0	0	0	2	0	0	10	137
5:30 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	6	0	0	13	141
5:35 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5	140
5:40 PM	0	0	0	0	0	0	0	0	0	4	0	0	1	1	0	0	6	132
5:45 PM	0	0	0	0	0	0	0	0	1	4	0	0	0	7	0	0	12	135
5:50 PM	0	0	0	0	0	0	0	0	1	7	0	0	0	6	0	0	14	137
5:55 PM	0	0	0	0	0	0	0	0	1	5	0	0	0	5	0	0	11	137

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	8	0	0	0	0	0	8	76	0	0	0	72	4	0	172
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/19/2017 4:01 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Middleton Rd -- SW Brookman Rd

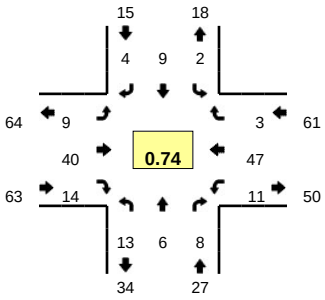
CITY/STATE: Sherwood, OR

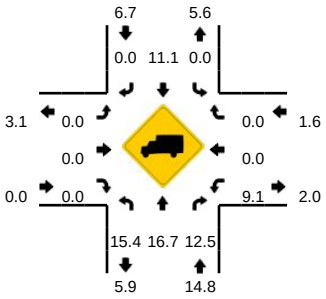
QC JOB #: 14401712

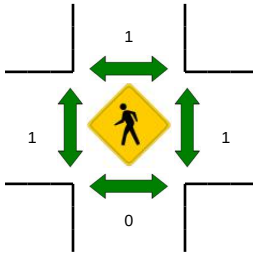
DATE: Thu, May 11 2017

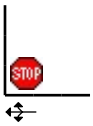
Peak-Hour: 5:00 PM -- 6:00 PM

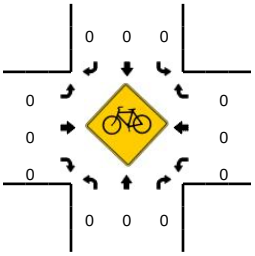
Peak 15-Min: 5:05 PM -- 5:20 PM

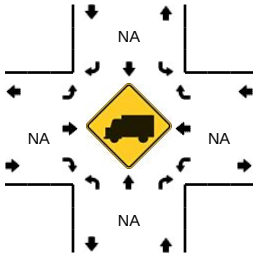


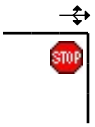


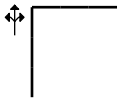


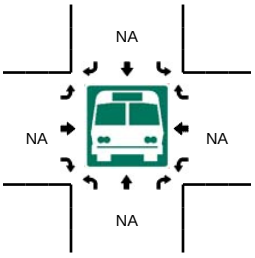












5-Min Count Period Beginning At	SW Middleton Rd (Northbound)				SW Middleton Rd (Southbound)				SW Brookman Rd (Eastbound)				SW Brookman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	1	0	0	0	0	1	0	0	0	2	0	0	4	
4:05 PM	0	0	0	0	0	2	1	0	0	7	0	0	0	4	0	0	14	
4:10 PM	1	0	1	0	0	0	0	0	1	3	0	0	0	3	0	0	9	
4:15 PM	3	0	0	0	0	0	0	0	1	3	1	0	0	1	0	0	9	
4:20 PM	0	0	1	0	0	0	0	0	0	1	0	0	0	4	0	0	6	
4:25 PM	0	0	0	0	0	0	0	0	0	2	0	0	1	5	0	0	8	
4:30 PM	0	0	0	0	0	0	0	0	0	1	2	0	0	2	0	0	5	
4:35 PM	0	0	1	0	1	0	0	0	0	2	0	0	0	4	1	0	9	
4:40 PM	3	0	0	0	0	0	0	0	0	2	0	0	0	7	0	0	12	
4:45 PM	1	0	0	0	2	0	2	0	1	2	1	0	1	4	0	0	14	
4:50 PM	2	0	0	0	0	1	1	0	0	6	1	0	1	2	1	0	15	
4:55 PM	0	0	0	0	0	0	0	0	0	5	0	0	1	3	0	0	9	114
5:00 PM	2	0	1	0	0	0	1	0	0	4	0	0	0	2	0	0	10	120
5:05 PM	0	0	1	0	0	1	0	0	0	7	1	0	1	3	0	0	14	120
5:10 PM	1	1	1	0	1	3	0	0	0	4	1	0	0	5	0	0	17	128
5:15 PM	2	2	0	0	0	1	0	0	1	4	3	0	2	10	0	0	25	144
5:20 PM	2	0	1	0	0	0	0	0	0	0	0	0	3	3	1	0	10	148
5:25 PM	0	0	1	0	0	0	0	0	2	5	1	0	0	3	0	0	12	152
5:30 PM	1	1	0	0	0	0	1	0	3	3	1	0	0	5	0	0	15	162
5:35 PM	1	0	1	0	0	1	0	0	0	1	1	0	1	2	0	0	8	161
5:40 PM	2	1	1	0	0	2	0	0	1	1	0	0	2	1	1	0	12	161
5:45 PM	1	1	1	0	0	0	2	0	2	3	1	0	1	3	1	0	16	163
5:50 PM	0	0	0	0	1	0	0	0	0	4	3	0	1	7	0	0	16	164
5:55 PM	1	0	0	0	0	1	0	0	0	4	2	0	0	3	0	0	11	166

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	12	12	8	0	4	20	0	0	4	60	20	0	12	72	0	0	224
Heavy Trucks	0	0	4		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/19/2017 4:01 PM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: SW Oberst Rd -- SW Brookman Rd

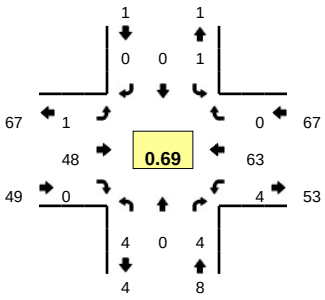
CITY/STATE: Sherwood, OR

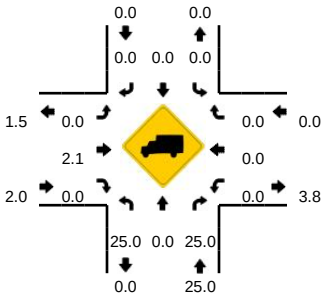
QC JOB #: 14401714

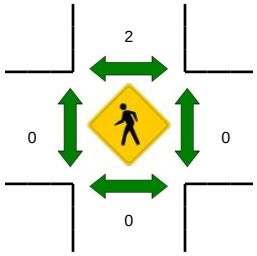
DATE: Thu, May 11 2017

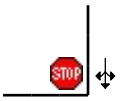
Peak-Hour: 4:55 PM -- 5:55 PM

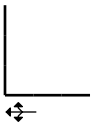
Peak 15-Min: 5:05 PM -- 5:20 PM

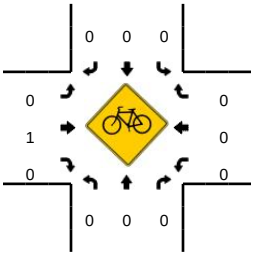


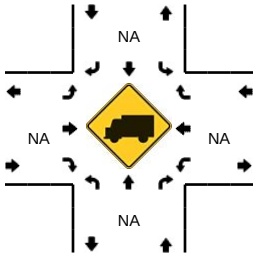


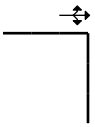


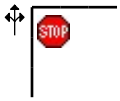


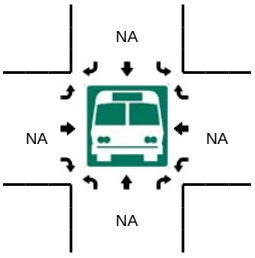












5-Min Count Period Beginning At	SW Oberst Rd (Northbound)				SW Oberst Rd (Southbound)				SW Brookman Rd (Eastbound)				SW Brookman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4	
4:05 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	6	0	0	12	
4:10 PM	0	0	0	0	0	0	0	0	0	3	1	0	0	2	0	0	6	
4:15 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	0	4	
4:20 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0	0	8	
4:25 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	5	1	0	8	
4:30 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	4	0	0	6	
4:35 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0	0	8	
4:40 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	6	0	0	9	
4:45 PM	1	0	0	0	0	0	0	0	0	1	1	0	0	6	0	0	9	
4:50 PM	0	0	0	0	0	0	0	0	0	7	1	0	1	2	0	0	11	
4:55 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	5	0	0	9	94
5:00 PM	1	0	1	0	0	0	0	0	0	3	0	0	0	3	0	0	8	98
5:05 PM	0	0	0	0	0	0	0	0	1	7	0	0	0	4	0	0	12	98
5:10 PM	0	0	0	0	0	0	0	0	0	7	0	0	3	4	0	0	14	106
5:15 PM	0	0	0	0	0	0	0	0	0	5	0	0	1	13	0	0	19	121
5:20 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	6	119
5:25 PM	0	0	1	0	0	0	0	0	0	5	0	0	0	3	0	0	9	120
5:30 PM	0	0	0	0	1	0	0	0	0	3	0	0	0	5	0	0	9	123
5:35 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0	0	8	123
5:40 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	6	120
5:45 PM	0	0	1	0	0	0	0	0	0	3	0	0	0	5	0	0	9	120
5:50 PM	1	0	1	0	0	0	0	0	0	5	0	0	0	9	0	0	16	125
5:55 PM	0	0	0	0	0	0	0	0	0	4	0	0	1	2	0	0	7	123

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	4	76	0	0	16	84	0	0	180
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/23/2017 9:22 AM

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

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

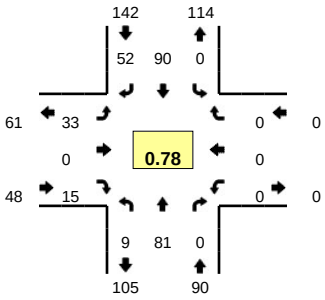
LOCATION: SW Ladd Hill Rd -- SW Brookman Rd

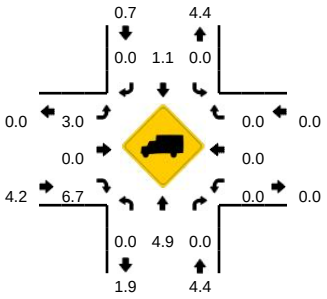
CITY/STATE: Sherwood, OR

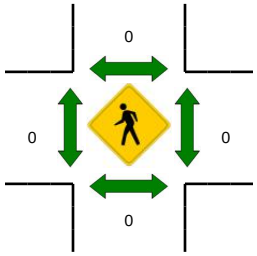
QC JOB #: 14401716

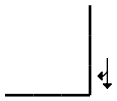
DATE: Thu, May 11 2017

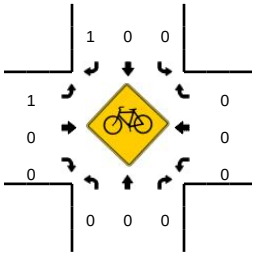
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

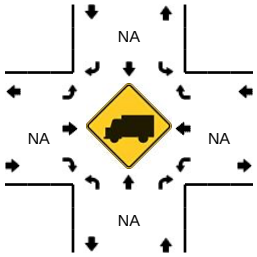


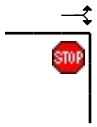


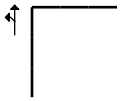


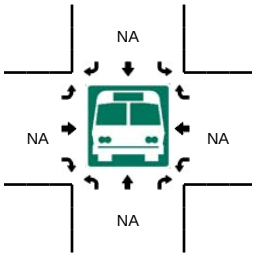












5-Min Count Period Beginning At	SW Ladd Hill Rd (Northbound)				SW Ladd Hill Rd (Southbound)				SW Brookman Rd (Eastbound)				SW Brookman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	7	0	0	0	6	3	0	1	0	1	0	0	0	0	0	18	
4:05 PM	2	4	0	0	0	3	4	0	2	0	2	0	0	0	0	0	17	
4:10 PM	1	6	0	0	0	4	0	0	4	0	1	0	0	0	0	0	16	
4:15 PM	1	5	0	0	0	10	0	0	2	0	1	0	0	0	0	0	19	
4:20 PM	2	7	0	0	0	3	5	0	2	0	1	0	0	0	0	0	20	
4:25 PM	1	10	0	0	0	4	6	0	0	0	0	0	0	0	0	0	21	
4:30 PM	2	4	0	0	0	5	1	0	1	0	1	0	0	0	0	0	14	
4:35 PM	1	7	0	0	0	5	2	0	2	0	0	0	0	0	0	0	17	
4:40 PM	2	4	0	0	0	5	4	0	2	0	0	0	0	0	0	0	17	
4:45 PM	2	9	0	0	0	8	3	0	1	0	2	0	0	0	0	0	25	
4:50 PM	1	1	0	0	0	7	4	0	2	0	1	0	0	0	0	0	16	
4:55 PM	0	8	0	0	0	6	5	0	4	0	1	0	0	0	0	0	24	224
5:00 PM	0	7	0	0	0	2	1	0	5	0	0	0	0	0	0	0	15	221
5:05 PM	1	10	0	0	0	11	7	0	2	0	1	0	0	0	0	0	32	236
5:10 PM	2	5	0	0	0	8	7	0	6	0	2	0	0	0	0	0	30	250
5:15 PM	2	9	0	0	0	5	6	0	3	0	3	0	0	0	0	0	28	259
5:20 PM	0	7	0	0	0	10	5	0	0	0	0	0	0	0	0	0	22	261
5:25 PM	1	5	0	0	0	14	4	0	3	0	1	0	0	0	0	0	28	268
5:30 PM	0	6	0	0	0	5	2	0	3	0	2	0	0	0	0	0	18	272
5:35 PM	0	5	0	0	0	5	4	0	2	0	1	0	0	0	0	0	17	272
5:40 PM	0	9	0	0	0	9	4	0	2	0	1	0	0	0	0	0	25	280
5:45 PM	1	3	0	0	0	5	9	0	3	0	1	0	0	0	0	0	22	277
5:50 PM	1	4	0	0	0	2	5	0	4	0	0	0	0	0	0	0	16	277
5:55 PM	0	4	0	0	0	9	2	0	5	0	2	0	0	0	0	0	22	275

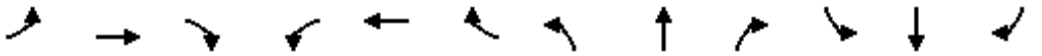
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	96	0	0	0	96	80	0	44	0	24	0	0	0	0	0	360
Heavy Trucks	0	4	0		0	4	0		4	0	4		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	1		0	0	0		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 5/19/2017 4:01 PM

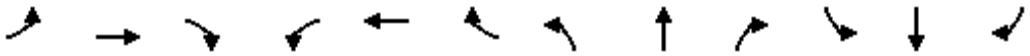
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix D Existing Conditions Level of Service Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	106	223	102	179	225	245	1580	106	128	766	13
Future Volume (vph)	18	106	223	102	179	225	245	1580	106	128	766	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-1%			2%	
Total Lost time (s)		6.0	6.0		6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	1.00	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
Frt		1.00	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		0.99	1.00		0.98	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1809	1583		1818	1553	1761	3489	1561	3180	3279	1361
Flt Permitted		0.91	1.00		0.79	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1667	1583		1471	1553	1761	3489	1561	3180	3279	1361
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)	19	112	235	107	188	237	258	1663	112	135	806	14
RTOR Reduction (vph)	0	0	171	0	0	109	0	0	27	0	0	8
Lane Group Flow (vph)	0	131	64	0	295	128	258	1663	85	135	806	6
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	5%	2%	2%	3%	4%	3%	4%	4%	9%	9%	15%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		35.0	35.0		35.0	35.0	23.8	65.1	65.1	11.2	52.5	52.5
Effective Green, g (s)		35.0	35.0		35.0	35.0	23.8	65.1	65.1	11.2	52.5	52.5
Actuated g/C Ratio		0.27	0.27		0.27	0.27	0.19	0.51	0.51	0.09	0.41	0.41
Clearance Time (s)		6.0	6.0		6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	5.4	5.4	3.5	5.4	5.4
Lane Grp Cap (vph)		454	431		401	423	326	1770	792	277	1341	556
v/s Ratio Prot							c0.15	c0.48		0.04	0.25	
v/s Ratio Perm		0.08	0.04		c0.20	0.08			0.05			0.00
v/c Ratio		0.29	0.15		0.74	0.30	0.79	0.94	0.11	0.49	0.60	0.01
Uniform Delay, d1		36.8	35.4		42.4	37.0	49.9	29.7	16.5	55.8	29.7	22.5
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		0.4	0.2		6.9	0.4	12.3	10.7	0.1	1.6	1.2	0.0
Delay (s)		37.2	35.5		49.3	37.4	62.2	40.4	16.6	57.4	30.9	22.5
Level of Service		D	D		D	D	E	D	B	E	C	C
Approach Delay (s)		36.1			44.0			41.9			34.5	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	39.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	128.3	Sum of lost time (s)	17.0
Intersection Capacity Utilization	83.2%	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)	51	238	41	7	410	86	17	14	10	27	44	67
Future Volume (Veh/h)	51	238	41	7	410	86	17	14	10	27	44	67
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	64	298	51	9	513	108	21	18	13	34	55	84
Pedestrians					5						3	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					3.5						3.5	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked												
vC, conflicting volume	624			349			1068	1068	303	1041	1065	570
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	624			349			1068	1068	303	1041	1065	570
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.5	4.0	3.3	3.6	4.0	3.3
p0 queue free %	93			99			83	91	98	80	73	84
cM capacity (veh/h)	926			1146			127	206	738	174	207	523

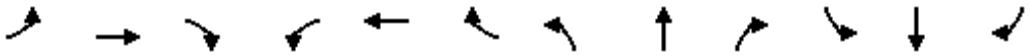
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	64	298	51	9	621	52	173
Volume Left	64	0	0	9	0	21	34
Volume Right	0	0	51	0	108	13	84
cSH	926	1700	1700	1146	1700	192	278
Volume to Capacity	0.07	0.18	0.03	0.01	0.37	0.27	0.62
Queue Length 95th (ft)	6	0	0	1	0	26	96
Control Delay (s)	9.2	0.0	0.0	8.2	0.0	30.6	37.1
Lane LOS	A			A		D	E
Approach Delay (s)	1.4			0.1		30.6	37.1
Approach LOS						D	E

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	48.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	208	67	71	321	182	45
Future Volume (Veh/h)	208	67	71	321	182	45
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	248	80	85	382	217	54
Pedestrians				21	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				2	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			329		841	310
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			329		841	310
tC, single (s)			4.2		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.4
p0 queue free %			93		29	92
cM capacity (veh/h)			1207		307	704

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	328	85	382	271
Volume Left	0	85	0	217
Volume Right	80	0	0	54
cSH	1700	1207	1700	346
Volume to Capacity	0.19	0.07	0.22	0.78
Queue Length 95th (ft)	0	6	0	161
Control Delay (s)	0.0	8.2	0.0	44.3
Lane LOS		A		E
Approach Delay (s)	0.0	1.5		44.3
Approach LOS				E

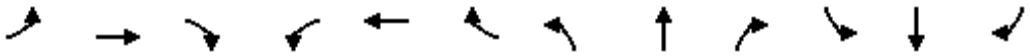
Intersection Summary			
Average Delay	11.9		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	106	244	24	30	171	30	71	127	65	28	37	101
Future Volume (vph)	106	244	24	30	171	30	71	127	65	28	37	101
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
Hourly flow rate (vph)	118	271	27	33	190	33	79	141	72	31	41	112

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	118	298	33	223	79	213	31	153
Volume Left (vph)	118	0	33	0	79	0	31	0
Volume Right (vph)	0	27	0	33	0	72	0	112
Hadj (s)	0.58	-0.03	0.72	-0.07	0.55	-0.18	0.50	-0.46
Departure Headway (s)	6.9	6.3	7.3	6.5	7.2	6.5	7.4	6.4
Degree Utilization, x	0.23	0.52	0.07	0.40	0.16	0.39	0.06	0.27
Capacity (veh/h)	495	550	465	527	469	522	451	520
Control Delay (s)	10.7	14.8	9.6	12.6	10.4	12.3	9.7	10.6
Approach Delay (s)	13.6		12.2		11.8		10.5	
Approach LOS	B		B		B		B	

Intersection Summary				
Delay	12.3			
Level of Service	B			
Intersection Capacity Utilization	49.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	238	7	202	5	20	23	124	133	3	5	109	61
Future Volume (vph)	238	7	202	5	20	23	124	133	3	5	109	61
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	0.91
Hourly flow rate (vph)	262	8	222	5	22	25	136	146	3	5	120	67

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total (vph)	262	230	52	285	192
Volume Left (vph)	262	0	5	136	5
Volume Right (vph)	0	222	25	3	67
Hadj (s)	0.55	-0.60	-0.20	0.20	-0.09
Departure Headway (s)	6.5	5.4	6.0	5.8	5.7
Degree Utilization, x	0.48	0.34	0.09	0.46	0.31
Capacity (veh/h)	528	642	520	580	585
Control Delay (s)	14.2	10.0	9.6	13.7	11.2
Approach Delay (s)	12.2		9.6	13.7	11.2
Approach LOS	B		A	B	B

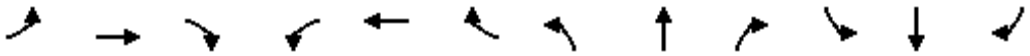
Intersection Summary				
Delay	12.3			
Level of Service	B			
Intersection Capacity Utilization	53.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	27	3	2	37	3	39	4	8	1850	84	3	17
Future Volume (Veh/h)	27	3	2	37	3	39	4	8	1850	84	3	17
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	28	3	2	39	3	41	0	8	1927	88	0	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2175	3184	558	2585	3156	1008	0	1133			0	2015
vC1, stage 1 conf vol	1153	1153		1987	1987							
vC2, stage 2 conf vol	1022	2031		598	1169							
vCu, unblocked vol	2175	3184	558	2585	3156	1008	0	1133			0	2015
tC, single (s)	7.7	6.5	6.9	7.6	6.5	7.2	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.7	5.5		6.6	5.5							
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	0.0	2.2			0.0	2.2
p0 queue free %	76	96	100	32	97	81	0	99			0	94
cM capacity (veh/h)	119	76	478	58	93	220	0	624			0	287

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	33	83	8	1285	730	18	558	558	16
Volume Left	28	39	8	0	0	18	0	0	0
Volume Right	2	41	0	0	88	0	0	0	16
cSH	118	93	624	1700	1700	287	1700	1700	1700
Volume to Capacity	0.28	0.89	0.01	0.76	0.43	0.06	0.33	0.33	0.01
Queue Length 95th (ft)	26	125	1	0	0	5	0	0	0
Control Delay (s)	46.7	147.1	10.8	0.0	0.0	18.4	0.0	0.0	0.0
Lane LOS	E	F	B			C			
Approach Delay (s)	46.7	147.1	0.0			0.3			
Approach LOS	E	F							

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	64.9%	ICU Level of Service		C
Analysis Period (min)	15			

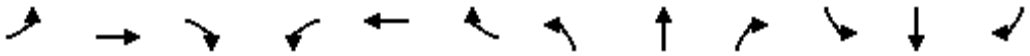
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1072	15
Future Volume (Veh/h)	1072	15
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	1117	16
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	89	1	0	63	3	2	2	2	8	3	14
Future Volume (Veh/h)	10	89	1	0	63	3	2	2	2	8	3	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	14	129	1	0	91	4	3	3	3	12	4	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	95			130			272	252	130	255	251	93
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	95			130			272	252	130	255	251	93
tC, single (s)	4.1			4.1			7.6	7.0	6.2	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.0	4.5	3.3	3.5	4.0	3.5
p0 queue free %	99			100			99	99	100	98	99	98
cM capacity (veh/h)	1512			1468			573	571	926	693	650	914

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	144	95	9	36
Volume Left	14	0	3	12
Volume Right	1	4	3	20
cSH	1512	1468	656	794
Volume to Capacity	0.01	0.00	0.01	0.05
Queue Length 95th (ft)	1	0	1	4
Control Delay (s)	0.8	0.0	10.6	9.8
Lane LOS	A		B	A
Approach Delay (s)	0.8	0.0	10.6	9.8
Approach LOS			B	A

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	22.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	87	8	2	56	6	10	10	9	7	4	3
Future Volume (Veh/h)	3	87	8	2	56	6	10	10	9	7	4	3
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	4	121	11	3	78	8	14	14	13	10	6	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	124	83	8	148	78	20	10			27		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	124	83	8	148	78	20	10			27		
tC, single (s)	7.1	6.5	6.2	7.6	6.6	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	4.0	4.0	3.5	2.2			2.2		
p0 queue free %	99	85	99	100	90	99	99			99		
cM capacity (veh/h)	776	797	1080	625	794	1015	1623			1600		

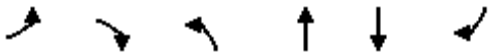
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	136	89	41	20
Volume Left	4	3	14	10
Volume Right	11	8	13	4
cSH	814	802	1623	1600
Volume to Capacity	0.17	0.11	0.01	0.01
Queue Length 95th (ft)	15	9	1	0
Control Delay (s)	10.3	10.0	2.5	3.7
Lane LOS	B	B	A	A
Approach Delay (s)	10.3	10.0	2.5	3.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	16.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	105	1	1	60	2	3
Future Volume (Veh/h)	105	1	1	60	2	3
Sign Control	Free			Free	Stop	
Grade	-3%			2%	1%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	154	1	1	88	3	4
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			155		244	156
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			155		244	156
tC, single (s)			4.1		6.4	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.6
p0 queue free %			100		100	100
cM capacity (veh/h)			1438		748	814

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	155	89	7
Volume Left	0	1	3
Volume Right	1	0	4
cSH	1700	1438	784
Volume to Capacity	0.09	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.1	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.6
Approach LOS			A

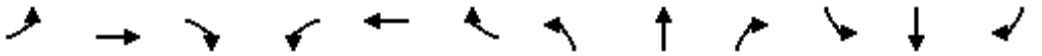
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	92	24	18	106	40	38
Future Volume (Veh/h)	92	24	18	106	40	38
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	131	34	26	151	57	54
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	288	84	111			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	288	84	111			
tC, single (s)	6.4	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.4			
p0 queue free %	81	96	98			
cM capacity (veh/h)	688	959	1390			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	165	177	111
Volume Left	131	26	0
Volume Right	34	0	54
cSH	731	1390	1700
Volume to Capacity	0.23	0.02	0.07
Queue Length 95th (ft)	22	1	0
Control Delay (s)	11.4	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	11.4	1.3	0.0
Approach LOS	B		

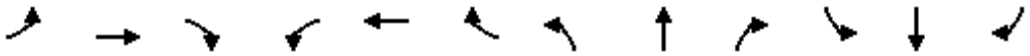
Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	122	294	127	106	135	219	1012	125	258	1669	13
Future Volume (vph)	13	122	294	127	106	135	219	1012	125	258	1669	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-1%			2%	
Total Lost time (s)		6.0	6.0		6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor		1.00	1.00		1.00	1.00	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes		1.00	1.00		1.00	0.98	1.00	1.00	0.99	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	0.85		1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected		1.00	1.00		0.97	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)		1876	1583		1775	1558	1796	3489	1587	3467	3504	1599
Flt Permitted		0.94	1.00		0.66	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)		1765	1583		1195	1558	1796	3489	1587	3467	3504	1599
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)	14	130	313	135	113	144	233	1077	133	274	1776	14
RTOR Reduction (vph)	0	0	235	0	0	85	0	0	32	0	0	7
Lane Group Flow (vph)	0	144	78	0	248	59	233	1077	101	274	1776	7
Confl. Peds. (#/hr)	3					3						
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	8%	0%	2%	6%	2%	2%	1%	4%	1%	0%	2%	0%
Turn Type	Perm	NA	Perm	Perm	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6
Actuated Green, G (s)		35.2	35.2		35.2	35.2	24.6	86.5	86.5	18.2	80.1	80.1
Effective Green, g (s)		35.2	35.2		35.2	35.2	24.6	86.5	86.5	18.2	80.1	80.1
Actuated g/C Ratio		0.22	0.22		0.22	0.22	0.16	0.55	0.55	0.12	0.51	0.51
Clearance Time (s)		6.0	6.0		6.0	6.0	5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)		3.0	3.0		3.0	3.0	3.0	5.4	5.4	3.5	5.4	5.4
Lane Grp Cap (vph)		395	355		268	349	281	1923	874	402	1788	816
v/s Ratio Prot							c0.13	0.31		0.08	c0.51	
v/s Ratio Perm		0.08	0.05		c0.21	0.04			0.06			0.00
v/c Ratio		0.36	0.22		0.93	0.17	0.83	0.56	0.12	0.68	0.99	0.01
Uniform Delay, d1		51.4	49.6		59.6	49.1	64.1	22.8	16.9	66.6	38.1	18.9
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	0.3		35.4	0.2	17.9	0.7	0.1	4.9	19.7	0.0
Delay (s)		52.0	50.0		94.9	49.3	82.1	23.5	17.0	71.5	57.8	18.9
Level of Service		D	D		F	D	F	C	B	E	E	B
Approach Delay (s)		50.6			78.2			32.4			59.4	
Approach LOS		D			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	51.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	156.9	Sum of lost time (s)	17.0
Intersection Capacity Utilization	98.9%	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)	101	344	24	5	370	68	10	0	1	34	1	52
Future Volume (Veh/h)	101	344	24	5	370	68	10	0	1	34	1	52
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	110	374	26	5	402	74	11	0	1	37	1	57
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked				0.98			0.98	0.98	0.98	0.98	0.98	
vC, conflicting volume	476			400			1064	1080	374	1044	1069	439
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	476			380			1056	1072	354	1036	1061	439
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			93	100	100	81	99	91
cM capacity (veh/h)	1091			1168			168	196	682	191	198	618

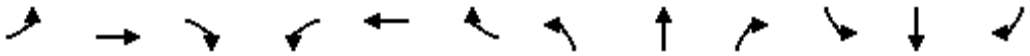
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	110	374	26	5	476	12	95
Volume Left	110	0	0	5	0	11	37
Volume Right	0	0	26	0	74	1	57
cSH	1091	1700	1700	1168	1700	179	326
Volume to Capacity	0.10	0.22	0.02	0.00	0.28	0.07	0.29
Queue Length 95th (ft)	8	0	0	0	0	5	30
Control Delay (s)	8.7	0.0	0.0	8.1	0.0	26.5	20.5
Lane LOS	A			A		D	C
Approach Delay (s)	1.9			0.1		26.5	20.5
Approach LOS						D	C

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	43.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	276	103	59	360	83	35
Future Volume (Veh/h)	276	103	59	360	83	35
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	303	113	65	396	91	38
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			416		886	360
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			416		886	360
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		69	94
cM capacity (veh/h)			1138		297	681

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	416	65	396	129
Volume Left	0	65	0	91
Volume Right	113	0	0	38
cSH	1700	1138	1700	356
Volume to Capacity	0.24	0.06	0.23	0.36
Queue Length 95th (ft)	0	5	0	40
Control Delay (s)	0.0	8.4	0.0	20.7
Lane LOS		A		C
Approach Delay (s)	0.0	1.2		20.7
Approach LOS				C

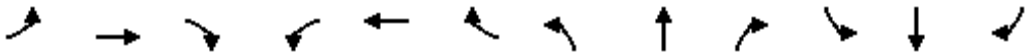
Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	25	112	124	32	84	49	91	213	27	65	347	39
Future Volume (vph)	25	112	124	32	84	49	91	213	27	65	347	39
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	28	126	139	36	94	55	102	239	30	73	390	44

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	28	265	36	149	102	269	73	434
Volume Left (vph)	28	0	36	0	102	0	73	0
Volume Right (vph)	0	139	0	55	0	30	0	44
Hadj (s)	0.50	-0.34	0.55	-0.25	0.50	-0.03	0.53	-0.05
Departure Headway (s)	7.9	7.0	8.2	7.4	7.5	6.9	7.3	6.7
Degree Utilization, x	0.06	0.52	0.08	0.31	0.21	0.52	0.15	0.81
Capacity (veh/h)	429	478	405	449	460	489	475	524
Control Delay (s)	10.2	16.2	10.7	12.4	11.3	16.0	10.3	30.8
Approach Delay (s)	15.6		12.1		14.7		27.9	
Approach LOS	C		B		B		D	

Intersection Summary				
Delay	19.5			
Level of Service	C			
Intersection Capacity Utilization	56.1%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	92	12	154	1	19	15	293	135	6	30	141	251
Future Volume (vph)	92	12	154	1	19	15	293	135	6	30	141	251
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
Hourly flow rate (vph)	102	13	171	1	21	17	326	150	7	33	157	279

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total (vph)	102	184	39	483	469
Volume Left (vph)	102	0	1	326	33
Volume Right (vph)	0	171	17	7	279
Hadj (s)	0.50	-0.57	-0.21	0.15	-0.31
Departure Headway (s)	7.7	6.6	7.3	5.9	5.5
Degree Utilization, x	0.22	0.34	0.08	0.79	0.72
Capacity (veh/h)	430	488	422	597	629
Control Delay (s)	11.6	11.7	10.9	27.4	21.1
Approach Delay (s)	11.7		10.9	27.4	21.1
Approach LOS	B		B	D	C

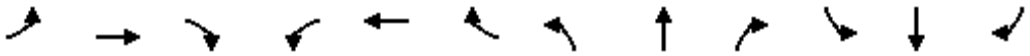
Intersection Summary				
Delay	21.1			
Level of Service	C			
Intersection Capacity Utilization	70.0%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	19	7	11	38	5	27	1	8	1325	43	2	22
Future Volume (Veh/h)	19	7	11	38	5	27	1	8	1325	43	2	22
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	20	7	11	40	5	28	0	8	1380	45	0	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2898	3603	1058	2537	3622	712	0	2158			0	1425
vC1, stage 1 conf vol	2162	2162		1418	1418							
vC2, stage 2 conf vol	736	1441		1118	2204							
vCu, unblocked vol	2898	3603	1058	2537	3622	712	0	2158			0	1425
tC, single (s)	7.6	6.5	6.9	7.6	6.5	6.9	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.6	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			0.0	2.2
p0 queue free %	53	90	95	61	92	93	0	97			0	95
cM capacity (veh/h)	43	71	224	103	64	379	0	252			0	484

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	38	73	8	920	505	23	1058	1058	42
Volume Left	20	40	8	0	0	23	0	0	0
Volume Right	11	28	0	0	45	0	0	0	42
cSH	62	135	252	1700	1700	484	1700	1700	1700
Volume to Capacity	0.62	0.54	0.03	0.54	0.30	0.05	0.62	0.62	0.02
Queue Length 95th (ft)	64	66	2	0	0	4	0	0	0
Control Delay (s)	130.4	59.2	19.7	0.0	0.0	12.8	0.0	0.0	0.0
Lane LOS	F	F	C			B			
Approach Delay (s)	130.4	59.2	0.1			0.1			
Approach LOS	F	F							

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	67.9%	ICU Level of Service		C
Analysis Period (min)	15			

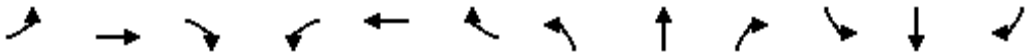
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2031	40
Future Volume (Veh/h)	2031	40
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	2116	42
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	56	1	1	65	2	1	1	2	1	1	1
Future Volume (Veh/h)	9	56	1	1	65	2	1	1	2	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
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
Hourly flow rate (vph)	11	68	1	1	79	2	1	1	2	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	81			69			174	174	68	175	173	80
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	81			69			174	174	68	175	173	80
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	100
cM capacity (veh/h)	1529			1545			787	718	1000	785	718	986

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	80	82	4	3
Volume Left	11	1	1	1
Volume Right	1	2	2	1
cSH	1529	1545	858	815
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	1.1	0.1	9.2	9.4
Lane LOS	A	A	A	A
Approach Delay (s)	1.1	0.1	9.2	9.4
Approach LOS			A	A

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	18.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	40	14	11	47	3	13	6	8	2	9	4
Future Volume (Veh/h)	9	40	14	11	47	3	13	6	8	2	9	4
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	12	54	19	15	64	4	18	8	11	3	12	5
Pedestrians		1			1						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	108	78	16	117	74	16	18			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	108	78	16	117	74	16	18			20		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	99	93	98	98	92	100	99			100		
cM capacity (veh/h)	808	804	1069	775	807	1068	1517			1608		

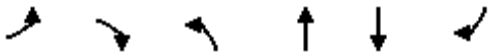
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	85	83	37	20
Volume Left	12	15	18	3
Volume Right	19	4	11	5
cSH	852	811	1517	1608
Volume to Capacity	0.10	0.10	0.01	0.00
Queue Length 95th (ft)	8	9	1	0
Control Delay (s)	9.7	9.9	3.6	1.1
Lane LOS	A	A	A	A
Approach Delay (s)	9.7	9.9	3.6	1.1
Approach LOS	A	A		

Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	16.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	48	0	4	63	4	4
Future Volume (Veh/h)	48	0	4	63	4	4
Sign Control	Free			Free	Stop	
Grade	-3%			2%	1%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	70	0	6	91	6	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			70		173	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			70		173	70
tC, single (s)			4.1		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.5
p0 queue free %			100		99	99
cM capacity (veh/h)			1544		764	932

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	70	97	12
Volume Left	0	6	6
Volume Right	0	0	6
cSH	1700	1544	840
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.5	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.4
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	15	9	81	90	52
Future Volume (Veh/h)	33	15	9	81	90	52
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	42	19	12	104	115	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	276	148	182			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	276	148	182			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	94	98	99			
cM capacity (veh/h)	705	885	1405			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	61	116	182
Volume Left	42	12	0
Volume Right	19	0	67
cSH	753	1405	1700
Volume to Capacity	0.08	0.01	0.11
Queue Length 95th (ft)	7	1	0
Control Delay (s)	10.2	0.8	0.0
Lane LOS	B	A	
Approach Delay (s)	10.2	0.8	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix E Queueing Summary

Appendix E. 95th Percentile Queues

ID	Intersection	Existing				Year 2020 Background				Year 2020 Total Traffic			
		Movement	Storage (ft)	Weekday AM	Weekday PM	Movement	Storage (ft)	Weekday AM	Weekday PM	Movement	Storage (ft)	Weekday AM	Weekday PM
1	Highway 99W/SW Elwert Road-SW Sunset Boulevard	EBL/T	85 [1]	**148**	203	EBL	85 [1]	**287**	**98**	EBL	85 [1]	**287**	**98**
		EBR	85 [1]	63	**97**	EBT/R	85 [1]	**256**	**260**	EBT/R	85 [1]	**256**	**258**
		WBL/T	600 [1]	351	438	WBL	230 [4]	227	**315**	WBL	600 [1]	227	**312**
		WBR	140	138	95	WBT/R	600 [1]	385	123	WBT/R	140	385	121
		NBL	320	295	**341**	NBL	320	247	250	NBL	320	257	250
		NBR	150	59	69	NBR	150	57	78	NBR	150	57	787
		SBL	210	90	194	SBL	210	110	**236**	SBL	210	112	**235**
		SBR	300	0	0	SBR	300	51	4	SBR	300	51	4
2	SW Woodhaven Drive/SW Sunset Boulevard	EBL	90	6	8	EBL	90	7	11	EBL	90	7	11
		EBR	150	0	0	EBR	150	0	0	EBR	150	0	0
		WBL	125	1	0	WBL	125	1	0	WBL	125	1	0
		WBT/R	675 [1]	0	0	WBT/R	675 [1]	0	0	WBT/R	675 [1]	0	0
		NBL/T/R	190 [1]	26	5	NBL/T/R	190 [1]	108	9	NBL/T/R	190 [1]	109	9
		SBL/T/R	460 [1]	96	30	SBL/T/R	460 [1]	344	44	SBL/T/R	460 [1]	344	46
3	SW Timbrel Lane/SW Sunset Boulevard	EBT/R	675 [1]	0	0	EBT/R	675 [1]	0	0	EBT/R	675 [1]	0	0
		WBL	115	6	5	WBL	115	7	5	WBL	115	7	5
		NBL/R	215 [1]	161	40	NBL/R	215 [1]	**384**	55	NBL/R	215 [1]	**373**	57
4	SW Ladd Hill Rd.-SW Main St./SW Sunset Boulevard[2]	EBL	95	23	5	EBL	95	28	5	EBL	95	28	5
		EBT/R	700 [1]	80	80	EBT/R	700 [1]	173	118	EBT/R	700 [1]	180	120
		WBL	100	5	8	WBL	100	8	8	WBL	100	8	13
		WBT/R	740 [1]	53	35	WBT/R	740 [1]	125	48	WBT/R	740 [1]	130	50
		NBL	100	15	20	NBL	100	23	25	NBL	100	23	25
		NBT/R	470 [1]	48	80	NBT/R	470 [1]	63	108	NBT/R	470 [1]	78	123
		SBL	150	5	13	SBL	150	8	15	SBL	150	8	15
		SBT/R	170 [1]	30	**215**	SBT/R	170 [1]	38	**308**	SBT/R	170 [1]	40	**340**
5	SW Baker Road-SW Murdock Road/SW Sunset Boulevard[2]	EBL	95	65	20	EBL	95	88	25	EBL	95	95	28
		EBT/R	880 [1]	40	38	EBT/R	880 [1]	50	43	EBT/R	880 [1]	53	48
		WBL/T/R	700 [1]	8	8	WBL/T/R	700 [1]	10	10	WBL/T/R	700 [1]	10	10
		NBL/T/R	390 [1]	63	188	NBL/T/R	390 [1]	78	258	NBL/T/R	390 [1]	80	280
		SBL/T/R	540 [1]	35	145	SBL/T/R	540 [1]	53	205	SBL/T/R	540 [1]	53	225
6	Highway 99W/SW Brookman Road-SW Chapman Road	EBL/T/R	1,000 [1]	26	64	EBL/T/R	1,000 [1]	37	76	EBL/T/R	1,000 [1]	62	91
		WBL/T/R	520 [1]	125	66	WBL/T/R	520 [1]	164	79	WBL/T/R	520 [1]	273	130
		NBL/U	260	1	2	NBL/U	260	1	3	NBL/U	260	1	3
		NBT/R	>1,000 [1]	0	0	NBT/R	>1,000 [1]	0	0	NBT/R	>1,000 [1]	0	0
		SBL/U	260	5	4	SBL/U	260	8	4	SBL/U	260	13	13
		SBR	255	0	0	SBR	255	0	0	SBR	255	0	0
7	Old Highway 99 W/SW Brookman Road	EBL/T/R	520 [1]	1	1	EBL/T/R	520 [1]	1	1	EBL/T/R	520 [1]	1	1
		WBL/T/R	220 [3]	0	0	WBL/T/R	220 [3]	0	0	WBL/T/R	220 [3]	0	0
		NBL/T/R	>1,000 [1]	1	0	NBL/T/R	>1,000 [1]	1	0	NBL/T/R	>1,000 [1]	1	0
		SBL/T/R	>1,000 [1]	4	0	SBL/T/R	>1,000 [1]	4	0	SBL/T/R	>1,000 [1]	4	0

ID	Intersection	Existing				Year 2020 Background				Year 2020 Total Traffic			
		Movement	Storage (ft)	Weekday AM	Weekday PM	Movement	Storage (ft)	Weekday AM	Weekday PM	Movement	Storage (ft)	Weekday AM	Weekday PM
8	SW Middleton Road/SW Brookman Road	EBL/T/R	>1,000 [3]	15	8	EBL/T/R	>1,000 [3]	18	9	EBL/T/R	>1,000 [3]	22	18
		WBL/T/R	>1,000 [1]	9	9	WBL/T/R	>1,000 [1]	10	9	WBL/T/R	>1,000 [1]	20	15
		NBL/T/R	400 [1]	1	1	NBL/T/R	400 [1]	1	1	NBL/T/R	400 [1]	1	1
		SBL/T/R	690 [3]	0	0	SBL/T/R	690 [3]	0	0	SBL/T/R	690 [3]	1	0
9	SW Oberst Road-Future Site Access/SW Brookman Road	EBT/R	890 [1]	0	0	EBT/R	890 [1]	0	0	EBL/T/R	890 [1]	1	5
		WBL/T	100 [1]	0	0	WBL/T	100 [1]	0	0	WBL/T/R	100 [1]	0	0
		NBL/R	>1,000 [1]	1	1	NBL/R	>1,000 [1]	1	1	NBL/T/R	>1,000 [1]	1	1
										SBL/T/R	250 [1]	14	9
10	SW Ladd Hill Road/SW Brookman Road	EBL/R	>1,000 [1]	22	7	EBL/R	>1,000 [1]	24	7	EBL/R	>1,000 [1]	34	11
		NBL/T	>1,000 [1]	1	1	NBL/T	>1,000 [1]	1	1	NBL/T	>1,000 [1]	2	1
		SBT/R	820 [1]	0	0	SBT/R	820 [1]	0	0	SBT/R	820 [1]	0	0

[1] Distance to adjacent intersection

[2] Queues were recorded from the HCM 2010 AWSC methodology, as implemented by Synchro

[3] Distance to railroad crossing

[4] Based on conceptual drawing provided by the City of Sherwood

Intersections 7, 8, 9 and 10 are not included as they do not have exclusive turn lanes

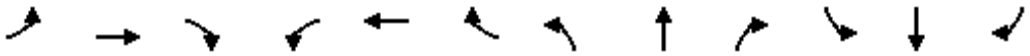
Bold and grey shading indicates 95th percentile queue exceeds available storage

Yellow shading indicates change in lane configuration

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	131	235	295	237	258	1663	112	135	806	14
v/c Ratio	0.29	0.39	0.74	0.44	0.79	0.94	0.14	0.49	0.60	0.02
Control Delay	39.4	6.5	55.0	17.3	67.3	41.7	9.7	61.7	32.8	0.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.4	6.5	55.0	17.3	67.3	41.7	9.7	61.7	32.8	0.1
Queue Length 50th (ft)	86	0	223	56	207	664	24	56	272	0
Queue Length 95th (ft)	148	63	#351	138	295	#882	59	90	369	0
Internal Link Dist (ft)	263		568			888			476	
Turn Bay Length (ft)				140	320		150	210		300
Base Capacity (vph)	455	603	401	533	412	2176	994	744	2045	869
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.29	0.39	0.74	0.44	0.63	0.76	0.11	0.18	0.39	0.02

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	238	41	7	410	86	17	14	10	27	44	67
Future Volume (Veh/h)	51	238	41	7	410	86	17	14	10	27	44	67
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	64	298	51	9	513	108	21	18	13	34	55	84
Pedestrians					5						3	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					3.5						3.5	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked												
vC, conflicting volume	624			349			1068	1068	303	1041	1065	570
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	624			349			1068	1068	303	1041	1065	570
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.5	4.0	3.3	3.6	4.0	3.3
p0 queue free %	93			99			83	91	98	80	73	84
cM capacity (veh/h)	926			1146			127	206	738	174	207	523

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	64	298	51	9	621	52	173
Volume Left	64	0	0	9	0	21	34
Volume Right	0	0	51	0	108	13	84
cSH	926	1700	1700	1146	1700	192	278
Volume to Capacity	0.07	0.18	0.03	0.01	0.37	0.27	0.62
Queue Length 95th (ft)	6	0	0	1	0	26	96
Control Delay (s)	9.2	0.0	0.0	8.2	0.0	30.6	37.1
Lane LOS	A			A		D	E
Approach Delay (s)	1.4			0.1		30.6	37.1
Approach LOS						D	E

Intersection Summary				
Average Delay	6.8			
Intersection Capacity Utilization	48.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	208	67	71	321	182	45
Future Volume (Veh/h)	208	67	71	321	182	45
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	248	80	85	382	217	54
Pedestrians				21	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				2	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			329		841	310
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			329		841	310
tC, single (s)			4.2		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.4
p0 queue free %			93		29	92
cM capacity (veh/h)			1207		307	704

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	328	85	382	271
Volume Left	0	85	0	217
Volume Right	80	0	0	54
cSH	1700	1207	1700	346
Volume to Capacity	0.19	0.07	0.22	0.78
Queue Length 95th (ft)	0	6	0	161
Control Delay (s)	0.0	8.2	0.0	44.3
Lane LOS		A		E
Approach Delay (s)	0.0	1.5		44.3
Approach LOS				E

Intersection Summary			
Average Delay	11.9		
Intersection Capacity Utilization	42.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	14
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	106	244	24	30	171	30	71	127	65	28	37	101
Future Vol, veh/h	106	244	24	30	171	30	71	127	65	28	37	101
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
Heavy Vehicles, %	5	2	0	13	2	0	3	2	6	0	5	2
Mvmt Flow	118	271	27	33	190	33	79	141	72	31	41	112
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	15.5	13.9	13.4	12
HCM LOS	C	B	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	66%	0%	91%	0%	85%	0%	27%
Vol Right, %	0%	34%	0%	9%	0%	15%	0%	73%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	71	192	106	268	30	201	28	138
LT Vol	71	0	106	0	30	0	28	0
Through Vol	0	127	0	244	0	171	0	37
RT Vol	0	65	0	24	0	30	0	101
Lane Flow Rate	79	213	118	298	33	223	31	153
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.165	0.401	0.235	0.543	0.07	0.42	0.067	0.288
Departure Headway (Hd)	7.543	6.773	7.184	6.559	7.573	6.765	7.711	6.762
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	477	533	502	551	473	532	464	531
Service Time	5.263	4.493	4.899	4.274	5.314	4.506	5.456	4.506
HCM Lane V/C Ratio	0.166	0.4	0.235	0.541	0.07	0.419	0.067	0.288
HCM Control Delay	11.8	14	12.1	16.8	10.9	14.3	11	12.2
HCM Lane LOS	B	B	B	C	B	B	B	B
HCM 95th-tile Q	0.6	1.9	0.9	3.2	0.2	2.1	0.2	1.2

Intersection	
Intersection Delay, s/veh	13.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	238	7	202	5	20	23	124	133	3	5	109	61
Future Vol, veh/h	238	7	202	5	20	23	124	133	3	5	109	61
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	0.91
Heavy Vehicles, %	3	14	4	20	5	0	7	5	67	20	5	8
Mvmt Flow	262	8	222	5	22	25	136	146	3	5	120	67
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	13.4	10.1	14	11.9
HCM LOS	B	B	B	B

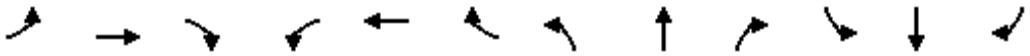
Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	48%	100%	0%	10%	3%
Vol Thru, %	51%	0%	3%	42%	62%
Vol Right, %	1%	0%	97%	48%	35%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	260	238	209	48	175
LT Vol	124	238	0	5	5
Through Vol	133	0	7	20	109
RT Vol	3	0	202	23	61
Lane Flow Rate	286	262	230	53	192
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.467	0.477	0.355	0.093	0.32
Departure Headway (Hd)	5.884	6.57	5.567	6.335	5.988
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	611	549	645	563	598
Service Time	3.929	4.312	3.308	4.4	4.039
HCM Lane V/C Ratio	0.468	0.477	0.357	0.094	0.321
HCM Control Delay	14	15.2	11.4	10.1	11.9
HCM Lane LOS	B	C	B	B	B
HCM 95th-tile Q	2.5	2.6	1.6	0.3	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	27	3	2	37	3	39	4	8	1850	84	3	17
Future Volume (Veh/h)	27	3	2	37	3	39	4	8	1850	84	3	17
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	28	3	2	39	3	41	0	8	1927	88	0	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2175	3184	558	2585	3156	1008	0	1133			0	2015
vC1, stage 1 conf vol	1153	1153		1987	1987							
vC2, stage 2 conf vol	1022	2031		598	1169							
vCu, unblocked vol	2175	3184	558	2585	3156	1008	0	1133			0	2015
tC, single (s)	7.7	6.5	6.9	7.6	6.5	7.2	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.7	5.5		6.6	5.5							
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	0.0	2.2			0.0	2.2
p0 queue free %	76	96	100	32	97	81	0	99			0	94
cM capacity (veh/h)	119	76	478	58	93	220	0	624			0	287

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	33	83	8	1285	730	18	558	558	16
Volume Left	28	39	8	0	0	18	0	0	0
Volume Right	2	41	0	0	88	0	0	0	16
cSH	118	93	624	1700	1700	287	1700	1700	1700
Volume to Capacity	0.28	0.89	0.01	0.76	0.43	0.06	0.33	0.33	0.01
Queue Length 95th (ft)	26	125	1	0	0	5	0	0	0
Control Delay (s)	46.7	147.1	10.8	0.0	0.0	18.4	0.0	0.0	0.0
Lane LOS	E	F	B			C			
Approach Delay (s)	46.7	147.1	0.0			0.3			
Approach LOS	E	F							

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	64.9%	ICU Level of Service		C
Analysis Period (min)	15			

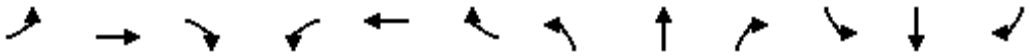
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1072	15
Future Volume (Veh/h)	1072	15
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	1117	16
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	89	1	0	63	3	2	2	2	8	3	14
Future Volume (Veh/h)	10	89	1	0	63	3	2	2	2	8	3	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	14	129	1	0	91	4	3	3	3	12	4	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	95			130			272	252	130	255	251	93
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	95			130			272	252	130	255	251	93
tC, single (s)	4.1			4.1			7.6	7.0	6.2	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.0	4.5	3.3	3.5	4.0	3.5
p0 queue free %	99			100			99	99	100	98	99	98
cM capacity (veh/h)	1512			1468			573	571	926	693	650	914

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	144	95	9	36
Volume Left	14	0	3	12
Volume Right	1	4	3	20
cSH	1512	1468	656	794
Volume to Capacity	0.01	0.00	0.01	0.05
Queue Length 95th (ft)	1	0	1	4
Control Delay (s)	0.8	0.0	10.6	9.8
Lane LOS	A		B	A
Approach Delay (s)	0.8	0.0	10.6	9.8
Approach LOS			B	A

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	22.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	87	8	2	56	6	10	10	9	7	4	3
Future Volume (Veh/h)	3	87	8	2	56	6	10	10	9	7	4	3
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	4	121	11	3	78	8	14	14	13	10	6	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	124	83	8	148	78	20	10			27		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	124	83	8	148	78	20	10			27		
tC, single (s)	7.1	6.5	6.2	7.6	6.6	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	4.0	4.0	3.5	2.2			2.2		
p0 queue free %	99	85	99	100	90	99	99			99		
cM capacity (veh/h)	776	797	1080	625	794	1015	1623			1600		

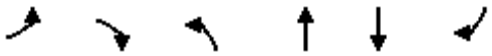
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	136	89	41	20
Volume Left	4	3	14	10
Volume Right	11	8	13	4
cSH	814	802	1623	1600
Volume to Capacity	0.17	0.11	0.01	0.01
Queue Length 95th (ft)	15	9	1	0
Control Delay (s)	10.3	10.0	2.5	3.7
Lane LOS	B	B	A	A
Approach Delay (s)	10.3	10.0	2.5	3.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	16.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	105	1	1	60	2	3
Future Volume (Veh/h)	105	1	1	60	2	3
Sign Control	Free			Free	Stop	
Grade	-3%			2%	1%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	154	1	1	88	3	4
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			155		244	156
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			155		244	156
tC, single (s)			4.1		6.4	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.6
p0 queue free %			100		100	100
cM capacity (veh/h)			1438		748	814

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	155	89	7
Volume Left	0	1	3
Volume Right	1	0	4
cSH	1700	1438	784
Volume to Capacity	0.09	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.1	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.6
Approach LOS			A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	92	24	18	106	40	38
Future Volume (Veh/h)	92	24	18	106	40	38
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	131	34	26	151	57	54
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	288	84	111			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	288	84	111			
tC, single (s)	6.4	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.4			
p0 queue free %	81	96	98			
cM capacity (veh/h)	688	959	1390			

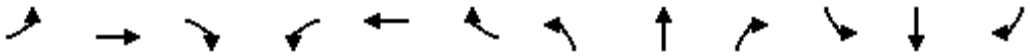
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	165	177	111
Volume Left	131	26	0
Volume Right	34	0	54
cSH	731	1390	1700
Volume to Capacity	0.23	0.02	0.07
Queue Length 95th (ft)	22	1	0
Control Delay (s)	11.4	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	11.4	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBT	EBR	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	144	313	248	144	233	1077	133	274	1776	14
v/c Ratio	0.36	0.53	0.93	0.33	0.83	0.56	0.15	0.68	0.99	0.02
Control Delay	55.4	9.5	98.3	17.4	88.2	24.7	8.9	75.9	57.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.4	9.5	98.3	17.4	88.2	24.7	8.9	75.9	57.7	0.0
Queue Length 50th (ft)	127	8	253	29	234	365	28	141	941	0
Queue Length 95th (ft)	203	97	#438	95	341	475	69	194	#1212	0
Internal Link Dist (ft)	263		568			888			476	
Turn Bay Length (ft)				140	320		150	210		300
Base Capacity (vph)	398	591	269	436	343	1922	906	663	1788	842
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.53	0.92	0.33	0.68	0.56	0.15	0.41	0.99	0.02

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	344	24	5	370	68	10	0	1	34	1	52
Future Volume (Veh/h)	101	344	24	5	370	68	10	0	1	34	1	52
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	110	374	26	5	402	74	11	0	1	37	1	57
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked				0.98			0.98	0.98	0.98	0.98	0.98	
vC, conflicting volume	476			400			1064	1080	374	1044	1069	439
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	476			380			1056	1072	354	1036	1061	439
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	90			100			93	100	100	81	99	91
cM capacity (veh/h)	1091			1168			168	196	682	191	198	618

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	110	374	26	5	476	12	95
Volume Left	110	0	0	5	0	11	37
Volume Right	0	0	26	0	74	1	57
cSH	1091	1700	1700	1168	1700	179	326
Volume to Capacity	0.10	0.22	0.02	0.00	0.28	0.07	0.29
Queue Length 95th (ft)	8	0	0	0	0	5	30
Control Delay (s)	8.7	0.0	0.0	8.1	0.0	26.5	20.5
Lane LOS	A			A		D	C
Approach Delay (s)	1.9			0.1		26.5	20.5
Approach LOS						D	C

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	43.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	276	103	59	360	83	35
Future Volume (Veh/h)	276	103	59	360	83	35
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	303	113	65	396	91	38
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			416		886	360
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			416		886	360
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		69	94
cM capacity (veh/h)			1138		297	681

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	416	65	396	129
Volume Left	0	65	0	91
Volume Right	113	0	0	38
cSH	1700	1138	1700	356
Volume to Capacity	0.24	0.06	0.23	0.36
Queue Length 95th (ft)	0	5	0	40
Control Delay (s)	0.0	8.4	0.0	20.7
Lane LOS		A		C
Approach Delay (s)	0.0	1.2		20.7
Approach LOS				C

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	23
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	112	124	32	84	49	91	213	27	65	347	39
Future Vol, veh/h	25	112	124	32	84	49	91	213	27	65	347	39
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	2	1	3	0	2	0	3	0	2	1	3
Mvmt Flow	28	126	139	36	94	55	102	239	30	73	390	44
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	18.1	13.9	17	33.5
HCM LOS	C	B	C	D

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	89%	0%	47%	0%	63%	0%	90%
Vol Right, %	0%	11%	0%	53%	0%	37%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	91	240	25	236	32	133	65	386
LT Vol	91	0	25	0	32	0	65	0
Through Vol	0	213	0	112	0	84	0	347
RT Vol	0	27	0	124	0	49	0	39
Lane Flow Rate	102	270	28	265	36	149	73	434
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.223	0.547	0.065	0.546	0.086	0.324	0.154	0.843
Departure Headway (Hd)	7.841	7.299	8.267	7.408	8.639	7.803	7.599	6.998
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	456	493	432	485	413	459	470	516
Service Time	5.615	5.073	6.039	5.179	6.423	5.586	5.367	4.765
HCM Lane V/C Ratio	0.224	0.548	0.065	0.546	0.087	0.325	0.155	0.841
HCM Control Delay	12.9	18.6	11.6	18.8	12.2	14.3	11.8	37.1
HCM Lane LOS	B	C	B	C	B	B	B	E
HCM 95th-tile Q	0.8	3.2	0.2	3.2	0.3	1.4	0.5	8.6

Intersection	
Intersection Delay, s/veh	21.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	92	12	154	1	19	15	293	135	6	30	141	251
Future Vol, veh/h	92	12	154	1	19	15	293	135	6	30	141	251
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
Heavy Vehicles, %	0	0	5	100	0	0	2	1	0	0	2	2
Mvmt Flow	102	13	171	1	21	17	326	150	7	33	157	279
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	12.5	13	27.3	20.8
HCM LOS	B	B	D	C

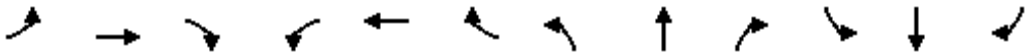
Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	68%	100%	0%	3%	7%
Vol Thru, %	31%	0%	7%	54%	33%
Vol Right, %	1%	0%	93%	43%	59%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	434	92	166	35	422
LT Vol	293	92	0	1	30
Through Vol	135	0	12	19	141
RT Vol	6	0	154	15	251
Lane Flow Rate	482	102	184	39	469
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.785	0.22	0.336	0.098	0.708
Departure Headway (Hd)	5.965	7.736	6.56	9.027	5.54
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	612	467	551	399	656
Service Time	3.965	5.44	4.26	7.039	3.54
HCM Lane V/C Ratio	0.788	0.218	0.334	0.098	0.715
HCM Control Delay	27.3	12.6	12.5	13	20.8
HCM Lane LOS	D	B	B	B	C
HCM 95th-tile Q	7.5	0.8	1.5	0.3	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	19	7	11	38	5	27	1	8	1325	43	2	22
Future Volume (Veh/h)	19	7	11	38	5	27	1	8	1325	43	2	22
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	20	7	11	40	5	28	0	8	1380	45	0	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2898	3603	1058	2537	3622	712	0	2158			0	1425
vC1, stage 1 conf vol	2162	2162		1418	1418							
vC2, stage 2 conf vol	736	1441		1118	2204							
vCu, unblocked vol	2898	3603	1058	2537	3622	712	0	2158			0	1425
tC, single (s)	7.6	6.5	6.9	7.6	6.5	6.9	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.6	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			0.0	2.2
p0 queue free %	53	90	95	61	92	93	0	97			0	95
cM capacity (veh/h)	43	71	224	103	64	379	0	252			0	484

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	38	73	8	920	505	23	1058	1058	42
Volume Left	20	40	8	0	0	23	0	0	0
Volume Right	11	28	0	0	45	0	0	0	42
cSH	62	135	252	1700	1700	484	1700	1700	1700
Volume to Capacity	0.62	0.54	0.03	0.54	0.30	0.05	0.62	0.62	0.02
Queue Length 95th (ft)	64	66	2	0	0	4	0	0	0
Control Delay (s)	130.4	59.2	19.7	0.0	0.0	12.8	0.0	0.0	0.0
Lane LOS	F	F	C			B			
Approach Delay (s)	130.4	59.2	0.1			0.1			
Approach LOS	F	F							

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	67.9%	ICU Level of Service		C
Analysis Period (min)	15			

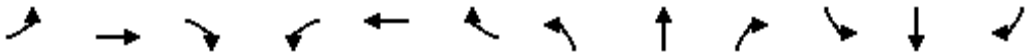
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2031	40
Future Volume (Veh/h)	2031	40
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	2116	42
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	56	1	1	65	2	1	1	2	1	1	1
Future Volume (Veh/h)	9	56	1	1	65	2	1	1	2	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
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
Hourly flow rate (vph)	11	68	1	1	79	2	1	1	2	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	81			69			174	174	68	175	173	80
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	81			69			174	174	68	175	173	80
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	100
cM capacity (veh/h)	1529			1545			787	718	1000	785	718	986

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	80	82	4	3
Volume Left	11	1	1	1
Volume Right	1	2	2	1
cSH	1529	1545	858	815
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	1.1	0.1	9.2	9.4
Lane LOS	A	A	A	A
Approach Delay (s)	1.1	0.1	9.2	9.4
Approach LOS			A	A

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	18.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	40	14	11	47	3	13	6	8	2	9	4
Future Volume (Veh/h)	9	40	14	11	47	3	13	6	8	2	9	4
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	12	54	19	15	64	4	18	8	11	3	12	5
Pedestrians		1			1						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	108	78	16	117	74	16	18			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	108	78	16	117	74	16	18			20		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	99	93	98	98	92	100	99			100		
cM capacity (veh/h)	808	804	1069	775	807	1068	1517			1608		

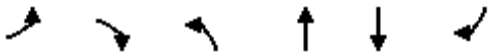
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	85	83	37	20
Volume Left	12	15	18	3
Volume Right	19	4	11	5
cSH	852	811	1517	1608
Volume to Capacity	0.10	0.10	0.01	0.00
Queue Length 95th (ft)	8	9	1	0
Control Delay (s)	9.7	9.9	3.6	1.1
Lane LOS	A	A	A	A
Approach Delay (s)	9.7	9.9	3.6	1.1
Approach LOS	A	A		

Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	16.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	48	0	4	63	4	4
Future Volume (Veh/h)	48	0	4	63	4	4
Sign Control	Free			Free	Stop	
Grade	-3%			2%	1%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	70	0	6	91	6	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			70		173	70
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			70		173	70
tC, single (s)			4.1		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.5
p0 queue free %			100		99	99
cM capacity (veh/h)			1544		764	932

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	70	97	12
Volume Left	0	6	6
Volume Right	0	0	6
cSH	1700	1544	840
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.5	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.4
Approach LOS			A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	16.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	33	15	9	81	90	52
Future Volume (Veh/h)	33	15	9	81	90	52
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	42	19	12	104	115	67
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	276	148	182			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	276	148	182			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	94	98	99			
cM capacity (veh/h)	705	885	1405			

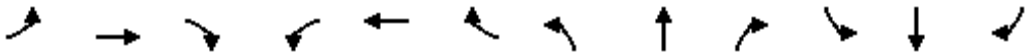
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	61	116	182
Volume Left	42	12	0
Volume Right	19	0	67
cSH	753	1405	1700
Volume to Capacity	0.08	0.01	0.11
Queue Length 95th (ft)	7	1	0
Control Delay (s)	10.2	0.8	0.0
Lane LOS	B	A	
Approach Delay (s)	10.2	0.8	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	138	543	114	638	348	1659	118	136	795	204
v/c Ratio	0.89	0.66	0.79	0.86	0.82	0.97	0.15	0.58	0.55	0.26
Control Delay	117.7	42.0	105.6	66.3	84.0	53.9	8.4	81.0	34.7	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	117.7	42.0	105.6	66.3	84.0	53.9	8.4	81.0	34.7	4.2
Queue Length 50th (ft)	148	188	120	307	186	910	19	72	333	0
Queue Length 95th (ft)	#287	256	#227	385	#247	#1096	57	110	402	51
Internal Link Dist (ft)		263		568		888			476	
Turn Bay Length (ft)					320		150	210		300
Base Capacity (vph)	155	891	152	829	458	1717	811	264	1453	780
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.61	0.75	0.77	0.76	0.97	0.15	0.52	0.55	0.26

Intersection Summary

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	338	74	7	562	91	20	15	11	29	47	119
Future Volume (Veh/h)	55	338	74	7	562	91	20	15	11	29	47	119
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	69	423	93	9	703	114	25	19	14	36	59	149
Pedestrians					5						3	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					3.5						3.5	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked				0.91			0.91	0.91	0.91	0.91	0.91	
vC, conflicting volume	820			516			1460	1399	428	1370	1435	763
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	820			420			1457	1389	324	1358	1429	763
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.5	4.0	3.3	3.6	4.0	3.3
p0 queue free %	91			99			27	84	98	59	47	63
cM capacity (veh/h)	781			982			34	118	655	88	112	406

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	69	423	93	9	817	58	244
Volume Left	69	0	0	9	0	25	36
Volume Right	0	0	93	0	114	14	149
cSH	781	1700	1700	982	1700	63	187
Volume to Capacity	0.09	0.25	0.05	0.01	0.48	0.91	1.30
Queue Length 95th (ft)	7	0	0	1	0	108	344
Control Delay (s)	10.1	0.0	0.0	8.7	0.0	196.4	218.3
Lane LOS	B			A		F	F
Approach Delay (s)	1.2			0.1		196.4	218.3
Approach LOS						F	F

Intersection Summary				
Average Delay	38.2			
Intersection Capacity Utilization	60.4%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	303	74	75	462	198	48
Future Volume (Veh/h)	303	74	75	462	198	48
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	361	88	89	550	236	57
Pedestrians				21	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				2	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			450		1134	427
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			450		1134	427
tC, single (s)			4.2		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.4
p0 queue free %			92		0	91
cM capacity (veh/h)			1089		203	604

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	449	89	550	293
Volume Left	0	89	0	236
Volume Right	88	0	0	57
cSH	1700	1089	1700	233
Volume to Capacity	0.26	0.08	0.32	1.26
Queue Length 95th (ft)	0	7	0	372
Control Delay (s)	0.0	8.6	0.0	188.7
Lane LOS		A		F
Approach Delay (s)	0.0	1.2		188.7
Approach LOS				F

Intersection Summary			
Average Delay	40.6		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	21.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	311	39	32	265	32	89	135	69	30	39	107
Future Vol, veh/h	112	311	39	32	265	32	89	135	69	30	39	107
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
Heavy Vehicles, %	5	2	0	13	2	0	3	2	6	0	5	2
Mvmt Flow	124	346	43	36	294	36	99	150	77	33	43	119
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	26.4	23.3	16.2	14.2
HCM LOS	D	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	66%	0%	89%	0%	89%	0%	27%
Vol Right, %	0%	34%	0%	11%	0%	11%	0%	73%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	89	204	112	350	32	297	30	146
LT Vol	89	0	112	0	32	0	30	0
Through Vol	0	135	0	311	0	265	0	39
RT Vol	0	69	0	39	0	32	0	107
Lane Flow Rate	99	227	124	389	36	330	33	162
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.23	0.479	0.27	0.774	0.081	0.679	0.08	0.348
Departure Headway (Hd)	8.39	7.613	7.807	7.162	8.186	7.402	8.693	7.733
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	427	471	459	506	437	485	411	462
Service Time	6.165	5.387	5.574	4.929	5.956	5.172	6.477	5.516
HCM Lane V/C Ratio	0.232	0.482	0.27	0.769	0.082	0.68	0.08	0.351
HCM Control Delay	13.7	17.3	13.5	30.5	11.7	24.5	12.2	14.6
HCM Lane LOS	B	C	B	D	B	C	B	B
HCM 95th-tile Q	0.9	2.5	1.1	6.9	0.3	5	0.3	1.5

Intersection	
Intersection Delay, s/veh	15.2
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	272	9	219	5	23	24	138	141	3	5	116	103
Future Vol, veh/h	272	9	219	5	23	24	138	141	3	5	116	103
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	0.91
Heavy Vehicles, %	3	14	4	20	5	0	7	5	67	20	5	8
Mvmt Flow	299	10	241	5	25	26	152	155	3	5	127	113
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	15.8	10.8	16.2	13.8
HCM LOS	C	B	C	B

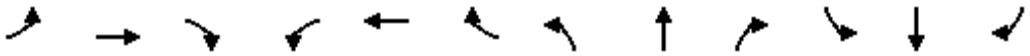
Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	49%	100%	0%	10%	2%
Vol Thru, %	50%	0%	4%	44%	52%
Vol Right, %	1%	0%	96%	46%	46%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	282	272	228	52	224
LT Vol	138	272	0	5	5
Through Vol	141	0	9	23	116
RT Vol	3	0	219	24	103
Lane Flow Rate	310	299	251	57	246
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.533	0.57	0.408	0.11	0.423
Departure Headway (Hd)	6.196	6.864	5.862	6.91	6.19
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	579	523	611	522	578
Service Time	4.268	4.629	3.626	4.91	4.266
HCM Lane V/C Ratio	0.535	0.572	0.411	0.109	0.426
HCM Control Delay	16.2	18.4	12.6	10.8	13.8
HCM Lane LOS	C	C	B	B	B
HCM 95th-tile Q	3.1	3.5	2	0.4	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	30	3	2	39	3	52	4	8	1914	89	3	25
Future Volume (Veh/h)	30	3	2	39	3	52	4	8	1914	89	3	25
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	31	3	2	41	3	54	0	8	1994	93	0	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2272	3307	576	2688	3278	1044	0	1169			0	2087
vC1, stage 1 conf vol	1204	1204		2056	2056							
vC2, stage 2 conf vol	1068	2103		632	1221							
vCu, unblocked vol	2272	3307	576	2688	3278	1044	0	1169			0	2087
tC, single (s)	7.7	6.5	6.9	7.6	6.5	7.2	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.7	5.5		6.6	5.5							
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	0.0	2.2			0.0	2.2
p0 queue free %	68	95	100	21	96	74	0	99			0	90
cM capacity (veh/h)	98	62	466	52	86	208	0	605			0	269

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	36	98	8	1329	758	26	576	576	17
Volume Left	31	41	8	0	0	26	0	0	0
Volume Right	2	54	0	0	93	0	0	0	17
cSH	98	90	605	1700	1700	269	1700	1700	1700
Volume to Capacity	0.37	1.08	0.01	0.78	0.45	0.10	0.34	0.34	0.01
Queue Length 95th (ft)	37	164	1	0	0	8	0	0	0
Control Delay (s)	61.9	204.2	11.0	0.0	0.0	19.8	0.0	0.0	0.0
Lane LOS	F	F	B			C			
Approach Delay (s)	61.9	204.2	0.0			0.4			
Approach LOS	F	F							

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			

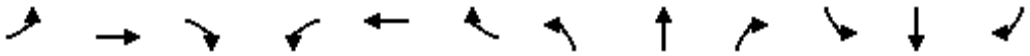
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1106	16
Future Volume (Veh/h)	1106	16
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	1152	17
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	104	2	0	73	3	3	2	2	8	3	15
Future Volume (Veh/h)	11	104	2	0	73	3	3	2	2	8	3	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	16	151	3	0	106	4	4	3	3	12	4	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	110			154			316	294	152	297	294	108
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	110			154			316	294	152	297	294	108
tC, single (s)	4.1			4.1			7.6	7.0	6.2	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.0	4.5	3.3	3.5	4.0	3.5
p0 queue free %	99			100			99	99	100	98	99	98
cM capacity (veh/h)	1493			1439			532	538	899	649	614	897

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	170	110	10	38
Volume Left	16	0	4	12
Volume Right	3	4	3	22
cSH	1493	1439	609	767
Volume to Capacity	0.01	0.00	0.02	0.05
Queue Length 95th (ft)	1	0	1	4
Control Delay (s)	0.8	0.0	11.0	9.9
Lane LOS	A		B	A
Approach Delay (s)	0.8	0.0	11.0	9.9
Approach LOS			B	A

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	22.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	94	17	2	60	6	16	11	10	7	4	3
Future Volume (Veh/h)	3	94	17	2	60	6	16	11	10	7	4	3
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	4	131	24	3	83	8	22	15	14	10	6	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	144	101	8	184	96	22	10			29		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	144	101	8	184	96	22	10			29		
tC, single (s)	7.1	6.5	6.2	7.6	6.6	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	4.0	4.0	3.5	2.2			2.2		
p0 queue free %	99	83	98	99	89	99	99			99		
cM capacity (veh/h)	745	775	1080	573	773	1013	1623			1597		

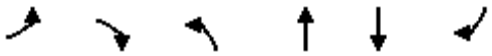
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	159	94	51	20
Volume Left	4	3	22	10
Volume Right	24	8	14	4
cSH	809	780	1623	1597
Volume to Capacity	0.20	0.12	0.01	0.01
Queue Length 95th (ft)	18	10	1	0
Control Delay (s)	10.5	10.2	3.2	3.7
Lane LOS	B	B	A	A
Approach Delay (s)	10.5	10.2	3.2	3.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	8.9			
Intersection Capacity Utilization	17.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	111	3	1	64	3	3
Future Volume (Veh/h)	111	3	1	64	3	3
Sign Control	Free			Free	Stop	
Grade	-3%			2%	1%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	163	4	1	94	4	4
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			167		261	166
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			167		261	166
tC, single (s)			4.1		6.4	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.6
p0 queue free %			100		99	100
cM capacity (veh/h)			1423		732	803

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	167	95	8
Volume Left	0	1	4
Volume Right	4	0	4
cSH	1700	1423	766
Volume to Capacity	0.10	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.1	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.8
Approach LOS			A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	16.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	98	25	19	112	42	40
Future Volume (Veh/h)	98	25	19	112	42	40
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	140	36	27	160	60	57
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	304	88	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	304	88	117			
tC, single (s)	6.4	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.4			
p0 queue free %	79	96	98			
cM capacity (veh/h)	674	953	1383			

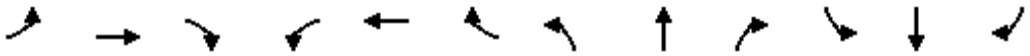
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	176	187	117
Volume Left	140	27	0
Volume Right	36	0	57
cSH	717	1383	1700
Volume to Capacity	0.25	0.02	0.07
Queue Length 95th (ft)	24	1	0
Control Delay (s)	11.6	1.2	0.0
Lane LOS	B	A	
Approach Delay (s)	11.6	1.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	48	516	144	305	260	1100	141	296	1823	48
v/c Ratio	0.48	0.92dr	0.97	0.40	0.96	0.62	0.17	0.80	0.97	0.05
Control Delay	86.6	54.5	133.4	29.8	113.8	30.3	10.0	83.8	50.3	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.6	54.5	133.4	29.8	113.8	30.3	10.0	83.8	50.3	0.6
Queue Length 50th (ft)	47	192	146	74	136	413	29	151	908	0
Queue Length 95th (ft)	98	260	#315	123	#250	555	78	#236	#1241	4
Internal Link Dist (ft)		263		568		888			476	
Turn Bay Length (ft)					320		150	210		300
Base Capacity (vph)	125	814	149	859	272	1764	844	384	1873	893
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.63	0.97	0.36	0.96	0.62	0.17	0.77	0.97	0.05

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	387	26	5	414	72	12	0	1	36	1	64
Future Volume (Veh/h)	121	387	26	5	414	72	12	0	1	36	1	64
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	132	421	28	5	450	78	13	0	1	39	1	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked												
vC, conflicting volume	528			449			1216	1223	421	1185	1212	489
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	528			449			1216	1223	421	1185	1212	489
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			100			90	100	100	74	99	88
cM capacity (veh/h)	1044			1122			126	158	637	150	160	579

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	132	421	28	5	528	14	110
Volume Left	132	0	0	5	0	13	39
Volume Right	0	0	28	0	78	1	70
cSH	1044	1700	1700	1122	1700	133	285
Volume to Capacity	0.13	0.25	0.02	0.00	0.31	0.10	0.39
Queue Length 95th (ft)	11	0	0	0	0	9	44
Control Delay (s)	8.9	0.0	0.0	8.2	0.0	35.1	25.4
Lane LOS	A			A		E	D
Approach Delay (s)	2.0			0.1		35.1	25.4
Approach LOS						E	D

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	48.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	314	110	63	403	89	37
Future Volume (Veh/h)	314	110	63	403	89	37
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	345	121	69	443	98	41
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			466		986	406
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			466		986	406
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		62	94
cM capacity (veh/h)			1090		257	642

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	466	69	443	139
Volume Left	0	69	0	98
Volume Right	121	0	0	41
cSH	1700	1090	1700	312
Volume to Capacity	0.27	0.06	0.26	0.44
Queue Length 95th (ft)	0	5	0	55
Control Delay (s)	0.0	8.5	0.0	25.4
Lane LOS		A		D
Approach Delay (s)	0.0	1.1		25.4
Approach LOS				D

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	33.1
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	133	134	34	103	52	99	226	29	69	368	41
Future Vol, veh/h	27	133	134	34	103	52	99	226	29	69	368	41
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	2	1	3	0	2	0	3	0	2	1	3
Mvmt Flow	30	149	151	38	116	58	111	254	33	78	413	46
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	23.8	16.2	20.8	54.7
HCM LOS	C	C	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	89%	0%	50%	0%	66%	0%	90%
Vol Right, %	0%	11%	0%	50%	0%	34%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	255	27	267	34	155	69	409
LT Vol	99	0	27	0	34	0	69	0
Through Vol	0	226	0	133	0	103	0	368
RT Vol	0	29	0	134	0	52	0	41
Lane Flow Rate	111	287	30	300	38	174	78	460
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.262	0.631	0.074	0.662	0.098	0.408	0.177	0.971
Departure Headway (Hd)	8.478	7.931	8.791	7.945	9.246	8.429	8.211	7.607
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	424	456	407	456	387	427	440	478
Service Time	6.236	5.689	6.546	5.699	7.011	6.192	5.911	5.307
HCM Lane V/C Ratio	0.262	0.629	0.074	0.658	0.098	0.407	0.177	0.962
HCM Control Delay	14.2	23.4	12.3	25	13	16.9	12.7	61.8
HCM Lane LOS	B	C	B	C	B	C	B	F
HCM 95th-tile Q	1	4.3	0.2	4.7	0.3	1.9	0.6	12.3

Intersection	
Intersection Delay, s/veh	28.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	105	14	165	1	21	16	313	143	6	32	149	273
Future Vol, veh/h	105	14	165	1	21	16	313	143	6	32	149	273
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
Heavy Vehicles, %	0	0	5	100	0	0	2	1	0	0	2	2
Mvmt Flow	117	16	183	1	23	18	348	159	7	36	166	303
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	13.7	13.8	39.6	28.8
HCM LOS	B	B	E	D

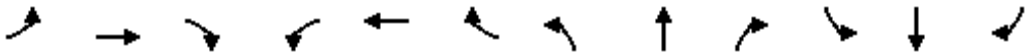
Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	68%	100%	0%	3%	7%
Vol Thru, %	31%	0%	8%	55%	33%
Vol Right, %	1%	0%	92%	42%	60%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	462	105	179	38	454
LT Vol	313	105	0	1	32
Through Vol	143	0	14	21	149
RT Vol	6	0	165	16	273
Lane Flow Rate	513	117	199	42	504
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.885	0.26	0.378	0.111	0.809
Departure Headway (Hd)	6.204	8.017	6.838	9.5	5.775
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	585	448	525	376	626
Service Time	4.246	5.768	4.589	7.584	3.817
HCM Lane V/C Ratio	0.877	0.261	0.379	0.112	0.805
HCM Control Delay	39.6	13.6	13.7	13.8	28.8
HCM Lane LOS	E	B	B	B	D
HCM 95th-tile Q	10.3	1	1.7	0.4	8.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	20	7	12	40	5	30	1	8	1368	46	2	24
Future Volume (Veh/h)	20	7	12	40	5	30	1	8	1368	46	2	24
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	21	7	13	42	5	31	0	8	1425	48	0	25
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2997	3724	1092	2624	3744	736	0	2229			0	1473
vC1, stage 1 conf vol	2235	2235		1465	1465							
vC2, stage 2 conf vol	762	1489		1159	2279							
vCu, unblocked vol	2997	3724	1092	2624	3744	736	0	2229			0	1473
tC, single (s)	7.6	6.5	6.9	7.6	6.5	6.9	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.6	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			0.0	2.2
p0 queue free %	45	89	94	56	91	92	0	97			0	95
cM capacity (veh/h)	38	65	213	95	58	366	0	237			0	464

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	41	78	8	950	523	25	1092	1092	44
Volume Left	21	42	8	0	0	25	0	0	0
Volume Right	13	31	0	0	48	0	0	0	44
cSH	57	127	237	1700	1700	464	1700	1700	1700
Volume to Capacity	0.72	0.61	0.03	0.56	0.31	0.05	0.64	0.64	0.03
Queue Length 95th (ft)	76	79	3	0	0	4	0	0	0
Control Delay (s)	161.7	70.2	20.7	0.0	0.0	13.2	0.0	0.0	0.0
Lane LOS	F	F	C			B			
Approach Delay (s)	161.7	70.2	0.1			0.1			
Approach LOS	F	F							

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	70.1%	ICU Level of Service	C	
Analysis Period (min)	15			

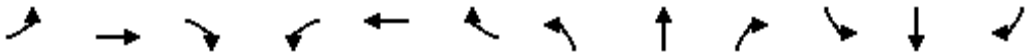
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2098	42
Future Volume (Veh/h)	2098	42
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	2185	44
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	60	1	1	70	2	1	1	2	1	1	1
Future Volume (Veh/h)	10	60	1	1	70	2	1	1	2	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
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
Hourly flow rate (vph)	12	73	1	1	85	2	1	1	2	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	87			74			187	186	74	188	186	86
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	87			74			187	186	74	188	186	86
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	100
cM capacity (veh/h)	1522			1538			771	705	994	769	706	978

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	86	88	4	3
Volume Left	12	1	1	1
Volume Right	1	2	2	1
cSH	1522	1538	846	803
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	1.1	0.1	9.3	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	1.1	0.1	9.3	9.5
Approach LOS			A	A

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	19.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	42	16	12	50	3	15	6	8	2	10	4
Future Volume (Veh/h)	10	42	16	12	50	3	15	6	8	2	10	4
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	14	57	22	16	68	4	20	8	11	3	14	5
Pedestrians		1			1						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	116	84	18	128	80	16	20			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	116	84	18	128	80	16	20			20		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	98	93	98	98	91	100	99			100		
cM capacity (veh/h)	794	797	1066	758	800	1068	1514			1608		

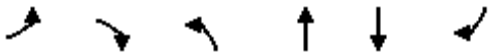
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	93	88	39	22
Volume Left	14	16	20	3
Volume Right	22	4	11	5
cSH	847	801	1514	1608
Volume to Capacity	0.11	0.11	0.01	0.00
Queue Length 95th (ft)	9	9	1	0
Control Delay (s)	9.8	10.0	3.8	1.0
Lane LOS	A	B	A	A
Approach Delay (s)	9.8	10.0	3.8	1.0
Approach LOS	A	B		

Intersection Summary				
Average Delay	8.1			
Intersection Capacity Utilization	17.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	51	0	4	67	4	4
Future Volume (Veh/h)	51	0	4	67	4	4
Sign Control	Free			Free	Stop	
Grade	-3%			2%	1%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	74	0	6	97	6	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			74		183	74
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			74		183	74
tC, single (s)			4.1		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.5
p0 queue free %			100		99	99
cM capacity (veh/h)			1538		754	927

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	74	103	12
Volume Left	0	6	6
Volume Right	0	0	6
cSH	1700	1538	831
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.5	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.4
Approach LOS			A

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	16.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	16	10	86	95	55
Future Volume (Veh/h)	35	16	10	86	95	55
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	45	21	13	110	122	71
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	294	158	193			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	294	158	193			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	93	98	99			
cM capacity (veh/h)	689	875	1392			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	66	123	193
Volume Left	45	13	0
Volume Right	21	0	71
cSH	739	1392	1700
Volume to Capacity	0.09	0.01	0.11
Queue Length 95th (ft)	7	1	0
Control Delay (s)	10.4	0.9	0.0
Lane LOS	B	A	
Approach Delay (s)	10.4	0.9	0.0
Approach LOS	B		

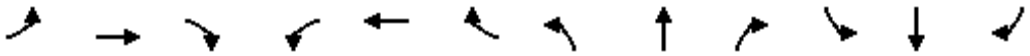
Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	138	545	114	638	353	1694	118	137	806	204
v/c Ratio	0.89	0.66	0.79	0.86	0.83	0.99	0.15	0.58	0.56	0.26
Control Delay	117.7	42.0	105.6	66.2	84.4	58.1	8.4	81.1	35.0	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	117.7	42.0	105.6	66.2	84.4	58.1	8.4	81.1	35.0	4.2
Queue Length 50th (ft)	148	189	120	307	190	~996	19	73	340	0
Queue Length 95th (ft)	#287	256	#227	385	#257	#1135	57	112	408	51
Internal Link Dist (ft)		263		568		888			476	
Turn Bay Length (ft)					320		150	210		300
Base Capacity (vph)	155	891	152	829	458	1717	810	264	1451	780
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.89	0.61	0.75	0.77	0.77	0.99	0.15	0.52	0.56	0.26

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	339	74	7	562	91	20	15	11	29	47	119
Future Volume (Veh/h)	55	339	74	7	562	91	20	15	11	29	47	119
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	69	424	93	9	703	114	25	19	14	36	59	149
Pedestrians					5						3	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					3.5						3.5	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked				0.91			0.91	0.91	0.91	0.91	0.91	
vC, conflicting volume	820			517			1462	1400	429	1372	1436	763
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	820			422			1458	1390	325	1359	1430	763
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.5	4.0	3.3	3.6	4.0	3.3
p0 queue free %	91			99			27	84	98	59	47	63
cM capacity (veh/h)	781			981			34	118	654	88	112	406

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	69	424	93	9	817	58	244
Volume Left	69	0	0	9	0	25	36
Volume Right	0	0	93	0	114	14	149
cSH	781	1700	1700	981	1700	63	187
Volume to Capacity	0.09	0.25	0.05	0.01	0.48	0.92	1.30
Queue Length 95th (ft)	7	0	0	1	0	109	344
Control Delay (s)	10.1	0.0	0.0	8.7	0.0	197.0	218.8
Lane LOS	B			A		F	F
Approach Delay (s)	1.2			0.1		197.0	218.8
Approach LOS						F	F

Intersection Summary				
Average Delay	38.3			
Intersection Capacity Utilization	60.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	303	75	75	462	198	48
Future Volume (Veh/h)	303	75	75	462	198	48
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	361	89	89	550	236	57
Pedestrians				21	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				2	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			451		1134	428
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			451		1134	428
tC, single (s)			4.2		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.4
p0 queue free %			92		0	91
cM capacity (veh/h)			1088		203	604

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	450	89	550	293
Volume Left	0	89	0	236
Volume Right	89	0	0	57
cSH	1700	1088	1700	233
Volume to Capacity	0.26	0.08	0.32	1.26
Queue Length 95th (ft)	0	7	0	373
Control Delay (s)	0.0	8.6	0.0	189.1
Lane LOS		A		F
Approach Delay (s)	0.0	1.2		189.1
Approach LOS				F

Intersection Summary			
Average Delay	40.6		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	22.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	112	311	39	37	265	32	89	143	85	30	42	107
Future Vol, veh/h	112	311	39	37	265	32	89	143	85	30	42	107
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
Heavy Vehicles, %	5	2	0	13	2	0	3	2	6	0	5	2
Mvmt Flow	124	346	43	41	294	36	99	159	94	33	47	119
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	28	24.3	17.6	14.6
HCM LOS	D	C	C	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	63%	0%	89%	0%	89%	0%	28%
Vol Right, %	0%	37%	0%	11%	0%	11%	0%	72%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	89	228	112	350	37	297	30	149
LT Vol	89	0	112	0	37	0	30	0
Through Vol	0	143	0	311	0	265	0	42
RT Vol	0	85	0	39	0	32	0	107
Lane Flow Rate	99	253	124	389	41	330	33	166
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.233	0.539	0.275	0.79	0.095	0.692	0.082	0.362
Departure Headway (Hd)	8.466	7.664	7.963	7.317	8.338	7.554	8.832	7.881
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	422	469	449	494	428	475	404	454
Service Time	6.246	5.443	5.741	5.095	6.119	5.334	6.624	5.672
HCM Lane V/C Ratio	0.235	0.539	0.276	0.787	0.096	0.695	0.082	0.366
HCM Control Delay	13.8	19.1	13.8	32.6	12	25.8	12.4	15.1
HCM Lane LOS	B	C	B	D	B	D	B	C
HCM 95th-tile Q	0.9	3.1	1.1	7.2	0.3	5.2	0.3	1.6

Intersection	
Intersection Delay, s/veh	15.6
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	280	9	227	5	23	24	141	141	3	5	116	105
Future Vol, veh/h	280	9	227	5	23	24	141	141	3	5	116	105
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	0.91
Heavy Vehicles, %	3	14	4	20	5	0	7	5	67	20	5	8
Mvmt Flow	308	10	249	5	25	26	155	155	3	5	127	115
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	16.3	10.8	16.6	14
HCM LOS	C	B	C	B

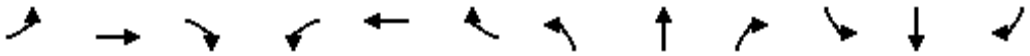
Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	49%	100%	0%	10%	2%
Vol Thru, %	49%	0%	4%	44%	51%
Vol Right, %	1%	0%	96%	46%	46%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	285	280	236	52	226
LT Vol	141	280	0	5	5
Through Vol	141	0	9	23	116
RT Vol	3	0	227	24	105
Lane Flow Rate	313	308	259	57	248
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.543	0.589	0.424	0.111	0.43
Departure Headway (Hd)	6.243	6.892	5.889	6.976	6.237
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	573	523	609	517	574
Service Time	4.317	4.66	3.656	4.976	4.317
HCM Lane V/C Ratio	0.546	0.589	0.425	0.11	0.432
HCM Control Delay	16.6	19.1	13	10.8	14
HCM Lane LOS	C	C	B	B	B
HCM 95th-tile Q	3.2	3.8	2.1	0.4	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	30	3	2	47	3	93	4	8	1914	92	3	38
Future Volume (Veh/h)	30	3	2	47	3	93	4	8	1914	92	3	38
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	31	3	2	49	3	97	0	8	1994	96	0	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2344	3338	576	2718	3307	1045	0	1169			0	2090
vC1, stage 1 conf vol	1232	1232		2058	2058							
vC2, stage 2 conf vol	1112	2106		660	1249							
vCu, unblocked vol	2344	3338	576	2718	3307	1045	0	1169			0	2090
tC, single (s)	7.7	6.5	6.9	7.6	6.5	7.2	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.7	5.5		6.6	5.5							
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	0.0	2.2			0.0	2.2
p0 queue free %	47	94	100	5	96	53	0	99			0	85
cM capacity (veh/h)	58	49	466	52	84	207	0	605			0	268

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	36	149	8	1329	761	40	576	576	17
Volume Left	31	49	8	0	0	40	0	0	0
Volume Right	2	97	0	0	96	0	0	0	17
cSH	60	103	605	1700	1700	268	1700	1700	1700
Volume to Capacity	0.60	1.45	0.01	0.78	0.45	0.15	0.34	0.34	0.01
Queue Length 95th (ft)	62	273	1	0	0	13	0	0	0
Control Delay (s)	130.5	323.8	11.0	0.0	0.0	20.8	0.0	0.0	0.0
Lane LOS	F	F	B			C			
Approach Delay (s)	130.5	323.8	0.0			0.7			
Approach LOS	F	F							

Intersection Summary				
Average Delay	15.4			
Intersection Capacity Utilization	70.5%	ICU Level of Service		C
Analysis Period (min)	15			

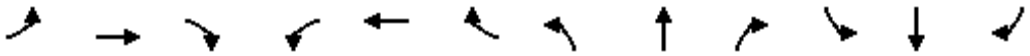
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1106	16
Future Volume (Veh/h)	1106	16
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	1152	17
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	120	2	0	122	3	3	2	2	8	3	15
Future Volume (Veh/h)	11	120	2	0	122	3	3	2	2	8	3	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	16	174	3	0	177	4	4	3	3	12	4	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	181			177			410	388	176	391	388	179
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	181			177			410	388	176	391	388	179
tC, single (s)	4.1			4.1			7.6	7.0	6.2	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.0	4.5	3.3	3.5	4.0	3.5
p0 queue free %	99			100			99	99	100	98	99	97
cM capacity (veh/h)	1407			1411			456	473	873	562	544	817

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	193	181	10	38
Volume Left	16	0	4	12
Volume Right	3	4	3	22
cSH	1407	1411	539	683
Volume to Capacity	0.01	0.00	0.02	0.06
Queue Length 95th (ft)	1	0	1	4
Control Delay (s)	0.7	0.0	11.8	10.6
Lane LOS	A		B	B
Approach Delay (s)	0.7	0.0	11.8	10.6
Approach LOS			B	B

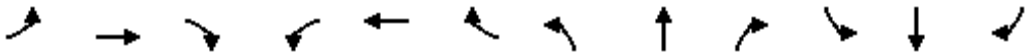
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	25.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	110	17	2	110	6	16	11	10	9	4	3
Future Volume (Veh/h)	3	110	17	2	110	6	16	11	10	9	4	3
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	4	153	24	3	153	8	22	15	14	13	6	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	184	107	8	200	102	22	10			29		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	184	107	8	200	102	22	10			29		
tC, single (s)	7.1	6.5	6.2	7.6	6.6	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	4.0	4.0	3.5	2.2			2.2		
p0 queue free %	99	80	98	99	80	99	99			99		
cM capacity (veh/h)	645	768	1080	542	765	1013	1623			1597		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	181	164	51	23
Volume Left	4	3	22	13
Volume Right	24	8	14	4
cSH	795	769	1623	1597
Volume to Capacity	0.23	0.21	0.01	0.01
Queue Length 95th (ft)	22	20	1	1
Control Delay (s)	10.9	10.9	3.2	4.1
Lane LOS	B	B	A	A
Approach Delay (s)	10.9	10.9	3.2	4.1
Approach LOS	B	B		

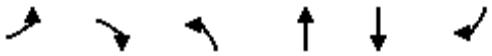
Intersection Summary				
Average Delay	9.6			
Intersection Capacity Utilization	18.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	111	3	1	64	12	3	0	3	35	0	50
Future Volume (Veh/h)	18	111	3	1	64	12	3	0	3	35	0	50
Sign Control		Free			Free			Stop			Stop	
Grade		-3%			2%			1%			0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	26	163	4	1	94	18	4	0	4	51	0	74
Pedestrians					1						2	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					3.5						3.5	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	114			167			396	333	166	329	326	105
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	114			167			396	333	166	329	326	105
tC, single (s)	4.1			4.1			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.6	3.5	4.0	3.3
p0 queue free %	98			100			99	100	100	92	100	92
cM capacity (veh/h)	1485			1423			515	578	803	614	584	953

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	193	113	8	125
Volume Left	26	1	4	51
Volume Right	4	18	4	74
cSH	1485	1423	628	778
Volume to Capacity	0.02	0.00	0.01	0.16
Queue Length 95th (ft)	1	0	1	14
Control Delay (s)	1.1	0.1	10.8	10.5
Lane LOS	A	A	B	B
Approach Delay (s)	1.1	0.1	10.8	10.5
Approach LOS			B	B

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	26.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	122	34	22	112	42	49
Future Volume (Veh/h)	122	34	22	112	42	49
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	174	49	31	160	60	70
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	318	95	130			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	318	95	130			
tC, single (s)	6.4	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.4			
p0 queue free %	74	95	98			
cM capacity (veh/h)	659	945	1368			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	223	191	130
Volume Left	174	31	0
Volume Right	49	0	70
cSH	706	1368	1700
Volume to Capacity	0.32	0.02	0.08
Queue Length 95th (ft)	34	2	0
Control Delay (s)	12.4	1.4	0.0
Lane LOS	B	A	
Approach Delay (s)	12.4	1.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

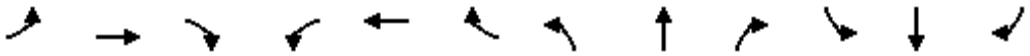
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	48	520	144	306	263	1123	141	299	1862	48
v/c Ratio	0.47	0.92dr	0.95	0.39	0.95	0.64	0.17	0.80	1.01	0.05
Control Delay	85.3	53.7	129.1	28.7	112.1	31.1	10.1	82.4	57.8	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	85.3	53.7	129.1	28.7	112.1	31.1	10.1	82.4	57.8	0.6
Queue Length 50th (ft)	47	191	144	72	135	425	29	150	~959	0
Queue Length 95th (ft)	98	258	#312	121	#250	573	78	#235	#1284	4
Internal Link Dist (ft)		263		568		888			476	
Turn Bay Length (ft)					320		150	210		300
Base Capacity (vph)	127	855	151	904	276	1742	834	389	1851	884
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.61	0.95	0.34	0.95	0.64	0.17	0.77	1.01	0.05

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

dr Defacto Right Lane. Recode with 1 though lane as a right lane.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	389	26	5	416	73	12	0	1	38	1	64
Future Volume (Veh/h)	121	389	26	5	416	73	12	0	1	38	1	64
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	132	423	28	5	452	79	13	0	1	41	1	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked												
vC, conflicting volume	531			451			1220	1228	423	1190	1216	492
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	531			451			1220	1228	423	1190	1216	492
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			100			90	100	100	73	99	88
cM capacity (veh/h)	1042			1120			125	156	635	149	159	577

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	132	423	28	5	531	14	112
Volume Left	132	0	0	5	0	13	41
Volume Right	0	0	28	0	79	1	70
cSH	1042	1700	1700	1120	1700	133	278
Volume to Capacity	0.13	0.25	0.02	0.00	0.31	0.11	0.40
Queue Length 95th (ft)	11	0	0	0	0	9	46
Control Delay (s)	9.0	0.0	0.0	8.2	0.0	35.4	26.4
Lane LOS	A			A		E	D
Approach Delay (s)	2.0			0.1		35.4	26.4
Approach LOS						E	D

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	48.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	314	115	63	403	92	37
Future Volume (Veh/h)	314	115	63	403	92	37
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	345	126	69	443	101	41
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			471		989	409
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			471		989	409
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		61	94
cM capacity (veh/h)			1086		256	640

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	471	69	443	142
Volume Left	0	69	0	101
Volume Right	126	0	0	41
cSH	1700	1086	1700	310
Volume to Capacity	0.28	0.06	0.26	0.46
Queue Length 95th (ft)	0	5	0	57
Control Delay (s)	0.0	8.5	0.0	26.1
Lane LOS		A		D
Approach Delay (s)	0.0	1.2		26.1
Approach LOS				D

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	36.9
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	27	133	134	52	103	52	99	231	39	69	377	41
Future Vol, veh/h	27	133	134	52	103	52	99	231	39	69	377	41
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	2	1	3	0	2	0	3	0	2	1	3
Mvmt Flow	30	149	151	58	116	58	111	260	44	78	424	46
Number of Lanes	1	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	24.6	16.3	22.8	63.9
HCM LOS	C	C	C	F

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	100%	0%	100%	0%	100%	0%
Vol Thru, %	0%	86%	0%	50%	0%	66%	0%	90%
Vol Right, %	0%	14%	0%	50%	0%	34%	0%	10%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	99	270	27	267	52	155	69	418
LT Vol	99	0	27	0	52	0	69	0
Through Vol	0	231	0	133	0	103	0	377
RT Vol	0	39	0	134	0	52	0	41
Lane Flow Rate	111	303	30	300	58	174	78	470
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.264	0.673	0.074	0.668	0.15	0.409	0.18	1.011
Departure Headway (Hd)	8.676	8.106	9.029	8.18	9.451	8.632	8.35	7.746
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	417	449	399	444	382	420	433	474
Service Time	6.376	5.806	6.729	5.88	7.151	6.332	6.045	5.441
HCM Lane V/C Ratio	0.266	0.675	0.075	0.676	0.152	0.414	0.18	0.992
HCM Control Delay	14.5	25.9	12.4	25.8	13.8	17.2	12.9	72.3
HCM Lane LOS	B	D	B	D	B	C	B	F
HCM 95th-tile Q	1	4.9	0.2	4.8	0.5	2	0.6	13.6

Intersection	
Intersection Delay, s/veh	32
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	110	14	171	1	21	16	322	143	6	32	149	282
Future Vol, veh/h	110	14	171	1	21	16	322	143	6	32	149	282
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
Heavy Vehicles, %	0	0	5	100	0	0	2	1	0	0	2	2
Mvmt Flow	122	16	190	1	23	18	358	159	7	36	166	313
Number of Lanes	1	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	2
HCM Control Delay	14.1	14	44.6	32
HCM LOS	B	B	E	D

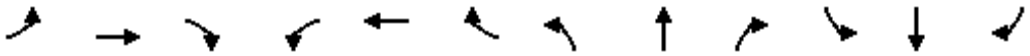
Lane	NBLn1	EBLn1	EBLn2	WBLn1	SBLn1
Vol Left, %	68%	100%	0%	3%	7%
Vol Thru, %	30%	0%	8%	55%	32%
Vol Right, %	1%	0%	92%	42%	61%
Sign Control	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	471	110	185	38	463
LT Vol	322	110	0	1	32
Through Vol	143	0	14	21	149
RT Vol	6	0	171	16	282
Lane Flow Rate	523	122	206	42	514
Geometry Grp	2	7	7	5	2
Degree of Util (X)	0.914	0.275	0.395	0.113	0.837
Departure Headway (Hd)	6.289	8.101	6.919	9.66	5.856
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes
Cap	576	444	520	370	617
Service Time	4.336	5.857	4.674	7.754	3.902
HCM Lane V/C Ratio	0.908	0.275	0.396	0.114	0.833
HCM Control Delay	44.6	13.9	14.2	14	32
HCM Lane LOS	E	B	B	B	D
HCM 95th-tile Q	11.2	1.1	1.9	0.4	9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	20	7	12	46	5	54	1	8	1368	55	2	65
Future Volume (Veh/h)	20	7	12	46	5	54	1	8	1368	55	2	65
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	21	7	13	48	5	56	0	8	1425	57	0	68
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	3108	3819	1092	2714	3834	741	0	2229			0	1482
vC1, stage 1 conf vol	2321	2321		1470	1470							
vC2, stage 2 conf vol	787	1498		1245	2365							
vCu, unblocked vol	3108	3819	1092	2714	3834	741	0	2229			0	1482
tC, single (s)	7.6	6.5	6.9	7.6	6.5	6.9	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.6	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			0.0	2.2
p0 queue free %	30	86	94	42	89	85	0	97			0	85
cM capacity (veh/h)	30	51	213	83	47	363	0	237			0	460

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	41	109	8	950	532	68	1092	1092	44
Volume Left	21	48	8	0	0	68	0	0	0
Volume Right	13	56	0	0	57	0	0	0	44
cSH	46	130	237	1700	1700	460	1700	1700	1700
Volume to Capacity	0.90	0.84	0.03	0.56	0.31	0.15	0.64	0.64	0.03
Queue Length 95th (ft)	91	130	3	0	0	13	0	0	0
Control Delay (s)	240.2	104.1	20.7	0.0	0.0	14.2	0.0	0.0	0.0
Lane LOS	F	F	C			B			
Approach Delay (s)	240.2	104.1	0.1			0.4			
Approach LOS	F	F							

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	71.9%	ICU Level of Service		C
Analysis Period (min)	15			

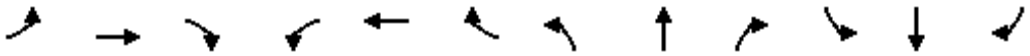
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2098	42
Future Volume (Veh/h)	2098	42
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	2185	44
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	110	1	1	100	2	1	1	2	1	1	1
Future Volume (Veh/h)	10	110	1	1	100	2	1	1	2	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
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
Hourly flow rate (vph)	12	134	1	1	122	2	1	1	2	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	124			135			285	284	134	286	284	123
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	124			135			285	284	134	286	284	123
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	100
cM capacity (veh/h)	1475			1462			665	622	920	664	623	933

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	147	125	4	3
Volume Left	12	1	1	1
Volume Right	1	2	2	1
cSH	1475	1462	757	717
Volume to Capacity	0.01	0.00	0.01	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	0.7	0.1	9.8	10.0
Lane LOS	A	A	A	B
Approach Delay (s)	0.7	0.1	9.8	10.0
Approach LOS			A	B

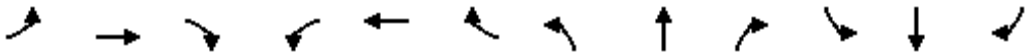
Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	22.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	92	16	12	80	6	15	6	8	7	10	4
Future Volume (Veh/h)	10	92	16	12	80	6	15	6	8	7	10	4
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	14	124	22	16	108	8	20	8	11	9	14	5
Pedestrians		1			1						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	152	96	18	173	92	16	20			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	152	96	18	173	92	16	20			20		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	98	84	98	98	86	99	99			99		
cM capacity (veh/h)	715	782	1066	655	785	1068	1514			1608		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	160	132	39	28
Volume Left	14	16	20	9
Volume Right	22	8	11	5
cSH	805	779	1514	1608
Volume to Capacity	0.20	0.17	0.01	0.01
Queue Length 95th (ft)	18	15	1	0
Control Delay (s)	10.6	10.6	3.8	2.4
Lane LOS	B	B	A	A
Approach Delay (s)	10.6	10.6	3.8	2.4
Approach LOS	B	B		

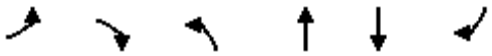
Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	18.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	51	0	4	67	36	4	0	4	23	0	32
Future Volume (Veh/h)	57	51	0	4	67	36	4	0	4	23	0	32
Sign Control		Free			Free			Stop			Stop	
Grade		-3%			2%			1%			0%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	83	74	0	6	97	52	6	0	6	33	0	46
Pedestrians											2	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											3.5	
Percent Blockage											0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	151			74			421	403	74	383	377	125
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	151			74			421	403	74	383	377	125
tC, single (s)	4.1			4.1			7.4	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.5	3.5	4.0	3.3
p0 queue free %	94			100			99	100	99	94	100	95
cM capacity (veh/h)	1440			1538			456	505	927	546	523	929

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	157	155	12	79
Volume Left	83	6	6	33
Volume Right	0	52	6	46
cSH	1440	1538	612	719
Volume to Capacity	0.06	0.00	0.02	0.11
Queue Length 95th (ft)	5	0	1	9
Control Delay (s)	4.3	0.3	11.0	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	4.3	0.3	11.0	10.6
Approach LOS			B	B

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	23.0%	ICU Level of Service	A	
Analysis Period (min)	15			

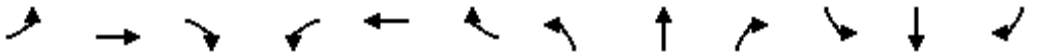


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	51	21	19	86	95	82
Future Volume (Veh/h)	51	21	19	86	95	82
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	65	27	24	110	122	105
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	332	174	227			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	332	174	227			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	90	97	98			
cM capacity (veh/h)	648	856	1353			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	92	134	227
Volume Left	65	24	0
Volume Right	27	0	105
cSH	698	1353	1700
Volume to Capacity	0.13	0.02	0.13
Queue Length 95th (ft)	11	1	0
Control Delay (s)	10.9	1.5	0.0
Lane LOS	B	A	
Approach Delay (s)	10.9	1.5	0.0
Approach LOS	B		

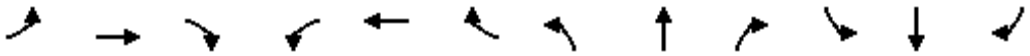
Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix F Background Conditions Level of Service Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	237	279	108	387	219	331	1576	112	129	755	194
Future Volume (vph)	131	237	279	108	387	219	331	1576	112	129	755	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-1%			2%	
Total Lost time (s)	4.5	6.0		4.5	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		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
Frt	1.00	0.92		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3209		1770	3303		3417	3489	1561	3180	3279	1505
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3209		1770	3303		3417	3489	1561	3180	3279	1505
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)	138	249	294	114	407	231	348	1659	118	136	795	204
RTOR Reduction (vph)	0	136	0	0	50	0	0	0	43	0	0	114
Lane Group Flow (vph)	138	407	0	114	588	0	348	1659	75	136	795	90
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	5%	2%	2%	3%	4%	3%	4%	4%	9%	9%	4%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	13.5	33.5		12.8	32.8		19.4	77.2	77.2	11.7	69.5	69.5
Effective Green, g (s)	13.5	33.5		12.8	32.8		19.4	77.2	77.2	11.7	69.5	69.5
Actuated g/C Ratio	0.09	0.21		0.08	0.21		0.12	0.49	0.49	0.07	0.44	0.44
Clearance Time (s)	4.5	6.0		4.5	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.4	5.4	3.5	5.4	5.4
Lane Grp Cap (vph)	155	686		144	691		423	1718	769	237	1454	667
v/s Ratio Prot	c0.08	0.13		0.06	c0.18		c0.10	c0.48		0.04	0.24	
v/s Ratio Perm									0.05			0.06
v/c Ratio	0.89	0.59		0.79	0.85		0.82	0.97	0.10	0.57	0.55	0.14
Uniform Delay, d1	70.9	55.5		70.6	59.6		67.0	38.5	21.2	70.1	32.0	25.8
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	42.0	1.4		25.0	9.9		12.2	14.6	0.1	3.6	0.8	0.2
Delay (s)	112.8	56.8		95.6	69.5		79.2	53.1	21.3	73.7	32.9	26.0
Level of Service	F	E		F	E		E	D	C	E	C	C
Approach Delay (s)		68.2			73.4			55.6			36.5	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	55.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	156.7	Sum of lost time (s)	21.5
Intersection Capacity Utilization	90.1%	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)	55	338	74	7	562	91	20	15	11	29	47	119
Future Volume (Veh/h)	55	338	74	7	562	91	20	15	11	29	47	119
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	69	423	93	9	703	114	25	19	14	36	59	149
Pedestrians					5						3	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					3.5						3.5	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked				0.91			0.91	0.91	0.91	0.91	0.91	
vC, conflicting volume	820			516			1460	1399	428	1370	1435	763
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	820			420			1457	1389	324	1358	1429	763
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.5	4.0	3.3	3.6	4.0	3.3
p0 queue free %	91			99			27	84	98	59	47	63
cM capacity (veh/h)	781			982			34	118	655	88	112	406

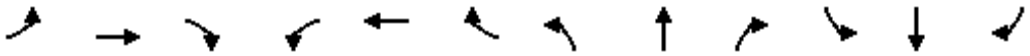
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	69	423	93	9	817	58	244
Volume Left	69	0	0	9	0	25	36
Volume Right	0	0	93	0	114	14	149
cSH	781	1700	1700	982	1700	63	187
Volume to Capacity	0.09	0.25	0.05	0.01	0.48	0.91	1.30
Queue Length 95th (ft)	7	0	0	1	0	108	344
Control Delay (s)	10.1	0.0	0.0	8.7	0.0	196.4	218.3
Lane LOS	B			A		F	F
Approach Delay (s)	1.2			0.1		196.4	218.3
Approach LOS						F	F

Intersection Summary				
Average Delay	38.2			
Intersection Capacity Utilization	60.4%	ICU Level of Service		B
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	303	74	75	462	198	48
Future Volume (Veh/h)	303	74	75	462	198	48
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	361	88	89	550	236	57
Pedestrians				21	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				2	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			450		1134	427
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			450		1134	427
tC, single (s)			4.2		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.4
p0 queue free %			92		0	91
cM capacity (veh/h)			1089		203	604

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	449	89	550	293
Volume Left	0	89	0	236
Volume Right	88	0	0	57
cSH	1700	1089	1700	233
Volume to Capacity	0.26	0.08	0.32	1.26
Queue Length 95th (ft)	0	7	0	372
Control Delay (s)	0.0	8.6	0.0	188.7
Lane LOS		A		F
Approach Delay (s)	0.0	1.2		188.7
Approach LOS				F

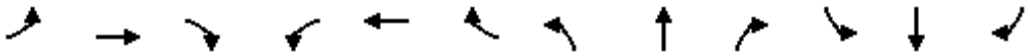
Intersection Summary			
Average Delay	40.6		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	112	311	39	32	265	32	89	135	69	30	39	107
Future Volume (vph)	112	311	39	32	265	32	89	135	69	30	39	107
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
Hourly flow rate (vph)	124	346	43	36	294	36	99	150	77	33	43	119

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	124	389	36	330	99	227	33	162
Volume Left (vph)	124	0	36	0	99	0	33	0
Volume Right (vph)	0	43	0	36	0	77	0	119
Hadj (s)	0.58	-0.05	0.72	-0.05	0.55	-0.18	0.50	-0.47
Departure Headway (s)	7.5	6.8	7.8	7.0	8.0	7.3	8.2	7.3
Degree Utilization, x	0.26	0.74	0.08	0.65	0.22	0.46	0.08	0.33
Capacity (veh/h)	463	511	440	489	428	463	404	459
Control Delay (s)	11.8	25.5	10.3	20.8	12.0	15.0	10.7	12.5
Approach Delay (s)	22.2		19.7		14.1		12.2	
Approach LOS	C		C		B		B	

Intersection Summary				
Delay	18.3			
Level of Service	C			
Intersection Capacity Utilization	52.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	272	9	219	5	23	24	138	141	3	5	116	103
Future Volume (vph)	272	9	219	5	23	24	138	141	3	5	116	103
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	0.91
Hourly flow rate (vph)	299	10	241	5	25	26	152	155	3	5	127	113

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total (vph)	299	251	56	310	245
Volume Left (vph)	299	0	5	152	5
Volume Right (vph)	0	241	26	3	113
Hadj (s)	0.55	-0.60	-0.19	0.20	-0.16
Departure Headway (s)	6.8	5.7	6.5	6.1	5.9
Degree Utilization, x	0.57	0.40	0.10	0.53	0.40
Capacity (veh/h)	507	609	463	553	568
Control Delay (s)	17.3	11.2	10.3	15.8	12.9
Approach Delay (s)	14.5		10.3	15.8	12.9
Approach LOS	B		B	C	B

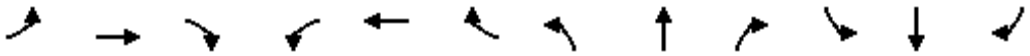
Intersection Summary				
Delay	14.3			
Level of Service	B			
Intersection Capacity Utilization	59.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	30	3	2	39	3	52	4	8	1914	89	3	25
Future Volume (Veh/h)	30	3	2	39	3	52	4	8	1914	89	3	25
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	31	3	2	41	3	54	0	8	1994	93	0	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2272	3307	576	2688	3278	1044	0	1169			0	2087
vC1, stage 1 conf vol	1204	1204		2056	2056							
vC2, stage 2 conf vol	1068	2103		632	1221							
vCu, unblocked vol	2272	3307	576	2688	3278	1044	0	1169			0	2087
tC, single (s)	7.7	6.5	6.9	7.6	6.5	7.2	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.7	5.5		6.6	5.5							
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	0.0	2.2			0.0	2.2
p0 queue free %	68	95	100	21	96	74	0	99			0	90
cM capacity (veh/h)	98	62	466	52	86	208	0	605			0	269

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	36	98	8	1329	758	26	576	576	17
Volume Left	31	41	8	0	0	26	0	0	0
Volume Right	2	54	0	0	93	0	0	0	17
cSH	98	90	605	1700	1700	269	1700	1700	1700
Volume to Capacity	0.37	1.08	0.01	0.78	0.45	0.10	0.34	0.34	0.01
Queue Length 95th (ft)	37	164	1	0	0	8	0	0	0
Control Delay (s)	61.9	204.2	11.0	0.0	0.0	19.8	0.0	0.0	0.0
Lane LOS	F	F	B			C			
Approach Delay (s)	61.9	204.2	0.0			0.4			
Approach LOS	F	F							

Intersection Summary				
Average Delay	6.7			
Intersection Capacity Utilization	67.6%	ICU Level of Service	C	
Analysis Period (min)	15			

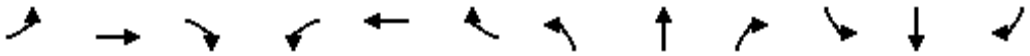
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1106	16
Future Volume (Veh/h)	1106	16
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	1152	17
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	104	2	0	73	3	3	2	2	8	3	15
Future Volume (Veh/h)	11	104	2	0	73	3	3	2	2	8	3	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	16	151	3	0	106	4	4	3	3	12	4	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	110			154			316	294	152	297	294	108
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	110			154			316	294	152	297	294	108
tC, single (s)	4.1			4.1			7.6	7.0	6.2	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.0	4.5	3.3	3.5	4.0	3.5
p0 queue free %	99			100			99	99	100	98	99	98
cM capacity (veh/h)	1493			1439			532	538	899	649	614	897

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	170	110	10	38
Volume Left	16	0	4	12
Volume Right	3	4	3	22
cSH	1493	1439	609	767
Volume to Capacity	0.01	0.00	0.02	0.05
Queue Length 95th (ft)	1	0	1	4
Control Delay (s)	0.8	0.0	11.0	9.9
Lane LOS	A		B	A
Approach Delay (s)	0.8	0.0	11.0	9.9
Approach LOS			B	A

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	22.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	94	17	2	60	6	16	11	10	7	4	3
Future Volume (Veh/h)	3	94	17	2	60	6	16	11	10	7	4	3
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	4	131	24	3	83	8	22	15	14	10	6	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	144	101	8	184	96	22	10			29		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	144	101	8	184	96	22	10			29		
tC, single (s)	7.1	6.5	6.2	7.6	6.6	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	4.0	4.0	3.5	2.2			2.2		
p0 queue free %	99	83	98	99	89	99	99			99		
cM capacity (veh/h)	745	775	1080	573	773	1013	1623			1597		

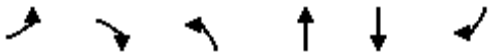
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	159	94	51	20
Volume Left	4	3	22	10
Volume Right	24	8	14	4
cSH	809	780	1623	1597
Volume to Capacity	0.20	0.12	0.01	0.01
Queue Length 95th (ft)	18	10	1	0
Control Delay (s)	10.5	10.2	3.2	3.7
Lane LOS	B	B	A	A
Approach Delay (s)	10.5	10.2	3.2	3.7
Approach LOS	B	B		

Intersection Summary				
Average Delay	8.9			
Intersection Capacity Utilization	17.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	111	3	1	64	3	3
Future Volume (Veh/h)	111	3	1	64	3	3
Sign Control	Free			Free	Stop	
Grade	-3%			2%	1%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	163	4	1	94	4	4
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			167		261	166
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			167		261	166
tC, single (s)			4.1		6.4	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.6
p0 queue free %			100		99	100
cM capacity (veh/h)			1423		732	803

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	167	95	8
Volume Left	0	1	4
Volume Right	4	0	4
cSH	1700	1423	766
Volume to Capacity	0.10	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.1	9.8
Lane LOS		A	A
Approach Delay (s)	0.0	0.1	9.8
Approach LOS			A

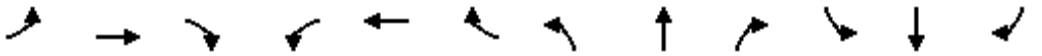
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	16.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	98	25	19	112	42	40
Future Volume (Veh/h)	98	25	19	112	42	40
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	140	36	27	160	60	57
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	304	88	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	304	88	117			
tC, single (s)	6.4	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.4			
p0 queue free %	79	96	98			
cM capacity (veh/h)	674	953	1383			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	176	187	117
Volume Left	140	27	0
Volume Right	36	0	57
cSH	717	1383	1700
Volume to Capacity	0.25	0.02	0.07
Queue Length 95th (ft)	24	1	0
Control Delay (s)	11.6	1.2	0.0
Lane LOS	B	A	
Approach Delay (s)	11.6	1.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

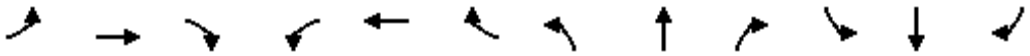


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	161	324	135	145	142	244	1034	133	278	1714	45
Future Volume (vph)	45	161	324	135	145	142	244	1034	133	278	1714	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-1%			2%	
Total Lost time (s)	4.5	6.0		4.5	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	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	0.90		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1671	3205		1703	3251		3484	3489	1587	3467	3504	1599
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1671	3205		1703	3251		3484	3489	1587	3467	3504	1599
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)	48	171	345	144	154	151	260	1100	141	296	1823	48
RTOR Reduction (vph)	0	125	0	0	114	0	0	0	42	0	0	22
Lane Group Flow (vph)	48	391	0	144	191	0	260	1100	99	296	1823	26
Confl. Peds. (#/hr)	3					3						
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	8%	0%	2%	6%	2%	2%	1%	4%	1%	0%	2%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	8.0	25.4		13.5	30.9		12.0	77.7	77.7	16.4	82.1	82.1
Effective Green, g (s)	8.0	25.4		13.5	30.9		12.0	77.7	77.7	16.4	82.1	82.1
Actuated g/C Ratio	0.05	0.16		0.09	0.20		0.08	0.50	0.50	0.11	0.53	0.53
Clearance Time (s)	4.5	6.0		4.5	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.4	5.4	3.5	5.4	5.4
Lane Grp Cap (vph)	86	526		148	650		270	1754	798	368	1861	849
v/s Ratio Prot	0.03	c0.12		c0.08	0.06		0.07	0.32		c0.09	c0.52	
v/s Ratio Perm									0.06			0.02
v/c Ratio	0.56	0.92dr		0.97	0.29		0.96	0.63	0.12	0.80	0.98	0.03
Uniform Delay, d1	71.5	61.5		70.3	52.5		71.0	27.9	20.4	67.5	35.4	17.2
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	7.6	5.7		65.4	0.3		44.3	1.1	0.2	12.3	16.3	0.0
Delay (s)	79.2	67.1		135.7	52.8		115.4	29.0	20.5	79.8	51.7	17.3
Level of Service	E	E		F	D		F	C	C	E	D	B
Approach Delay (s)		68.1			79.4			43.1			54.8	
Approach LOS		E			E			D			D	

Intersection Summary			
HCM 2000 Control Delay	55.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	154.5	Sum of lost time (s)	21.5
Intersection Capacity Utilization	94.6%	ICU Level of Service	F
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	387	26	5	414	72	12	0	1	36	1	64
Future Volume (Veh/h)	121	387	26	5	414	72	12	0	1	36	1	64
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	132	421	28	5	450	78	13	0	1	39	1	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked												
vC, conflicting volume	528			449			1216	1223	421	1185	1212	489
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	528			449			1216	1223	421	1185	1212	489
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			100			90	100	100	74	99	88
cM capacity (veh/h)	1044			1122			126	158	637	150	160	579

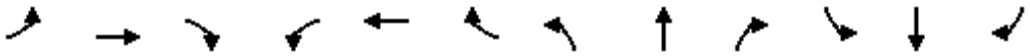
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	132	421	28	5	528	14	110
Volume Left	132	0	0	5	0	13	39
Volume Right	0	0	28	0	78	1	70
cSH	1044	1700	1700	1122	1700	133	285
Volume to Capacity	0.13	0.25	0.02	0.00	0.31	0.10	0.39
Queue Length 95th (ft)	11	0	0	0	0	9	44
Control Delay (s)	8.9	0.0	0.0	8.2	0.0	35.1	25.4
Lane LOS	A			A		E	D
Approach Delay (s)	2.0			0.1		35.1	25.4
Approach LOS						E	D

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	48.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	314	110	63	403	89	37
Future Volume (Veh/h)	314	110	63	403	89	37
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	345	121	69	443	98	41
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			466		986	406
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			466		986	406
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		62	94
cM capacity (veh/h)			1090		257	642

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	466	69	443	139
Volume Left	0	69	0	98
Volume Right	121	0	0	41
cSH	1700	1090	1700	312
Volume to Capacity	0.27	0.06	0.26	0.44
Queue Length 95th (ft)	0	5	0	55
Control Delay (s)	0.0	8.5	0.0	25.4
Lane LOS		A		D
Approach Delay (s)	0.0	1.1		25.4
Approach LOS				D

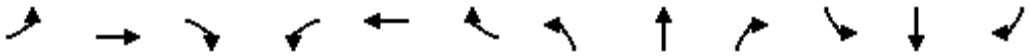
Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	27	133	134	34	103	52	99	226	29	69	368	41
Future Volume (vph)	27	133	134	34	103	52	99	226	29	69	368	41
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	30	149	151	38	116	58	111	254	33	78	413	46

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	30	300	38	174	111	287	78	459
Volume Left (vph)	30	0	38	0	111	0	78	0
Volume Right (vph)	0	151	0	58	0	33	0	46
Hadj (s)	0.50	-0.33	0.55	-0.22	0.50	-0.04	0.53	-0.05
Departure Headway (s)	8.2	7.4	8.6	7.8	7.9	7.4	7.7	7.1
Degree Utilization, x	0.07	0.62	0.09	0.38	0.24	0.59	0.17	0.90
Capacity (veh/h)	420	460	398	438	436	464	453	501
Control Delay (s)	10.6	20.3	11.2	14.2	12.2	19.1	11.0	45.1
Approach Delay (s)	19.5		13.7		17.2		40.2	
Approach LOS	C		B		C		E	

Intersection Summary				
Delay	25.5			
Level of Service	D			
Intersection Capacity Utilization	59.5%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	105	14	165	1	21	16	313	143	6	32	149	273
Future Volume (vph)	105	14	165	1	21	16	313	143	6	32	149	273
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
Hourly flow rate (vph)	117	16	183	1	23	18	348	159	7	36	166	303

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total (vph)	117	199	42	514	505
Volume Left (vph)	117	0	1	348	36
Volume Right (vph)	0	183	18	7	303
Hadj (s)	0.50	-0.57	-0.21	0.16	-0.31
Departure Headway (s)	8.0	6.9	7.8	6.1	5.8
Degree Utilization, x	0.26	0.38	0.09	0.88	0.81
Capacity (veh/h)	431	497	415	568	609
Control Delay (s)	12.6	12.9	11.6	38.1	28.4
Approach Delay (s)	12.8		11.6	38.1	28.4
Approach LOS	B		B	E	D

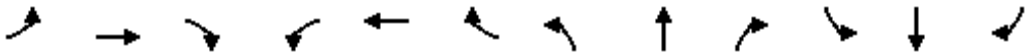
Intersection Summary				
Delay	27.9			
Level of Service	D			
Intersection Capacity Utilization	74.1%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	20	7	12	40	5	30	1	8	1368	46	2	24
Future Volume (Veh/h)	20	7	12	40	5	30	1	8	1368	46	2	24
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	21	7	13	42	5	31	0	8	1425	48	0	25
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2997	3724	1092	2624	3744	736	0	2229			0	1473
vC1, stage 1 conf vol	2235	2235		1465	1465							
vC2, stage 2 conf vol	762	1489		1159	2279							
vCu, unblocked vol	2997	3724	1092	2624	3744	736	0	2229			0	1473
tC, single (s)	7.6	6.5	6.9	7.6	6.5	6.9	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.6	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			0.0	2.2
p0 queue free %	45	89	94	56	91	92	0	97			0	95
cM capacity (veh/h)	38	65	213	95	58	366	0	237			0	464

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	41	78	8	950	523	25	1092	1092	44
Volume Left	21	42	8	0	0	25	0	0	0
Volume Right	13	31	0	0	48	0	0	0	44
cSH	57	127	237	1700	1700	464	1700	1700	1700
Volume to Capacity	0.72	0.61	0.03	0.56	0.31	0.05	0.64	0.64	0.03
Queue Length 95th (ft)	76	79	3	0	0	4	0	0	0
Control Delay (s)	161.7	70.2	20.7	0.0	0.0	13.2	0.0	0.0	0.0
Lane LOS	F	F	C			B			
Approach Delay (s)	161.7	70.2	0.1			0.1			
Approach LOS	F	F							

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	70.1%	ICU Level of Service	C	
Analysis Period (min)	15			

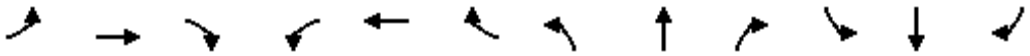
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2098	42
Future Volume (Veh/h)	2098	42
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	2185	44
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	60	1	1	70	2	1	1	2	1	1	1
Future Volume (Veh/h)	10	60	1	1	70	2	1	1	2	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
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
Hourly flow rate (vph)	12	73	1	1	85	2	1	1	2	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	87			74			187	186	74	188	186	86
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	87			74			187	186	74	188	186	86
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	100
cM capacity (veh/h)	1522			1538			771	705	994	769	706	978

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	86	88	4	3
Volume Left	12	1	1	1
Volume Right	1	2	2	1
cSH	1522	1538	846	803
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	1.1	0.1	9.3	9.5
Lane LOS	A	A	A	A
Approach Delay (s)	1.1	0.1	9.3	9.5
Approach LOS			A	A

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	19.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	42	16	12	50	3	15	6	8	2	10	4
Future Volume (Veh/h)	10	42	16	12	50	3	15	6	8	2	10	4
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	14	57	22	16	68	4	20	8	11	3	14	5
Pedestrians		1			1						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	116	84	18	128	80	16	20			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	116	84	18	128	80	16	20			20		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	98	93	98	98	91	100	99			100		
cM capacity (veh/h)	794	797	1066	758	800	1068	1514			1608		

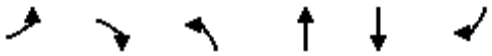
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	93	88	39	22
Volume Left	14	16	20	3
Volume Right	22	4	11	5
cSH	847	801	1514	1608
Volume to Capacity	0.11	0.11	0.01	0.00
Queue Length 95th (ft)	9	9	1	0
Control Delay (s)	9.8	10.0	3.8	1.0
Lane LOS	A	B	A	A
Approach Delay (s)	9.8	10.0	3.8	1.0
Approach LOS	A	B		

Intersection Summary				
Average Delay	8.1			
Intersection Capacity Utilization	17.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	51	0	4	67	4	4
Future Volume (Veh/h)	51	0	4	67	4	4
Sign Control	Free			Free	Stop	
Grade	-3%			2%	1%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	74	0	6	97	6	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			74		183	74
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			74		183	74
tC, single (s)			4.1		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.2		3.7	3.5
p0 queue free %			100		99	99
cM capacity (veh/h)			1538		754	927

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	74	103	12
Volume Left	0	6	6
Volume Right	0	0	6
cSH	1700	1538	831
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.5	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.4
Approach LOS			A

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	16.8%	ICU Level of Service	A
Analysis Period (min)	15		

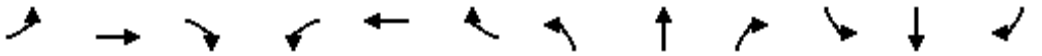


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	35	16	10	86	95	55
Future Volume (Veh/h)	35	16	10	86	95	55
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	45	21	13	110	122	71
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	294	158	193			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	294	158	193			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	93	98	99			
cM capacity (veh/h)	689	875	1392			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	66	123	193
Volume Left	45	13	0
Volume Right	21	0	71
cSH	739	1392	1700
Volume to Capacity	0.09	0.01	0.11
Queue Length 95th (ft)	7	1	0
Control Delay (s)	10.4	0.9	0.0
Lane LOS	B	A	
Approach Delay (s)	10.4	0.9	0.0
Approach LOS	B		

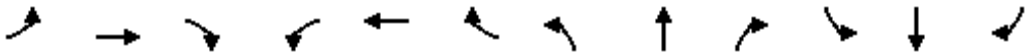
Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	22.9%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix G Total Traffic Conditions Level of Service Worksheets



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	131	237	281	108	387	219	335	1609	112	130	766	194
Future Volume (vph)	131	237	281	108	387	219	335	1609	112	130	766	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-1%			2%	
Total Lost time (s)	4.5	6.0		4.5	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00		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
Frt	1.00	0.92		1.00	0.95		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1805	3208		1770	3303		3417	3489	1561	3180	3279	1505
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1805	3208		1770	3303		3417	3489	1561	3180	3279	1505
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)	138	249	296	114	407	231	353	1694	118	137	806	204
RTOR Reduction (vph)	0	137	0	0	50	0	0	0	43	0	0	114
Lane Group Flow (vph)	138	408	0	114	588	0	353	1694	75	137	806	90
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	5%	2%	2%	3%	4%	3%	4%	4%	9%	9%	4%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	13.5	33.6		12.8	32.9		19.5	77.2	77.2	11.7	69.4	69.4
Effective Green, g (s)	13.5	33.6		12.8	32.9		19.5	77.2	77.2	11.7	69.4	69.4
Actuated g/C Ratio	0.09	0.21		0.08	0.21		0.12	0.49	0.49	0.07	0.44	0.44
Clearance Time (s)	4.5	6.0		4.5	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.4	5.4	3.5	5.4	5.4
Lane Grp Cap (vph)	155	687		144	693		424	1717	768	237	1451	666
v/s Ratio Prot	c0.08	0.13		0.06	c0.18		c0.10	c0.49		0.04	0.25	
v/s Ratio Perm									0.05			0.06
v/c Ratio	0.89	0.59		0.79	0.85		0.83	0.99	0.10	0.58	0.56	0.14
Uniform Delay, d1	70.9	55.5		70.7	59.6		67.1	39.3	21.2	70.2	32.3	25.9
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	42.0	1.4		25.0	9.5		13.1	18.6	0.1	3.7	0.9	0.2
Delay (s)	112.9	56.8		95.7	69.1		80.1	57.9	21.4	73.8	33.2	26.1
Level of Service	F	E		F	E		F	E	C	E	C	C
Approach Delay (s)		68.2			73.1			59.5			36.8	
Approach LOS		E			E			E			D	

Intersection Summary			
HCM 2000 Control Delay	57.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	156.8	Sum of lost time (s)	21.5
Intersection Capacity Utilization	91.1%	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)	55	339	74	7	562	91	20	15	11	29	47	119
Future Volume (Veh/h)	55	339	74	7	562	91	20	15	11	29	47	119
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	69	424	93	9	703	114	25	19	14	36	59	149
Pedestrians					5						3	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					3.5						3.5	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked				0.91			0.91	0.91	0.91	0.91	0.91	
vC, conflicting volume	820			517			1462	1400	429	1372	1436	763
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	820			422			1458	1390	325	1359	1430	763
tC, single (s)	4.2			4.2			7.1	6.5	6.2	7.2	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.5	4.0	3.3	3.6	4.0	3.3
p0 queue free %	91			99			27	84	98	59	47	63
cM capacity (veh/h)	781			981			34	118	654	88	112	406

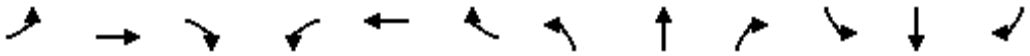
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	69	424	93	9	817	58	244
Volume Left	69	0	0	9	0	25	36
Volume Right	0	0	93	0	114	14	149
cSH	781	1700	1700	981	1700	63	187
Volume to Capacity	0.09	0.25	0.05	0.01	0.48	0.92	1.30
Queue Length 95th (ft)	7	0	0	1	0	109	344
Control Delay (s)	10.1	0.0	0.0	8.7	0.0	197.0	218.8
Lane LOS	B			A		F	F
Approach Delay (s)	1.2			0.1		197.0	218.8
Approach LOS						F	F

Intersection Summary				
Average Delay	38.3			
Intersection Capacity Utilization	60.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	303	75	75	462	198	48
Future Volume (Veh/h)	303	75	75	462	198	48
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	361	89	89	550	236	57
Pedestrians				21	1	
Lane Width (ft)				12.0	12.0	
Walking Speed (ft/s)				3.5	3.5	
Percent Blockage				2	0	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			451		1134	428
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			451		1134	428
tC, single (s)			4.2		6.4	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.4
p0 queue free %			92		0	91
cM capacity (veh/h)			1088		203	604

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	450	89	550	293
Volume Left	0	89	0	236
Volume Right	89	0	0	57
cSH	1700	1088	1700	233
Volume to Capacity	0.26	0.08	0.32	1.26
Queue Length 95th (ft)	0	7	0	373
Control Delay (s)	0.0	8.6	0.0	189.1
Lane LOS		A		F
Approach Delay (s)	0.0	1.2		189.1
Approach LOS				F

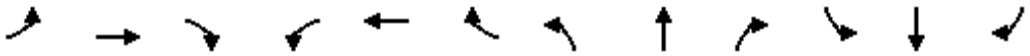
Intersection Summary			
Average Delay	40.6		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	112	311	39	37	265	32	89	143	85	30	42	107
Future Volume (vph)	112	311	39	37	265	32	89	143	85	30	42	107
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
Hourly flow rate (vph)	124	346	43	41	294	36	99	159	94	33	47	119

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	124	389	41	330	99	253	33	166
Volume Left (vph)	124	0	41	0	99	0	33	0
Volume Right (vph)	0	43	0	36	0	94	0	119
Hadj (s)	0.58	-0.05	0.72	-0.05	0.55	-0.20	0.50	-0.45
Departure Headway (s)	7.6	7.0	7.9	7.2	8.0	7.3	8.3	7.4
Degree Utilization, x	0.26	0.75	0.09	0.66	0.22	0.51	0.08	0.34
Capacity (veh/h)	455	502	433	481	426	463	399	452
Control Delay (s)	12.1	27.0	10.5	21.7	12.1	16.5	10.8	12.9
Approach Delay (s)	23.4		20.4		15.3		12.6	
Approach LOS	C		C		C		B	

Intersection Summary				
Delay	19.1			
Level of Service	C			
Intersection Capacity Utilization	54.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	280	9	227	5	23	24	141	141	3	5	116	105
Future Volume (vph)	280	9	227	5	23	24	141	141	3	5	116	105
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	0.91
Hourly flow rate (vph)	308	10	249	5	25	26	155	155	3	5	127	115

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total (vph)	308	259	56	313	247
Volume Left (vph)	308	0	5	155	5
Volume Right (vph)	0	249	26	3	115
Hadj (s)	0.55	-0.60	-0.19	0.21	-0.16
Departure Headway (s)	6.9	5.7	6.6	6.2	6.0
Degree Utilization, x	0.59	0.41	0.10	0.54	0.41
Capacity (veh/h)	506	607	458	549	562
Control Delay (s)	18.0	11.4	10.3	16.2	13.1
Approach Delay (s)	15.0		10.3	16.2	13.1
Approach LOS	C		B	C	B

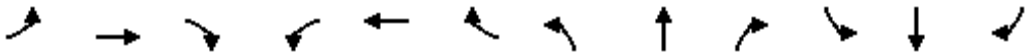
Intersection Summary				
Delay	14.7			
Level of Service	B			
Intersection Capacity Utilization	60.4%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	30	3	2	47	3	93	4	8	1914	92	3	38
Future Volume (Veh/h)	30	3	2	47	3	93	4	8	1914	92	3	38
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	31	3	2	49	3	97	0	8	1994	96	0	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2344	3338	576	2718	3307	1045	0	1169			0	2090
vC1, stage 1 conf vol	1232	1232		2058	2058							
vC2, stage 2 conf vol	1112	2106		660	1249							
vCu, unblocked vol	2344	3338	576	2718	3307	1045	0	1169			0	2090
tC, single (s)	7.7	6.5	6.9	7.6	6.5	7.2	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.7	5.5		6.6	5.5							
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	0.0	2.2			0.0	2.2
p0 queue free %	47	94	100	5	96	53	0	99			0	85
cM capacity (veh/h)	58	49	466	52	84	207	0	605			0	268

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	36	149	8	1329	761	40	576	576	17
Volume Left	31	49	8	0	0	40	0	0	0
Volume Right	2	97	0	0	96	0	0	0	17
cSH	60	103	605	1700	1700	268	1700	1700	1700
Volume to Capacity	0.60	1.45	0.01	0.78	0.45	0.15	0.34	0.34	0.01
Queue Length 95th (ft)	62	273	1	0	0	13	0	0	0
Control Delay (s)	130.5	323.8	11.0	0.0	0.0	20.8	0.0	0.0	0.0
Lane LOS	F	F	B			C			
Approach Delay (s)	130.5	323.8	0.0			0.7			
Approach LOS	F	F							

Intersection Summary				
Average Delay	15.4			
Intersection Capacity Utilization	70.5%	ICU Level of Service		C
Analysis Period (min)	15			

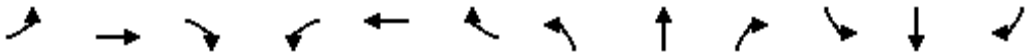
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1106	16
Future Volume (Veh/h)	1106	16
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	1152	17
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	120	2	0	122	3	3	2	2	8	3	15
Future Volume (Veh/h)	11	120	2	0	122	3	3	2	2	8	3	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	16	174	3	0	177	4	4	3	3	12	4	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	181			177			410	388	176	391	388	179
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	181			177			410	388	176	391	388	179
tC, single (s)	4.1			4.1			7.6	7.0	6.2	7.1	6.5	6.4
tC, 2 stage (s)												
tF (s)	2.2			2.2			4.0	4.5	3.3	3.5	4.0	3.5
p0 queue free %	99			100			99	99	100	98	99	97
cM capacity (veh/h)	1407			1411			456	473	873	562	544	817

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	193	181	10	38
Volume Left	16	0	4	12
Volume Right	3	4	3	22
cSH	1407	1411	539	683
Volume to Capacity	0.01	0.00	0.02	0.06
Queue Length 95th (ft)	1	0	1	4
Control Delay (s)	0.7	0.0	11.8	10.6
Lane LOS	A		B	B
Approach Delay (s)	0.7	0.0	11.8	10.6
Approach LOS			B	B

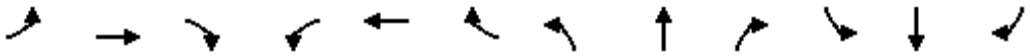
Intersection Summary				
Average Delay	1.6			
Intersection Capacity Utilization	25.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	110	17	2	110	6	16	11	10	9	4	3
Future Volume (Veh/h)	3	110	17	2	110	6	16	11	10	9	4	3
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72
Hourly flow rate (vph)	4	153	24	3	153	8	22	15	14	13	6	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	184	107	8	200	102	22	10			29		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	184	107	8	200	102	22	10			29		
tC, single (s)	7.1	6.5	6.2	7.6	6.6	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	4.0	4.0	3.5	2.2			2.2		
p0 queue free %	99	80	98	99	80	99	99			99		
cM capacity (veh/h)	645	768	1080	542	765	1013	1623			1597		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	181	164	51	23
Volume Left	4	3	22	13
Volume Right	24	8	14	4
cSH	795	769	1623	1597
Volume to Capacity	0.23	0.21	0.01	0.01
Queue Length 95th (ft)	22	20	1	1
Control Delay (s)	10.9	10.9	3.2	4.1
Lane LOS	B	B	A	A
Approach Delay (s)	10.9	10.9	3.2	4.1
Approach LOS	B	B		

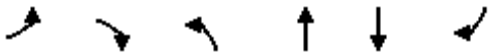
Intersection Summary				
Average Delay	9.6			
Intersection Capacity Utilization	18.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	111	3	1	64	12	3	0	3	35	0	50
Future Volume (Veh/h)	18	111	3	1	64	12	3	0	3	35	0	50
Sign Control		Free			Free			Stop			Stop	
Grade		-3%			2%			1%			0%	
Peak Hour Factor	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Hourly flow rate (vph)	26	163	4	1	94	18	4	0	4	51	0	74
Pedestrians					1						2	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					3.5						3.5	
Percent Blockage					0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	114			167			396	333	166	329	326	105
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	114			167			396	333	166	329	326	105
tC, single (s)	4.1			4.1			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.6	3.5	4.0	3.3
p0 queue free %	98			100			99	100	100	92	100	92
cM capacity (veh/h)	1485			1423			515	578	803	614	584	953

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	193	113	8	125
Volume Left	26	1	4	51
Volume Right	4	18	4	74
cSH	1485	1423	628	778
Volume to Capacity	0.02	0.00	0.01	0.16
Queue Length 95th (ft)	1	0	1	14
Control Delay (s)	1.1	0.1	10.8	10.5
Lane LOS	A	A	B	B
Approach Delay (s)	1.1	0.1	10.8	10.5
Approach LOS			B	B

Intersection Summary				
Average Delay	3.7			
Intersection Capacity Utilization	26.2%	ICU Level of Service	A	
Analysis Period (min)	15			



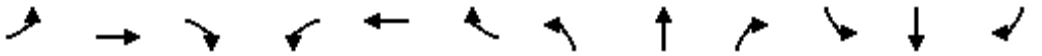
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	122	34	22	112	42	49
Future Volume (Veh/h)	122	34	22	112	42	49
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.70	0.70	0.70	0.70	0.70	0.70
Hourly flow rate (vph)	174	49	31	160	60	70
Pedestrians					1	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	318	95	130			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	318	95	130			
tC, single (s)	6.4	6.3	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.4			
p0 queue free %	74	95	98			
cM capacity (veh/h)	659	945	1368			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	223	191	130
Volume Left	174	31	0
Volume Right	49	0	70
cSH	706	1368	1700
Volume to Capacity	0.32	0.02	0.08
Queue Length 95th (ft)	34	2	0
Control Delay (s)	12.4	1.4	0.0
Lane LOS	B	A	
Approach Delay (s)	12.4	1.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	29.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
101: SW Pacific Hwy & SW Elwert Rd/SW Sunset Blvd

02/05/2019

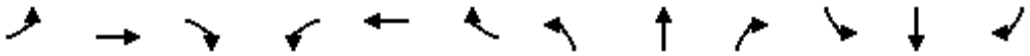


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	161	328	135	145	143	247	1056	133	281	1750	45
Future Volume (vph)	45	161	328	135	145	143	247	1056	133	281	1750	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			-1%			2%	
Total Lost time (s)	4.5	6.0		4.5	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Lane Util. Factor	1.00	0.95		1.00	0.95		0.97	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00	0.99	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	0.90		1.00	0.93		1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1671	3204		1703	3250		3484	3489	1587	3467	3504	1599
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1671	3204		1703	3250		3484	3489	1587	3467	3504	1599
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)	48	171	349	144	154	152	263	1123	141	299	1862	48
RTOR Reduction (vph)	0	125	0	0	116	0	0	0	42	0	0	23
Lane Group Flow (vph)	48	395	0	144	190	0	263	1123	99	299	1862	25
Confl. Peds. (#/hr)	3					3						
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	8%	0%	2%	6%	2%	2%	1%	4%	1%	0%	2%	0%
Turn Type	Prot	NA		Prot	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases									2			6
Actuated Green, G (s)	8.0	25.4		13.5	30.9		12.0	75.7	75.7	16.4	80.1	80.1
Effective Green, g (s)	8.0	25.4		13.5	30.9		12.0	75.7	75.7	16.4	80.1	80.1
Actuated g/C Ratio	0.05	0.17		0.09	0.20		0.08	0.50	0.50	0.11	0.53	0.53
Clearance Time (s)	4.5	6.0		4.5	6.0		5.0	6.0	6.0	5.0	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.4	5.4	3.5	5.4	5.4
Lane Grp Cap (vph)	87	533		150	658		274	1731	787	372	1840	839
v/s Ratio Prot	0.03	c0.12		c0.08	0.06		0.08	0.32		c0.09	c0.53	
v/s Ratio Perm									0.06			0.02
v/c Ratio	0.55	0.92dr		0.96	0.29		0.96	0.65	0.13	0.80	1.01	0.03
Uniform Delay, d1	70.5	60.4		69.2	51.5		70.0	28.5	20.6	66.5	36.2	17.5
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	7.4	5.5		60.6	0.2		42.9	1.3	0.2	12.2	24.0	0.0
Delay (s)	77.9	65.9		129.9	51.7		112.9	29.8	20.8	78.7	60.2	17.5
Level of Service	E	E		F	D		F	C	C	E	E	B
Approach Delay (s)		66.9			76.7			43.3			61.7	
Approach LOS		E			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	57.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	152.5	Sum of lost time (s)	21.5
Intersection Capacity Utilization	95.8%	ICU Level of Service	F
Analysis Period (min)	15		

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	121	389	26	5	416	73	12	0	1	38	1	64
Future Volume (Veh/h)	121	389	26	5	416	73	12	0	1	38	1	64
Sign Control		Free			Free			Stop			Stop	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	132	423	28	5	452	79	13	0	1	41	1	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		648										
pX, platoon unblocked												
vC, conflicting volume	531			451			1220	1228	423	1190	1216	492
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	531			451			1220	1228	423	1190	1216	492
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	87			100			90	100	100	73	99	88
cM capacity (veh/h)	1042			1120			125	156	635	149	159	577

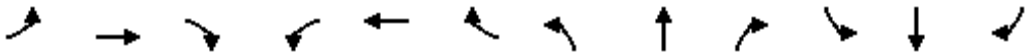
Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	NB 1	SB 1
Volume Total	132	423	28	5	531	14	112
Volume Left	132	0	0	5	0	13	41
Volume Right	0	0	28	0	79	1	70
cSH	1042	1700	1700	1120	1700	133	278
Volume to Capacity	0.13	0.25	0.02	0.00	0.31	0.11	0.40
Queue Length 95th (ft)	11	0	0	0	0	9	46
Control Delay (s)	9.0	0.0	0.0	8.2	0.0	35.4	26.4
Lane LOS	A			A		E	D
Approach Delay (s)	2.0			0.1		35.4	26.4
Approach LOS						E	D

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	48.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	314	115	63	403	92	37
Future Volume (Veh/h)	314	115	63	403	92	37
Sign Control	Free			Free	Stop	
Grade	-1%			1%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	345	126	69	443	101	41
Pedestrians				1		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				3.5		
Percent Blockage				0		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1264					
pX, platoon unblocked						
vC, conflicting volume			471		989	409
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			471		989	409
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		61	94
cM capacity (veh/h)			1086		256	640

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	471	69	443	142
Volume Left	0	69	0	101
Volume Right	126	0	0	41
cSH	1700	1086	1700	310
Volume to Capacity	0.28	0.06	0.26	0.46
Queue Length 95th (ft)	0	5	0	57
Control Delay (s)	0.0	8.5	0.0	26.1
Lane LOS		A		D
Approach Delay (s)	0.0	1.2		26.1
Approach LOS				D

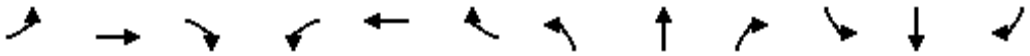
Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	44.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	27	133	134	52	103	52	99	231	39	69	377	41
Future Volume (vph)	27	133	134	52	103	52	99	231	39	69	377	41
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	30	149	151	58	116	58	111	260	44	78	424	46

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	30	300	58	174	111	304	78	470
Volume Left (vph)	30	0	58	0	111	0	78	0
Volume Right (vph)	0	151	0	58	0	44	0	46
Hadj (s)	0.50	-0.33	0.55	-0.22	0.50	-0.06	0.53	-0.05
Departure Headway (s)	8.4	7.6	8.7	7.9	8.0	7.5	7.8	7.2
Degree Utilization, x	0.07	0.63	0.14	0.38	0.25	0.63	0.17	0.94
Capacity (veh/h)	415	456	396	435	432	460	446	493
Control Delay (s)	10.8	21.3	11.9	14.6	12.5	21.3	11.2	53.2
Approach Delay (s)	20.4		13.9		18.9		47.2	
Approach LOS	C		B		C		E	

Intersection Summary				
Delay	28.6			
Level of Service	D			
Intersection Capacity Utilization	59.9%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	110	14	171	1	21	16	322	143	6	32	149	282
Future Volume (vph)	110	14	171	1	21	16	322	143	6	32	149	282
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
Hourly flow rate (vph)	122	16	190	1	23	18	358	159	7	36	166	313

Direction, Lane #	EB 1	EB 2	WB 1	NB 1	SB 1
Volume Total (vph)	122	206	42	524	515
Volume Left (vph)	122	0	1	358	36
Volume Right (vph)	0	190	18	7	313
Hadj (s)	0.50	-0.57	-0.21	0.16	-0.32
Departure Headway (s)	8.1	7.0	8.0	6.2	5.8
Degree Utilization, x	0.27	0.40	0.09	0.91	0.83
Capacity (veh/h)	430	495	413	564	601
Control Delay (s)	12.9	13.3	11.8	43.0	31.4
Approach Delay (s)	13.2		11.8	43.0	31.4
Approach LOS	B		B	E	D

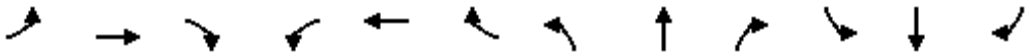
Intersection Summary				
Delay	30.9			
Level of Service	D			
Intersection Capacity Utilization	75.5%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	20	7	12	46	5	54	1	8	1368	55	2	65
Future Volume (Veh/h)	20	7	12	46	5	54	1	8	1368	55	2	65
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	21	7	13	48	5	56	0	8	1425	57	0	68
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	3108	3819	1092	2714	3834	741	0	2229			0	1482
vC1, stage 1 conf vol	2321	2321		1470	1470							
vC2, stage 2 conf vol	787	1498		1245	2365							
vCu, unblocked vol	3108	3819	1092	2714	3834	741	0	2229			0	1482
tC, single (s)	7.6	6.5	6.9	7.6	6.5	6.9	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.6	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			0.0	2.2
p0 queue free %	30	86	94	42	89	85	0	97			0	85
cM capacity (veh/h)	30	51	213	83	47	363	0	237			0	460

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	41	109	8	950	532	68	1092	1092	44
Volume Left	21	48	8	0	0	68	0	0	0
Volume Right	13	56	0	0	57	0	0	0	44
cSH	46	130	237	1700	1700	460	1700	1700	1700
Volume to Capacity	0.90	0.84	0.03	0.56	0.31	0.15	0.64	0.64	0.03
Queue Length 95th (ft)	91	130	3	0	0	13	0	0	0
Control Delay (s)	240.2	104.1	20.7	0.0	0.0	14.2	0.0	0.0	0.0
Lane LOS	F	F	C			B			
Approach Delay (s)	240.2	104.1	0.1			0.4			
Approach LOS	F	F							

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	71.9%	ICU Level of Service		C
Analysis Period (min)	15			

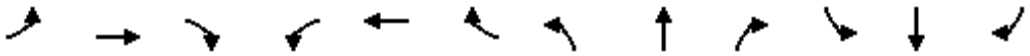
Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2098	42
Future Volume (Veh/h)	2098	42
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	2185	44
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	110	1	1	100	2	1	1	2	1	1	1
Future Volume (Veh/h)	10	110	1	1	100	2	1	1	2	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			2%			2%			-2%	
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
Hourly flow rate (vph)	12	134	1	1	122	2	1	1	2	1	1	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	124			135			285	284	134	286	284	123
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	124			135			285	284	134	286	284	123
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			100	100	100	100	100	100
cM capacity (veh/h)	1475			1462			665	622	920	664	623	933

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	147	125	4	3
Volume Left	12	1	1	1
Volume Right	1	2	2	1
cSH	1475	1462	757	717
Volume to Capacity	0.01	0.00	0.01	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	0.7	0.1	9.8	10.0
Lane LOS	A	A	A	B
Approach Delay (s)	0.7	0.1	9.8	10.0
Approach LOS			A	B

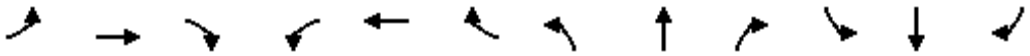
Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	22.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	92	16	12	80	6	15	6	8	7	10	4
Future Volume (Veh/h)	10	92	16	12	80	6	15	6	8	7	10	4
Sign Control		Stop			Stop			Free			Free	
Grade		-1%			1%			-2%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	14	124	22	16	108	8	20	8	11	9	14	5
Pedestrians		1			1						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	152	96	18	173	92	16	20			20		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	152	96	18	173	92	16	20			20		
tC, single (s)	7.1	6.5	6.2	7.2	6.5	6.2	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.3	2.3			2.2		
p0 queue free %	98	84	98	98	86	99	99			99		
cM capacity (veh/h)	715	782	1066	655	785	1068	1514			1608		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	160	132	39	28
Volume Left	14	16	20	9
Volume Right	22	8	11	5
cSH	805	779	1514	1608
Volume to Capacity	0.20	0.17	0.01	0.01
Queue Length 95th (ft)	18	15	1	0
Control Delay (s)	10.6	10.6	3.8	2.4
Lane LOS	B	B	A	A
Approach Delay (s)	10.6	10.6	3.8	2.4
Approach LOS	B	B		

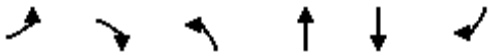
Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	18.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	51	0	4	67	36	4	0	4	23	0	32
Future Volume (Veh/h)	57	51	0	4	67	36	4	0	4	23	0	32
Sign Control		Free			Free			Stop			Stop	
Grade		-3%			2%			1%			0%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	83	74	0	6	97	52	6	0	6	33	0	46
Pedestrians											2	
Lane Width (ft)											12.0	
Walking Speed (ft/s)											3.5	
Percent Blockage											0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	151			74			421	403	74	383	377	125
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	151			74			421	403	74	383	377	125
tC, single (s)	4.1			4.1			7.4	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.7	4.0	3.5	3.5	4.0	3.3
p0 queue free %	94			100			99	100	99	94	100	95
cM capacity (veh/h)	1440			1538			456	505	927	546	523	929

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	157	155	12	79
Volume Left	83	6	6	33
Volume Right	0	52	6	46
cSH	1440	1538	612	719
Volume to Capacity	0.06	0.00	0.02	0.11
Queue Length 95th (ft)	5	0	1	9
Control Delay (s)	4.3	0.3	11.0	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	4.3	0.3	11.0	10.6
Approach LOS			B	B

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	23.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	51	21	19	86	95	82
Future Volume (Veh/h)	51	21	19	86	95	82
Sign Control	Stop			Free	Free	
Grade	2%			-1%	0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	65	27	24	110	122	105
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	332	174	227			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	332	174	227			
tC, single (s)	6.4	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.4	2.2			
p0 queue free %	90	97	98			
cM capacity (veh/h)	648	856	1353			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	92	134	227
Volume Left	65	24	0
Volume Right	27	0	105
cSH	698	1353	1700
Volume to Capacity	0.13	0.02	0.13
Queue Length 95th (ft)	11	1	0
Control Delay (s)	10.9	1.5	0.0
Lane LOS	B	A	
Approach Delay (s)	10.9	1.5	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix H Mitigated Total Traffic Conditions Level of Service Worksheets

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	30	3	2	47	3	93	4	8	1914	92	3	38
Future Volume (Veh/h)	30	3	2	47	3	93	4	8	1914	92	3	38
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	31	3	2	49	3	97	0	8	1994	96	0	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						8						
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	2295	3338	576	2718	3307	1045	0	1169			0	2090
vC1, stage 1 conf vol	1232	1232		2058	2058							
vC2, stage 2 conf vol	1063	2106		660	1249							
vCu, unblocked vol	2295	3338	576	2718	3307	1045	0	1169			0	2090
tC, single (s)	7.7	6.5	6.9	7.6	6.5	7.2	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.7	5.5		6.6	5.5							
tF (s)	3.6	4.0	3.3	3.5	4.0	3.4	0.0	2.2			0.0	2.2
p0 queue free %	51	94	100	5	96	53	0	99			0	85
cM capacity (veh/h)	64	49	466	52	84	207	0	605			0	268

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	36	149	8	1329	761	40	576	576	17
Volume Left	31	49	8	0	0	40	0	0	0
Volume Right	2	97	0	0	96	0	0	0	17
cSH	65	153	605	1700	1700	268	1700	1700	1700
Volume to Capacity	0.55	0.97	0.01	0.78	0.45	0.15	0.34	0.34	0.01
Queue Length 95th (ft)	57	180	1	0	0	13	0	0	0
Control Delay (s)	114.2	106.7	11.0	0.0	0.0	20.8	0.0	0.0	0.0
Lane LOS	F	F	B			C			
Approach Delay (s)	114.2	106.7	0.0			0.7			
Approach LOS	F	F							

Intersection Summary				
Average Delay	6.0			
Intersection Capacity Utilization	74.9%	ICU Level of Service	D	
Analysis Period (min)	15			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	1106	16
Future Volume (Veh/h)	1106	16
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	1152	17
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (veh/h)	20	7	12	46	5	54	1	8	1368	55	2	65
Future Volume (Veh/h)	20	7	12	46	5	54	1	8	1368	55	2	65
Sign Control		Stop			Stop				Free			
Grade		0%			0%				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	0.96
Hourly flow rate (vph)	21	7	13	48	5	56	0	8	1425	57	0	68
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						8						
Median type									Raised			
Median storage veh)									2			
Upstream signal (ft)												
pX, platoon unblocked							0.00				0.00	
vC, conflicting volume	3080	3819	1092	2714	3834	741	0	2229			0	1482
vC1, stage 1 conf vol	2321	2321		1470	1470							
vC2, stage 2 conf vol	759	1498		1245	2365							
vCu, unblocked vol	3080	3819	1092	2714	3834	741	0	2229			0	1482
tC, single (s)	7.6	6.5	6.9	7.6	6.5	6.9	0.0	4.1			0.0	4.1
tC, 2 stage (s)	6.6	5.5		6.6	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	0.0	2.2			0.0	2.2
p0 queue free %	30	86	94	42	89	85	0	97			0	85
cM capacity (veh/h)	30	51	213	83	47	363	0	237			0	460

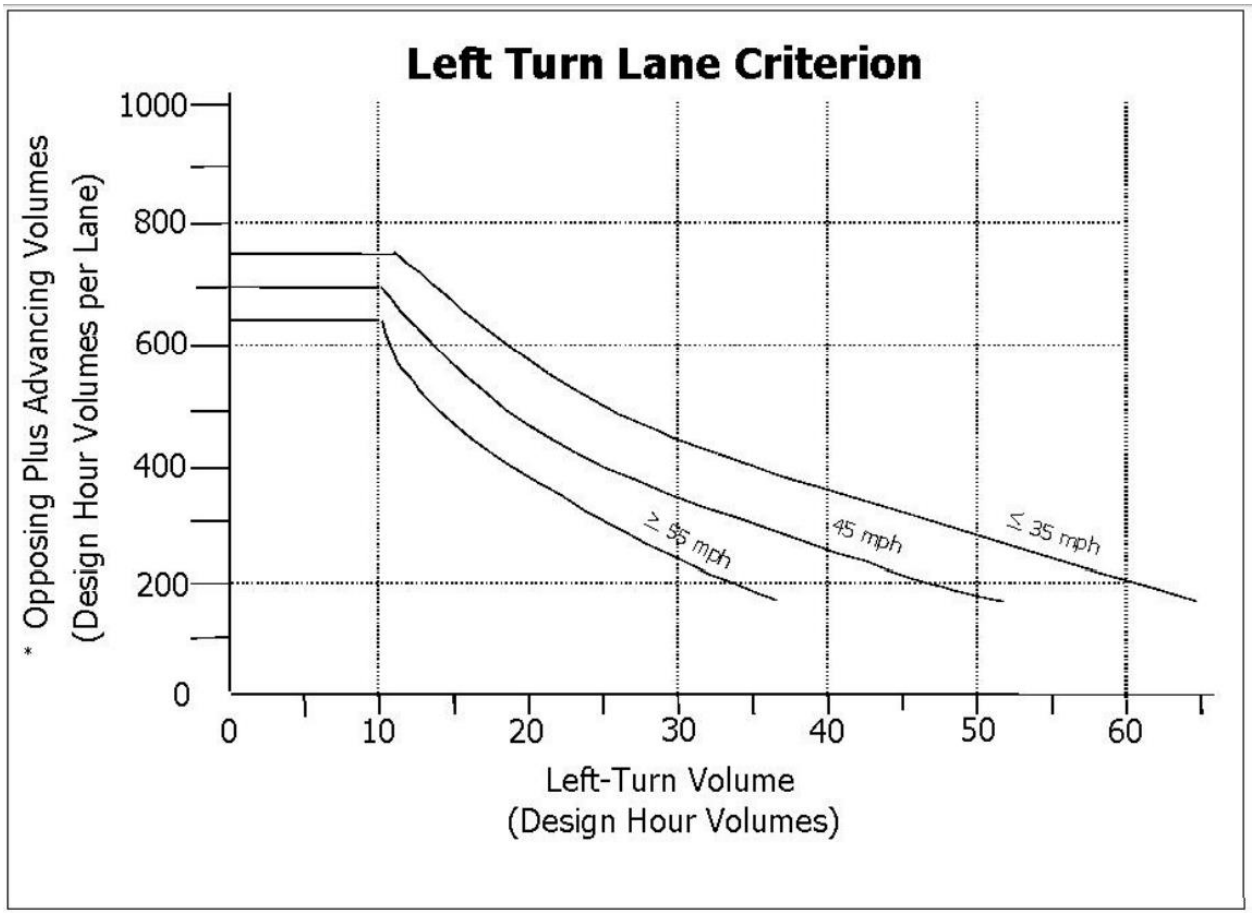
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3	SB 4
Volume Total	41	109	8	950	532	68	1092	1092	44
Volume Left	21	48	8	0	0	68	0	0	0
Volume Right	13	56	0	0	57	0	0	0	44
cSH	46	164	237	1700	1700	460	1700	1700	1700
Volume to Capacity	0.90	0.66	0.03	0.56	0.31	0.15	0.64	0.64	0.03
Queue Length 95th (ft)	91	95	3	0	0	13	0	0	0
Control Delay (s)	239.7	63.3	20.7	0.0	0.0	14.2	0.0	0.0	0.0
Lane LOS	F	F	C			B			
Approach Delay (s)	239.7	63.3	0.1			0.4			
Approach LOS	F	F							

Intersection Summary				
Average Delay	4.5			
Intersection Capacity Utilization	73.5%	ICU Level of Service		D
Analysis Period (min)	15			

Movement	SBT	SBR
Lane Configurations		
Traffic Volume (veh/h)	2098	42
Future Volume (Veh/h)	2098	42
Sign Control	Free	
Grade	0%	
Peak Hour Factor	0.96	0.96
Hourly flow rate (vph)	2185	44
Pedestrians		
Lane Width (ft)		
Walking Speed (ft/s)		
Percent Blockage		
Right turn flare (veh)		
Median type	Raised	
Median storage veh)	2	
Upstream signal (ft)		
pX, platoon unblocked		
vC, conflicting volume		
vC1, stage 1 conf vol		
vC2, stage 2 conf vol		
vCu, unblocked vol		
tC, single (s)		
tC, 2 stage (s)		
tF (s)		
p0 queue free %		
cM capacity (veh/h)		
Direction, Lane #		

Appendix I Turn Lane Assessment

Appendix H: Turn Lane Assessment



*(Advancing Volume/Number of Advancing Through Lanes) + (Opposing Volume/Number of Opposing Through Lanes)
Opposing left turns are not counted as opposing volumes

Scenario	Eastbound Left-Turn Volume	Opposing Plus Advancing Volumes	Meets Criteria?
Year 2020 Total Traffic, Weekday AM Peak Hour	18	208	No
Year 2020 Total Traffic, Weekday PM Peak Hour	57	211	No