Impact Study E

Memorandums: "Traffic Impact Analysis/Access Report" and "Estimated Volumes for Streets B, C and D" dated February 1, 2017; "Traffic Signal Warrant Analysis" dated March 23, 2017 by Kittelson & Associates

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MEMORANDUM

Date: February 15, 2017 Project #: 19252

To: Jabra Khasho, PE & Ken Rencher, City of Beaverton
Jinde Zhu, Washington County Department of Land Use and Transportation

cc: Dan Grimberg, West Hills Land Development
Mike Peebles, PE and Li Alligood, OTAK

From: Julia Kuhn, PE, Chris Brehmer, PE and Zachary Bugg

Project: Lolich/Bellairs Property Development

Subject: Traffic Impact Analysis/Access Report

West Hills Land Development (herein referred to as "West Hills") is proposing to develop up to 110 single family homes and up to 200 multifamily units on the Lolich/Bellairs property, located northeast of the SW Scholls Ferry Road/SW Strobel Road/SW Vandermost Road intersection. One existing home on the property may remain in-place after neighborhood development. Construction, completion, and occupancy of the new single family homes is scheduled for 2018; occupancy of the 200 multifamily units may occur at a later date. A Planned Unit Development (PUD) application is being submitted for both the single family homes and multifamily dwellings at this time. As such, this traffic study addresses the cumulative transportation-related impacts of both the single family and multifamily homes.

Based on the analysis herein, the following recommendations are associated with the proposed PUD:

- Per prior traffic impact studies approved for River Terrace and South Cooper Mountain, Washington County should continue to monitor the SW Scholls Ferry Road/SW 175th Avenue/SW Roy Rogers Road intersection to determine if, and when, additional modifications are needed beyond those currently planned for construction.
- West Hills should install an eastbound left-turn lane, westbound left-turn lane, a westbound right-turn lane, a southbound through/right and southbound left-turn lane at the SW Scholls Ferry Road/SW Strobel Road/SW Vandermost Road intersection as part of site development. In the future, the westbound right-turn lane can be converted to a through/right lane as part of the planned widening of SW Scholls Ferry Road to five lanes.
- Stop control should be provided on the southbound approach of the SW Scholls Ferry Road/SW Strobel Road/SW Vandermost Road in accordance with applicable City and County design standards.

- West Hills should locate and maintain all future landscaping, above-ground utilities, and site signage to ensure minimum required sight lines are provided at all intersections within the Lolich/Bellairs neighborhood.

INTRODUCTION

West Hills is proposing to develop up to 110 single family homes and up to 200 multifamily units on the Lolich/Bellairs property, located northeast of the SW Scholls Ferry Road/SW Strobel Road/SW Vandermost Road intersection. The existing single family home north of the proposed collector roadway may remain in-place after the new homes are constructed. Figure 1 shows the site vicinity of the proposed development and Figure 2 shows the proposed site plan.

In the near-term, access to the single family homes is proposed via SW Strobel Road north of SW Scholls Ferry Road. In the future, a new collector roadway will extend east and south from the property to SW Scholls Ferry Road, just to the west of Mountainside High School, and will serve several other area developments. At this point, the new collector will only extend to the eastern property boundary.

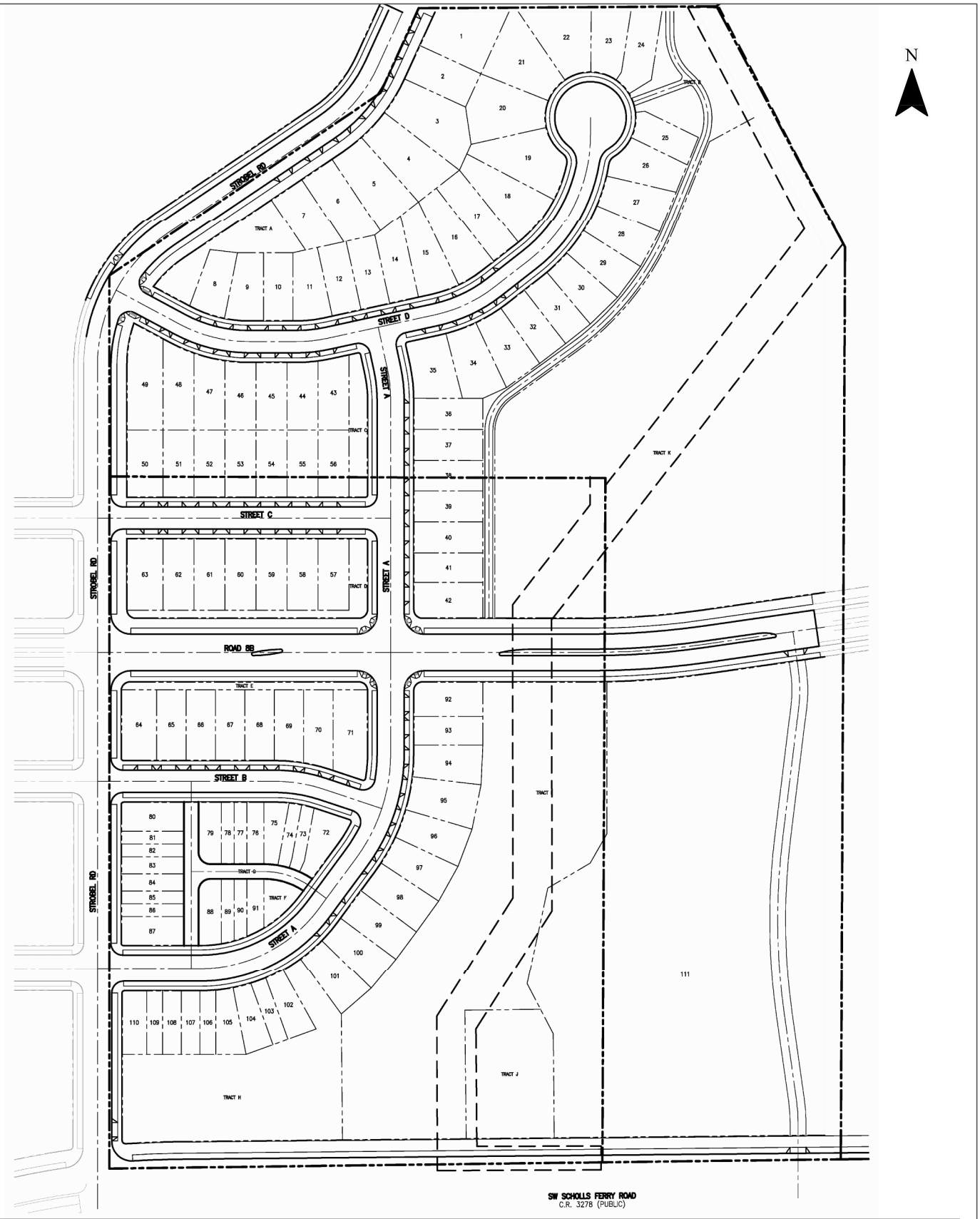
SCOPE OF THE REPORT

This report identifies the transportation-related impacts associated with the proposed Lolich/Bellairs Property development and was prepared in accordance with Washington County requirements for an Access Report and City of Beaverton Traffic Impact Study requirements. Per the County and City requirements (as outlined in Development Code Section 60.55.20), the study intersections include neighborhood routes, collectors, and arterials within 1,000 feet of the site, those intersections through which site-generated trips contribute five percent or more of existing volumes, as well as intersections immediately adjacent to the proposed site accesses. Accordingly, operational analyses were performed at the following study intersections during the weekday AM and PM peak periods:

- SW Scholls Ferry Road/SW Tile Flat Road;
- SW Scholls Ferry Road/SW Strobel Road/SW Vandermost Road; and
- SW Scholls Ferry Road/SW 175th Avenue/SW Roy Rogers Road.

Site Vicinity
Beaverton, Oregon

Figure
1



Site plan provided by OTAK on 2/1/2017

Proposed Site Plan
Beaverton, Oregon

Figure
2

This report evaluates the following:

- Existing land use and transportation system conditions within the site vicinity during the weekday AM and PM peak periods;
- Build-out year 2018 background traffic conditions during the weekday AM and PM peak periods, considering in-process developments and planned transportation improvements in the study area;
- Trip generation and distribution estimates for the proposed PUD;
- Build-out year 2018 total traffic conditions during the weekday AM and PM peak assuming full build-out of the proposed PUD; and
- Recommended improvements/intersection considerations.

Analysis Methodology

The intersection operational analyses presented in this report were prepared following Highway Capacity Manual 2000 (Reference 1) analysis procedures using Synchro 9 software.

Operating Standards

Intersection performance measures reported in this study include level of service (LOS), volume-to-capacity ratio (v/c), and delay. Queuing at key intersections was also assessed. Intersection operating standards adopted by the respective transportation review authorities for the facilities they operate and maintain are summarized in this section.

City of Beaverton

The City of Beaverton's Development Code sets operating standards for signalized and unsignalized intersections, found in Section 60.55.10. The standards require an average control delay of no more than 65 seconds per vehicle for signalized intersections. In addition, the volume-to-capacity (v/c) ratio for each lane group must not exceed 0.98. For two-way and all-way stop-controlled intersections, the City of Beaverton standards require an average control delay of no more than 45 seconds per vehicle. The proposed system of new streets to serve the neighborhood will be under the jurisdiction of the City.

Washington County

Washington County sets operating standards for both signalized and unsignalized intersections with a v/c no greater than 0.99 over a 60-minute period. Within the study area, Washington County maintains jurisdiction over the study intersections along SW Scholls Ferry Road.

EXISTING CONDITIONS

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

Site Conditions and Adjacent Land Uses

The proposed development is located north of SW Scholls Ferry Road and to the west of the new Mountainside High School. The existing property is occupied by the Lolich Family Farm and a single family residence. The area to the south is outside of the Urban Growth Boundary whereas the areas immediately to the west and to the east are planned for future neighborhood development, as part of the South Cooper Mountain Plan. In addition, several new neighborhoods are planned for development within the River Terrace Community Plan Area.

Transportation Facilities

Access to the new neighborhood is proposed via SW Strobel Road north of SW Scholls Ferry Road. Table 1 summarizes the attributes of the arterial and collector roadways within the influence area. Figure 3 illustrates the existing lane configurations and traffic control at the study intersections.

Table 1. Street Characteristics in Site Vicinity

Street	Classification[1]	Vehicle Travel Lanes	Posted Speed (mph)	Pedestrian Facilities	Bicycle Facilities
SW 175th Avenue/ SW Roy Rogers Road	Arterial	2- 3	45	None	Shoulder (S of Scholls)
SW Scholls Ferry Road	Arterial	4 – 5 (E of 175th) 2 – 3 (W of 175th)	40	Sidewalk (E of 175th)	Bike lanes (E of 175th) Shoulder (W of 175th)
SW Tile Flat Road	Arterial	2	NP	None	None
SW Strobel Road/ SW Vandermost Road	Local Street	2	NP	None	None

[1]Per the City of Beaverton Transportation System Plan.
[2]NP = Not Posted.

Pedestrian Facilities

Given the rural nature of the existing land uses, sidewalks are provided intermittently throughout the study area. Sidewalks are provided on SW Scholls Ferry Road east of SW 175th Avenue and along the frontage of the Mountainside High School. Significant pedestrian infrastructure will be provided as part of the buildout of the South Cooper Mountain and River Terrace neighborhoods.

Bicycle Facilities

Bike lanes are provided along SW Scholls Ferry Road east of SW 175th Avenue. SW 175th Avenue south of SW Scholls Ferry Road and SW Scholls Ferry Road west of SW 175th Avenue have shoulders that serve bicycles. New bike lanes will be developed as part of the buildout of the South Cooper Mountain and River Terrace neighborhoods.

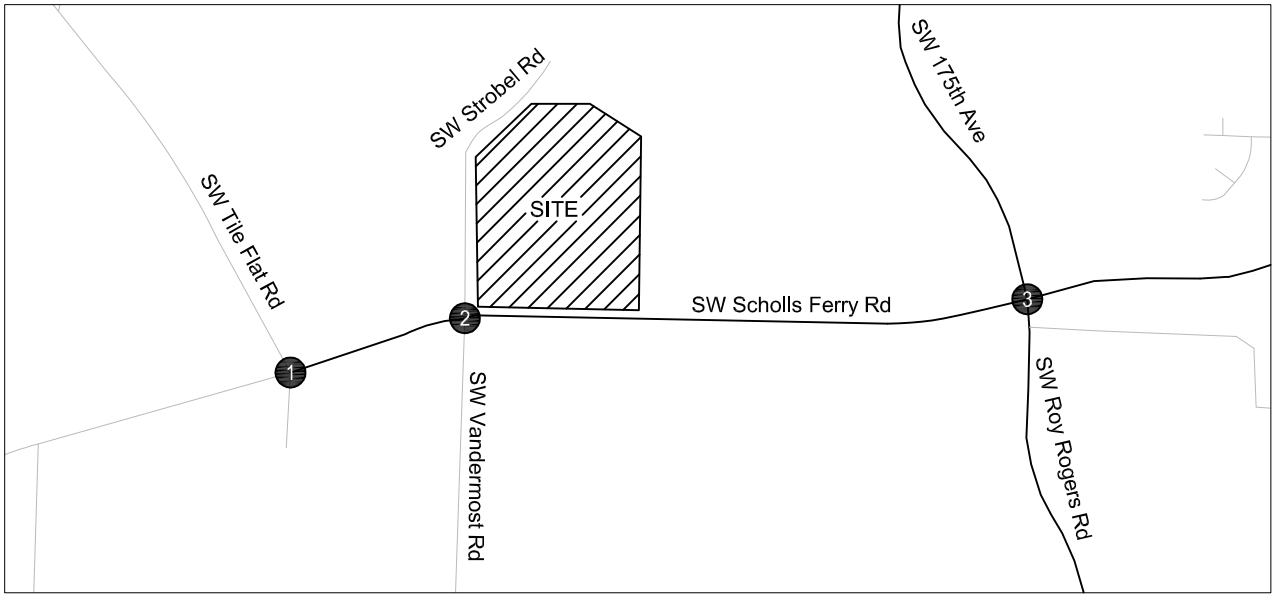
Transit Facilities

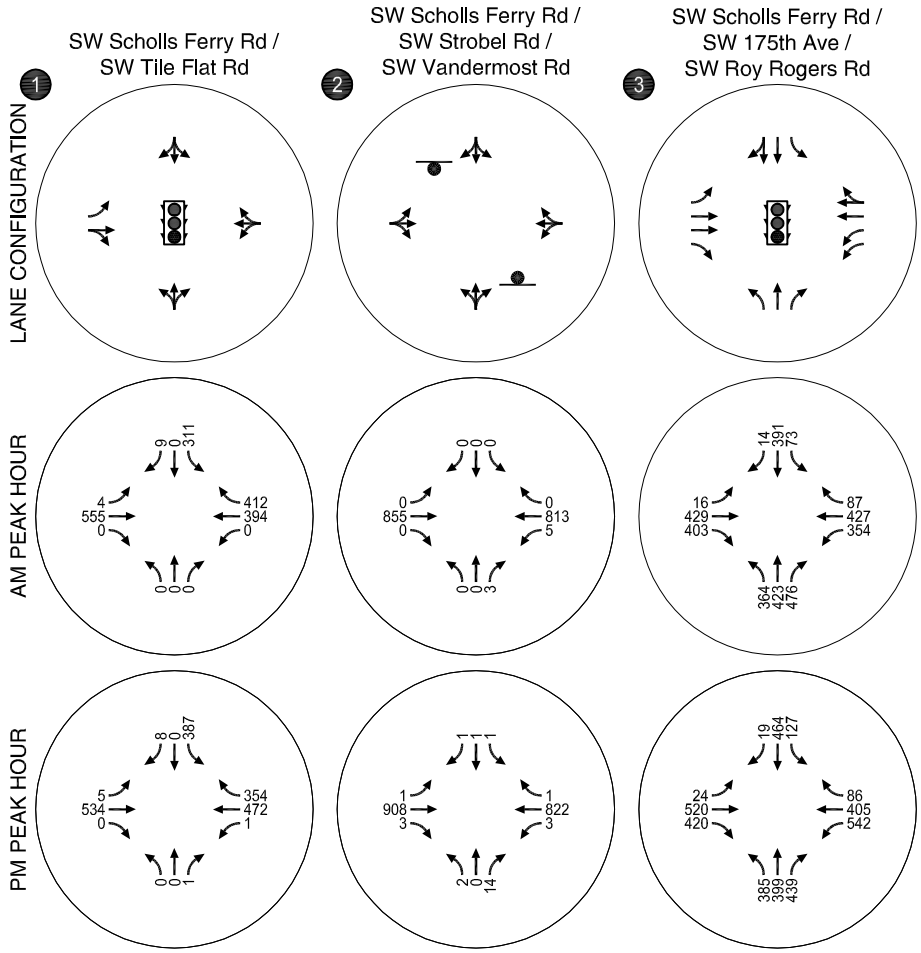
The site is located near the border of the TriMet transit district. The nearest bus line is Route 92, the South Beaverton Express, which stops at the intersection of SW Scholls Ferry Road/SW Teal Boulevard/SW Horizon Boulevard (approximately 1.75 miles east of the project site). Route 92 provides weekday rush-hour service between Beaverton and the Portland City Center, including a stop at the Progress Ridge Park & Ride.

Existing Conditions Operational Analysis

Manual turning movement counts were collected at the study intersections in December 2016 when school was in session and no inclement weather conditions occurred. Traffic counts were collected for three mid-week days, in accordance with the City of Beaverton's Traffic Impact Analysis requirements for the morning (7:00 AM to 9:00 AM) and evening (4:00 PM to 6:00 PM) peak time periods. The day experiencing the highest collective volumes during the peak hours was selected for the operational analysis (i.e., Tuesday, December 13th for the AM and Tuesday, December 6th for the PM peak). Figure 3 summarizes the traffic volumes at the study intersections during both peak hours. *Appendix "A" contains the traffic count worksheets.*

Table 2 summarizes the operational analysis for the study intersections during the weekday AM and PM peak hours. Each of the study intersections currently meets County standards (i.e., v/c < 0.99 during 60-minute period). All of the intersections meet City standards during the peak 15 minute period, with the exception of the high delays experienced at the southbound SW Strobel Road approach to the SW Scholls Ferry Road intersection during the weekday PM peak hour. As shown in Figure 3, only three vehicles make this movement today and per Table 2, the v/c ratio for this movement is 0.05. As will be discussed, West Hills will be providing improvements to this intersection in conjunction with site development. *Appendix "B" includes the operations analysis worksheets for the Existing Conditions analysis.*





- STOP SIGN
- TRAFFIC SIGNAL

Existing Traffic Conditions, Lane Configurations, and Traffic Control Devices
Beaverton, Oregon

Figure 3

K:\H_Portland\projfile\19252 - Bierly Property - South Cooper Mountain\dwgs\figs\19252_fig.dwg Feb 01, 2017 - 3:53pm - zbugg Layout Tab: Fig03_Existing

Table 2. Existing Intersection Operations

Study Intersection		60-Minute Results			Peak 15-Minute Results		
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS
Weekday AM Peak Hour							
1	SW Scholls Ferry Road/ SW Tile Flat Road	0.82	17.6	B	0.91	23.4	C
2	SW Scholls Ferry Road/ SW Strobel Road/SW Vandermost Road	0.01 (NB)	16.6 (NB)	C	0.01 (NB)	19.1 (NB)	C
3	SW Scholls Ferry Road/ SW 175th Avenue/SW Roy Rogers Road	0.74	30.7	C	0.82	34.6	C
Weekday PM Peak Hour							
1	SW Scholls Ferry Road/ SW Tile Flat Road	0.82	25.7	C	0.91	30.6	C
2	SW Scholls Ferry Road/ SW Strobel Road/SW Vandermost Road	0.04 (SB)	> 50 (SB)	F	0.05 (SB)	> 50 (SB)	F
3	SW Scholls Ferry Road/ SW 175th Avenue/SW Roy Rogers Road	0.80	37.3	D	0.85	44.1	D

Traffic Safety

Washington County maintains a Safety Priority Index System (SPIS) list to identify existing hazardous intersections for potential safety improvements. Intersections are included in the 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 SW Roy Rogers Road/SW Scholls Ferry Road/SW 175th Avenue intersection is ranked #99 on the most recent Washington County SPIS list (2012-2014, Reference 2). The SPIS list notes that there was a Major Streets Transportation Improvement Program (MSTIP) project completed at the intersection in 2014 and that a number of planned developments are anticipated in the vicinity.

In addition to reviewing the Washington County SPIS list, the crash history of each study intersection was reviewed in an effort to identify potential intersection safety issues. Crash data for the study intersections was obtained from the Oregon Department of Transportation (ODOT) for the five-year period from January 1, 2010 through December 31, 2014. Table 3 illustrates the crashes reported at the study intersections. Note that a traffic signal was installed at the SW Scholls Ferry Road/SW Tile Flat Road intersection in 2014. *Appendix "C" contains the ODOT crash data.*

Table 3. Intersection Crash History (January 1, 2010 through December 31, 2014)

Location	Collision Type					Severity		Total Crashes	Crash Rate[4]	Statewide 90th-percentile Crash Rate[4]	Observed Crash Rate > Statewide 90th-percentile?
	Turning	Fixed Object	Rear End	Sideswipe	Angle	PDO[1]	Injury				
SW Scholls Ferry Road/ SW Tile Flat Road[2]	6	0	0	0	0	3	3	6	0.19	0.48	No
SW Scholls Ferry Road/ SW Strobel Road/ SW Vandermost Road	1	0	0	0	0	0	1	1	0.03	1.08	No
SW Scholls Ferry Road/ SW 175th Avenue/ SW Roy Rogers Road[3]	6	3	17	1	2	18	11	29	0.42	0.86	No

[1]PDO – Property damage only
[2]Traffic signal installed in 2014.
[3] Reported crashes occurred prior to completion of MSTIP project improvements.
[4]Crash rate per million entering vehicles

As shown in Table 3, the observed crash rate at each intersection was compared to the statewide 90th-percentile crash rate for similar intersection types (rural/urban, signalized/stop-controlled, 3-leg/4-leg), consistent with the ODOT Analysis Procedures Manual (Reference 3). As shown, none of the observed crash rates at the study intersections exceed the statewide 90th-percentile crash rates. As a result, no safety-related mitigation measures are recommended as part of the development of the PUD.

TRAFFIC IMPACT ANALYSIS

The traffic impact analysis identifies how the study area's transportation system will operate in the build-out year 2018 when the single family homes are expected to be occupied; we also assumed occupancy of the multifamily homes would occur in 2018.

This section of the report addresses the following elements:

- Build-out year 2018 background traffic conditions during the weekday AM and PM peak periods, considering in-process developments and planned transportation improvements in the study area;
- Trip generation and distribution estimates for the proposed PUD;
- Build-out year 2018 total traffic conditions during the weekday AM and PM peak assuming full build-out of the proposed PUD; and
- Recommended improvements/intersection considerations.

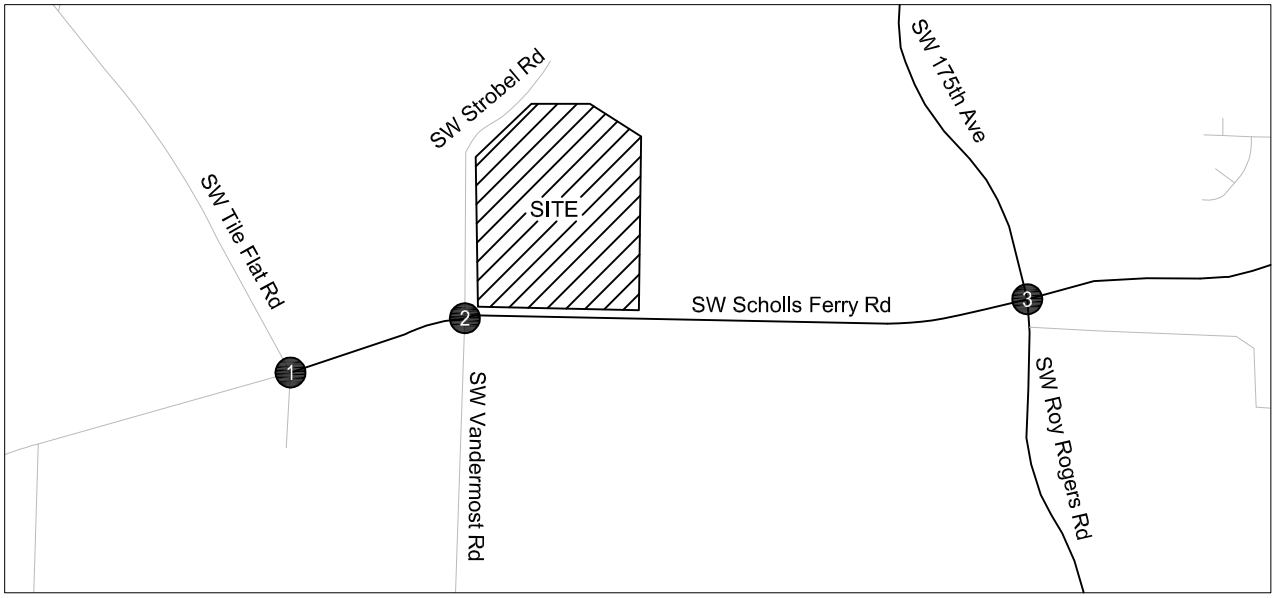
2018 Background Operational Analysis

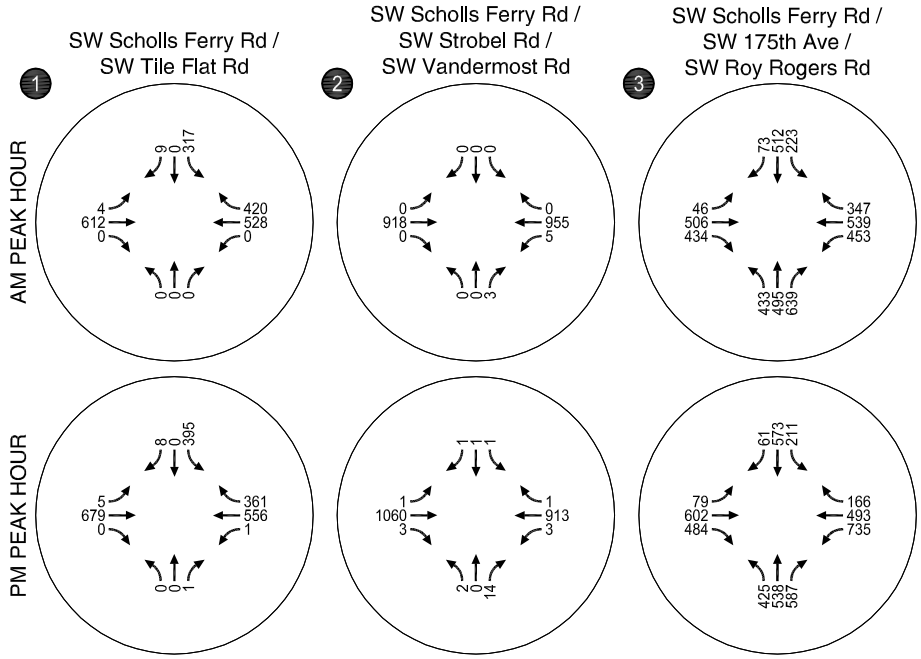
Background traffic volumes include changes in volumes due to added trips from new development in the vicinity as well as general regional growth. The year 2018 analyses include a background annual growth rate of two percent at each study intersection, as well as the following in-process developments identified by City and County staff:

- Beaverton School District (Mountainside) High School;
- South Cooper Mountain Heights;
- River Terrace Northwest;
- River Terrace East;
- West River Terrace;
- Roshak Ridge;
- South River Terrace; and,
- Bull Mountain Dickson.

Figure 4 summarizes the background traffic volumes at the study intersections during both peak hours. Table 4 summarizes the operational analysis for the study intersections during the weekday AM and PM peak hours.

As shown in Table 4, each of the study intersections is forecast to meet County standards (i.e., v/c < 0.99 during 60-minute period) under the background conditions. All of the intersections are also forecast to meet City standards during the peak 15 minute period, with two exceptions. During the weekday PM peak hour, the southbound SW Strobel Road approach to the SW Scholls Ferry Road intersection is forecast to continue to function with high delays but an acceptable v/c ratio. In addition, the SW Scholls Ferry/SW 175th Avenue/SW Roy Rogers Road is forecast to operate at LOS "E" and a v/c of 0.99 during the peak 15-minute time period, thereby meeting County but not City standards. It should be noted that several ongoing land use reviews have recognized the near-capacity conditions at this intersection and no additional improvements are suggested at this time beyond constructed as part of the MSTIP project. *Appendix "D" includes the operations analysis worksheets for the 2018 Background Conditions analysis, as well as a summary of the in-process traffic volumes.*





Year 2018 Background Traffic Conditions
Weekday AM and PM Peak Hours
Beaverton, Oregon

Figure
4

Table 4. Background Intersection Operations

Study Intersection		60-Minute Results			Peak 15-Minute Results		
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS
Weekday AM Peak Hour							
1	SW Scholls Ferry Road/ SW Tile Flat Road	0.86	21.0	C	0.96	28.7	C
2	SW Scholls Ferry Road/ SW Strobel Road/SW Vandermost Road	0.01 (NB)	17.8 (NB)	C	0.01 (NB)	20.3 (SB)	C
3	SW Scholls Ferry Road/ SW 175th Avenue/SW Roy Rogers Road	0.90	45.0	D	0.97	56.5	E
Weekday PM Peak Hour							
1	SW Scholls Ferry Road/ SW Tile Flat Road	0.86	27.9	C	0.94	36.5	D
2	SW Scholls Ferry Road/ SW Strobel Road/SW Vandermost Road	0.07 (SB)	> 50 (SB)	F	0.11 (SB)	> 50 (SB)	F
3	SW Scholls Ferry Road/ SW 175th Avenue/SW Roy Rogers Road	0.97	57.1	E	1.01	63.4	E

Trip Generation Estimate

Trip generation estimates for the PUD were developed based on the standard reference manual published by the Institute of Transportation Engineers, *Trip Generation*, 9th Edition (Reference 4). The estimated trip generation is shown in Table 5. As mentioned previously, the existing family home north of the proposed collector may remain in-place and as such is accounted for in the existing and background volumes.

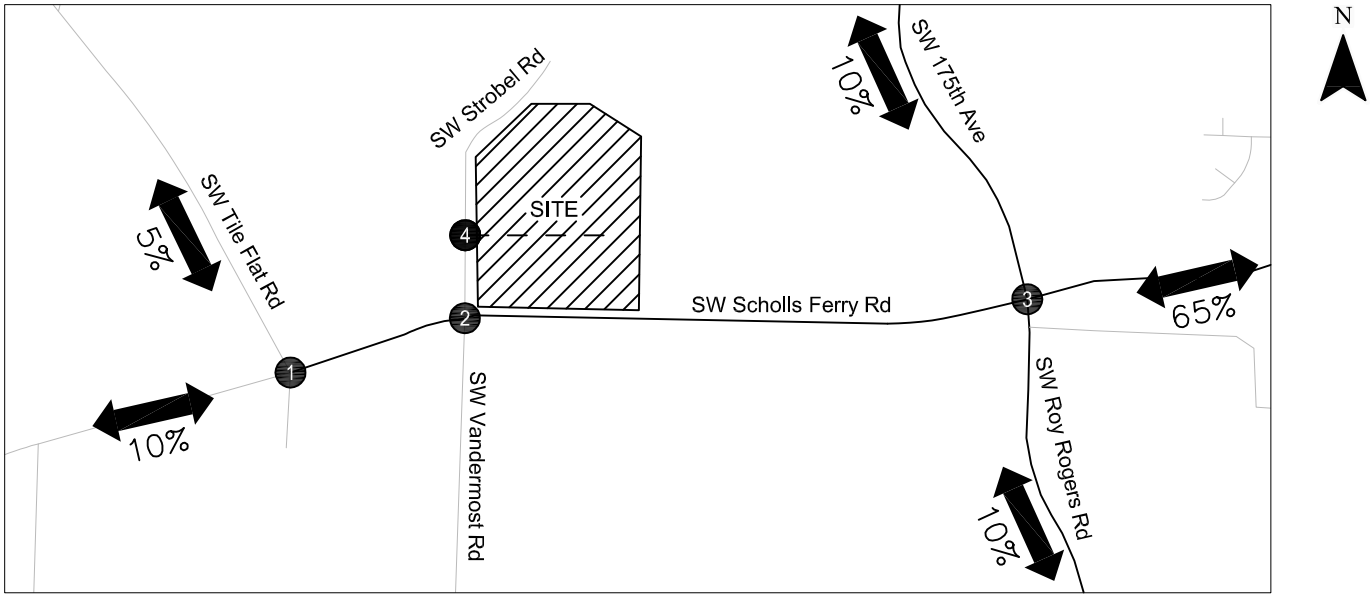
Table 5. Estimated Trip Generation

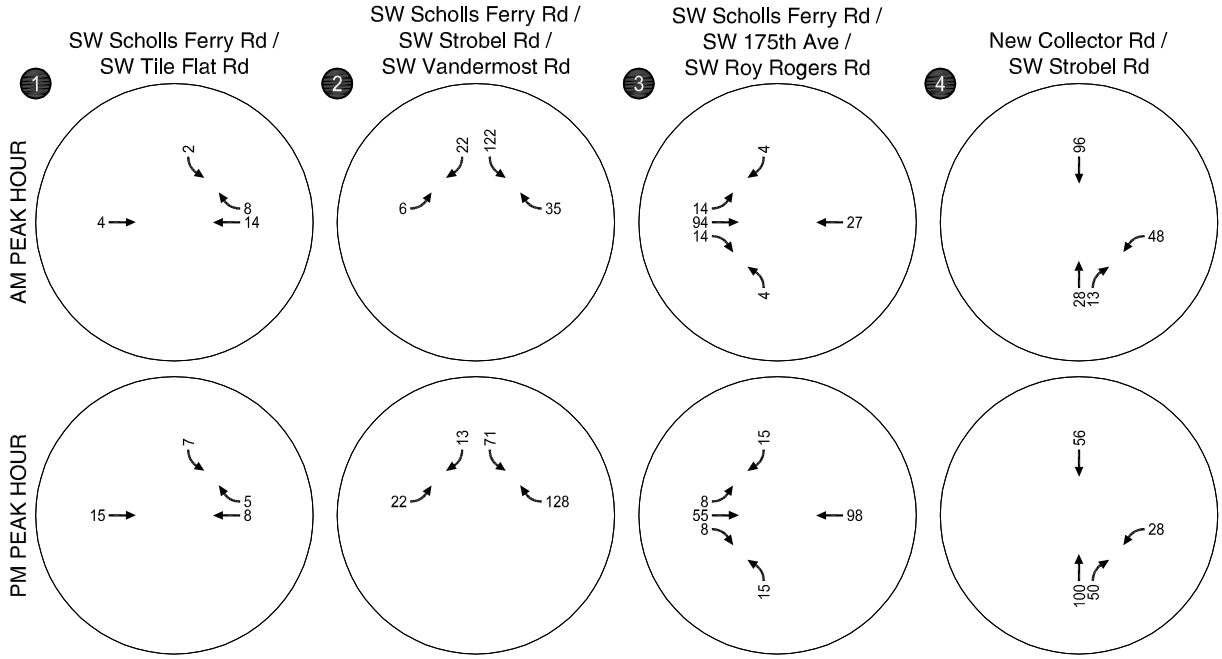
	ITE Code	Dwelling Units	Total Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total Trips	In	Out	Total Trips	In	Out
Single Family	210	110	1,048	83	21	62	110	69	41
Multi-Family	220	200	1,330	102	20	82	124	81	43
Total		310	2,378	185	41	144	234	150	84

Trip Distribution and Assignment

Figure 5 illustrates the estimated trip distribution pattern. This distribution pattern is similar to that used on other ongoing land use cases in the study vicinity.

The estimated site-generated trips were assigned to the network by distributing the trips shown in Table 5 according to the trip distribution pattern. Figure 5 shows the site-generated trips that are expected to use the study intersections during the peak hour periods.





Site-Generated Trips
Weekday AM and PM Peak Hours
Beaverton, Oregon

Figure
5

2018 Total Traffic Operational Analysis

Total traffic volumes include the site-generated trips in addition to the 2018 background traffic volumes. Figure 6 summarizes the total traffic volumes at the study intersections during both peak hours. Table 6 summarizes the operational analysis for the study intersections during the weekday AM and PM peak hours. *It should be noted that the operational results for the SW Scholls Ferry Road/SW Strobel Road/SW Vandermost Road assume the construction of a separate southbound left-turn lane, eastbound left-turn lane, westbound right-turn lane, and westbound left-turn lane as part of site development at this intersection.*

Table 6. Total Intersection Operations

Study Intersection		60-Minute Results			Peak 15-Minute Results		
		V/C	Delay (sec)	LOS	V/C	Delay (sec)	LOS
Weekday AM Peak Hour							
1	SW Scholls Ferry Road/ SW Tile Flat Road	0.88	21.9	C	0.98	30.6	C
2	SW Scholls Ferry Road/ SW Strobel Road/SW Vandermost Road	0.58 (SBLT)	43.2 (SBLT)	E	0.77 (SBLT)	> 50 (SBLT)	F
3	SW Scholls Ferry Road/ SW 175th Avenue/SW Roy Rogers Road	0.91	48.6	D	1.00	61.7	E
4	SW Strobel Road/ New Collector	0.06 (WBLT)	9.4 (WBLT)	A	0.06 (WBLT)	9.5 (WBLT)	A
Weekday PM Peak Hour							
1	SW Scholls Ferry Road/ SW Tile Flat Road	0.87	29.4	C	0.95	38.8	D
2	SW Scholls Ferry Road/ SW Strobel Road/SW Vandermost Road	0.43 (SBLT)	42.2 (SBLT)	E	0.57 (SBLT)	> 50 (SBLT)	F
3	SW Scholls Ferry Road/ SW 175th Avenue/SW Roy Rogers Road	1.00	59.8	E	1.04	66.8	E
4	SW Strobel Road/ New Collector	0.03 (WBLT)	9.6 (WBLT)	A	0.04 (WBLT)	9.7 (WBLT)	A

As shown in Table 6, each of the study intersections is forecast to meet County standards (i.e., v/c < 0.99 during 60-minute period) assuming development of the PUD, with the exception of the SW Scholls Ferry/SW 175th Avenue/SW Roy Rogers Road intersection, which is forecast to operate with a v/c of 1.00 during the PM peak hour. Each of the intersections meets City standards during the peak 15 minute period, with two exceptions. During the weekday PM peak hour, the southbound left-turn movement at the SW Strobel Road/ SW Scholls Ferry Road intersection is forecast to continue to function with high delays but an acceptable v/c ratio. In addition, the SW Scholls Ferry/SW 175th Avenue/SW Roy Rogers Road is forecast to operate at LOS "E" and overcapacity during the peak 15-minute time period. As previously noted, several ongoing land use reviews have recognized the near-capacity conditions at this intersection and no additional improvements are suggested at this time beyond those constructed as part of the MSTIP project. *Appendix "E" includes the year 2018 total traffic operations worksheets.*

SW Scholls Ferry Road/SW Strobel Road Turn Lane Warrant Analysis

As noted above, the 2018 total traffic operations results are reported assuming that West Hills construct the following improvements as part of site development:

- Eastbound left-turn lane with 100 feet of storage;
- Westbound left-turn lane with 100 feet of storage;
- Westbound right-turn lane with 100 feet of storage; and,
- Southbound left-turn lane with 125 feet of storage.

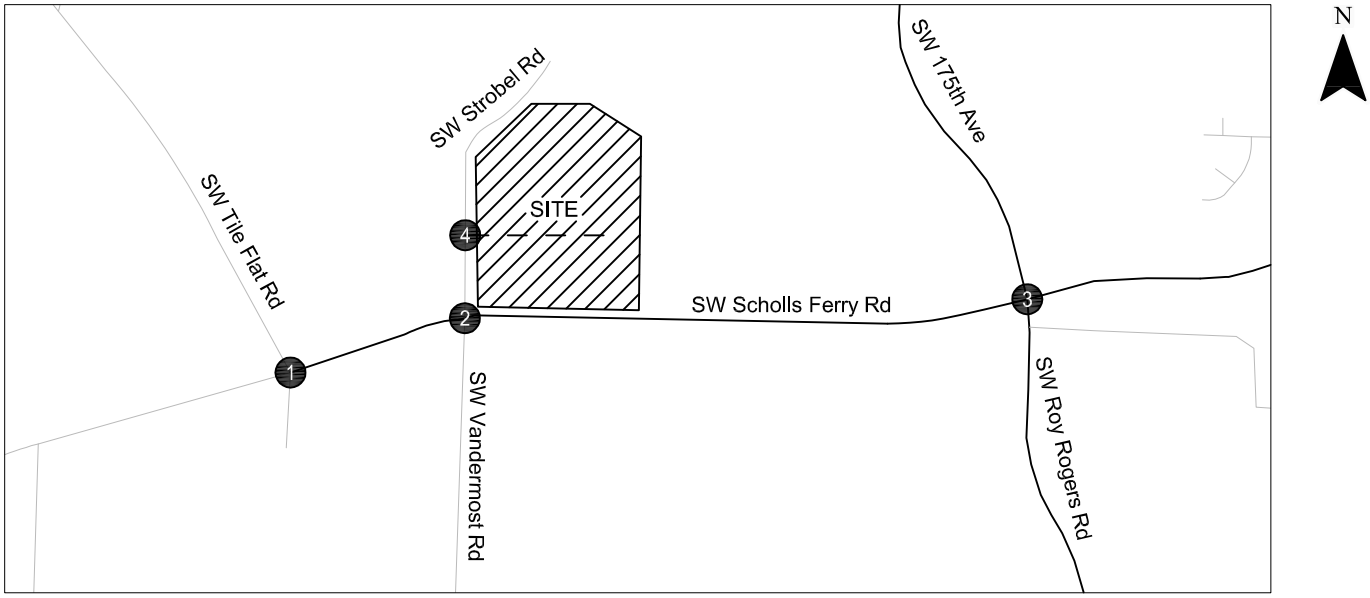
Stop control should be provided on the southbound approach to the intersection in accordance with applicable City and County design standards. Finally, in the future, the westbound right-turn lane can be converted to a through/right lane as part of the planned widening of SW Scholls Ferry Road to five lanes.

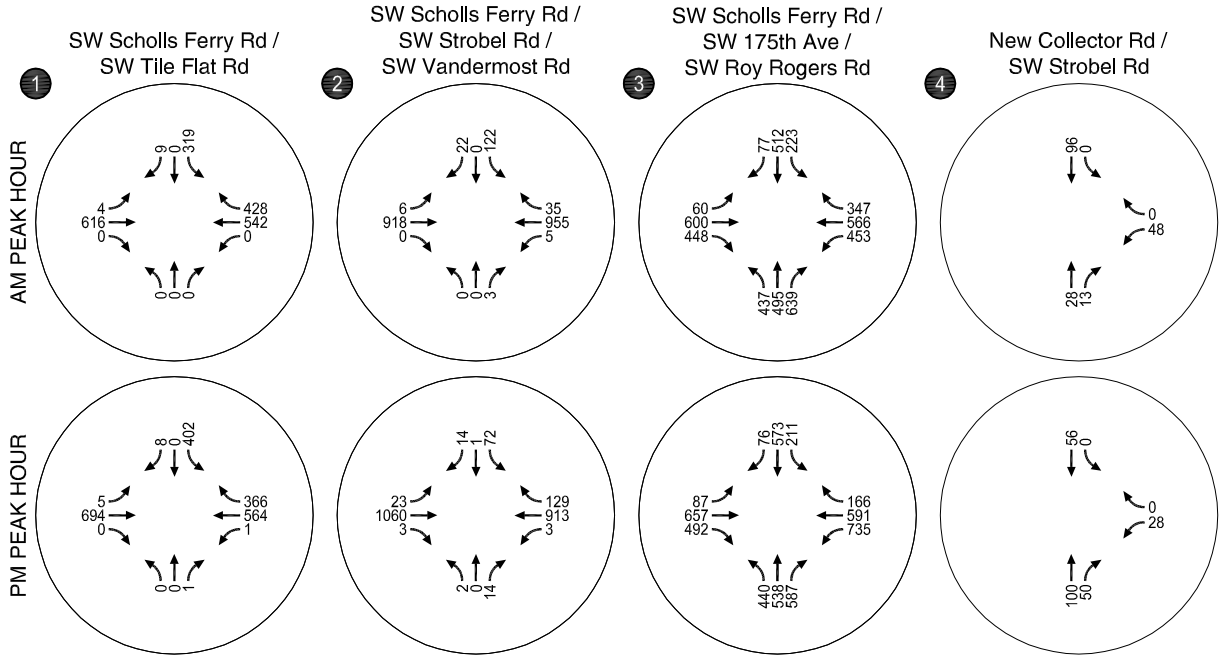
SW Scholls Ferry Road/SW Strobel Road Queuing Warrant Analysis

Table 7 identifies the projected 95th percentile queuing at the SW Scholls Ferry Road/SW Strobel Road intersection assuming full occupancy of the single family and multifamily homes proposed within the PUD and the added turn lanes to be constructed by West Hills. Note that these results could be expected to improve over time as alternative site access is created to the east with other off-site development.

Table 7. 95th Percentile Queues at SW Scholls Ferry Road/SW Strobel Road for peak 15-minute analysis

Movement	95th-percentile Queue (ft)	
	Total AM	Total PM
Eastbound Left	<25	<25
Southbound Left	125	75
Southbound Through/Right	<25	<25
Westbound Right	<25	<25
Northbound Left/Through/Right	<25	<25





Year 2018 Total Traffic Conditions
Weekday AM and PM Peak Hours
Beaverton, Oregon

Figure
6

SW Strobel Road/Future Collector Intersection

Based on conversations with City staff, we evaluated the need for a southbound left-turn lane on SW Strobel Road at the future collector street intersection. Until such a time that the collector is extended southeast to SW Scholls Ferry Road and additional properties develop both east and west of the PUD, this improvement will not be needed. However, West Hills will construct SW Strobel Road to allow for the provision of a southbound left-turn lane at this location in the future.

Intersection Sight Distance

West Hills should locate and maintain all future landscaping, above-ground utilities, and site signage to ensure they provide minimum required sight lines are provided at all intersections within the Lolich/Bellairs neighborhood.

OTAK will address sight distance at the SW Strobel/SW Scholls Ferry Road intersection under separate cover with the identified improvements in-place.

RECOMMENDATIONS

Based on the analysis herein, the following recommendations are associated with the proposed PUD:

- Per prior traffic impact studies approved for River Terrace and South Cooper Mountain, Washington County should continue to monitor the SW Scholls Ferry Road/SW 175th Avenue/SW Roy Rogers Road intersection to determine if, and when, additional modifications are needed beyond those currently planned for construction.
- West Hills should improve the SW Scholls Ferry Road/SW Strobel Road/Vandermost Road intersection as part of site development to provide:
    - an eastbound left-turn lane (with at least 100 feet of storage);
    - a westbound left-turn lane (with at least 100 feet of storage);
    - a westbound right-turn lane (with at least 100 feet of storage), which can be converted in the future to a through/right lane as part of the planned widening of SW Scholls Ferry Road to five lanes;
    - a southbound through/right and southbound left-turn lane (with at least 125 feet of storage), and
    - stop control on the southbound approach in accordance with applicable City and County design standards.
- West Hills should locate and maintain all future landscaping, above-ground utilities, and site signage to ensure minimum required sight lines are provided at all intersections within the Lolich/Bellairs neighborhood.

Please contact us at (503) 228-5230 if you have any questions regarding this study or the findings and recommendations presented.

REFERENCES

1. Transportation Research Board. *2000 Highway Capacity Manual.* 2000.
2. Washington County, Oregon. *Safety Priority Index System (SPIS)*. 2012-2014.
3. Oregon Department of Transportation. *Analysis Procedures Manual Version 2.* 2016.
4. Institute of Transportation Engineers. *Trip Generation, 9th Edition.* 2012.

APPENDICES

A. Traffic Counts

B. Year 2016 Existing Traffic Conditions Worksheets

C. ODOT Crash Data

D. Year 2018 Background Traffic Conditions Worksheets

E. Year 2018 Total Traffic Conditions Worksheets

Appendix A Traffic Counts

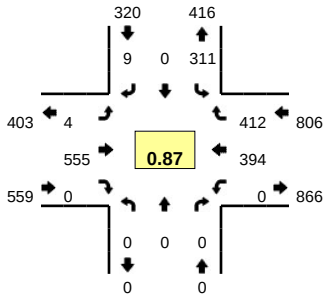
Type of peak hour being reported: User-Defined

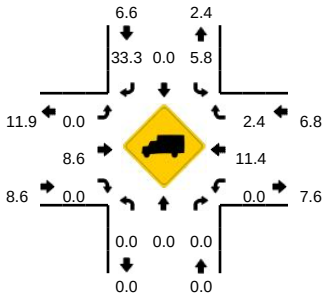
Method for determining peak hour: Total Entering Volume

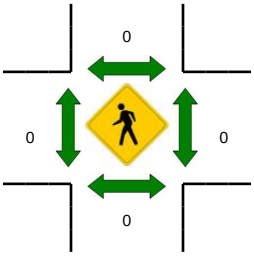
LOCATION: SW Tile Flat Rd -- SW Scholls Ferry Rd
CITY/STATE: Beaverton, OR

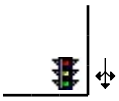
QC JOB #: 14075201
DATE: Tue, Dec 13 2016

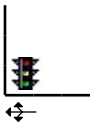
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

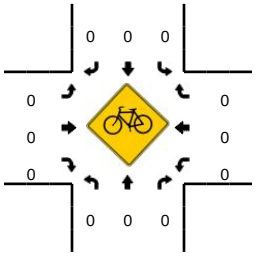


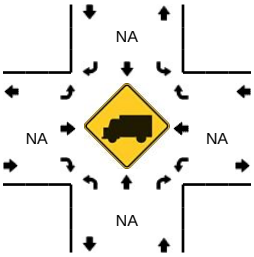


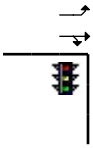


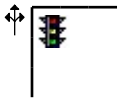


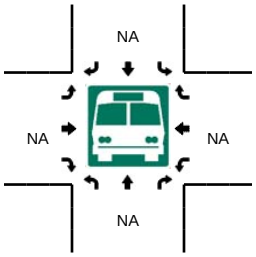












5-Min Count Period Beginning At	SW Tile Flat Rd (Northbound)				SW Tile Flat Rd (Southbound)				SW Scholls Ferry Rd (Eastbound)				SW Scholls Ferry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	24	0	0	0	2	50	0	0	0	28	13	0	117	
7:05 AM	0	0	0	0	20	0	0	0	0	49	0	0	0	18	24	0	111	
7:10 AM	0	0	0	0	31	0	0	0	0	39	0	0	0	36	34	0	140	
7:15 AM	0	0	0	0	24	0	0	0	1	54	0	0	0	26	34	0	139	
7:20 AM	0	0	0	0	23	0	1	0	0	49	0	0	0	35	34	0	142	
7:25 AM	0	0	0	0	33	0	0	0	0	51	0	0	0	34	34	0	152	
7:30 AM	0	0	0	0	29	0	2	0	0	48	0	0	0	42	32	0	153	
7:35 AM	0	0	0	0	29	0	1	0	0	48	0	0	0	39	35	0	152	
7:40 AM	0	0	0	0	31	0	1	0	1	55	0	0	0	41	49	0	178	
7:45 AM	0	0	0	0	26	0	0	0	0	39	0	0	0	28	34	0	127	
7:50 AM	0	0	0	0	12	0	1	0	0	52	0	0	0	27	34	0	126	
7:55 AM	0	0	0	0	25	0	1	0	1	38	0	0	0	27	29	0	121	1658
8:00 AM	0	0	0	0	26	0	2	0	0	32	0	0	0	28	36	0	124	1665
8:05 AM	0	0	0	0	22	0	0	0	1	50	0	0	0	31	27	0	131	1685
8:10 AM	0	0	0	0	17	0	0	0	0	38	0	0	0	27	25	0	107	1652
8:15 AM	0	0	0	0	27	0	0	0	0	40	0	0	0	27	28	0	122	1635
8:20 AM	0	0	0	0	24	0	0	0	0	50	0	0	0	34	35	0	143	1636
8:25 AM	0	0	0	0	19	0	1	0	0	37	0	0	0	36	20	0	113	1597
8:30 AM	0	0	0	0	27	0	0	0	0	26	0	0	0	26	24	0	103	1547
8:35 AM	0	0	0	0	17	0	0	0	1	45	0	0	0	29	16	0	108	1503
8:40 AM	0	0	0	0	33	0	1	0	0	38	0	0	0	30	24	0	126	1451
8:45 AM	0	0	0	0	16	0	0	0	1	24	0	0	0	25	25	0	91	1415
8:50 AM	0	0	0	0	21	0	1	0	0	25	0	0	0	25	15	0	87	1376
8:55 AM	0	0	0	0	11	0	0	0	0	29	0	0	0	29	19	0	88	1343

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	356	0	16	0	4	604	0	0	0	488	464	0	1932
Heavy Trucks	0	0	0		16	0	8		0	48	0		0	48	12		132
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 1/31/2017 11:21 AM

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

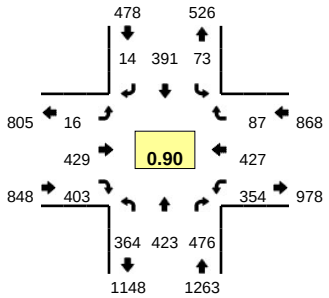
Type of peak hour being reported: User-Defined

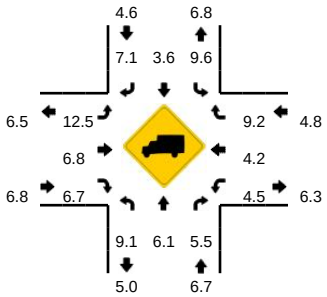
Method for determining peak hour: Total Entering Volume

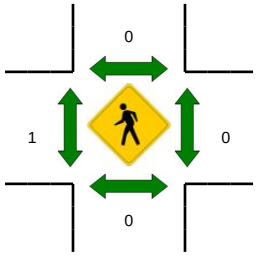
LOCATION: SW Roy Rogers Rd -- SW Scholls Ferry Rd
CITY/STATE: Sherwood, OR

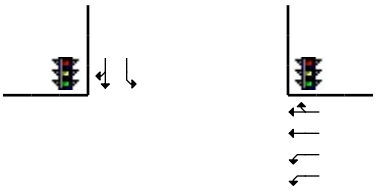
QC JOB #: 14075207
DATE: Tue, Dec 13 2016

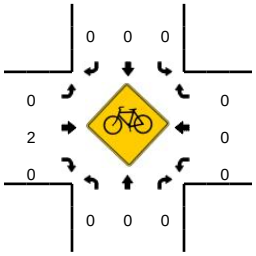
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

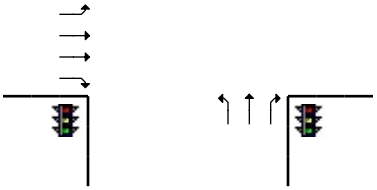


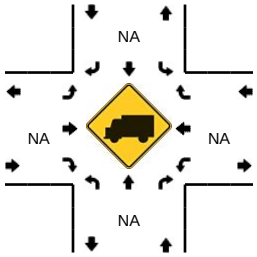


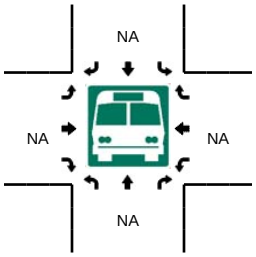












5-Min Count Period Beginning At	SW Roy Rogers Rd (Northbound)				SW Roy Rogers Rd (Southbound)				SW Scholls Ferry Rd (Eastbound)				SW Scholls Ferry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	17	41	35	0	3	20	1	0	1	33	34	0	28	25	7	0	245	
7:05 AM	28	25	40	0	8	27	1	0	0	24	36	0	15	15	10	0	229	
7:10 AM	38	34	34	0	10	14	2	0	0	34	26	0	26	34	7	0	259	
7:15 AM	20	30	42	0	2	36	1	0	2	48	46	0	39	40	9	0	315	
7:20 AM	35	41	38	0	10	41	1	0	3	29	27	0	23	37	2	0	287	
7:25 AM	29	22	36	0	3	30	1	0	1	38	41	0	32	41	5	0	279	
7:30 AM	34	46	45	0	2	46	0	0	1	41	38	0	26	41	11	0	331	
7:35 AM	25	33	38	0	2	28	3	0	1	40	47	0	45	59	7	0	328	
7:40 AM	38	32	43	0	11	48	1	0	1	23	39	0	27	27	6	0	296	
7:45 AM	25	37	51	0	5	24	1	0	3	40	39	0	33	37	6	0	301	
7:50 AM	27	56	37	0	5	40	1	0	0	28	26	0	33	32	11	0	296	
7:55 AM	28	29	32	0	11	17	2	0	2	36	25	0	12	27	6	0	227	3393
8:00 AM	30	30	43	0	5	37	1	0	2	33	30	0	29	32	9	0	281	3429
8:05 AM	35	33	37	0	7	30	0	0	0	39	19	0	29	20	8	0	257	3457
8:10 AM	11	32	50	0	8	21	3	0	0	42	15	0	28	33	3	0	246	3444
8:15 AM	28	43	33	0	1	31	1	0	1	34	30	0	10	22	5	0	239	3368
8:20 AM	27	28	43	0	5	27	2	0	1	41	36	0	24	42	3	0	279	3360
8:25 AM	30	24	28	0	4	28	1	0	5	24	26	0	22	25	4	0	221	3302
8:30 AM	23	23	30	0	8	22	0	0	0	27	30	0	18	28	8	0	217	3188
8:35 AM	20	22	34	0	4	24	0	0	1	44	15	0	30	25	5	0	224	3084
8:40 AM	30	25	38	0	4	25	1	0	0	30	31	0	25	18	5	0	232	3020
8:45 AM	27	27	40	0	2	16	2	0	1	32	25	0	25	23	4	0	224	2943
8:50 AM	13	19	28	0	7	22	1	0	1	17	15	0	29	28	2	0	182	2829
8:55 AM	19	13	33	0	8	15	2	0	2	16	18	0	15	19	8	0	168	2770

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	388	444	504	0	60	488	16	0	12	416	496	0	392	508	96	0	3820
Heavy Trucks	36	24	32		0	32	4		4	24	28		20	28	8		240
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 1/31/2017 11:21 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

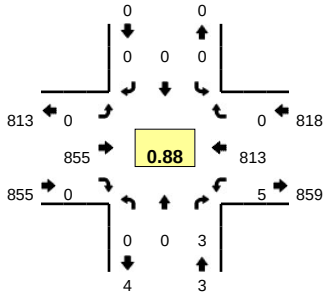
LOCATION: Strobel Rd/SW Vandermost Rd -- SW Scholls Ferry Rd

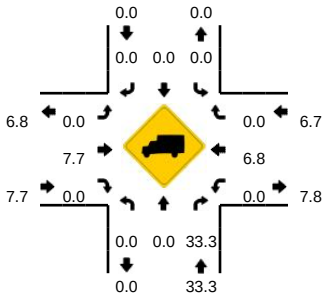
QC JOB #: 14075213

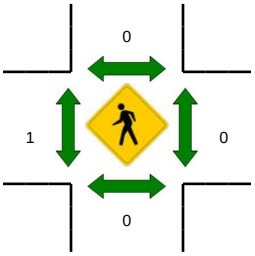
CITY/STATE: Beaverton, OR

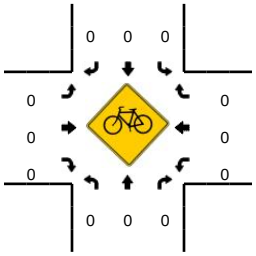
DATE: Tue, Dec 13 2016

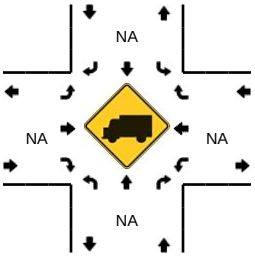
Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

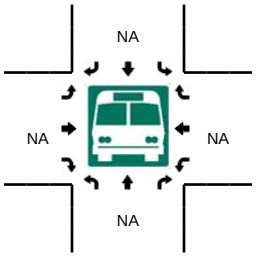












5-Min Count Period Beginning At	Strobel Rd/SW Vandermost Rd (Northbound)				Strobel Rd/SW Vandermost Rd (Southbound)				SW Scholls Ferry Rd (Eastbound)				SW Scholls Ferry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	73	0	0	0	48	0	0	122	
7:05 AM	0	0	0	0	0	0	0	0	0	63	0	0	0	33	0	0	96	
7:10 AM	0	0	0	0	0	0	0	0	0	72	0	0	0	74	0	0	146	
7:15 AM	0	0	0	0	0	0	0	0	0	79	0	0	0	58	0	0	137	
7:20 AM	0	0	0	0	0	0	0	0	0	70	0	0	2	74	0	0	146	
7:25 AM	0	0	0	0	0	0	0	0	0	81	0	0	0	62	0	0	143	
7:30 AM	0	0	1	0	0	0	0	0	0	74	0	0	0	79	0	0	154	
7:35 AM	0	0	0	0	0	0	0	0	0	76	0	0	0	88	0	0	164	
7:40 AM	0	0	0	0	0	0	0	0	0	88	0	0	1	71	0	0	160	
7:45 AM	0	0	1	0	0	0	0	0	0	58	0	0	0	63	0	0	122	
7:50 AM	0	0	0	0	0	0	0	0	0	70	0	0	1	64	0	0	135	
7:55 AM	0	0	1	0	0	0	0	0	0	62	0	0	0	53	0	0	116	1641
8:00 AM	0	0	0	0	0	0	0	0	0	58	0	0	0	71	0	1	130	1649
8:05 AM	0	0	0	0	0	0	0	0	0	67	0	0	0	56	0	0	123	1676
8:10 AM	0	0	0	0	0	0	0	0	0	58	0	0	0	49	0	0	107	1637
8:15 AM	0	0	0	0	0	0	0	0	0	69	1	0	0	53	0	0	123	1623
8:20 AM	0	0	0	0	0	0	0	0	0	71	0	0	0	69	0	0	140	1617
8:25 AM	0	0	1	0	0	0	0	0	0	59	0	0	0	62	0	0	122	1596
8:30 AM	0	0	1	0	0	0	0	0	0	50	0	0	1	48	0	0	100	1542
8:35 AM	0	0	0	0	0	0	0	0	0	62	0	0	0	48	0	0	110	1488
8:40 AM	0	0	0	0	0	0	0	0	0	71	0	0	0	47	0	0	118	1446
8:45 AM	0	0	0	0	0	0	0	0	2	39	0	0	1	55	0	0	97	1421
8:50 AM	0	0	1	0	0	0	0	0	0	38	0	0	0	41	0	0	80	1366
8:55 AM	1	0	0	0	0	0	0	0	0	42	0	0	0	44	0	0	87	1337

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	4	0	0	0	0	0	0	952	0	0	4	952	0	0	1912
Heavy Trucks	0	0	0		0	0	0		0	64	0		0	60	0		124
Pedestrians		0				0				4				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 1/31/2017 11:21 AM

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

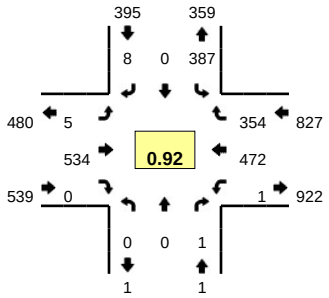
Type of peak hour being reported: User-Defined

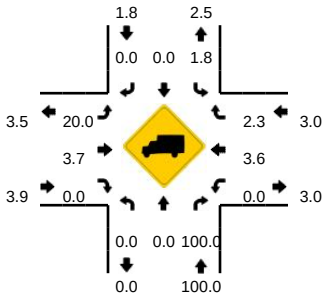
Method for determining peak hour: Total Entering Volume

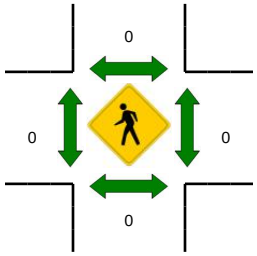
LOCATION: SW Tile Flat Rd -- SW Scholls Ferry Rd
CITY/STATE: Beaverton, OR

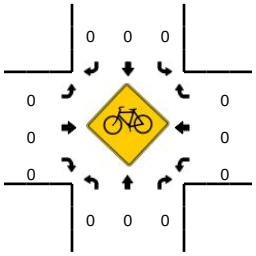
QC JOB #: 14075204
DATE: Tue, Dec 06 2016

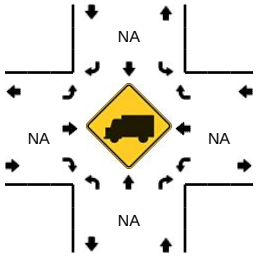
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

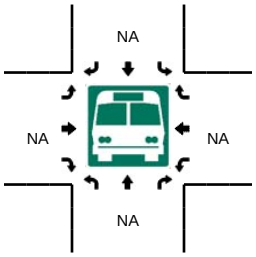












5-Min Count Period Beginning At	SW Tile Flat Rd (Northbound)				SW Tile Flat Rd (Southbound)				SW Scholls Ferry Rd (Eastbound)				SW Scholls Ferry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	28	0	0	0	0	18	0	0	0	43	21	0	110	
4:05 PM	0	0	0	0	28	0	1	0	1	40	0	0	0	37	25	0	132	
4:10 PM	0	0	0	0	23	0	2	0	1	33	0	0	0	30	36	0	125	
4:15 PM	0	0	0	0	11	0	0	0	0	39	0	0	0	44	24	0	118	
4:20 PM	0	0	1	0	35	0	0	0	0	34	0	0	1	33	23	0	127	
4:25 PM	0	0	0	0	33	0	0	0	0	28	0	0	0	42	27	0	130	
4:30 PM	0	0	0	0	32	0	1	0	0	40	0	0	0	42	29	0	144	
4:35 PM	0	0	0	0	37	0	1	0	0	35	0	0	1	29	24	0	127	
4:40 PM	0	0	0	0	26	0	0	0	1	37	0	0	0	41	28	0	133	
4:45 PM	0	0	0	0	33	0	2	0	1	41	0	0	0	35	28	0	140	
4:50 PM	0	0	1	0	34	0	1	0	0	47	0	0	0	47	21	0	151	
4:55 PM	0	0	0	0	43	0	0	0	1	51	0	0	0	41	26	0	162	1599
5:00 PM	0	0	0	0	38	0	1	0	0	47	0	0	0	40	40	0	166	1655
5:05 PM	0	0	0	0	37	0	0	0	0	42	0	0	1	37	25	0	142	1665
5:10 PM	0	0	0	0	15	0	1	0	2	40	0	0	0	32	28	0	118	1658
5:15 PM	0	0	0	0	31	0	0	0	0	50	0	0	0	36	36	0	153	1693
5:20 PM	0	0	0	0	31	0	1	0	0	37	0	0	0	51	30	0	150	1716
5:25 PM	0	0	0	0	33	0	0	0	0	39	0	0	0	34	32	0	138	1724
5:30 PM	0	0	0	0	32	0	1	0	1	48	0	0	0	40	29	0	151	1731
5:35 PM	0	0	0	0	30	0	0	0	0	40	0	0	0	40	29	0	139	1743
5:40 PM	0	0	0	0	30	0	1	0	0	52	0	0	0	39	30	0	152	1762
5:45 PM	0	0	0	0	30	0	0	0	0	33	0	0	0	39	32	0	134	1756
5:50 PM	0	0	0	0	24	0	0	0	0	44	0	0	0	35	26	0	129	1734
5:55 PM	0	0	0	0	25	0	0	0	0	41	0	0	0	27	26	0	119	1691

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	4	0	460	0	8	0	4	580	0	0	0	512	348	0	1916
Heavy Trucks	0	0	4		20	0	0		4	40	0		0	4	12		84
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 1/31/2017 11:25 AM

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

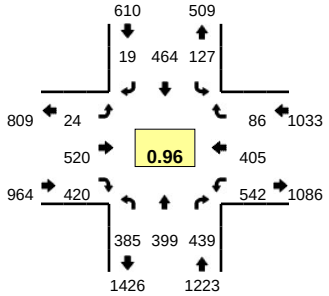
Type of peak hour being reported: User-Defined

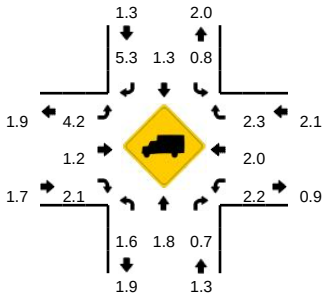
Method for determining peak hour: Total Entering Volume

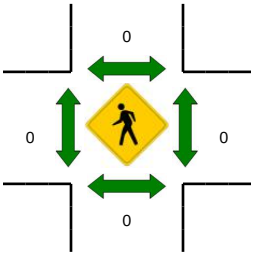
LOCATION: SW Roy Rogers Rd -- SW Scholls Ferry Rd
CITY/STATE: Sherwood, OR

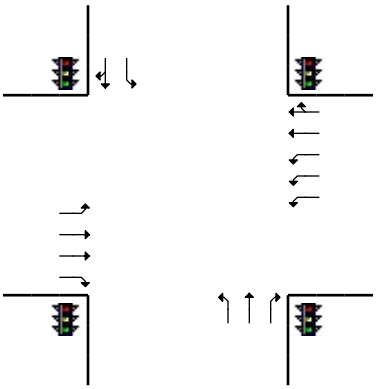
QC JOB #: 14075210
DATE: Tue, Dec 06 2016

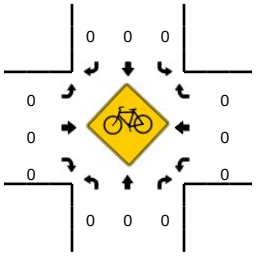
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

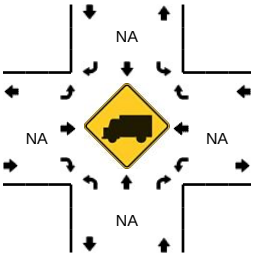


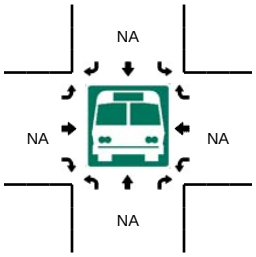












5-Min Count Period Beginning At	SW Roy Rogers Rd (Northbound)				SW Roy Rogers Rd (Southbound)				SW Scholls Ferry Rd (Eastbound)				SW Scholls Ferry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	36	44	44	0	9	44	3	0	1	15	27	0	35	22	7	0	287	
4:05 PM	23	27	26	0	4	28	2	0	1	32	27	0	44	49	9	0	272	
4:10 PM	33	25	23	0	4	27	4	0	0	34	21	0	39	30	8	0	248	
4:15 PM	29	35	37	0	10	40	3	0	2	36	21	0	40	27	5	0	285	
4:20 PM	28	36	27	0	6	33	2	0	5	28	33	0	49	31	13	0	291	
4:25 PM	35	22	39	0	14	24	0	0	1	39	33	0	53	40	7	0	307	
4:30 PM	34	43	34	0	10	48	1	0	1	35	30	0	35	27	2	0	300	
4:35 PM	25	28	40	0	11	37	3	0	3	39	32	0	55	26	2	0	301	
4:40 PM	24	33	29	0	4	36	1	0	2	37	42	0	49	44	6	0	307	
4:45 PM	37	30	36	0	13	39	1	0	0	35	38	0	43	34	12	0	318	
4:50 PM	30	48	31	0	12	45	5	0	1	31	42	0	39	25	8	0	317	
4:55 PM	30	37	49	0	9	44	1	0	4	38	42	0	44	35	6	0	339	3572
5:00 PM	30	34	36	0	8	21	2	0	2	56	50	0	48	46	9	0	342	3627
5:05 PM	37	32	33	0	19	36	3	0	2	43	50	0	31	24	7	0	317	3672
5:10 PM	34	32	49	0	18	50	1	0	2	28	27	0	41	31	5	0	318	3742
5:15 PM	30	37	40	0	7	41	0	0	4	37	17	0	60	42	0	0	315	3772
5:20 PM	29	26	38	0	4	33	3	0	0	55	36	0	48	27	7	0	306	3787
5:25 PM	38	22	26	0	16	41	0	0	4	44	29	0	39	38	9	0	306	3786
5:30 PM	33	33	25	0	9	42	1	0	1	50	29	0	42	29	7	0	301	3787
5:35 PM	28	36	45	0	5	50	1	0	4	38	28	0	47	35	6	0	323	3809
5:40 PM	29	32	31	0	7	22	1	0	0	65	32	0	60	39	10	0	328	3830
5:45 PM	34	28	41	0	14	34	1	0	1	47	29	0	41	33	4	0	307	3819
5:50 PM	39	42	38	0	5	38	0	0	2	27	22	0	40	21	3	0	277	3779
5:55 PM	27	38	36	0	11	46	1	0	1	32	31	0	61	27	5	0	316	3756

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	360	476	464	0	116	440	32	0	28	500	536	0	524	424	92	0	3992
Heavy Trucks	0	12	0		4	8	0		0	8	28		12	12	4		88
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 1/31/2017 11:25 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

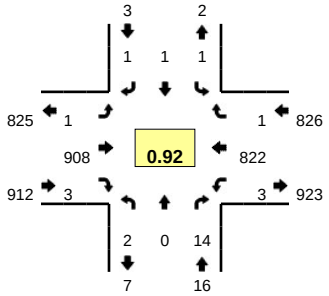
LOCATION: Strobel Rd/SW Vandermost Rd -- SW Scholls Ferry Rd

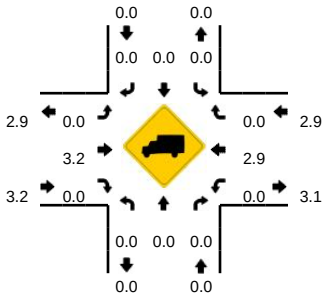
QC JOB #: 14075216

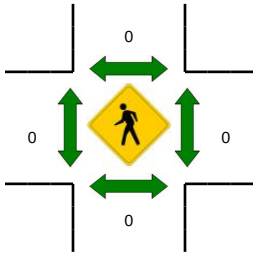
CITY/STATE: Beaverton, OR

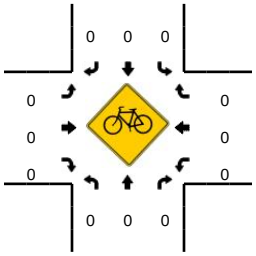
DATE: Tue, Dec 06 2016

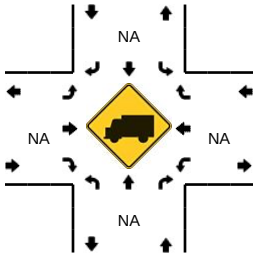
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:50 PM -- 5:05 PM

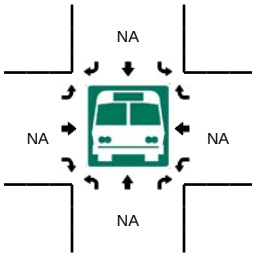












5-Min Count Period Beginning At	Strobel Rd/SW Vandermost Rd (Northbound)				Strobel Rd/SW Vandermost Rd (Southbound)				SW Scholls Ferry Rd (Eastbound)				SW Scholls Ferry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	49	0	0	5	64	0	0	118	
4:05 PM	1	0	0	0	0	0	0	0	0	66	0	0	1	68	0	0	136	
4:10 PM	0	0	1	0	0	0	0	0	0	51	0	0	2	65	0	0	119	
4:15 PM	0	0	1	0	0	0	0	0	0	54	0	0	1	62	0	0	118	
4:20 PM	0	0	2	0	0	0	0	0	0	65	2	0	0	60	0	0	129	
4:25 PM	0	0	2	0	0	0	0	0	0	66	0	0	1	68	0	0	137	
4:30 PM	0	0	1	0	0	0	0	0	0	74	1	0	0	66	0	0	142	
4:35 PM	0	0	2	0	0	0	0	0	0	62	0	0	0	64	0	0	128	
4:40 PM	0	0	3	0	0	0	0	0	0	70	0	0	0	62	0	0	135	
4:45 PM	0	0	0	0	0	0	0	0	1	68	0	0	0	63	0	0	132	
4:50 PM	0	0	0	0	0	1	1	0	0	85	0	0	0	65	1	0	153	
4:55 PM	1	0	3	0	0	0	0	0	0	89	0	0	1	72	0	0	166	1613
5:00 PM	1	0	1	0	0	0	0	0	0	84	0	0	1	72	0	0	159	1654
5:05 PM	0	0	3	0	0	0	0	0	0	79	0	0	0	68	0	0	150	1668
5:10 PM	0	0	0	0	0	0	0	0	0	60	0	0	0	65	0	0	125	1674
5:15 PM	0	0	1	0	1	0	0	0	0	79	1	0	0	74	0	0	156	1712
5:20 PM	0	0	4	0	0	0	0	0	0	62	1	0	0	71	0	0	138	1721
5:25 PM	0	0	2	0	0	0	0	0	0	73	1	0	1	70	0	0	147	1731
5:30 PM	0	0	0	0	0	0	0	0	0	80	0	0	0	66	0	0	146	1735
5:35 PM	0	0	0	0	0	0	0	0	0	74	0	0	0	71	0	0	145	1752
5:40 PM	0	0	0	0	0	0	0	0	0	75	0	0	0	65	0	0	140	1757
5:45 PM	0	0	0	0	0	0	0	0	0	65	0	0	0	74	0	0	139	1764
5:50 PM	0	0	2	0	0	0	0	0	0	66	0	0	0	60	0	0	128	1739
5:55 PM	0	0	0	0	0	0	0	0	0	68	0	0	0	58	0	0	126	1699

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	16	0	0	4	4	0	0	1032	0	0	8	836	4	0	1912
Heavy Trucks	0	0	0		0	0	0		0	64	0		0	16	0		80
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 1/31/2017 11:25 AM

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

Appendix B Year 2016 Existing Traffic Conditions

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

01/19/2017

Lane Group	EBL	EBT	WBT	SBT
Lane Group Flow (vph)	4	555	806	320
v/c Ratio	0.03	0.52	0.79	0.68
Control Delay	46.8	10.3	18.4	31.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	46.8	10.3	18.4	31.0
Queue Length 50th (ft)	2	139	245	102
Queue Length 95th (ft)	14	233	561	#280
Internal Link Dist (ft)		230	1105	390
Turn Bay Length (ft)	130			
Base Capacity (vph)	120	1569	1424	618
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.03	0.35	0.57	0.52

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 (vph)	4	555	0	0	394	412	0	0	0	311	0	9
Future Volume (vph)	4	555	0	0	394	412	0	0	0	311	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5						4.5	
Lane Util. Factor	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			0.93						1.00	
Flt Protected	0.95	1.00			1.00						0.95	
Satd. Flow (prot)	1769	1708			1646						1691	
Flt Permitted	0.95	1.00			1.00						0.95	
Satd. Flow (perm)	1769	1708			1646						1691	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	555	0	0	394	412	0	0	0	311	0	9
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	64	0
Lane Group Flow (vph)	4	555	0	0	782	0	0	0	0	0	256	0
Heavy Vehicles (%)	0%	9%	0%	0%	11%	2%	0%	0%	0%	6%	0%	33%
Turn Type	Prot	NA			NA					Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.7	53.0			48.3						19.2	
Effective Green, g (s)	0.7	53.0			48.3						19.2	
Actuated g/C Ratio	0.01	0.64			0.59						0.23	
Clearance Time (s)	4.0	5.5			5.5						4.5	
Vehicle Extension (s)	1.5	3.5			3.5						1.5	
Lane Grp Cap (vph)	15	1101			967						394	
v/s Ratio Prot	0.00	c0.32			c0.48						c0.15	
v/s Ratio Perm												
v/c Ratio	0.27	0.50			0.81						0.65	
Uniform Delay, d1	40.5	7.7			13.3						28.5	
Progression Factor	1.00	1.00			1.00						1.00	
Incremental Delay, d2	3.5	0.4			5.2						2.8	
Delay (s)	43.9	8.1			18.5						31.2	
Level of Service	D	A			B						C	
Approach Delay (s)		8.4			18.5			0.0			31.2	
Approach LOS		A			B			A			C	

Intersection Summary			
HCM 2000 Control Delay	17.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: SW Vandermost Rd/SW Strobel Rd & SW Scholls Ferry Rd

01/19/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	855	0	5	813	0	0	0	3	0	0	0
Future Volume (Veh/h)	0	855	0	5	813	0	0	0	3	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	855	0	5	813	0	0	0	3	0	0	0
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)		1185										
pX, platoon unblocked				0.86			0.86	0.86	0.86	0.86	0.86	
vC, conflicting volume	813			855			1679	1678	855	1681	1678	814
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	813			748			1709	1708	748	1711	1708	814
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 %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	823			746			62	79	314	61	79	381

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	855	818	3	0
Volume Left	0	5	0	0
Volume Right	0	0	3	0
cSH	823	746	314	1700
Volume to Capacity	0.00	0.01	0.01	0.00
Queue Length 95th (ft)	0	1	1	0
Control Delay (s)	0.0	0.2	16.6	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	0.2	16.6	0.0
Approach LOS			C	A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	16	429	403	354	514	364	423	476	73	405
v/c Ratio	0.17	0.69	0.53	0.72	0.44	0.83	0.62	0.48	0.50	0.68
Control Delay	55.2	43.4	14.1	49.3	26.4	49.9	29.6	8.8	58.4	43.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.2	43.4	14.1	49.3	26.4	49.9	29.6	8.8	58.4	43.7
Queue Length 50th (ft)	9	122	106	101	107	195	200	84	41	119
Queue Length 95th (ft)	37	221	221	193	224	379	375	204	106	217
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	107	1010	979	691	1489	695	989	1062	236	934
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	0.15	0.42	0.41	0.51	0.35	0.52	0.43	0.45	0.31	0.43

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	429	403	354	427	87	364	423	476	73	391	14
Future Volume (vph)	16	429	403	354	427	87	364	423	476	73	391	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	*0.92	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1612	3374	1501	3335	3356		1631	1766	1515	1657	3373	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1612	3374	1501	3335	3356		1631	1766	1515	1657	3373	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	16	429	403	354	427	87	364	423	476	73	391	14
RTOR Reduction (vph)	0	0	48	0	13	0	0	0	89	0	2	0
Lane Group Flow (vph)	16	429	355	354	501	0	364	423	387	73	403	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	12%	7%	7%	5%	4%	9%	9%	6%	5%	10%	4%	7%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	1.8	20.1	45.0	13.6	31.9		24.9	35.8	49.4	6.6	17.5	
Effective Green, g (s)	1.8	20.1	45.0	13.6	31.9		24.9	35.8	49.4	6.6	17.5	
Actuated g/C Ratio	0.02	0.21	0.47	0.14	0.34		0.26	0.38	0.52	0.07	0.18	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	30	713	710	476	1125		427	664	786	114	620	
v/s Ratio Prot	0.01	c0.13	0.13	c0.11	0.15		c0.22	c0.24	0.07	0.04	0.12	
v/s Ratio Perm			0.11						0.19			
v/c Ratio	0.53	0.60	0.50	0.74	0.45		0.85	0.64	0.49	0.64	0.65	
Uniform Delay, d1	46.2	33.9	17.3	39.1	24.7		33.4	24.3	14.8	43.1	36.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	8.8	1.0	0.2	5.4	0.1		14.6	1.5	0.2	8.8	1.9	
Delay (s)	55.1	34.9	17.5	44.5	24.8		47.9	25.8	14.9	51.9	37.8	
Level of Service	E	C	B	D	C		D	C	B	D	D	
Approach Delay (s)		27.0			32.8			28.1			40.0	
Approach LOS		C			C			C			D	

Intersection Summary			
HCM 2000 Control Delay	30.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	95.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

01/18/2017

Lane Group	EBL	EBT	WBT	SBT
Lane Group Flow (vph)	5	638	927	367
v/c Ratio	0.05	0.57	0.86	0.80
Control Delay	51.5	10.3	21.7	43.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	51.5	10.3	21.7	43.7
Queue Length 50th (ft)	3	177	336	159
Queue Length 95th (ft)	17	234	632	#408
Internal Link Dist (ft)		230	1105	390
Turn Bay Length (ft)	130			
Base Capacity (vph)	194	1613	1424	456
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.03	0.40	0.65	0.80

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 (vph)	4	555	0	0	394	412	0	0	0	311	0	9
Future Volume (vph)	4	555	0	0	394	412	0	0	0	311	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5						4.5	
Lane Util. Factor	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			0.93						1.00	
Flt Protected	0.95	1.00			1.00						0.95	
Satd. Flow (prot)	1769	1708			1646						1691	
Flt Permitted	0.95	1.00			1.00						0.95	
Satd. Flow (perm)	1769	1708			1646						1691	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	5	638	0	0	453	474	0	0	0	357	0	10
RTOR Reduction (vph)	0	0	0	0	25	0	0	0	0	0	65	0
Lane Group Flow (vph)	5	638	0	0	902	0	0	0	0	0	302	0
Heavy Vehicles (%)	0%	9%	0%	0%	11%	2%	0%	0%	0%	6%	0%	33%
Turn Type	Prot	NA			NA					Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.8	64.9			60.1						21.6	
Effective Green, g (s)	0.8	64.9			60.1						21.6	
Actuated g/C Ratio	0.01	0.67			0.62						0.22	
Clearance Time (s)	4.0	5.5			5.5						4.5	
Vehicle Extension (s)	1.5	3.5			3.5						1.5	
Lane Grp Cap (vph)	14	1148			1025						378	
v/s Ratio Prot	0.00	c0.37			c0.55						c0.18	
v/s Ratio Perm												
v/c Ratio	0.36	0.56			0.88						0.80	
Uniform Delay, d1	47.6	8.3			15.2						35.4	
Progression Factor	1.00	1.00			1.00						1.00	
Incremental Delay, d2	5.6	0.6			9.1						10.5	
Delay (s)	53.2	8.9			24.3						45.9	
Level of Service	D	A			C						D	
Approach Delay (s)		9.3			24.3			0.0			45.9	
Approach LOS		A			C			A			D	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	96.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: SW Vandermost Rd/SW Strobel Rd & SW Scholls Ferry Rd

01/18/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	855	0	5	813	0	0	0	3	0	0	0
Future Volume (Veh/h)	0	855	0	5	813	0	0	0	3	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	0	972	0	6	924	0	0	0	3	0	0	0
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)		1185										
pX, platoon unblocked				0.81			0.81	0.81	0.81	0.81	0.81	
vC, conflicting volume	924			972			1909	1908	972	1911	1908	925
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	924			849			2005	2003	849	2007	2003	925
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 %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	748			647			36	49	259	36	49	329

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	972	930	3	0
Volume Left	0	6	0	0
Volume Right	0	0	3	0
cSH	748	647	259	1700
Volume to Capacity	0.00	0.01	0.01	0.00
Queue Length 95th (ft)	0	1	1	0
Control Delay (s)	0.0	0.3	19.1	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	0.3	19.1	0.0
Approach LOS			C	A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	57.1%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	18	477	448	393	571	404	470	529	81	450
v/c Ratio	0.20	0.75	0.59	0.75	0.48	0.92	0.70	0.53	0.56	0.73
Control Delay	50.7	44.1	16.3	49.3	25.9	64.5	33.5	9.7	57.4	44.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.7	44.1	16.3	49.3	25.9	64.5	33.5	9.7	57.4	44.2
Queue Length 50th (ft)	10	141	133	115	122	233	239	96	47	137
Queue Length 95th (ft)	36	210	249	#212	220	#489	#450	237	100	206
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	172	1265	759	536	1451	437	760	1000	266	1087
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	0.10	0.38	0.59	0.73	0.39	0.92	0.62	0.53	0.30	0.41

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 (vph)	16	429	403	354	427	87	364	423	476	73	391	14
Future Volume (vph)	16	429	403	354	427	87	364	423	476	73	391	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	*0.92	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1612	3374	1501	3335	3355		1631	1766	1515	1657	3372	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1612	3374	1501	3335	3355		1631	1766	1515	1657	3372	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	18	477	448	393	474	97	404	470	529	81	434	16
RTOR Reduction (vph)	0	0	49	0	13	0	0	0	105	0	2	0
Lane Group Flow (vph)	18	477	399	393	558	0	404	470	424	81	448	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	12%	7%	7%	5%	4%	9%	9%	6%	5%	10%	4%	7%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	2.2	20.4	45.6	14.8	33.0		25.2	36.0	50.8	7.1	17.9	
Effective Green, g (s)	2.2	20.4	45.6	14.8	33.0		25.2	36.0	50.8	7.1	17.9	
Actuated g/C Ratio	0.02	0.21	0.47	0.15	0.34		0.26	0.37	0.52	0.07	0.18	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	36	707	703	507	1137		422	653	790	120	620	
v/s Ratio Prot	0.01	c0.14	0.15	c0.12	0.17		c0.25	c0.27	0.08	0.05	0.13	
v/s Ratio Perm			0.12						0.20			
v/c Ratio	0.50	0.67	0.57	0.78	0.49		0.96	0.72	0.54	0.68	0.72	
Uniform Delay, d1	47.0	35.4	18.7	39.7	25.5		35.5	26.3	15.4	44.0	37.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.9	2.0	0.6	6.7	0.1		32.4	3.2	0.4	11.2	3.5	
Delay (s)	50.9	37.4	19.3	46.3	25.6		67.9	29.5	15.8	55.1	40.9	
Level of Service	D	D	B	D	C		E	C	B	E	D	
Approach Delay (s)		29.1			34.0			35.4			43.1	
Approach LOS		C			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	34.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	97.3	Sum of lost time (s)	19.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

01/19/2017

Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	5	534	827	1	395
v/c Ratio	0.06	0.50	0.82	0.00	0.71
Control Delay	51.4	12.7	23.8	0.0	33.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	51.4	12.7	23.8	0.0	33.6
Queue Length 50th (ft)	3	162	319	0	153
Queue Length 95th (ft)	18	284	712	0	#423
Internal Link Dist (ft)		230	1105	30	390
Turn Bay Length (ft)	130				
Base Capacity (vph)	85	1535	1351	373	603
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	0.35	0.61	0.00	0.66

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 (vph)	5	534	0	1	472	354	0	0	1	387	0	8
Future Volume (vph)	5	534	0	1	472	354	0	0	1	387	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5			4.0			4.5	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.94			0.86			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (prot)	1474	1790			1718			794			1772	
Flt Permitted	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (perm)	1474	1790			1718			794			1772	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	534	0	1	472	354	0	0	1	387	0	8
RTOR Reduction (vph)	0	0	0	0	18	0	0	1	0	0	62	0
Lane Group Flow (vph)	5	534	0	0	809	0	0	0	0	0	333	0
Heavy Vehicles (%)	20%	4%	0%	0%	4%	2%	0%	0%	100%	2%	0%	0%
Turn Type	Prot	NA		Perm	NA			NA		Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.7	56.5			51.8			0.6			25.1	
Effective Green, g (s)	0.7	56.5			51.8			0.6			25.1	
Actuated g/C Ratio	0.01	0.59			0.54			0.01			0.26	
Clearance Time (s)	4.0	5.5			5.5			4.0			4.5	
Vehicle Extension (s)	1.5	3.5			3.5			1.5			1.5	
Lane Grp Cap (vph)	10	1051			925			4			462	
v/s Ratio Prot	0.00	c0.30						c0.00			c0.19	
v/s Ratio Perm					0.47							
v/c Ratio	0.50	0.51			0.87			0.00			0.72	
Uniform Delay, d1	47.6	11.7			19.4			47.5			32.4	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	13.6	0.5			9.4			0.1			4.7	
Delay (s)	61.2	12.1			28.8			47.6			37.0	
Level of Service	E	B			C			D			D	
Approach Delay (s)		12.6			28.8			47.6			37.0	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	96.2	Sum of lost time (s)	18.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: SW Vandermost Rd/SW Strobel Rd & SW Scholls Ferry Rd

01/19/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	908	3	3	822	1	2	0	14	1	1	1
Future Volume (Veh/h)	1	908	3	3	822	1	2	0	14	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	908	3	3	822	1	2	0	14	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)		1185										
pX, platoon unblocked				0.83			0.83	0.83	0.83	0.83	0.83	
vC, conflicting volume	823			911			1742	1740	910	1754	1742	822
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	823			790			1791	1790	788	1806	1791	822
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 %	100			100			96	100	96	98	99	100
cM capacity (veh/h)	816			696			52	68	328	49	68	377

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	912	826	16	3
Volume Left	1	3	2	1
Volume Right	3	1	14	1
cSH	816	696	197	80
Volume to Capacity	0.00	0.00	0.08	0.04
Queue Length 95th (ft)	0	0	7	3
Control Delay (s)	0.0	0.1	24.9	52.0
Lane LOS	A	A	C	F
Approach Delay (s)	0.0	0.1	24.9	52.0
Approach LOS			C	F

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	24	520	420	542	491	385	399	439	127	483
v/c Ratio	0.26	0.77	0.50	0.83	0.38	0.87	0.66	0.46	0.67	0.75
Control Delay	62.1	50.6	16.3	54.9	26.4	59.6	37.8	10.7	66.5	50.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	62.1	50.6	16.3	54.9	26.4	59.6	37.8	10.7	66.5	50.4
Queue Length 50th (ft)	17	186	146	191	133	258	238	107	89	172
Queue Length 95th (ft)	48	271	255	#300	201	#452	387	211	163	251
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	103	874	943	798	1452	571	748	1023	288	857
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	0.23	0.59	0.45	0.68	0.34	0.67	0.53	0.43	0.44	0.56

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 (vph)	24	520	420	542	405	86	385	399	439	127	464	19
Future Volume (vph)	24	520	420	542	405	86	385	399	439	127	464	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	3574	1583	3433	3446		1743	1835	1575	1805	3583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	3574	1583	3433	3446		1743	1835	1575	1805	3583	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	24	520	420	542	405	86	385	399	439	127	464	19
RTOR Reduction (vph)	0	0	50	0	14	0	0	0	68	0	2	0
Lane Group Flow (vph)	24	520	370	542	477	0	385	399	371	127	481	0
Heavy Vehicles (%)	4%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%	5%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	3.0	21.8	48.4	19.8	38.6		26.6	34.4	54.2	11.0	18.8	
Effective Green, g (s)	3.0	21.8	48.4	19.8	38.6		26.6	34.4	54.2	11.0	18.8	
Actuated g/C Ratio	0.03	0.21	0.46	0.19	0.36		0.25	0.32	0.51	0.10	0.18	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	49	735	722	641	1254		437	595	805	187	635	
v/s Ratio Prot	0.01	c0.15	0.13	c0.16	0.14		c0.22	c0.22	0.09	0.07	0.13	
v/s Ratio Perm			0.11						0.15			
v/c Ratio	0.49	0.71	0.51	0.85	0.38		0.88	0.67	0.46	0.68	0.76	
Uniform Delay, d1	50.7	39.1	20.4	41.6	24.9		38.2	30.9	16.6	45.8	41.4	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	2.8	2.6	0.3	9.6	0.1		17.9	2.3	0.2	7.5	4.6	
Delay (s)	53.5	41.7	20.7	51.2	24.9		56.1	33.2	16.7	53.3	46.0	
Level of Service	D	D	C	D	C		E	C	B	D	D	
Approach Delay (s)		32.8			38.7			34.5			47.5	
Approach LOS		C			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	37.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	106.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

01/18/2017

Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	5	580	899	1	430
v/c Ratio	0.05	0.53	0.87	0.00	0.83
Control Delay	50.4	11.2	24.5	0.0	42.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	50.4	11.2	24.5	0.0	42.4
Queue Length 50th (ft)	2	149	307	0	160
Queue Length 95th (ft)	18	270	749	0	#582
Internal Link Dist (ft)		230	1105	30	390
Turn Bay Length (ft)	130				
Base Capacity (vph)	181	1693	1562	349	519
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.03	0.34	0.58	0.00	0.83

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 (vph)	5	534	0	1	472	354	0	0	1	387	0	8
Future Volume (vph)	5	534	0	1	472	354	0	0	1	387	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5			4.0			4.5	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.94			0.86			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (prot)	1474	1790			1718			794			1772	
Flt Permitted	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (perm)	1474	1790			1718			794			1772	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	580	0	1	513	385	0	0	1	421	0	9
RTOR Reduction (vph)	0	0	0	0	21	0	0	1	0	0	64	0
Lane Group Flow (vph)	5	580	0	0	878	0	0	0	0	0	366	0
Heavy Vehicles (%)	20%	4%	0%	0%	4%	2%	0%	0%	100%	2%	0%	0%
Turn Type	Prot	NA		Perm	NA			NA		Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.8	55.7			50.9			0.5			22.3	
Effective Green, g (s)	0.8	55.7			50.9			0.5			22.3	
Actuated g/C Ratio	0.01	0.60			0.55			0.01			0.24	
Clearance Time (s)	4.0	5.5			5.5			4.0			4.5	
Vehicle Extension (s)	1.5	3.5			3.5			1.5			1.5	
Lane Grp Cap (vph)	12	1077			945			4			427	
v/s Ratio Prot	0.00	c0.32						c0.00			c0.21	
v/s Ratio Perm					0.51							
v/c Ratio	0.42	0.54			0.93			0.00			0.86	
Uniform Delay, d1	45.6	10.8			19.1			45.8			33.6	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	8.3	0.6			15.0			0.0			15.0	
Delay (s)	53.9	11.4			34.2			45.8			48.6	
Level of Service	D	B			C			D			D	
Approach Delay (s)		11.8			34.2			45.8			48.6	
Approach LOS		B			C			D			D	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	92.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: SW Vandermost Rd/SW Strobel Rd & SW Scholls Ferry Rd

01/18/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	908	3	3	822	1	2	0	14	1	1	1
Future Volume (Veh/h)	1	908	3	3	822	1	2	0	14	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
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)	1	987	3	3	893	1	2	0	15	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)		1185										
pX, platoon unblocked				0.81			0.81	0.81	0.81	0.81	0.81	
vC, conflicting volume	894			990			1892	1890	988	1905	1892	894
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	894			869			1984	1983	867	2001	1984	894
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 %	100			100			95	100	95	97	98	100
cM capacity (veh/h)	767			634			37	50	288	35	50	343

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	991	897	17	3
Volume Left	1	3	2	1
Volume Right	3	1	15	1
cSH	767	634	160	58
Volume to Capacity	0.00	0.00	0.11	0.05
Queue Length 95th (ft)	0	0	9	4
Control Delay (s)	0.0	0.1	30.2	70.6
Lane LOS	A	A	D	F
Approach Delay (s)	0.0	0.1	30.2	70.6
Approach LOS			D	F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	25	542	438	565	512	401	416	457	132	503
v/c Ratio	0.25	0.76	0.51	1.06	0.41	0.89	0.67	0.49	0.68	0.75
Control Delay	53.1	44.3	14.6	95.7	25.0	59.0	35.3	12.2	60.5	45.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.1	44.3	14.6	95.7	25.0	59.0	35.3	12.2	60.5	45.1
Queue Length 50th (ft)	15	165	128	~194	108	234	215	108	78	153
Queue Length 95th (ft)	46	241	242	#364	198	#495	377	240	153	227
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	180	1301	863	535	1447	453	763	931	281	1120
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	0.14	0.42	0.51	1.06	0.35	0.89	0.55	0.49	0.47	0.45

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 (vph)	24	520	420	542	405	86	385	399	439	127	464	19
Future Volume (vph)	24	520	420	542	405	86	385	399	439	127	464	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	3574	1583	3433	3446		1743	1835	1575	1805	3583	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	3574	1583	3433	3446		1743	1835	1575	1805	3583	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	25	542	438	565	422	90	401	416	457	132	483	20
RTOR Reduction (vph)	0	0	48	0	14	0	0	0	71	0	2	0
Lane Group Flow (vph)	25	542	390	565	498	0	401	416	386	132	501	0
Heavy Vehicles (%)	4%	1%	2%	2%	2%	2%	2%	2%	1%	1%	1%	5%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	2.4	22.0	47.2	15.1	34.7		25.2	32.9	48.0	10.4	18.1	
Effective Green, g (s)	2.4	22.0	47.2	15.1	34.7		25.2	32.9	48.0	10.4	18.1	
Actuated g/C Ratio	0.02	0.22	0.47	0.15	0.35		0.25	0.33	0.48	0.10	0.18	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	41	791	751	521	1202		441	607	760	188	652	
v/s Ratio Prot	0.01	c0.15	0.13	c0.16	0.14		c0.23	c0.23	0.08	0.07	0.14	
v/s Ratio Perm			0.11						0.17			
v/c Ratio	0.61	0.69	0.52	1.08	0.41		0.91	0.69	0.51	0.70	0.77	
Uniform Delay, d1	48.0	35.5	18.2	42.2	24.6		36.0	28.8	17.6	43.0	38.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	16.3	2.0	0.3	64.2	0.1		21.9	2.6	0.2	9.3	4.9	
Delay (s)	64.4	37.5	18.4	106.4	24.7		57.8	31.3	17.8	52.3	43.5	
Level of Service	E	D	B	F	C		E	C	B	D	D	
Approach Delay (s)		29.9			67.6			34.8			45.4	
Approach LOS		C			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	44.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	99.4	Sum of lost time (s)	19.0
Intersection Capacity Utilization	80.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Appendix C ODOT Crash Data

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

SW Scholls Ferry Road & SW Tile Flat Road
January 1, 2010 through December 31, 2014

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: 2013														
TURNING MOVEMENTS	0	2	3	5	0	2	1	4	1	4	1	5	0	0
2013 TOTAL	0	2	3	5	0	2	1	4	1	4	1	5	0	0
YEAR: 2012														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2012 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
FINAL TOTAL	0	3	3	6	0	3	1	5	1	5	1	6	0	0

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

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

COUNTY ROAD CRASH LISTING

WASHINGTON COUNTY

SW Scholls Ferry Road & SW Tile Flat Road

January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	S P E D / E A L C / R U G S / S C H / W O R K	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	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
00606	N N N N N	2/3/2012		SW SCHOLLS FERRY RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
COUNTY		Fri 7A	0	SW TILE FLAT RD	CN		STOP SIGN	N	DRY	TURN		PRVTE	E W									000		00
No		*45 25 28.97 -122 52 18.23*		1	01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	49	M	OR-Y	000		000		00
																			OR<25					
											02	NONE 0	TURN-L											
												PRVTE	N E									015		00
												PSNGR CAR		01	DRVR	NONE	27	M	OR-Y	028		000		02
																			OR<25					
03350	N N N N N	6/25/2013		SW SCHOLLS FERRY RD	INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 1	TURN-L											10
COUNTY		Tue 10A	0	SW TILE FLAT RD	CN		STOP SIGN	N	DRY	TURN		PRVTE	N E									000		00
No		*45 25 28.97 -122 52 18.23*		1	01	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	33	M	OTH-Y	014		000		10
																			N-RES					
											02	NONE 0	STRGHT											
												PRVTE	E W									000		00
												PSNGR CAR		01	DRVR	NONE	42	M	OR-Y	000		000		00
																			OR<25					
04660	N N N	8/22/2013		SW SCHOLLS FERRY RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
COUNTY		Thu 7A	0	SW TILE FLAT RD	CN		STOP SIGN	N	DRY	TURN		PRVTE	N E									015		00
No		*45 25 28.97 -122 52 18.23*		1	01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	20	M	OR-Y	028		000		02
																			OR<25					
											02	NONE 0	STRGHT											
												PRVTE	E W									000		00
												PSNGR CAR		01	DRVR	NONE	34	M	OR-Y	000		000		00
																			OR<25					
05678	N N N	10/5/2013		SW SCHOLLS FERRY RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
NONE		Sat 5P	0	SW TILE FLAT RD	CN		STOP SIGN	N	DRY	TURN		PRVTE	E W									000		00
No		*45 25 28.97 -122 52 18.23*		1	01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	47	F	OR-Y	000		000		00
																			OR<25					
											02	NONE 0	TURN-L											
												PRVTE	N E									015		00
												PSNGR CAR		01	DRVR	NONE	42	M	OR-Y	028		000		02
																			OR<25					
07087	N N N N N	12/5/2013		SW SCHOLLS FERRY RD	INTER	3-LEG	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											02
COUNTY		Thu 8A	0	SW TILE FLAT RD	CN		STOP SIGN	N	DRY	TURN		PRVTE	E W									000		00
No		*45 25 28.97 -122 52 18.23*		1	01	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	35	F	OR-Y	028		000		02
																			OR<25					
											02	NONE 0	TURN-L											
												PRVTE	N E									000		00
												PSNGR CAR		01	DRVR	NONE	41	M	OR-Y	000		000		00
																			OR<25					

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

COUNTY ROAD CRASH LISTING

WASHINGTON COUNTY

SW Scholls Ferry Road & SW Tile Flat Road

January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPE / ELD	DRA / CSU	SWC / HLG	SWO / HRK	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
05286	N	N	N		9/20/2013		SW SCHOLLS FERRY RD	INTER	3-LEG	N	N	CLD	ANGL-OTH	01	NONE 0	STRGHT											02
COUNTY					Fri 5A	0	SW TILE FLAT RD	CN		STOP SIGN	N	WET	TURN		PRVTE	W E									000		00
No					*45 25 28.97 -122 52 18.23*		1	03	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	INJC	52	M	OR-Y OR<25	000		000		00
														02	NONE 0	TURN-L											
															PRVTE	N E									000		00
															PSNGR CAR		01	DRVR	NONE	60	M	SUSP 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

SW Scholls Ferry Road & SW Strobel Road / SW Vandermost Rd
January 1, 2010 through December 31, 2014

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: 2011														
TURNING MOVEMENTS	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2011 TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0
FINAL TOTAL	0	1	0	1	0	1	0	1	0	1	0	1	0	0

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

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
COUNTY ROAD CRASH LISTING

WASHINGTON COUNTY

SW Scholls Ferry Road & SW Strobel Road / SW Vandermost Rd
January 1, 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPE / ALC / DSL	DRUG / SHK	SWOR	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
03404	N	N	N	6/29/2011		SW SCHOLLS FERRY RD	INTER	CROSS	N	N	CLD	S-1TURN	01	NONE 0	STRGHT											08
COUNTY				Wed 1P	0	SW STROBEL RD	CN		STOP SIGN	N	DRY	TURN		PRVTE	E W									000		00
No				*45 25 32.74 -122 52 2.77*		1	01	0		N	DAY	INJ		PSNGR CAR		01	DRVR	INJC	46	M	OR-Y OR<25	000		000		00
													02	NONE 0	U-TURN											
														PRVTE	E E									000		00
														PSNGR CAR		01	DRVR	NONE	35	M	OR-Y OR<25	008		000		08

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

SW Scholls Ferry Road & SW Roy Rogers Road / SW 175th Ave
January 1. 2010 through December 31, 2014

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: 2014														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	1	0	1	1	0	1
REAR-END	0	1	3	4	0	1	0	3	1	3	1	4	0	0
SIDESWIPE - OVERTAKING	0	0	1	1	0	0	0	1	0	0	1	1	0	0
TURNING MOVEMENTS	0	1	0	1	0	1	0	0	1	0	1	1	0	0
2014 TOTAL	0	2	5	7	0	2	0	4	3	3	4	7	0	1
YEAR: 2013														
REAR-END	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	0	2	2	0	0	0	1	1	1	1	2	0	0
2013 TOTAL	0	0	3	3	0	0	0	2	1	2	1	3	0	0
YEAR: 2012														
ANGLE	0	2	0	2	0	3	0	1	1	0	2	2	0	0
FIXED / OTHER OBJECT	0	1	0	1	0	1	0	0	1	0	1	1	0	1
REAR-END	0	3	1	4	0	4	0	4	0	4	0	4	0	0
TURNING MOVEMENTS	0	0	1	1	0	0	0	1	0	1	0	1	0	0
2012 TOTAL	0	6	2	8	0	8	0	6	2	5	3	8	0	1
YEAR: 2011														
FIXED / OTHER OBJECT	0	0	1	1	0	0	0	0	1	0	1	1	0	1
REAR-END	0	1	3	4	0	1	0	2	1	2	2	4	0	0
TURNING MOVEMENTS	0	1	1	2	0	1	0	1	1	1	1	2	0	0
2011 TOTAL	0	2	5	7	0	2	0	3	3	3	4	7	0	1
YEAR: 2010														
REAR-END	0	1	3	4	0	3	0	3	1	4	0	4	0	0
2010 TOTAL	0	1	3	4	0	3	0	3	1	4	0	4	0	0
FINAL TOTAL	0	11	18	29	0	15	0	18	10	17	12	29	0	3

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
COUNTY ROAD CRASH LISTING

WASHINGTON COUNTY

SW Scholls Ferry Road & SW Roy Rogers Road / SW 175th Ave
January 1. 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED / ALCOHOL / DRUGS / SCHOOL / 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
86807	N N N	7/7/2013		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NO RPT		Sun 11A	0	SW SCHOLLS FERRY RD	E		TRF SIGNAL	N	DRY	REAR		PRVTE	E W								000			00
No		*45 25 34.95 -122 51 12.51*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	36	F	OR-Y	026	000			07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	E W								011			00
												PSNGR CAR		01	DRVR	NONE	39	M	OR-Y	000	000			00
																			OR<25					
01984	Y Y N N N	4/17/2011		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 0	TURN-L										079,010	01,08
COUNTY		Sun 11P	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	DRY	TURN		PRVTE	E S								000			00
No		*45 25 34.95 -122 51 12.48*		1	05	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	25	M	OR-Y	047,080	000			01,08
																			OR<25					
											02	NONE 0	TURN-L											
												PRVTE	E S								000	079,010		00
												PSNGR CAR		01	DRVR	INJB	19	F	OR-Y	000	000			00
																			OR<25					
05668	Y N N N N	10/13/2011		SW ROY ROGERS RD	INTER	CROSS	N	Y	RAIN	FIX OBJ	01	NONE 0	TURN-L										100,073,124	01
COUNTY		Thu 8P	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	WET	FIX		PRVTE	E S								088	100,073,124		00
No		*45 25 34.95 -122 51 12.48*		1	05	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	17	M	OR-Y	047,080,081	017			01
																			OR<25					
05883	Y N N N N	10/27/2012		SW ROY ROGERS RD	INTER	CROSS	N	Y	RAIN	FIX OBJ	01	NONE 0	TURN-L										100,079,040	01
COUNTY		Sat 10P	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	WET	FIX		PRVTE	E S								000	010,079,124		00
No		*45 25 34.95 -122 51 12.51*		1	05	0		N	DLIT	INJ		PSNGR CAR		01	DRVR	NONE	20	F	OR-Y	047,080,081	017			01
																			OR<25					
														02	PSNG	INJC	17	F		000	000			00
02472	N N N	5/14/2013		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 0	TURN-L											08
NO RPT		Tue 4P	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	DRY	TURN		PRVTE	E S								000			00
No		*45 25 34.95 -122 51 12.51*		1	05	0		N	DAY	PDO		MTRCYCLE		01	DRVR	NONE	00	M	OR-Y	001	000			08
																			OR>25					
											02	NONE 0	TURN-L											
												PRVTE	E S								000			00
												PSNGR CAR		01	DRVR	NONE	52	M	OR-Y	000	000			00
																			OR<25					
00616	N N N	2/9/2010		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		Tue 3P	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	W E								000			00
No		*45 25 34.95 -122 51 12.51*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	28	M	OR-Y	026	000			07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	W E								011			00
												PSNGR CAR		01	DRVR	NONE	57	F	OR-Y	000	000			00
																			OR<25					

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

COUNTY ROAD CRASH LISTING

WASHINGTON COUNTY

SW Scholls Ferry Road & SW Roy Rogers Road / SW 175th Ave

January 1. 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED / ALCOHOL / DRUGS / SCHOOL / 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
06376	N N N	11/17/2010		SW ROY ROGERS RD	INTER	3-LEG	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		Wed 7A	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	DRY	REAR		PRVTE	S N									000		00
No	*45 25 34.95 -122 51 12.51*			1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	39	F	OR-Y	026		000		07
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S N									011		00
												PSNGR CAR		01	DRVR	NONE	00	M	OR-Y	000		000		00
																			OR>25					
00685	N N N	2/7/2011		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											10
NONE		Mon 7A	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	WET	REAR		PRVTE	S N									000		00
No	*45 25 34.95 -122 51 12.48*			1	06	0		N	DAWN	PDO		PSNGR CAR		01	DRVR	NONE	50	M	OR-Y	014,026		000		10
																			OR>25					
											02	NONE 0	STOP											
												PRVTE	S N									011		00
												PSNGR CAR		01	DRVR	NONE	32	M	OR-Y	000		000		00
																			OR<25					
														02	PSNG	NO<5	02	F		000		000		00
04941	N N N	9/11/2011		SW ROY ROGERS RD	INTER	CROSS	N	N	UNK	S-1STOP	01	NONE 0	STRGHT										013	10
NONE		Sun 2P	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	UNK	REAR		PRVTE	S N									000		00
No	*45 25 34.95 -122 51 12.48*			1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y	026		088		10
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S N									011	013	00
												PSNGR CAR		01	DRVR	NONE	00	F	UNK	000		000		00
																			OR<25					
											03	NONE 0	STOP											
												UNKN	S N									022		00
												PSNGR CAR		01	DRVR	NONE	00	M	OR-Y	000		000		00
																			OR<25					
01418	Y N N	3/19/2012		SW ROY ROGERS RD	INTER	CROSS	N	N	CLD	S-1STOP	01	NONE 0	STRGHT											01
NONE		Mon 4P	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	DRY	REAR		UNKN	S N									000		00
No	*45 25 34.95 -122 51 12.51*			1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	U	OR-Y	047,026		000		01
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S N									011		00
												PSNGR CAR		01	DRVR	INJC	31	F	OR-Y	000		000		00
																			OR<25					
														02	PSNG	NO<5	04	F		000		000		00
														03	PSNG	INJC	06	M		000		000		00

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

COUNTY ROAD CRASH LISTING

WASHINGTON COUNTY

SW Scholls Ferry Road & SW Roy Rogers Road / SW 175th Ave

January 1. 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPEED / ALCOHOL / DRUG / SCHOOL / 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
01734	N N N	4/5/2012		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT										013	07
NONE		Thu 4P	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	DRY	REAR		UNKN	S N									000		00
No		*45 25 34.95 -122 51 12.51*		1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	00	M	OR-Y	026		000		07
																			UNK					
											02	NONE 0	STOP											
												PRVTE	S N									011	013	00
												PSNGR CAR		01	DRVR	INJC	45	F	OR-Y	000		000		00
																			OR<25					
											03	NONE 0	STOP											
												UNKN	S N									022		00
												PSNGR CAR		01	DRVR	NONE	00	M	UNK	000		000		00
																			UNK					
01628	N N N	3/21/2014		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 0	STRGHT											13
NO RPT		Fri 6P	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	DRY	SS-O		PRVTE	S N									000		00
No		*45 25 34.95 -122 51 12.51*		1	06	0		N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	67	F	OR-Y	045,026		000		13
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S N									011		00
												PSNGR CAR		01	DRVR	NONE	56	F	OR-Y	000		000		00
																			OR<25					
07096	Y N N N N	11/25/2014		SW ROY ROGERS RD	INTER	CROSS	N	N	CLD	ANGL-OTH	01	NONE 0	TURN-R										124	01
CITY		Tue 8A	0	SW SCHOLLS FERRY RD	S		TRF SIGNAL	N	WET	TURN		PRVTE	W S									000	124	00
No		*45 25 34.95 -122 51 12.51*		1	06	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	INJC	23	F	OR-Y	047,026		000		01
																			OR<25					
											02	NONE 0	STOP											
												PRVTE	S N									012		00
												PSNGR CAR		01	DRVR	NONE	35	M	OTH-Y	000		000		00
																			OR<25					
											03	NONE 0	STOP											
												PRVTE	S N									011		00
												PSNGR CAR		01	DRVR	NONE	00	U	UNK	000		000		00
																			UNK					
02990	N N N	6/8/2011		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE		Wed 10P	0	SW SCHOLLS FERRY RD	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000		00
No		*45 25 34.85 -122 51 13.18*		1	06	0		N	DLIT	PDO		PSNGR CAR		01	DRVR	NONE	22	M	OTH-Y	026		000		07
																			N-RES					
											02	NONE 0	STOP											
												PRVTE	W E									011		00
												PSNGR CAR		01	DRVR	NONE	00	M	OR-Y	000		000		00
																			OR<25					

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

COUNTY ROAD CRASH LISTING

WASHINGTON COUNTY

SW Scholls Ferry Road & SW Roy Rogers Road / SW 175th Ave

January 1. 2010 through December 31, 2014

SER# INVEST UNLOC?	S P E D	A L C	R U G S	S C H L	W O R K	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	A G E	S E X	LICNS RES	PED LOC	ERROR	ACTN	EVENT	CAUSE
03549	N	N	N	N	N	7/11/2012		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
COUNTY						Wed 6P	0	SW SCHOLLS FERRY RD	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000		00
No						*45 25 34.95 -122 51 12.51*		1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	48	F	OR-Y OR<25	026		000		07
															02	NONE 0	STOP											
																PRVTE	W E									011		00
																PSNGR CAR		01	DRVR	INJC	37	M	OR-Y OR<25	000		000		00
02614	N	N	N			5/9/2014		SW ROY ROGERS RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											27,10
NO RPT						Fri 5P	0	SW SCHOLLS FERRY RD	W		TRF SIGNAL	N	WET	REAR		PRVTE	W E									000		00
No						*45 25 34.95 -122 51 12.51*		1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	22	M	OR-Y OR<25	016,014,026		038		27,10
															02	NONE 0	STOP											
																PRVTE	W E									011		00
																PSNGR CAR		01	DRVR	INJC	35	F	OR-Y OR<25	000		000		00
85917	N	N	N			6/11/2014		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-1STOP	01	NONE 0	STRGHT											07
NONE						Wed 2P	0	SW SCHOLLS FERRY RD	W		TRF SIGNAL	N	DRY	REAR		PRVTE	W E									000		00
No						*45 25 34.95 -122 51 12.51*		1	06	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y OR<25	026		000		07
															02	NONE 1	STOP											
																PRVTE	W E									011		00
																PSNGR CAR		01	DRVR	NONE	00	M	UNK OR<25	000		000		00
04922	N	N	N	Y		8/26/2014		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-1STOP	01	UNKN 0	STRGHT											07
CITY						Tue 6A	0	SW SCHOLLS FERRY RD	W		TRF SIGNAL	N	DRY	REAR		UNKN	W E									000		00
No						*45 25 34.95 -122 51 12.51*		1	06	0		N	DAY	PDO		UNKNOWN		01	DRVR	NONE	00	U	UNK UNK	026		000		07
															02	NONE 0	STOP											
																PRVTE	W E									011		00
																PSNGR CAR		01	DRVR	NONE	50	M	OR-Y OR<25	000		000		00
06449	N	N	N	N	N	11/16/2011		SW ROY ROGERS RD	INTER	CROSS	N	N	RAIN	S-OTHER	01	NONE 0	TURN-R											02
COUNTY						Wed 12P	0	SW SCHOLLS FERRY RD	CN		L-GRN-SIG	N	WET	TURN		PRVTE	W S									016		00
No						*45 25 34.95 -122 51 12.49*		1	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	60	F	OR-Y OR<25	028		000		02
															02	NONE 0	TURN-L											
																PRVTE	E S									000		00
																PSNGR CAR		01	DRVR	NONE	46	M	OR-Y OR<25	000		000		00

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

COUNTY ROAD CRASH LISTING

WASHINGTON COUNTY

SW Scholls Ferry Road & SW Roy Rogers Road / SW 175th Ave

January 1. 2010 through December 31, 2014

SER# / INVEST / UNLOC?	SPE D / A C	DRU G / S	SWC H / L	SWO R / K	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
00459	N	N	N		1/12/2012		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	S-OTHER	01	NONE 0	TURN-R											07
NONE					Thu 2P	0	SW SCHOLLS FERRY RD	CN		TRF SIGNAL	N	DRY	TURN		PRVTE	W S									000		00
No					*45 25 34.95 -122 51 12.51*		1	03	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	43	M	OR-Y		026	000		07
																						OR<25					
														02	NONE 0	TURN-R											
															PRVTE	W S									013		00
															PSNGR CAR		01	DRVR	NONE	21	F	OR-Y		000	000		00
																						OR<25					
04597	N	N	N	N	9/1/2012		SW ROY ROGERS RD	INTER	CROSS	N	N	CLR	ANGL-OTH	01	NONE 0	STRGHT											04
COUNTY					Sat 6A	0	SW SCHOLLS FERRY RD	CN		TRF SIGNAL	N	DRY	ANGL		PRVTE	N S									000		00
No					*45 25 34.95 -122 51 12.51*		1	03	0		N	DAWN	INJ		PSNGR CAR		01	DRVR	INJC	57	M	OR-Y		000	000		00
																						OR<25					
														02	NONE 0	STRGHT											
															PRVTE	W E									000		00
															PSNGR CAR		01	DRVR	INJB	59	M	OR-Y		020	028		04
																						OR<25					
00465	N	N	N		1/25/2013		SW SCHOLLS FERRY RD	INTER	CROSS	N	N	RAIN	ANGL-STP	01	NONE 0	TURN-R											08
NONE					Fri 5P	0	SW 175TH AVE	N		TRF SIGNAL	N	WET	TURN		PRVTE	E N									000		00
No					*45 25 34.95 -122 51 12.51*		1	06	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	22	M	OR-Y		001	000		08
																						OR<25					
														02	NONE 0	STOP											
															PRVTE	N S									012		00
															PSNGR CAR		01	DRVR	NONE	45	F	OR-Y		000	000		00
																						OR<25					
02295	N	Y	Y	N	4/24/2014		SW SCHOLLS FERRY RD	INTER	CROSS	N	Y	RAIN	FIX OBJ	01	NONE 0	STRGHT										079	05
CITY					Thu 1A	0	SW 175TH AVE	E		TRF SIGNAL	N	WET	FIX		PRVTE	E W									000	079	00
No					*45 25 34.95 -122 51 12.51*		1	05	0		N	DARK	PDO		PSNGR CAR		01	DRVR	NONE	60	F	SUSP		039,080,081	000		05
																						OR<25					
00358	N	N	N		1/25/2010		SW SCHOLLS FERRY RD	INTER	CROSS	N	N	UNK	S-1STOP	01	UNKN 9	STRGHT											10
NONE					Mon 1P	0	SW 175TH AVE	E		TRF SIGNAL	N	DRY	REAR		UNKN	E W									000		00
No					*45 25 34.95 -122 51 12.51*		1	06	0		N	DAY	PDO		UNKNOWN		01	DRVR	NONE	00	U	UNK		026	000		10
																						UNK					
														02	NONE 0	STOP											
															PUBLC	E W									011		00
															PSNGR CAR		01	DRVR	NONE	59	M	OR-Y		000	000		00
																						OR>25					
04900	N	N	N	N	9/18/2010		SW SCHOLLS FERRY RD	INTER	CROSS	N	N	RAIN	S-1STOP	01	NONE 0	STRGHT											27
COUNTY					Sat 11A	0	SW 175TH AVE	E		TRF SIGNAL	N	WET	REAR		PRVTE	E W									000		00
No					*45 25 34.95 -122 51 12.51*		1	06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	23	F	OR-Y		016,026	038		10
																						OR<25					

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
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
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO.
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	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

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

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)
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
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/ VEHI(
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
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT

EVENT CODE TRANSLATION LIST

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

EVENT CODE TRANSLATION LIST

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

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC 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

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

PEDESTRIAN LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK 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

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

VEHICLE TYPE CODE TRANSLATION LIST

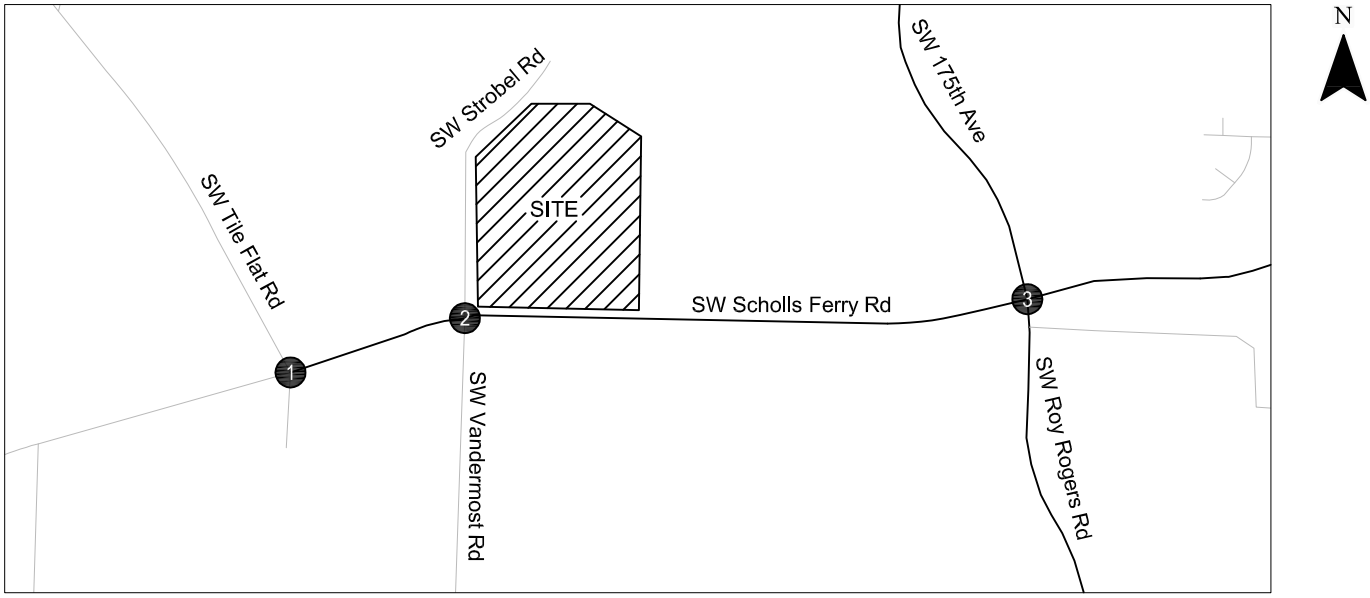
CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	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

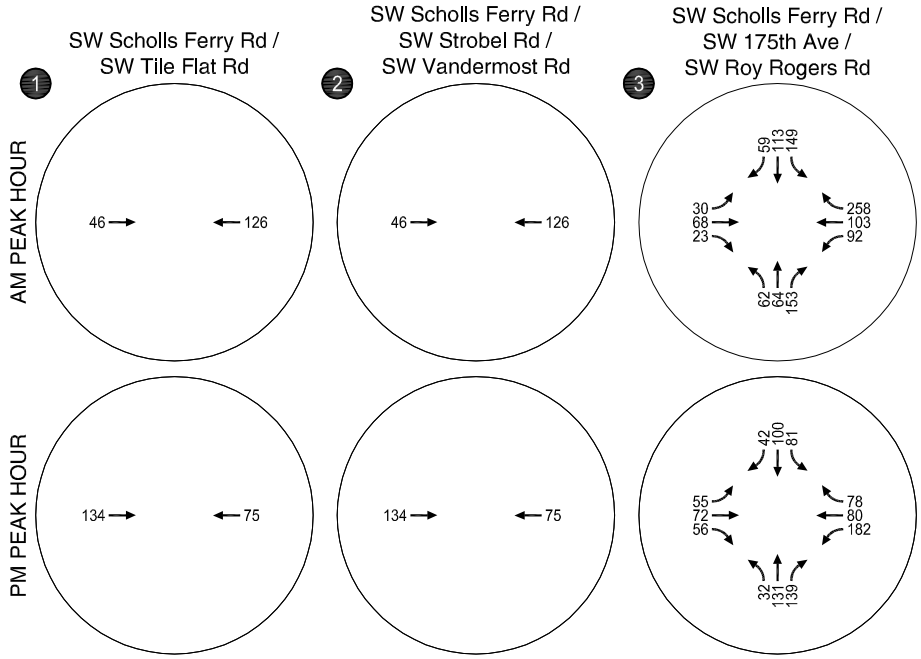
095	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

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 D Year 2018 Background Traffic Conditions





In-Process Trips
Weekday AM and PM Peak Hours
Beaverton, Oregon

Figure
D-1

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

02/14/2017

Lane Group	EBL	EBT	WBT	SBT
Lane Group Flow (vph)	4	612	948	326
v/c Ratio	0.05	0.50	0.81	0.81
Control Delay	51.8	8.7	18.5	47.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	51.8	8.7	18.5	47.7
Queue Length 50th (ft)	3	169	364	157
Queue Length 95th (ft)	14	239	#778	#330
Internal Link Dist (ft)		230	1105	390
Turn Bay Length (ft)	130			
Base Capacity (vph)	83	1341	1177	410
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.46	0.81	0.80

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 (vph)	4	612	0	0	528	420	0	0	0	317	0	9
Future Volume (vph)	4	612	0	0	528	420	0	0	0	317	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5						4.5	
Lane Util. Factor	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			0.94						1.00	
Flt Protected	0.95	1.00			1.00						0.95	
Satd. Flow (prot)	1769	1724			1679						1691	
Flt Permitted	0.95	1.00			1.00						0.95	
Satd. Flow (perm)	1769	1724			1679						1691	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	612	0	0	528	420	0	0	0	317	0	9
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	68	0
Lane Group Flow (vph)	4	612	0	0	933	0	0	0	0	0	258	0
Heavy Vehicles (%)	0%	8%	0%	0%	8%	2%	0%	0%	0%	6%	0%	33%
Turn Type	Prot	NA			NA					Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.9	78.5			73.6						20.9	
Effective Green, g (s)	0.9	78.5			73.6						20.9	
Actuated g/C Ratio	0.01	0.72			0.67						0.19	
Clearance Time (s)	4.0	5.5			5.5						4.5	
Vehicle Extension (s)	1.5	3.5			3.5						1.5	
Lane Grp Cap (vph)	14	1237			1129						323	
v/s Ratio Prot	0.00	c0.35			c0.56						c0.15	
v/s Ratio Perm												
v/c Ratio	0.29	0.49			0.83						0.80	
Uniform Delay, d1	53.9	6.8			13.2						42.2	
Progression Factor	1.00	1.00			1.00						1.00	
Incremental Delay, d2	4.1	0.4			5.2						12.1	
Delay (s)	58.0	7.1			18.4						54.4	
Level of Service	E	A			B						D	
Approach Delay (s)		7.5			18.4			0.0			54.4	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	21.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	109.4	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: SW Vandermost Rd/SW Strobel Rd & SW Scholls Ferry Rd

02/14/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	918	0	5	955	0	0	0	3	0	0	0
Future Volume (Veh/h)	0	918	0	5	955	0	0	0	3	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	0	918	0	5	955	0	0	0	3	0	0	0
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)		1185										
pX, platoon unblocked				0.85			0.85	0.85	0.85	0.85	0.85	
vC, conflicting volume	955			918			1884	1883	918	1886	1883	956
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	955			816			1952	1950	816	1954	1950	956
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 %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	728			698			42	55	284	41	55	316

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	918	960	3	0
Volume Left	0	5	0	0
Volume Right	0	0	3	0
cSH	728	698	284	1700
Volume to Capacity	0.00	0.01	0.01	0.00
Queue Length 95th (ft)	0	1	1	0
Control Delay (s)	0.0	0.2	17.8	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	0.2	17.8	0.0
Approach LOS			C	A

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	46	506	434	453	886	433	495	639	223	585
v/c Ratio	0.51	0.79	0.55	0.86	0.79	0.91	0.84	0.74	0.85	0.86
Control Delay	76.1	53.7	16.5	64.6	37.1	64.6	49.8	23.8	76.0	57.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.1	53.7	16.5	64.6	37.1	64.6	49.8	23.8	76.0	57.1
Queue Length 50th (ft)	35	200	162	178	297	317	347	310	168	226
Queue Length 95th (ft)	#86	262	251	#275	380	#523	#548	500	#308	#328
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	98	812	851	586	1257	548	670	891	308	773
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	0.47	0.62	0.51	0.77	0.70	0.79	0.74	0.72	0.72	0.76

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 (vph)	46	506	434	453	539	347	433	495	639	223	512	73
Future Volume (vph)	46	506	434	453	539	347	433	495	639	223	512	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	3406	1516	3367	3312		1662	1782	1530	1770	3476	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	3406	1516	3367	3312		1662	1782	1530	1770	3476	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	46	506	434	453	539	347	433	495	639	223	512	73
RTOR Reduction (vph)	0	0	48	0	85	0	0	0	47	0	9	0
Lane Group Flow (vph)	46	506	386	453	801	0	433	495	592	223	576	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	4%	6%	6%	4%	3%	2%	7%	5%	4%	3%	3%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.5	22.2	54.1	17.4	35.1		31.9	37.0	54.4	16.6	21.7	
Effective Green, g (s)	4.5	22.2	54.1	17.4	35.1		31.9	37.0	54.4	16.6	21.7	
Actuated g/C Ratio	0.04	0.20	0.48	0.16	0.31		0.28	0.33	0.48	0.15	0.19	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	69	673	730	522	1036		472	587	741	261	672	
v/s Ratio Prot	0.03	0.15	0.15	c0.13	c0.24		c0.26	c0.28	0.12	0.13	0.17	
v/s Ratio Perm			0.10						0.26			
v/c Ratio	0.67	0.75	0.53	0.87	0.77		0.92	0.84	0.80	0.85	0.86	
Uniform Delay, d1	53.1	42.4	20.2	46.3	34.9		38.9	34.9	24.3	46.6	43.8	
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	17.2	4.2	0.3	13.8	3.3		22.2	10.3	5.6	22.1	10.1	
Delay (s)	70.3	46.6	20.5	60.0	38.3		61.1	45.2	29.9	68.7	53.9	
Level of Service	E	D	C	E	D		E	D	C	E	D	
Approach Delay (s)		36.2			45.6			43.3			58.0	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	45.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	112.2	Sum of lost time (s)	19.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

02/14/2017

Lane Group	EBL	EBT	WBT	SBT
Lane Group Flow (vph)	4	680	1054	362
v/c Ratio	0.05	0.56	0.90	0.89
Control Delay	51.8	9.8	26.0	56.6
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	51.8	9.8	26.0	56.6
Queue Length 50th (ft)	3	199	477	186
Queue Length 95th (ft)	14	283	#1015	#393
Internal Link Dist (ft)		230	1105	390
Turn Bay Length (ft)	130			
Base Capacity (vph)	83	1333	1170	408
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.51	0.90	0.89

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 (vph)	4	612	0	0	528	420	0	0	0	317	0	9
Future Volume (vph)	4	612	0	0	528	420	0	0	0	317	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5						4.5	
Lane Util. Factor	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			0.94						1.00	
Flt Protected	0.95	1.00			1.00						0.95	
Satd. Flow (prot)	1769	1724			1679						1691	
Flt Permitted	0.95	1.00			1.00						0.95	
Satd. Flow (perm)	1769	1724			1679						1691	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	680	0	0	587	467	0	0	0	352	0	10
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	68	0
Lane Group Flow (vph)	4	680	0	0	1039	0	0	0	0	0	294	0
Heavy Vehicles (%)	0%	8%	0%	0%	8%	2%	0%	0%	0%	6%	0%	33%
Turn Type	Prot	NA			NA					Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.9	78.5			73.6						21.5	
Effective Green, g (s)	0.9	78.5			73.6						21.5	
Actuated g/C Ratio	0.01	0.71			0.67						0.20	
Clearance Time (s)	4.0	5.5			5.5						4.5	
Vehicle Extension (s)	1.5	3.5			3.5						1.5	
Lane Grp Cap (vph)	14	1230			1123						330	
v/s Ratio Prot	0.00	c0.39			c0.62						c0.17	
v/s Ratio Perm												
v/c Ratio	0.29	0.55			0.93						0.89	
Uniform Delay, d1	54.2	7.4			15.8						43.1	
Progression Factor	1.00	1.00			1.00						1.00	
Incremental Delay, d2	4.1	0.6			12.8						24.2	
Delay (s)	58.3	8.0			28.6						67.3	
Level of Service	E	A			C						E	
Approach Delay (s)		8.3			28.6			0.0			67.3	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: SW Vandermost Rd/SW Strobel Rd & SW Scholls Ferry Rd

02/14/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	918	0	5	955	0	0	0	3	0	0	0
Future Volume (Veh/h)	0	918	0	5	955	0	0	0	3	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
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)	0	1020	0	6	1061	0	0	0	3	0	0	0
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)		1185										
pX, platoon unblocked				0.80			0.80	0.80	0.80	0.80	0.80	
vC, conflicting volume	1061			1020			2094	2093	1020	2096	2093	1062
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1061			904			2238	2237	904	2241	2237	1062
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 %	100			99			100	100	99	100	100	100
cM capacity (veh/h)	664			612			25	35	238	24	34	274

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1020	1067	3	0
Volume Left	0	6	0	0
Volume Right	0	0	3	0
cSH	664	612	238	1700
Volume to Capacity	0.00	0.01	0.01	0.00
Queue Length 95th (ft)	0	1	1	0
Control Delay (s)	0.0	0.3	20.3	0.0
Lane LOS		A	C	A
Approach Delay (s)	0.0	0.3	20.3	0.0
Approach LOS			C	A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	51	562	482	503	985	481	550	710	248	650
v/c Ratio	0.64	0.88	0.60	0.93	0.87	0.97	0.89	0.81	0.95	0.95
Control Delay	90.9	63.9	19.0	76.1	43.6	76.1	56.5	29.5	95.1	71.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	90.9	63.9	19.0	76.1	43.6	76.1	56.5	29.5	95.1	71.2
Queue Length 50th (ft)	41	230	198	207	351	384	420	418	200	270
Queue Length 95th (ft)	#104	#313	302	#309	#453	#607	#634	616	#363	#390
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	83	693	806	557	1148	500	619	881	269	698
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	0.61	0.81	0.60	0.90	0.86	0.96	0.89	0.81	0.92	0.93

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 (vph)	46	506	434	453	539	347	433	495	639	223	512	73
Future Volume (vph)	46	506	434	453	539	347	433	495	639	223	512	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	3406	1516	3367	3311		1662	1782	1530	1770	3476	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	3406	1516	3367	3311		1662	1782	1530	1770	3476	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	562	482	503	599	386	481	550	710	248	569	81
RTOR Reduction (vph)	0	0	47	0	85	0	0	0	32	0	9	0
Lane Group Flow (vph)	51	562	435	503	900	0	481	550	678	248	641	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	4%	6%	6%	4%	3%	2%	7%	5%	4%	3%	3%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.6	23.7	59.9	19.4	38.5		36.2	41.9	61.3	18.0	23.7	
Effective Green, g (s)	4.6	23.7	59.9	19.4	38.5		36.2	41.9	61.3	18.0	23.7	
Actuated g/C Ratio	0.04	0.19	0.49	0.16	0.32		0.30	0.34	0.50	0.15	0.19	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	65	661	744	535	1044		493	612	768	261	675	
v/s Ratio Prot	0.03	0.17	0.17	c0.15	c0.27		c0.29	c0.31	0.14	0.14	0.18	
v/s Ratio Perm			0.11						0.30			
v/c Ratio	0.78	0.85	0.58	0.94	0.86		0.98	0.90	0.88	0.95	0.95	
Uniform Delay, d1	58.2	47.4	22.2	50.7	39.3		42.5	38.0	27.1	51.6	48.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	42.2	9.8	0.8	24.6	7.2		33.8	15.6	11.4	41.8	22.5	
Delay (s)	100.4	57.3	22.9	75.4	46.5		76.3	53.6	38.5	93.3	71.1	
Level of Service	F	E	C	E	D		E	D	D	F	E	
Approach Delay (s)		44.2			56.2			53.7			77.2	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	56.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	122.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	86.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queues

1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

02/14/2017

Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	5	679	918	1	403
v/c Ratio	0.06	0.57	0.81	0.00	0.84
Control Delay	53.8	12.4	21.9	0.0	48.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	53.8	12.4	21.9	0.0	48.8
Queue Length 50th (ft)	3	215	368	0	201
Queue Length 95th (ft)	18	382	#909	0	#459
Internal Link Dist (ft)		230	1105	30	390
Turn Bay Length (ft)	130				
Base Capacity (vph)	83	1367	1175	445	477
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	0.50	0.78	0.00	0.84

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 (vph)	5	679	0	1	556	361	0	0	1	395	0	8
Future Volume (vph)	5	679	0	1	556	361	0	0	1	395	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5			4.0			4.5	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.95			0.86			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (prot)	1769	1808			1736			1589			1772	
Flt Permitted	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (perm)	1769	1808			1735			1589			1772	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	679	0	1	556	361	0	0	1	395	0	8
RTOR Reduction (vph)	0	0	0	0	14	0	0	1	0	0	66	0
Lane Group Flow (vph)	5	679	0	0	904	0	0	0	0	0	337	0
Heavy Vehicles (%)	0%	3%	0%	0%	3%	2%	0%	0%	0%	2%	0%	0%
Turn Type	Prot	NA		Perm	NA			NA		Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.9	73.0			68.1			0.7			24.6	
Effective Green, g (s)	0.9	73.0			68.1			0.7			24.6	
Actuated g/C Ratio	0.01	0.65			0.61			0.01			0.22	
Clearance Time (s)	4.0	5.5			5.5			4.0			4.5	
Vehicle Extension (s)	1.5	3.5			3.5			1.5			1.5	
Lane Grp Cap (vph)	14	1175			1052			9			388	
v/s Ratio Prot	0.00	c0.38						c0.00			c0.19	
v/s Ratio Perm					c0.52							
v/c Ratio	0.36	0.58			0.86			0.00			0.87	
Uniform Delay, d1	55.4	11.0			18.2			55.5			42.3	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	5.6	0.7			7.3			0.0			17.8	
Delay (s)	61.0	11.8			25.5			55.5			60.1	
Level of Service	E	B			C			E			E	
Approach Delay (s)		12.1			25.5			55.5			60.1	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	27.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	112.3	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: SW Vandermost Rd/SW Strobel Rd & SW Scholls Ferry Rd

02/14/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1060	3	3	913	1	2	0	14	1	1	1
Future Volume (Veh/h)	1	1060	3	3	913	1	2	0	14	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	1	1060	3	3	913	1	2	0	14	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)		1185										
pX, platoon unblocked				0.77			0.77	0.77	0.77	0.77	0.77	
vC, conflicting volume	914			1063			1984	1984	1062	1997	1984	914
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	914			930			2132	2131	928	2148	2132	914
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 %	100			99			93	100	94	96	97	100
cM capacity (veh/h)	754			570			27	39	252	26	38	334

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1064	917	16	3
Volume Left	1	3	2	1
Volume Right	3	1	14	1
cSH	754	570	124	44
Volume to Capacity	0.00	0.01	0.13	0.07
Queue Length 95th (ft)	0	0	11	5
Control Delay (s)	0.0	0.2	38.2	92.6
Lane LOS	A	A	E	F
Approach Delay (s)	0.0	0.2	38.2	92.6
Approach LOS			E	F

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	79	602	484	735	659	425	538	587	211	634
v/c Ratio	0.62	0.88	0.60	0.99	0.54	0.99	0.93	0.63	0.94	0.93
Control Delay	75.7	63.4	21.6	78.9	32.8	86.9	64.9	19.3	100.8	68.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	75.7	63.4	21.6	78.9	32.8	86.9	64.9	19.3	100.8	68.3
Queue Length 50th (ft)	63	246	220	~311	212	~347	419	275	170	261
Queue Length 95th (ft)	113	#330	332	#442	286	#561	#638	399	#324	#370
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	179	736	812	742	1215	430	586	938	228	709
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	0.44	0.82	0.60	0.99	0.54	0.99	0.92	0.63	0.93	0.89

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 (vph)	79	602	484	735	493	166	425	538	587	211	573	61
Future Volume (vph)	79	602	484	735	493	166	425	538	587	211	573	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3574	1583	3467	3405		1743	1835	1591	1823	3555	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3574	1583	3467	3405		1743	1835	1591	1823	3555	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	79	602	484	735	493	166	425	538	587	211	573	61
RTOR Reduction (vph)	0	0	51	0	25	0	0	0	27	0	6	0
Lane Group Flow (vph)	79	602	433	735	634	0	425	538	560	211	628	0
Heavy Vehicles (%)	1%	1%	2%	1%	2%	2%	2%	2%	0%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	7.6	24.1	54.1	26.0	42.5		30.0	38.3	64.3	14.9	23.2	
Effective Green, g (s)	7.6	24.1	54.1	26.0	42.5		30.0	38.3	64.3	14.9	23.2	
Actuated g/C Ratio	0.06	0.20	0.44	0.21	0.35		0.25	0.31	0.53	0.12	0.19	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	111	704	700	737	1183		427	574	836	222	674	
v/s Ratio Prot	0.04	c0.17	0.15	c0.21	0.19		c0.24	c0.29	0.14	0.12	0.18	
v/s Ratio Perm			0.12						0.21			
v/c Ratio	0.71	0.86	0.62	1.00	0.54		1.00	0.94	0.67	0.95	0.93	
Uniform Delay, d1	56.3	47.4	26.2	48.1	32.0		46.1	40.8	21.2	53.3	48.8	
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	16.4	9.6	1.1	32.2	0.2		42.0	22.7	1.6	46.1	19.4	
Delay (s)	72.6	57.0	27.3	80.3	32.2		88.1	63.5	22.8	99.5	68.2	
Level of Service	E	E	C	F	C		F	E	C	F	E	
Approach Delay (s)		45.7			57.6			54.8			76.0	
Approach LOS		D			E			D			E	

Intersection Summary			
HCM 2000 Control Delay	57.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.97		
Actuated Cycle Length (s)	122.3	Sum of lost time (s)	19.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

02/14/2017

Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	5	738	997	1	438
v/c Ratio	0.06	0.61	0.87	0.00	0.94
Control Delay	54.2	13.1	25.8	0.0	63.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	13.1	25.8	0.0	63.5
Queue Length 50th (ft)	3	247	444	0	239
Queue Length 95th (ft)	18	438	#1044	0	#523
Internal Link Dist (ft)		230	1105	30	390
Turn Bay Length (ft)	130				
Base Capacity (vph)	82	1330	1145	417	466
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	0.55	0.87	0.00	0.94

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 (vph)	5	679	0	1	556	361	0	0	1	395	0	8
Future Volume (vph)	5	679	0	1	556	361	0	0	1	395	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5			4.0			4.5	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.95			0.86			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (prot)	1769	1808			1736			1589			1772	
Flt Permitted	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (perm)	1769	1808			1735			1589			1772	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	738	0	1	604	392	0	0	1	429	0	9
RTOR Reduction (vph)	0	0	0	0	13	0	0	1	0	0	66	0
Lane Group Flow (vph)	5	738	0	0	984	0	0	0	0	0	372	0
Heavy Vehicles (%)	0%	3%	0%	0%	3%	2%	0%	0%	0%	2%	0%	0%
Turn Type	Prot	NA		Perm	NA			NA		Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.9	75.7			70.8			0.7			24.6	
Effective Green, g (s)	0.9	75.7			70.8			0.7			24.6	
Actuated g/C Ratio	0.01	0.66			0.62			0.01			0.21	
Clearance Time (s)	4.0	5.5			5.5			4.0			4.5	
Vehicle Extension (s)	1.5	3.5			3.5			1.5			1.5	
Lane Grp Cap (vph)	13	1190			1068			9			379	
v/s Ratio Prot	0.00	c0.41						c0.00			c0.21	
v/s Ratio Perm					c0.57							
v/c Ratio	0.38	0.62			0.92			0.00			0.98	
Uniform Delay, d1	56.8	11.3			19.6			56.8			45.0	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	6.8	1.1			12.8			0.0			41.0	
Delay (s)	63.5	12.4			32.4			56.8			86.0	
Level of Service	E	B			C			E			F	
Approach Delay (s)		12.8			32.4			56.8			86.0	
Approach LOS		B			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	36.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	89.5%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: SW Vandermost Rd/SW Strobel Rd & SW Scholls Ferry Rd

02/14/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	1060	3	3	913	1	2	0	14	1	1	1
Future Volume (Veh/h)	1	1060	3	3	913	1	2	0	14	1	1	1
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
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)	1	1152	3	3	992	1	2	0	15	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)		1185										
pX, platoon unblocked				0.73			0.73	0.73	0.73	0.73	0.73	
vC, conflicting volume	993			1155			2156	2154	1154	2169	2156	992
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	993			1028			2397	2395	1026	2415	2397	992
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 %	100			99			88	100	93	94	96	100
cM capacity (veh/h)	704			500			17	25	211	15	25	301

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	1156	996	17	3
Volume Left	1	3	2	1
Volume Right	3	1	15	1
cSH	704	500	89	28
Volume to Capacity	0.00	0.01	0.19	0.11
Queue Length 95th (ft)	0	0	17	8
Control Delay (s)	0.1	0.2	54.8	150.1
Lane LOS	A	A	F	F
Approach Delay (s)	0.1	0.2	54.8	150.1
Approach LOS			F	F

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	82	627	504	766	687	443	560	611	220	661
v/c Ratio	0.64	0.91	0.62	1.04	0.57	1.04	0.97	0.65	0.97	0.95
Control Delay	76.8	66.1	22.6	91.5	33.6	99.5	72.9	20.4	107.6	72.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	76.8	66.1	22.6	91.5	33.6	99.5	72.9	20.4	107.6	72.9
Queue Length 50th (ft)	65	258	236	~345	224	~387	444	294	179	275
Queue Length 95th (ft)	117	#354	354	#469	300	#594	#677	427	#341	#396
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	177	729	813	735	1214	426	581	934	226	702
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	0.46	0.86	0.62	1.04	0.57	1.04	0.96	0.65	0.97	0.94

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 (vph)	79	602	484	735	493	166	425	538	587	211	573	61
Future Volume (vph)	79	602	484	735	493	166	425	538	587	211	573	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	
Frt	1.00	1.00	0.85	1.00	0.96		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3574	1583	3467	3406		1743	1835	1591	1823	3554	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3574	1583	3467	3406		1743	1835	1591	1823	3554	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	82	627	504	766	514	173	443	560	611	220	597	64
RTOR Reduction (vph)	0	0	51	0	25	0	0	0	27	0	6	0
Lane Group Flow (vph)	82	627	453	766	662	0	443	560	584	220	655	0
Heavy Vehicles (%)	1%	1%	2%	1%	2%	2%	2%	2%	0%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	7.8	24.6	54.6	26.0	42.8		30.0	38.5	64.5	15.2	23.7	
Effective Green, g (s)	7.8	24.6	54.6	26.0	42.8		30.0	38.5	64.5	15.2	23.7	
Actuated g/C Ratio	0.06	0.20	0.44	0.21	0.35		0.24	0.31	0.52	0.12	0.19	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	113	713	700	731	1182		424	572	832	224	683	
v/s Ratio Prot	0.05	c0.18	0.16	c0.22	0.19		c0.25	c0.31	0.15	0.12	0.18	
v/s Ratio Perm			0.13						0.22			
v/c Ratio	0.73	0.88	0.65	1.05	0.56		1.04	0.98	0.70	0.98	0.96	
Uniform Delay, d1	56.7	47.9	26.8	48.6	32.6		46.6	42.0	22.2	53.9	49.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	17.7	11.6	1.5	46.5	0.3		55.9	31.8	2.2	54.6	24.1	
Delay (s)	74.4	59.5	28.4	95.2	32.9		102.5	73.8	24.4	108.5	73.4	
Level of Service	E	E	C	F	C		F	E	C	F	E	
Approach Delay (s)		47.6			65.7			63.0			82.2	
Approach LOS		D			E			E			F	

Intersection Summary			
HCM 2000 Control Delay	63.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	123.3	Sum of lost time (s)	19.0
Intersection Capacity Utilization	94.8%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Appendix E Year 2018 Total Traffic Conditions

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

02/14/2017

Lane Group	EBL	EBT	WBT	SBT
Lane Group Flow (vph)	4	616	970	328
v/c Ratio	0.05	0.50	0.83	0.82
Control Delay	51.8	8.8	19.7	47.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	51.8	8.8	19.7	47.8
Queue Length 50th (ft)	3	170	385	159
Queue Length 95th (ft)	14	241	#880	#334
Internal Link Dist (ft)		230	1105	390
Turn Bay Length (ft)	130			
Base Capacity (vph)	83	1339	1175	409
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.46	0.83	0.80

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 (vph)	4	616	0	0	542	428	0	0	0	319	0	9
Future Volume (vph)	4	616	0	0	542	428	0	0	0	319	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5						4.5	
Lane Util. Factor	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			0.94						1.00	
Flt Protected	0.95	1.00			1.00						0.95	
Satd. Flow (prot)	1769	1724			1679						1691	
Flt Permitted	0.95	1.00			1.00						0.95	
Satd. Flow (perm)	1769	1724			1679						1691	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	616	0	0	542	428	0	0	0	319	0	9
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	68	0
Lane Group Flow (vph)	4	616	0	0	955	0	0	0	0	0	260	0
Heavy Vehicles (%)	0%	8%	0%	0%	8%	2%	0%	0%	0%	6%	0%	33%
Turn Type	Prot	NA			NA					Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.9	78.5			73.6						21.1	
Effective Green, g (s)	0.9	78.5			73.6						21.1	
Actuated g/C Ratio	0.01	0.72			0.67						0.19	
Clearance Time (s)	4.0	5.5			5.5						4.5	
Vehicle Extension (s)	1.5	3.5			3.5						1.5	
Lane Grp Cap (vph)	14	1234			1127						325	
v/s Ratio Prot	0.00	c0.36			c0.57						c0.15	
v/s Ratio Perm												
v/c Ratio	0.29	0.50			0.85						0.80	
Uniform Delay, d1	54.0	6.9			13.7						42.2	
Progression Factor	1.00	1.00			1.00						1.00	
Incremental Delay, d2	4.1	0.4			6.2						12.5	
Delay (s)	58.1	7.2			19.9						54.7	
Level of Service	E	A			B						D	
Approach Delay (s)		7.6			19.9			0.0			54.7	
Approach LOS		A			B			A			D	

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	109.6	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	918	0	5	955	35	0	0	3	122	0	22
Future Volume (Veh/h)	6	918	0	5	955	35	0	0	3	122	0	22
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	6	918	0	5	955	35	0	0	3	122	0	22
Pedestrians		1										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		3.5										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1185										
pX, platoon unblocked				0.85			0.85	0.85	0.85	0.85	0.85	
vC, conflicting volume	990			918			1918	1930	918	1898	1895	956
vC1, stage 1 conf vol							930	930		965	965	
vC2, stage 2 conf vol							988	1000		933	930	
vCu, unblocked vol	990			814			1992	2007	814	1969	1965	956
tC, single (s)	4.1			4.1			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.6	3.5	4.0	3.3
p0 queue free %	99			99			100	100	99	42	100	93
cM capacity (veh/h)	706			697			200	226	284	211	231	316

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	6	918	5	955	35	3	122	22
Volume Left	6	0	5	0	0	0	122	0
Volume Right	0	0	0	0	35	3	0	22
cSH	706	1700	697	1700	1700	284	211	316
Volume to Capacity	0.01	0.54	0.01	0.56	0.02	0.01	0.58	0.07
Queue Length 95th (ft)	1	0	1	0	0	1	80	6
Control Delay (s)	10.1	0.0	10.2	0.0	0.0	17.8	43.2	17.3
Lane LOS	B		B			C	E	C
Approach Delay (s)	0.1		0.1			17.8	39.2	
Approach LOS						C	E	

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	60	600	448	453	913	437	495	639	223	589
v/c Ratio	0.68	0.86	0.56	0.88	0.79	0.93	0.84	0.75	0.87	0.88
Control Delay	92.8	58.3	16.8	67.6	37.6	69.6	51.6	25.9	81.9	60.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	92.8	58.3	16.8	67.6	37.6	69.6	51.6	25.9	81.9	60.5
Queue Length 50th (ft)	48	243	172	184	313	340	367	345	176	237
Queue Length 95th (ft)	#122	#317	265	#271	397	#540	#550	512	#315	#332
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	93	794	844	572	1231	514	640	872	286	742
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	0.65	0.76	0.53	0.79	0.74	0.85	0.77	0.73	0.78	0.79

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 (vph)	60	600	448	453	566	347	437	495	639	223	512	77
Future Volume (vph)	60	600	448	453	566	347	437	495	639	223	512	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	3406	1515	3367	3317		1662	1782	1530	1770	3473	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	3406	1515	3367	3317		1662	1782	1530	1770	3473	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	60	600	448	453	566	347	437	495	639	223	512	77
RTOR Reduction (vph)	0	0	47	0	75	0	0	0	40	0	10	0
Lane Group Flow (vph)	60	600	401	453	838	0	437	495	599	223	579	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	4%	6%	6%	4%	3%	2%	7%	5%	4%	3%	3%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	4.6	24.7	57.3	17.8	37.9		32.6	38.0	55.8	16.7	22.1	
Effective Green, g (s)	4.6	24.7	57.3	17.8	37.9		32.6	38.0	55.8	16.7	22.1	
Actuated g/C Ratio	0.04	0.21	0.49	0.15	0.33		0.28	0.33	0.48	0.14	0.19	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	68	723	747	515	1081		466	582	734	254	660	
v/s Ratio Prot	0.03	0.18	0.15	c0.13	c0.25		c0.26	c0.28	0.13	0.13	0.17	
v/s Ratio Perm			0.11						0.27			
v/c Ratio	0.88	0.83	0.54	0.88	0.78		0.94	0.85	0.82	0.88	0.88	
Uniform Delay, d1	55.5	43.7	20.3	48.2	35.3		40.8	36.5	25.8	48.8	45.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	68.1	7.5	0.4	15.3	3.2		26.3	11.0	6.7	26.4	12.3	
Delay (s)	123.6	51.2	20.7	63.4	38.5		67.1	47.5	32.5	75.1	58.0	
Level of Service	F	D	C	E	D		E	D	C	E	E	
Approach Delay (s)		42.8			46.8			46.8			62.7	
Approach LOS		D			D			D			E	

Intersection Summary			
HCM 2000 Control Delay	48.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	116.2	Sum of lost time (s)	19.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	0	28	13	0	96
Future Volume (Veh/h)	48	0	28	13	0	96
Sign Control	Stop		Free			Free
Grade	0%		0%			-4%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	48	0	28	13	0	96
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	130	34			41	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	130	34			41	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	100			100	
cM capacity (veh/h)	868	1044			1581	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	48	0	41	96
Volume Left	48	0	0	0
Volume Right	0	0	13	0
cSH	868	1700	1700	1581
Volume to Capacity	0.06	0.00	0.02	0.00
Queue Length 95th (ft)	4	0	0	0
Control Delay (s)	9.4	0.0	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.4		0.0	0.0
Approach LOS	A			

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

02/14/2017

Lane Group	EBL	EBT	WBT	SBT
Lane Group Flow (vph)	4	684	1078	364
v/c Ratio	0.05	0.56	0.92	0.89
Control Delay	51.8	9.8	28.5	57.4
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	51.8	9.8	28.5	57.4
Queue Length 50th (ft)	3	201	508	188
Queue Length 95th (ft)	14	285	#1054	#396
Internal Link Dist (ft)		230	1105	390
Turn Bay Length (ft)	130			
Base Capacity (vph)	83	1333	1170	408
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.05	0.51	0.92	0.89

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 (vph)	4	616	0	0	542	428	0	0	0	319	0	9
Future Volume (vph)	4	616	0	0	542	428	0	0	0	319	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5						4.5	
Lane Util. Factor	1.00	1.00			1.00						1.00	
Frt	1.00	1.00			0.94						1.00	
Flt Protected	0.95	1.00			1.00						0.95	
Satd. Flow (prot)	1769	1724			1679						1691	
Flt Permitted	0.95	1.00			1.00						0.95	
Satd. Flow (perm)	1769	1724			1679						1691	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	684	0	0	602	476	0	0	0	354	0	10
RTOR Reduction (vph)	0	0	0	0	15	0	0	0	0	0	68	0
Lane Group Flow (vph)	4	684	0	0	1063	0	0	0	0	0	296	0
Heavy Vehicles (%)	0%	8%	0%	0%	8%	2%	0%	0%	0%	6%	0%	33%
Turn Type	Prot	NA			NA					Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.9	78.5			73.6						21.5	
Effective Green, g (s)	0.9	78.5			73.6						21.5	
Actuated g/C Ratio	0.01	0.71			0.67						0.20	
Clearance Time (s)	4.0	5.5			5.5						4.5	
Vehicle Extension (s)	1.5	3.5			3.5						1.5	
Lane Grp Cap (vph)	14	1230			1123						330	
v/s Ratio Prot	0.00	c0.40			c0.63						c0.18	
v/s Ratio Perm												
v/c Ratio	0.29	0.56			0.95						0.90	
Uniform Delay, d1	54.2	7.5			16.4						43.2	
Progression Factor	1.00	1.00			1.00						1.00	
Incremental Delay, d2	4.1	0.6			15.7						25.0	
Delay (s)	58.3	8.1			32.2						68.2	
Level of Service	E	A			C						E	
Approach Delay (s)		8.4			32.2			0.0			68.2	
Approach LOS		A			C			A			E	

Intersection Summary			
HCM 2000 Control Delay	30.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	81.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	918	0	5	955	35	0	0	3	122	0	22
Future Volume (Veh/h)	6	918	0	5	955	35	0	0	3	122	0	22
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
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)	7	1020	0	6	1061	39	0	0	3	136	0	24
Pedestrians		1										
Lane Width (ft)		12.0										
Walking Speed (ft/s)		3.5										
Percent Blockage		0										
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1185										
pX, platoon unblocked				0.80			0.80	0.80	0.80	0.80	0.80	
vC, conflicting volume	1100			1020			2132	2146	1020	2110	2107	1062
vC1, stage 1 conf vol							1034	1034		1073	1073	
vC2, stage 2 conf vol							1098	1112		1037	1034	
vCu, unblocked vol	1100			903			2286	2304	903	2259	2255	1062
tC, single (s)	4.1			4.1			7.1	6.5	6.5	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.6	3.5	4.0	3.3
p0 queue free %	99			99			100	100	99	23	100	91
cM capacity (veh/h)	642			612			165	192	238	176	196	274

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	7	1020	6	1061	39	3	136	24
Volume Left	7	0	6	0	0	0	136	0
Volume Right	0	0	0	0	39	3	0	24
cSH	642	1700	612	1700	1700	238	176	274
Volume to Capacity	0.01	0.60	0.01	0.62	0.02	0.01	0.77	0.09
Queue Length 95th (ft)	1	0	1	0	0	1	127	7
Control Delay (s)	10.7	0.0	10.9	0.0	0.0	20.3	73.4	19.4
Lane LOS	B		B			C	F	C
Approach Delay (s)	0.1		0.1			20.3	65.3	
Approach LOS						C	F	

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	70.4%	ICU Level of Service	C
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	67	667	498	503	1015	486	550	710	248	655
v/c Ratio	0.81	0.94	0.61	0.96	0.90	1.02	0.93	0.84	0.96	0.96
Control Delay	114.0	69.2	19.1	82.3	47.4	91.1	63.0	33.4	98.5	74.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	114.0	69.2	19.1	82.3	47.4	91.1	63.0	33.4	98.5	74.2
Queue Length 50th (ft)	54	277	207	208	369	~417	426	439	200	272
Queue Length 95th (ft)	#139	#387	313	#318	#491	#629	#648	#698	#363	#394
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	86	733	815	528	1145	475	594	845	264	686
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	0.78	0.91	0.61	0.95	0.89	1.02	0.93	0.84	0.94	0.95

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.

HCM Signalized Intersection Capacity Analysis
3: SW Roy Rogers Rd/SW 175th Ave & SW Scholls Ferry Rd

02/14/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	600	448	453	566	347	437	495	639	223	512	77
Future Volume (vph)	60	600	448	453	566	347	437	495	639	223	512	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.94		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1736	3406	1515	3367	3317		1662	1782	1530	1770	3473	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1736	3406	1515	3367	3317		1662	1782	1530	1770	3473	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	67	667	498	503	629	386	486	550	710	248	569	86
RTOR Reduction (vph)	0	0	46	0	76	0	0	0	30	0	10	0
Lane Group Flow (vph)	67	667	452	503	939	0	486	550	680	248	645	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	4%	6%	6%	4%	3%	2%	7%	5%	4%	3%	3%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	5.9	25.8	61.0	19.2	39.1		35.2	41.0	60.2	18.1	23.9	
Effective Green, g (s)	5.9	25.8	61.0	19.2	39.1		35.2	41.0	60.2	18.1	23.9	
Actuated g/C Ratio	0.05	0.21	0.50	0.16	0.32		0.29	0.33	0.49	0.15	0.19	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	83	713	750	525	1053		475	593	748	260	674	
v/s Ratio Prot	0.04	0.20	0.17	c0.15	c0.28		c0.29	c0.31	0.14	0.14	0.19	
v/s Ratio Perm			0.13						0.30			
v/c Ratio	0.81	0.94	0.60	0.96	0.89		1.02	0.93	0.91	0.95	0.96	
Uniform Delay, d1	58.0	47.8	22.3	51.6	40.0		43.9	39.6	28.9	52.1	49.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	39.8	19.2	0.9	28.4	9.5		47.3	20.4	14.6	42.6	24.2	
Delay (s)	97.9	67.1	23.3	80.0	49.5		91.3	60.1	43.6	94.7	73.3	
Level of Service	F	E	C	E	D		F	E	D	F	E	
Approach Delay (s)		51.0			59.6			62.0			79.2	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	61.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	123.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	48	0	28	13	0	96
Future Volume (Veh/h)	48	0	28	13	0	96
Sign Control	Stop		Free			Free
Grade	0%		0%			-4%
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	55	0	32	15	0	109
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	148	40			47	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	148	40			47	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	100			100	
cM capacity (veh/h)	848	1038			1573	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	55	0	47	109
Volume Left	55	0	0	0
Volume Right	0	0	15	0
cSH	848	1700	1700	1573
Volume to Capacity	0.06	0.00	0.03	0.00
Queue Length 95th (ft)	5	0	0	0
Control Delay (s)	9.5	0.0	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.5		0.0	0.0
Approach LOS	A			

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

02/14/2017

Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	5	694	931	1	410
v/c Ratio	0.06	0.58	0.81	0.00	0.88
Control Delay	54.2	12.4	21.8	0.0	53.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	12.4	21.8	0.0	53.8
Queue Length 50th (ft)	3	223	380	0	215
Queue Length 95th (ft)	18	395	#932	0	#472
Internal Link Dist (ft)		230	1105	30	390
Turn Bay Length (ft)	130				
Base Capacity (vph)	82	1330	1145	432	466
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	0.52	0.81	0.00	0.88

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 (vph)	5	694	0	1	564	366	0	0	1	402	0	8
Future Volume (vph)	5	694	0	1	564	366	0	0	1	402	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5			4.0			4.5	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.95			0.86			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (prot)	1769	1808			1736			1589			1772	
Flt Permitted	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (perm)	1769	1808			1735			1589			1772	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	5	694	0	1	564	366	0	0	1	402	0	8
RTOR Reduction (vph)	0	0	0	0	13	0	0	1	0	0	66	0
Lane Group Flow (vph)	5	694	0	0	918	0	0	0	0	0	344	0
Heavy Vehicles (%)	0%	3%	0%	0%	3%	2%	0%	0%	0%	2%	0%	0%
Turn Type	Prot	NA		Perm	NA			NA		Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.9	75.7			70.8			0.7			24.6	
Effective Green, g (s)	0.9	75.7			70.8			0.7			24.6	
Actuated g/C Ratio	0.01	0.66			0.62			0.01			0.21	
Clearance Time (s)	4.0	5.5			5.5			4.0			4.5	
Vehicle Extension (s)	1.5	3.5			3.5			1.5			1.5	
Lane Grp Cap (vph)	13	1190			1068			9			379	
v/s Ratio Prot	0.00	c0.38						c0.00			c0.19	
v/s Ratio Perm					c0.53							
v/c Ratio	0.38	0.58			0.86			0.00			0.91	
Uniform Delay, d1	56.8	10.9			18.0			56.8			44.1	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	6.8	0.8			7.2			0.0			24.2	
Delay (s)	63.5	11.7			25.2			56.8			68.3	
Level of Service	E	B			C			E			E	
Approach Delay (s)		12.1			25.2			56.8			68.3	
Approach LOS		B			C			E			E	

Intersection Summary			
HCM 2000 Control Delay	29.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.87		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	90.6%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis
2: SW Vandermost Rd/SW Strobel Rd & SW Scholls Ferry Rd

02/14/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	1060	3	3	913	129	2	0	14	72	1	14
Future Volume (Veh/h)	23	1060	3	3	913	129	2	0	14	72	1	14
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	23	1060	3	3	913	129	2	0	14	72	1	14
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1185										
pX, platoon unblocked				0.77			0.77	0.77	0.77	0.77	0.77	
vC, conflicting volume	1042			1063			2041	2156	1062	2039	2028	913
vC1, stage 1 conf vol							1108	1108		919	919	
vC2, stage 2 conf vol							934	1048		1120	1109	
vCu, unblocked vol	1042			931			2204	2353	929	2201	2187	913
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	97			99			99	100	94	57	99	96
cM capacity (veh/h)	675			571			169	179	252	166	193	335

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	23	1063	3	913	129	16	72	15
Volume Left	23	0	3	0	0	2	72	0
Volume Right	0	3	0	0	129	14	0	14
cSH	675	1700	571	1700	1700	237	166	319
Volume to Capacity	0.03	0.63	0.01	0.54	0.08	0.07	0.43	0.05
Queue Length 95th (ft)	3	0	0	0	0	5	49	4
Control Delay (s)	10.5	0.0	11.3	0.0	0.0	21.3	42.2	16.8
Lane LOS	B		B			C	E	C
Approach Delay (s)	0.2		0.0			21.3	37.8	
Approach LOS						C	E	

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	87	657	492	735	757	440	538	587	211	649
v/c Ratio	0.72	0.94	0.64	1.00	0.64	1.03	0.93	0.63	0.95	0.95
Control Delay	87.1	70.8	23.2	82.8	36.1	96.3	64.8	19.5	103.1	71.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.1	70.8	23.2	82.8	36.1	96.3	64.8	19.5	103.1	71.9
Queue Length 50th (ft)	69	274	226	~311	261	~379	417	273	170	268
Queue Length 95th (ft)	#140	#386	341	#442	331	#584	#635	397	#324	#384
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	139	717	766	732	1182	429	583	934	225	699
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	0.63	0.92	0.64	1.00	0.64	1.03	0.92	0.63	0.94	0.93

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 (vph)	87	657	492	735	591	166	440	538	587	211	573	76
Future Volume (vph)	87	657	492	735	591	166	440	538	587	211	573	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3574	1574	3467	3423		1743	1835	1591	1823	3542	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3574	1574	3467	3423		1743	1835	1591	1823	3542	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	87	657	492	735	591	166	440	538	587	211	573	76
RTOR Reduction (vph)	0	0	51	0	20	0	0	0	27	0	8	0
Lane Group Flow (vph)	87	657	441	735	737	0	440	538	560	211	641	0
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	2%	1%	2%	2%	2%	2%	0%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	8.4	24.2	54.5	26.0	41.8		30.3	38.9	64.9	15.0	23.6	
Effective Green, g (s)	8.4	24.2	54.5	26.0	41.8		30.3	38.9	64.9	15.0	23.6	
Actuated g/C Ratio	0.07	0.20	0.44	0.21	0.34		0.25	0.32	0.53	0.12	0.19	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	121	702	696	732	1162		429	579	838	222	679	
v/s Ratio Prot	0.05	c0.18	0.16	c0.21	0.22		c0.25	c0.29	0.14	0.12	0.18	
v/s Ratio Perm			0.12						0.21			
v/c Ratio	0.72	0.94	0.63	1.00	0.63		1.03	0.93	0.67	0.95	0.94	
Uniform Delay, d1	56.2	48.7	26.6	48.5	34.2		46.4	40.8	21.2	53.7	49.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	15.6	19.5	1.4	34.3	0.8		50.2	21.0	1.6	46.1	21.5	
Delay (s)	71.8	68.2	28.0	82.8	35.0		96.6	61.8	22.8	99.8	70.6	
Level of Service	E	E	C	F	D		F	E	C	F	E	
Approach Delay (s)		52.4			58.6			56.9			77.8	
Approach LOS		D			E			E			E	

Intersection Summary			
HCM 2000 Control Delay	59.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	123.1	Sum of lost time (s)	19.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	0	100	50	0	56
Future Volume (Veh/h)	28	0	100	50	0	56
Sign Control	Stop		Free			Free
Grade	0%		0%			-4%
Peak Hour Factor	1.00	1.00	1.00	1.00	1.00	1.00
Hourly flow rate (vph)	28	0	100	50	0	56
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	125			150	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	181	125			150	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	100			100	
cM capacity (veh/h)	813	931			1444	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	28	0	150	56
Volume Left	28	0	0	0
Volume Right	0	0	50	0
cSH	813	1700	1700	1444
Volume to Capacity	0.03	0.00	0.09	0.00
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	9.6	0.0	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.6		0.0	0.0
Approach LOS	A			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		

Queues
1: Parking Lot/SW Tile Flat Rd & SW Scholls Ferry Rd

02/14/2017

Lane Group	EBL	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	5	754	1012	1	446
v/c Ratio	0.06	0.63	0.88	0.00	0.96
Control Delay	54.2	13.5	27.0	0.0	67.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	54.2	13.5	27.0	0.0	67.0
Queue Length 50th (ft)	3	256	461	0	246
Queue Length 95th (ft)	18	454	#1069	0	#539
Internal Link Dist (ft)		230	1105	30	390
Turn Bay Length (ft)	130				
Base Capacity (vph)	82	1330	1145	411	466
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.06	0.57	0.88	0.00	0.96

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 (vph)	5	694	0	1	564	366	0	0	1	402	0	8
Future Volume (vph)	5	694	0	1	564	366	0	0	1	402	0	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	11	11	11	12	12	12
Grade (%)		4%			2%			0%			0%	
Total Lost time (s)	4.0	5.5			5.5			4.0			4.5	
Lane Util. Factor	1.00	1.00			1.00			1.00			1.00	
Frt	1.00	1.00			0.95			0.86			1.00	
Flt Protected	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (prot)	1769	1808			1736			1589			1772	
Flt Permitted	0.95	1.00			1.00			1.00			0.95	
Satd. Flow (perm)	1769	1808			1735			1589			1772	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	5	754	0	1	613	398	0	0	1	437	0	9
RTOR Reduction (vph)	0	0	0	0	13	0	0	1	0	0	66	0
Lane Group Flow (vph)	5	754	0	0	999	0	0	0	0	0	380	0
Heavy Vehicles (%)	0%	3%	0%	0%	3%	2%	0%	0%	0%	2%	0%	0%
Turn Type	Prot	NA		Perm	NA			NA		Split	NA	
Protected Phases	5	2			6		8	8		4	4	
Permitted Phases				6								
Actuated Green, G (s)	0.9	75.7			70.8			0.7			24.6	
Effective Green, g (s)	0.9	75.7			70.8			0.7			24.6	
Actuated g/C Ratio	0.01	0.66			0.62			0.01			0.21	
Clearance Time (s)	4.0	5.5			5.5			4.0			4.5	
Vehicle Extension (s)	1.5	3.5			3.5			1.5			1.5	
Lane Grp Cap (vph)	13	1190			1068			9			379	
v/s Ratio Prot	0.00	c0.42						c0.00			c0.21	
v/s Ratio Perm					c0.58							
v/c Ratio	0.38	0.63			0.93			0.00			1.00	
Uniform Delay, d1	56.8	11.5			20.0			56.8			45.2	
Progression Factor	1.00	1.00			1.00			1.00			1.00	
Incremental Delay, d2	6.8	1.2			14.6			0.0			46.9	
Delay (s)	63.5	12.7			34.6			56.8			92.1	
Level of Service	E	B			C			E			F	
Approach Delay (s)		13.0			34.6			56.8			92.1	
Approach LOS		B			C			E			F	

Intersection Summary			
HCM 2000 Control Delay	38.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	115.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	90.6%	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)	23	1060	3	3	913	129	2	0	14	72	1	14
Future Volume (Veh/h)	23	1060	3	3	913	129	2	0	14	72	1	14
Sign Control		Free			Free			Stop			Stop	
Grade		-4%			0%			-7%			-4%	
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)	25	1152	3	3	992	140	2	0	15	78	1	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			TWLTL							
Median storage veh)					2							
Upstream signal (ft)		1185										
pX, platoon unblocked				0.73			0.73	0.73	0.73	0.73	0.73	
vC, conflicting volume	1132			1155			2217	2342	1154	2215	2203	992
vC1, stage 1 conf vol							1204	1204		998	998	
vC2, stage 2 conf vol							1014	1138		1217	1205	
vCu, unblocked vol	1132			1025			2488	2659	1023	2485	2469	992
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)							6.1	5.5		6.1	5.5	
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	96			99			99	100	93	43	99	95
cM capacity (veh/h)	625			498			141	152	210	137	164	301

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1	SB 1	SB 2
Volume Total	25	1155	3	992	140	17	78	16
Volume Left	25	0	3	0	0	2	78	0
Volume Right	0	3	0	0	140	15	0	15
cSH	625	1700	498	1700	1700	199	137	286
Volume to Capacity	0.04	0.68	0.01	0.58	0.08	0.09	0.57	0.06
Queue Length 95th (ft)	3	0	0	0	0	7	72	4
Control Delay (s)	11.0	0.0	12.3	0.0	0.0	24.8	61.7	18.3
Lane LOS	B		B			C	F	C
Approach Delay (s)	0.2		0.0			24.8	54.3	
Approach LOS						C	F	

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	73.3%	ICU Level of Service	D
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	91	684	513	766	789	458	560	611	220	676
v/c Ratio	0.75	0.96	0.67	1.06	0.67	1.08	0.97	0.66	0.99	0.98
Control Delay	89.9	75.1	24.4	95.8	37.0	110.3	72.7	20.6	111.4	77.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	89.9	75.1	24.4	95.8	37.0	110.3	72.7	20.6	111.4	77.8
Queue Length 50th (ft)	72	288	243	~345	275	~409	442	292	179	282
Queue Length 95th (ft)	#148	#410	365	#469	348	#617	#673	424	#341	#408
Internal Link Dist (ft)		686			809		447			409
Turn Bay Length (ft)	170		330	330		300		300	250	
Base Capacity (vph)	138	711	767	726	1184	425	578	930	223	693
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	0.66	0.96	0.67	1.06	0.67	1.08	0.97	0.66	0.99	0.98

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 (vph)	87	657	492	735	591	166	440	538	587	211	573	76
Future Volume (vph)	87	657	492	735	591	166	440	538	587	211	573	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			3%			-2%	
Total Lost time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95		1.00	1.00	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1787	3574	1574	3467	3423		1743	1835	1591	1823	3543	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1787	3574	1574	3467	3423		1743	1835	1591	1823	3543	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	91	684	512	766	616	173	458	560	611	220	597	79
RTOR Reduction (vph)	0	0	51	0	20	0	0	0	27	0	8	0
Lane Group Flow (vph)	91	684	462	766	769	0	458	560	584	220	668	0
Confl. Bikes (#/hr)			2									
Heavy Vehicles (%)	1%	1%	2%	1%	2%	2%	2%	2%	0%	0%	1%	2%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	5	2	3	1	6		3	8	1	7	4	
Permitted Phases			2						8			
Actuated Green, G (s)	8.5	24.7	55.0	26.0	42.2		30.3	39.1	65.1	15.2	24.0	
Effective Green, g (s)	8.5	24.7	55.0	26.0	42.2		30.3	39.1	65.1	15.2	24.0	
Actuated g/C Ratio	0.07	0.20	0.44	0.21	0.34		0.24	0.32	0.52	0.12	0.19	
Clearance Time (s)	4.0	5.5	4.0	4.0	5.5		4.0	5.5	4.0	4.0	5.5	
Vehicle Extension (s)	1.0	2.0	1.0	1.0	2.0		1.0	2.0	1.0	1.0	2.0	
Lane Grp Cap (vph)	122	711	698	726	1164		425	578	835	223	685	
v/s Ratio Prot	0.05	c0.19	0.16	c0.22	0.22		c0.26	c0.31	0.15	0.12	0.19	
v/s Ratio Perm			0.13						0.22			
v/c Ratio	0.75	0.96	0.66	1.06	0.66		1.08	0.97	0.70	0.99	0.98	
Uniform Delay, d1	56.7	49.2	27.2	49.0	34.8		46.9	41.8	22.1	54.3	49.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	19.3	24.5	1.8	48.9	1.1		66.0	29.2	2.1	55.8	27.9	
Delay (s)	76.0	73.7	29.0	97.9	35.9		112.9	71.0	24.2	110.1	77.6	
Level of Service	E	E	C	F	D		F	E	C	F	E	
Approach Delay (s)		56.0			66.4			65.2			85.6	
Approach LOS		E			E			E			F	

Intersection Summary			
HCM 2000 Control Delay	66.8	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.04		
Actuated Cycle Length (s)	124.0	Sum of lost time (s)	19.0
Intersection Capacity Utilization	97.6%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	28	0	100	50	0	56
Future Volume (Veh/h)	28	0	100	50	0	56
Sign Control	Stop		Free			Free
Grade	0%		0%			-4%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	0	109	54	0	61
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	197	136			163	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	197	136			163	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	100			100	
cM capacity (veh/h)	796	918			1428	

Direction, Lane #	WB 1	WB 2	NB 1	SB 1
Volume Total	30	0	163	61
Volume Left	30	0	0	0
Volume Right	0	0	54	0
cSH	796	1700	1700	1428
Volume to Capacity	0.04	0.00	0.10	0.00
Queue Length 95th (ft)	3	0	0	0
Control Delay (s)	9.7	0.0	0.0	0.0
Lane LOS	A	A		
Approach Delay (s)	9.7		0.0	0.0
Approach LOS	A			

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		