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# MEMORANDUM

Date: February 1, 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 but development of the 200 multifamily units will 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 175$^{th}$ Avenue/SW Roy Rogers Road.

Site Vicinity
Beaverton, Oregon

Figure
1

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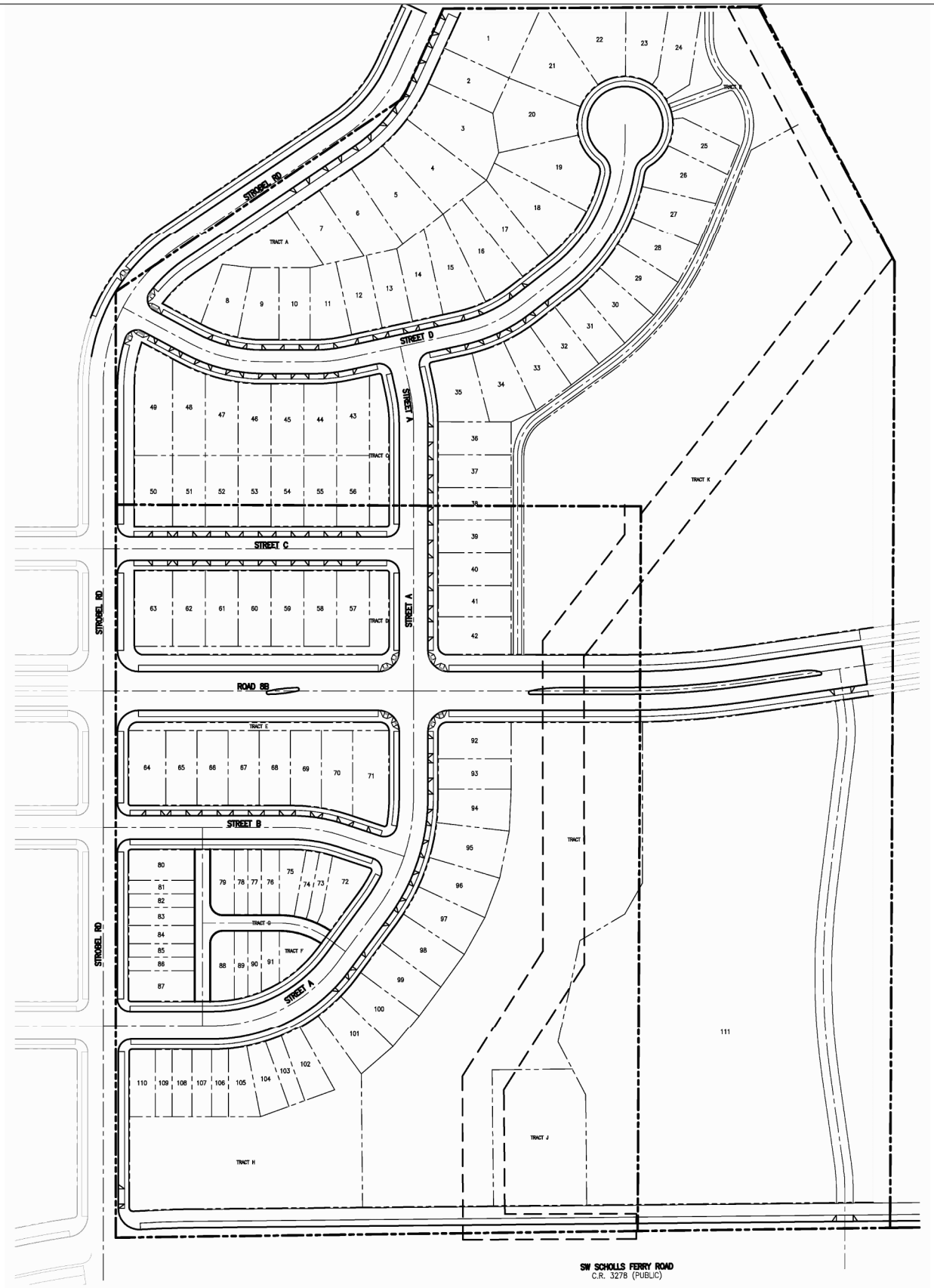


Site plan provided by OTAK on 2/1/2017

Proposed Site Plan
Beaverton, Oregon

Figure
2

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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)<br>2 – 3 (W of 175th) | 40 | Sidewalk (E of 175th) | Bike lanes (E of 175th)<br>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.

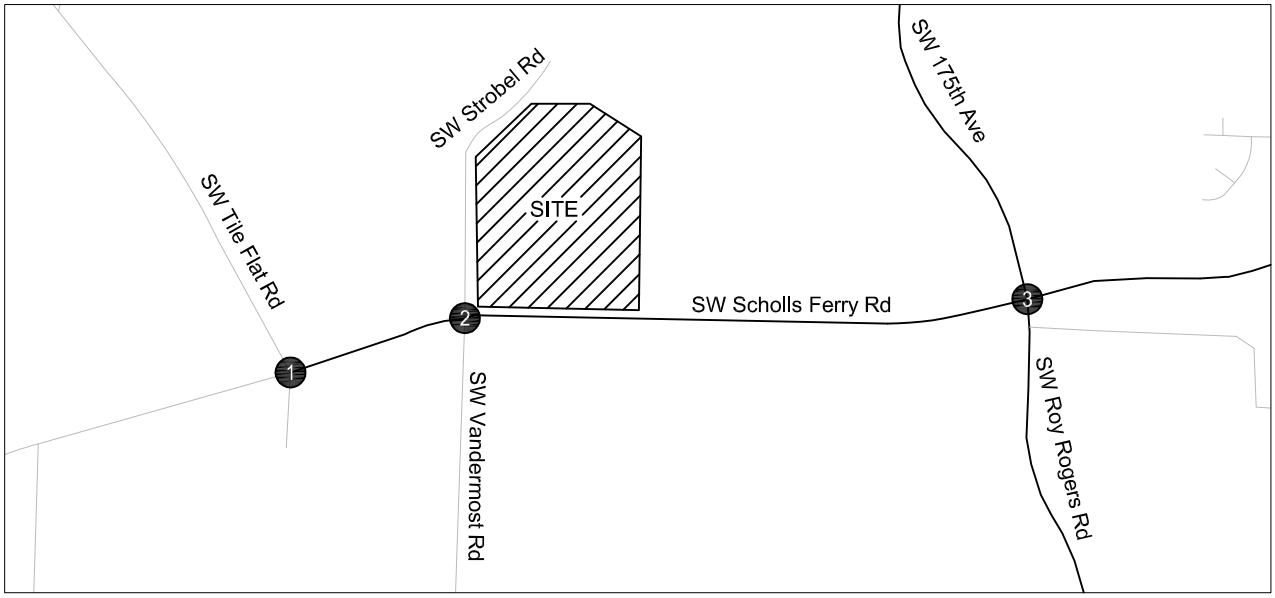
### *Transit Facilities*

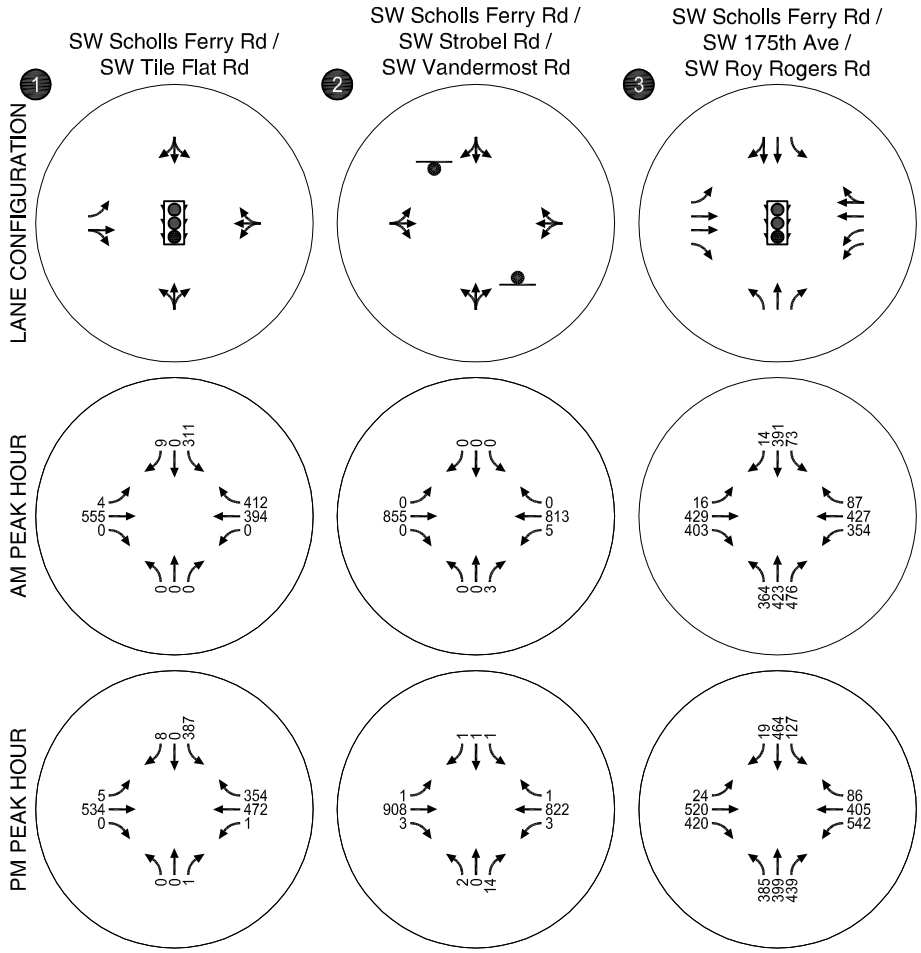
The site is located near the border of the TriMet transit district. The nearest bus line is Route 92, the South Beaverton Express, which stops at the intersection of SW Scholls Ferry Road/SW Teal Boulevard/SW Horizon Boulevard (approximately 1.75 miles east of the project site). Route 92 provides weekday 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.*




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

Figure 3

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**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. As discussed previously, although the multifamily homes are not proposed for construction at this time, we also assumed occupancy of these units 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.

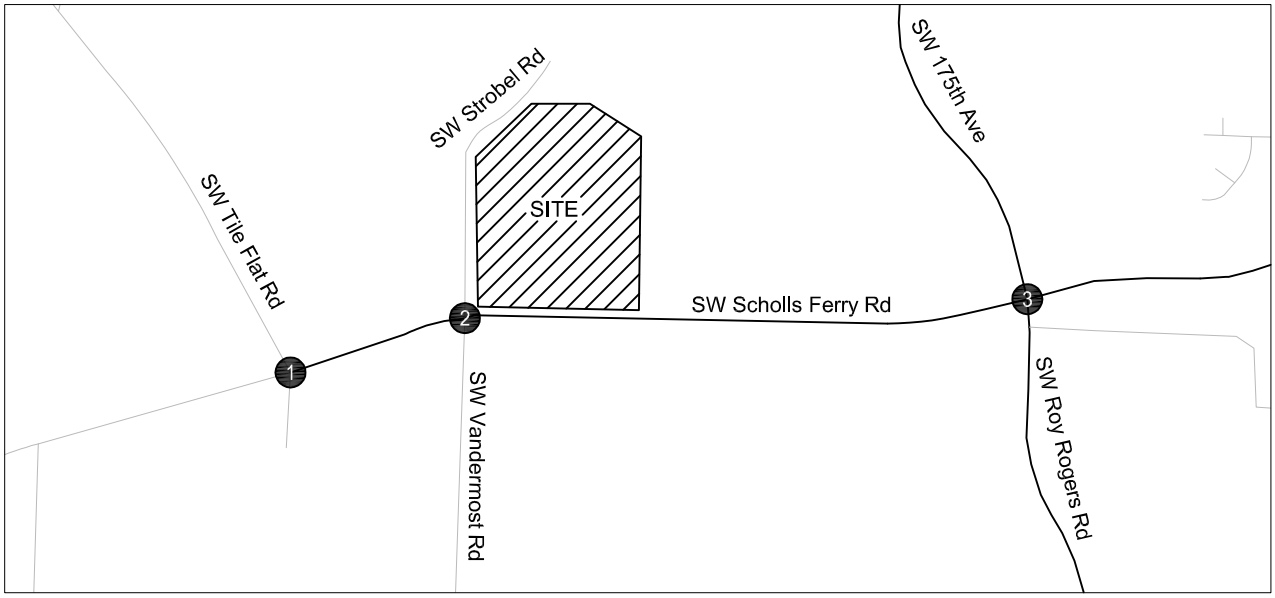
## 2018 Background Operational Analysis

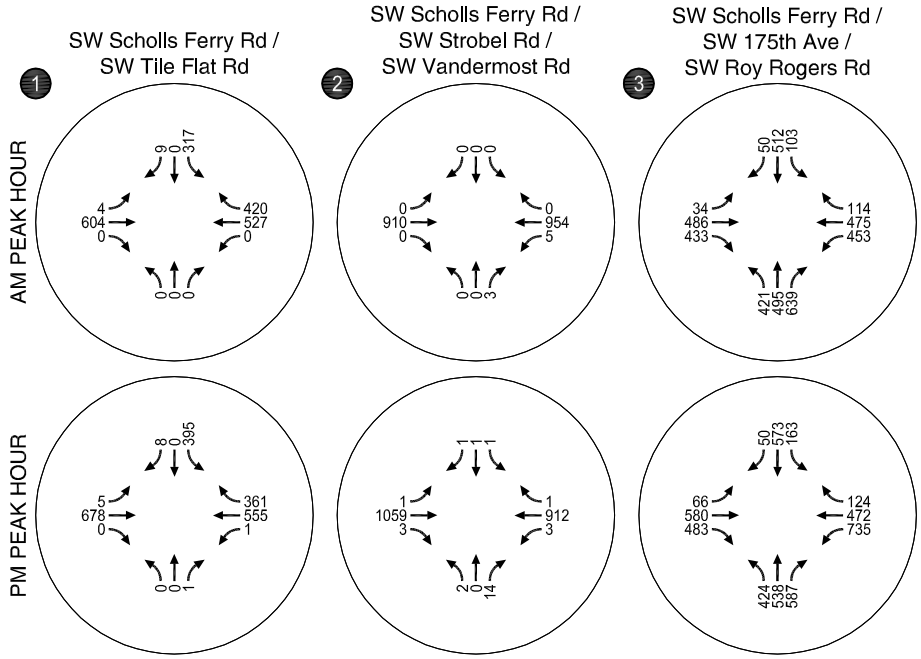
Background traffic volumes include changes in volumes due to added trips from new development in the vicinity as well as general regional growth. The year 2018 analyses include a background annual growth rate of two percent at each study intersection, as well as the following in-process developments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

- 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 175$^{th}$ 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. 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

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**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 | 21.1 | C | 0.96 | 28.7 | C |
| 2 | SW Scholls Ferry Road/ SW Strobel Road/SW Vandermost Road | 0.01 (NB) | 17.6 (NB) | C | 0.01 (NB) | 20.1 (SB) | C |
| 3 | SW Scholls Ferry Road/ SW 175th Avenue/SW Roy Rogers Road | 0.83 | 39.3 | D | 0.91 | 47.7 | D |
| *Weekday PM Peak Hour* | | | | | | | |
| 1 | SW Scholls Ferry Road/ SW Tile Flat Road | 0.86 | 27.9 | C | 0.94 | 36.4 | 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 | 0.95 | 53.7 | D | 0.99 | 59.4 | 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.

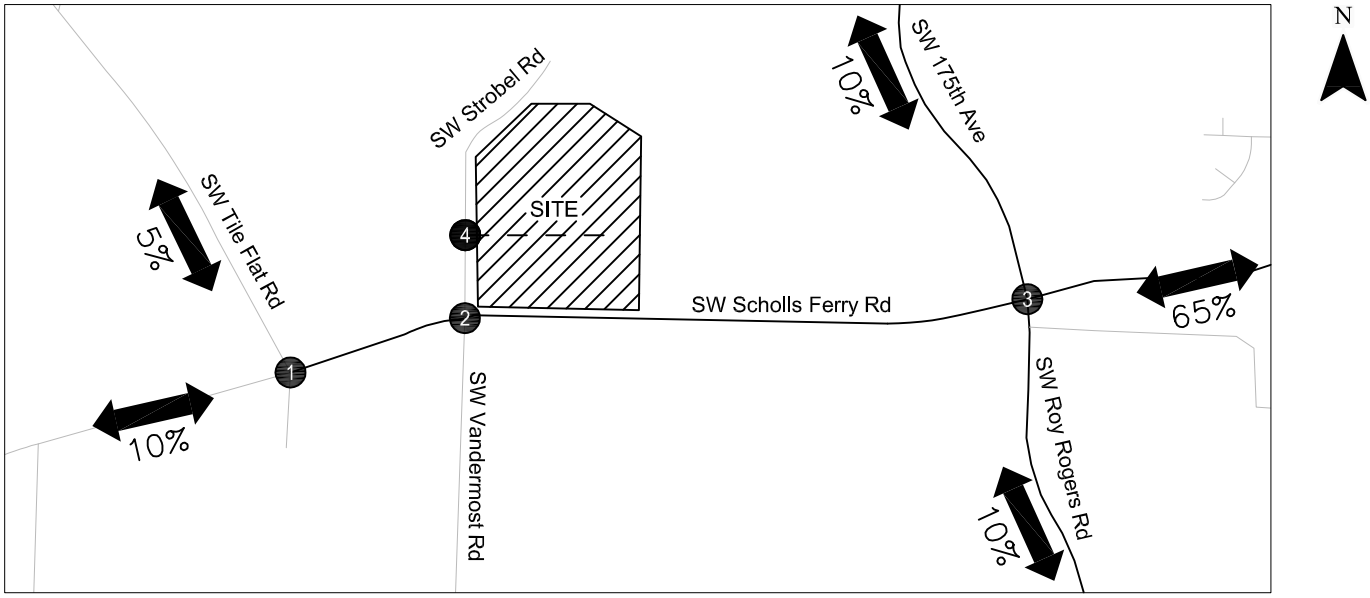
**Table 5. Estimated Trip Generation**

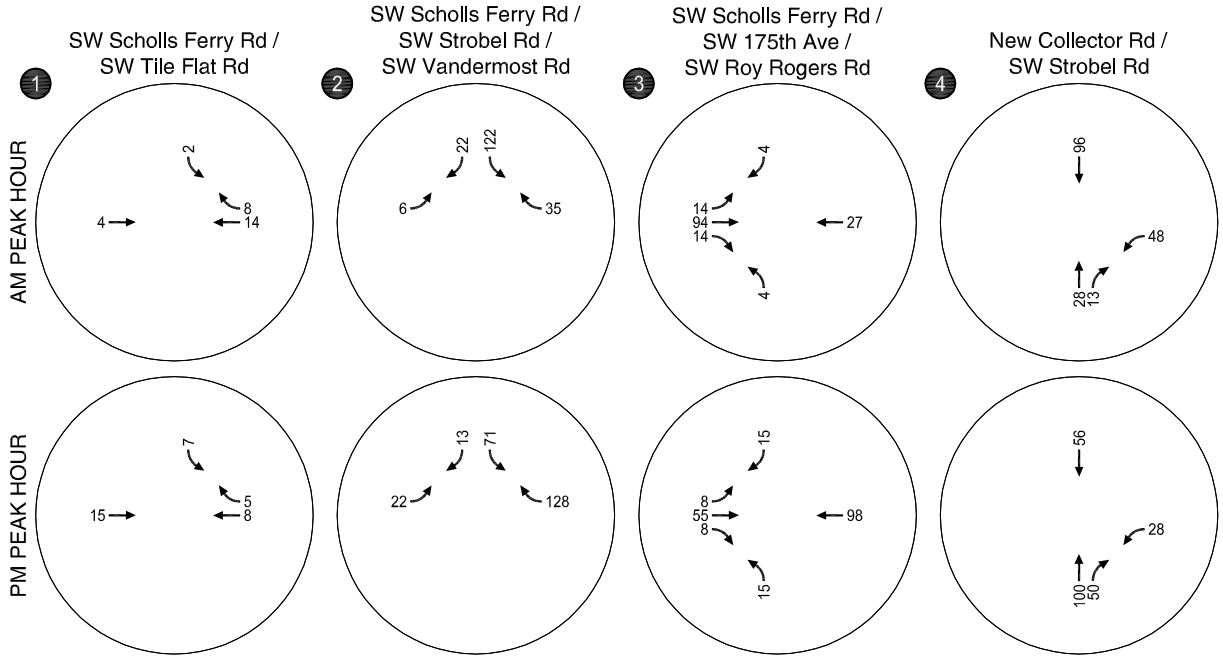
| | ITE Code | Dwelling Units | Total Daily Trips | Weekday AM Peak Hour | | | Weekday PM Peak Hour | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Total Trips | In | Out | Total Trips | In | Out |
| Single Family | 210 | 110 | 1,048 | 83 | 21 | 62 | 110 | 69 | 41 |
| Multi-Family | 220 | 200 | 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

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## 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 | 0.57 (SBLT) | 42.5 (SBLT) | E | 0.77 (SBLT) | > 50 (SBLT) | F |
| 3 | SW Scholls Ferry Road/ SW 175th Avenue/SW Roy Rogers Road | 0.87 | 41.8 | D | 0.95 | 51.2 | D |
| 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 | 29.1 | C | 0.95 | 38.7 | 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 | 0.97 | 56.8 | E | 1.02 | 62.9 | 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. Similar to the 2018 background conditions, all of the intersections 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 1.02 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.

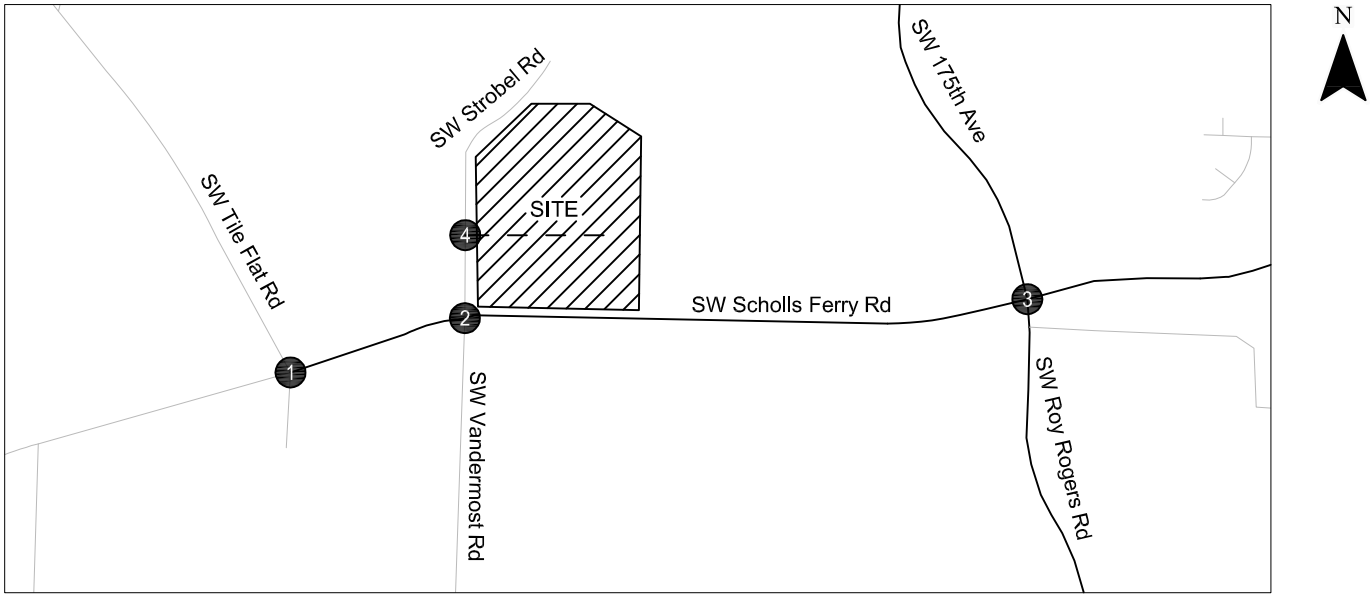
Stop control should be provided on the southbound approach to the intersection in accordance with applicable City and County design standards. Finally, in the future, the westbound right-turn lane can be converted to a through/right lane as part of the planned widening of SW Scholls Ferry Road to five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

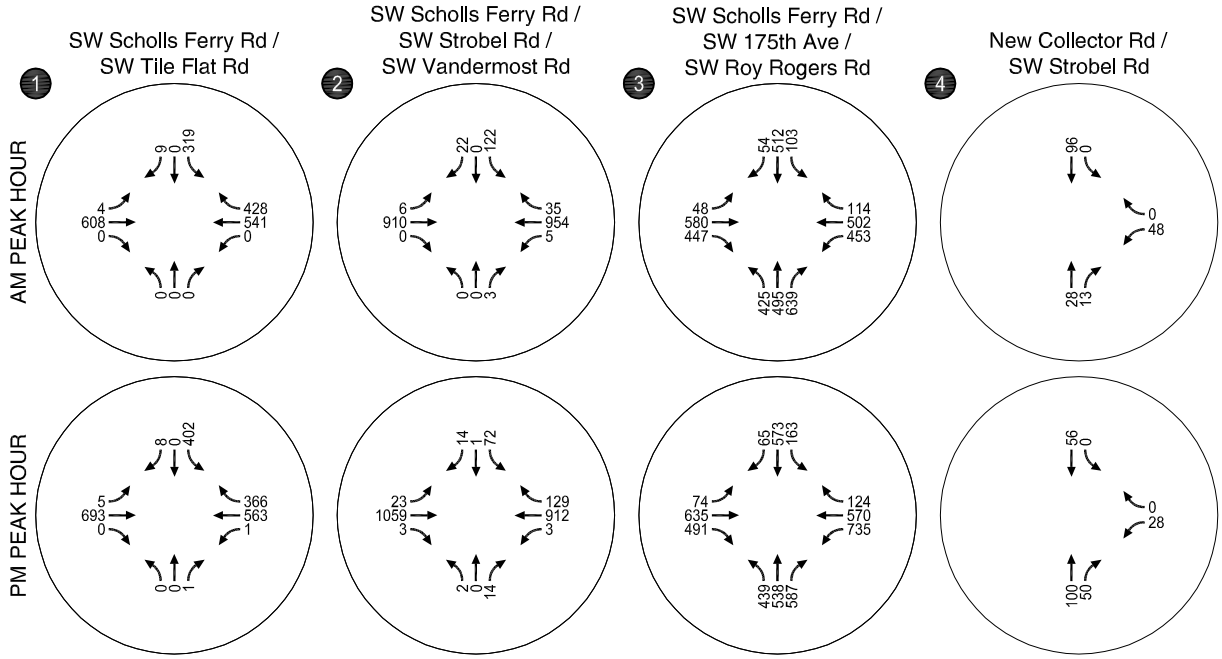
### *SW Scholls Ferry Road/SW Strobel Road Queuing Warrant Analysis*

Table 7 identifies the projected 95$^{th}$ 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. 95$^{th}$ 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

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### *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

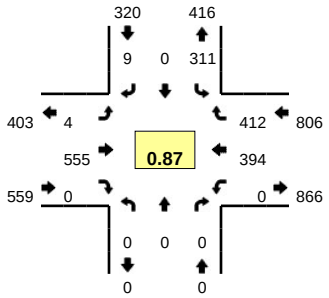
Type of peak hour being reported: User-Defined

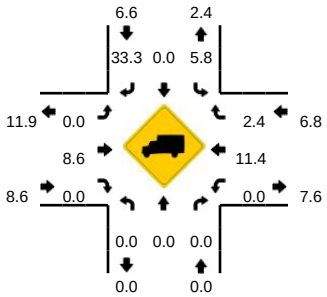
Method for determining peak hour: Total Entering Volume

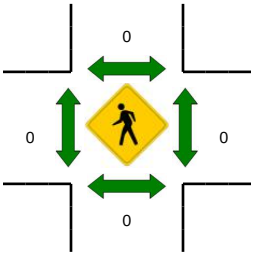
**LOCATION:** SW Tile Flat Rd -- SW Scholls Ferry Rd
**CITY/STATE:** Beaverton, OR

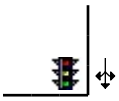
**QC JOB #:** 14075201
**DATE:** Tue, Dec 13 2016

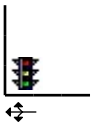
**Peak-Hour: 7:10 AM -- 8:10 AM**
**Peak 15-Min: 7:30 AM -- 7:45 AM**

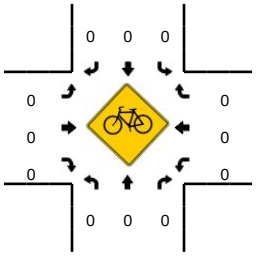


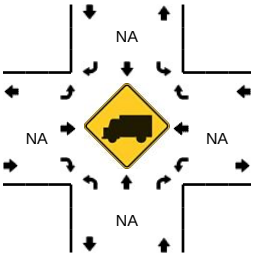



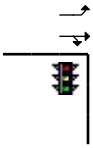



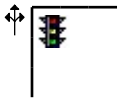



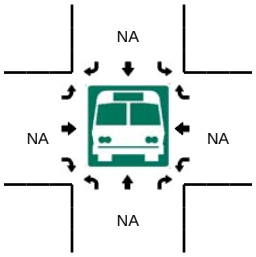









| 5-Min Count Period Beginning At | SW Tile Flat Rd (Northbound) | | | | SW Tile Flat Rd (Southbound) | | | | SW Scholls Ferry Rd (Eastbound) | | | | SW Scholls Ferry Rd (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | 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

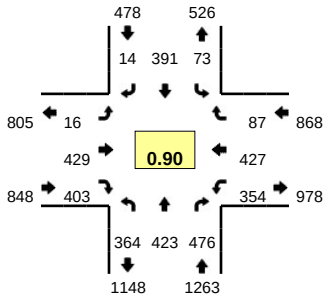
Type of peak hour being reported: User-Defined

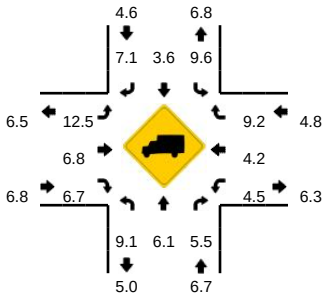
Method for determining peak hour: Total Entering Volume

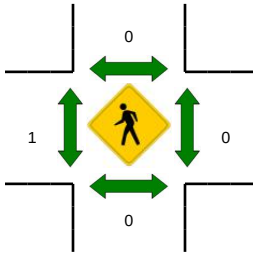
**LOCATION:** SW Roy Rogers Rd -- SW Scholls Ferry Rd
**CITY/STATE:** Sherwood, OR

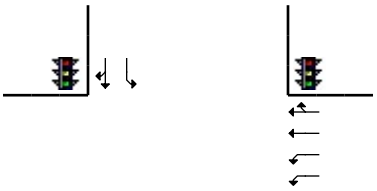
**QC JOB #:** 14075207
**DATE:** Tue, Dec 13 2016

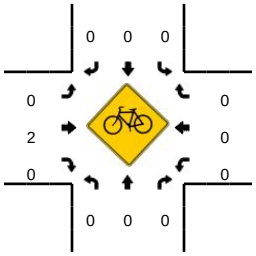
**Peak-Hour: 7:10 AM -- 8:10 AM**
**Peak 15-Min: 7:30 AM -- 7:45 AM**

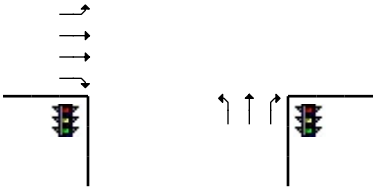


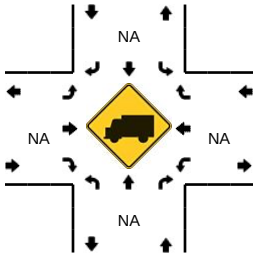



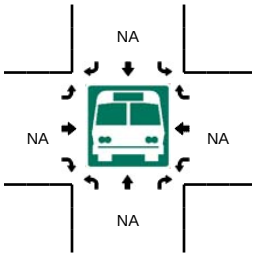








| 5-Min Count Period Beginning At | SW Roy Rogers Rd (Northbound) | | | | SW Roy Rogers Rd (Southbound) | | | | SW Scholls Ferry Rd (Eastbound) | | | | SW Scholls Ferry Rd (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | 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

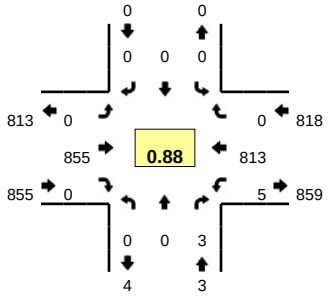
**LOCATION:** Strobel Rd/SW Vandermost Rd -- SW Scholls Ferry Rd

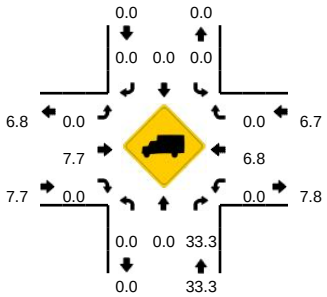
**QC JOB #:** 14075213

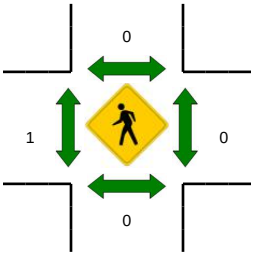
**CITY/STATE:** Beaverton, OR

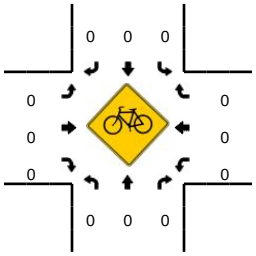
**DATE:** Tue, Dec 13 2016

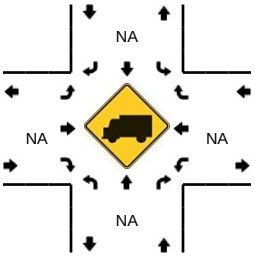
**Peak-Hour: 7:10 AM -- 8:10 AM**
**Peak 15-Min: 7:30 AM -- 7:45 AM**

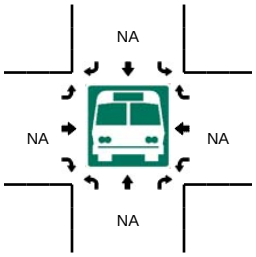







| 5-Min Count Period Beginning At | Strobel Rd/SW Vandermost Rd (Northbound) | | | | Strobel Rd/SW Vandermost Rd (Southbound) | | | | SW Scholls Ferry Rd (Eastbound) | | | | SW Scholls Ferry Rd (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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

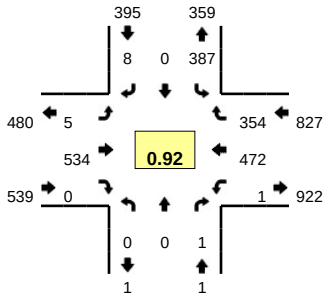
Type of peak hour being reported: User-Defined

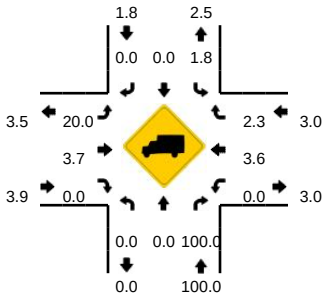
Method for determining peak hour: Total Entering Volume

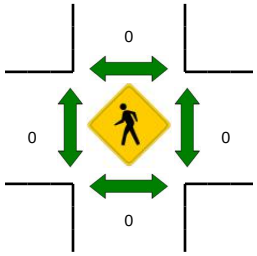
**LOCATION:** SW Tile Flat Rd -- SW Scholls Ferry Rd
**CITY/STATE:** Beaverton, OR

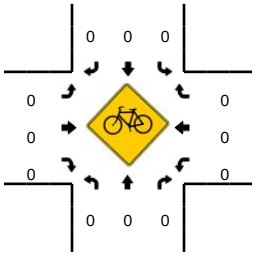
**QC JOB #:** 14075204
**DATE:** Tue, Dec 06 2016

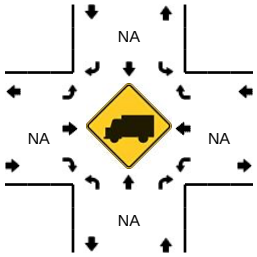
**Peak-Hour: 4:45 PM -- 5:45 PM**
**Peak 15-Min: 4:50 PM -- 5:05 PM**

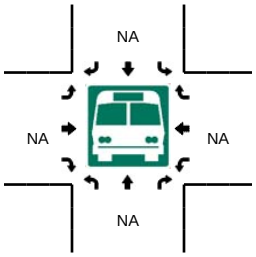







| 5-Min Count Period Beginning At | SW Tile Flat Rd (Northbound) | | | | SW Tile Flat Rd (Southbound) | | | | SW Scholls Ferry Rd (Eastbound) | | | | SW Scholls Ferry Rd (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | 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

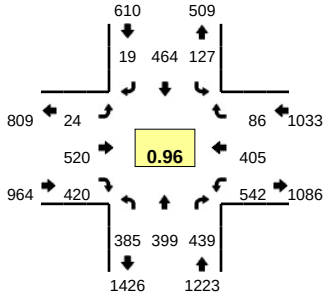
Type of peak hour being reported: User-Defined

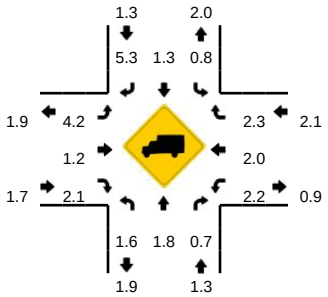
Method for determining peak hour: Total Entering Volume

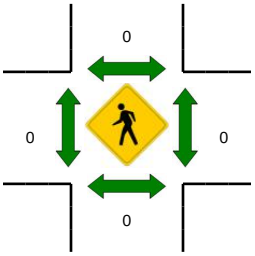
**LOCATION:** SW Roy Rogers Rd -- SW Scholls Ferry Rd
**CITY/STATE:** Sherwood, OR

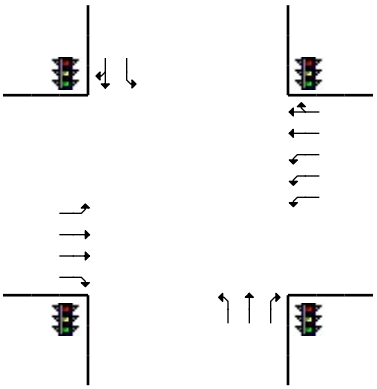
**QC JOB #:** 14075210
**DATE:** Tue, Dec 06 2016

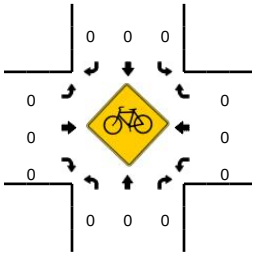
**Peak-Hour: 4:45 PM -- 5:45 PM**
**Peak 15-Min: 4:50 PM -- 5:05 PM**

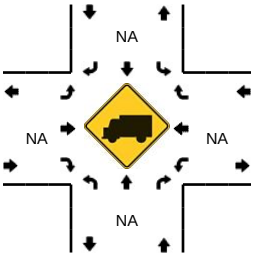


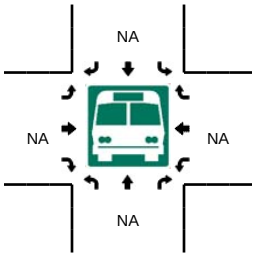






| 5-Min Count Period Beginning At | SW Roy Rogers Rd (Northbound) | | | | SW Roy Rogers Rd (Southbound) | | | | SW Scholls Ferry Rd (Eastbound) | | | | SW Scholls Ferry Rd (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Left | 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

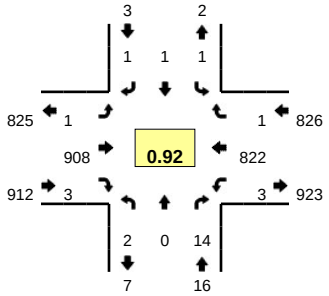
**LOCATION:** Strobel Rd/SW Vandermost Rd -- SW Scholls Ferry Rd

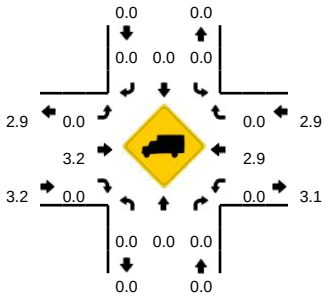
**QC JOB #:** 14075216

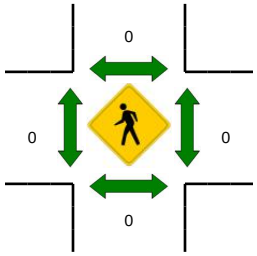
**CITY/STATE:** Beaverton, OR

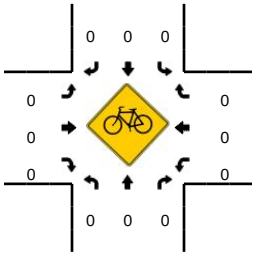
**DATE:** Tue, Dec 06 2016

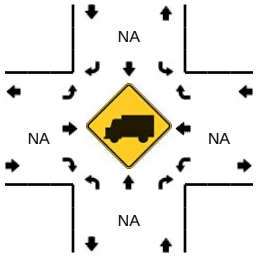
**Peak-Hour: 4:45 PM -- 5:45 PM**
**Peak 15-Min: 4:50 PM -- 5:05 PM**

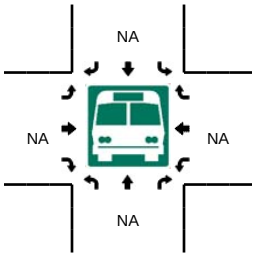







| 5-Min Count Period Beginning At | Strobel Rd/SW Vandermost Rd (Northbound) | | | | Strobel Rd/SW Vandermost Rd (Southbound) | | | | SW Scholls Ferry Rd (Eastbound) | | | | SW Scholls Ferry Rd (Westbound) | | | | Total | Hourly Totals |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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<br>OR<25 | 000 | | 000 | | 00 |
| | | | | | | | | | | | | | | 02 | NONE 0 | TURN-L | | | | | | | | | | | |
| | | | | | | | | | | | | | | | PRVTE | N E | | | | | | | | | 000 | | 00 |
| | | | | | | | | | | | | | | | PSNGR CAR | | 01 | DRVR | NONE | 60 | M | SUSP<br>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<br>OR<25 | 000 | | 000 | | 00 |
| | | | | | | | | | | | | | 02 | NONE 0 | U-TURN | | | | | | | | | | | |
| | | | | | | | | | | | | | | PRVTE | E E | | | | | | | | | 000 | | 00 |
| | | | | | | | | | | | | | | PSNGR CAR | | 01 | DRVR | NONE | 35 | M | OR-Y<br>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 |

*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 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

# 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 | 604 | 947 | 326 |
| v/c Ratio | 0.05 | 0.49 | 0.80 | 0.81 |
| Control Delay | 51.8 | 8.6 | 18.4 | 47.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.8 | 8.6 | 18.4 | 47.7 |
| Queue Length 50th (ft) | 3 | 165 | 363 | 157 |
| Queue Length 95th (ft) | 14 | 235 | #766 | #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 | 0.45 | 0.80 | 0.80 |

### Intersection Summary

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

# HCM Signalized Intersection Capacity Analysis
## 1: Parking Lot/SW Tile Flat 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 (vph) | 4 | 604 | 0 | 0 | 527 | 420 | 0 | 0 | 0 | 317 | 0 | 9 |
| Future Volume (vph) | 4 | 604 | 0 | 0 | 527 | 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 | 604 | 0 | 0 | 527 | 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 | 604 | 0 | 0 | 932 | 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 | 6.7 | | | 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) | | 7.4 | | | 18.4 | | | 0.0 | | | 54.4 | |
| Approach LOS | | A | | | B | | | A | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 21.1 | 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 | 79.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 910 | 0 | 5 | 954 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 910 | 0 | 5 | 954 | 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 | 910 | 0 | 5 | 954 | 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 | 954 | | | 910 | | | 1875 | 1874 | 910 | 1877 | 1874 | 955 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 954 | | | 810 | | | 1939 | 1937 | 810 | 1941 | 1937 | 955 |
| 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) | 729 | | | 705 | | | 43 | 57 | 288 | 42 | 57 | 316 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 910 | 959 | 3 | 0 |
| Volume Left | 0 | 5 | 0 | 0 |
| Volume Right | 0 | 0 | 3 | 0 |
| cSH | 729 | 705 | 288 | 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 | 17.6 | 0.0 |
| Lane LOS | | A | C | A |
| Approach Delay (s) | 0.0 | 0.2 | 17.6 | 0.0 |
| Approach LOS | | | C | A |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.1 | | |
| Intersection Capacity Utilization | 64.5% | 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) | 34 | 486 | 433 | 453 | 589 | 421 | 495 | 639 | 103 | 562 |
| v/c Ratio | 0.37 | 0.78 | 0.56 | 0.83 | 0.51 | 0.90 | 0.71 | 0.66 | 0.71 | 0.83 |
| Control Delay | 66.4 | 52.8 | 16.9 | 60.3 | 31.8 | 62.4 | 35.7 | 16.2 | 77.5 | 54.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 66.4 | 52.8 | 16.9 | 60.3 | 31.8 | 62.4 | 35.7 | 16.2 | 77.5 | 54.5 |
| Queue Length 50th (ft) | 26 | 188 | 163 | 173 | 192 | 304 | 309 | 246 | 77 | 215 |
| Queue Length 95th (ft) | 62 | 251 | 255 | #263 | 254 | #514 | 464 | 413 | #163 | #308 |
| Internal Link Dist (ft) | | 686 | | | 809 | | 447 | | | 409 |
| Turn Bay Length (ft) | 170 | | 330 | 330 | | 300 | | 300 | 250 | |
| Base Capacity (vph) | 109 | 835 | 844 | 635 | 1279 | 548 | 811 | 1004 | 178 | 796 |
| 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 | 0.31 | 0.58 | 0.51 | 0.71 | 0.46 | 0.77 | 0.61 | 0.64 | 0.58 | 0.71 |

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) | 34 | 486 | 433 | 453 | 475 | 114 | 421 | 495 | 639 | 103 | 512 | 50 |
| Future Volume (vph) | 34 | 486 | 433 | 453 | 475 | 114 | 421 | 495 | 639 | 103 | 512 | 50 |
| 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 | 0.99 | |
| 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 | 3406 | 1515 | 3367 | 3410 | | 1662 | 1782 | 1530 | 1770 | 3495 | |
| 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 | 3410 | | 1662 | 1782 | 1530 | 1770 | 3495 | |
| 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) | 34 | 486 | 433 | 453 | 475 | 114 | 421 | 495 | 639 | 103 | 512 | 50 |
| RTOR Reduction (vph) | 0 | 0 | 48 | 0 | 17 | 0 | 0 | 0 | 46 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 34 | 486 | 385 | 453 | 572 | 0 | 421 | 495 | 593 | 103 | 556 | 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) | 3.4 | 22.0 | 52.8 | 17.6 | 36.2 | | 30.8 | 42.8 | 60.4 | 9.1 | 21.1 | |
| Effective Green, g (s) | 3.4 | 22.0 | 52.8 | 17.6 | 36.2 | | 30.8 | 42.8 | 60.4 | 9.1 | 21.1 | |
| Actuated g/C Ratio | 0.03 | 0.20 | 0.48 | 0.16 | 0.33 | | 0.28 | 0.39 | 0.55 | 0.08 | 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) | 53 | 678 | 723 | 536 | 1117 | | 463 | 690 | 836 | 145 | 667 | |
| v/s Ratio Prot | 0.02 | c0.14 | 0.15 | c0.13 | 0.17 | | c0.25 | 0.28 | 0.11 | 0.06 | c0.16 | |
| v/s Ratio Perm | | | 0.11 | | | | | | 0.27 | | | |
| v/c Ratio | 0.64 | 0.72 | 0.53 | 0.85 | 0.51 | | 0.91 | 0.72 | 0.71 | 0.71 | 0.83 | |
| Uniform Delay, d1 | 52.9 | 41.3 | 20.2 | 45.1 | 30.0 | | 38.5 | 28.7 | 18.6 | 49.4 | 43.0 | |
| 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 | 18.1 | 3.0 | 0.4 | 11.2 | 0.2 | | 21.1 | 3.0 | 2.3 | 12.8 | 8.5 | |
| Delay (s) | 71.1 | 44.4 | 20.6 | 56.4 | 30.2 | | 59.6 | 31.7 | 20.8 | 62.2 | 51.5 | |
| Level of Service | E | D | C | E | C | | E | C | C | E | D | |
| Approach Delay (s) | | 34.5 | | | 41.6 | | | 34.8 | | | 53.1 | |
| Approach LOS | | C | | | D | | | C | | | D | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 39.3 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.83 | | |
| Actuated Cycle Length (s) | 110.5 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 81.4% | 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 | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 4 | 671 | 1053 | 362 |
| v/c Ratio | 0.05 | 0.55 | 0.90 | 0.89 |
| Control Delay | 51.8 | 9.7 | 25.9 | 56.6 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.8 | 9.7 | 25.9 | 56.6 |
| Queue Length 50th (ft) | 3 | 195 | 475 | 186 |
| Queue Length 95th (ft) | 14 | 277 | #1013 | #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 | 0.50 | 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 | 604 | 0 | 0 | 527 | 420 | 0 | 0 | 0 | 317 | 0 | 9 |
| Future Volume (vph) | 4 | 604 | 0 | 0 | 527 | 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 | 671 | 0 | 0 | 586 | 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 | 671 | 0 | 0 | 1038 | 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 | | | 0.92 | | | | | | 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 | | | 12.7 | | | | | | 24.2 | |
| Delay (s) | 58.3 | 7.9 | | | 28.5 | | | | | | 67.3 | |
| Level of Service | E | A | | | C | | | | | | E | |
| Approach Delay (s) | | 8.2 | | | 28.5 | | | 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 | 79.8% | ICU Level of Service | D |
| Analysis Period (min) | 15 | | |
| c Critical Lane Group | | | |

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 0 | 910 | 0 | 5 | 954 | 0 | 0 | 0 | 3 | 0 | 0 | 0 |
| Future Volume (Veh/h) | 0 | 910 | 0 | 5 | 954 | 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 | 1011 | 0 | 6 | 1060 | 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 | 1060 | | | 1011 | | | 2084 | 2083 | 1011 | 2086 | 2083 | 1061 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 1060 | | | 897 | | | 2220 | 2219 | 897 | 2223 | 2219 | 1061 |
| 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) | 665 | | | 620 | | | 26 | 36 | 242 | 25 | 36 | 274 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 1011 | 1066 | 3 | 0 |
| Volume Left | 0 | 6 | 0 | 0 |
| Volume Right | 0 | 0 | 3 | 0 |
| cSH | 665 | 620 | 242 | 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 | 20.1 | 0.0 |
| Lane LOS | | A | C | A |
| Approach Delay (s) | 0.0 | 0.3 | 20.1 | 0.0 |
| Approach LOS | | | C | A |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.2 | | |
| Intersection Capacity Utilization | 64.5% | 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) | 38 | 540 | 481 | 503 | 655 | 468 | 550 | 710 | 114 | 625 |
| v/c Ratio | 0.43 | 0.85 | 0.61 | 0.92 | 0.57 | 0.96 | 0.76 | 0.73 | 0.78 | 0.91 |
| Control Delay | 71.9 | 60.6 | 19.0 | 72.9 | 34.9 | 73.3 | 39.3 | 19.9 | 87.6 | 65.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 71.9 | 60.6 | 19.0 | 72.9 | 34.9 | 73.3 | 39.3 | 19.9 | 87.6 | 65.4 |
| Queue Length 50th (ft) | 30 | 218 | 198 | 204 | 225 | 365 | 375 | 338 | 89 | 254 |
| Queue Length 95th (ft) | 68 | 284 | 301 | #309 | 293 | #588 | 531 | 517 | #180 | #367 |
| Internal Link Dist (ft) | | 686 | | | 809 | | 447 | | | 409 |
| Turn Bay Length (ft) | 170 | | 330 | 330 | | 300 | | 300 | 250 | |
| Base Capacity (vph) | 103 | 722 | 811 | 572 | 1156 | 508 | 743 | 985 | 168 | 718 |
| 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 | 0.37 | 0.75 | 0.59 | 0.88 | 0.57 | 0.92 | 0.74 | 0.72 | 0.68 | 0.87 |

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) | 34 | 486 | 433 | 453 | 475 | 114 | 421 | 495 | 639 | 103 | 512 | 50 |
| Future Volume (vph) | 34 | 486 | 433 | 453 | 475 | 114 | 421 | 495 | 639 | 103 | 512 | 50 |
| 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 | 0.99 | |
| 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 | 3406 | 1516 | 3367 | 3409 | | 1662 | 1782 | 1530 | 1770 | 3494 | |
| 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 | 3409 | | 1662 | 1782 | 1530 | 1770 | 3494 | |
| 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) | 38 | 540 | 481 | 503 | 528 | 127 | 468 | 550 | 710 | 114 | 569 | 56 |
| RTOR Reduction (vph) | 0 | 0 | 47 | 0 | 16 | 0 | 0 | 0 | 37 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 38 | 540 | 434 | 503 | 639 | 0 | 468 | 550 | 673 | 114 | 619 | 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) | 3.9 | 23.9 | 58.8 | 19.2 | 39.2 | | 34.9 | 48.2 | 67.4 | 9.8 | 23.1 | |
| Effective Green, g (s) | 3.9 | 23.9 | 58.8 | 19.2 | 39.2 | | 34.9 | 48.2 | 67.4 | 9.8 | 23.1 | |
| Actuated g/C Ratio | 0.03 | 0.20 | 0.49 | 0.16 | 0.33 | | 0.29 | 0.40 | 0.56 | 0.08 | 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) | 56 | 677 | 742 | 538 | 1112 | | 482 | 715 | 858 | 144 | 672 | |
| v/s Ratio Prot | 0.02 | c0.16 | 0.17 | c0.15 | 0.19 | | c0.28 | 0.31 | 0.13 | 0.06 | c0.18 | |
| v/s Ratio Perm | | | 0.12 | | | | | | 0.31 | | | |
| v/c Ratio | 0.68 | 0.80 | 0.58 | 0.93 | 0.57 | | 0.97 | 0.77 | 0.78 | 0.79 | 0.92 | |
| Uniform Delay, d1 | 57.5 | 45.8 | 21.9 | 49.8 | 33.5 | | 42.1 | 31.1 | 20.7 | 54.1 | 47.6 | |
| 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 | 22.6 | 6.1 | 0.8 | 23.4 | 0.4 | | 33.3 | 4.5 | 4.4 | 23.5 | 17.9 | |
| Delay (s) | 80.1 | 51.9 | 22.7 | 73.2 | 34.0 | | 75.4 | 35.6 | 25.0 | 77.7 | 65.5 | |
| Level of Service | F | D | C | E | C | | E | D | C | E | E | |
| Approach Delay (s) | | 39.6 | | | 51.0 | | | 42.1 | | | 67.4 | |
| Approach LOS | | D | | | D | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 47.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.91 | | |
| Actuated Cycle Length (s) | 120.1 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 81.4% | 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

01/19/2017

| Lane Group | EBL | EBT | WBT | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 5 | 678 | 917 | 1 | 403 |
| v/c Ratio | 0.06 | 0.57 | 0.81 | 0.00 | 0.84 |
| Control Delay | 54.0 | 12.5 | 22.0 | 0.0 | 48.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.0 | 12.5 | 22.0 | 0.0 | 48.5 |
| Queue Length 50th (ft) | 3 | 218 | 373 | 0 | 203 |
| Queue Length 95th (ft) | 18 | 385 | #912 | 0 | #454 |
| Internal Link Dist (ft) | | 230 | 1105 | 30 | 390 |
| Turn Bay Length (ft) | 130 | | | | |
| Base Capacity (vph) | 83 | 1344 | 1155 | 441 | 479 |
| 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 | 0.79 | 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 | 678 | 0 | 1 | 555 | 361 | 0 | 0 | 1 | 395 | 0 | 8 |
| Future Volume (vph) | 5 | 678 | 0 | 1 | 555 | 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 | 678 | 0 | 1 | 555 | 361 | 0 | 0 | 1 | 395 | 0 | 8 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 1 | 0 | 0 | 65 | 0 |
| Lane Group Flow (vph) | 5 | 678 | 0 | 0 | 903 | 0 | 0 | 0 | 0 | 0 | 338 | 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 | 73.8 | | | 68.9 | | | 0.7 | | | 25.0 | |
| Effective Green, g (s) | 0.9 | 73.8 | | | 68.9 | | | 0.7 | | | 25.0 | |
| 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 | | | 1053 | | | 9 | | | 390 | |
| 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 | 56.0 | 11.1 | | | 18.3 | | | 56.1 | | | 42.6 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 5.6 | 0.7 | | | 7.2 | | | 0.0 | | | 17.3 | |
| Delay (s) | 61.6 | 11.9 | | | 25.5 | | | 56.1 | | | 59.9 | |
| Level of Service | E | B | | | C | | | E | | | E | |
| Approach Delay (s) | | 12.2 | | | 25.5 | | | 56.1 | | | 59.9 | |
| 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) | 113.5 | Sum of lost time (s) | 18.0 |
| Intersection Capacity Utilization | 89.4% | 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 | 1059 | 3 | 3 | 912 | 1 | 2 | 0 | 14 | 1 | 1 | 1 |
| Future Volume (Veh/h) | 1 | 1059 | 3 | 3 | 912 | 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 | 1059 | 3 | 3 | 912 | 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 | 913 | | | 1062 | | | 1982 | 1982 | 1060 | 1995 | 1982 | 912 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 913 | | | 929 | | | 2129 | 2127 | 927 | 2145 | 2129 | 912 |
| 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) | 755 | | | 571 | | | 28 | 39 | 252 | 26 | 39 | 335 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 1063 | 916 | 16 | 3 |
| Volume Left | 1 | 3 | 2 | 1 |
| Volume Right | 3 | 1 | 14 | 1 |
| cSH | 755 | 571 | 125 | 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 | 38.0 | 92.0 |
| Lane LOS | A | A | E | F |
| Approach Delay (s) | 0.0 | 0.2 | 38.0 | 92.0 |
| Approach LOS | | | E | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.5 | | |
| Intersection Capacity Utilization | 66.6% | 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) | 66 | 580 | 483 | 735 | 596 | 424 | 538 | 587 | 163 | 623 |
| v/c Ratio | 0.58 | 0.87 | 0.60 | 0.98 | 0.48 | 0.98 | 0.86 | 0.60 | 0.92 | 0.91 |
| Control Delay | 75.4 | 62.0 | 21.6 | 77.0 | 31.4 | 84.4 | 52.6 | 16.8 | 103.3 | 66.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 75.4 | 62.0 | 21.6 | 77.0 | 31.4 | 84.4 | 52.6 | 16.8 | 103.3 | 66.5 |
| Queue Length 50th (ft) | 52 | 235 | 219 | ~307 | 187 | ~340 | 399 | 253 | 131 | 255 |
| Queue Length 95th (ft) | 100 | 303 | 331 | #442 | 251 | #559 | #600 | 373 | #265 | #361 |
| Internal Link Dist (ft) | | 686 | | | 809 | | 447 | | | 409 |
| Turn Bay Length (ft) | 170 | | 330 | 330 | | 300 | | 300 | 250 | |
| Base Capacity (vph) | 149 | 741 | 810 | 747 | 1235 | 433 | 638 | 981 | 182 | 714 |
| 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 | 0.78 | 0.60 | 0.98 | 0.48 | 0.98 | 0.84 | 0.60 | 0.90 | 0.87 |

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) | 66 | 580 | 483 | 735 | 472 | 124 | 424 | 538 | 587 | 163 | 573 | 50 |
| Future Volume (vph) | 66 | 580 | 483 | 735 | 472 | 124 | 424 | 538 | 587 | 163 | 573 | 50 |
| 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) | 1787 | 3574 | 1583 | 3467 | 3429 | | 1743 | 1835 | 1591 | 1823 | 3564 | |
| 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 | 3429 | | 1743 | 1835 | 1591 | 1823 | 3564 | |
| 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) | 66 | 580 | 483 | 735 | 472 | 124 | 424 | 538 | 587 | 163 | 573 | 50 |
| RTOR Reduction (vph) | 0 | 0 | 51 | 0 | 18 | 0 | 0 | 0 | 26 | 0 | 5 | 0 |
| Lane Group Flow (vph) | 66 | 580 | 432 | 735 | 578 | 0 | 424 | 538 | 562 | 163 | 618 | 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) | 6.7 | 23.6 | 53.6 | 26.0 | 42.9 | | 30.0 | 41.2 | 67.2 | 11.8 | 23.0 | |
| Effective Green, g (s) | 6.7 | 23.6 | 53.6 | 26.0 | 42.9 | | 30.0 | 41.2 | 67.2 | 11.8 | 23.0 | |
| Actuated g/C Ratio | 0.06 | 0.19 | 0.44 | 0.21 | 0.35 | | 0.25 | 0.34 | 0.55 | 0.10 | 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) | 98 | 693 | 697 | 741 | 1209 | | 430 | 621 | 879 | 176 | 674 | |
| v/s Ratio Prot | 0.04 | c0.16 | 0.15 | c0.21 | 0.17 | | c0.24 | c0.29 | 0.14 | 0.09 | 0.17 | |
| v/s Ratio Perm | | | 0.12 | | | | | | 0.22 | | | |
| v/c Ratio | 0.67 | 0.84 | 0.62 | 0.99 | 0.48 | | 0.99 | 0.87 | 0.64 | 0.93 | 0.92 | |
| Uniform Delay, d1 | 56.4 | 47.1 | 26.1 | 47.7 | 30.6 | | 45.6 | 37.6 | 18.8 | 54.5 | 48.4 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 13.4 | 8.3 | 1.2 | 30.9 | 0.1 | | 39.3 | 11.8 | 1.1 | 46.0 | 17.0 | |
| Delay (s) | 69.8 | 55.5 | 27.3 | 78.6 | 30.7 | | 84.9 | 49.4 | 19.9 | 100.5 | 65.4 | |
| Level of Service | E | E | C | E | C | | F | D | B | F | E | |
| Approach Delay (s) | | 44.3 | | | 57.1 | | | 47.9 | | | 72.7 | |
| Approach LOS | | D | | | E | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 53.7 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 121.6 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 93.8% | 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

01/18/2017

| Lane Group | EBL | EBT | WBT | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 5 | 737 | 996 | 1 | 438 |
| v/c Ratio | 0.06 | 0.61 | 0.87 | 0.00 | 0.94 |
| Control Delay | 54.2 | 13.1 | 25.7 | 0.0 | 63.5 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.2 | 13.1 | 25.7 | 0.0 | 63.5 |
| Queue Length 50th (ft) | 3 | 246 | 444 | 0 | 239 |
| Queue Length 95th (ft) | 18 | 437 | #1042 | 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 | 678 | 0 | 1 | 555 | 361 | 0 | 0 | 1 | 395 | 0 | 8 |
| Future Volume (vph) | 5 | 678 | 0 | 1 | 555 | 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 | 737 | 0 | 1 | 603 | 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 | 737 | 0 | 0 | 983 | 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 | 1.0 | | | 12.6 | | | 0.0 | | | 41.0 | |
| Delay (s) | 63.5 | 12.4 | | | 32.1 | | | 56.8 | | | 86.0 | |
| Level of Service | E | B | | | C | | | E | | | F | |
| Approach Delay (s) | | 12.7 | | | 32.1 | | | 56.8 | | | 86.0 | |
| Approach LOS | | B | | | C | | | E | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 36.4 | 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 | 89.4% | 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 | 1059 | 3 | 3 | 912 | 1 | 2 | 0 | 14 | 1 | 1 | 1 |
| Future Volume (Veh/h) | 1 | 1059 | 3 | 3 | 912 | 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 | 1151 | 3 | 3 | 991 | 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 | 992 | | | 1154 | | | 2154 | 2152 | 1152 | 2167 | 2154 | 992 |
| vC1, stage 1 conf vol | | | | | | | | | | | | |
| vC2, stage 2 conf vol | | | | | | | | | | | | |
| vCu, unblocked vol | 992 | | | 1026 | | | 2395 | 2393 | 1024 | 2413 | 2395 | 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) | 705 | | | 500 | | | 17 | 25 | 211 | 16 | 25 | 301 |

| Direction, Lane # | EB 1 | WB 1 | NB 1 | SB 1 |
|---|---|---|---|---|
| Volume Total | 1155 | 995 | 17 | 3 |
| Volume Left | 1 | 3 | 2 | 1 |
| Volume Right | 3 | 1 | 15 | 1 |
| cSH | 705 | 500 | 89 | 28 |
| Volume to Capacity | 0.00 | 0.01 | 0.19 | 0.11 |
| Queue Length 95th (ft) | 0 | 0 | 16 | 8 |
| Control Delay (s) | 0.1 | 0.2 | 54.7 | 149.7 |
| Lane LOS | A | A | F | F |
| Approach Delay (s) | 0.1 | 0.2 | 54.7 | 149.7 |
| Approach LOS | | | F | F |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 0.8 | | |
| Intersection Capacity Utilization | 66.6% | 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) | 69 | 604 | 503 | 766 | 621 | 442 | 560 | 611 | 170 | 649 |
| v/c Ratio | 0.59 | 0.89 | 0.62 | 1.04 | 0.50 | 1.03 | 0.90 | 0.63 | 0.92 | 0.94 |
| Control Delay | 76.3 | 63.8 | 22.5 | 89.3 | 32.0 | 96.8 | 58.5 | 18.1 | 103.7 | 70.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 76.3 | 63.8 | 22.5 | 89.3 | 32.0 | 96.8 | 58.5 | 18.1 | 103.7 | 70.7 |
| Queue Length 50th (ft) | 55 | 247 | 235 | ~345 | 198 | ~385 | 429 | 278 | 137 | 270 |
| Queue Length 95th (ft) | 104 | #333 | 353 | #469 | 264 | #591 | #645 | 403 | #274 | #385 |
| Internal Link Dist (ft) | | 686 | | | 809 | | 447 | | | 409 |
| Turn Bay Length (ft) | 170 | | 330 | 330 | | 300 | | 300 | 250 | |
| Base Capacity (vph) | 151 | 734 | 811 | 740 | 1236 | 429 | 624 | 972 | 188 | 707 |
| 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 | 0.82 | 0.62 | 1.04 | 0.50 | 1.03 | 0.90 | 0.63 | 0.90 | 0.92 |

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) | 66 | 580 | 483 | 735 | 472 | 124 | 424 | 538 | 587 | 163 | 573 | 50 |
| Future Volume (vph) | 66 | 580 | 483 | 735 | 472 | 124 | 424 | 538 | 587 | 163 | 573 | 50 |
| 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) | 1787 | 3574 | 1583 | 3467 | 3429 | | 1743 | 1835 | 1591 | 1823 | 3564 | |
| 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 | 3429 | | 1743 | 1835 | 1591 | 1823 | 3564 | |
| Peak-hour factor, PHF | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Adj. Flow (vph) | 69 | 604 | 503 | 766 | 492 | 129 | 442 | 560 | 611 | 170 | 597 | 52 |
| RTOR Reduction (vph) | 0 | 0 | 51 | 0 | 18 | 0 | 0 | 0 | 26 | 0 | 5 | 0 |
| Lane Group Flow (vph) | 69 | 604 | 452 | 766 | 603 | 0 | 442 | 560 | 585 | 170 | 644 | 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) | 6.9 | 24.2 | 54.2 | 26.0 | 43.3 | | 30.0 | 41.1 | 67.1 | 12.3 | 23.4 | |
| Effective Green, g (s) | 6.9 | 24.2 | 54.2 | 26.0 | 43.3 | | 30.0 | 41.1 | 67.1 | 12.3 | 23.4 | |
| Actuated g/C Ratio | 0.06 | 0.20 | 0.44 | 0.21 | 0.35 | | 0.24 | 0.34 | 0.55 | 0.10 | 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) | 100 | 705 | 699 | 735 | 1211 | | 426 | 615 | 870 | 182 | 680 | |
| v/s Ratio Prot | 0.04 | c0.17 | 0.16 | c0.22 | 0.18 | | c0.25 | c0.31 | 0.14 | 0.09 | 0.18 | |
| v/s Ratio Perm | | | 0.13 | | | | | | 0.23 | | | |
| v/c Ratio | 0.69 | 0.86 | 0.65 | 1.04 | 0.50 | | 1.04 | 0.91 | 0.67 | 0.93 | 0.95 | |
| Uniform Delay, d1 | 56.8 | 47.5 | 26.7 | 48.3 | 31.1 | | 46.3 | 39.0 | 19.9 | 54.7 | 49.0 | |
| 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 | 14.6 | 9.7 | 1.5 | 44.7 | 0.1 | | 53.7 | 17.4 | 1.6 | 47.2 | 22.0 | |
| Delay (s) | 71.4 | 57.2 | 28.3 | 93.0 | 31.2 | | 100.0 | 56.4 | 21.5 | 102.0 | 71.0 | |
| Level of Service | E | E | C | F | C | | F | E | C | F | E | |
| Approach Delay (s) | | 45.7 | | | 65.3 | | | 55.1 | | | 77.4 | |
| Approach LOS | | D | | | E | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 59.4 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.99 | | |
| Actuated Cycle Length (s) | 122.6 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 93.8% | 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

01/19/2017

| Lane Group | EBL | EBT | WBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 4 | 608 | 969 | 328 |
| v/c Ratio | 0.05 | 0.50 | 0.82 | 0.82 |
| Control Delay | 51.8 | 8.7 | 19.6 | 47.9 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.8 | 8.7 | 19.6 | 47.9 |
| Queue Length 50th (ft) | 3 | 165 | 380 | 159 |
| Queue Length 95th (ft) | 14 | 235 | #876 | #336 |
| Internal Link Dist (ft) | | 230 | 1105 | 390 |
| Turn Bay Length (ft) | 130 | | | |
| Base Capacity (vph) | 83 | 1338 | 1175 | 405 |
| 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 | 0.45 | 0.82 | 0.81 |

### 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 | 608 | 0 | 0 | 541 | 428 | 0 | 0 | 0 | 319 | 0 | 9 |
| Future Volume (vph) | 4 | 608 | 0 | 0 | 541 | 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 | 608 | 0 | 0 | 541 | 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 | 608 | 0 | 0 | 954 | 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 | 78.7 | | | 73.8 | | | | | | 21.1 | |
| Effective Green, g (s) | 0.9 | 78.7 | | | 73.8 | | | | | | 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 | 1235 | | | 1128 | | | | | | 324 | |
| v/s Ratio Prot | 0.00 | c0.35 | | | c0.57 | | | | | | c0.15 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | 0.29 | 0.49 | | | 0.85 | | | | | | 0.80 | |
| Uniform Delay, d1 | 54.1 | 6.8 | | | 13.7 | | | | | | 42.4 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | | | | | 1.00 | |
| Incremental Delay, d2 | 4.1 | 0.4 | | | 6.1 | | | | | | 12.7 | |
| Delay (s) | 58.2 | 7.2 | | | 19.8 | | | | | | 55.0 | |
| Level of Service | E | A | | | B | | | | | | E | |
| Approach Delay (s) | | 7.5 | | | 19.8 | | | 0.0 | | | 55.0 | |
| Approach LOS | | A | | | B | | | A | | | E | |

| 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) | 109.8 | 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 | 910 | 0 | 5 | 954 | 35 | 0 | 0 | 3 | 122 | 0 | 22 |
| Future Volume (Veh/h) | 6 | 910 | 0 | 5 | 954 | 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 | 910 | 0 | 5 | 954 | 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 | 989 | | | 910 | | | 1909 | 1921 | 910 | 1889 | 1886 | 955 |
| vC1, stage 1 conf vol | | | | | | | 922 | 922 | | 964 | 964 | |
| vC2, stage 2 conf vol | | | | | | | 987 | 999 | | 925 | 922 | |
| vCu, unblocked vol | 989 | | | 809 | | | 1979 | 1993 | 809 | 1956 | 1952 | 955 |
| 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 | 43 | 100 | 93 |
| cM capacity (veh/h) | 707 | | | 705 | | | 202 | 228 | 288 | 213 | 233 | 316 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 6 | 910 | 5 | 954 | 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 | 707 | 1700 | 705 | 1700 | 1700 | 288 | 213 | 316 |
| Volume to Capacity | 0.01 | 0.54 | 0.01 | 0.56 | 0.02 | 0.01 | 0.57 | 0.07 |
| Queue Length 95th (ft) | 1 | 0 | 1 | 0 | 0 | 1 | 79 | 6 |
| Control Delay (s) | 10.1 | 0.0 | 10.1 | 0.0 | 0.0 | 17.6 | 42.5 | 17.2 |
| Lane LOS | B | | B | | | C | E | C |
| Approach Delay (s) | 0.1 | | 0.1 | | | 17.6 | 38.7 | |
| Approach LOS | | | | | | C | E | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.8 | | |
| Intersection Capacity Utilization | 70.3% | 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) | 48 | 580 | 447 | 453 | 616 | 425 | 495 | 639 | 103 | 566 |
| v/c Ratio | 0.46 | 0.84 | 0.56 | 0.87 | 0.56 | 0.92 | 0.72 | 0.68 | 0.72 | 0.84 |
| Control Delay | 69.2 | 55.7 | 16.8 | 65.8 | 34.7 | 67.1 | 37.1 | 18.3 | 80.8 | 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 | 69.2 | 55.7 | 16.8 | 65.8 | 34.7 | 67.1 | 37.1 | 18.3 | 80.8 | 57.1 |
| Queue Length 50th (ft) | 37 | 232 | 171 | 181 | 208 | 321 | 322 | 278 | 80 | 223 |
| Queue Length 95th (ft) | 79 | 300 | 263 | #275 | 276 | #521 | 464 | 434 | #163 | #311 |
| Internal Link Dist (ft) | | 686 | | | 809 | | 447 | | | 409 |
| Turn Bay Length (ft) | 170 | | 330 | 330 | | 300 | | 300 | 250 | |
| Base Capacity (vph) | 143 | 833 | 852 | 579 | 1161 | 527 | 780 | 966 | 171 | 765 |
| 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 | 0.34 | 0.70 | 0.52 | 0.78 | 0.53 | 0.81 | 0.63 | 0.66 | 0.60 | 0.74 |

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) | 48 | 580 | 447 | 453 | 502 | 114 | 425 | 495 | 639 | 103 | 512 | 54 |
| Future Volume (vph) | 48 | 580 | 447 | 453 | 502 | 114 | 425 | 495 | 639 | 103 | 512 | 54 |
| 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 | 0.99 | |
| 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 | 3406 | 1515 | 3367 | 3414 | | 1662 | 1782 | 1530 | 1770 | 3491 | |
| 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 | 3414 | | 1662 | 1782 | 1530 | 1770 | 3491 | |
| 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) | 48 | 580 | 447 | 453 | 502 | 114 | 425 | 495 | 639 | 103 | 512 | 54 |
| RTOR Reduction (vph) | 0 | 0 | 47 | 0 | 15 | 0 | 0 | 0 | 40 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 48 | 580 | 400 | 453 | 601 | 0 | 425 | 495 | 599 | 103 | 560 | 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) | 5.5 | 24.0 | 55.4 | 17.5 | 36.0 | | 31.4 | 43.8 | 61.3 | 9.1 | 21.5 | |
| Effective Green, g (s) | 5.5 | 24.0 | 55.4 | 17.5 | 36.0 | | 31.4 | 43.8 | 61.3 | 9.1 | 21.5 | |
| Actuated g/C Ratio | 0.05 | 0.21 | 0.49 | 0.15 | 0.32 | | 0.28 | 0.39 | 0.54 | 0.08 | 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) | 84 | 720 | 740 | 519 | 1083 | | 460 | 688 | 827 | 142 | 661 | |
| v/s Ratio Prot | 0.03 | c0.17 | 0.15 | c0.13 | 0.18 | | c0.26 | 0.28 | 0.11 | 0.06 | c0.16 | |
| v/s Ratio Perm | | | 0.11 | | | | | | 0.28 | | | |
| v/c Ratio | 0.57 | 0.81 | 0.54 | 0.87 | 0.55 | | 0.92 | 0.72 | 0.72 | 0.73 | 0.85 | |
| Uniform Delay, d1 | 52.8 | 42.5 | 20.2 | 46.9 | 32.1 | | 39.8 | 29.6 | 19.7 | 50.9 | 44.4 | |
| 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 | 5.7 | 6.2 | 0.4 | 14.5 | 0.4 | | 23.9 | 3.0 | 2.7 | 14.4 | 9.4 | |
| Delay (s) | 58.5 | 48.7 | 20.6 | 61.4 | 32.4 | | 63.8 | 32.6 | 22.4 | 65.3 | 53.8 | |
| Level of Service | E | D | C | E | C | | E | C | C | E | D | |
| Approach Delay (s) | | 37.4 | | | 44.7 | | | 36.9 | | | 55.5 | |
| Approach LOS | | D | | | D | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 41.8 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.87 | | |
| Actuated Cycle Length (s) | 113.4 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 84.4% | 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

01/19/2017

| Lane Group | EBL | EBT | WBT | SBT |
|---|---|---|---|---|
| Lane Group Flow (vph) | 4 | 676 | 1077 | 364 |
| v/c Ratio | 0.05 | 0.56 | 0.92 | 0.89 |
| Control Delay | 51.8 | 9.7 | 28.4 | 57.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 51.8 | 9.7 | 28.4 | 57.4 |
| Queue Length 50th (ft) | 3 | 197 | 506 | 188 |
| Queue Length 95th (ft) | 14 | 280 | #1051 | #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 | 608 | 0 | 0 | 541 | 428 | 0 | 0 | 0 | 319 | 0 | 9 |
| Future Volume (vph) | 4 | 608 | 0 | 0 | 541 | 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 | 676 | 0 | 0 | 601 | 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 | 676 | 0 | 0 | 1062 | 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 | c0.39 | | | c0.63 | | | | | | c0.18 | |
| v/s Ratio Perm | | | | | | | | | | | | |
| v/c Ratio | 0.29 | 0.55 | | | 0.95 | | | | | | 0.90 | |
| Uniform Delay, d1 | 54.2 | 7.4 | | | 16.4 | | | | | | 43.2 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | | | | | 1.00 | |
| Incremental Delay, d2 | 4.1 | 0.6 | | | 15.6 | | | | | | 25.0 | |
| Delay (s) | 58.3 | 8.0 | | | 32.0 | | | | | | 68.2 | |
| Level of Service | E | A | | | C | | | | | | E | |
| Approach Delay (s) | | 8.3 | | | 32.0 | | | 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 | 910 | 0 | 5 | 954 | 35 | 0 | 0 | 3 | 122 | 0 | 22 |
| Future Volume (Veh/h) | 6 | 910 | 0 | 5 | 954 | 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 | 1011 | 0 | 6 | 1060 | 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 | | | | 0.81 | | | 0.81 | 0.81 | 0.81 | 0.81 | 0.81 | |
| vC, conflicting volume | 1099 | | | 1011 | | | 2122 | 2136 | 1011 | 2100 | 2097 | 1061 |
| vC1, stage 1 conf vol | | | | | | | 1025 | 1025 | | 1072 | 1072 | |
| vC2, stage 2 conf vol | | | | | | | 1097 | 1111 | | 1028 | 1025 | |
| vCu, unblocked vol | 1099 | | | 896 | | | 2268 | 2286 | 896 | 2241 | 2237 | 1061 |
| 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) | 643 | | | 620 | | | 167 | 194 | 242 | 177 | 198 | 274 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 7 | 1011 | 6 | 1060 | 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 | 643 | 1700 | 620 | 1700 | 1700 | 242 | 177 | 274 |
| Volume to Capacity | 0.01 | 0.59 | 0.01 | 0.62 | 0.02 | 0.01 | 0.77 | 0.09 |
| Queue Length 95th (ft) | 1 | 0 | 1 | 0 | 0 | 1 | 125 | 7 |
| Control Delay (s) | 10.7 | 0.0 | 10.9 | 0.0 | 0.0 | 20.1 | 71.5 | 19.4 |
| Lane LOS | B | | B | | | C | F | C |
| Approach Delay (s) | 0.1 | | 0.1 | | | 20.1 | 63.7 | |
| Approach LOS | | | | | | C | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 4.5 | | |
| Intersection Capacity Utilization | 70.3% | 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) | 53 | 644 | 497 | 503 | 685 | 472 | 550 | 710 | 114 | 629 |
| v/c Ratio | 0.52 | 0.94 | 0.61 | 0.94 | 0.62 | 0.97 | 0.77 | 0.74 | 0.79 | 0.93 |
| Control Delay | 74.4 | 70.6 | 19.3 | 78.2 | 38.3 | 78.3 | 40.7 | 21.5 | 90.4 | 69.7 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 74.4 | 70.6 | 19.3 | 78.2 | 38.3 | 78.3 | 40.7 | 21.5 | 90.4 | 69.7 |
| Queue Length 50th (ft) | 42 | 269 | 209 | 208 | 242 | 376 | 382 | 357 | 90 | 260 |
| Queue Length 95th (ft) | 85 | #382 | 317 | #312 | 318 | #597 | 531 | 527 | #180 | #371 |
| Internal Link Dist (ft) | | 686 | | | 809 | | 447 | | | 409 |
| Turn Bay Length (ft) | 170 | | 330 | 330 | | 300 | | 300 | 250 | |
| Base Capacity (vph) | 134 | 705 | 817 | 547 | 1097 | 491 | 718 | 962 | 162 | 695 |
| 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 | 0.40 | 0.91 | 0.61 | 0.92 | 0.62 | 0.96 | 0.77 | 0.74 | 0.70 | 0.91 |

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) | 48 | 580 | 447 | 453 | 502 | 114 | 425 | 495 | 639 | 103 | 512 | 54 |
| Future Volume (vph) | 48 | 580 | 447 | 453 | 502 | 114 | 425 | 495 | 639 | 103 | 512 | 54 |
| 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 | 0.99 | |
| 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 | 3406 | 1515 | 3367 | 3414 | | 1662 | 1782 | 1530 | 1770 | 3491 | |
| 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 | 3414 | | 1662 | 1782 | 1530 | 1770 | 3491 | |
| 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) | 53 | 644 | 497 | 503 | 558 | 127 | 472 | 550 | 710 | 114 | 569 | 60 |
| RTOR Reduction (vph) | 0 | 0 | 46 | 0 | 15 | 0 | 0 | 0 | 33 | 0 | 6 | 0 |
| Lane Group Flow (vph) | 53 | 644 | 451 | 503 | 670 | 0 | 472 | 550 | 677 | 114 | 623 | 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) | 6.1 | 25.4 | 61.0 | 19.3 | 38.6 | | 35.6 | 49.0 | 68.3 | 9.9 | 23.3 | |
| Effective Green, g (s) | 6.1 | 25.4 | 61.0 | 19.3 | 38.6 | | 35.6 | 49.0 | 68.3 | 9.9 | 23.3 | |
| Actuated g/C Ratio | 0.05 | 0.21 | 0.50 | 0.16 | 0.31 | | 0.29 | 0.40 | 0.56 | 0.08 | 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) | 86 | 705 | 753 | 530 | 1074 | | 482 | 712 | 852 | 142 | 663 | |
| v/s Ratio Prot | 0.03 | c0.19 | 0.17 | c0.15 | 0.20 | | c0.28 | 0.31 | 0.13 | 0.06 | c0.18 | |
| v/s Ratio Perm | | | 0.12 | | | | | | 0.32 | | | |
| v/c Ratio | 0.62 | 0.91 | 0.60 | 0.95 | 0.62 | | 0.98 | 0.77 | 0.79 | 0.80 | 0.94 | |
| Uniform Delay, d1 | 57.1 | 47.5 | 22.0 | 51.2 | 35.8 | | 43.1 | 32.0 | 21.6 | 55.4 | 48.9 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 8.9 | 16.0 | 0.9 | 26.3 | 0.8 | | 35.1 | 4.8 | 4.8 | 25.6 | 20.8 | |
| Delay (s) | 66.0 | 63.5 | 22.9 | 77.5 | 36.6 | | 78.2 | 36.7 | 26.4 | 81.0 | 69.7 | |
| Level of Service | E | E | C | E | D | | E | D | C | F | E | |
| Approach Delay (s) | | 46.7 | | | 53.9 | | | 43.8 | | | 71.5 | |
| Approach LOS | | D | | | D | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 51.2 | HCM 2000 Level of Service | D |
| HCM 2000 Volume to Capacity ratio | 0.95 | | |
| Actuated Cycle Length (s) | 122.6 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 84.4% | 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

01/19/2017

| Lane Group | EBL | EBT | WBT | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 5 | 693 | 930 | 1 | 410 |
| v/c Ratio | 0.06 | 0.58 | 0.82 | 0.00 | 0.86 |
| Control Delay | 54.2 | 12.9 | 22.8 | 0.0 | 50.4 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.2 | 12.9 | 22.8 | 0.0 | 50.4 |
| Queue Length 50th (ft) | 3 | 229 | 390 | 0 | 213 |
| Queue Length 95th (ft) | 18 | 402 | #940 | 0 | #463 |
| Internal Link Dist (ft) | | 230 | 1105 | 30 | 390 |
| Turn Bay Length (ft) | 130 | | | | |
| Base Capacity (vph) | 82 | 1317 | 1132 | 431 | 479 |
| 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 | 0.53 | 0.82 | 0.00 | 0.86 |

### 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 | 693 | 0 | 1 | 563 | 366 | 0 | 0 | 1 | 402 | 0 | 8 |
| Future Volume (vph) | 5 | 693 | 0 | 1 | 563 | 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 | 693 | 0 | 1 | 563 | 366 | 0 | 0 | 1 | 402 | 0 | 8 |
| RTOR Reduction (vph) | 0 | 0 | 0 | 0 | 14 | 0 | 0 | 1 | 0 | 0 | 65 | 0 |
| Lane Group Flow (vph) | 5 | 693 | 0 | 0 | 916 | 0 | 0 | 0 | 0 | 0 | 345 | 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 | 74.9 | | | 70.0 | | | 0.7 | | | 25.4 | |
| Effective Green, g (s) | 0.9 | 74.9 | | | 70.0 | | | 0.7 | | | 25.4 | |
| 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) | 13 | 1177 | | | 1056 | | | 9 | | | 391 | |
| v/s Ratio Prot | 0.00 | c0.38 | | | | | | c0.00 | | | c0.19 | |
| v/s Ratio Perm | | | | | c0.53 | | | | | | | |
| v/c Ratio | 0.38 | 0.59 | | | 0.87 | | | 0.00 | | | 0.88 | |
| Uniform Delay, d1 | 56.8 | 11.3 | | | 18.7 | | | 56.8 | | | 43.3 | |
| Progression Factor | 1.00 | 1.00 | | | 1.00 | | | 1.00 | | | 1.00 | |
| Incremental Delay, d2 | 6.8 | 0.8 | | | 7.9 | | | 0.0 | | | 19.6 | |
| Delay (s) | 63.5 | 12.2 | | | 26.5 | | | 56.8 | | | 62.9 | |
| Level of Service | E | B | | | C | | | E | | | E | |
| Approach Delay (s) | | 12.5 | | | 26.5 | | | 56.8 | | | 62.9 | |
| Approach LOS | | B | | | C | | | E | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 29.1 | 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

01/19/2017

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (veh/h) | 23 | 1059 | 3 | 3 | 912 | 129 | 2 | 0 | 14 | 72 | 1 | 14 |
| Future Volume (Veh/h) | 23 | 1059 | 3 | 3 | 912 | 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 | 1059 | 3 | 3 | 912 | 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 | | | | 0.76 | | | 0.76 | 0.76 | 0.76 | 0.76 | 0.76 | |
| vC, conflicting volume | 1041 | | | 1062 | | | 2039 | 2154 | 1060 | 2037 | 2026 | 912 |
| vC1, stage 1 conf vol | | | | | | | 1106 | 1106 | | 918 | 918 | |
| vC2, stage 2 conf vol | | | | | | | 932 | 1047 | | 1119 | 1108 | |
| vCu, unblocked vol | 1041 | | | 927 | | | 2205 | 2355 | 925 | 2202 | 2188 | 912 |
| 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) | 676 | | | 570 | | | 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 | 1062 | 3 | 912 | 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 | 676 | 1700 | 570 | 1700 | 1700 | 237 | 166 | 319 |
| Volume to Capacity | 0.03 | 0.62 | 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 | 73.2% | 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) | 74 | 635 | 491 | 735 | 694 | 439 | 538 | 587 | 163 | 638 |
| v/c Ratio | 0.61 | 0.93 | 0.64 | 1.00 | 0.57 | 1.01 | 0.85 | 0.60 | 0.93 | 0.93 |
| Control Delay | 75.8 | 69.3 | 23.1 | 82.0 | 34.5 | 91.1 | 52.0 | 16.9 | 106.8 | 70.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 75.8 | 69.3 | 23.1 | 82.0 | 34.5 | 91.1 | 52.0 | 16.9 | 106.8 | 70.0 |
| Queue Length 50th (ft) | 59 | 264 | 226 | ~311 | 234 | ~372 | 399 | 252 | 132 | 263 |
| Queue Length 95th (ft) | 108 | #370 | 339 | #442 | 310 | #579 | #592 | 367 | #265 | #374 |
| Internal Link Dist (ft) | | 686 | | | 809 | | 447 | | | 409 |
| Turn Bay Length (ft) | 170 | | 330 | 330 | | 300 | | 300 | 250 | |
| Base Capacity (vph) | 169 | 708 | 766 | 734 | 1222 | 436 | 637 | 978 | 179 | 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 | 0.44 | 0.90 | 0.64 | 1.00 | 0.57 | 1.01 | 0.84 | 0.60 | 0.91 | 0.91 |

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) | 74 | 635 | 491 | 735 | 570 | 124 | 439 | 538 | 587 | 163 | 573 | 65 |
| Future Volume (vph) | 74 | 635 | 491 | 735 | 570 | 124 | 439 | 538 | 587 | 163 | 573 | 65 |
| 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 | 3444 | | 1743 | 1835 | 1591 | 1823 | 3551 | |
| 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 | 3444 | | 1743 | 1835 | 1591 | 1823 | 3551 | |
| 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) | 74 | 635 | 491 | 735 | 570 | 124 | 439 | 538 | 587 | 163 | 573 | 65 |
| RTOR Reduction (vph) | 0 | 0 | 51 | 0 | 14 | 0 | 0 | 0 | 26 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 74 | 635 | 440 | 735 | 680 | 0 | 439 | 538 | 561 | 163 | 631 | 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) | 7.4 | 24.4 | 55.1 | 26.0 | 43.0 | | 30.7 | 42.2 | 68.2 | 11.9 | 23.4 | |
| Effective Green, g (s) | 7.4 | 24.4 | 55.1 | 26.0 | 43.0 | | 30.7 | 42.2 | 68.2 | 11.9 | 23.4 | |
| Actuated g/C Ratio | 0.06 | 0.20 | 0.45 | 0.21 | 0.35 | | 0.25 | 0.34 | 0.55 | 0.10 | 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) | 107 | 706 | 702 | 729 | 1199 | | 433 | 627 | 878 | 175 | 672 | |
| v/s Ratio Prot | 0.04 | c0.18 | 0.16 | c0.21 | 0.20 | | c0.25 | c0.29 | 0.13 | 0.09 | 0.18 | |
| v/s Ratio Perm | | | 0.12 | | | | | | 0.22 | | | |
| v/c Ratio | 0.69 | 0.90 | 0.63 | 1.01 | 0.57 | | 1.01 | 0.86 | 0.64 | 0.93 | 0.94 | |
| Uniform Delay, d1 | 56.9 | 48.4 | 26.3 | 48.8 | 32.7 | | 46.4 | 37.9 | 19.1 | 55.4 | 49.3 | |
| Progression Factor | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | |
| Incremental Delay, d2 | 14.4 | 14.0 | 1.3 | 35.4 | 0.4 | | 46.8 | 10.8 | 1.1 | 47.9 | 20.5 | |
| Delay (s) | 71.4 | 62.3 | 27.6 | 84.1 | 33.1 | | 93.2 | 48.7 | 20.3 | 103.3 | 69.9 | |
| Level of Service | E | E | C | F | C | | F | D | C | F | E | |
| Approach Delay (s) | | 48.7 | | | 59.3 | | | 50.5 | | | 76.7 | |
| Approach LOS | | D | | | E | | | D | | | E | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 56.8 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 0.97 | | |
| Actuated Cycle Length (s) | 123.5 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 96.6% | 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

01/19/2017

| Lane Group | EBL | EBT | WBT | NBT | SBT |
|---|---|---|---|---|---|
| Lane Group Flow (vph) | 5 | 753 | 1011 | 1 | 446 |
| v/c Ratio | 0.06 | 0.62 | 0.88 | 0.00 | 0.96 |
| Control Delay | 54.2 | 13.4 | 26.9 | 0.0 | 67.0 |
| Queue Delay | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Total Delay | 54.2 | 13.4 | 26.9 | 0.0 | 67.0 |
| Queue Length 50th (ft) | 3 | 256 | 460 | 0 | 246 |
| Queue Length 95th (ft) | 18 | 452 | #1069 | 0 | #539 |
| Internal Link Dist (ft) | | 230 | 1105 | 30 | 390 |
| Turn Bay Length (ft) | 130 | | | | |
| Base Capacity (vph) | 82 | 1330 | 1145 | 412 | 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 | 693 | 0 | 1 | 563 | 366 | 0 | 0 | 1 | 402 | 0 | 8 |
| Future Volume (vph) | 5 | 693 | 0 | 1 | 563 | 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 | 753 | 0 | 1 | 612 | 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 | 753 | 0 | 0 | 998 | 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 | | | | | c0.57 | | | | | | | |
| 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 | | | 14.5 | | | 0.0 | | | 46.9 | |
| Delay (s) | 63.5 | 12.7 | | | 34.5 | | | 56.8 | | | 92.1 | |
| Level of Service | E | B | | | C | | | E | | | F | |
| Approach Delay (s) | | 13.0 | | | 34.5 | | | 56.8 | | | 92.1 | |
| Approach LOS | | B | | | C | | | E | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 38.7 | 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 | 1059 | 3 | 3 | 912 | 129 | 2 | 0 | 14 | 72 | 1 | 14 |
| Future Volume (Veh/h) | 23 | 1059 | 3 | 3 | 912 | 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 | 1151 | 3 | 3 | 991 | 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 | 1131 | | | 1154 | | | 2215 | 2340 | 1152 | 2213 | 2201 | 991 |
| vC1, stage 1 conf vol | | | | | | | 1202 | 1202 | | 997 | 997 | |
| vC2, stage 2 conf vol | | | | | | | 1012 | 1137 | | 1216 | 1204 | |
| vCu, unblocked vol | 1131 | | | 1024 | | | 2484 | 2655 | 1022 | 2481 | 2465 | 991 |
| 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 | 211 | 137 | 165 | 302 |

| Direction, Lane # | EB 1 | EB 2 | WB 1 | WB 2 | WB 3 | NB 1 | SB 1 | SB 2 |
|---|---|---|---|---|---|---|---|---|
| Volume Total | 25 | 1154 | 3 | 991 | 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 | 287 |
| 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 | 61.5 | 18.3 |
| Lane LOS | B | | B | | | C | F | C |
| Approach Delay (s) | 0.2 | | 0.0 | | | 24.8 | 54.1 | |
| Approach LOS | | | | | | C | F | |

| Intersection Summary | | | |
|---|---|---|---|
| Average Delay | 2.4 | | |
| Intersection Capacity Utilization | 73.2% | 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) | 77 | 661 | 511 | 766 | 723 | 457 | 560 | 611 | 170 | 665 |
| v/c Ratio | 0.62 | 0.94 | 0.67 | 1.05 | 0.59 | 1.07 | 0.90 | 0.63 | 0.93 | 0.96 |
| Control Delay | 76.6 | 71.7 | 24.4 | 94.1 | 35.0 | 107.9 | 58.3 | 18.3 | 106.0 | 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 | 76.6 | 71.7 | 24.4 | 94.1 | 35.0 | 107.9 | 58.3 | 18.3 | 106.0 | 74.2 |
| Queue Length 50th (ft) | 61 | 276 | 242 | ~345 | 246 | ~407 | 427 | 276 | 137 | 276 |
| Queue Length 95th (ft) | 112 | #389 | 361 | #469 | 324 | #614 | #641 | 400 | #274 | #400 |
| Internal Link Dist (ft) | | 686 | | | 809 | | 447 | | | 409 |
| Turn Bay Length (ft) | 170 | | 330 | 330 | | 300 | | 300 | 250 | |
| Base Capacity (vph) | 171 | 714 | 765 | 730 | 1227 | 427 | 621 | 968 | 186 | 697 |
| 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 | 0.45 | 0.93 | 0.67 | 1.05 | 0.59 | 1.07 | 0.90 | 0.63 | 0.91 | 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.

| Movement | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBT | NBR | SBL | SBT | SBR |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Lane Configurations | | | | | | | | | | | | |
| Traffic Volume (vph) | 74 | 635 | 491 | 735 | 570 | 124 | 439 | 538 | 587 | 163 | 573 | 65 |
| Future Volume (vph) | 74 | 635 | 491 | 735 | 570 | 124 | 439 | 538 | 587 | 163 | 573 | 65 |
| 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 | 3444 | | 1743 | 1835 | 1591 | 1823 | 3551 | |
| 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 | 3444 | | 1743 | 1835 | 1591 | 1823 | 3551 | |
| 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) | 77 | 661 | 511 | 766 | 594 | 129 | 457 | 560 | 611 | 170 | 597 | 68 |
| RTOR Reduction (vph) | 0 | 0 | 51 | 0 | 14 | 0 | 0 | 0 | 26 | 0 | 7 | 0 |
| Lane Group Flow (vph) | 77 | 661 | 460 | 766 | 709 | 0 | 457 | 560 | 585 | 170 | 658 | 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) | 7.6 | 25.1 | 55.4 | 26.0 | 43.5 | | 30.3 | 41.8 | 67.8 | 12.4 | 23.9 | |
| Effective Green, g (s) | 7.6 | 25.1 | 55.4 | 26.0 | 43.5 | | 30.3 | 41.8 | 67.8 | 12.4 | 23.9 | |
| Actuated g/C Ratio | 0.06 | 0.20 | 0.45 | 0.21 | 0.35 | | 0.24 | 0.34 | 0.55 | 0.10 | 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) | 109 | 721 | 701 | 725 | 1205 | | 424 | 617 | 867 | 181 | 682 | |
| v/s Ratio Prot | 0.04 | c0.18 | 0.16 | c0.22 | 0.21 | | c0.26 | c0.31 | 0.14 | 0.09 | 0.19 | |
| v/s Ratio Perm | | | 0.13 | | | | | | 0.23 | | | |
| v/c Ratio | 0.71 | 0.92 | 0.66 | 1.06 | 0.59 | | 1.08 | 0.91 | 0.67 | 0.94 | 0.96 | |
| Uniform Delay, d1 | 57.3 | 48.6 | 27.0 | 49.1 | 33.1 | | 47.0 | 39.4 | 20.3 | 55.6 | 49.8 | |
| 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 | 15.6 | 16.1 | 1.7 | 49.4 | 0.5 | | 66.2 | 16.8 | 1.6 | 48.5 | 25.6 | |
| Delay (s) | 72.9 | 64.7 | 28.7 | 98.5 | 33.5 | | 113.2 | 56.2 | 22.0 | 104.0 | 75.3 | |
| Level of Service | E | E | C | F | C | | F | E | C | F | E | |
| Approach Delay (s) | | 50.5 | | | 67.0 | | | 59.3 | | | 81.2 | |
| Approach LOS | | D | | | E | | | E | | | F | |

| Intersection Summary | | | |
|---|---|---|---|
| HCM 2000 Control Delay | 62.9 | HCM 2000 Level of Service | E |
| HCM 2000 Volume to Capacity ratio | 1.02 | | |
| Actuated Cycle Length (s) | 124.3 | Sum of lost time (s) | 19.0 |
| Intersection Capacity Utilization | 96.6% | 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 | | |