

**Appendix C-5: Proposed Refinements  
Rail Operations and Maintenance Facility  
(ROMF) Traffic Impact Analysis**

**Durham-Orange Light Rail Transit Project**





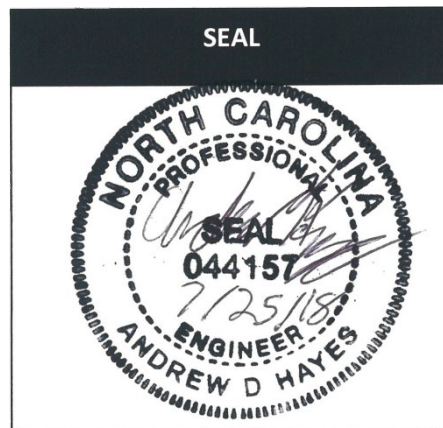
## ROMF Transportation Impact Analysis Version History

Version	Date	Description
0	July 25, 2018	TIA report to support permit application

Analysis by: Andrew Hayes, P.E., PTOE

Drafting/Graphics by: Andrew Hayes, P.E., PTOE

Reviewed by: Frank Ameyna, P.E., PTOE  
Nate Larson, P.E., PTOE  
Nick Liguori, P.E.



Sealed by: Andrew Hayes, P.E., PTOE

# ROMF Transportation Impact Analysis

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## List of Acronyms and Abbreviations

Acronym/Abbreviation	Definition
CES	Creekside Elementary School
DCHC MPO	Durham-Chapel Hill-Carrboro Metropolitan Planning Organization
D-O	Durham-Orange
D-O LRT	Durham-Orange Light Rail Transit
EB	Eastbound
NB	Northbound
NC	North Carolina
NCDOT	North Carolina Department of Transportation
ROMF	Rail Operations and Maintenance Facility
SB	Southbound
TIA	Traffic Impact Analysis
TIP	Transportation Improvement Program Project
WB	Westbound

### 1. Executive Summary

The Durham-Orange Light Rail Transit (D-O LRT) Project will construct a light rail system approximately 18 miles in length between southwest Chapel Hill in Orange County and east Durham in Durham County. As part of this project, a Rail Operations and Maintenance Facility (ROMF) will be constructed along the new railway, on a site between I-40 and Farrington Road.

This Traffic Impact Analysis (TIA) was performed to identify the impacts of the ROMF operation and to provide recommendations to mitigate the net effects of ROMF traffic. This analysis was conducted to NCDOT and City of Durham standards.

The ROMF's access will be on the east side of Farrington Road, directly opposite Ephesus Church Road, tying in as the fourth leg of the intersection. The access to the ROMF will be gated, but the gates for the ROMF are proposed to remain open during the peak hour/shift change times. The study area is encompassed by Ephesus Church Road (SR 1114) from George King Road to Farrington Road (SR 1109) and Farrington Road (SR 1109) from Ephesus Church Road (SR 1114) to Culp Hill Drive.

The proposed site is located within 0.20 miles of a school (Creekside Elementary School), located on Ephesus Church Road. The presence of this school, with a dismissal time of 2:15 pm, results in a high concentration of traffic between 2 and 4 pm. Also, GoTriangle's preliminary staffing plan indicates that up to 34 train operators could arrive or depart in the 2 to 4 pm period. Hence, the 2 to 4 pm period is expected to be more critical in terms of traffic operations than the 4 to 6 pm period. It was agreed in the TIA scoping process with City of Durham to analyze the 7 to 9 am period and the 2 to 4 pm period. More information can be found in Section 3.4 of this report.

A build-out analysis year of 2028 (build-out year +1) was utilized in this project to account for D-O LRT opening year conditions. The traffic generation potential of the site was determined based on detailed staffing information provided by GoTriangle, and was agreed upon in the scoping process with City of Durham. Based on expected employment numbers and shift schedules, a total of 53 trips are expected in the AM peak hour, and 38 trips are expected in the PM peak hour.

The analysis indicates overall acceptable capacity at the study intersections in the existing scenario. In 2028 with the build-out of the site, delay and queuing issues are anticipated at the intersection of Farrington Road and Ephesus Church Road / Proposed Site Access. Improvements are needed to accommodate this development and the addition of a fourth leg to the intersection of Ephesus Church Road and Farrington Road. A southbound left turn lane is recommended on Farrington Road in order to reduce queue lengths, reduce the potential for rear-end collisions, and to improve overall traffic flow on Farrington Road. To enhance capacity both for vehicles leaving the ROMF and the intersection overall, two (2) westbound exit lanes are recommended on the site access: a left turn lane and a through / right turn lane. Finally, the traffic signal design will need to be modified due to the addition of the fourth leg.

In summary, this Transportation Impact Analysis was performed in order to assess transportation impacts of the proposed ROMF site as well as background traffic. Recommendations have been given to accommodate these impacts. In our professional opinion, with the recommended improvements in place, the development of the proposed ROMF site is not expected to have a detrimental impact on traffic operations in the study area.

### 2. Introduction

The Durham-Orange Light Rail Transit (D-O LRT) Project will construct a light rail system approximately 18 miles in length between southwest Chapel Hill in Orange County and east Durham in Durham County. The main objectives of this Transportation Impact Analysis are to review the impacts of the D-O LRT Rail Transit Operations and Maintenance Facility (ROMF) and to identify improvements to mitigate these impacts. The ROMF's access will be on the east side of Farrington Road, directly opposite Ephesus Church Road, tying in as the fourth leg of this signalized intersection. The access to the ROMF will be gated for the ROMF, but the gates are proposed to remain open during the peak hour/shift change times. The study area is encompassed by Ephesus Church Road (SR 1114) from George King Road to Farrington Road (SR 1109) and Farrington Road (SR 1109) from Ephesus Church Road (SR 1114) to Culp Hill Drive.

This traffic analysis was conducted using Synchro and SimTraffic software. The following study intersections were analyzed in this report and are shown in the vicinity map in Figure 2-2.

1. Ephesus Church Road (SR 1114) at Farrington Road (SR 1109) (signalized)
2. Ephesus Church Road (SR 1114) at George King Road/Weston Downs Drive (unsignalized)
3. Farrington Road (SR 1109) at Niagra Drive (unsignalized)
4. Farrington Road (SR 1109) at Culp Hill Drive (unsignalized)

The following scenarios were evaluated for traffic capacity:

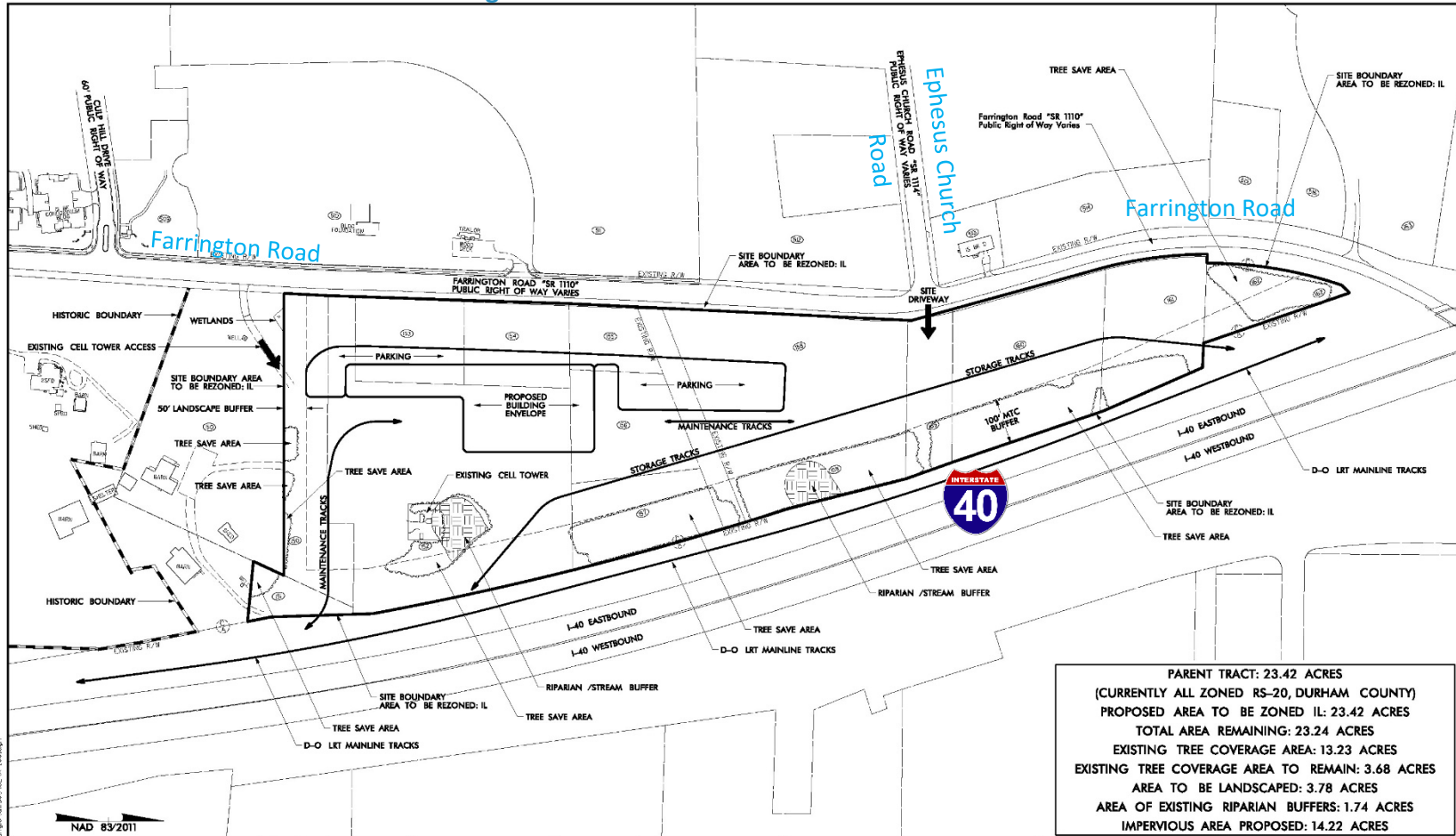
1. 2018 Existing Conditions
2. 2028 Future No Build Conditions
3. 2028 Future Build Conditions
4. 2028 Future Build with Improvements Conditions

Information regarding the project was provided by GoTriangle. This report presents existing conditions, study methodology, results, and recommendations.



# ROMF Transportation Impact Analysis

Figure 2-1: Current Site Plan for the ROMF



PARENT TRACT: 23.42 ACRES  
 (CURRENTLY ALL ZONED RS-20, DURHAM COUNTY)  
 PROPOSED AREA TO BE ZONED IL: 23.42 ACRES  
 TOTAL AREA REMAINING: 23.24 ACRES  
 EXISTING TREE COVERAGE AREA: 13.23 ACRES  
 EXISTING TREE COVERAGE AREA TO REMAIN: 3.68 ACRES  
 AREA TO BE LANDSCAPED: 3.78 ACRES  
 AREA OF EXISTING RIPARIAN BUFFERS: 1.74 ACRES  
 IMPERVIOUS AREA PROPOSED: 14.22 ACRES

PLOT NUMBER: A-1-DWG-04  
 USER: MUSEM  
 DATE: 2/16/2018  
 TIME: 12:02:24 PM  
 FILE: G:\DWG\PROJECTS\180718\180718\_04\180718\_04\_000.dwg

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DOCUMENT NOT CONSIDERED FINAL  
 UNLESS ALL SIGNATURES ARE COMPLETED

DESIGNED BY: PCP  
 DRAWN BY: DIB  
 CHECKED BY: PCP  
 DATE: 02-05-18

**ICALYX**  
 ENGINEERING & CONSULTANTS  
 4750 TRUCK ROAD  
 CARY, NC 27516  
 PHONE: 919.412.1112  
 CARY@icalyx.com  
 NC License # F-1333

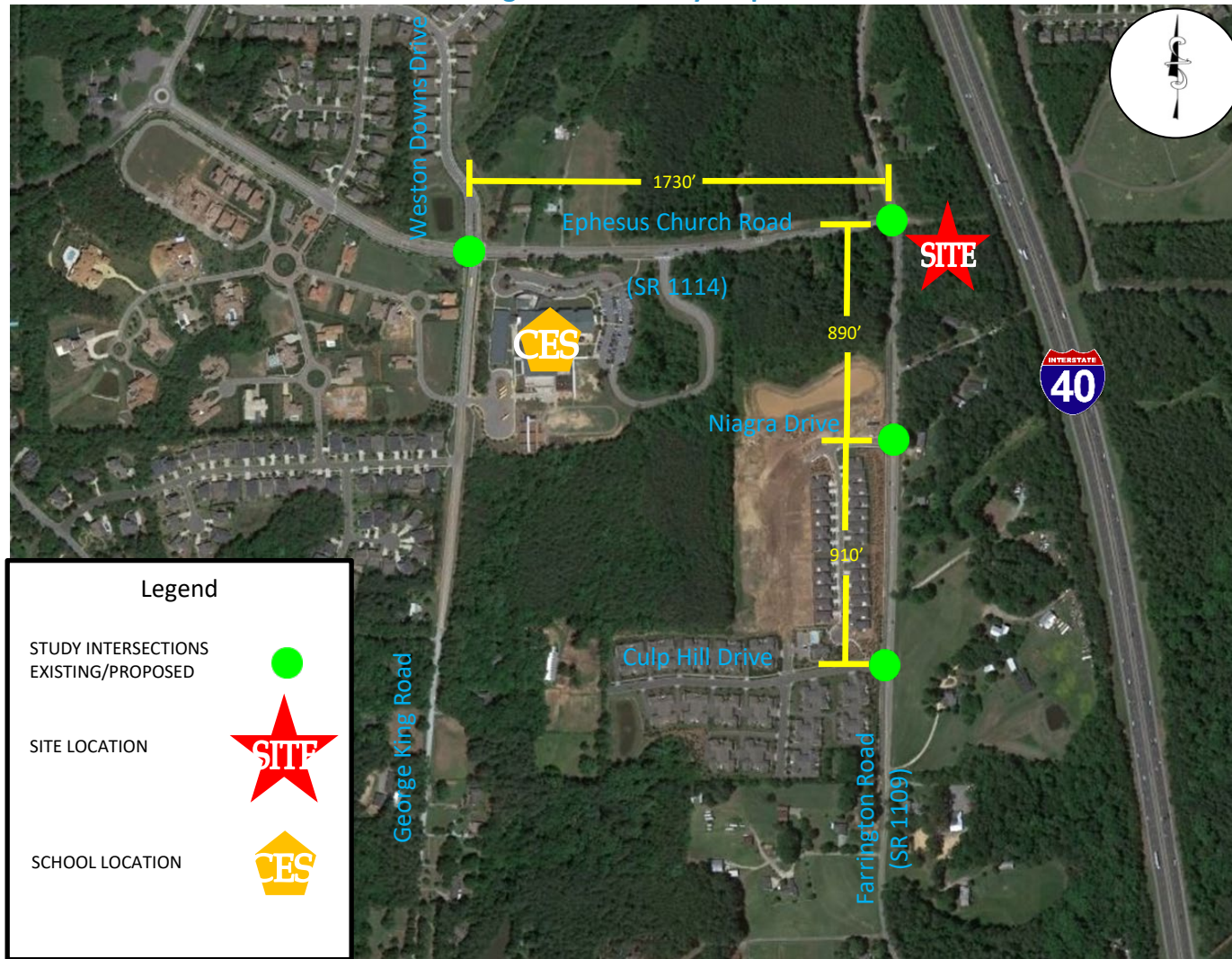
**HDR**  
**HDR Engineering, Inc.**  
 556 Fayetteville Street, Suite 900  
 Raleigh, NC 27601-3034

**DURHAM-ORANGE LIGHT RAIL TRANSIT PROJECT**  
**RAIL OPERATIONS & MAINTENANCE FACILITY**  
**PROPOSED CONDITIONS**

DRAWING NO: A-200      SHEET NO: SHEET 3 OF 3      REV:

## ROMF Transportation Impact Analysis

Figure 2-2: Vicinity Map



## 3. Existing Conditions

### 3.1 Inventory

A field investigation was conducted to determine the existing roadway conditions in the study area. Table 3-1 contains the results of this effort.

**Table 3-1: Street Inventory**

Facility Name	Route #	Typical Cross Section	Pavement Width	Speed Limit	Maintained By
Ephesus Church Road	SR 1114	3-lane undivided	Approx. 36'	35 MPH	NCDOT
Farrington Road	SR 1109	2 to 3-lane undivided	Varies from 24' to 36'	45 MPH	NCDOT
George King Road	N/A	2-lane undivided	Approx. 28'	25 MPH	City of Durham
Culp Hill Drive	N/A	2-lane undivided	Approx. 28'	25 MPH	City of Durham
Niagra Drive	N/A	2-lane undivided	Approx. 28'	25 MPH	City of Durham
Weston Downs Drive	N/A	2-lane undivided	Approx. 30'	25 MPH	City of Durham

### 3.2 Background Traffic Growth Rate

Historical traffic counts by NCDOT were reviewed to determine a background traffic growth rate for the study area. Between 2013 and 2015 (the latest available year), traffic counts indicated 1% annual growth trend. This 1% rate is consistent with projections made using the regional travel demand model (TRM v6) employed by the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) for its long-range planning. In the TIA scoping process with City of Durham, a 1% annual growth rate was agreed upon.

### 3.3 Existing Traffic Volumes

Existing traffic counts were collected at the four (4) study intersections on January 9, 2018. These traffic counts included vehicular, pedestrian, and bicycle volumes. All counts were taken on a typical Tuesday while school was in session. Note that counts were recorded in 5-minute intervals to more adequately account for any spikes in traffic volume due to Creekside Elementary School. Traffic volumes were balanced between intersections by using Ephesus Church Road (SR 1114) at Farrington Road (SR 1109) as the master intersection. A mid-block node was added to the traffic model between George King Road and Farrington Road along Ephesus Church Road because drivers were turning in and out of the school drive.

Table 6-1 shows 2018 AM and PM peak hour volumes. More information on existing traffic volumes and existing signal timings can be found in Attachment C-5.1: Traffic Volume Data and Signal Timings.

### 3.4 Analyzed Peak Hours

In the scoping process with City of Durham, it was agreed upon to analyze the AM peak (7-9 am) and the school PM peak (2-4 pm), since the facility is located less than 0.20 miles from Creekside Elementary School, which is expected to have a significant impact on area traffic patterns. The 2-4 pm period was analyzed in place of the traditional 4-6 pm period based on this consideration. NCDOT requested that

GoTriangle compare the 2-4 pm period with the 4-6 pm period to ensure that the choice to analyze the 2-4 pm period adequately captured the highest potential impacts of the project.

For the primary study intersection of Ephesus Church Road at Farrington Road, traffic counts were collected for all three (3) periods: 7-9 am, 2-4 pm, and 4-6 pm. These counts showed that the highest peak hour occurred from 7:05 to 8:05 am, with 1,435 vehicles. Within the 4-6 pm period, the peak hour occurred from 4:45 to 5:45 pm, with 1,257 vehicles. This exceeded the peak hour within the 2-4 pm period of 1,000 vehicles, which occurred between 2:10 and 3:10 pm. However, the 2:10 to 3:10 pm hour had a more intense overall peak hour factor (0.75), as compared to the 4:45 to 5:45 hour with a factor of 0.87.

The traffic analysis accounted for the more intense peak hour factor, which heavily impacts the levels of service and delay. The more intense peak hour factor in the 2 to 4 pm peak helps to offset the higher volume during the 4 to 6 pm peak. Also, the analyzed AM peak has both higher traffic volume and a more intense peak hour factor than the 4-6 pm peak. Lastly, of the three time periods, the trip generation potential of the ROMF is lowest (34 Trips) during the traditional (4-6 pm) PM peak.

### **3.5 Approved Developments**

Approved developments are developments that have been recently approved in the area, but not yet constructed. A 132-unit townhome development called Creekside Commons (D1700237) is proposed on the north side of Ephesus Church Road across from Creekside Elementary School. City of Durham staff indicated that the 1% annual growth rate used in this study will be adequate to account for Creekside Commons.

### **3.6 Committed Improvements**

Committed improvements are those planned by NCDOT or the City of Durham, but not yet constructed. Per scoping with City of Durham, there are no committed improvements located in the study area.

## 4. Methodology

### 4.1 Base Assumptions and Standards

The analysis for this project was conducted utilizing commonly accepted NCDOT and City of Durham standards. An existing pedestrian figure can be found in Attachment C-5.1. The following table contains a summary of the base assumptions:

**Table 4-1: Transportation Analysis Assumptions**

Peak Hour Factor	0.90 for movements with no school traffic; 0.75 for movements with both school and non-school traffic
Background Traffic Annual Growth Rate	1.0% per year on all movements. See Section 3.2
Analysis Software	Synchro/SimTraffic Version 9.0
Signal Plans and Timings	Provided by NCDOT
Lane widths	12-feet unless measured otherwise
Truck percentages	2% based on traffic counts
Grades	As measured
Pedestrians	Pedestrians were counted at each intersection and were included in the traffic analysis to account for loss in vehicular capacity due to conflicting pedestrian movements.
Bicycles	Bicycles were counted at each intersection and were included in the traffic analysis to account for loss in vehicular capacity due to conflicting bicycle movements.

### 4.2 Trip Generation

The ITE Trip Generation Manual does not have data applicable to the proposed ROMF. However, GoTriangle has developed projections for the number of employees who will work at this site and anticipated shift schedules. It was agreed upon in the scoping process with City of Durham to use this information from GoTriangle to calculate site traffic.

A total of 132 employees are expected to work on site on a normal weekday. Of the 65 first shift employees, 48 employees are expected to arrive during the peak. The other 17 employees are train operators, who are expected to arrive in the very early morning, well before the AM peak hour, as D-O LRT is projected to begin revenue service at 5:30 am. During the 2 to 4 pm period, a train operator shift change is expected. This study conservatively assumed that all train operators would change over at some time during the peak hour studied (2:10 to 3:10 pm). This means all 34 operators would be either entering or exiting the site during the PM peak hour studied. Ten percent (10%) more traffic was added on to the employee projected commute trips to account for deliveries and employee drop-off trips. No trip reduction was taken for employee ridesharing or transit use. The resulting trip generation totals are shown in Table 4-2.

**Table 4-2: ROMF Trip Generation**

Rail Operations and Maintenance Facility (ROMF), Durham, NC									
Average Weekday Driveway Volumes					24 Hour	AM Peak Hour		PM Peak Hour	
					Two-Way				
<u>Land Use</u>	<u>ITE Land Code</u>	<u>Size</u>		<u>Data Source</u>	<u>Volume</u>	<u>Enter</u>	<u>Exit</u>	<u>Enter</u>	<u>Exit</u>
Maintenance Facility	NA	132	Employees	-	292	48	5	19	19
<b>Total Trips</b>					<b>292</b>	<b>48</b>	<b>5</b>	<b>19</b>	<b>19</b>

### 4.3 Trip Distribution

The directional distribution percentage was approved by the City of Durham. With the Farrington Road’s connection to NC 54 and I-40 to the south, it is expected that 50% of ROMF-oriented traffic will be coming from the south. With Farrington Road’s connection to Old Chapel Hill Road to the north, it is expected that 30% will be coming from the north. Ephesus Church Road is expected to carry 20% of ROMF traffic with its connection to Pope Road to the west.

## 5. Capacity Analysis

### 5.1 Level of Service Evaluation Criteria

The Transportation Research Board’s 2010 Highway Capacity Manual (HCM) utilizes the term “level of service” to measure how traffic operates in intersections and on roadway segments. There are six levels of service ranging from A to F. Level of service “A” represents low-volume traffic operations and Level of Service “F” represents over-saturated, high-volume traffic operations. Level of service for intersections is determined by average delay per vehicle as shown in Table 5-1 below. Synchro Traffic modeling software version 9 was used to determine the vehicular delay and level of service for the studied intersections. These results are reported for each movement of the intersection.

**Table 5-1: Level of Service and Control Delay Criteria**

Signalized Intersection		Unsignalized Intersection	
Level of Service	Control Delay Per vehicle (sec)	Level of Service	Delay Range (sec)
A	≤ 10	A	≤ 10
B	> 10 and ≤ 20	B	> 10 and ≤ 15
C	> 20 and ≤ 35	C	> 15 and ≤ 25
D	> 35 and ≤ 55	D	> 25 and ≤ 35
E	> 55 and ≤ 80	E	> 35 and ≤ 50
F	> 80	F	> 50

Level of service at unsignalized intersections with at least one free-flowing movement, including the three stop-controlled intersections analyzed here, is expressed in terms of the performance of the yielding movement with the highest delay per vehicle. In most cases, this movement is a left turn from the side street on to the primary street.

## 6. 2018 Existing Conditions

An analysis was performed for existing conditions in order to understand current traffic capacity and operational issues. Existing traffic volumes and level of service results are summarized in Table 6-1. As the table shows all intersections operate at an overall level of service (LOS) D or better. The detailed Existing Synchro output reports can be found in Attachment C-5.2.

**Table 6-1: Level of Service Summary (2018 Existing Conditions)**

Intersection	AM Peak		PM Peak	
	Delay (sec)	LOS	Delay (sec)	LOS
Ephesus Church Road (EB) at Farrington Road (NB/SB)	37.7	D	17.0	B
Ephesus Church Road (EB/WB) at George King Road/ Weston Downs Drive (NB/SB)	16.9	C	16.0	C
Niagra Drive (EB) at Farrington Road (NB/SB)	29.4	D	16.4	C
Culp Hill Drive (EB) at Farrington Road (NB/SB)	15.2	C	13.4	B

### 6.1 2018 Base Conditions Queuing Analysis

A review of anticipated queue lengths was conducted based on a traffic simulation with SimTraffic software. The SimTraffic queuing reports can be found in Attachment C-5.3. The existing queues do not extend past the available storage lengths.



## 7. 2028 No Build Year Analysis

This section presents capacity analysis results for the 2028 No Build scenario. A 1% annual growth rate was determined as discussed in Section 3.2. Existing traffic volumes were multiplied by this rate over ten (10) years to obtain 2028 future No Build volumes. The projected volumes are shown in Table 7-1.

### 7.1 Capacity Analysis

An analysis was performed for 2028 No Build conditions in order to understand traffic capacity and operational issues without the facility’s traffic. The level of service results for this analysis are summarized in Table 7-1. As the table shows all intersections operate at an overall level of service (LOS) D or better, except for Niagra Drive at Farrington Road, which operates at an LOS E in the AM peak. This LOS E condition occurs on the stop-controlled approach of Niagra Drive, and is due to an estimated average delay that is just beyond the D/E threshold of 35 seconds. Such delay is a typical condition for minor street stop-controlled movements onto higher volume roads such as Farrington Road. There are only five (5) vehicles on this approach in the AM peak hour, and the traffic analysis indicates that delays are short-lived. The No Build Synchro output reports can be found in Attachment C-5.4.

**Table 7-1: Level of Service Summary (2028 No Build Analysis)**

Intersection	AM Peak		PM Peak	
	Delay (sec)	LOS	Delay (sec)	LOS
Ephesus Church Road (EB) at Farrington Road (NB/SB)	42.7	D	18.8	B
Ephesus Church Road (EB/WB) at George King Road/ Weston Downs Drive (NB/SB)	18.8	C	17.2	C
Niagra Drive (EB) at Farrington Road (NB/SB)	35.6	E	17.9	C
Culp Hill Drive (EB) at Farrington Road (NB/SB)	16.3	C	14.4	B

### 7.2 2028 No Build Conditions Queuing Analysis

A review of anticipated queue lengths was conducted based on a traffic simulation with SimTraffic software. The SimTraffic queuing reports can be found in Attachment C-5.5. The No Build queues do not extend past the available storage lengths.

## 8. 2028 Build Year Conditions

### 8.1 Capacity Analysis

Traffic analysis was performed for 2028 Build conditions in order to understand traffic operations when the site has been operational for one year. The projected volumes and level of service results for this analysis are summarized in Table 8-1. As the table shows, all intersections operate at an overall LOS of D or better, with the exception of Ephesus Church Road / Proposed Site Access at Farrington Road and Niagra Drive at Farrington Road, which are projected to be LOS E during the AM peak hour. The increase in delay at Ephesus Church Road / Proposed Site Access at Farrington Road is mainly due to the southbound lefts blocking the southbound through and right turning vehicles. At the intersection of Farrington Road and Niagra Drive, the LOS E condition occurs on the stop-controlled approach of Niagra Drive. This is a background condition and is due to the time it takes left-turning vehicles from the minor approach to find acceptable gaps, resulting in an average delay just beyond the D/E threshold. Such delay is typical condition for minor street stop-controlled movements onto higher volume roads such as Farrington Road. There are only five (5) vehicles on this eastbound approach, and the traffic simulation indicates that delays are short-lived.

Improvements are needed at the signalized intersection of Farrington Road and Ephesus Church Road / ROMF Access in order to accommodate the addition of a fourth leg to this intersection. These improvements are outlined in Section 8.3. The 2028 Build Synchro output reports can be found in Attachment C-5.6.

**Table 8-1: Level of Service Summary (2028 Build Analysis)**

Intersection	AM Peak		PM Peak	
	Delay (sec)	LOS	Delay (sec)	LOS
Ephesus Church Road (EB) / Proposed Site Access at Farrington Road (NB/SB)	64.5	E	23.8	C
Ephesus Church Road (EB/WB) at George King Road/ Weston Downs Drive (NB/SB)	19.2	C	17.5	C
Niagra Drive (EB) at Farrington Road (NB/SB)	37.6	E	18.4	C
Culp Hill Drive (EB) at Farrington Road (NB/SB)	16.5	C	14.6	B

### 8.2 2028 Build Year Conditions Queuing Analysis

The Build queues do not extend past the storage lengths. SimTraffic reports for the 2028 Build Conditions can be found in Attachment C-5.7.

### 8.3 Recommended Improvements

Improvements are needed to accommodate the addition of a fourth leg to the intersection of Ephesus Church Road and Farrington Road. To enhance capacity both for exit movement from the site and the intersection overall, two (2) westbound exit lanes are recommended on the site access: a left turn lane and a shared through / right turn lane. The traffic signal design will need to be modified to accommodate the addition of the fourth leg.

A southbound left turn lane is also recommended to accommodate left turn movement into the site. This improvement is expected to reduce queue lengths on southbound Farrington Road, reduce the potential for rear-end collisions, and enhance overall traffic flow on Farrington Road.

An analysis was performed for 2028 Build with Improvements conditions in order to understand traffic capacity and operational improvements. The LOS results for this analysis are summarized in Table 8-2. The 2028 Build with Improvements Synchro output reports can be found in Attachment C-5.8.

**Table 8-2: Level of Service Summary (2028 Build Analysis with Improvements)**

Intersection	Condition	AM Peak		PM Peak	
		Delay (sec)	LOS	Delay (sec)	LOS
Ephesus Church Road (EB) / Proposed Site Access at Farrington Road (NB/SB)	<b>No Build</b>	<b>42.7</b>	<b>D</b>	<b>23.1</b>	<b>C</b>
	<b>Build</b>	<b>64.5</b>	<b>E</b>	<b>23.8</b>	<b>C</b>
	<b>Build With Improvements</b>	<b>53.9</b>	<b>D</b>	<b>23.5</b>	<b>C</b>
Note: Greater reduction in delay in AM peak is due to traffic patterns and higher site entry volume in AM peak					

### 8.4 Queuing Analysis (2028 Build with Improvements)

A review of anticipated queue lengths was conducted based on a traffic simulation with SimTraffic software. The SimTraffic queuing reports can be found in Attachment C-5.9.

### 9. Summary

The analysis indicates overall acceptable capacity at the study intersections in the existing scenario. In 2028 with the build-out of the site, delay and queuing issues are anticipated at the intersection of Farrington Road and Ephesus Church Road / Proposed Site Access. Improvements are needed to accommodate this development and the addition of a fourth leg to the intersection of Ephesus Church Road and Farrington Road. A southbound left turn lane is recommended on Farrington Road in order to reduce queue lengths, reduce the potential for rear-end collisions, and to improve overall traffic flow on Farrington Road. To enhance capacity both for vehicles leaving the ROMF and the intersection overall, two (2) westbound exit lanes are recommended on the site access: a left turn lane and a through / right turn lane. Finally, the traffic signal design will need to be modified due to the addition of the fourth leg.

#### 9.1 Conclusion

This TIA was performed in order to assess transportation impacts of the proposed ROMF site as well as background traffic. Recommendations have been given to accommodate these impacts. The analysis documented here indicates that with the recommended improvements in place, the proposed ROMF site is not expected to have a substantive impact on traffic operations in the study area.

**Table 9-1: Recommended Improvements**

Intersection	Recommendations
Ephesus Church Road/ROMF Access (EB/WB) at Farrington Road (NB/SB)	<ol style="list-style-type: none"> <li>1. Modify existing traffic signal due to addition of fourth leg</li> <li>2. Provide southbound left turn lane on Farrington Road with 100 feet of storage and appropriate taper</li> <li>3. On westbound approach provide separate left turn lane and a through / right turn lane</li> </ol>

**Attachment C-5.1: Traffic Volume Data and Signal Timings**

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Counts





# DAVENPORT

119 Brookstown Ave., Suite PH1,  
Winston Salem NC, 27101  
Ph:(336)744-1636

Counted by: N. Baez

File Name : Ephesus Church Road at Farrington Road  
Site Code : 00015423  
Start Date : 1/9/2018  
Page No : 1

## Groups Printed- Cars - Buses and Trucks - Bikes on Road

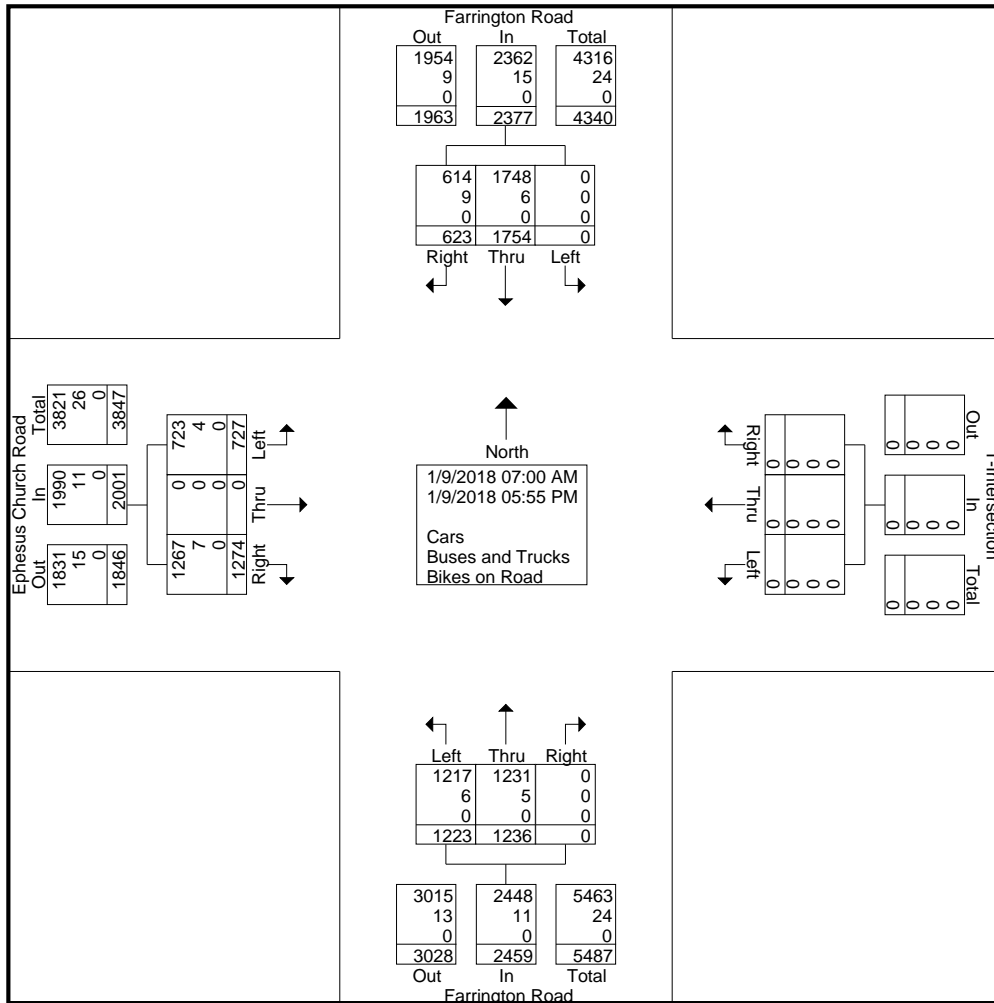
Start Time	Farrington Road Southbound					T-Intersection Westbound					Farrington Road Northbound					Ephesus Church Road Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total			
07:00 AM	12	15	0	0	27	0	0	0	0	0	0	6	13	0	19	12	0	5	0	17	0	63	63
07:05 AM	15	15	0	0	30	0	0	0	0	0	0	17	16	0	33	18	0	4	0	22	0	85	85
07:10 AM	18	29	0	0	47	0	0	0	0	0	0	11	27	0	38	11	0	5	0	16	0	101	101
07:15 AM	17	20	0	0	37	0	0	0	0	0	0	21	17	0	38	19	0	13	0	32	0	107	107
07:20 AM	14	25	0	0	39	0	0	0	0	0	0	13	42	0	55	34	0	27	0	61	0	155	155
07:25 AM	15	31	0	0	46	0	0	0	0	0	0	17	39	0	56	27	0	15	0	42	0	144	144
07:30 AM	30	16	0	0	46	0	0	0	0	0	0	11	41	0	52	29	0	24	0	53	0	151	151
07:35 AM	45	20	0	0	65	0	0	0	0	0	0	20	28	0	48	37	0	15	0	52	0	165	165
07:40 AM	8	21	0	0	29	0	0	0	0	0	0	15	27	0	42	36	0	33	0	69	0	140	140
07:45 AM	13	27	0	0	40	0	0	0	0	0	0	22	21	0	43	34	0	38	0	72	0	155	155
07:50 AM	7	16	0	0	23	0	0	0	0	0	0	15	14	0	29	12	0	16	0	28	0	80	80
07:55 AM	3	21	0	0	24	0	0	0	0	0	0	14	10	0	24	14	0	14	0	28	0	76	76
Total	197	256	0	0	453	0	0	0	0	0	0	182	295	0	477	283	0	209	0	492	0	1422	1422
08:00 AM	6	32	0	0	38	0	0	0	0	0	0	10	9	0	19	7	0	12	0	19	0	76	76
08:05 AM	3	28	0	0	31	0	0	0	0	0	0	20	12	0	32	10	0	11	0	21	0	84	84
08:10 AM	6	24	0	0	30	0	0	0	0	0	0	13	12	0	25	15	0	7	0	22	0	77	77
08:15 AM	6	22	0	0	28	0	0	0	0	0	0	19	17	0	36	21	0	2	0	23	0	87	87
08:20 AM	6	26	0	0	32	0	0	0	0	0	0	9	14	0	23	30	0	6	0	36	0	91	91
08:25 AM	6	38	0	0	44	0	0	0	0	0	0	22	16	0	38	25	0	4	0	29	0	111	111
08:30 AM	7	27	0	0	34	0	0	0	0	0	0	15	12	0	27	15	0	5	0	20	0	81	81
08:35 AM	2	30	0	0	32	0	0	0	0	0	0	28	8	0	36	21	0	5	0	26	0	94	94
08:40 AM	5	28	0	0	33	0	0	0	0	0	0	15	13	0	28	19	0	4	0	23	0	84	84
08:45 AM	3	37	0	0	40	0	0	0	0	0	0	19	14	0	33	13	0	6	0	19	0	92	92
08:50 AM	3	22	0	0	25	0	0	0	0	0	0	10	8	0	18	11	0	3	0	14	0	57	57
08:55 AM	2	18	0	0	20	0	0	0	0	0	0	18	14	0	32	15	0	7	0	22	0	74	74
Total	55	332	0	0	387	0	0	0	0	0	0	198	149	0	347	202	0	72	0	274	0	1008	1008
*** BREAK ***																							
02:00 PM	18	21	0	0	39	0	0	0	0	0	0	18	30	0	48	8	0	4	0	12	0	99	99
02:05 PM	3	9	0	0	12	0	0	0	0	0	0	9	9	0	18	6	0	2	2	8	2	38	40
02:10 PM	16	25	0	0	41	0	0	0	0	0	0	14	13	0	27	13	0	2	0	15	0	83	83
02:15 PM	8	22	0	0	30	0	0	0	0	0	0	17	27	0	44	8	0	4	0	12	0	86	86
02:20 PM	12	19	0	0	31	0	0	0	0	0	0	19	18	0	37	25	0	18	0	43	0	111	111
02:25 PM	4	21	0	0	25	0	0	0	0	0	0	13	15	0	28	26	0	26	0	52	0	105	105
02:30 PM	3	14	0	0	17	0	0	0	0	0	0	12	20	0	32	35	0	23	0	58	0	107	107
02:35 PM	6	24	0	0	30	0	0	0	0	0	0	10	12	0	22	16	0	11	0	27	0	79	79
02:40 PM	5	19	0	0	24	0	0	0	0	0	0	11	11	0	22	17	0	7	0	24	0	70	70
02:45 PM	5	17	0	0	22	0	0	0	0	0	0	20	5	0	25	17	0	7	0	24	0	71	71
02:50 PM	5	18	0	0	23	0	0	0	0	0	0	19	23	0	42	9	0	9	0	18	0	83	83
02:55 PM	4	14	0	0	18	0	0	0	0	0	0	12	7	0	19	11	0	6	0	17	0	54	54
Total	89	223	0	0	312	0	0	0	0	0	0	174	190	0	364	191	0	119	2	310	2	986	988



# DAVENPORT

119 Brookstown Ave., Suite PH1,  
Winston Salem NC, 27101  
Ph:(336)744-1636

File Name : Ephesus Church Road at Farrington Road  
Site Code : 00015423  
Start Date : 1/9/2018  
Page No : 3

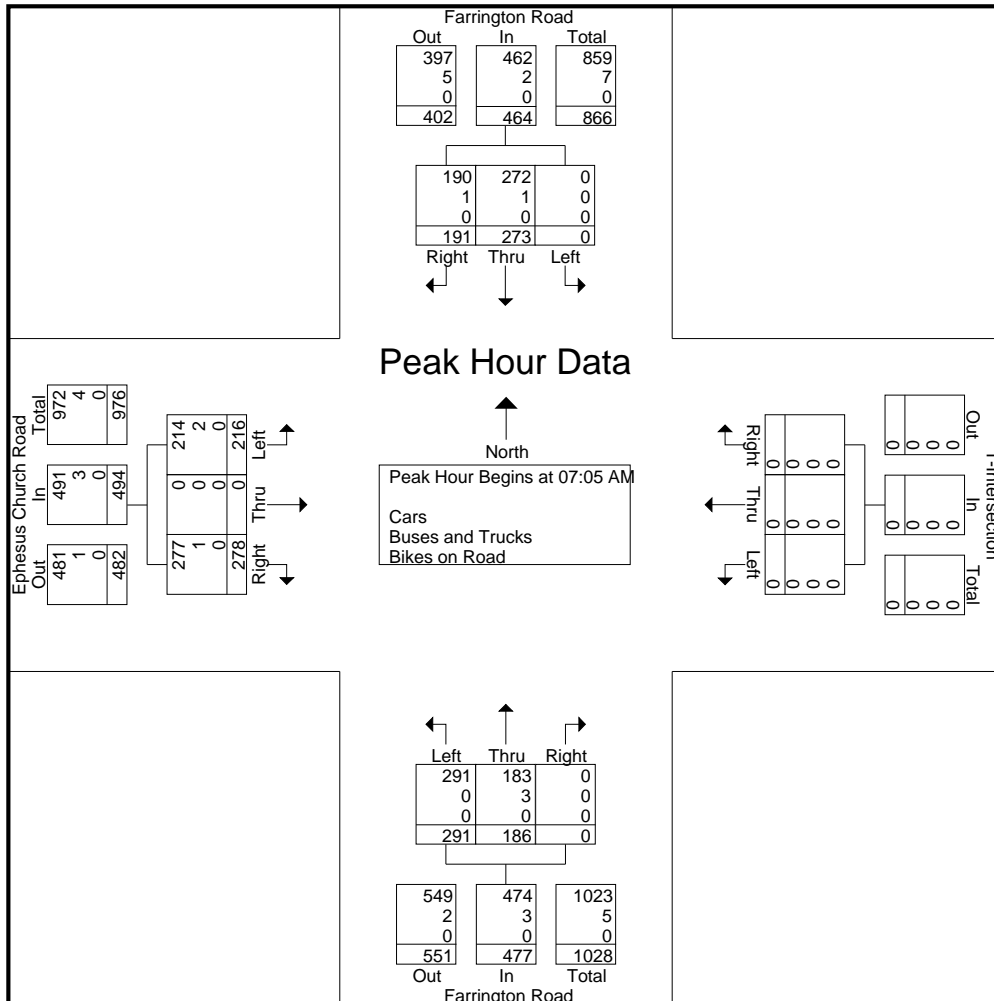




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File Name : Ephesus Church Road at Farrington Road  
 Site Code : 00015423  
 Start Date : 1/9/2018  
 Page No : 5

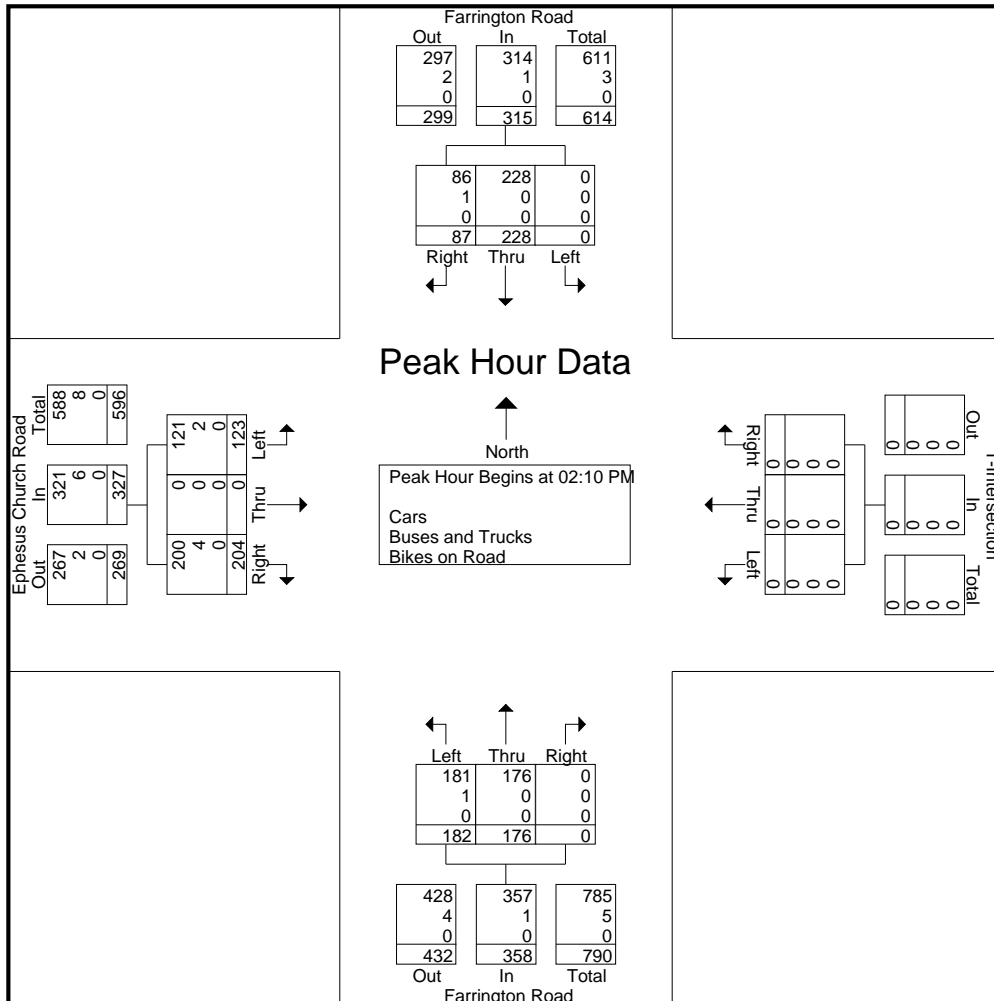




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File Name : Ephesus Church Road at Farrington Road  
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 Start Date : 1/9/2018  
 Page No : 7



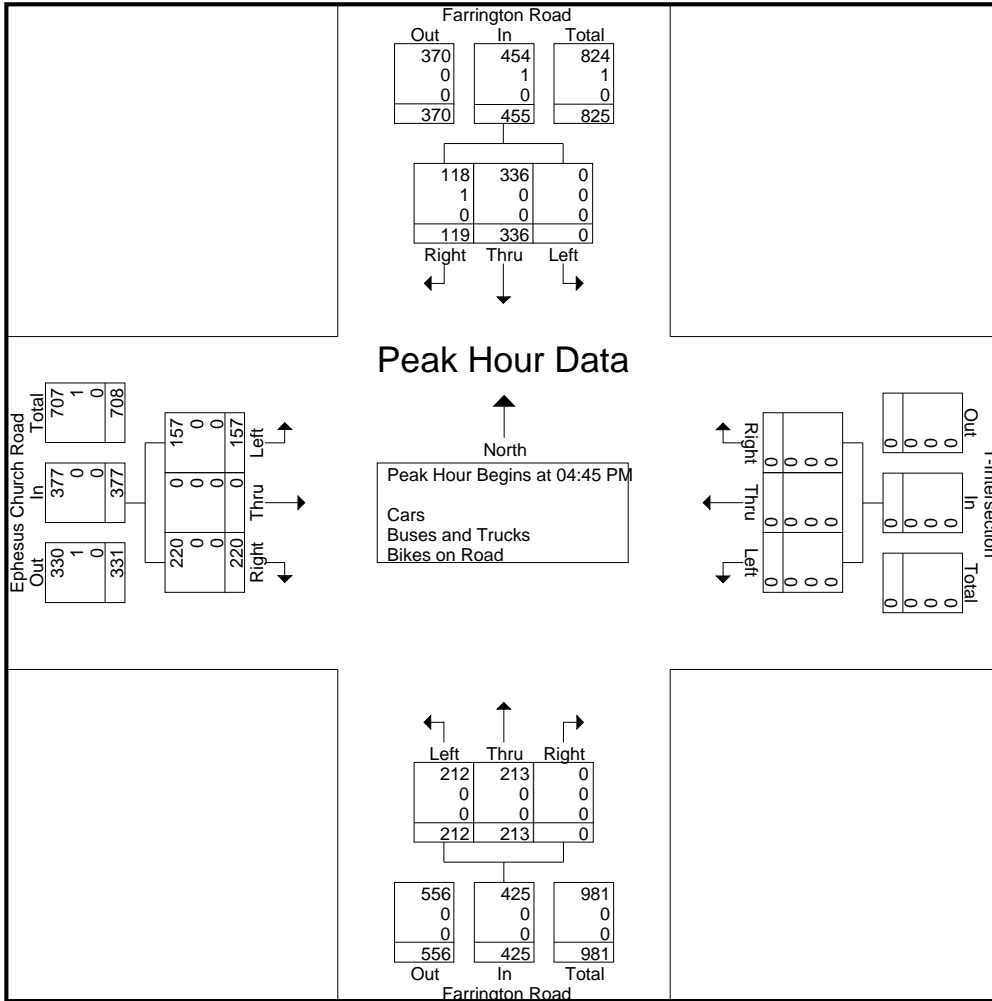




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File Name : Ephesus Church Road at Farrington Road  
 Site Code : 00015423  
 Start Date : 1/9/2018  
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# DAVENPORT

119 Brookstown Ave., Suite PH1,  
Winston Salem NC, 27101  
Ph:(336)744-1636

Counted by: N. Baez

File Name : Ephesus Church Road at George King Road  
Site Code : 00015423  
Start Date : 1/9/2018  
Page No : 1

## Groups Printed- Cars - Buses and Trucks - Bikes on Road

Start Time	Weston Downs Drive Southbound					Ephesus Church Road Westbound					George King Road Northbound					Ephesus Church Road Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total			
07:00 AM	0	0	0	0	0	2	4	4	0	10	5	0	1	0	6	1	10	0	0	11	0	27	27
07:05 AM	0	0	3	0	3	0	7	0	0	7	2	0	0	0	2	0	13	0	0	13	0	25	25
07:10 AM	1	0	3	0	4	1	3	6	0	10	0	1	0	0	1	0	13	0	0	13	0	28	28
07:15 AM	1	0	2	0	3	0	12	2	4	14	5	0	0	0	5	0	13	0	0	13	4	35	39
07:20 AM	0	1	1	0	2	3	23	2	1	28	4	0	2	0	6	0	20	0	0	20	1	56	57
07:25 AM	0	0	0	0	0	0	11	2	0	13	4	0	1	0	5	0	12	0	0	12	0	30	30
07:30 AM	3	0	3	0	6	0	19	5	3	24	5	0	3	0	8	0	15	1	0	16	3	54	57
07:35 AM	0	0	0	0	0	2	10	6	5	18	11	0	0	0	11	1	13	0	0	14	5	43	48
07:40 AM	0	1	1	0	2	2	10	7	5	19	5	0	0	0	5	0	15	0	0	15	5	41	46
07:45 AM	0	0	2	0	2	1	20	6	1	27	12	0	1	0	13	1	19	0	0	20	1	62	63
07:50 AM	0	0	0	0	0	0	13	3	1	16	5	0	2	0	7	1	8	0	0	9	1	32	33
07:55 AM	0	0	0	0	0	0	11	1	1	12	5	0	0	1	5	0	6	0	0	6	2	23	25
Total	5	2	15	0	22	11	143	44	21	198	63	1	10	1	74	4	157	1	0	162	22	456	478
08:00 AM	0	0	0	0	0	0	12	2	0	14	2	0	2	0	4	1	12	0	0	13	0	31	31
08:05 AM	0	0	0	0	0	0	5	2	0	7	2	0	1	0	3	1	14	0	0	15	0	25	25
08:10 AM	0	0	0	0	0	0	10	3	0	13	3	0	3	0	6	0	17	0	0	17	0	36	36
08:15 AM	0	0	0	0	0	0	18	1	0	19	4	1	1	0	6	1	16	0	0	17	0	42	42
08:20 AM	1	0	1	0	2	1	19	3	0	23	3	0	0	0	3	0	26	0	0	26	0	54	54
08:25 AM	0	0	1	0	1	1	14	1	0	16	2	0	0	0	2	1	24	0	0	25	0	44	44
08:30 AM	0	0	0	0	0	0	23	3	0	26	4	0	1	0	5	0	18	0	0	18	0	49	49
08:35 AM	0	0	0	0	0	0	5	2	0	7	4	0	2	0	6	1	21	0	0	22	0	35	35
08:40 AM	0	0	2	0	2	0	7	4	0	11	3	0	1	0	4	0	16	0	0	16	0	33	33
08:45 AM	0	0	0	0	0	0	14	1	0	15	1	0	0	0	1	0	13	0	0	13	0	29	29
08:50 AM	0	0	0	0	0	0	8	1	0	9	2	0	1	0	3	0	15	0	0	15	0	27	27
08:55 AM	0	0	1	0	1	0	12	3	0	15	3	0	0	0	3	0	15	0	0	15	0	34	34
Total	1	0	5	0	6	2	147	26	0	175	33	1	12	0	46	5	207	0	0	212	0	439	439
*** BREAK ***																							
02:00 PM	0	0	0	0	0	1	14	5	0	20	2	1	0	0	3	0	6	0	0	6	0	29	29
02:05 PM	0	0	0	0	0	0	13	8	1	21	2	1	2	0	5	0	14	0	0	14	1	40	41
02:10 PM	0	0	0	0	0	0	8	4	5	12	4	0	1	0	5	1	11	0	0	12	5	29	34
02:15 PM	2	0	0	0	2	1	18	6	24	25	1	0	1	0	2	0	14	0	0	14	24	43	67
02:20 PM	1	0	0	0	1	1	18	1	3	20	3	0	0	0	3	1	14	0	0	15	3	39	42
02:25 PM	1	0	0	0	1	0	14	1	0	15	3	0	2	0	5	1	8	0	0	9	0	30	30
02:30 PM	0	0	0	0	0	1	15	4	0	20	8	0	3	0	11	0	14	0	0	14	0	45	45
02:35 PM	0	0	0	0	0	0	18	4	0	22	0	0	0	0	0	1	9	0	0	10	0	32	32
02:40 PM	0	0	0	0	0	0	8	3	0	11	4	0	1	0	5	2	18	0	0	20	0	36	36
02:45 PM	2	0	3	0	5	1	13	1	0	15	1	0	2	0	3	2	9	0	0	11	0	34	34
02:50 PM	0	0	0	0	0	0	20	1	0	21	1	0	1	0	2	3	15	0	0	18	0	41	41
02:55 PM	0	0	0	0	0	0	17	3	0	20	3	0	0	0	3	1	7	0	0	8	0	31	31
Total	6	0	3	0	9	5	176	41	33	222	32	2	13	0	47	12	139	0	0	151	33	429	462

# DAVENPORT

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File Name : Ephesus Church Road at George King Road  
Site Code : 00015423  
Start Date : 1/9/2018  
Page No : 2

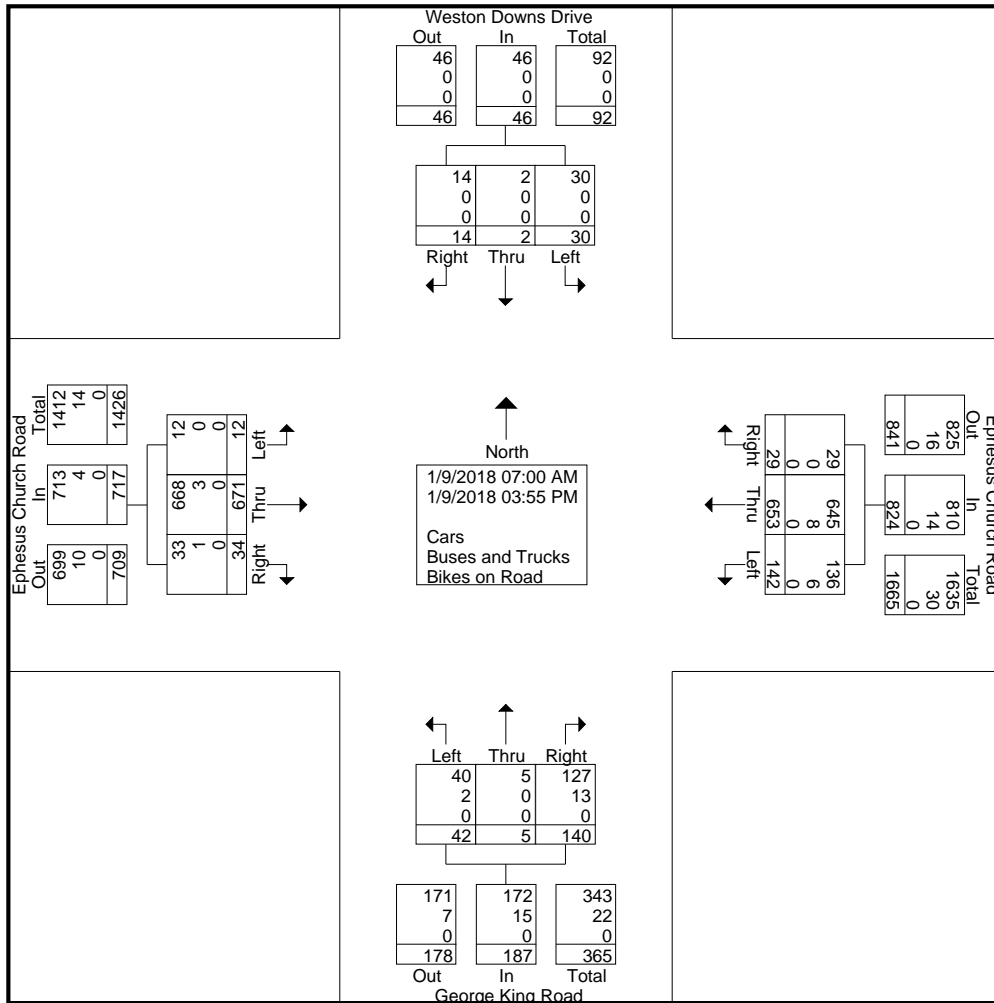
Groups Printed- Cars - Buses and Trucks - Bikes on Road

Start Time	Weston Downs Drive Southbound					Ephesus Church Road Westbound					George King Road Northbound					Ephesus Church Road Eastbound					Exclu. Total	Inclu. Total	Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total			
03:00 PM	0	0	0	0	0	1	20	1	0	22	3	0	1	0	4	1	11	0	0	12	0	38	38
03:05 PM	1	0	0	0	1	2	22	3	0	27	2	0	0	0	2	0	19	0	0	19	0	49	49
03:10 PM	0	0	0	0	0	0	16	4	0	20	0	0	0	0	0	0	13	0	0	13	0	33	33
03:15 PM	0	0	0	0	0	0	17	1	0	18	0	0	0	0	0	2	15	0	0	17	0	35	35
03:20 PM	0	0	0	0	0	0	11	2	1	13	2	0	2	0	4	1	12	0	0	13	1	30	31
03:25 PM	0	0	1	0	1	2	12	6	0	20	0	0	1	0	1	2	11	5	0	18	0	40	40
03:30 PM	0	0	0	0	0	1	18	0	0	19	1	0	1	0	2	1	9	2	0	12	0	33	33
03:35 PM	0	0	0	0	0	1	17	5	0	23	0	1	1	0	2	1	19	4	0	24	0	49	49
03:40 PM	0	0	1	0	1	1	14	1	0	16	1	0	1	0	2	1	13	0	0	14	0	33	33
03:45 PM	1	0	1	0	2	0	8	1	0	9	0	0	0	0	0	1	10	0	0	11	0	22	22
03:50 PM	0	0	2	0	2	3	14	4	0	21	2	0	0	0	2	1	19	0	0	20	0	45	45
03:55 PM	0	0	2	0	2	0	18	3	0	21	1	0	0	0	1	2	17	0	0	19	0	43	43
<b>Total</b>	<b>2</b>	<b>0</b>	<b>7</b>	<b>0</b>	<b>9</b>	<b>11</b>	<b>187</b>	<b>31</b>	<b>1</b>	<b>229</b>	<b>12</b>	<b>1</b>	<b>7</b>	<b>0</b>	<b>20</b>	<b>13</b>	<b>168</b>	<b>11</b>	<b>0</b>	<b>192</b>	<b>1</b>	<b>450</b>	<b>451</b>
<b>Grand Total</b>	<b>14</b>	<b>2</b>	<b>30</b>	<b>0</b>	<b>46</b>	<b>29</b>	<b>653</b>	<b>142</b>	<b>55</b>	<b>824</b>	<b>140</b>	<b>5</b>	<b>42</b>	<b>1</b>	<b>187</b>	<b>34</b>	<b>671</b>	<b>12</b>	<b>0</b>	<b>717</b>	<b>56</b>	<b>1774</b>	<b>1830</b>
<b>Apprch %</b>	<b>30.4</b>	<b>4.3</b>	<b>65.2</b>			<b>3.5</b>	<b>79.2</b>	<b>17.2</b>			<b>74.9</b>	<b>2.7</b>	<b>22.5</b>			<b>4.7</b>	<b>93.6</b>	<b>1.7</b>					
<b>Total %</b>	<b>0.8</b>	<b>0.1</b>	<b>1.7</b>		<b>2.6</b>	<b>1.6</b>	<b>36.8</b>	<b>8</b>		<b>46.4</b>	<b>7.9</b>	<b>0.3</b>	<b>2.4</b>		<b>10.5</b>	<b>1.9</b>	<b>37.8</b>	<b>0.7</b>		<b>40.4</b>	<b>3.1</b>	<b>96.9</b>	
<b>Cars</b>	<b>14</b>	<b>2</b>	<b>30</b>		<b>46</b>	<b>29</b>	<b>645</b>	<b>136</b>		<b>865</b>	<b>127</b>	<b>5</b>	<b>40</b>		<b>173</b>	<b>33</b>	<b>668</b>	<b>12</b>		<b>713</b>	<b>0</b>	<b>0</b>	<b>1797</b>
<b>% Cars</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>0</b>	<b>100</b>	<b>100</b>	<b>98.8</b>	<b>95.8</b>	<b>100</b>	<b>98.4</b>	<b>90.7</b>	<b>100</b>	<b>95.2</b>	<b>100</b>	<b>92</b>	<b>97.1</b>	<b>99.6</b>	<b>100</b>	<b>0</b>	<b>99.4</b>	<b>0</b>	<b>0</b>	<b>98.2</b>
<b>Buses and Trucks</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>6</b>		<b>14</b>	<b>13</b>	<b>0</b>	<b>2</b>		<b>15</b>	<b>1</b>	<b>3</b>	<b>0</b>		<b>4</b>	<b>0</b>	<b>0</b>	<b>33</b>
<b>% Buses and Trucks</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1.2</b>	<b>4.2</b>	<b>0</b>	<b>1.6</b>	<b>9.3</b>	<b>0</b>	<b>4.8</b>	<b>0</b>	<b>8</b>	<b>2.9</b>	<b>0.4</b>	<b>0</b>	<b>0</b>	<b>0.6</b>	<b>0</b>	<b>0</b>	<b>1.8</b>
<b>Bikes on Road</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>% Bikes on Road</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

# DAVENPORT

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 Site Code : 00015423  
 Start Date : 1/9/2018  
 Page No : 3

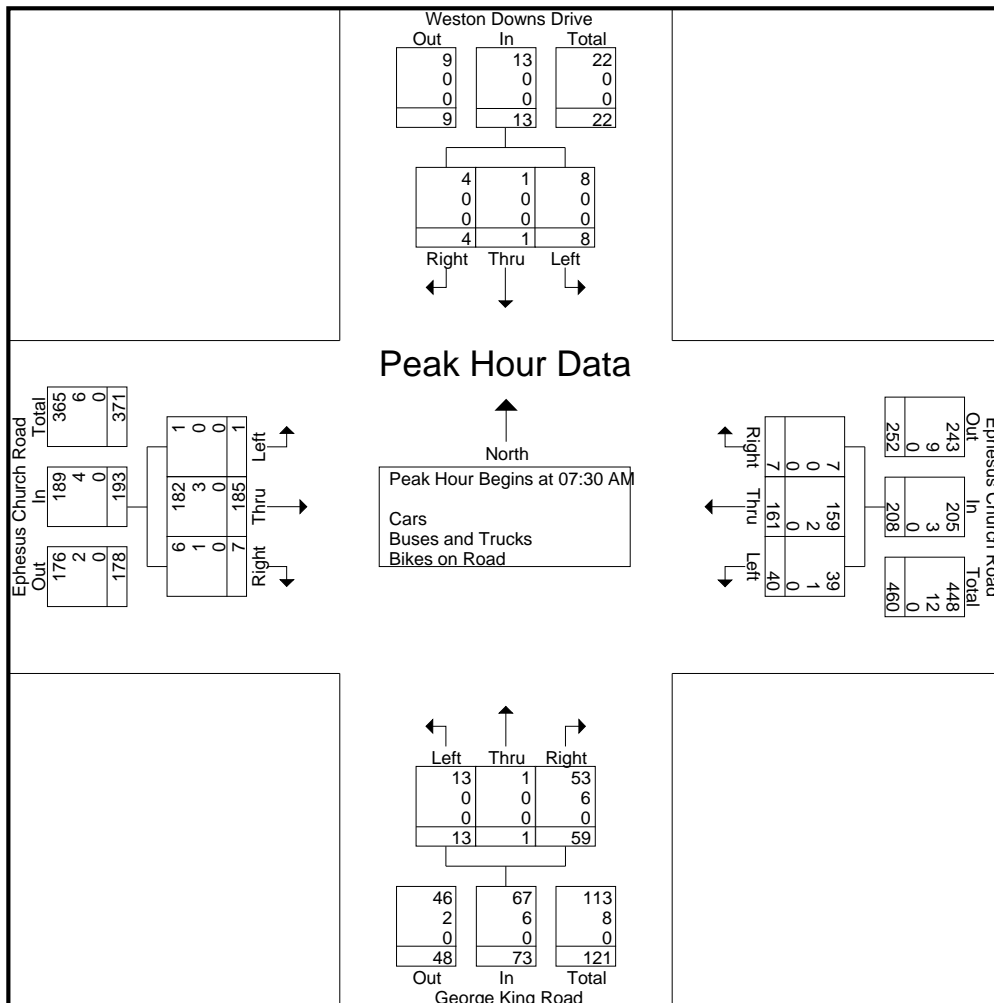




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File Name : Ephesus Church Road at George King Road  
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 Start Date : 1/9/2018  
 Page No : 5

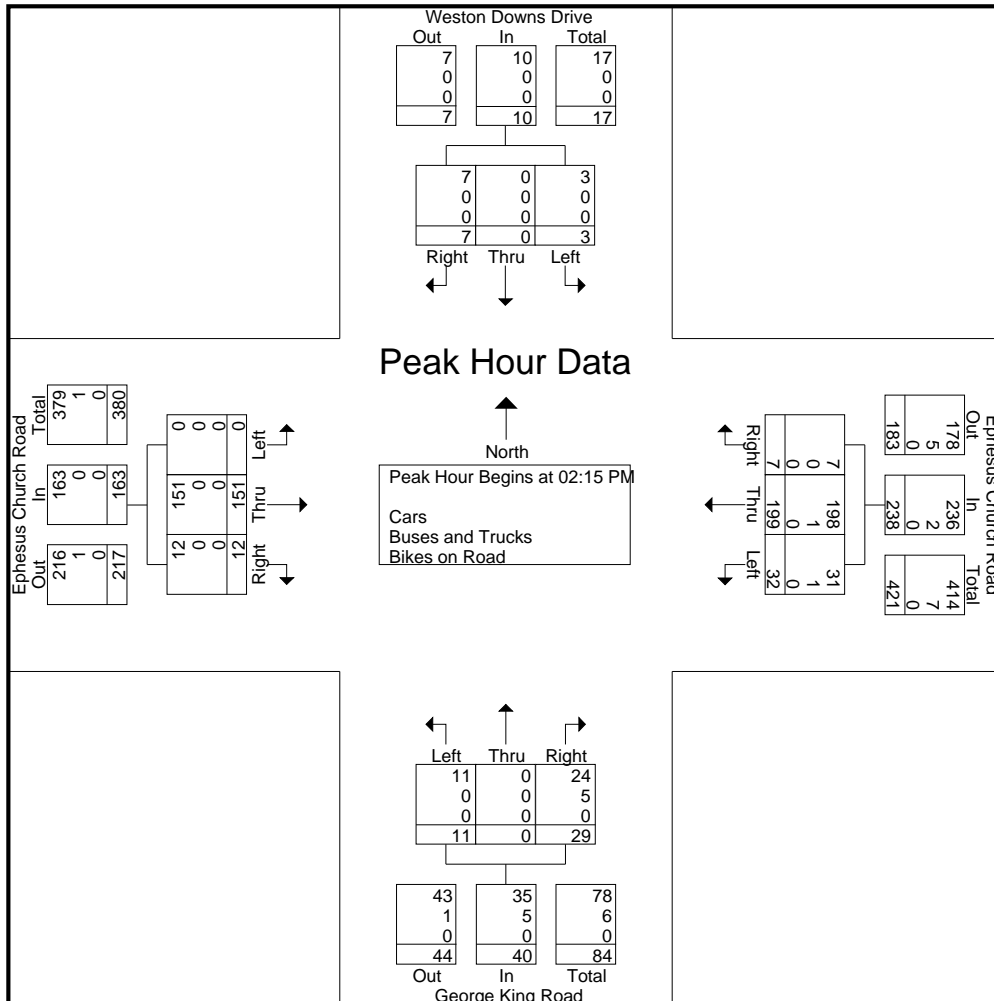




# DAVENPORT

119 Brookstown Ave., Suite PH1,  
 Winston Salem NC, 27101  
 Ph:(336)744-1636

File Name : Ephesus Church Road at George King Road  
 Site Code : 00015423  
 Start Date : 1/9/2018  
 Page No : 7





# DAVENPORT

119 Brookstown Ave., Suite PH1,  
Winston Salem NC, 27101  
Ph:(336)744-1636

Counted By: E. Hood

File Name : Farrington Road at Niagra Drive  
Site Code : 00015423  
Start Date : 1/9/2018  
Page No : 1

## Groups Printed- Cars - Buses and Trucks - Bikes on Road

Start Time	Farrington Road Southbound					Driveway Westbound					Farrington Road Northbound					Niagra Drive Eastbound					Exclu. Total	Inclu. Total	Int. Total			
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total						
07:00 AM	1	26	0	0	27	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	0	0	40	40		
07:05 AM	0	37	0	0	37	0	0	0	0	0	0	45	0	0	45	0	0	1	0	1	0	0	83	83		
07:10 AM	0	42	0	0	42	0	0	0	0	0	0	40	0	0	40	0	0	0	0	0	0	0	82	82		
07:15 AM	0	37	0	0	37	0	0	0	0	0	0	48	1	0	49	0	0	0	0	0	0	0	86	86		
07:20 AM	0	57	0	0	57	0	0	0	0	0	0	56	1	0	57	0	0	0	0	0	0	0	114	114		
07:25 AM	1	67	0	0	68	0	0	0	0	0	0	57	0	0	57	0	0	1	0	1	0	0	126	126		
07:30 AM	0	44	0	0	44	0	0	0	0	0	0	57	0	0	57	0	0	0	0	0	0	0	101	101		
07:35 AM	0	52	0	0	52	0	0	0	0	0	0	35	0	0	35	0	0	0	0	0	0	0	87	87		
07:40 AM	1	55	0	0	56	1	0	0	0	1	0	41	0	0	41	0	0	0	0	0	0	0	98	98		
07:45 AM	0	61	0	0	61	0	0	0	0	0	0	40	1	0	41	0	0	0	0	0	0	0	102	102		
07:50 AM	1	27	0	0	28	0	0	0	0	0	0	36	0	0	36	0	0	0	0	0	0	0	64	64		
07:55 AM	0	35	0	0	35	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	0	0	55	55		
Total	4	540	0	0	544	1	0	0	0	1	0	488	3	0	491	0	0	2	0	2	0	0	1038	1038		
08:00 AM	0	37	0	0	37	0	0	0	0	0	0	19	1	0	20	0	0	1	0	1	0	0	58	58		
08:05 AM	1	37	0	0	38	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	0	0	67	67		
08:10 AM	0	39	0	0	39	0	0	0	0	0	0	39	0	0	39	1	0	0	0	1	0	0	79	79		
08:15 AM	1	41	0	0	42	0	0	0	0	0	0	21	1	0	22	0	0	0	0	0	0	0	64	64		
08:20 AM	0	57	0	0	57	0	0	0	0	0	0	30	1	0	31	2	0	0	0	2	0	0	90	90		
08:25 AM	0	65	0	0	65	0	0	0	0	0	0	37	1	0	38	0	0	0	0	0	0	0	103	103		
08:30 AM	0	40	0	0	40	0	0	0	0	0	0	35	1	0	36	2	0	0	0	2	0	0	78	78		
08:35 AM	0	51	0	0	51	0	0	0	0	0	0	26	0	0	26	1	0	0	0	1	0	0	78	78		
08:40 AM	0	46	0	0	46	0	0	0	0	0	0	36	1	0	37	0	0	0	0	0	0	0	83	83		
08:45 AM	0	49	0	0	49	0	0	0	0	0	0	24	0	0	24	0	0	0	0	0	0	0	73	73		
08:50 AM	0	36	0	0	36	0	0	0	0	0	0	25	0	0	25	2	0	0	0	2	0	0	63	63		
08:55 AM	0	31	0	0	31	0	0	0	0	0	0	29	1	0	30	1	0	0	0	1	0	0	62	62		
Total	2	529	0	0	531	0	0	0	0	0	0	350	7	0	357	9	0	1	0	10	0	0	898	898		
*** BREAK ***																										
02:00 PM	0	26	0	0	26	0	0	0	0	0	0	42	0	0	42	0	0	0	0	0	0	0	68	68		
02:05 PM	0	26	0	0	26	0	0	0	0	0	0	28	0	0	28	1	0	0	0	1	0	0	55	55		
02:10 PM	0	38	0	0	38	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	0	0	63	63		
02:15 PM	0	30	0	0	30	0	0	0	0	0	0	49	1	0	50	1	0	0	0	1	0	0	81	81		
02:20 PM	3	45	0	0	48	0	0	0	0	0	0	35	1	0	36	0	0	0	0	0	0	0	84	84		
02:25 PM	0	47	0	0	47	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	0	0	76	76		
02:30 PM	0	48	0	0	48	0	0	0	0	0	0	26	0	0	26	0	0	0	0	0	0	0	74	74		
02:35 PM	1	38	0	0	39	0	0	0	0	0	0	24	1	0	25	0	0	0	0	0	0	0	64	64		
02:40 PM	0	35	0	0	35	0	0	0	0	0	0	21	0	0	21	1	0	1	0	2	0	0	58	58		
02:45 PM	1	30	0	0	31	0	0	0	0	0	0	22	1	0	23	2	0	1	0	3	0	0	57	57		
02:50 PM	1	25	1	0	27	0	0	0	0	0	0	44	1	0	45	2	0	2	0	4	0	0	76	76		
02:55 PM	1	27	0	0	28	0	0	0	0	0	0	20	0	0	20	1	0	0	0	1	0	0	49	49		
Total	7	415	1	0	423	0	0	0	0	0	0	365	5	0	370	8	0	4	0	12	0	0	805	805		

# DAVENPORT

119 Brookstown Ave., Suite PH1,  
Winston Salem NC, 27101  
Ph:(336)744-1636

File Name : Farrington Road at Niagra Drive  
Site Code : 00015423  
Start Date : 1/9/2018  
Page No : 2

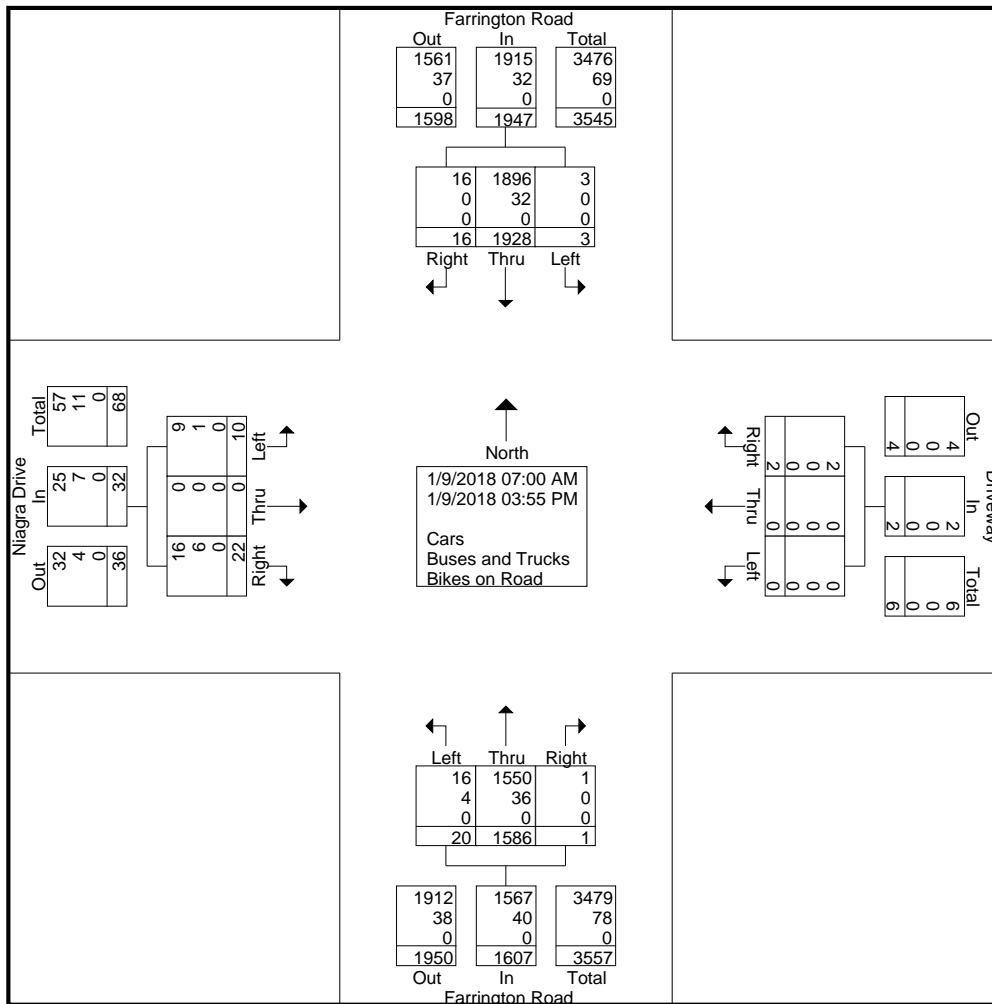
Groups Printed- Cars - Buses and Trucks - Bikes on Road

Start Time	Farrington Road Southbound					Driveway Westbound					Farrington Road Northbound					Niagra Drive Eastbound					Exclu. Total	Inclu. Total	Int. Total	
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total				
03:00 PM	0	21	0	0	21	0	0	0	0	0	0	34	1	0	35	1	0	0	0	1	0	0	57	57
03:05 PM	0	39	0	0	39	1	0	0	0	1	0	30	0	0	30	2	0	0	0	2	0	0	72	72
03:10 PM	0	32	0	0	32	0	0	0	0	0	0	25	1	0	26	1	0	1	0	2	0	0	60	60
03:15 PM	0	28	0	0	28	0	0	0	0	0	1	36	0	0	37	0	0	2	0	2	0	0	67	67
03:20 PM	0	38	0	0	38	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	0	0	61	61
03:25 PM	0	43	0	0	43	0	0	0	0	0	0	31	0	0	31	0	0	0	0	0	0	0	74	74
03:30 PM	0	41	1	0	42	0	0	0	0	0	0	23	0	0	23	0	0	0	0	0	0	0	65	65
03:35 PM	0	45	0	0	45	0	0	0	0	0	0	36	2	0	38	0	0	0	0	0	0	0	83	83
03:40 PM	1	40	0	0	41	0	0	0	0	0	0	30	1	0	31	0	0	0	0	0	0	0	72	72
03:45 PM	1	38	0	0	39	0	0	0	0	0	0	48	0	0	48	1	0	0	0	1	0	0	88	88
03:50 PM	1	35	1	0	37	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	0	0	66	66
03:55 PM	0	44	0	0	44	0	0	0	0	0	0	38	0	0	38	0	0	0	0	0	0	0	82	82
Total	3	444	2	0	449	1	0	0	0	1	1	383	5	0	389	5	0	3	0	8	0	0	847	847
Grand Total	16	1928	3	0	1947	2	0	0	0	2	1	1586	20	0	1607	22	0	10	0	32	0	0	3588	3588
Apprch %	0.8	99	0.2			100	0	0			0.1	98.7	1.2			68.8	0	31.2						
Total %	0.4	53.7	0.1		54.3	0.1	0	0		0.1	0	44.2	0.6		44.8	0.6	0	0.3		0.9	0	0	100	
Cars	16	1896	3		1915	2	0	0		2	1	1550	16		1567	16	0	9		25	0	0	3509	
% Cars	100	98.3	100		98.4	100	0	0		100	100	97.7	80		97.5	72.7	0	90		78.1	0	0	97.8	
Buses and Trucks	0	32	0		32	0	0	0		0	0	36	4		40	6	0	1		7	0	0	79	
% Buses and Trucks	0	1.7	0		1.6	0	0	0		0	0	2.3	20		2.5	27.3	0	10		21.9	0	0	2.2	
Bikes on Road	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	
% Bikes on Road	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0	

# DAVENPORT

119 Brookstown Ave., Suite PH1,  
 Winston Salem NC, 27101  
 Ph:(336)744-1636

File Name : Farrington Road at Niagra Drive  
 Site Code : 00015423  
 Start Date : 1/9/2018  
 Page No : 3

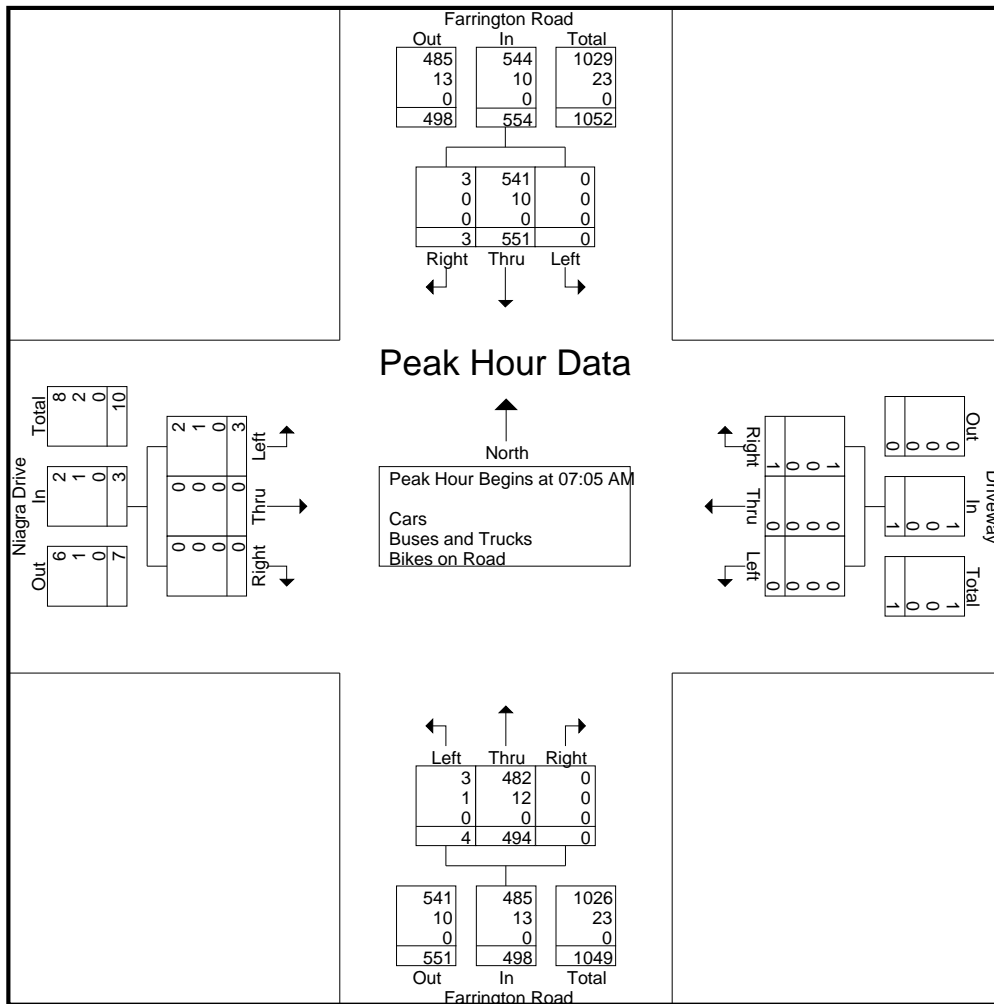




# DAVENPORT

119 Brookstown Ave., Suite PH1,  
 Winston Salem NC, 27101  
 Ph:(336)744-1636

File Name : Farrington Road at Niagra Drive  
 Site Code : 00015423  
 Start Date : 1/9/2018  
 Page No : 5

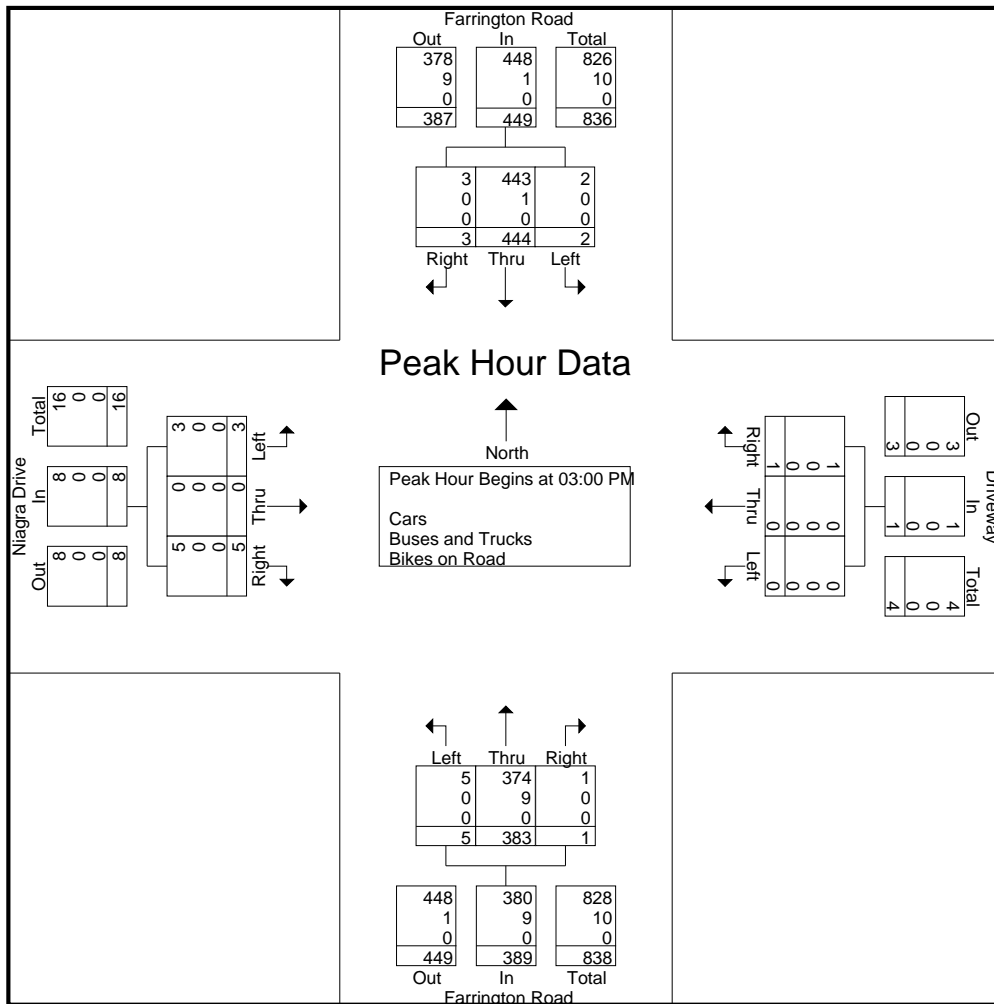




# DAVENPORT

119 Brookstown Ave., Suite PH1,  
 Winston Salem NC, 27101  
 Ph:(336)744-1636

File Name : Farrington Road at Niagra Drive  
 Site Code : 00015423  
 Start Date : 1/9/2018  
 Page No : 7



# DAVENPORT

119 Brookstown Ave., Suite PH1,  
Winston Salem NC, 27101  
Ph:(336)744-1636

Counted By: E. Hood

File Name : Farrington Road at Culp Hill Drive  
Site Code : 00015423  
Start Date : 1/9/2018  
Page No : 1

## Groups Printed- Cars - Buses and Trucks - Bikes on Road

Start Time	Farrington Road Southbound					T-Intersection Westbound					Farrington Road Northbound					Culp Hill Drive Eastbound					Exclu. Total	Inclu. Total	Int. Total	
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total				
07:00 AM	1	29	0	0	30	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	0	0	44	44
07:05 AM	0	32	0	0	32	0	0	0	0	0	0	45	3	0	48	1	0	0	0	1	0	81	81	
07:10 AM	0	42	0	0	42	0	0	0	0	0	0	40	0	0	40	0	0	0	0	0	0	82	82	
07:15 AM	0	38	0	0	38	0	0	0	0	0	0	46	1	0	47	2	0	0	0	2	0	87	87	
07:20 AM	0	50	0	0	50	0	0	0	0	0	0	56	0	0	56	0	0	1	0	1	0	107	107	
07:25 AM	0	70	0	0	70	0	0	0	0	0	0	57	1	0	58	1	0	0	0	1	0	129	129	
07:30 AM	0	43	0	0	43	0	0	0	0	0	0	55	2	0	57	0	0	1	0	1	0	101	101	
07:35 AM	0	52	0	0	52	0	0	0	0	0	0	38	0	0	38	1	0	0	0	1	0	91	91	
07:40 AM	0	58	0	0	58	0	0	0	0	0	0	41	0	0	41	0	0	0	0	0	0	99	99	
07:45 AM	1	64	0	0	65	0	0	0	0	0	0	42	0	0	42	0	0	0	0	0	0	107	107	
07:50 AM	0	28	0	0	28	0	0	0	0	0	0	34	0	0	34	1	0	1	0	2	0	64	64	
07:55 AM	0	33	0	0	33	0	0	0	0	0	0	21	1	0	22	0	0	0	0	0	0	55	55	
Total	2	539	0	0	541	0	0	0	0	0	0	489	8	0	497	6	0	3	0	9	0	1047	1047	
08:00 AM	0	42	0	0	42	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	63	63	
08:05 AM	1	35	0	0	36	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	0	65	65	
08:10 AM	1	40	0	0	41	0	0	0	0	0	0	37	1	0	38	0	0	0	1	0	1	79	80	
08:15 AM	0	41	0	0	41	0	0	0	0	0	0	23	1	0	24	0	0	0	0	0	0	65	65	
08:20 AM	1	59	0	0	60	0	0	0	0	0	0	30	0	0	30	1	0	2	1	3	1	93	94	
08:25 AM	0	59	0	0	59	0	0	0	0	0	0	35	1	0	36	0	0	0	0	0	0	95	95	
08:30 AM	0	43	0	0	43	0	0	0	0	0	0	37	0	0	37	2	0	0	0	2	0	82	82	
08:35 AM	0	51	0	0	51	0	0	0	0	0	0	26	0	0	26	1	0	0	0	1	0	78	78	
08:40 AM	0	47	0	0	47	0	0	0	0	0	0	34	0	0	34	1	0	0	0	1	0	82	82	
08:45 AM	0	48	0	0	48	0	0	0	0	0	0	26	1	0	27	0	0	0	1	0	1	75	76	
08:50 AM	0	41	0	0	41	0	0	0	0	0	0	29	0	0	29	0	0	0	0	0	0	70	70	
08:55 AM	0	34	0	0	34	0	0	0	0	0	0	26	0	0	26	0	0	0	0	0	0	60	60	
Total	3	540	0	0	543	0	0	0	0	0	0	353	4	0	357	5	0	2	3	7	3	907	910	
*** BREAK ***																								
02:00 PM	0	25	0	0	25	0	0	0	0	0	0	41	2	0	43	0	0	1	0	1	0	69	69	
02:05 PM	0	23	0	0	23	0	0	0	0	0	0	24	1	0	25	0	0	1	0	1	0	49	49	
02:10 PM	1	34	0	0	35	0	0	0	0	0	0	25	1	0	26	1	0	0	0	1	0	62	62	
02:15 PM	1	30	0	0	31	0	0	0	0	0	0	47	1	0	48	1	0	2	0	3	0	82	82	
02:20 PM	1	45	0	0	46	0	0	0	0	0	0	39	1	0	40	2	0	0	0	2	0	88	88	
02:25 PM	0	44	0	0	44	0	0	0	0	0	0	28	0	0	28	0	0	1	0	1	0	73	73	
02:30 PM	0	50	0	0	50	0	0	0	0	0	0	26	0	0	26	0	0	0	0	0	0	76	76	
02:35 PM	0	38	0	0	38	0	0	0	0	0	0	25	0	0	25	3	0	0	0	3	0	66	66	
02:40 PM	3	34	0	0	37	0	0	0	0	0	0	21	2	0	23	2	0	0	0	2	0	62	62	
02:45 PM	2	34	0	0	36	0	0	0	0	0	0	21	0	0	21	2	0	1	0	3	0	60	60	
02:50 PM	1	27	0	0	28	0	0	0	0	0	0	41	2	0	43	0	0	3	0	3	0	74	74	
02:55 PM	0	26	0	0	26	0	0	0	0	0	0	21	0	0	21	1	0	0	0	1	0	48	48	
Total	9	410	0	0	419	0	0	0	0	0	0	359	10	0	369	12	0	9	0	21	0	809	809	

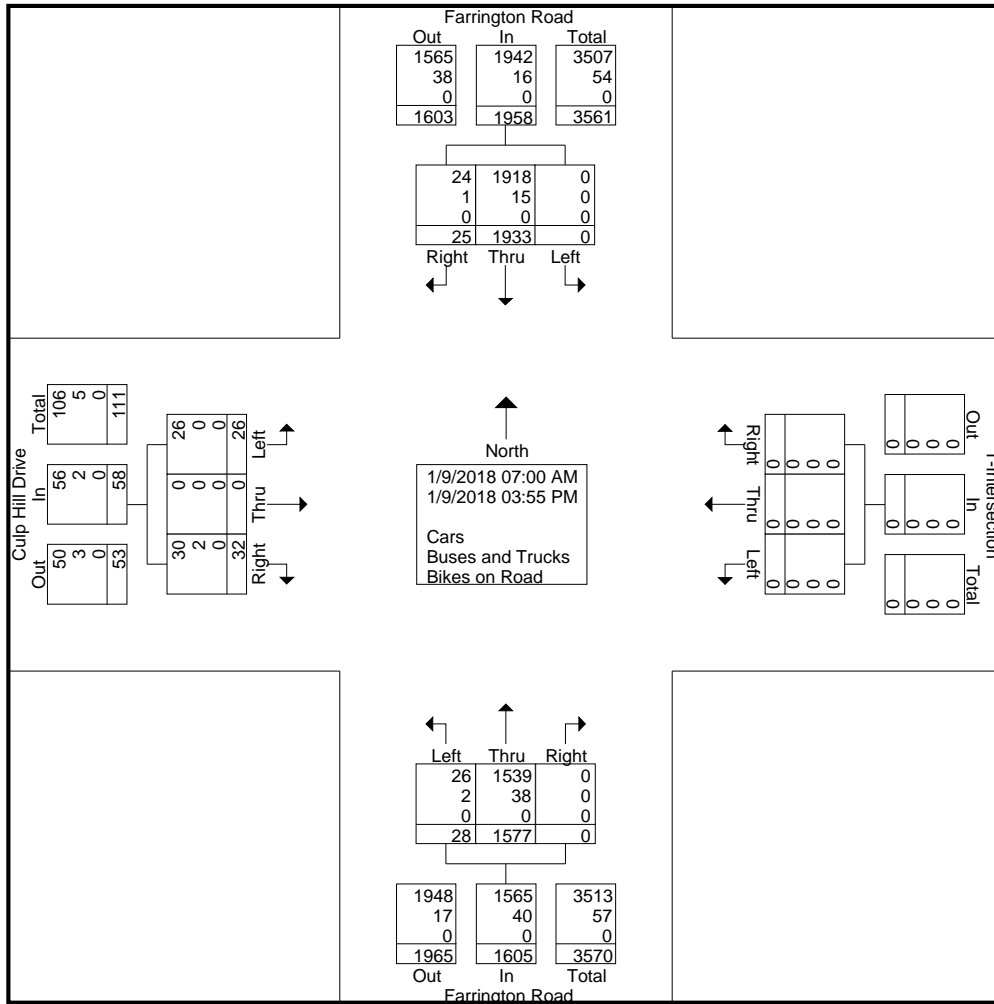




# DAVENPORT

119 Brookstown Ave., Suite PH1,  
 Winston Salem NC, 27101  
 Ph:(336)744-1636

File Name : Farrington Road at Culp Hill Drive  
 Site Code : 00015423  
 Start Date : 1/9/2018  
 Page No : 3

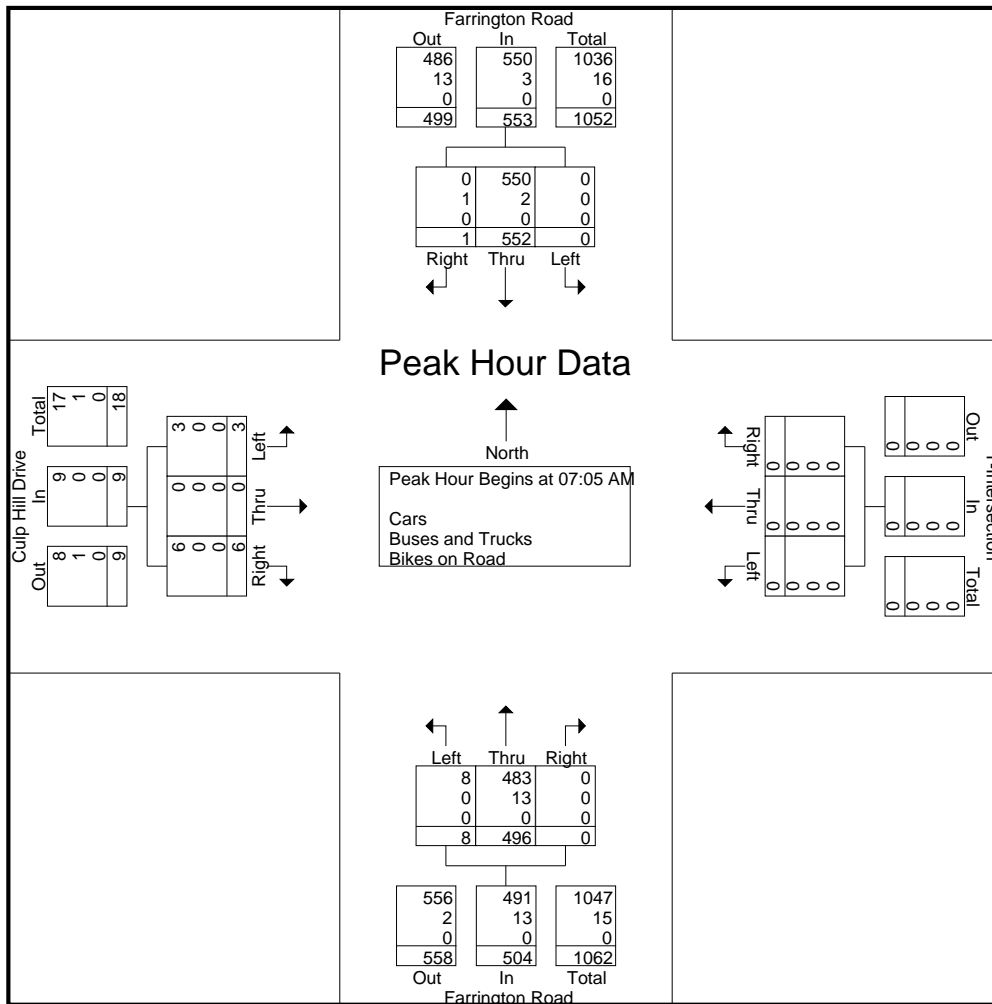




# DAVENPORT

119 Brookstown Ave., Suite PH1,  
Winston Salem NC, 27101  
Ph:(336)744-1636

File Name : Farrington Road at Culp Hill Drive  
Site Code : 00015423  
Start Date : 1/9/2018  
Page No : 5

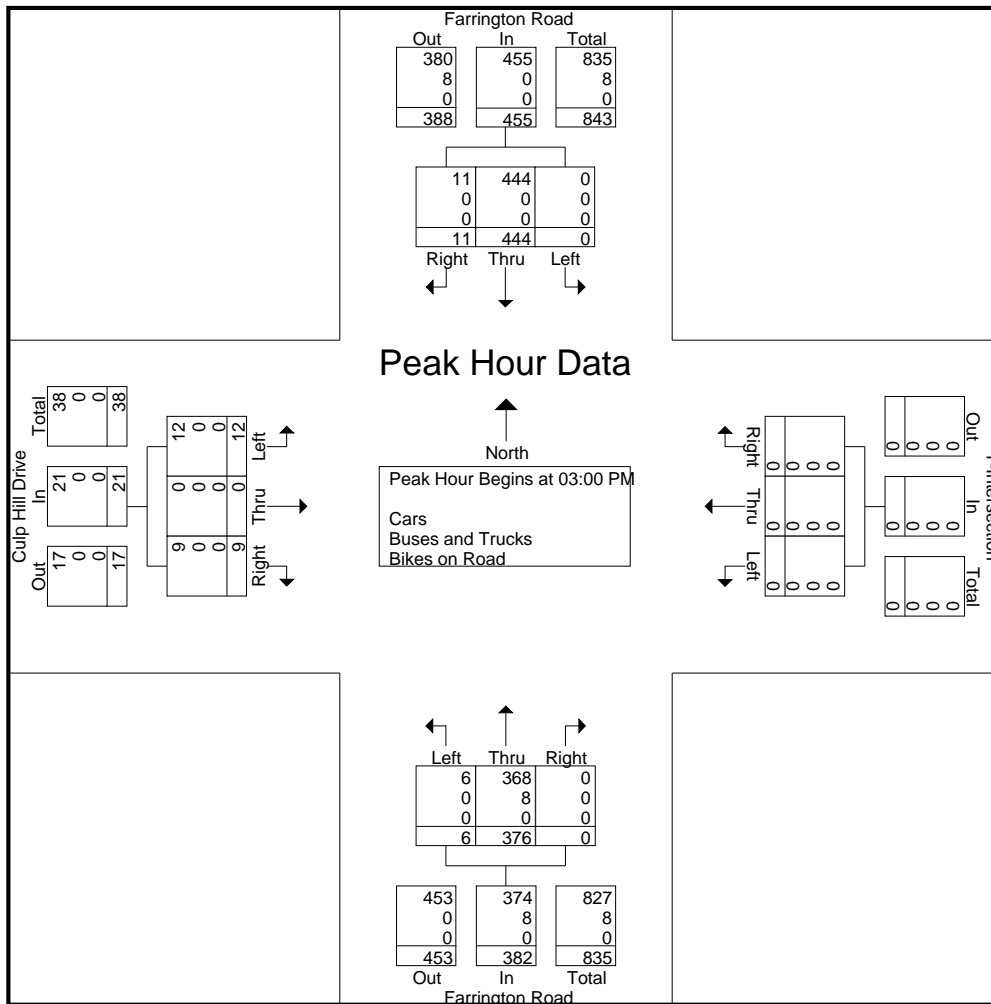


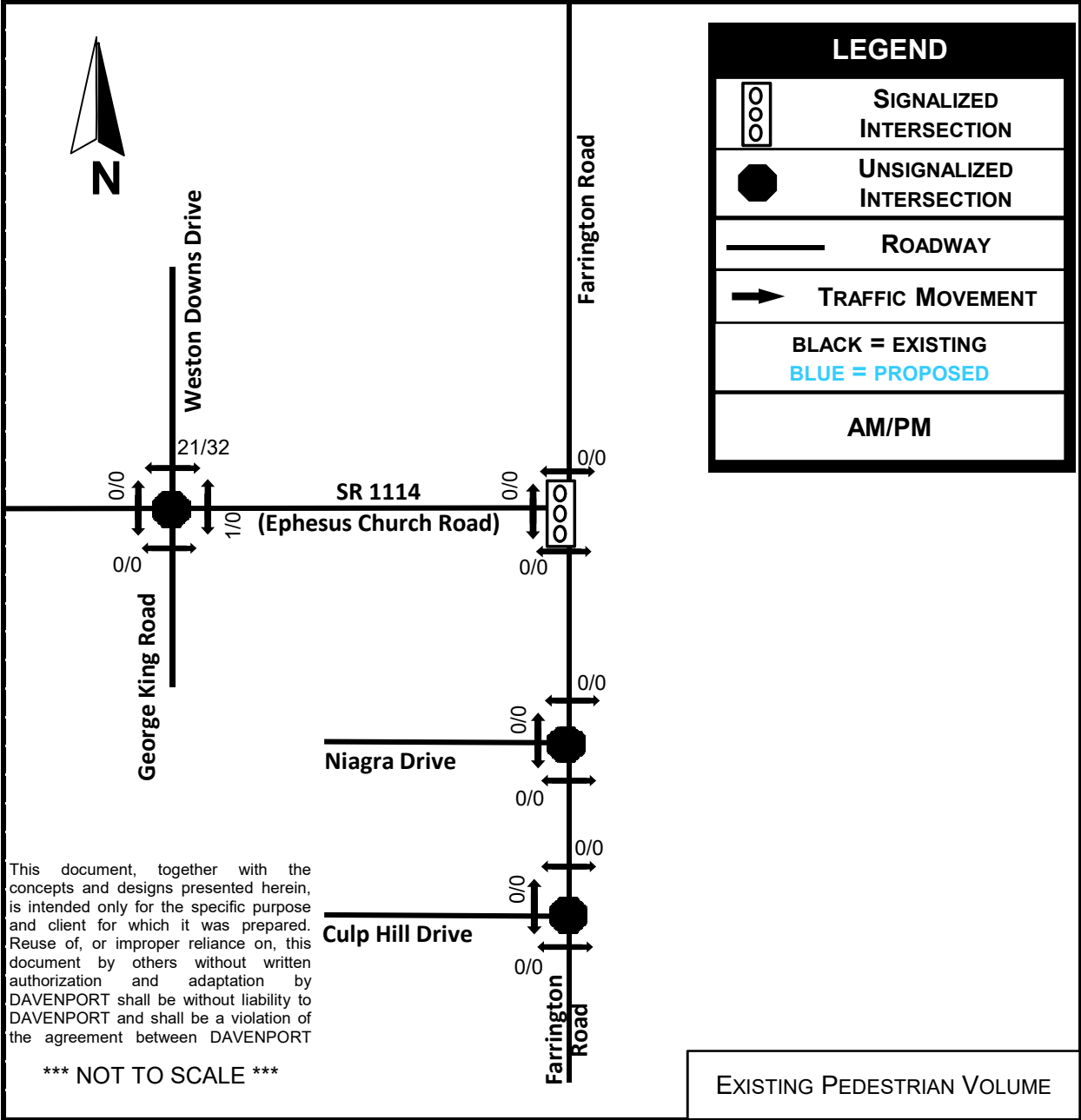


# DAVENPORT

119 Brookstown Ave., Suite PH1,  
Winston Salem NC, 27101  
Ph:(336)744-1636

File Name : Farrington Road at Culp Hill Drive  
Site Code : 00015423  
Start Date : 1/9/2018  
Page No : 7





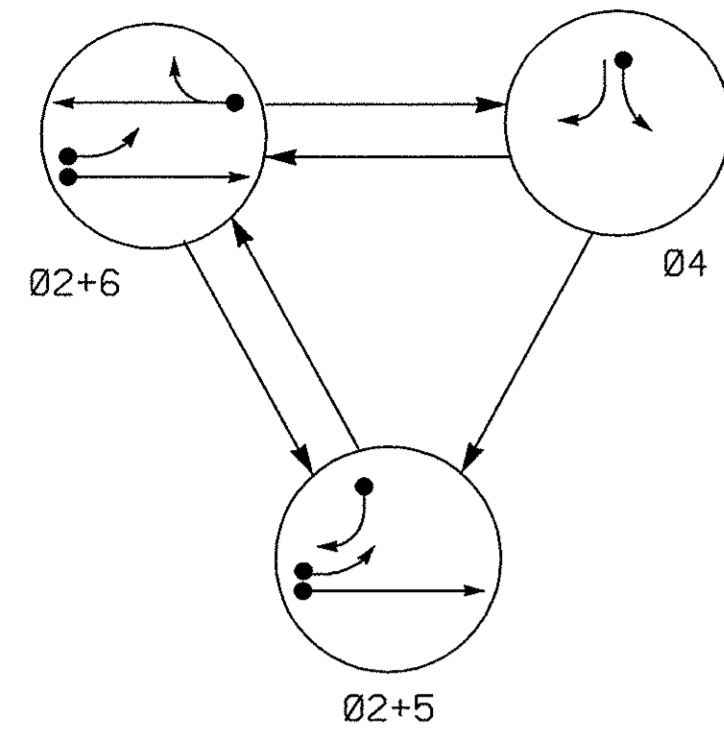




# Signal Timings



**PHASING DIAGRAM**



SIGNAL FACE	PHASE			
	Ø 2+5	Ø 2+6	Ø 4	FLASH
21	G	R	Y	
22	G	G	R	Y
41	R	R	G	R
42	R	R	G	R
61,62	R	G	R	Y

2070L LOOP & DETECTOR INSTALLATION												
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING						SYSTEM LOOP	NEW CARD
					PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME		
2A	6x6	300	4	Y	2	Y	Y	-	-	-	Y	
4A	6x40	0	2-4-2	Y	4	Y	Y	-	-	-	Y	
5A	6x40	0	2-4-2	Y	5	Y	Y	-	-	15	Y	
5B	6x40	0	2-4-2	Y	2	Y	Y	-	-	3	Y	
6A	6x6	300	5	Y	6	Y	Y	-	-	-	Y	

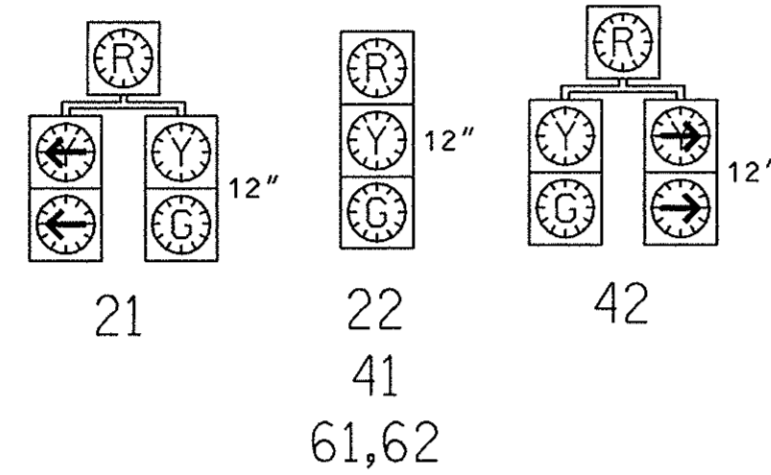
**3 PHASE FULLY ACTUATED (ISOLATED)**

**NOTES**

1. Refer to "Roadway Standard Drawings NCDOT" dated July, 2006 and "Standard Specifications for Roads and Structures" dated July, 2006, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: <http://www.ncdot.org/doh/preconstruct/traffic/ITSS>
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Set all detector units to presence mode.
4. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
5. Locate all underground utilities prior to pole drilling and conduit trenching.

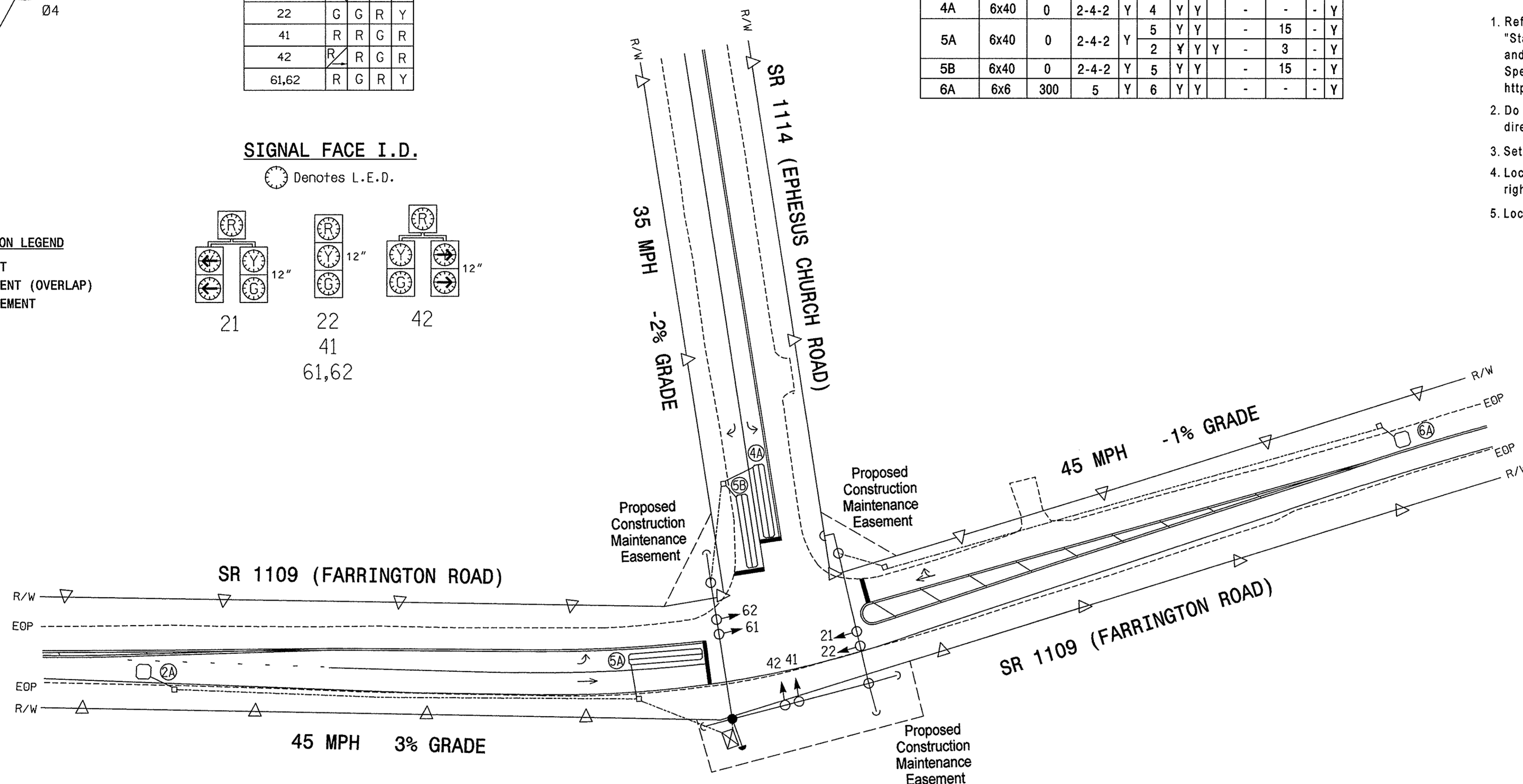
**SIGNAL FACE I.D.**

Denotes L.E.D.



**PHASING DIAGRAM DETECTION LEGEND**

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT

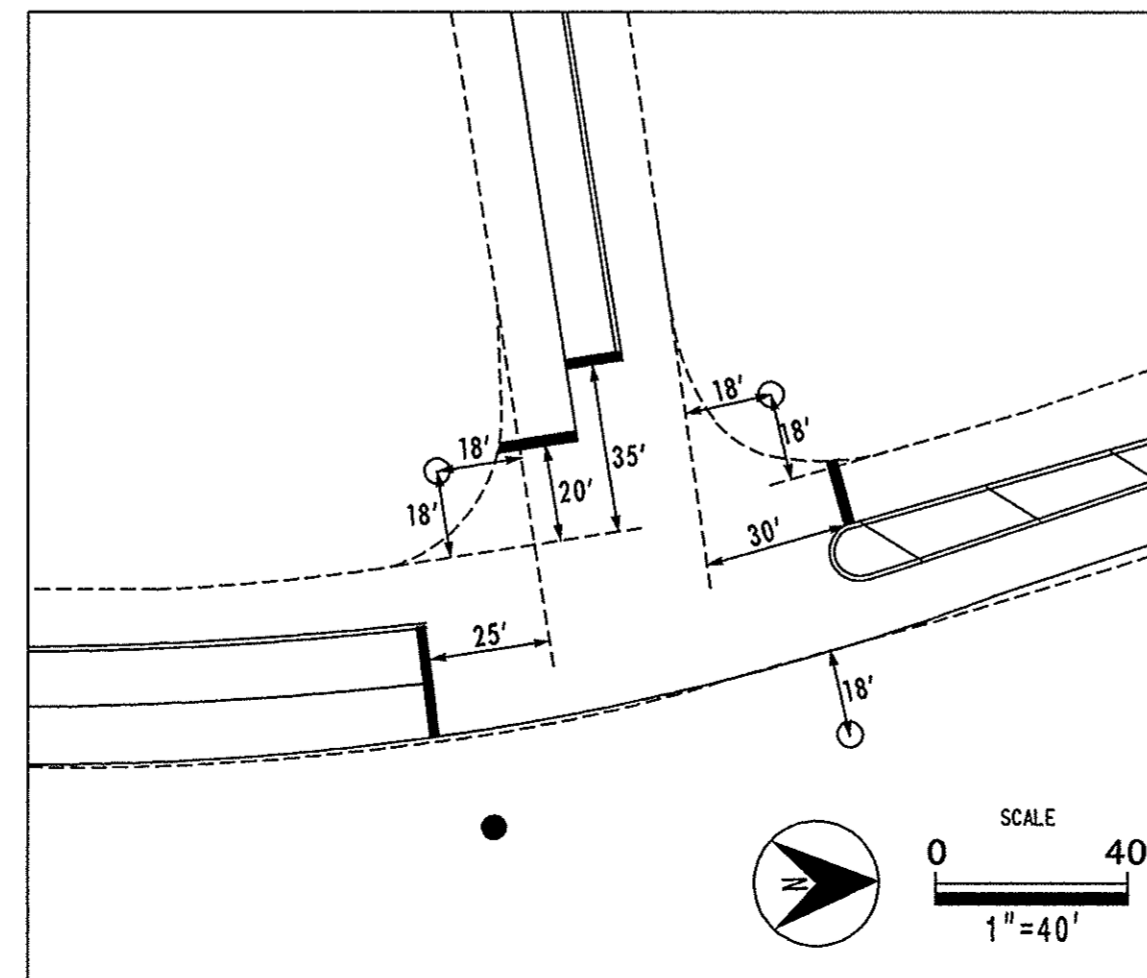


**LEGEND**

- | PROPOSED | EXISTING |
|----------|----------|
|          |          |
|          | N/A      |
|          |          |
|          |          |
|          |          |
|          |          |
|          |          |
|          |          |
|          |          |
|          |          |
| N/A      |          |
|          |          |
|          |          |

FEATURE	PHASE			
	Ø2	Ø4	Ø5	Ø6
Min Green 1 *	12	7	7	12
Extension 1 *	6.0	1.0	1.0	6.0
Max Green 1 *	90	20	35	90
Yellow Clearance	4.3	3.3	3.1	4.6
Red Clearance	1.0	1.8	1.7	1.0
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	2.5	-	-	2.5
Max Variable Initial *	34	-	-	34
Time Before Reduction *	15	-	-	15
Time To Reduce *	30	-	-	30
Minimum Gap	3.0	-	-	3.0
Recall Mode	MIN RECALL	-	-	MIN RECALL
Vehicle Call Memory	YELLOW	-	-	YELLOW
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

**PROPOSED STOPBAR AND POLE LOCATION**



NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 FINAL DRAWING Date: 7/7/08  
 Traffic Engineering Branch



4000 Westchase Blvd. Suite 530  
 Raleigh, NC 27607  
 Tel. 919.829.0329  
 Fax. 919.829.0329

**NEW INSTALLATION**

	<b>SR 1109 (FARRINGTON ROAD)          AT          SR 1114 (EPHESUS CHURCH ROAD)</b>		
	DIVISION 5 DURHAM COUNTY DURHAM PLAN DATE: 07/03/2008 PREPARED BY: JM	REVIEWED BY: JLL REVIEWED BY:	
SCALE 1"=40' 		SCALE 1"=40' 	
SIGNATURE: <i>Jianxin Ma</i> DATE: 7/3/2008		SIGNATURE: <i>Martin Alexiou Bryson</i> DATE:	
SIG. INVENTORY NO. 05-2338			

\* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.



**Attachment C-5.2: 2018 Existing Synchro Output Reports**

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## Level of Service Summary (2018 Existing Conditions)

Intersection	Movement	AM Peak			PM Peak		
		Volume (VPH)	Delay (sec)	LOS	Volume (VPH)	Delay (sec)	LOS
Ephesus Church Road (EB) at Farrington Road (NB/SB)	EBL	216	93.0	F	123	22.8	C
	EBR	278	21.5	C	204	14.5	B
	NBL	291	42.8	D	182	24.7	C
	NBT	186	3.9	A	176	4.6	A
	SBT	273	28.8	C	228	18.0	B
	SBR	191	-	-	87	-	-
	<b>Overall</b>		<b>1435</b>	<b>37.7</b>	<b>D</b>	<b>1000</b>	<b>17.0</b>
Ephesus Church Road (EB/WB) at George King Road/ Weston Downs Drive (NB/SB)	EBL	2	7.7	A	2	7.9	A
	EBT	159	-	-	149	-	-
	EBR	4	-	-	13	-	-
	WBL	42	7.8	A	32	7.7	A
	WBT	151	-	-	191	-	-
	WBR	9	-	-	7	-	-
	NBL	11	-	-	12	-	-
	NBT	1	10.6	B	1	10.8	B
	NBR	60	-	-	33	-	-
	SBL	15	16.9	C	3	16.0	C
	SBT	2	9.6	A	1	10.1	B
	SBR	5	-	-	7	-	-
<b>Overall</b>		<b>461</b>	<b>3.1</b>	<b>-</b>	<b>451</b>	<b>1.9</b>	<b>-</b>
Niagra Drive (EB) at Farrington Road (NB/SB)	EBL	3	29.4	D	4	16.4	C
	EBR	2	-	-	10	-	-
	NBL	4	9.2	A	6	8.6	A
	NBT	474	-	-	354	-	-
	SBT	548	-	-	425	-	-
	SBR	3	-	-	7	-	-
<b>Overall</b>		<b>1034</b>	<b>0.2</b>	<b>-</b>	<b>806</b>	<b>0.3</b>	<b>-</b>
Culp Hill Drive (EB) at Farrington Road (NB/SB)	EBL	3	15.2	C	9	13.4	B
	EBR	6	-	-	12	-	-
	NBL	8	9.2	A	7	8.6	A
	NBT	475	-	-	351	-	-
	SBT	548	-	-	424	-	-
	SBR	2	-	-	11	-	-
<b>Overall</b>		<b>1042</b>	<b>0.2</b>	<b>-</b>	<b>814</b>	<b>0.3</b>	<b>-</b>





AM



ROMF TIA  
1: Farrington Rd & Ephesus Church Rd

Existing  
Timing Plan: AM



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	216	278	291	186	273	191		
Future Volume (veh/h)	216	278	291	186	273	191		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1853	1853	1872	1910		
Adj Flow Rate, veh/h	288	371	388	207	303	255		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.75	0.75	0.75	0.90	0.90	0.75		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	287	663	448	1358	400	337		
Arrive On Green	0.16	0.16	0.25	0.73	0.43	0.43		
Sat Flow, veh/h	1792	1599	1765	1853	941	792		
Grp Volume(v), veh/h	288	371	388	207	0	558		
Grp Sat Flow(s),veh/h/ln	1792	1599	1765	1853	0	1732		
Q Serve(g_s), s	15.0	15.0	19.7	3.1	0.0	25.5		
Cycle Q Clear(g_c), s	15.0	15.0	19.7	3.1	0.0	25.5		
Prop In Lane	1.00	1.00	1.00			0.46		
Lane Grp Cap(c), veh/h	287	663	448	1358	0	737		
V/C Ratio(X)	1.00	0.56	0.87	0.15	0.00	0.76		
Avail Cap(c_a), veh/h	287	663	566	1684	0	926		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	39.3	20.9	33.4	3.8	0.0	22.8		
Incr Delay (d2), s/veh	53.7	0.7	9.4	0.2	0.0	6.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	11.6	0.1	10.8	1.7	0.0	13.3		
LnGrp Delay(d),s/veh	93.0	21.5	42.8	3.9	0.0	28.8		
LnGrp LOS	F	C	D	A		C		
Approach Vol, veh/h	659			595	558			
Approach Delay, s/veh	52.8			29.3	28.8			
Approach LOS	D			C	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		73.5		20.0	28.8	44.8		
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		
Max Green Setting (Gmax), s		83.0		13.0	28.0	48.0		
Max Q Clear Time (g_c+I1), s		5.1		17.0	21.7	27.5		
Green Ext Time (p_c), s		17.2		0.0	0.1	10.2		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			37.7					
HCM 2010 LOS			D					

**Intersection**

Int Delay, s/veh 3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	159	4	42	151	9	11	1	60	15	2	5
Future Vol, veh/h	2	159	4	42	151	9	11	1	60	15	2	5
Conflicting Peds, #/hr	21	0	0	0	0	21	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	370	-	-	-	-	-	-	-	115
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	0	-	-	-1	-	-	3	-
Peak Hour Factor	90	75	90	75	75	75	90	90	75	75	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	212	4	56	201	12	12	1	80	20	2	6

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	234	0	0	216
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1333	-	-	1354
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1333	-	-	1353
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.6	10.6	15.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	738	1333	-	-	1353	-	-	324	780
HCM Lane V/C Ratio	0.126	0.002	-	-	0.041	-	-	0.069	0.007
HCM Control Delay (s)	10.6	7.7	-	-	7.8	-	-	16.9	9.6
HCM Lane LOS	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.4	0	-	-	0.1	-	-	0.2	0

ROMF TIA  
3: Farrington Rd & Niagra Dr

Existing  
Timing Plan: AM

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	2	4	474	548	3
Future Vol, veh/h	3	2	4	474	548	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	5	-	-	1	5	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	4	632	731	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1373	732	734	0	-	0
Stage 1	732	-	-	-	-	-
Stage 2	641	-	-	-	-	-
Critical Hdwy	7.42	6.72	4.12	-	-	-
Critical Hdwy Stg 1	6.42	-	-	-	-	-
Critical Hdwy Stg 2	6.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	110	380	871	-	-	-
Stage 1	388	-	-	-	-	-
Stage 2	439	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	109	380	871	-	-	-
Mov Cap-2 Maneuver	109	-	-	-	-	-
Stage 1	388	-	-	-	-	-
Stage 2	437	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	29.4	0.1	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	871	-	153	-	-
HCM Lane V/C Ratio	0.005	-	0.036	-	-
HCM Control Delay (s)	9.2	-	29.4	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

ROMF TIA  
4: Farrington Rd & Culp Hill Dr

Existing  
Timing Plan: AM

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	6	8	475	548	2
Future Vol, veh/h	3	6	8	475	548	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-6	-	-	-5	-1	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	7	9	633	731	2

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1383	732	733	0	-	0
Stage 1	732	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Critical Hdwy	5.22	5.62	4.12	-	-	-
Critical Hdwy Stg 1	4.22	-	-	-	-	-
Critical Hdwy Stg 2	4.22	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	251	476	872	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	645	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	248	476	872	-	-	-
Mov Cap-2 Maneuver	248	-	-	-	-	-
Stage 1	607	-	-	-	-	-
Stage 2	638	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15.2	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	872	-	364	-	-
HCM Lane V/C Ratio	0.01	-	0.027	-	-
HCM Control Delay (s)	9.2	-	15.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

PM





ROMF TIA  
1: Farrington Rd & Ephesus Church Rd

Existing  
Timing Plan: PM



Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	123	204	182	176	228	87		
Future Volume (veh/h)	123	204	182	176	228	87		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1853	1853	1872	1910		
Adj Flow Rate, veh/h	164	272	243	196	253	116		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.75	0.75	0.75	0.90	0.90	0.75		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	344	614	339	1201	457	210		
Arrive On Green	0.19	0.19	0.19	0.65	0.38	0.38		
Sat Flow, veh/h	1792	1599	1765	1853	1216	558		
Grp Volume(v), veh/h	164	272	243	196	0	369		
Grp Sat Flow(s),veh/h/ln	1792	1599	1765	1853	0	1774		
Q Serve(g_s), s	5.1	7.9	8.1	2.6	0.0	10.2		
Cycle Q Clear(g_c), s	5.1	7.9	8.1	2.6	0.0	10.2		
Prop In Lane	1.00	1.00	1.00			0.31		
Lane Grp Cap(c), veh/h	344	614	339	1201	0	667		
V/C Ratio(X)	0.48	0.44	0.72	0.16	0.00	0.55		
Avail Cap(c_a), veh/h	430	691	848	2523	0	1420		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	22.4	14.3	23.6	4.3	0.0	15.4		
Incr Delay (d2), s/veh	0.4	0.2	1.1	0.2	0.0	2.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	2.5	7.6	4.0	1.4	0.0	5.4		
LnGrp Delay(d),s/veh	22.8	14.5	24.7	4.6	0.0	18.0		
LnGrp LOS	C	B	C	A		B		
Approach Vol, veh/h	436			439	369			
Approach Delay, s/veh	17.6			15.7	18.0			
Approach LOS	B			B	B			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		45.5		17.0	17.0	28.5		
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		
Max Green Setting (Gmax), s		83.0		13.0	28.0	48.0		
Max Q Clear Time (g_c+I1), s		4.6		9.9	10.1	12.2		
Green Ext Time (p_c), s		10.6		0.1	0.1	9.2		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			17.0					
HCM 2010 LOS			B					

**Intersection**

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	149	13	32	191	7	12	1	33	3	1	7
Future Vol, veh/h	2	149	13	32	191	7	12	1	33	3	1	7
Conflicting Peds, #/hr	32	0	0	0	0	32	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	370	-	-	-	-	-	-	-	115
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	0	-	-	-1	-	-	3	-
Peak Hour Factor	90	75	90	75	75	75	90	90	75	75	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	199	14	43	255	9	13	1	44	4	1	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	296	0	0	213	0	0	555	591	206	610	595	291
Stage 1	-	-	-	-	-	-	210	210	-	377	377	-
Stage 2	-	-	-	-	-	-	345	381	-	233	218	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.92	6.32	6.12	7.72	7.12	6.52
Critical Hdwy Stg 1	-	-	-	-	-	-	5.92	5.32	-	6.72	6.12	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.92	5.32	-	6.72	6.12	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1265	-	-	1357	-	-	456	434	839	367	378	730
Stage 1	-	-	-	-	-	-	801	737	-	605	578	-
Stage 2	-	-	-	-	-	-	684	626	-	741	697	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1265	-	-	1357	-	-	439	407	839	328	354	708
Mov Cap-2 Maneuver	-	-	-	-	-	-	439	407	-	328	354	-
Stage 1	-	-	-	-	-	-	800	736	-	586	543	-
Stage 2	-	-	-	-	-	-	654	588	-	700	696	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.1			10.8			12.4		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	683	1265	-	-	1357	-	-	333	708
HCM Lane V/C Ratio	0.086	0.002	-	-	0.031	-	-	0.015	0.011
HCM Control Delay (s)	10.8	7.9	-	-	7.7	-	-	16	10.1
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0	0

ROMF TIA  
3: Farrington Rd & Niagra Dr

Existing  
Timing Plan: PM

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	10	6	354	425	7
Future Vol, veh/h	4	10	6	354	425	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	5	-	-	1	5	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	11	7	472	567	8

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1056	571	574	0	-	0
Stage 1	571	-	-	-	-	-
Stage 2	485	-	-	-	-	-
Critical Hdwy	7.42	6.72	4.12	-	-	-
Critical Hdwy Stg 1	6.42	-	-	-	-	-
Critical Hdwy Stg 2	6.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	186	481	999	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	541	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	185	481	999	-	-	-
Mov Cap-2 Maneuver	185	-	-	-	-	-
Stage 1	482	-	-	-	-	-
Stage 2	537	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.4	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	999	-	330	-	-
HCM Lane V/C Ratio	0.007	-	0.047	-	-
HCM Control Delay (s)	8.6	-	16.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

ROMF TIA  
4: Farrington Rd & Culp Hill Dr

Existing  
Timing Plan: PM

Intersection

Int Delay, s/veh 0.3

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	9	12	7	351	424	11
Future Vol, veh/h	9	12	7	351	424	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-6	-	-	-5	-1	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	13	8	468	565	12

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	1055	571	578	0	-	0
Stage 1	571	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Critical Hdwy	5.22	5.62	4.12	-	-	-
Critical Hdwy Stg 1	4.22	-	-	-	-	-
Critical Hdwy Stg 2	4.22	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	355	572	996	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	352	572	996	-	-	-
Mov Cap-2 Maneuver	352	-	-	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	722	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	13.4	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	996	-	451	-	-
HCM Lane V/C Ratio	0.008	-	0.052	-	-
HCM Control Delay (s)	8.6	-	13.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

**Attachment C-5.3: 2018 Existing SimTraffic Output Reports**

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### Queuing Summary (2018 Existing Conditions)

Intersection	Movement	Storage Length	AM Peak Queue Length (Feet)	PM Peak Queue Length (Feet)
Ephesus Church Road (EB) at Farrington Road (NB/SB)	EBL	350	255	140
	EBR	-	242	153
	NBL	450	283	166
	NBT	-	103	82
	SBTR	-	324	182
Ephesus Church Road (EB/WB) at George King Road/ Weston Downs Drive (NB/SB)	EBL	150	5	5
	WBL	370	36	27
	WBTR	-	0	5
	NBLTR	-	58	56
	SBLT	-	30	28
	SBR	115	26	26
Niagra Drive (EB) at Farrington Road (NB/SB)	EBLR	-	31	33
	NBL	-	16	24
Culp Hill Drive (EB) at Farrington Road (NB/SB)	EBLR	-	31	42
	NBL	200	27	27





AM



**Intersection: 1: Farrington Rd & Ephesus Church Rd**

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	255	242	283	103	324
Average Queue (ft)	130	109	157	32	166
95th Queue (ft)	223	185	249	75	266
Link Distance (ft)		898		846	908
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	350		450		
Storage Blk Time (%)	0	0			
Queuing Penalty (veh)	0	0			

**Intersection: 2: George King Rd/Weston Downs Dr & Ephesus Church Rd**

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	LT	R
Maximum Queue (ft)	5	36	58	30	26
Average Queue (ft)	0	5	29	12	4
95th Queue (ft)	4	24	50	35	19
Link Distance (ft)			1345	483	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150	370			115
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 3: Farrington Rd & Niagra Dr**

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	31	16
Average Queue (ft)	5	1
95th Queue (ft)	24	9
Link Distance (ft)	543	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Farrington Rd & Culp Hill Dr

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	31	27
Average Queue (ft)	8	2
95th Queue (ft)	30	14
Link Distance (ft)	978	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: School Driveway & Ephesus Church Rd

Movement	WB	NB
Directions Served	L	R
Maximum Queue (ft)	92	106
Average Queue (ft)	34	55
95th Queue (ft)	75	86
Link Distance (ft)		679
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0
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PM



**Intersection: 1: Farrington Rd & Ephesus Church Rd**

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	140	153	166	82	182
Average Queue (ft)	67	73	84	24	92
95th Queue (ft)	116	127	142	64	160
Link Distance (ft)		898		852	908
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	350		450		
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 2: George King Rd/Weston Downs Dr & Ephesus Church Rd**

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	TR	LTR	LT	R
Maximum Queue (ft)	5	27	5	56	28	26
Average Queue (ft)	0	5	0	26	3	6
95th Queue (ft)	4	21	4	51	17	23
Link Distance (ft)			703	1345	483	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150	370				115
Storage Blk Time (%)						
Queuing Penalty (veh)						

**Intersection: 3: Farrington Rd & Niagra Dr**

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	33	24
Average Queue (ft)	11	2
95th Queue (ft)	35	14
Link Distance (ft)	543	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Farrington Rd & Culp Hill Dr

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	42	27
Average Queue (ft)	16	2
95th Queue (ft)	43	13
Link Distance (ft)	978	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		200
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: School Driveway & Ephesus Church Rd

Movement	WB	NB
Directions Served	L	R
Maximum Queue (ft)	36	85
Average Queue (ft)	5	41
95th Queue (ft)	25	68
Link Distance (ft)		679
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0
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**Attachment C-5.4: 2028 No Build Synchro Output Reports**

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## Level of Service Summary (2028 No Build Analysis)

Intersection	Movement	AM Peak			PM Peak		
		Volume (VPH)	Delay (sec)	LOS	Volume (VPH)	Delay (sec)	LOS
Ephesus Church Road (EB) at Farrington Road (NB/SB)	EBL	239	63.3	E	136	25.4	C
	EBR	307	21.3	C	225	15.7	B
	NBL	205	60.4	E	201	27.5	C
	NBT	321	5.5	A	194	4.8	A
	SBT	302	47.6	D	252	20.0	C
	SBR	211	-	-	96	-	-
	<b>Overall</b>		<b>1585</b>	<b>42.7</b>	<b>D</b>	<b>1104</b>	<b>18.8</b>
Ephesus Church Road (EB/WB) at George King Road/ Weston Downs Drive (NB/SB)	EBL	2	7.8	A	2	7.9	A
	EBT	176	-	-	165	-	-
	EBR	4	-	-	14	-	-
	WBL	46	7.8	A	35	7.8	A
	WBT	167	-	-	211	-	-
	WBR	10	-	-	8	-	-
	NBL	12	-	-	13	-	-
	NBT	1	10.9	B	1	11.1	B
	NBR	66	-	-	36	-	-
	SBL	17	18.8	C	3	17.2	C
	SBT	2	9.8	A	1	10.3	B
	SBR	6	-	-	8	-	-
<b>Overall</b>		<b>509</b>	<b>3.2</b>	<b>-</b>	<b>497</b>	<b>2.0</b>	<b>-</b>
Niagra Drive (EB) at Farrington Road (NB/SB)	EBL	3	35.6	E	4	17.9	C
	EBR	2	-	-	11	-	-
	NBL	4	9.4	A	7	8.8	A
	NBT	524	-	-	391	-	-
	SBT	605	-	-	469	-	-
	SBR	3	-	-	8	-	-
	<b>Overall</b>		<b>1141</b>	<b>0.2</b>	<b>-</b>	<b>890</b>	<b>0.3</b>
Culp Hill Drive (EB) at Farrington Road (NB/SB)	EBL	3	16.3	C	10	14.4	B
	EBR	7	-	-	13	-	-
	NBL	9	9.5	A	8	8.8	A
	NBT	525	-	-	388	-	-
	SBT	605	-	-	468	-	-
	SBR	2	-	-	12	-	-
	<b>Overall</b>		<b>1158</b>	<b>0.2</b>	<b>-</b>	<b>899</b>	<b>0.4</b>



AM





Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	239	307	321	205	302	211		
Future Volume (veh/h)	239	307	321	205	302	211		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1853	1853	1872	1910		
Adj Flow Rate, veh/h	319	409	428	228	336	281		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.75	0.75	0.75	0.90	0.90	0.75		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	361	748	469	1310	373	312		
Arrive On Green	0.20	0.20	0.27	0.71	0.40	0.40		
Sat Flow, veh/h	1792	1599	1765	1853	944	789		
Grp Volume(v), veh/h	319	409	428	228	0	617		
Grp Sat Flow(s),veh/h/ln	1792	1599	1765	1853	0	1733		
Q Serve(g_s), s	18.9	20.0	25.6	4.5	0.0	36.5		
Cycle Q Clear(g_c), s	18.9	20.0	25.6	4.5	0.0	36.5		
Prop In Lane	1.00	1.00	1.00			0.46		
Lane Grp Cap(c), veh/h	361	748	469	1310	0	684		
V/C Ratio(X)	0.88	0.55	0.91	0.17	0.00	0.90		
Avail Cap(c_a), veh/h	361	748	469	1325	0	699		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	42.3	20.8	38.8	5.4	0.0	31.0		
Incr Delay (d2), s/veh	21.0	0.5	21.6	0.2	0.0	16.6		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	11.4	19.1	15.3	2.4	0.0	20.5		
LnGrp Delay(d),s/veh	63.3	21.3	60.4	5.6	0.0	47.6		
LnGrp LOS	E	C	E	A		D		
Approach Vol, veh/h	728			656	617			
Approach Delay, s/veh	39.7			41.3	47.6			
Approach LOS	D			D	D			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		82.1		27.0	34.0	48.1		
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		
Max Green Setting (Gmax), s		76.0		20.0	27.0	42.0		
Max Q Clear Time (g_c+I1), s		6.5		22.0	27.6	38.5		
Green Ext Time (p_c), s		19.8		0.0	0.0	2.6		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			42.7					
HCM 2010 LOS			D					

**Intersection**

Int Delay, s/veh 3.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	176	4	46	167	10	12	1	66	17	2	6
Future Vol, veh/h	2	176	4	46	167	10	12	1	66	17	2	6
Conflicting Peds, #/hr	23	0	0	0	0	23	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	370	-	-	-	-	-	-	-	115
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	0	-	-	-1	-	-	3	-
Peak Hour Factor	90	75	90	75	75	75	90	90	75	75	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	235	4	61	223	13	13	1	88	23	2	7

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	259	0	0	239
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1306	-	-	1328
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1306	-	-	1327
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.6	10.9	16.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	708	1306	-	-	1327	-	-	285	753
HCM Lane V/C Ratio	0.145	0.002	-	-	0.046	-	-	0.087	0.009
HCM Control Delay (s)	10.9	7.8	-	-	7.8	-	-	18.8	9.8
HCM Lane LOS	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.3	0



**Intersection**

Int Delay, s/veh 0.2

**Movement** EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	3	2	4	524	605	3
Future Vol, veh/h	3	2	4	524	605	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	5	-	-	1	5	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	4	699	807	3

**Major/Minor** Minor2 Major1 Major2

Conflicting Flow All	1516	808	810	0	-	0
Stage 1	808	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Critical Hdwy	7.42	6.72	4.12	-	-	-
Critical Hdwy Stg 1	6.42	-	-	-	-	-
Critical Hdwy Stg 2	6.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	86	340	816	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	86	340	816	-	-	-
Mov Cap-2 Maneuver	86	-	-	-	-	-
Stage 1	350	-	-	-	-	-
Stage 2	399	-	-	-	-	-

**Approach** EB NB SB

HCM Control Delay, s	35.6	0.1	0
HCM LOS	E		

**Minor Lane/Major Mvmt** NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	816	-	123	-	-
HCM Lane V/C Ratio	0.005	-	0.045	-	-
HCM Control Delay (s)	9.4	-	35.6	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	7	9	525	605	2
Future Vol, veh/h	3	7	9	525	605	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-6	-	-	-5	-1	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	8	10	700	807	2

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	1528	808	809	0	0
Stage 1	808	-	-	-	-
Stage 2	720	-	-	-	-
Critical Hdwy	5.22	5.62	4.12	-	-
Critical Hdwy Stg 1	4.22	-	-	-	-
Critical Hdwy Stg 2	4.22	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	215	436	817	-	-
Stage 1	574	-	-	-	-
Stage 2	613	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	212	436	817	-	-
Mov Cap-2 Maneuver	212	-	-	-	-
Stage 1	574	-	-	-	-
Stage 2	605	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	16.3	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	817	-	331	-	-
HCM Lane V/C Ratio	0.012	-	0.034	-	-
HCM Control Delay (s)	9.5	-	16.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

PM





Movement	EBL	EBR	NBL	NBT	SBT	SBR		
Lane Configurations								
Traffic Volume (veh/h)	136	225	201	194	252	96		
Future Volume (veh/h)	136	225	201	194	252	96		
Number	7	14	5	2	6	16		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00		
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1881	1881	1853	1853	1872	1910		
Adj Flow Rate, veh/h	181	300	268	216	280	128		
Adj No. of Lanes	1	1	1	1	1	0		
Peak Hour Factor	0.75	0.75	0.75	0.90	0.90	0.75		
Percent Heavy Veh, %	2	2	2	2	2	2		
Cap, veh/h	354	637	354	1222	470	215		
Arrive On Green	0.20	0.20	0.20	0.66	0.39	0.39		
Sat Flow, veh/h	1792	1599	1765	1853	1217	557		
Grp Volume(v), veh/h	181	300	268	216	0	408		
Grp Sat Flow(s),veh/h/ln	1792	1599	1765	1853	0	1774		
Q Serve(g_s), s	6.3	9.7	10.0	3.1	0.0	12.8		
Cycle Q Clear(g_c), s	6.3	9.7	10.0	3.1	0.0	12.8		
Prop In Lane	1.00	1.00	1.00			0.31		
Lane Grp Cap(c), veh/h	354	637	354	1222	0	686		
V/C Ratio(X)	0.51	0.47	0.76	0.18	0.00	0.60		
Avail Cap(c_a), veh/h	386	666	760	2262	0	1274		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.00	1.00		
Uniform Delay (d), s/veh	25.0	15.5	26.2	4.6	0.0	17.0		
Incr Delay (d2), s/veh	0.4	0.2	1.2	0.2	0.0	3.0		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	3.2	9.3	5.0	1.6	0.0	6.8		
LnGrp Delay(d),s/veh	25.4	15.7	27.5	4.8	0.0	20.0		
LnGrp LOS	C	B	C	A		C		
Approach Vol, veh/h	481			484	408			
Approach Delay, s/veh	19.4			17.4	20.0			
Approach LOS	B			B	C			
Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		50.9		18.7	19.0	31.9		
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		
Max Green Setting (Gmax), s		83.0		13.0	28.0	48.0		
Max Q Clear Time (g_c+I1), s		5.1		11.7	12.0	14.8		
Green Ext Time (p_c), s		12.2		0.1	0.1	10.1		
<b>Intersection Summary</b>								
HCM 2010 Ctrl Delay			18.8					
HCM 2010 LOS			B					

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	165	14	35	211	8	13	1	36	3	1	8
Future Vol, veh/h	2	165	14	35	211	8	13	1	36	3	1	8
Conflicting Peds, #/hr	32	0	0	0	0	32	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	370	-	-	-	-	-	-	-	115
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	0	-	-	-1	-	-	3	-
Peak Hour Factor	90	75	90	75	75	75	90	90	75	75	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	220	16	47	281	11	14	1	48	4	1	9

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	324	0	0	236	0	0	613	649	228	669	652	319
Stage 1	-	-	-	-	-	-	232	232	-	412	412	-
Stage 2	-	-	-	-	-	-	381	417	-	257	240	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.92	6.32	6.12	7.72	7.12	6.52
Critical Hdwy Stg 1	-	-	-	-	-	-	5.92	5.32	-	6.72	6.12	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.92	5.32	-	6.72	6.12	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1236	-	-	1331	-	-	419	403	816	332	347	703
Stage 1	-	-	-	-	-	-	781	722	-	576	555	-
Stage 2	-	-	-	-	-	-	655	605	-	716	679	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1236	-	-	1331	-	-	401	376	816	294	324	682
Mov Cap-2 Maneuver	-	-	-	-	-	-	401	376	-	294	324	-
Stage 1	-	-	-	-	-	-	780	721	-	558	519	-
Stage 2	-	-	-	-	-	-	622	566	-	672	678	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.1			11.1			12.8		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	650	1236	-	-	1331	-	-	300	682
HCM Lane V/C Ratio	0.098	0.002	-	-	0.035	-	-	0.017	0.013
HCM Control Delay (s)	11.1	7.9	-	-	7.8	-	-	17.2	10.3
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.1	0

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	11	7	391	469	8
Future Vol, veh/h	4	11	7	391	469	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	5	-	-	1	5	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	12	8	521	625	9

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1167	630	634	0	-	0
Stage 1	630	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Critical Hdwy	7.42	6.72	4.12	-	-	-
Critical Hdwy Stg 1	6.42	-	-	-	-	-
Critical Hdwy Stg 2	6.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	155	441	949	-	-	-
Stage 1	446	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	154	441	949	-	-	-
Mov Cap-2 Maneuver	154	-	-	-	-	-
Stage 1	446	-	-	-	-	-
Stage 2	501	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	17.9	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	949	-	295	-	-
HCM Lane V/C Ratio	0.008	-	0.056	-	-
HCM Control Delay (s)	8.8	-	17.9	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	0.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	13	8	388	468	12
Future Vol, veh/h	10	13	8	388	468	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-6	-	-	-5	-1	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	14	9	517	624	13

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1166	631	637	0	-	0
Stage 1	631	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Critical Hdwy	5.22	5.62	4.12	-	-	-
Critical Hdwy Stg 1	4.22	-	-	-	-	-
Critical Hdwy Stg 2	4.22	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	316	534	947	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	313	534	947	-	-	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	654	-	-	-	-	-
Stage 2	695	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.4	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	947	-	409	-	-
HCM Lane V/C Ratio	0.009	-	0.062	-	-
HCM Control Delay (s)	8.8	-	14.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-



**Attachment C-5.5: 2028 No Build SimTraffic Output Reports**

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### Queuing Summary (2028 No Build Analysis)

Intersection	Movement	Storage Length	AM Peak Queue Length (Feet)	PM Peak Queue Length (Feet)
Ephesus Church Road (EB) at Farrington Road (NB/SB)	EBL	350	192	145
	EBR	-	188	193
	NBL	450	263	173
	NBT	-	76	78
	SBTR	-	299	202
Ephesus Church Road (EB/WB) at George King Road/ Weston Downs Drive (NB/SB)	EBL	150	0	8
	WBL	370	24	35
	WBTR	-	5	5
	NBLTR	-	47	54
	SBLT	-	30	28
	SBR	115	22	26
Niagra Drive (EB) at Farrington Road (NB/SB)	EBLR	-	12	33
	NBL	-	8	24
Culp Hill Drive (EB) at Farrington Road (NB/SB)	EBLR	-	26	52
	NBL	200	21	24



AM



**Intersection: 1: Farrington Rd & Ephesus Church Rd**

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	192	188	263	76	299
Average Queue (ft)	135	129	196	42	208
95th Queue (ft)	220	211	313	95	350
Link Distance (ft)		898		808	908
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	350		450		
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 2: George King Rd/Weston Downs Dr & Ephesus Church Rd**

Movement	WB	WB	NB	SB	SB
Directions Served	L	TR	LTR	LT	R
Maximum Queue (ft)	24	5	47	30	22
Average Queue (ft)	6	1	30	15	5
95th Queue (ft)	24	12	52	39	22
Link Distance (ft)		703	1345	483	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	370				115
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 3: Farrington Rd & Niagra Dr**

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	12	8
Average Queue (ft)	4	2
95th Queue (ft)	21	12
Link Distance (ft)	543	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Farrington Rd & Culp Hill Dr

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	26	21
Average Queue (ft)	10	5
95th Queue (ft)	33	23
Link Distance (ft)	978	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: School Driveway & Ephesus Church Rd

Movement	WB	NB
Directions Served	L	R
Maximum Queue (ft)	54	74
Average Queue (ft)	32	56
95th Queue (ft)	63	78
Link Distance (ft)	679	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0
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PM



**Intersection: 1: Farrington Rd & Ephesus Church Rd**

Movement	EB	EB	NB	NB	SB
Directions Served	L	R	L	T	TR
Maximum Queue (ft)	145	193	173	78	202
Average Queue (ft)	74	87	94	27	97
95th Queue (ft)	124	152	151	66	169
Link Distance (ft)		898		840	908
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	350		450		
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 2: George King Rd/Weston Downs Dr & Ephesus Church Rd**

Movement	EB	WB	WB	NB	SB	SB
Directions Served	L	L	TR	LTR	LT	R
Maximum Queue (ft)	8	35	5	54	28	26
Average Queue (ft)	0	6	0	25	3	6
95th Queue (ft)	4	25	5	48	16	24
Link Distance (ft)			703	1345	483	
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150	370				115
Storage Blk Time (%)						
Queuing Penalty (veh)						

**Intersection: 3: Farrington Rd & Niagra Dr**

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	33	24
Average Queue (ft)	12	2
95th Queue (ft)	37	14
Link Distance (ft)	543	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Farrington Rd & Culp Hill Dr

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	52	24
Average Queue (ft)	17	2
95th Queue (ft)	44	13
Link Distance (ft)	978	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: School Driveway & Ephesus Church Rd

Movement	WB	NB
Directions Served	L	R
Maximum Queue (ft)	37	90
Average Queue (ft)	7	44
95th Queue (ft)	29	71
Link Distance (ft)	679	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0
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**Attachment C-5.6: 2028 Build Synchro Output Reports**

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## Level of Service Summary (2028 Build Analysis)

Intersection	Movement	AM Peak			PM Peak		
		Volume (VPH)	Delay (sec)	LOS	Volume (VPH)	Delay (sec)	LOS
Ephesus Church Road (EB) / Proposed Site Access at Farrington Road (NB/SB)	EBL	239	49.2	E	136	26.0	C
	EBT	10	93.0	F	4	28.6	C
	EBR	307	-	-	225	-	-
	WBL	3	60.3	E	10	34.3	C
	WBT	1	33.1	C	4	22.3	C
	WBR	2	-	-	6	-	-
	NBL	205	89.9	F	201	31.3	C
	NBT	321	8.5	A	194	6.6	A
	NBR	25	-	-	10	-	-
	SBL	15	-	-	6	-	-
	SBT	302	58.8	E	252	23.6	C
	SBR	211	-	-	96	-	-
	<b>Overall</b>		<b>1641</b>	<b>64.5</b>	<b>E</b>	<b>1144</b>	<b>23.8</b>
Ephesus Church Road (EB/WB) at George King Road/ Weston Downs Drive (NB/SB)	EBL	2	7.8	A	2	7.9	A
	EBT	185	-	-	169	-	-
	EBR	4	-	-	14	-	-
	WBL	46	7.9	A	35	7.8	A
	WBT	168	-	-	215	-	-
	WBR	10	-	-	8	-	-
	NBL	12	-	-	13	-	-
	NBT	1	11.1	B	1	11.2	B
	NBR	66	-	-	36	-	-
	SBL	17	19.2	C	3	17.5	C
	SBT	2	9.8	A	1	10.4	B
	SBR	6	-	-	8	-	-
<b>Overall</b>		<b>519</b>	<b>3.2</b>	<b>-</b>	<b>505</b>	<b>2.0</b>	<b>-</b>
Niagra Drive (EB) at Farrington Road (NB/SB)	EBL	3	37.6	E	4	18.4	C
	EBR	2	-	-	11	-	-
	NBL	4	9.5	A	7	8.9	A
	NBT	548	-	-	401	-	-
	SBT	608	-	-	479	-	-
	SBR	3	-	-	8	-	-
	<b>Overall</b>		<b>1168</b>	<b>0.2</b>	<b>-</b>	<b>910</b>	<b>0.3</b>

## Level of Service Summary (2028 Build Analysis)

Intersection	Movement	AM Peak			PM Peak		
		Volume (VPH)	Delay (sec)	LOS	Volume (VPH)	Delay (sec)	LOS
Culp Hill Drive (EB) at Farrington Road (NB/SB)	EBL	3	16.5	C	10	14.6	B
	EBR	7	-	-	13	-	-
	NBL	9	9.5	A	8	8.9	A
	NBT	549	-	-	398	-	-
	SBT	608	-	-	478	-	-
	SBR	2	-	-	12	-	-
	<b>Overall</b>		<b>1178</b>	<b>0.2</b>	<b>-</b>	<b>919</b>	<b>0.4</b>



AM



ROMF TIA  
1: Farrington Rd & Ephesus Church Rd/ROMF Access

2028 Build  
Timing Plan: AM

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	10	307	3	1	2	321	205	25	15	302	211
Future Volume (veh/h)	239	10	307	3	1	2	321	205	25	15	302	211
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1919	1863	1863	1900	1853	1853	1890	1910	1872	1910
Adj Flow Rate, veh/h	319	13	409	3	1	2	428	228	28	17	336	281
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.75	0.75	0.75	0.90	0.90	0.90	0.75	0.90	0.90	0.90	0.90	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	425	13	402	60	144	287	427	1066	131	40	351	286
Arrive On Green	0.26	0.26	0.26	0.26	0.26	0.26	0.24	0.66	0.66	0.38	0.38	0.38
Sat Flow, veh/h	1422	49	1557	961	556	1111	1765	1619	199	24	935	763
Grp Volume(v), veh/h	319	0	422	3	0	3	428	0	256	634	0	0
Grp Sat Flow(s),veh/h/ln	1422	0	1607	961	0	1667	1765	0	1818	1722	0	0
Q Serve(g_s), s	25.8	0.0	31.0	0.0	0.0	0.2	29.0	0.0	6.7	22.1	0.0	0.0
Cycle Q Clear(g_c), s	25.9	0.0	31.0	31.0	0.0	0.2	29.0	0.0	6.7	43.7	0.0	0.0
Prop In Lane	1.00		0.97	1.00		0.67	1.00		0.11	0.03		0.44
Lane Grp Cap(c), veh/h	425	0	415	60	0	431	427	0	1197	676	0	0
V/C Ratio(X)	0.75	0.00	1.02	0.05	0.00	0.01	1.00	0.00	0.21	0.94	0.00	0.00
Avail Cap(c_a), veh/h	425	0	415	60	0	431	427	0	1197	676	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	42.7	0.0	44.5	60.0	0.0	33.1	45.5	0.0	8.2	37.0	0.0	0.0
Incr Delay (d2), s/veh	6.5	0.0	48.5	0.3	0.0	0.0	44.4	0.0	0.3	21.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	10.9	0.0	19.3	0.1	0.0	0.1	19.4	0.0	3.4	24.9	0.0	0.0
LnGrp Delay(d),s/veh	49.2	0.0	93.0	60.3	0.0	33.1	89.9	0.0	8.5	58.8	0.0	0.0
LnGrp LOS	D		F	E		C	F		A	E		
Approach Vol, veh/h		741			6			684			634	
Approach Delay, s/veh		74.1			46.7			59.4			58.8	
Approach LOS		E			D			E			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		84.0		36.0	34.0	50.0		36.0				
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s		77.0		29.0	27.0	43.0		29.0				
Max Q Clear Time (g_c+I1), s		8.7		33.0	31.0	45.7		33.0				
Green Ext Time (p_c), s		21.4		0.0	0.0	0.0		0.0				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			64.5									
HCM 2010 LOS			E									

ROMF TIA  
2: George King Rd/Weston Downs Dr & Ephesus Church Rd

2028 Build  
Timing Plan: AM

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	185	4	46	168	10	12	1	66	17	2	6
Future Vol, veh/h	2	185	4	46	168	10	12	1	66	17	2	6
Conflicting Peds, #/hr	23	0	0	0	0	23	0	0	1	1	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	370	-	-	-	-	-	-	-	115
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	0	-	-	-1	-	-	3	-
Peak Hour Factor	90	75	90	75	75	75	90	90	75	75	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	247	4	61	224	13	13	1	88	23	2	7

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	260	0	0	251	0	0	607	636	250	675	632	254
Stage 1	-	-	-	-	-	-	253	253	-	376	376	-
Stage 2	-	-	-	-	-	-	354	383	-	299	256	-
Critical Hdwy	4.12	-	-	4.12	-	-	6.92	6.32	6.12	7.72	7.12	6.52
Critical Hdwy Stg 1	-	-	-	-	-	-	5.92	5.32	-	6.72	6.12	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.92	5.32	-	6.72	6.12	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1304	-	-	1314	-	-	422	410	794	329	358	768
Stage 1	-	-	-	-	-	-	762	708	-	606	579	-
Stage 2	-	-	-	-	-	-	676	625	-	675	667	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1304	-	-	1313	-	-	401	382	793	275	333	751
Mov Cap-2 Maneuver	-	-	-	-	-	-	401	382	-	275	333	-
Stage 1	-	-	-	-	-	-	761	707	-	592	540	-
Stage 2	-	-	-	-	-	-	636	583	-	598	666	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.6			11.1			17.2		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	696	1304	-	-	1313	-	-	279	751
HCM Lane V/C Ratio	0.147	0.002	-	-	0.047	-	-	0.089	0.009
HCM Control Delay (s)	11.1	7.8	-	-	7.9	-	-	19.2	9.8
HCM Lane LOS	B	A	-	-	A	-	-	C	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.3	0

**Intersection**

Int Delay, s/veh 0.2

**Movement** EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	3	2	4	548	608	3
Future Vol, veh/h	3	2	4	548	608	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	5	-	-	1	5	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	2	4	731	811	3

**Major/Minor** Minor2 Major1 Major2

Conflicting Flow All	1552	812	814	0	-	0
Stage 1	812	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Critical Hdwy	7.42	6.72	4.12	-	-	-
Critical Hdwy Stg 1	6.42	-	-	-	-	-
Critical Hdwy Stg 2	6.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	81	339	813	-	-	-
Stage 1	348	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	81	339	813	-	-	-
Mov Cap-2 Maneuver	81	-	-	-	-	-
Stage 1	348	-	-	-	-	-
Stage 2	382	-	-	-	-	-

**Approach** EB NB SB

HCM Control Delay, s	37.6	0.1	0
HCM LOS	E		

**Minor Lane/Major Mvmt** NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	813	-	116	-	-
HCM Lane V/C Ratio	0.005	-	0.048	-	-
HCM Control Delay (s)	9.5	-	37.6	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

**Intersection**

Int Delay, s/veh 0.2

**Movement** EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	3	7	9	549	608	2
Future Vol, veh/h	3	7	9	549	608	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-6	-	-	-5	-1	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	8	10	732	811	2

**Major/Minor** Minor2 Major1 Major2

Conflicting Flow All	1564	812	813	0	-	0
Stage 1	812	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Critical Hdwy	5.22	5.62	4.12	-	-	-
Critical Hdwy Stg 1	4.22	-	-	-	-	-
Critical Hdwy Stg 2	4.22	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	207	434	814	-	-	-
Stage 1	572	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	204	434	814	-	-	-
Mov Cap-2 Maneuver	204	-	-	-	-	-
Stage 1	572	-	-	-	-	-
Stage 2	591	-	-	-	-	-

**Approach** EB NB SB

HCM Control Delay, s	16.5	0.1	0
HCM LOS	C		

**Minor Lane/Major Mvmt** NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	814	-	324	-	-
HCM Lane V/C Ratio	0.012	-	0.034	-	-
HCM Control Delay (s)	9.5	-	16.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-




















PM





ROMF TIA  
1: Farrington Rd & Ephesus Church Rd

2028 Build  
Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	4	225	10	4	6	201	194	10	6	252	96
Future Volume (veh/h)	136	4	225	10	4	6	201	194	10	6	252	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1919	1863	1863	1900	1853	1853	1890	1910	1872	1910
Adj Flow Rate, veh/h	181	5	300	11	4	7	268	216	11	7	280	128
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	0	1	0
Peak Hour Factor	0.75	0.75	0.75	0.90	0.90	0.90	0.75	0.90	0.90	0.90	0.90	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	434	7	390	167	151	264	345	1093	56	51	443	199
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.20	0.62	0.62	0.37	0.37	0.37
Sat Flow, veh/h	1412	26	1577	1070	609	1066	1765	1749	89	11	1213	546
Grp Volume(v), veh/h	181	0	305	11	0	11	268	0	227	415	0	0
Grp Sat Flow(s),veh/h/ln	1412	0	1603	1070	0	1675	1765	0	1838	1769	0	0
Q Serve(g_s), s	8.7	0.0	13.8	0.8	0.0	0.4	11.3	0.0	4.1	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.1	0.0	13.8	14.6	0.0	0.4	11.3	0.0	4.1	15.1	0.0	0.0
Prop In Lane	1.00		0.98	1.00		0.64	1.00		0.05	0.02		0.31
Lane Grp Cap(c), veh/h	434	0	397	167	0	414	345	0	1148	693	0	0
V/C Ratio(X)	0.42	0.00	0.77	0.07	0.00	0.03	0.78	0.00	0.20	0.60	0.00	0.00
Avail Cap(c_a), veh/h	717	0	717	382	0	749	564	0	1762	1062	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	25.7	0.0	27.4	34.1	0.0	22.3	29.8	0.0	6.3	20.6	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.2	0.2	0.0	0.0	1.4	0.0	0.3	3.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	6.2	0.2	0.0	0.2	5.6	0.0	2.2	8.0	0.0	0.0
LnGrp Delay(d),s/veh	26.0	0.0	28.6	34.3	0.0	22.3	31.3	0.0	6.6	23.6	0.0	0.0
LnGrp LOS	C		C	C		C	C		A	C		
Approach Vol, veh/h		486			22			495			415	
Approach Delay, s/veh		27.6			28.3			19.9			23.6	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		53.9		24.3	20.3	33.6		24.3				
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s		73.0		33.0	23.0	43.0		33.0				
Max Q Clear Time (g_c+I1), s		6.1		15.8	13.3	17.1		16.6				
Green Ext Time (p_c), s		12.5		0.8	0.1	9.4		0.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			23.8									
HCM 2010 LOS			C									

ROMF TIA  
2: George King Rd/Weston Downs Dr & Ephesus Church Rd

2028 Build  
Timing Plan: PM

Intersection

Int Delay, s/veh 2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↔			↖	↗
Traffic Vol, veh/h	2	169	14	35	215	8	13	1	36	3	1	8
Future Vol, veh/h	2	169	14	35	215	8	13	1	36	3	1	8
Conflicting Peds, #/hr	35	0	0	0	0	35	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	-	370	-	-	-	-	-	-	-	115
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	-1	-	-	0	-	-	-1	-	-	3	-
Peak Hour Factor	90	75	90	75	75	75	90	90	75	75	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	225	16	47	287	11	14	1	48	4	1	9

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	332	0	0	241
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.12	-	-	4.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.218	-	-	2.218
Pot Cap-1 Maneuver	1227	-	-	1326
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1227	-	-	1326
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.1	11.2	13
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	643	1227	-	-	1326	-	-	293	672
HCM Lane V/C Ratio	0.099	0.002	-	-	0.035	-	-	0.017	0.013
HCM Control Delay (s)	11.2	7.9	-	-	7.8	-	-	17.5	10.4
HCM Lane LOS	B	A	-	-	A	-	-	C	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0.1	-	-	0.1	0

**Intersection**

Int Delay, s/veh 0.3

**Movement** EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	4	11	7	401	479	8
Future Vol, veh/h	4	11	7	401	479	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	100	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	5	-	-	1	5	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	12	8	535	639	9

**Major/Minor** Minor2 Major1 Major2

Conflicting Flow All	1193	643	648	0	-	0
Stage 1	643	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Critical Hdwy	7.42	6.72	4.12	-	-	-
Critical Hdwy Stg 1	6.42	-	-	-	-	-
Critical Hdwy Stg 2	6.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	148	433	938	-	-	-
Stage 1	438	-	-	-	-	-
Stage 2	496	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	147	433	938	-	-	-
Mov Cap-2 Maneuver	147	-	-	-	-	-
Stage 1	438	-	-	-	-	-
Stage 2	492	-	-	-	-	-

**Approach** EB NB SB

HCM Control Delay, s	18.4	0.1	0
HCM LOS	C		

**Minor Lane/Major Mvmt** NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	938	-	285	-	-
HCM Lane V/C Ratio	0.008	-	0.058	-	-
HCM Control Delay (s)	8.9	-	18.4	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

**Intersection**

Int Delay, s/veh 0.4

**Movement** EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	10	13	8	398	478	12
Future Vol, veh/h	10	13	8	398	478	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	-6	-	-	-5	-1	-
Peak Hour Factor	90	90	90	75	75	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	14	9	531	637	13

**Major/Minor** Minor2 Major1 Major2

Conflicting Flow All	1192	644	651	0	-	0
Stage 1	644	-	-	-	-	-
Stage 2	548	-	-	-	-	-
Critical Hdwy	5.22	5.62	4.12	-	-	-
Critical Hdwy Stg 1	4.22	-	-	-	-	-
Critical Hdwy Stg 2	4.22	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	308	526	935	-	-	-
Stage 1	648	-	-	-	-	-
Stage 2	695	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	305	526	935	-	-	-
Mov Cap-2 Maneuver	305	-	-	-	-	-
Stage 1	648	-	-	-	-	-
Stage 2	688	-	-	-	-	-

**Approach** EB NB SB

HCM Control Delay, s 14.6 0.1 0  
HCM LOS B

**Minor Lane/Major Mvmt** NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	935	-	400	-	-
HCM Lane V/C Ratio	0.01	-	0.064	-	-
HCM Control Delay (s)	8.9	-	14.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

**Attachment C-5.7: 2028 Build SimTraffic Output Reports**

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## Queue Summary (2028 Build Analysis)

Intersection	Movement	Storage Length (Feet)	AM Peak Queue Length (Feet)	PM Peak Queue Length (Feet)
Ephesus Church Road (EB) at Farrington Road (NB/SB)	EBL	350	323	149
	EBTR	-	424	237
	WBL	100	24	43
	WBTR	-	28	38
	NBL	450	368	210
	NBT	-	128	97
	SBLTR	-	503	242
Ephesus Church Road (EB/WB) at George King Road/ Weston Downs Drive (NB/SB)	EBL	150	2	13
	WBL	370	34	36
	WBTR	-	3	-
	NBLTR	-	66	58
	SBLT	-	37	28
Niagra Drive (EB) at Farrington Road (NB/SB)	SBR	115	26	26
	EBLR	-	28	36
Culp Hill Drive (EB) at Farrington Road (NB/SB)	NBL	-	19	28
	EBLR	-	35	41
Culp Hill Drive (EB) at Farrington Road (NB/SB)	NBL	200	29	27





AM



**Intersection: 1: Farrington Rd & Ephesus Church Rd/ROMF Access**

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	TR	LTR
Maximum Queue (ft)	323	424	24	28	368	128	503
Average Queue (ft)	167	227	3	3	214	49	285
95th Queue (ft)	299	405	16	17	333	104	455
Link Distance (ft)		898		345		1266	908
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	350		100		450		
Storage Blk Time (%)	0	4			0		
Queuing Penalty (veh)	0	10			0		

**Intersection: 2: George King Rd/Weston Downs Dr & Ephesus Church Rd**

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	LT	R
Maximum Queue (ft)	2	34	66	37	26
Average Queue (ft)	0	8	32	14	5
95th Queue (ft)	2	29	56	38	21
Link Distance (ft)			1345	483	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150	370			115
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 3: Farrington Rd & Niagra Dr**

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	28	19
Average Queue (ft)	4	1
95th Queue (ft)	21	11
Link Distance (ft)	543	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Farrington Rd & Culp Hill Dr

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	35	29
Average Queue (ft)	10	4
95th Queue (ft)	33	19
Link Distance (ft)	978	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: School Driveway & Ephesus Church Rd

Movement	WB	NB
Directions Served	L	R
Maximum Queue (ft)	62	98
Average Queue (ft)	23	50
95th Queue (ft)	55	80
Link Distance (ft)	679	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 10
----------------------------------

PM



**Intersection: 1: Farrington Rd & Ephesus Church Rd**

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	TR	LTR
Maximum Queue (ft)	149	237	43	38	210	97	242
Average Queue (ft)	76	119	9	6	105	37	123
95th Queue (ft)	131	196	32	26	175	80	205
Link Distance (ft)		898		300		1266	908
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	350		100		450		
Storage Blk Time (%)							
Queuing Penalty (veh)							

**Intersection: 2: George King Rd/Weston Downs Dr & Ephesus Church Rd**

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	LT	R
Maximum Queue (ft)	13	36	58	28	26
Average Queue (ft)	1	5	25	3	6
95th Queue (ft)	7	24	50	18	24
Link Distance (ft)			1345	483	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150	370			115
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 3: Farrington Rd & Niagra Dr**

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	36	28
Average Queue (ft)	12	3
95th Queue (ft)	37	16
Link Distance (ft)	543	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

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**Intersection: 4: Farrington Rd & Culp Hill Dr**

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Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	41	27
Average Queue (ft)	16	2
95th Queue (ft)	42	15
Link Distance (ft)	978	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

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**Intersection: 5: School Driveway & Ephesus Church Rd**

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Movement	WB	NB
Directions Served	L	R
Maximum Queue (ft)	40	87
Average Queue (ft)	8	45
95th Queue (ft)	31	70
Link Distance (ft)	679	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

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**Network Summary**

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Network wide Queuing Penalty: 0



**Attachment C-5.8: 2028 Build with Improvements Synchro Output Reports**

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## Level of Service Summary (2028 Build Analysis with Improvements)





















Intersection	Movement	AM Peak			PM Peak		
		Volume (VPH)	Delay (sec)	LOS	Volume (VPH)	Delay (sec)	LOS
Ephesus Church Road (EB) at Farrington Road (NB/SB)	EBL	239	38.8	D	136	25.3	C
	EBT	10	48.5	D	4	27.8	C
	EBR	307	-	-	225	-	-
	WBL	3	51.0	D	10	33.4	C
	WBT	1	31.0	C	4	21.7	C
	WBR	2	-	-	6	-	-
	NBL	205	74.4	E	201	30.4	C
	NBT	321	8.0	A	194	6.6	A
	NBR	25	-	-	10	-	-
	SBL	15	23.3	C	6	15.9	B
	SBT	302	69.3	E	252	24.3	C
	SBR	211	-	-	96	-	-
	<b>Overall</b>	<b>1641</b>	<b>53.9</b>	<b>D</b>	<b>1144</b>	<b>23.5</b>	<b>C</b>



AM

ROMF TIA  
1: Farrington Rd & Ephesus Church Rd/ROMF Access

2028 Build with Improvements  
Timing Plan: AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	239	10	307	3	1	2	321	205	25	15	302	211
Future Volume (veh/h)	239	10	307	3	1	2	321	205	25	15	302	211
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1919	1863	1863	1900	1853	1853	1890	1872	1872	1910
Adj Flow Rate, veh/h	266	11	341	3	1	2	428	228	28	17	336	281
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.75	0.90	0.90	0.90	0.90	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	425	13	396	111	141	283	444	1062	130	469	339	284
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.66	0.66	0.36	0.36	0.36
Sat Flow, veh/h	1422	50	1556	1025	556	1111	1765	1619	199	1125	944	789
Grp Volume(v), veh/h	266	0	352	3	0	3	428	0	256	17	0	617
Grp Sat Flow(s),veh/h/ln	1422	0	1607	1025	0	1667	1765	0	1818	1125	0	1733
Q Serve(g_s), s	19.1	0.0	23.3	0.3	0.0	0.1	26.7	0.0	6.3	1.1	0.0	39.4
Cycle Q Clear(g_c), s	19.3	0.0	23.3	23.6	0.0	0.1	26.7	0.0	6.3	1.1	0.0	39.4
Prop In Lane	1.00		0.97	1.00		0.67	1.00		0.11	1.00		0.46
Lane Grp Cap(c), veh/h	425	0	409	111	0	424	444	0	1192	469	0	623
V/C Ratio(X)	0.63	0.00	0.86	0.03	0.00	0.01	0.96	0.00	0.21	0.04	0.00	0.99
Avail Cap(c_a), veh/h	535	0	534	191	0	554	444	0	1192	469	0	623
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.2	0.0	39.6	50.9	0.0	31.0	41.2	0.0	7.7	23.2	0.0	35.5
Incr Delay (d2), s/veh	0.6	0.0	8.9	0.1	0.0	0.0	33.2	0.0	0.3	0.1	0.0	33.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.6	0.0	11.4	0.1	0.0	0.1	17.1	0.0	3.2	0.4	0.0	24.7
LnGrp Delay(d),s/veh	38.8	0.0	48.5	51.0	0.0	31.0	74.4	0.0	8.0	23.3	0.0	69.3
LnGrp LOS	D		D	D		C	E		A	C		E
Approach Vol, veh/h		618			6			684			634	
Approach Delay, s/veh		44.3			41.0			49.5			68.1	
Approach LOS		D			D			D			E	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		78.0		33.3	33.0	45.0		33.3				
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s		71.0		35.0	26.0	38.0		35.0				
Max Q Clear Time (g_c+I1), s		8.3		25.3	28.7	41.4		25.6				
Green Ext Time (p_c), s		20.6		0.7	0.0	0.0		0.7				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			53.9									
HCM 2010 LOS			D									

PM

























ROMF TIA  
1: Farrington Rd & Ephesus Church Rd/ROMF Access

2028 Build with Improvements

Timing Plan: PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	4	225	10	4	6	201	194	10	6	252	96
Future Volume (veh/h)	136	4	225	10	4	6	201	194	10	6	252	96
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1919	1863	1863	1900	1853	1853	1890	1872	1872	1910
Adj Flow Rate, veh/h	181	5	300	11	4	7	268	216	11	7	280	128
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.75	0.75	0.75	0.90	0.90	0.90	0.75	0.90	0.90	0.90	0.90	0.75
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	438	7	392	171	151	265	347	1085	55	508	436	199
Arrive On Green	0.25	0.25	0.25	0.25	0.25	0.25	0.20	0.62	0.62	0.36	0.36	0.36
Sat Flow, veh/h	1412	26	1577	1070	609	1066	1765	1749	89	1155	1217	557
Grp Volume(v), veh/h	181	0	305	11	0	11	268	0	227	7	0	408
Grp Sat Flow(s),veh/h/ln	1412	0	1603	1070	0	1675	1765	0	1838	1155	0	1774
Q Serve(g_s), s	8.5	0.0	13.5	0.7	0.0	0.4	11.0	0.0	4.1	0.3	0.0	14.6
Cycle Q Clear(g_c), s	8.9	0.0	13.5	14.2	0.0	0.4	11.0	0.0	4.1	0.3	0.0	14.6
Prop In Lane	1.00		0.98	1.00		0.64	1.00		0.05	1.00		0.31
Lane Grp Cap(c), veh/h	438	0	399	171	0	416	347	0	1140	508	0	635
V/C Ratio(X)	0.41	0.00	0.77	0.06	0.00	0.03	0.77	0.00	0.20	0.01	0.00	0.64
Avail Cap(c_a), veh/h	735	0	735	396	0	768	671	0	1806	715	0	953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	26.6	33.2	0.0	21.7	29.0	0.0	6.3	15.8	0.0	20.4
Incr Delay (d2), s/veh	0.2	0.0	1.2	0.2	0.0	0.0	1.4	0.0	0.3	0.0	0.0	3.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	6.1	0.2	0.0	0.2	5.5	0.0	2.1	0.1	0.0	7.8
LnGrp Delay(d),s/veh	25.3	0.0	27.8	33.4	0.0	21.7	30.4	0.0	6.6	15.9	0.0	24.3
LnGrp LOS	C		C	C		C	C		A	B		C
Approach Vol, veh/h		486			22			495			415	
Approach Delay, s/veh		26.8			27.5			19.5			24.2	
Approach LOS		C			C			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4	5	6		8				
Phs Duration (G+Y+Rc), s		52.4		24.0	20.0	32.3		24.0				
Change Period (Y+Rc), s		7.0		7.0	7.0	7.0		7.0				
Max Green Setting (Gmax), s		73.0		33.0	27.0	39.0		33.0				
Max Q Clear Time (g_c+I1), s		6.1		15.5	13.0	16.6		16.2				
Green Ext Time (p_c), s		12.4		0.8	0.1	8.7		0.8				
<b>Intersection Summary</b>												
HCM 2010 Ctrl Delay			23.5									
HCM 2010 LOS			C									



**Attachment C-5.9: 2028 Build with Improvements SimTraffic Output Reports**

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## Queue Summary (2028 Build Analysis with Improvements)

Intersection	Approach	Storage Bay (Feet)	AM Peak Queue Length (Feet)	PM Peak Queue Length (Feet)	Recommended Additional Storage (Feet)
Ephesus Church Road/ROMF Access (EB/WB) at Farrington Road (NB/SB)	EBL	350	254	156	-
	EBTR	-	338	243	-
	WBL	-	32	40	-
	WBTR	-	26	38	-
	NBL	450	395	211	-
	NBTR	-	195	107	-
	SBL	-	85	34	100
	SBTR	-	556	227	-



AM





**Intersection: 1: Farrington Rd & Ephesus Church Rd/ROMF Access**

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	254	338	32	26	395	195	85	556
Average Queue (ft)	144	187	4	3	214	55	11	309
95th Queue (ft)	227	304	19	17	347	142	51	517
Link Distance (ft)		898		345		1266		908
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	350		100		450		100	
Storage Blk Time (%)		0			0		0	48
Queuing Penalty (veh)		1			1		0	7

**Intersection: 2: George King Rd/Weston Downs Dr & Ephesus Church Rd**

Movement	EB	EB	WB	WB	NB	SB	SB
Directions Served	L	TR	L	TR	LTR	LT	R
Maximum Queue (ft)	5	2	38	5	57	39	26
Average Queue (ft)	0	0	7	0	30	13	6
95th Queue (ft)	4	2	28	4	49	37	23
Link Distance (ft)		1098		703	1345	483	
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	150		370				115
Storage Blk Time (%)							
Queuing Penalty (veh)							

**Intersection: 3: Farrington Rd & Niagra Dr**

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	31	24
Average Queue (ft)	4	1
95th Queue (ft)	22	12
Link Distance (ft)	543	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Farrington Rd & Culp Hill Dr

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	42	27
Average Queue (ft)	9	3
95th Queue (ft)	33	18
Link Distance (ft)	978	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: School Driveway & Ephesus Church Rd

Movement	WB	NB
Directions Served	L	R
Maximum Queue (ft)	89	135
Average Queue (ft)	35	65
95th Queue (ft)	72	106
Link Distance (ft)	679	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 9
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PM



**Intersection: 1: Farrington Rd & Ephesus Church Rd**

Movement	EB	EB	WB	WB	NB	NB	SB
Directions Served	L	TR	L	TR	L	TR	LTR
Maximum Queue (ft)	149	237	43	38	210	97	242
Average Queue (ft)	76	119	9	6	105	37	123
95th Queue (ft)	131	196	32	26	175	80	205
Link Distance (ft)		898		300		1266	908
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	350		100		450		
Storage Blk Time (%)							
Queuing Penalty (veh)							

**Intersection: 2: George King Rd/Weston Downs Dr & Ephesus Church Rd**

Movement	EB	WB	NB	SB	SB
Directions Served	L	L	LTR	LT	R
Maximum Queue (ft)	13	36	58	28	26
Average Queue (ft)	1	5	25	3	6
95th Queue (ft)	7	24	50	18	24
Link Distance (ft)			1345	483	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	150	370			115
Storage Blk Time (%)					
Queuing Penalty (veh)					

**Intersection: 3: Farrington Rd & Niagra Dr**

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	36	28
Average Queue (ft)	12	3
95th Queue (ft)	37	16
Link Distance (ft)	543	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Farrington Rd & Culp Hill Dr

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	41	27
Average Queue (ft)	16	2
95th Queue (ft)	42	15
Link Distance (ft)	978	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	200	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: School Driveway & Ephesus Church Rd

Movement	WB	NB
Directions Served	L	R
Maximum Queue (ft)	40	87
Average Queue (ft)	8	45
95th Queue (ft)	31	70
Link Distance (ft)	679	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	250	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 0
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