Transportation Analysis

1908 Hall Road

DRI #2916

Fulton County, GA

Report Prepared:
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Table of Contents

List of Tables

List of Figures

Appendix

A. Letter of Understanding
B. Site Plan
C. Trip Generation Sheets
D. Project Traffic Distribution
E. Existing Conditions – Lane Configurations and Volumes
F. Raw Data
G. FDOT Generalized LOS Table 5
H. Existing Conditions Synchro Reports
I. GDOT PI 0010943 Plans
J. Historical Growth Rate
K. Future No-Build and Lane Configurations and Volumes
L. Future No-Build Conditions Synchro Reports
M. Project Traffic Volumes
N. Future Build Conditions Volumes
O. Future Build Conditions Synchro Reports
P. SR 92 HCS Analysis
Q. Recommended Lane Configurations and Improvements Synchro Reports
R. Site Access Analysis Documents

Executive Summary

The proposed residential development by Liberty Communities in Union City, GA has been designated a Development of Regional Impact (DRI) necessitating an analysis of the impact the proposed development will have on the surrounding roadway network. The proposed development is expected to generate 4,878 trips per day of which 419 will occur during the AM peak hour and 521 will occur during the PM peak hour. The following scenarios were analyzed to determine the impact of the proposed development:

- 2019 Existing Conditions
- 2024 No-Build Conditions
- 2024 Build Conditions

The following roadway segments were identified as needing to be widened to a four-lane cross section based on existing volumes:

- SR 92 between Jones Road and Hall Road
- SR 92 between Hall Road and Thompson Road

The two roadway segments on SR 92 from Hall Road to South Fulton Parkway are projected to operate at LOS F in the build conditions using thresholds from generalized LOS tables and assuming a four-lane cross section, however the projected build volumes are only approximately 5% above the failing LOS threshold and a more detailed HCS analysis found that the segments are projected to operate at LOS D during the PM peak hour therefore this analysis does not recommend widening the roadway to six lanes.

All other roadway segments operate at or above the standard LOS for all conditions. It is recommended that Jones Road, currently partially a gravel road, be paved from the Jones Road access point east to the existing pavement for safety and comfort of drivers.

Four intersections were identified that need improvements to bring the intersections into compliance with LOS standards:

- Hall Road at Jones Road
- SR 92 at Jones Road
- SR 92 at Hall Road
- SR 92 at Thompson Road

Hall Road at Jones Road and SR 92 at Jones Road and Thompson Road operate at LOS F during at least one peak hour in both the future no-build and future build conditions. While SR 92 at Hall Road operates at an acceptable LOS during both peak hours in the no-build conditions, the northbound

left-turn volume is above GODT's threshold of 300 left-turning vehicles per hour and warrants an additional left-turn lane in the no-build conditions.

The recommended improvements to bring the intersections into compliance with LOS standards in the future no-build conditions were tested in the build conditions to determine additional improvements needed to accommodate project traffic. The intersections operate at an acceptable LOS in the future build conditions with identified improvements; no additional improvements are needed to accommodate project traffic.

A site access analysis was also performed to determine access control types needed on the new links created by the driveways to the proposed development. This analysis also identified the intersection of Hall Road and the east Renaissance Middle School driveway as needing improvements in the no-build conditions to accommodate background traffic.

Table 1 presents projects that have been identified to improve the LOS of the transportation network to accommodate projected background traffic volumes.

TABLE 1: RECOMMENDED IMPROVEMENT PROJECTS TO ACCOMMODATE BACKGROUND TRAFFIC

Location	Improvement Description	Estimated Cost	Sponsor/ Funding Source	Timing
SR 92 between Hall Road and Thompson Road	Widen roadway to four lanes	$800,000	GDOT	Widen before development build-out
Hall Road at Jones Road	Convert AWSC to TWSC	$15,000	Fulton County/Union City	Short-term (by 2024)
SR 92 at Jones Road	Possible signalization of intersection	$750,000	Fulton County/Union City	Contingent on Signal Warrant Analysis
SR 92 at Hall Road	Construct additional left-turn lane on NB approach	$350,000	GDOT	Short-term (by 2024)
Hall Road at Renaissance Middle School	Possible signalization of intersection	$750,000	Fulton County/Union City	Contingent on Signal Warrant Analysis

Table 2 lists additional projects that the developer of the proposed DRI will be responsible for implementing to maintain an acceptable LOS and safety on the roadway network upon construction of the proposed development.

TABLE 2: RECOMMENDED IMPROVEMENT PROJECTS TO ACCOMMODATE PROJECT TRAFFIC

Location	Improvement Description	Estimated Cost	Sponsor/ Funding Source	Timing
Jones Road	Pave road from existing pavement to Jones Road site access	$600,000	Developer	At build-out

Introduction

This traffic report documents the impacts of the proposed residential development in the southwest corner of the intersection of Hall Road and Jones Road by Liberty Communities in Union City, GA. This site has been designated a Development of Regional Impact (DRI) due to a rezoning request and because the proposed scale of the development exceeds the DRI threshold of 400 residential units as mandated in the Rules of Georgia Department of Community Affairs, Chapter 110-12-7-.05. Per state law (OCGA §50-32-14), Georgia Regional Transportation Authority (GRTA) is required to review all DRIs within its 13-county metro Atlanta jurisdiction for their impacts on surrounding transportation infrastructure. This traffic analysis follows guidelines set forth in the GRTA DRI Review Package Technical Guidelines adopted on January 9, 2013 and methodology agreed upon during a methodology meeting on March 25, 2019 documented in a letter of understanding sent by GRTA on April 1, 2019 included in **Appendix A**.

Background Information

Project Description

The proposed development is a primarily residential community consisting of 330 single family homes, 188 townhomes, and an 8,000 square foot commercial daycare facility. A location map is provided in **Figure 1**.

Local Plan Summary

The *South Fulton Comprehensive Transportation Plan (CTP) of Fulton County* was adopted in December 2013. The plan analyzed exiting conditions, assessed current and projected transportation needs, and recommended projects throughout South Fulton County to meet existing and future transportation needs. The plan discusses expected increases in development throughout the plan coverage area and specifically mentions the SR 92 corridor as a location for clusters of intense land use based on the County's future land use plan. The plan recommends improvements to the intersection of SR 92 and South Fulton Parkway as a high-priority, short-term project (project number R-23c) and even recommends grade separation of these roadways as a long-term goal (project number R-117). The plan also recommends several other long-range projects within the immediate vicinity of the proposed development including the extension of Thompson Road to Derrick Road (project number R-136) and the extension of Hall Road to South Fulton Parkway at Rosewood Place (project number R-133) which would also necessitate the widening of SR 92 between Thompson Road and Hall Road from two to four lanes (project number R-135). A complete list of recommended projects can be found in the

Planned Improvements section of this report.

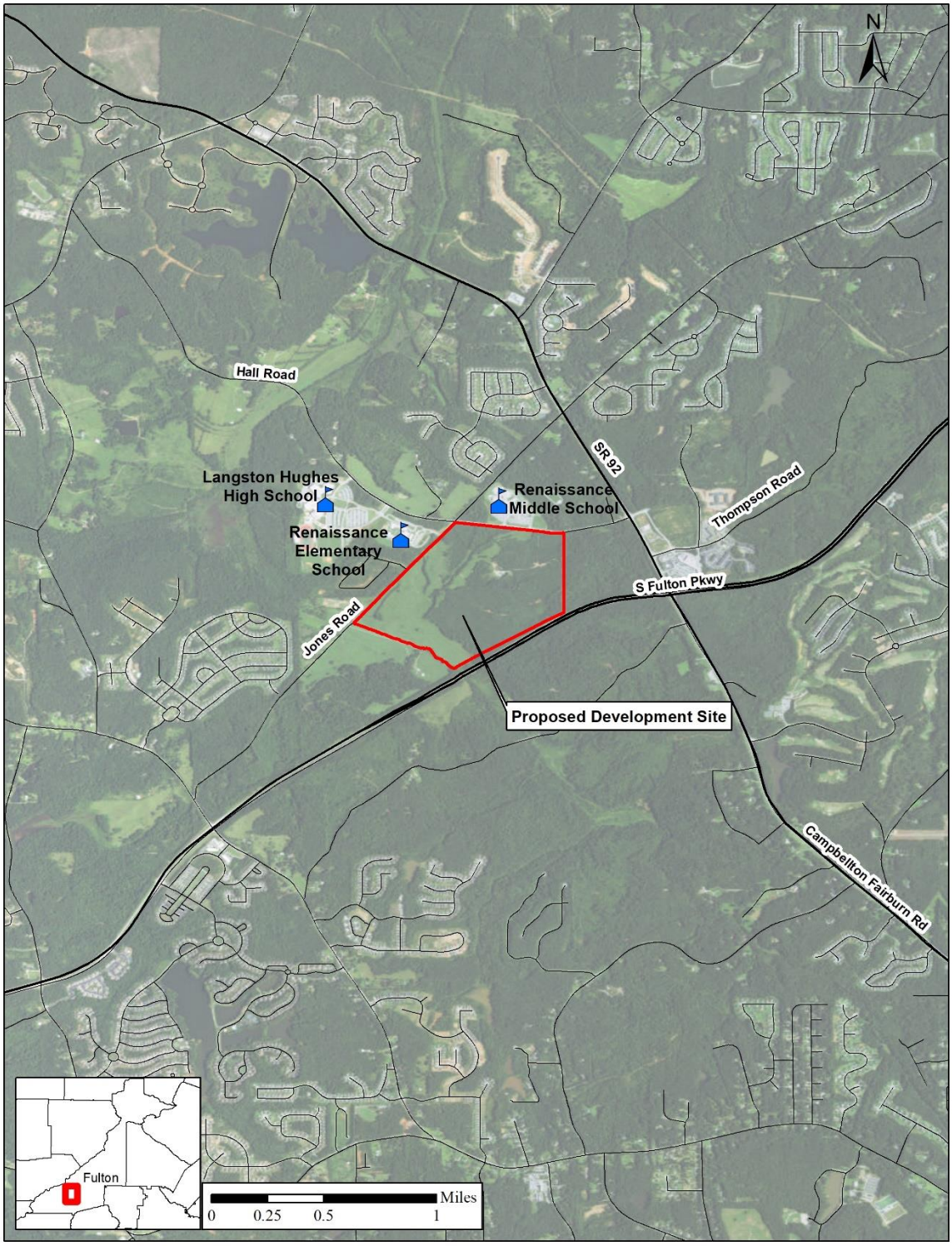


FIGURE 1: LOCATION MAP

Site Plan

The property is currently zoned as single family residential (R-1) and the proposed land use is town center mixed use (TCMU). When built out, the site will contain 330 single family units and 188 townhome units for a total of 518 residential units along with an 8,000 square foot commercial daycare center. Projected build-out of the development will take place in one phase and is expected to be completed by 2024. The property will be accessible from Jones Road and Hall Road. A detailed site plan is included in **Appendix B**.

Bicycle and Pedestrian Facilities

Currently there is a sidewalk along Hall Road opposite to the proposed project site. There are no dedicated bicycle facilities that provide access to the proposed development. The CTP was reviewed for bicycle and pedestrian projects and there are no short-term plans to add additional bicycle or pedestrian facilities in the vicinity of the proposed development.

Transit Facilities

There are no existing transit routes within the vicinity of the proposed development. The CTP was reviewed for planned transit projects near the proposed development. There are no transit projects near the proposed development site with funding identified. One illustrative transit project proposes a route that would include service on South Fulton Parkway which is approximal 0.75-mile walk from the proposed site access on Hall Road, but there is no timeline or funding specified for the project. There are no plans to provide transit facilities at the proposed development.

Trip Generation

The *ITE Trip Generation Manual, 10th Edition* was used to estimate the number of gross trip ends generated by the proposed development. The proposed development contains three different land uses: single-family detached housing (LUC 210), multifamily housing (LUC 220), and day care center (LUC 565). **Table 3** presents the daily and peak hour trips generated by the proposed development for this land use type. Relevant sheets from the trip generation manual are included in **Appendix C**.

TABLE 3: GROSS TRIP ENDS GENERATED BY PROPOSED DEVELOPMENT

ITE Land Use Code	Description	Qty	Unit	AM Peak Hour			PM Peak Hour			Daily		
				In	Out	Total	In	Out	Total	In	Out	Total
210	Single Family Detached Housing	330	units	61	183	244	206	121	327	1,559	1,559	3,118
220	Multifamily Housing (Low Rise)	188	units	20	67	87	66	39	105	690	690	1,380
565	Day Care Center	8.0	1,000 SF	47	41	88	42	47	89	190	190	380
			Total	128	291	419	314	207	521	2,439	2,439	4,878

This analysis assumes no reduction in trips due to internal capture or alternate transportation modes. Furthermore, all trips generated by the proposed development are new trips being added to the network, i.e. no pass-by trips. The site is expected to generate primarily passenger car trips and all analysis assumes 2.0% of trips generated are truck trips.

Trip Distribution

Project trips were distributed throughout the roadway network based on existing land uses, current travel patterns observed through historical traffic counts, condition of existing roadway facilities, and engineering judgement. Distribution of project traffic was presented to GRTA, ARC, GDOT, and Union City officials during and immediately following the March 25th methodology meeting. Distribution of project traffic is presented in **Appendix D**. Passenger car and truck traffic generated by the project are expected to have the same distribution.

Study Network

Per Section 4-110 of the GRTA DRI Review Technical Guidelines, any segment where the gross trips generated by the proposed DRI exceed 7% of the two-way service volume should be included in the study area. The trip generation and trip distribution values discussed in the previous sections were used to calculate the number of daily trips on each segment. Table 5 from the *GRTA DRI Review Technical Guidelines* document was used to determine the service volume on each segment. **Table 4** shows the results of this analysis. **Figure 2** illustrates the final study network.

The following intersections are included in the final study network based on the results of the study network determination and approved in GRTA's April 1st letter of understanding.

1. Cedar Grove Road at Jones Road
2. Hall Road at Jones Road
3. SR 92/Fairburn Road at Jones Road

4. SR 92/Fairburn Road at Hall Road
5. SR 92/Fairburn Road at Thompson Road
6. SR 92/Fairburn Road at South Fulton Parkway
7. Jones Road Site Access
8. Hall Road Site Access

The intersections can be seen in the study network illustration in **Figure 2**.

Existing Roadway Network

The study roadway network is illustrated in **Figure 2**. The functional classification, number of lanes, and service volume for each study segment is included in **Table 4**. Existing lane configurations at each study intersection are illustrated in **Appendix E**. Existing conditions volumes for segments and intersections are discussed in the following section.

One feature of note not included in the tables is that Jones Road is an unpaved road for about 1.5 mile from Cedar Grove Road to the Renaissance Elementary School driveway.

TABLE 4: STUDY NETWORK DETERMINATION

Road	From	To	Lanes	Functional Classification	LOS Standard	Service Volume	% Daily Site Traffic	Daily Traffic	% Service Volume
Hall Road	Ridge Road	Jones Road	2	Local Road	D	12,390	1.0%	49	0.4%
Hall Road	Jones Road	Site Access	2	Local Road	D	12,390	3.0%	146	1.2%
Hall Road	**Jones Road**	**Site Access**	**2**	**Local Road**	**D**	**15,930**	**38.5%**	**1.878**	**11.8%**
Hall Road	**Site Access**	**SR 92**	**2**	**Local Road**	**D**	**15,930**	**95.5%**	**4.658**	**29.2%**
Jones Road	*Cedar Grove Road*	*Site Access*	*2*	*Local Road*	*D*	*10,360*	*0.5%*	*24*	*0.2%*
Jones Road	**Site Access**	**Hall Road**	**2**	**Local Road**	**D**	**10,360**	**35.5%**	**1.732**	**16.7%**
Jones Road	*Hall Road*	*SR 92*	*2*	*Local Road*	*D*	*10,360*	*0.0%*	*0*	*0.0%*
Jones Road	SR 92	Stonewall Tell Road	2	Local Road	D	12,390	1.0%	49	0.4%
Thompson Road	SR 92	Southwood Road	2	Local Road	D	15,930	2.0%	98	0.6%
SR 92	Demooney Road	Jones Road	2	Principal Arterial	D	12,390	2.0%	98	0.8%
SR 92	*Jones Road*	*Hall Road*	*2*	*Principal Arterial*	*D*	*12,390*	*3.0%*	*146*	*1.2%*
SR 92	**Hall Road**	**Thompson Road**	**2**	**Principal Arterial**	**D**	**12,390**	**94.5%**	**4.610**	**37.2%**
SR 92	**Thompson Road**	**S. Fulton Parkway**	**2**	**Principal Arterial**	**D**	**12,390**	**92.5%**	**4.512**	**36.4%**
SR 92	S. Fulton Parkway	SR 138/Beverly Engram Parkway	4	Principal Arterial	D	39,800	25.0%	1.220	3.1%
S. Fulton Parkway	Short Road	Cedar Grove Road	4	Principal Arterial	D	39,800	10.0%	488	1.2%
S. Fulton Parkway	Cedar Grove Road	SR 92	4	Principal Arterial	D	39,800	14.5%	707	1.8%
S. Fulton Parkway	SR 92	Stonewall Tell Road	4	Principal Arterial	D	39,800	55.0%	2.683	6.7%
Cedar Grove Road	Cascade Palmetto Highway	Jones Road	2	Major Collector	D	12,390	1.0%	49	0.4%
Cedar Grove Road	Jones Road	S. Fulton Parkway	2	Major Collector	D	12,390	1.5%	73	0.6%
Cedar Grove Road	S. Fulton Parkway	Rivertown Road	2	Local Road	D	12,390	1.0%	49	0.4%

Note 1: Rows that are **bolded** are included in the study network per the 7% rule while rows that are *italicized* are included in the study network because they are adjacent to a proposed site access location or were requested by a local agency.

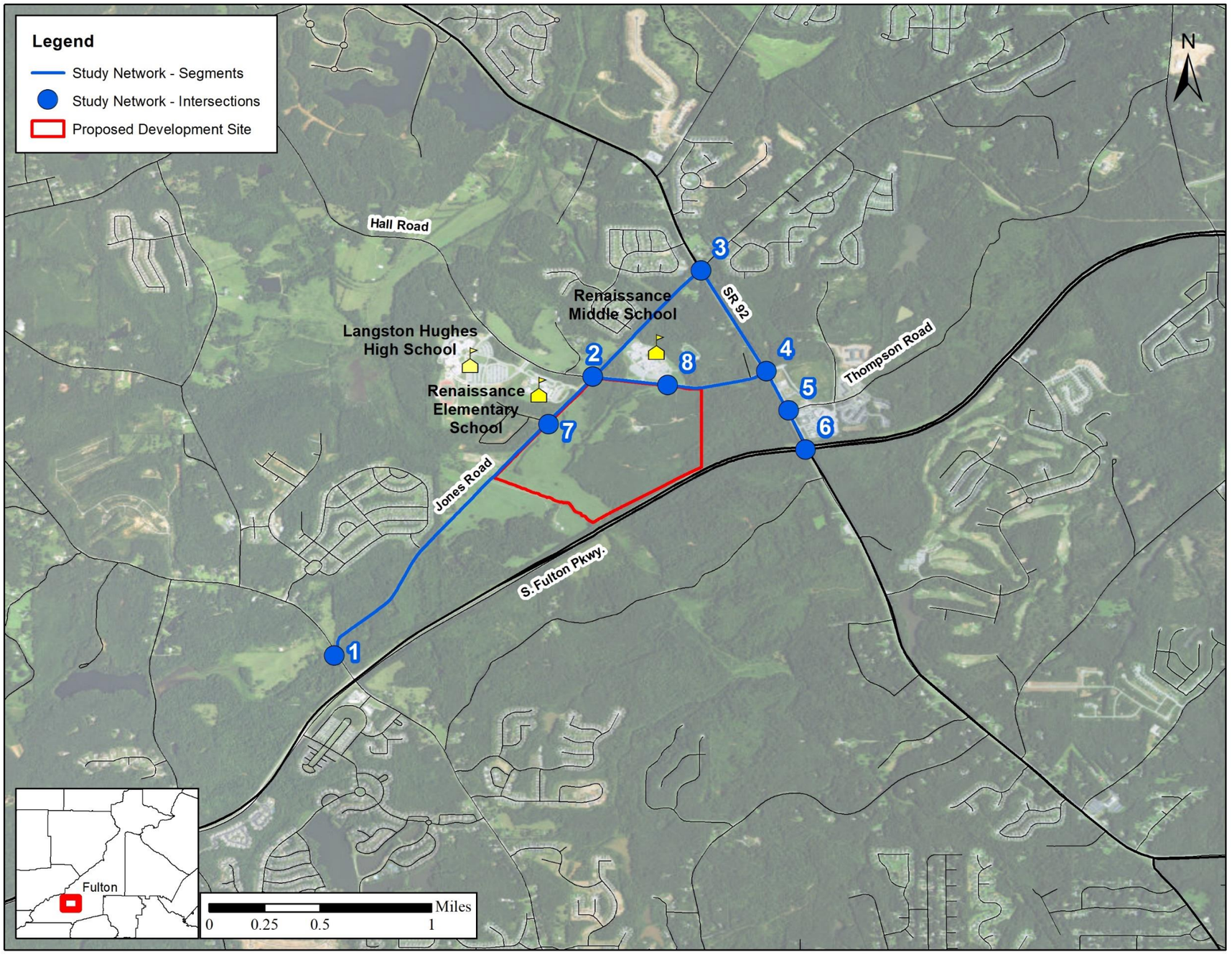


FIGURE 2: STUDY NETWORK

Existing Conditions Analysis

Data Collection and Volume Development

Peak period turning movement counts and 24-hour classification counts were collected on Wednesday, April 17, 2019. Additional traffic data was collected at SR 92 and Jones Road on Tuesday, June 25th, 2019 in response to Union City's request to include the intersection in the DRI analysis. While this date occurs while Fulton County schools were on summer break, control counts were collected at the adjacent intersections of SR 92 at Hall Road and Jones Road at Hall Road and compared to volumes collected during the school year to estimate traffic volumes to add to the SR 92 and Jones Road intersection to account for school traffic.

The level of service analysis for this report used the balanced raw peak hour volumes at each intersection. Raw data collected in the field is included in **Appendix F**. Existing conditions AM and PM peak hour intersection volumes are shown in **Appendix E**. The peak hours were chosen based on the hours with the highest volume on roadway segments adjacent to the proposed development. The AM peak hour is 7:15 – 8:15 AM and the PM peak hour is 5:00 – 6:00 PM. Peak hour intersection volumes were used to calculate peak hour segment volumes. Peak hour segment volumes are listed in the following section, Segment Level of Service.

Segment Level of Service

The existing level of service (LOS) on study roadway segments was determined using peak hour bi-directional volumes and the most recent FDOT Generalized Level of Service Table 5, Generalized Peak Hour Two-Way Volumes for Transitioning Areas. A copy of the FDOT table is included in **Appendix G**. The segment volumes used for this analysis and the resulting segment LOS are shown in **Table 5**.

TABLE 5: EXISTING CONDITIONS SEGMENT VOLUMES AND LEVEL OF SERVICE

Study Segment	From	To	AM Peak Hour		PM Peak Hour	
			Volume	LOS	Volume	LOS
Hall Road	Jones Road	Site Access	917	C	435	B
Hall Road	Site Access	SR 92	967	C	452	B
Jones Road	Cedar Grove Road	Site Access	38	B	17	B
Jones Road	Site Access	Hall Road	265	B	52	B
Jones Road	Hall Road	SR 92	29	B	9	B
SR 92	Jones Road	Hall Road	**1,688**	**F**	**2,125**	**F**
SR 92	Hall Road	Thompson Road	**2,216**	**F**	**2,480**	**F**
SR 92	Thompson Road	S. Fulton Parkway	2,249	B	2,444	B

This analysis shows that SR 92 between Jones Road and Thompson Road is currently operating at LOS F due to the two-lane undivided cross section. According to guidance from GRTA in the April 1st letter of understanding the LOS standard for these segments in the future no-build and future build conditions will be LOS E.

Intersection Level of Service

Intersection LOS was analyzed using balanced peak hour turning movement counts and Synchro version 9.2.915.6 to calculate delay following procedures in the Highway Capacity Manual (HCM). The results of this analysis are presented in **Table 6**. Synchro generated reports for each intersection are included in **Appendix H**. Delay shown for signalized intersections is the overall intersection delay while delay shown for two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections is the highest delay on a stop-controlled approach.

TABLE 6: EXISTING CONDITIONS INTERSECTION DELAY AND LEVEL OF SERVICE

No.	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (s)	LOS	Delay (s)	LOS
1	Cedar Grove Road at Jones Road	TWSC	12.7	B	12.2	B
2	Hall Road at Jones Road	AWSC	33.7	D	9.4	A
3	SR 92 at Jones Road	TWSC	**307.0**	**F**	**833.0**	**F**
4	SR 92 at Hall Road	Signalized	16.6	B	19.4	B
5	SR 92 at Thompson Road	TWSC	**650.0**	**F**	**983.6**	**F**
6	SR 92 at S. Fulton Parkway	Signalized	42.8	D	37.3	D

In the existing conditions two intersections operate below the standard LOS of D during both the AM and PM peak hour:

- SR 92 at Jones Road
- SR 92 at Thompson Road

According to guidance from GRTA in the April 1st letter of understanding the LOS standard for these intersections for the future no-build and future build conditions will be LOS E.

Planned and Programmed Improvements in the Study Network

The *South Fulton Comprehensive Transportation Plan (CTP) of Fulton County* (2013) was reviewed for transportation and capital improvements within the vicinity of the proposed development. **Table 7** lists all transportation projects near the proposed development identified in the report.

Several projects that are recommended were not prioritized as regional project and did not have a time-frame associated with them.

TABLE 7: CTP PROJECT LIST

Jurisdiction	ID	Timeframe	Location	Description	Cost
Union City	R-23c	Short-term	SR 92 at S. Fulton Pkwy	Interchange improvements, CFI	$17,325,000
Fulton	ASP-FS-230	Long-term	SR 92 from S. Fulton Pkwy to SR 70	Roadway widening	$35,000,000
Union City	R-117	Long-term	S. Fulton Pkwy at SR 92	Grade separation	$22,307,010
Union City	R-29	n/a	Cedar Grove Rd at Jones Rd	Intersection realignment	$1,000,000
Fulton	R-22d	n/a	SR 92 at Jones Rd	Intersection signal study	$242,000
Fulton/ Union City	R-133	n/a	Hall Rd from SR 92 to S. Fulton Pkwy	New construction w/ overpass at S. Fulton Pkwy	$6,983,500
Fulton	R-134	n/a	Jones Rd from Hall Rd to SR 92	Paving and shoulder improvements	$4,162,250
Fulton/ Union City	R-135	n/a	Thompson Rd from SR 92 to proposed Hall Rd Ext	Widen from 2 to 4 lanes	$4,162,250

GDOT's project database, GEOPI, was also reviewed and projects within the study area are shown in **Table 8.**

TABLE 8: GDOT PROJECT LIST

GDOT PI NO.	Timeframe	Location	Description	Cost
0010943	2019	SR 92 at S. Fulton Pkwy	Intersection Improvements	$1,521,600
0014081	2026	SR 92 at S. Fulton Pkwy	Intersection improvements (CFI)	$18,200,000

GDOT Project 0010943 is scheduled to be completed by the end of 2019 while additional improvements to the intersection will not begin construction until at least 2026. Design plans for the intersection improvements to be modeled in future conditions for this analysis are included in **Appendix I**.

The Atlanta Regional Commission's (ARC's) Transportation Improvement Program (TIP), lists projects with funding allocated within the next six years and was most recently updated in March 2019. No projects near the proposed development were included in the TIP. Fulton County's capital improvement program was also reviewed and no projects near the proposed development are included in the program.

Future Background (No-Build) Conditions Analysis

Growth Rate

Historical traffic volumes are available at GDOT's TADA website[1]. Historical data from count stations in the vicinity of the project area were analyzed to calculate an average 10 and 5-year growth rate. Rates were calculated using "actual" counts and "estimated" counts were not used in the analysis. Growth rates were only calculated if at least two years of "actual" counts were collected during the timeframe. The results of these calculations are shown in **Table 9**. The 10-year growth rate was 2.7% while the average 5-year growth rate was 6.2%. The growth rate calculations and data from each count location included in the analysis are presented in **Appendix J**.

TABLE 9: GROWTH RATES BASED ON HISTORICAL TRAFFIC DATA

GDOT Count Location	Location Description	Growth Rate (10-Year)	Growth Rate (5-Year)
121-0981	S. Fulton Parkway east of SR 92	3.3%	-
121-6056	S. Fulton Parkway east of Cascade Palmetto Highway	0.6%	8.4%
121-8077	Jones Road between Cedar Grove Road and SR 92	4.2%	-
121-0292	SR 93 south of S. Fulton Parkway	3.5%	8.0%
121-0294	SR 92 north of Ridge Road	4.1%	4.3%
121-0733	Ridge Road between Cascade Palmetto Highway and SR 92	-3.2%	-5.0%
121-0773	Cedar Grove Road north of Short Road	7.2%	15.3%
121-0777	Stonewall Tell Road south of Jones Road	1.7%	-
	Average Growth Rate	**2.7%**	**6.2%**

A growth rate was also calculated based on projected future traffic volumes. ARC's regional travel demand model was used to collect existing conditions (2015) and future (2024) volumes on all links within the study area. The link volumes and resulting average growth rate is presented in **Table 10**. Based on the model data, traffic around the proposed development is projected to grow at an average rate of 4.3%.

TABLE 10: GROWTH RATE BASED ON PROJECTED TRAFFIC VOLUMES

Model Link	2015	2024	Growth Rate
S. Fulton Pkwy W/O Cedar Grove Rd	9,724	15,579	5.38%
S. Fulton Pkwy btwn Cedar Grove Rd and SR 92	10,066	20,463	8.20%
S. Fulton Pkwy E/O SR 92	22,278	32,586	4.32%

[1] https://gdottrafficdata.drakewell.com

Model Link	2015	2024	Growth Rate
SR 92 S/O S. Fulton Pkwy	16,160	20,566	2.72%
SR 92 N/O S. Fulton Pkwy	15,460	21,634	3.80%
Jones Road W/O SR 92	4,210	4,843	1.57%
SR 92 N/O Jones Road	13,001	17,128	3.11%
Cedar Grove Rd N/O S. Fulton Pkwy	3,881	4,991	2.83%
Bethlehem Rd N/O Cedar Grove Rd	793	2,189	11.94%
Ridge Road btwn SR 92 and Cedar Grove Rd	1,674	4,267	10.96%
	Average Growth Rate		**4.3%**

ARC's population projections for Fulton County and the subarea of southern Fulton County are presented in **Table 11**. The 5, 15, and 25-year growth rates calculated from this data are shown in **Table 12**. Based on these projections the population in Henry County is expected to grow at an average rate of 1.2%.

TABLE 11: FULTON COUNTY POPULATION PROJECTIONS

Location	2015	2020	2030	2040
Fulton	970,290	1,017,903	1,139,008	1,264,376
S Fulton	49,721	52,957	62,741	70,303

TABLE 12: GROWTH RATE BASED ON POPULATION PROJECTIONS

Location	Growth 2020	Growth 2030	Growth 2040	Average
Fulton	1.0%	1.1%	1.1%	1.0%
S Fulton	1.3%	1.6%	1.4%	1.4%
Average	**1.1%**	**1.3%**	**1.2%**	**1.2%**

ARC's population projections for Fulton County and the subarea of southern Fulton County are presented in **Table 13**. The 5, 15, and 25-year growth rates calculated from this data are shown in **Table 14**. Based on these projections the population in Henry County is expected to grow at an average rate of 1.4%.

TABLE 13: FULTON COUNTY EMPLOYMENT PROJECTIONS

Location	2015	2020	2030	2040
Fulton	889,811	972,901	1,059,481	1,059,481
S Fulton	16,991	18,257	22,765	24,395

TABLE 14: GROWTH RATE BASED ON EMPLOYMENT PROJECTIONS

Location	Growth 2020	Growth 2030	Growth 2040	Average
Fulton	1.8%	1.2%	0.7%	1.2%
S Fulton	1.4%	2.0%	1.5%	1.6%
Average	**1.6%**	**1.6%**	**1.1%**	**1.4%**

Based on the results of this analysis and feedback from local representatives during and immediately following the March 25th methodology meeting **a growth rate of 2.0% is recommended for all roadways for the future background no-build conditions**. This growth rate was approved in GRTA's April 1st letter of understanding.

Volume Development

The future year used for this analysis is 2024. The approved 2.0% growth rate was applied to the balanced existing turning movement counts to calculate future background (no-build) volumes. Additional volumes from four adjacent DRI projects were also added to the turning movement counts to account for these large developments which were not accounted for in the background growth rate. Volumes from the following DRIs were added to the future no-build traffic:

- 2373 – MAC IV – Derrick Road
- 2759 – Southpoint Farms Logistics Center
- 2767 – Hillwood Hall Road Site
- 2854 – Crossroads Business Center

AM and PM peak hour volume diagrams for each intersection are included in **Appendix K**. Peak hour intersection volumes were used to calculate segment volumes. Peak hour segment volumes are listed in the following section.

Segment Level of Service.

The future background level of service (LOS) on study roadway segments was determined following the same methodology used for the existing conditions analysis. The segment volumes used for this analysis and the resulting segment LOS are shown in **Table 15**.

TABLE 15: NO-BUILD CONDITIONS SEGMENT VOLUMES AND LEVEL OF SERVICE

Study Segment	From	To	AM Peak Hour		PM Peak Hour	
			Volume	LOS	Volume	LOS
Hall Road	Jones Road	Site Access	1,013	C	483	B
Hall Road	Site Access	SR 92	1,069	C	500	B
Jones Road	Cedar Grove Road	Site Access	42	B	19	B
Jones Road	Site Access	Hall Road	293	B	56	B
Jones Road	Hall Road	SR 92	32	B	9	B
SR 92	Jones Road	Hall Road	**1,970**	**F**	**2,483**	**F**
SR 92	Hall Road	Thompson Road	**2,553**	**F**	**2,876**	**F**
SR 92	Thompson Road	S. Fulton Parkway	2,627	B	2,904	B

Similar to the existing conditions, SR 92 between Jones Road and Thompson Road operates at a LOS F in the future no-build conditions.

Intersection Level of Service

Intersection LOS was analyzed following the same methodology used for the existing conditions analysis. Intersection modifications were made at the intersection of SR 92 and S. Fulton Parkway as described in the planned and programed improvements section. A west leg was also added to the intersection of SR 92 and Thompson Road which is planned to provide access to the Hillwood Hall development as detailed in DRI 2767. These projects have both been let for construction and therefore are included in the future no-build and build conditions as directed in GRTA's April 1st letter of understanding. The lane configuration for each intersection is included with the future no-build volume diagrams in **Appendix K**. The results of this analysis are presented in **Table 16**. Synchro generated reports for each intersection are included in **Appendix L**.

TABLE 16: NO-BUILD CONDITIONS INTERSECTION DELAY AND LEVEL OF SERVICE

No.	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (s)	LOS	Delay (s)	LOS
1	Cedar Grove Road at Jones Road	TWSC	13.5	B	12.9	B
2	Hall Road at Jones Road	AWSC	**59.4**	**F**	9.6	A
3	SR 92 at Jones Road	AWSC	**948.6**	**F**	**2,349.2**	**F**
4	SR 92 at Hall Road	Signalized	47.8	D	39.6	D
5	SR 92 at Thompson Road	TWSC	**3,358.0**	**F**	**6,441.1**	**F**
6	SR 92 at S. Fulton Parkway	Signalized	47.5	D	34.9	C

In the future no-build conditions two intersections operates at LOS F during both the AM and PM peak hour:

- SR 92 at Jones Road
- SR 92 at Thompson Road

One additional intersection operates below the standard LOS of D only during the AM peak hour:

- Hall Road at Jones Road

Future Build Conditions Analysis

Volume Development

The project traffic distributions presented in **Appendix D** were used to assign peak hour project traffic from **Table 3** to the roadway network within the study area. The project traffic at each intersection is presented in **Appendix M**. Project traffic was added directly to the future background no-build traffic volumes to calculate future build conditions volumes. These volumes are shown in **Appendix N.**

Segment Level of Service.

The future build level of service (LOS) on study roadway segments was determined following the same methodology used for the existing and no-build conditions analysis. The segment volumes used for this analysis and the resulting segment LOS are shown in **Table 17**.

TABLE 17: BUILD CONDITIONS SEGMENT VOLUMES AND LEVEL OF SERVICE

Study Segment	From	To	AM Peak Hour		PM Peak Hour	
			Volume	LOS	Volume	LOS
Hall Road	Jones Road	Site Access	1,156	C	664	B
Hall Road	Site Access	SR 92	1,461	C	989	C
Jones Road	Cedar Grove Road	Site Access	44	B	22	B
Jones Road	Site Access	Hall Road	441	B	240	B
Jones Road	Hall Road	SR 92	32	B	9	B
SR 92	Jones Road	Hall Road	**1,978**	**F**	**2,493**	**F**
SR 92	Hall Road	Thompson Road	**2,937**	**F**	**3,355**	**F**
SR 92	Thompson Road	S. Fulton Parkway	3,005	B	**3,374**	**F**

Two segments of SR 92 operate at LOS F during both the AM and PM peak hours. These segments were also failing in the existing conditions and no-build conditions LOS analysis. An addition segment of SR 92 from Thompson Road to South Fulton Parkway operates at LOS F, but only during the PM peak hour.

Intersection Level of Service

Intersection LOS was analyzed following the same methodology used for the existing and no-build conditions analysis. The results of this analysis are presented in **Table 18**. Synchro generated reports for each intersection are included in **Appendix O**.

TABLE 18: BUILD CONDITIONS INTERSECTION DELAY AND LEVEL OF SERVICE

No.	Intersection	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (s)	LOS	Delay (s)	LOS
1	Cedar Grove Road at Jones Road	TWSC	13.6	B	13.0	B
2	Hall Road at Jones Road	AWSC	**122.7**	**F**	12.4	B
3	SR 92 at Jones Road	AWSC	**948.6**	**F**	**2,349.2**	**F**
4	SR 92 at Hall Road	Signalized	**69.8**	**E**	**76.3**	**E**
5	SR 92 at Thompson Road	TWSC	**7,752.5**	**F**	**19,144.9**	**F**
6	SR 92 at S. Fulton Parkway	Signalized	54.5	D	44.8	D

In the future build conditions three intersections operate at a failing LOS during both the AM and PM peak hour:

- SR 92 at Jones Road
- SR 92 at Hall Road
- SR 92 at Thompson Road

The intersections of SR 92 at Jones Road and Thompson Road both operated at LOS F in the future no-build conditions. One intersection operates below the standard LOS D during only the AM peak hour, similar to what was observed in the no-build conditions analysis:

- Hall Road at Jones Road

Facility Needs Analysis

SR 92 between Thompson Road and South Fulton Parkway

The standard LOS on this segment is LOS D. This segment operates at a failing LOS during the PM peak hour in the build conditions. Based on the FDOT Generalized LOS Table 5 a two-way peak hour volume of 3,200 or less is required to maintain a LOS D on a four-lane undivided cross-section with dedicated right-turn lanes. A six-lane cross section is necessary to bring this segment into compliance during the build conditions PM peak hour. Similar to the segment in the previous section, this segment is only 174 vehicles over the LOS threshold. This segment operates at LOS D when analyzed using estimated daily traffic of 33,740 vehicles per day calculated from the 3,374 vehicles in the PM peak hour and a K-factor of 0.1.

A more detailed analysis of the PM peak hour, the peak hour during which the future build conditions are projected to fail, was conducted using the HCS 7 software. This analysis accounts for specific elements of the study segment, as opposed to the generalized LOS tables which

makes many assumptions to come up with the LOS volume thresholds that can be applied to a wide range of roadways. The HCS analysis was performed assuming a 4-lane cross section and using projected build conditions volumes. The results of this analysis are presented in **Table 19.** The analysis found that the southbound lanes operate at LOS C and the northbound lanes operates at LOS D during the PM peak hour. The HCS output from this analysis is included in Appendix P.

TABLE 19: HCS ANALYSIS OF SR 92 FROM THOMPSON ROAD TO SOUTH FULTON PARKWAY, BUILD CONDITIONS, PM PEAK HOUR

Southbound		Northbound	
Density (pc/mi/ln)	LOS	Density (pc/mi/ln)	LOS
19.7	C	26.5	D

This analysis does not recommend widening this portion of SR 92 from four lanes to six lanes because projected build volumes are only approximately 5% above the LOS threshold set in the generalized LOS tables during the PM peak hour and are within the LOS thresholds of the generalized LOS tables for the AM peak hour and daily volume. Furthermore, a more detailed HCS analysis of the PM peak hour resulted in an acceptable LOS on this segment during the PM peak hour.

SR 92 between Hall Road and Thompson Road

The standard LOS on this segment is LOS E because the segment operates at LOS F in the existing conditions during both the AM and PM peak hour. The southern portion of this roadway segment is a four-lane cross section while the northern portion of the segment is two lanes with a dedicated northbound right-turn lane in addition to the northbound through lane. Based on FDOT Generalized LOS Table 5, widening the entire section to a four-lane road would bring the LOS into compliance in the future no-build conditions.

Based on FDOT's Generalized LOS Table 5, a six-lane cross section is necessary to bring this segment into compliance in the future build conditions. The threshold to maintain an acceptable LOS on this segment is a peak-hour two-way volumes of 3,200 vehicles or less. This segment is just 155 vehicles over the threshold with 3,355 vehicles projected in the peak hour.

This analysis also looked at the performance of the segment with daily traffic volumes assuming a conservative K-factor of 0.1 based on K-factors reported at two nearby GDOT count stations (0.105 at station 121-0294, SR 92 North of Jones Road, and 0.115 at station 121-0981, South Fulton Parkway east of SR 92). Based on the projected 3,355 vehicles during the PM peak hour, the AADT on this segment would be 33,550 vehicles per day. At this volume the segment

operates at LOS D according to thresholds in FDOT's Generalized LOS Table 2 which uses AADT volumes in transitioning areas to estimate daily LOS on roadway segments. The threshold between a LOS D and LOS F for this analysis is 35,500 vehicles per day.

A more detailed analysis of the PM peak hour, the peak hour during which the future build conditions are projected to fail, was conducted using the HCS 7 software for the higher volume segment of SR 92 south of this segment. The analysis is described in the previous section and resulted in a projected segment LOS of D during the PM peak hour.

This analysis does not recommend widening this portion of SR 92 from four lanes to six lanes because projected build volumes are only approximately 5% above the LOS threshold set in the generalized LOS tables during the PM peak hour and are within the LOS thresholds of the generalized LOS tables for the AM peak hour and daily volume. Furthermore, a more detailed HCS analysis of the PM peak hour of a higher volume segment of SR 92 resulted in an acceptable LOS on the segment during the PM peak hour.

SR 92 between Jones Road and Hall Road

The standard LOS on this segment is LOS E because the segment operates at LOS F in the existing conditions during both the AM and PM peak hour. Based on FDOT Generalized LOS Table 5, widening this segment to a four-lane road would bring the LOS into compliance in the future no-build conditions. This recommended improvement would also bring the segment LOS into compliance in the future build conditions.

Hall Road at Jones Road

The standard LOS at this intersection is LOS D. The LOS at this intersection falls below the standard during the AM peak hour in both the future no-build and build conditions. The minimum improvements required to alleviate delay at this intersection in the no-build condition is to convert the intersection from an all-way stop-controlled intersection to a two-way stop-controlled intersection with stop signs on the Jones Road approaches and allowing vehicles on Hall Road to move freely through the intersection. It should be noted that if this improvement is made consideration should be given to adding a westbound turn lane on Hall Road to improve safety for the high volume of westbound to southbound turning vehicles from Hall Road to Jones Road; a turn lane is not needed to improve the LOS to the standard LOS of D in the no-build conditions.

When the recommended improvement described in the previous paragraph were modeled in the build conditions the intersection LOS was also within the acceptable LOS range. The LOS

results for the improved no-build and build conditions at this intersection are provided in **Table 20**. Neither analysis includes a westbound left-turn lane.

TABLE 20: AM PEAK HOUR INTERSECTION ANALYSIS WITH RECOMMENDED IMPROVEMENTS, HALL ROAD AT JONES ROAD

Intersection	Control Type	No-Build (AM)		Build (AM)	
		Delay (s)	LOS	Delay (s)	LOS
Hall Road at Jones Road	TWSC	18.0	C	20.0	C

SR 92 at Jones Road

The standard LOS at this intersection is LOS E because the intersection operates at LOS F in the existing conditions during both the AM and PM peak hour. Various intersection geometries were tested to see if new lane configurations would bring the intersection into LOS compliance however the addition of a traffic signal at this intersection was the only strategy to successfully mitigate the excessive delay on the sidestreets. The LOS at this intersection with signalization in the future no-build and build conditions is presented in **Table 21.**

TABLE 21: INTERSECTION ANALYSIS WITH RECOMMENDED IMPROVEMENTS, SR 92 AT JONES ROAD

Intersection	Scenario	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (s)	LOS	Delay (s)	LOS
SR 92 at Jones Road	No-Build	Signalized	3.5	A	4.4	A
	Build	Signalized	4.2	A	5.6	A

SR 92 at Hall Road

The LOS standard for this intersection is LOS D. The LOS at this intersection falls below the standard LOS during the AM and PM peak hour in the build conditions. The minimum improvement to alleviate delay at the intersection is to add an additional northbound left-turn lane on SR 92. This is necessary due to the very high volumes of left-turning traffic in both the AM and PM peak hour, 504 and 507 vehicles respectively.

The results of an intersection analysis with this improvement is shown below in **Table 22**.

TABLE 22: BUILD CONDITIONS INTERSECTION ANALYSIS WITH RECOMMENDED IMPROVEMENTS, SR 92 AT HALL ROAD

Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay (s)	LOS	Delay (s)	LOS
SR 92 at Hall Road	Signalized	41.7	D	54.9	D

It should be noted that 388 vehicles make the northbound left-turn movement during the AM peak hour in the no-build conditions. The GDOT Regulations for Driveway and Encroachment

Control states in section 4I-5 that "dual left-turn lanes are typically considered when the peak hour left turn volume is 300 vehicles or greater." Therefore, while the intersection LOS is within acceptable standards in the no-build conditions the dual left-turn lanes are still warranted in the no-build conditions due to high left turn volumes in the AM peak hour.

SR 92 at Thompson Road

The standard LOS at this intersection is LOS E because the intersection operates at LOS F in the existing conditions during both the AM and PM peak hour. The intersection analyses presented in this report shows extreme delay on the minor street at this intersection. The westbound approach is the approach with the highest delay in the no-build and build conditions. This approach already has separated left and right-turn lanes therefore the minimum improvement to alleviate delay at this intersection is to install a traffic signal. The LOS at this intersection with signalization in the future no-build and build conditions is presented in **Table 23**.

TABLE 23: INTERSECTION ANALYSIS WITH RECOMMENDED IMPROVEMENTS, SR 92 AT THOMPSON ROAD

Intersection	Scenario	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (s)	LOS	Delay (s)	LOS
SR 92 at Thompson Road	No-Build	Signalized	11.3	B	6.7	A
	Build	Signalized	29.0	C	10.0	B

Synchro reports for all recommended improvements at intersections discussed in the section are included in **Appendix Q**.

Site Access Analysis

The standard LOS at each site access point is LOS D. The northern site access point on Jones Road operates at an acceptable LOS with a two-lane stop-controlled approach and no geometric changes to Jones Road. Jones Road is currently an unpaved gravel road at the proposed northern access point. It is recommended that Wilkins Road be paved from the existing pavement to the proposed access point to facilitate comfortable access to the site. The results of the build conditions level of service analysis at this access point are presented in **Table 24**.

TABLE 24: SITE ACCESS ANALYSIS, JONES ROAD ACCESS POINT

Intersection	Control Type	AM Peak Hour		PM Peak Hour	
		Delay (s)	LOS	Delay (s)	LOS
Jones Road Access Point	TWSC	8.9	A	8.7	A

The proposed access point on Hall Road will be adjacent to the west driveway to Renaissance elementary school. Existing conditions turning movements at this location were estimated using the *ITE Trip Generation Manual, 10th Edition* Land Use Code 522, Middle School, to estimate the number of peak hour trips generated by the school based on the reported enrollment of 1,195 students[2] and using the segment volumes on Hall Road to distribute the volumes onto the roadway network. This analysis conservatively assumed that approximately 90% of the estimated trips generated by the school would use the driveway adjacent to the proposed access point. Existing volumes at this driveway were treated like all other intersections and grown using the background growth rate of 2.0% and include future volumes from surrounding DRIs. The project volumes were added to calculate build conditions volumes at the driveways. The results of a level of service analysis for the existing, no-build, and build conditions is presented in **Table 25**.

TABLE 25: LEVEL OF SERVICE ANALYSIS, HALL ROAD AT MIDDLE SCHOOL DRIVEWAY/HALL ROAD ACCESS POINT

Intersection	Scenario	Control Type	AM Peak Hour		PM Peak Hour	
			Delay (s)	LOS	Delay (s)	LOS
Hall Road at Middle School Driveway/Hall Road Access Point	Existing	TWSC	**46.0**	**E**	11.4	B
	No-Build	TWSC	**94.6**	**F**	11.9	B
	Build	TWSC	**803.3**	**F**	**59.3**	**F**

The standard LOS for this intersection is LOS E in the AM peak hour because the intersection operates at LOS E during the AM peak hour in existing conditions. The standard LOS for the PM peak hour remains LOS D.

The southbound approach from the middle school driveway already has dedicated left and right-turn lanes which leaves very few options for improvements to alleviate delay in the no-build conditions at the driveway. The addition of an eastbound left-turn lane in the no-build conditions did not significantly improve intersection performance and still operated at LOS F. Driveway signalization may not be an applicable countermeasure due to the condensed peak periods experienced at schools and because many schools hire police officers to control traffic during peak school periods regardless of intersection control type. An official recommendation regarding intersection signalization should be contingent on a signal warrant analysis.

Project traffic volumes, future build conditions volumes, graphics of the recommended lane configuration, and reports generated by Synchro at the site access points are included in **Appendix R**.

[2] https://schoolgrades.georgia.gov/renaissance-middle-school

Conclusion

The following projects, presented in **Table 26**, have been identified to improve the LOS of the transportation network within the influence area of the DRI to accommodate projected background traffic volumes. It should be noted that these recommended projects are due to background growth only and are independent of the proposed development traffic.

TABLE 26: RECOMMENDED IMPROVEMENT PROJECTS TO ACCOMMODATE BACKGROUND TRAFFIC

Location	Improvement Description	Estimated Cost	Sponsor/ Funding Source	Timing
SR 92 between Hall Road and Thompson Road	Widen roadway to four lanes	$800,000	GDOT	Widen before development build-out
Hall Road at Jones Road	Convert AWSC to TWSC	$15,000	Fulton County/Union City	Short-term (by 2024)
SR 92 at Jones Road	Possible signalization of intersection	$750,000	Fulton County/Union City	Contingent on Signal Warrant Analysis
SR 92 at Hall Road	Construct additional left-turn lane on NB approach	$350,000	GDOT	Short-term (by 2024)
Hall Road at Renaissance Middle School	Possible signalization of intersection	$750,000	Fulton County/Union City	Contingent on Signal Warrant Analysis

Table 27 lists additional projects that the developer of the proposed DRI will be responsible for implementing to maintain an acceptable LOS and safety on the roadway network upon construction of the proposed development.

TABLE 27: RECOMMENDED IMPROVEMENT PROJECTS TO ACCOMMODATE PROJECT TRAFFIC

Location	Improvement Description	Estimated Cost	Sponsor/ Funding Source	Timing
Jones Road	Pave road from existing pavement to Jones Road site access	$600,000	Developer	At build-out

The recommendation to pave Jones Road is not based on LOS analysis but is a common-sense improvement to facilitate access to the development site.

APPENDIX A

LETTER OF UNDERSTANDING

LETTER OF UNDERSTANDING

April 1, 2019

Neil Koelbl
General Holdings Unlimited
P.O. Box 1129
Monroe, GA 30655

RE: **DRI 2916 1908 Hall Road**

Dear Mr. Koelbl:

The purpose of this letter is to document the discussions during the Pre-Review and Methodology Meeting held at ARC's office on March 25, 2019 regarding **DRI 2916 1908 Hall Road.** Some of the following items were discussed in this meeting and should assist you and your consultant team in preparing the DRI Review Package.

PROJECT OVERVIEW

- The project is located in the City of Union City on a 202-acre site at the southwest corner of the intersection of Jones Road and Hall Road.
- The DRI trigger for this development is a rezoning application.
- The project is planned primarily as a residential development with 330 single family homes, 188 townhomes, and a 8,000 SF commercial daycare facility.
- The vehicular trip generation is estimated to be 4, 878 gross daily trips based on the *ITE Trip Generation Manual 10th edition*.
- The development site proposes two full access driveways. One existing driveway on Jones Road and one driveway on Hall Road.
- The projected build-out is one phase, to be completed by 2024.
- The applicant is applying for approval under GRTA's non-expedited review process.

STUDY NETWORK

1. Cedar Grove Road at Jones Road
2. Hall Road at Jones Road
3. SR 92/Fairburn Rd at Hall Rd
4. SR 92/Fairburn Rd at Thompson Road
5. SR 92/Fairburn Rd at South Fulton Parkway
6. SR 92/Fairburn Road at Jones Road
7. All Site Access

METHODOLOGY

- All intersections identified as within the study network shall be analyzed during the AM and PM peak hours for (1) existing conditions, (2) future "no-build" conditions [may not be applicable for the site driveways, and (3) future "build" conditions. This DRI shall be reviewed in one phase to be completed by 2024.

- Capacity analysis shall be based on turning movement counts collected not more than 12-months prior to the date of the actual DRI submittal to GRTA. As appropriate, pedestrian counts and heavy vehicle counts shall be collected with vehicle counts and considered within the capacity analysis. Turning movement counts shall be collected while local schools are in session and ordinarily not between the week of Thanksgiving and the second week of January or any week of a major holiday.

- A 2% annual background traffic growth rate shall be used for all roadways. The trips from DRI 2767 Hillwood Hall, 2759 Southpoint Farms, and 2854 Crossroad Business Center to be included added in the no-build and build scenarios. Trip generation information for any other major developments currently underway in the study area shall be taken into consideration.

- The Level of Service (LOS) standard for all analyses shall be LOS D.

- No alternate mode trip reduction, mixed-use or pass-by reductions shall be taken for this development.

- Default values should not be assumed in the traffic modeling. Existing conditions shall be taken into account.

- The applicant shall research TIP, STIP, RTP, and GDOT's construction work program, as well as any local government plans (SPLOST, CIP, etc.), to determine the open-to-traffic date, sponsor, cost of the project, funding source(s), for future roadway projects in the project vicinity. This information shall be included within the traffic analysis.

ADDITIONAL INFORMATION

Every roadway segment and intersection listed above will be analyzed for "required improvements." If the existing LOS for the segment or intersection is below the applicable level of service for a particular time period (e.g., A.M. peak period, P.M. peak period, etc.), then the measured LOS service for that segment and time periods is the standard by which the "base" and "future" traffic conditions will be designed. For example, if the County's LOS standard is LOS D, but an intersection or segment currently operates at LOS E for a certain peak period, then the LOS standard for that intersection or segment for "base" and "future" conditions becomes LOS E (only for that intersection and only for that peak period). The "base" is the phase year traffic without the development traffic (also called future "no-build" conditions) and the "future" is the phase year with the development traffic (also called future "build" conditions). As required in the technical guidelines, specific "required improvements" will be identified to bring the "base" LOS and "future" LOS for every roadway segment and intersection up to the applicable LOS standard. If the existing LOS for the segment or intersection is LOS F, then the future "no-build' and future "build" LOS standard will be LOS E. The improvements required to achieve the desired LOS standard will be provided in a table and graphic within the study. The traffic study should indicate the existing roadway laneage at each studied intersection as well as the laneage required (to meet the LOS standard) for future "no-build" and future "build" conditions. The improvements may include both programmed improvements and improvements identified in the study.

The planned and programmed improvement should indicate the project sponsor, the anticipated funding by source (federal, state, city/county, developer, CID, etc.), the year open-to-traffic, and estimate of the total project cost. All other required improvements identified in the study should, to the extent known, identify the cost, sponsor, funding, and timing. If any of these elements are not known, please state as "unknown."

The future "no-build" and the future "build" analyses should NOT automatically include/assume the additional lanes/capacity associated with planned and programmed improvement projects unless those roadway projects are currently under construction. Instead, the traffic consultant should recommend the additional laneage required to satisfy the level of service standard.

DRI REVIEW PACKAGE CHECKLIST

Please use the DRI Review Package Checklist to help you prepare your GRTA DRI Review Package for expedited review of your application. The Checklist reflects the understandings set forth in this letter, and is incorporated into this letter by reference.

The site plan shall be prepared in accordance with Section 4-104 of the DRI Review Package Technical Guidelines and it shall be dated, and shall be at a scale of 1"= 200' or larger (showing more detail). The site plan shall be consistent with GRTA's Site Plan Information Guidelines, which represents the minimum required information on site plans.

The applicant shall indicate on the site plans all adjacent land uses, current zoning, and future land use as indicated on the future land use map. Additionally, all existing and proposed sidewalks, existing and proposed pedestrian trails, and existing and proposed roadway laneage should be indicated on the site plan.

DRI REVIEW PACKAGE SUBMITTAL

At the time you are ready to submit your DRI Review Package to GRTA, please note the following:

- Provide one (1) paper copy of all materials:
  - Transportation analysis
  - Site Plan
- Provide one (1) CD-ROM with electronic versions of all submittal documents:
  - Provide a PDF of each document
  - Provide the native format for each document
    - .dwg is the preferred CAD format (AutoCAD)
    - .doc is the preferred word processing format (Word)
    - .xls is the preferred spreadsheet format (Excel)
    - .sy8, .sy9 or .sy10 is the preferred capacity analysis format (Synchro)

As part of the completeness certification process, please have your consultant forward one copy of the completed GRTA DRI Review Package (traffic analysis, site plan, CD) to the GDOT District Office, Regional Commission and local government Planning & Development and Transportation group (contact information provided below). GRTA shall be copied on each of the transmittal letters.

GRTA	ATLANTA REGIONAL COMMISSION	CITY OF UNION CITY	GDOT DISTRICT 7
Emily Estes 245 Peachtree Center Ave. Suite 2200 Atlanta, GA 30303	Andrew Smith International Tower 229 Peachtree Street NE Suite 100 Atlanta, GA 30303	Ellis Still Community Development 5047 Union Street Union City, GA 30291	Paul DeNard 5025 New Peachtree Rd. NE Chamblee, GA 30341

If you have any questions, please feel free to contact me directly at 404-893-6171 or eestes@srta.ga.gov.

Sincerely,
Emily Estes
Program Manager, Developments of Regional Impact

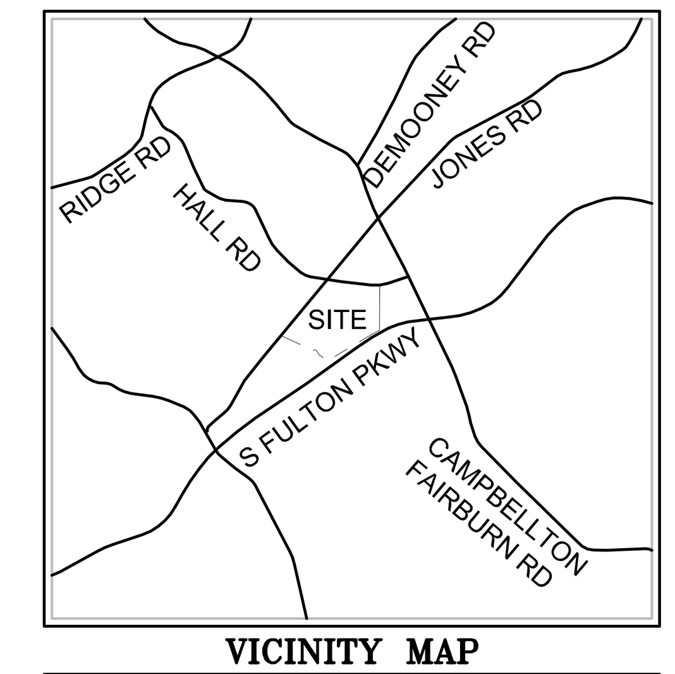
cc:

Jon West, DCA
Andrew Smith, ARC
Robert Herrig, ARC
Annie Gillespie, GRTA
Renaud Marshall, GRTA
Ellis Still, City of Union City
Noble Rogers, GDOT
Megan Wilson, GDOT
Paul DeNard, GDOT
Greg Floyd, MARTA
Dale Hall, FDC
David Pickworth, VHB
Melissa Gende, VHB

Shayla Reed, City of South Fulton
Richard Hathcock, City of South Fulton

APPENDIX B

SITE PLAN



VICINITY MAP

NOT TO SCALE

LAND USE SUMMARY
TOTAL SITE AREA : 202.12 ACRES

EXISTING ZONING CLASSIFICATION:
SINGLE FAMILY RESIDENTIAL (R-1)

PROPOSED ZONING CLASSIFICATION:
TOWN CENTER MIXED USE (TCMU)

SINGLE FAMILY UNITS: 330 UNITS
TOWN HOME UNITS: 188 UNITS
TOTAL UNITS: 518 UNITS
DENSITY: 2.56 UNITS/ACRE
COMMERCIAL DAYCARE: 8,000 SF BUILDING
OPEN SPACE REQUIRED: 30.32 ACRES (15% REQ'D)
OPEN SPACE PROVIDED: 30.32 ACRES

NET LOT AREA CALCULATIONS:
COMBINED SF DEDUCT AREAS

R/W AREA:	862,060.6 SF
DETENTION AREA:	217,800 SF
100 YR. FLOOD AREA:	1,344,322.4 SF
	2,424,183.0 SF

NET LOT AREA

TOTAL SITE AREA:	8,804,347.2 SF
LESS COMBINED SF:	2,424,183.0 SF
	6,380,164 SF (146.5 NET USEABLE ACRES)

DENSITY
146.5 NUA X 4.0 (MIXED-USES & OS BONUS) = 586 MAX. UNITS

GRAPHIC SCALE
200 0 100 200 400 800
(IN FEET)
1 inch = 200 ft.

(GA WEST ZONE) GRID NORTH

NO FIELD SURVEY HAS BEEN PERFORMED.

TOPOGRAPHY AND BOUNDARY INFORMATION FROM UNION CITY GIS.

PRELIMINARY (NOT FOR CONSTRUCTION)

CONCEPTUAL PLAN
FOR
GENERAL HOLDINGS UNLIMITED
MCCLURE TRACT
LOCATED IN:
UNION CITY, GEORGIA

FALCON DESIGN
CIVIL ENGINEERING · LAND PLANNING · CONSTRUCTION MANAGEMENT · SURVEYING

REVISIONS
1.
2.
3.
4.

Know what's below. Call before you dig.
811
UTILITIES PROTECTION CENTER

DATE:	10-19-18
SCALE:	1"=200'
FILE NUMBER:	MP220
DRAWN BY:	AM

THIS DOCUMENT IS NOT VALID UNLESS IT BEARS THE ORIGINAL SIGNATURE OF THE REGISTRANT ACROSS THE REGISTRANT'S SEAL.

SHEET NUMBER
1.0

P:\Projects\109.003 Hall Rd & Hwy 92 (McClure Tracts)\PLANNING\MP220.dwg, Layout1, amcdonald, Oct 19, 2018 - 10:57:18am

APPENDIX C

TRIP GENERATION SHEETS

Land Use: 210
Single-Family Detached Housing

Description

Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision.

Additional Data

The number of vehicles and residents had a high correlation with average weekday vehicle trip ends. The use of these variables was limited, however, because the number of vehicles and residents was often difficult to obtain or predict. The number of dwelling units was generally used as the independent variable of choice because it was usually readily available, easy to project, and had a high correlation with average weekday vehicle trip ends.

This land use included data from a wide variety of units with different sizes, price ranges, locations, and ages. Consequently, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Single-family detached units had the highest trip generation rate per dwelling unit of all residential uses because they were the largest units in size and had more residents and more vehicles per unit than other residential land uses; they were generally located farther away from shopping centers, employment areas, and other trip attractors than other residential land uses; and they generally had fewer alternative modes of transportation available because they were typically not as concentrated as other residential land uses.

Time-of-day distribution data for this land use are presented in Appendix A. For the six general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:00 and 5:00 p.m., respectively. For the two sites with Saturday data, the overall highest vehicle volume was counted between 3:00 and 4:00 p.m. For the one site with Sunday data, the overall highest vehicle volume was counted between 10:15 and 11:15 a.m.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Connecticut, Delaware, Illinois, Indiana, Maryland, Minnesota, Montana, New Jersey, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Vermont, and Virginia.

Source Numbers

100, 105, 114, 126, 157, 167, 177, 197, 207, 211, 217, 267, 275, 293, 300, 319, 320, 356, 357, 367, 384, 387, 407, 435, 522, 550, 552, 579, 598, 601, 603, 614, 637, 711, 716, 720, 728, 735, 868, 903, 925, 936

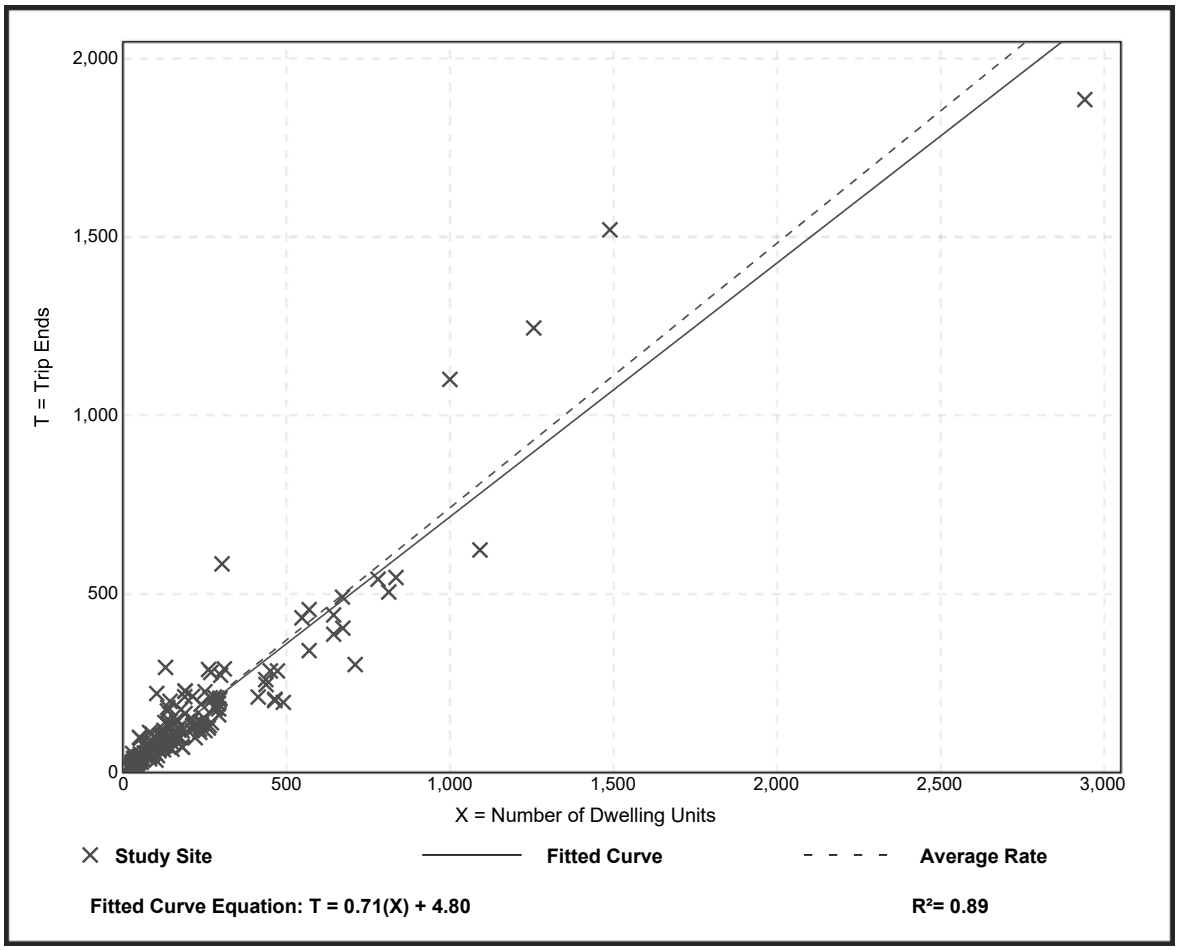
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 173
Avg. Num. of Dwelling Units: 219
Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.74	0.33 - 2.27	0.27

Data Plot and Equation



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Single-Family Detached Housing
(210)

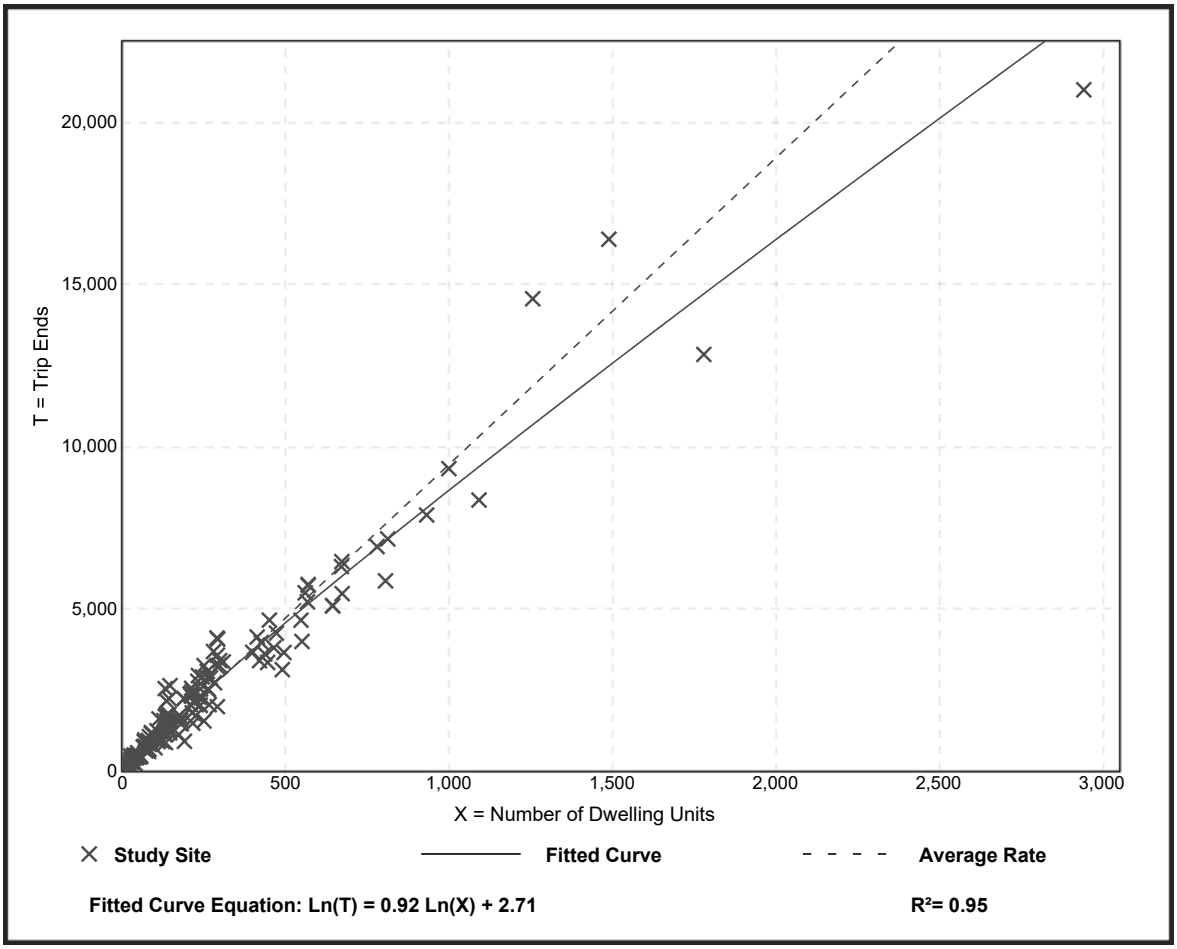
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 159
Avg. Num. of Dwelling Units: 264
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.44	4.81 - 19.39	2.10

Data Plot and Equation



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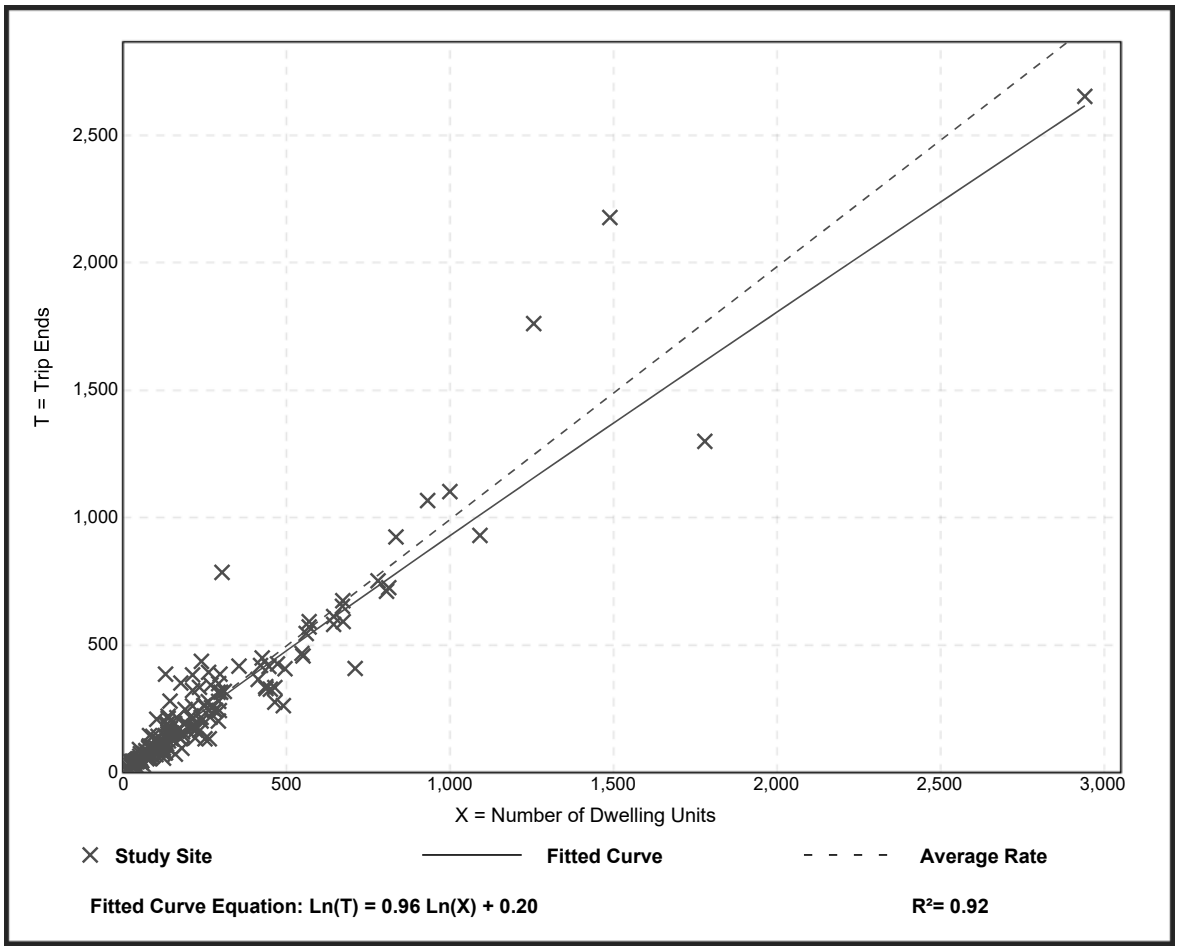
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 190
Avg. Num. of Dwelling Units: 242
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.99	0.44 - 2.98	0.31

Data Plot and Equation



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Land Use: 220
Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have one or two levels (floors). Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), and off-campus student apartment (Land Use 225) are related land uses.

Additional Data

In prior editions of *Trip Generation Manual*, the low-rise multifamily housing sites were further divided into rental and condominium categories. An investigation of vehicle trip data found no clear differences in trip making patterns between the rental and condominium sites within the ITE database. As more data are compiled for future editions, this land use classification can be reinvestigated.

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

This land use included data from a wide variety of units with different sizes, price ranges, locations, and ages. Consequently, there was a wide variation in trips generated within this category. Other factors, such as geographic location and type of adjacent and nearby development, may also have had an effect on the site trip generation.

Time-of-day distribution data for this land use are presented in Appendix A. For the 10 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:45 and 5:45 p.m., respectively. For the one site with Saturday data, the overall highest vehicle volume was counted between 9:45 and 10:45 a.m. For the one site with Sunday data, the overall highest vehicle volume was counted between 11:45 a.m. and 12:45 p.m.

For the one dense multi-use urban site with 24-hour count data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:00 and 8:00 a.m. and 6:15 and 7:15 p.m., respectively.

For the three sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.72 residents per occupied dwelling unit.

The average numbers of person trips per vehicle trip at the five general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.13 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 7 and 9 a.m.
- 1.21 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in British Columbia (CAN), California, District of Columbia, Florida, Georgia, Illinois, Indiana, Maine, Maryland, Minnesota, New Jersey, New York, Ontario, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Utah, Virginia, and Washington.

It is expected that the number of bedrooms and number of residents are likely correlated to the number of trips generated by a residential site. Many of the studies included in this land use did not indicate the total number of bedrooms. To assist in the future analysis of this land use, it is important that this information be collected and included in trip generation data submissions.

Source Numbers

168, 187, 188, 204, 211, 300, 305, 306, 319, 320, 321, 357, 390, 412, 418, 525, 530, 571, 579, 583, 864, 868, 869, 870, 896, 903, 918, 946, 947, 948, 951

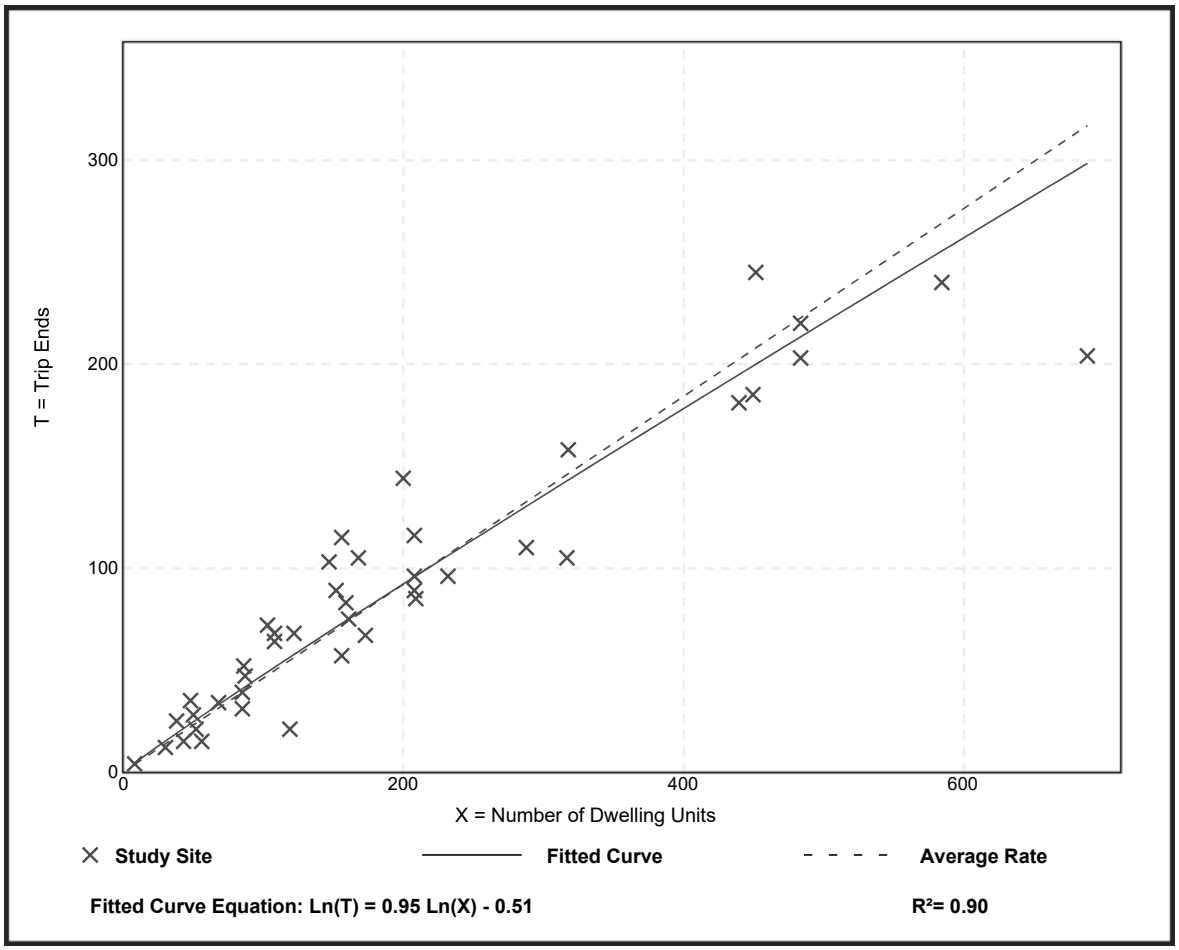
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 42
Avg. Num. of Dwelling Units: 199
Directional Distribution: 23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



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Multifamily Housing (Low-Rise)
(220)

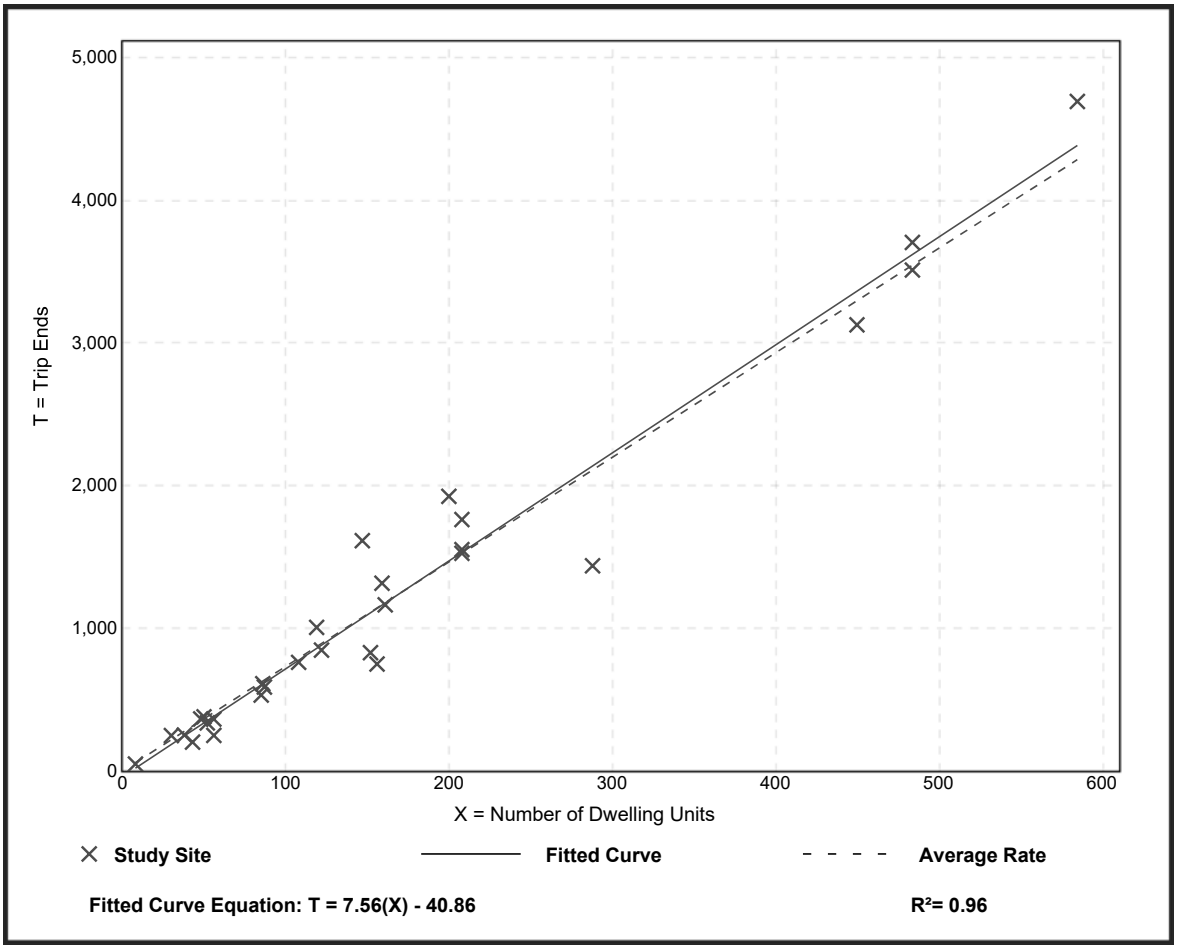
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



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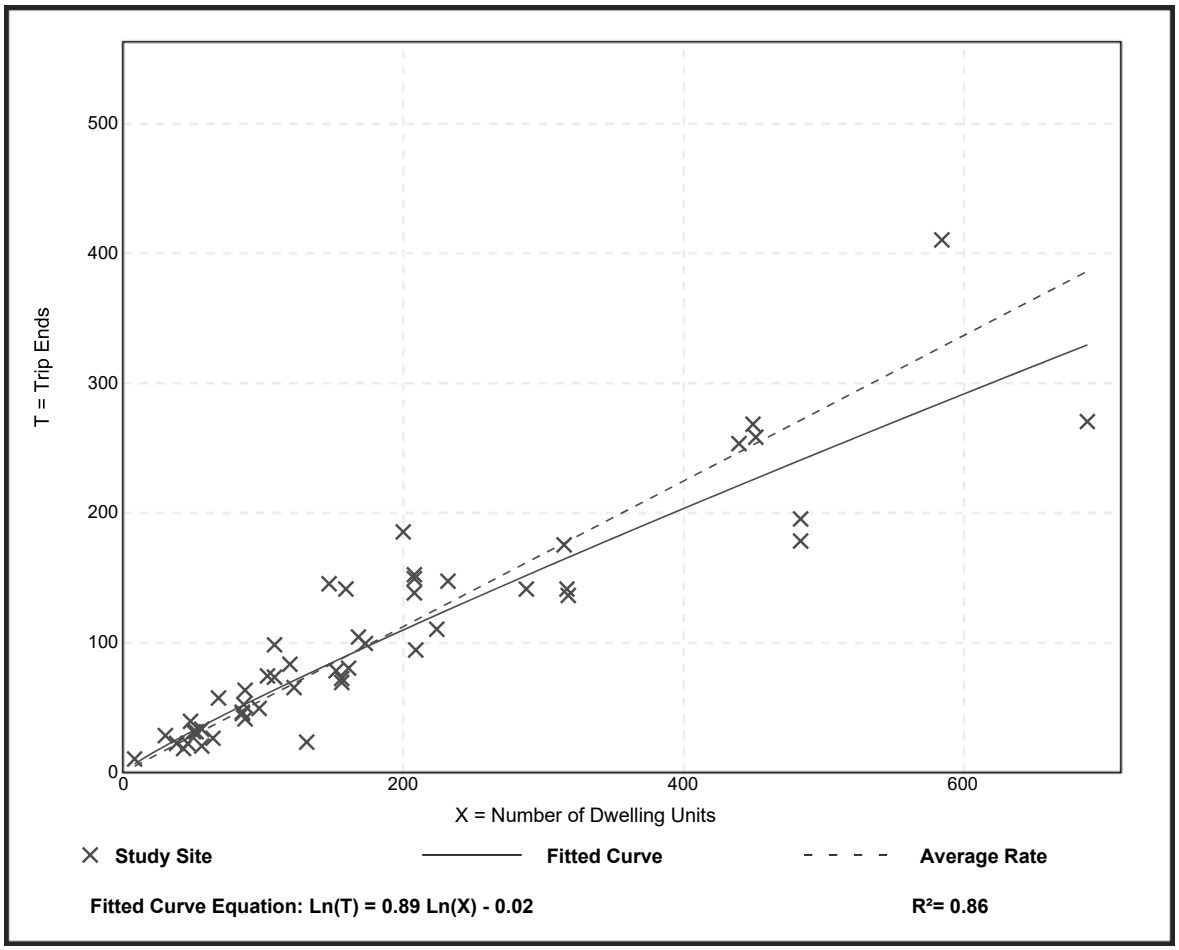
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 50
Avg. Num. of Dwelling Units: 187
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



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Land Use: 565
Day Care Center

Description

A day care center is a facility where care for pre-school age children is provided, normally during the daytime hours. Day care facilities generally include classrooms, offices, eating areas and playgrounds. Some centers also provide after-school care for school-age children.

Additional Data

Time-of-day distribution data for this land use are presented in Appendix A. For the 21 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:15 and 8:15 a.m. and 4:45 and 5:45 p.m., respectively.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Florida, Georgia, Maryland, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Tennessee, Texas, Virginia, and Wisconsin.

Source Numbers

169, 208, 216, 253, 335, 336, 337, 355, 418, 423, 536, 550, 562, 583, 633, 734, 866, 869, 877, 878, 954, 959, 981

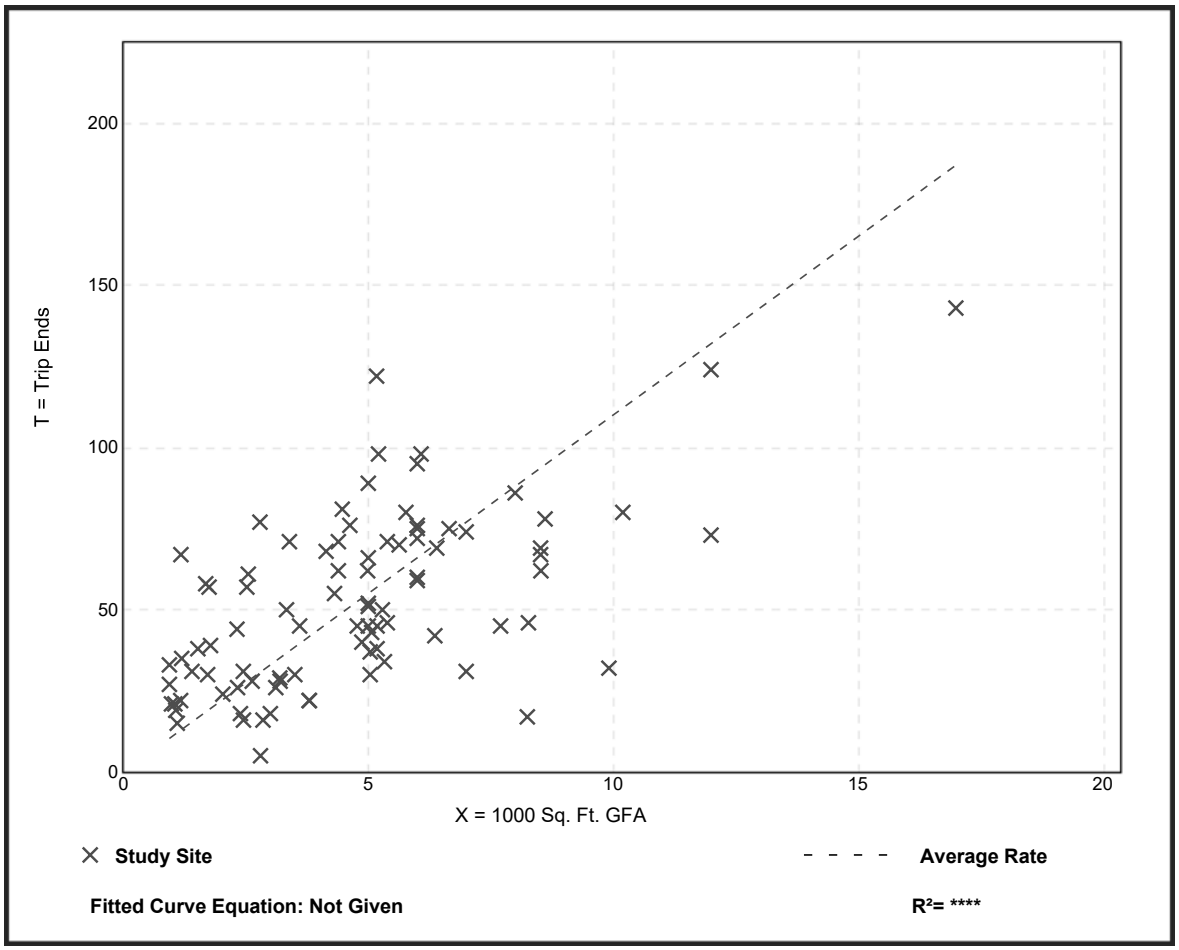
Day Care Center
(565)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 89
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.00	1.79 - 57.02	6.08

Data Plot and Equation



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Day Care Center
(565)

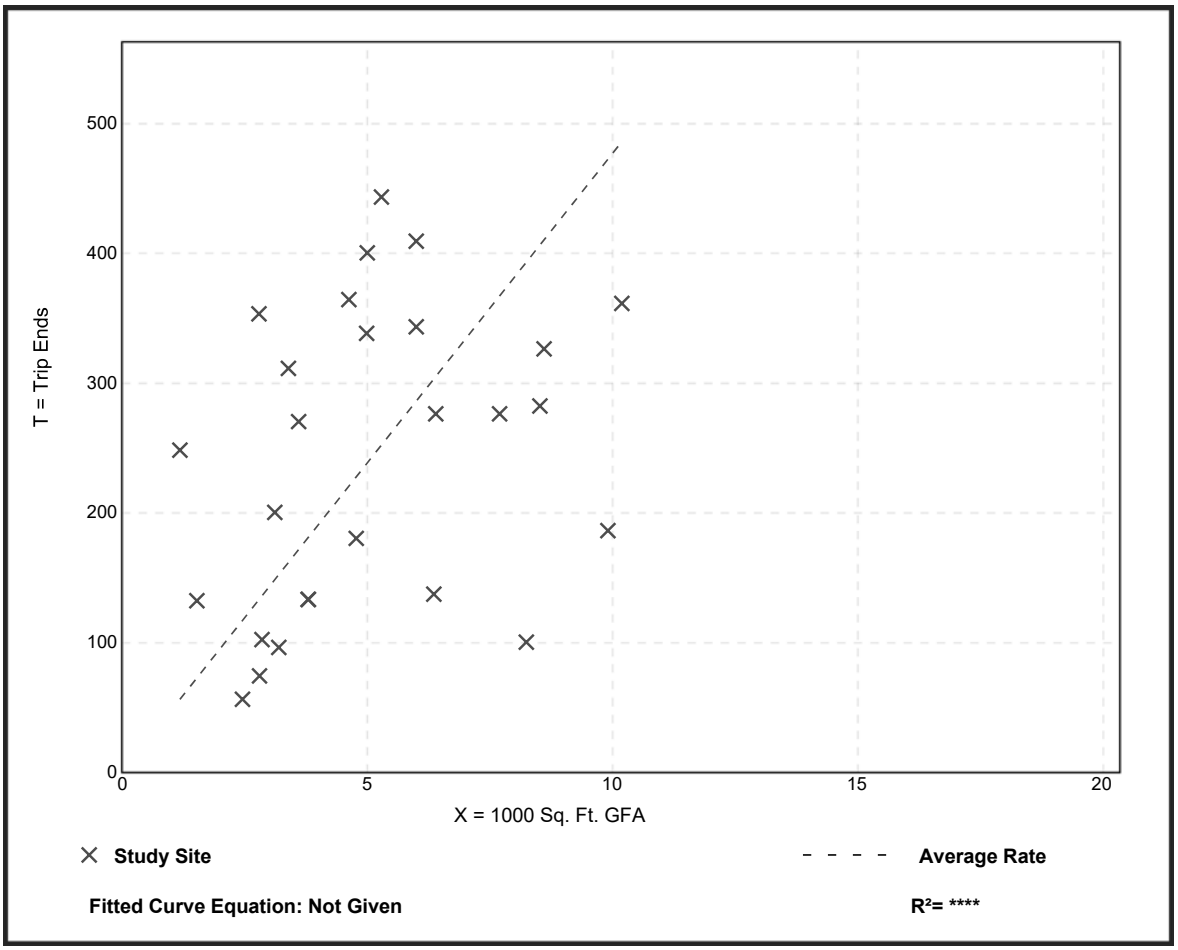
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 27
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
47.62	12.12 - 211.06	29.78

Data Plot and Equation



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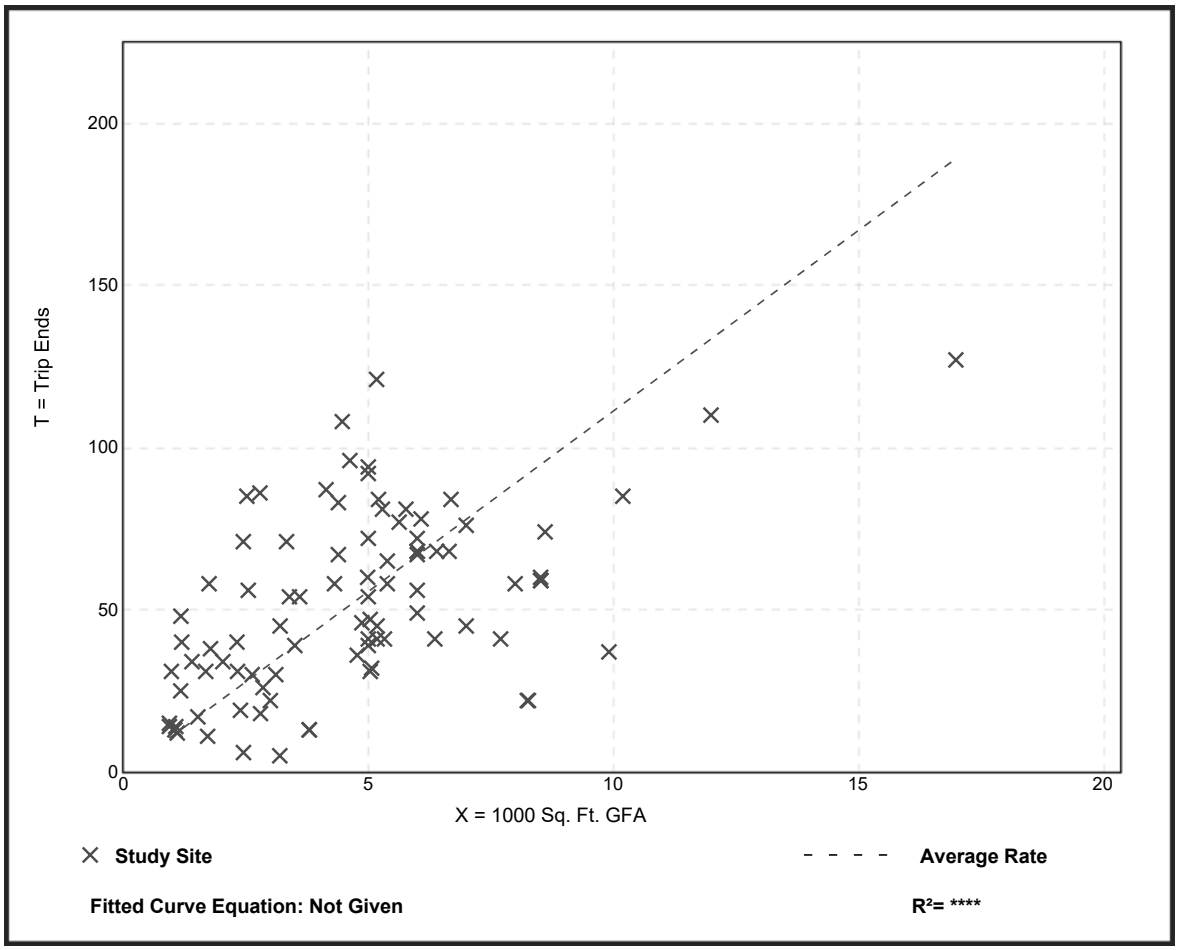
Day Care Center
(565)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 90
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
11.12	1.56 - 40.85	6.28

Data Plot and Equation



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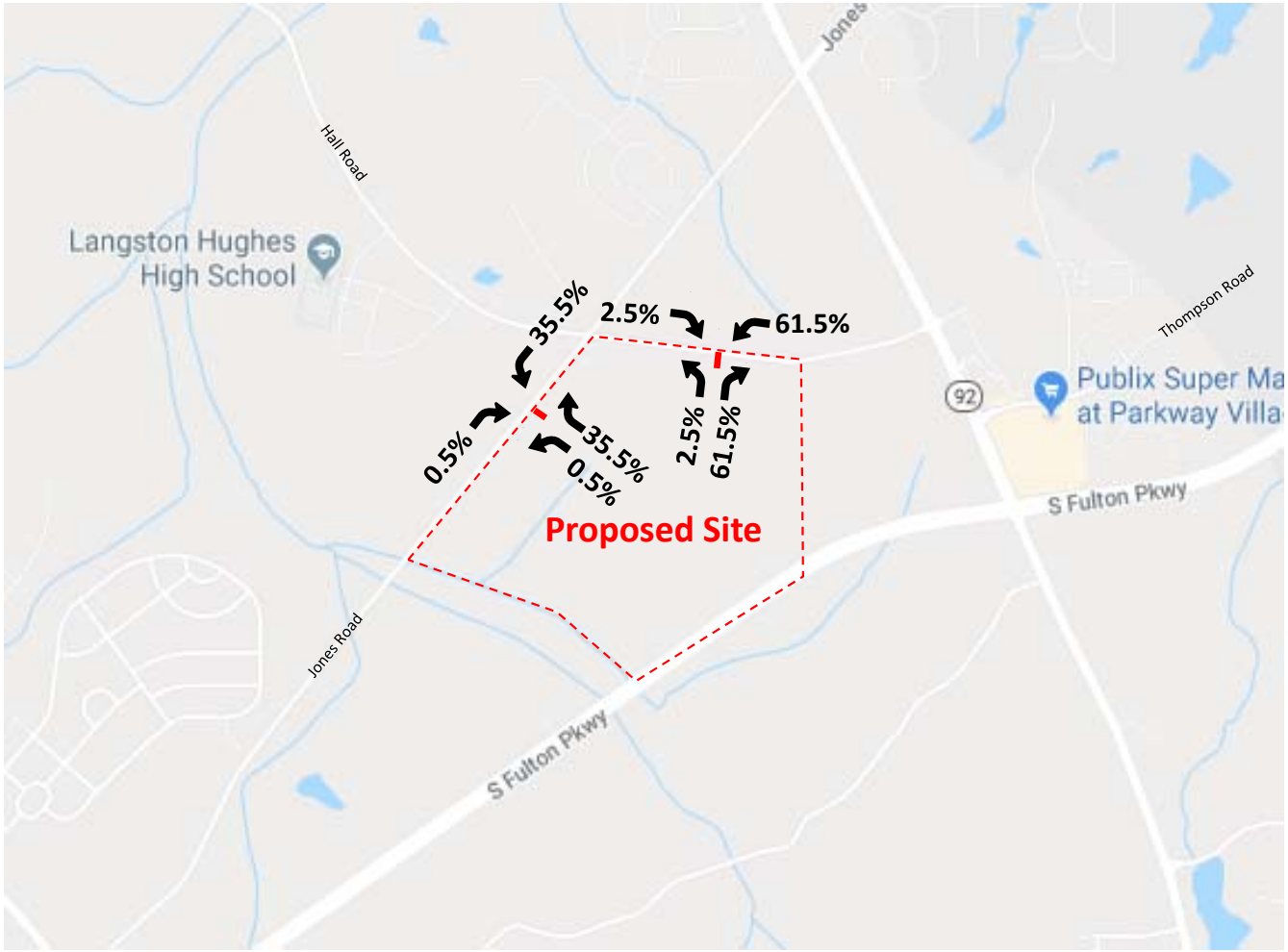
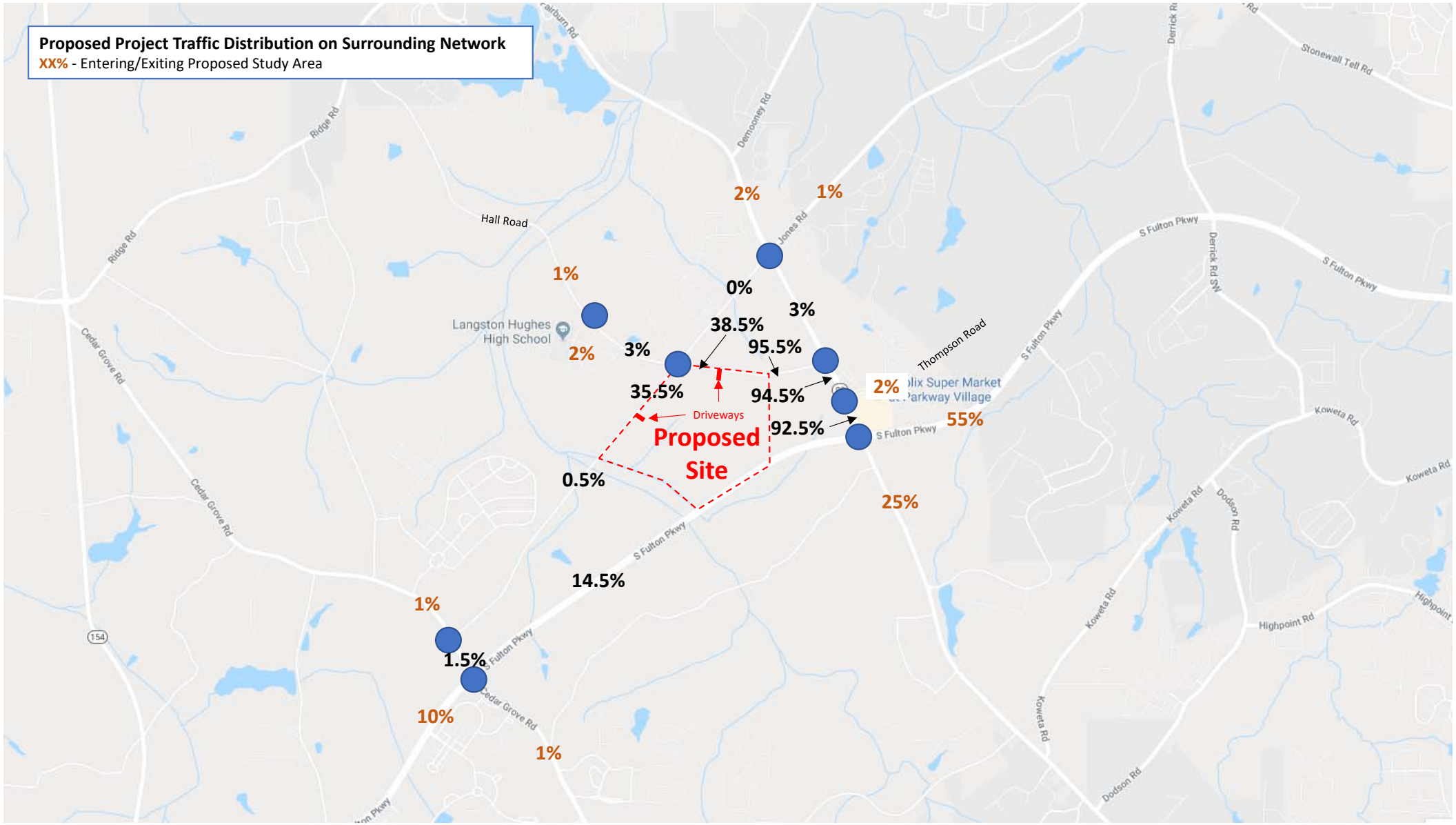
APPENDIX D

PROJECT TRAFFIC DISTRIBUTION

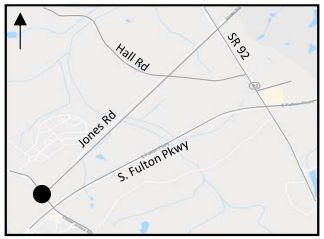
Daily Traffic Distribution at Development Driveways




Proposed Project Traffic Distribution on Surrounding Network
XX% - Entering/Exiting Proposed Study Area
2%
1%
Hall Road
1%
0%
3%
Langston Hughes High School
38.5%
95.5%
2%
3%
35.5%
94.5%
2%
Thompson Road
Driveways
Proposed Site
92.5%
55%
S Fulton Pkwy
0.5%
25%
14.5%
1%
1.5%
10%
1%
Ridge Rd
Cedar Grove Rd
Demooney Rd
Jones Rd
Derrick Rd SW
Stonewall Tell Rd
Koweta Rd
Dodson Rd
Highpoint Rd
154

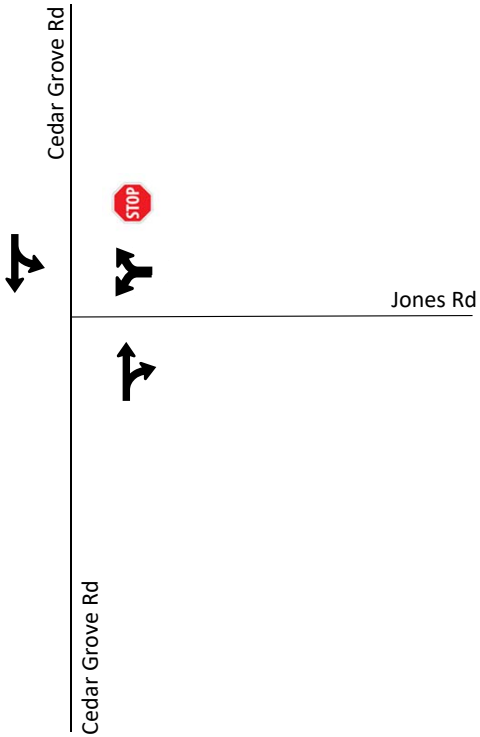
APPENDIX E

EXISTING CONDITIONS –
LANE CONFIGURATIONS AND VOLUMES

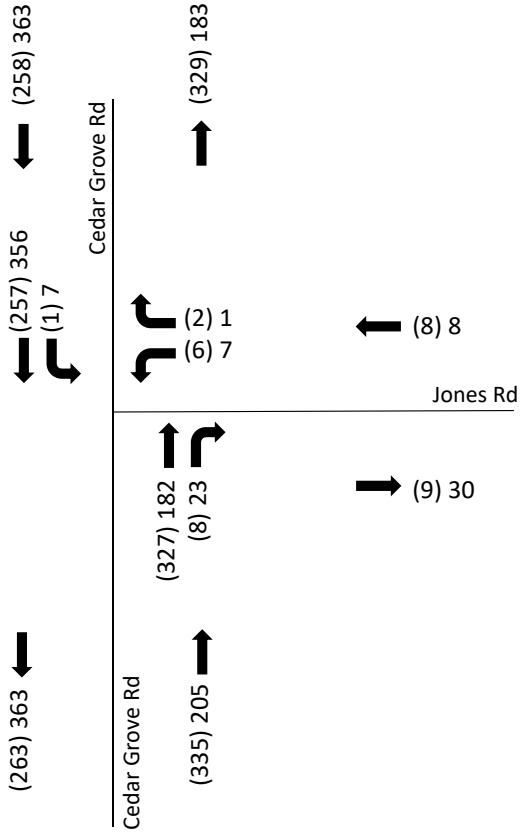


1: Cedar Grove Road at Jones Road

NOT TO SCALE



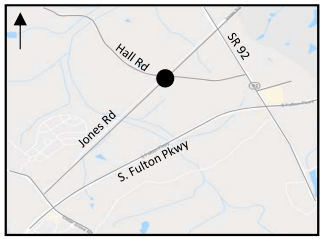
Existing Lane Configuration



Existing (2019) TMC – (PM)/AM

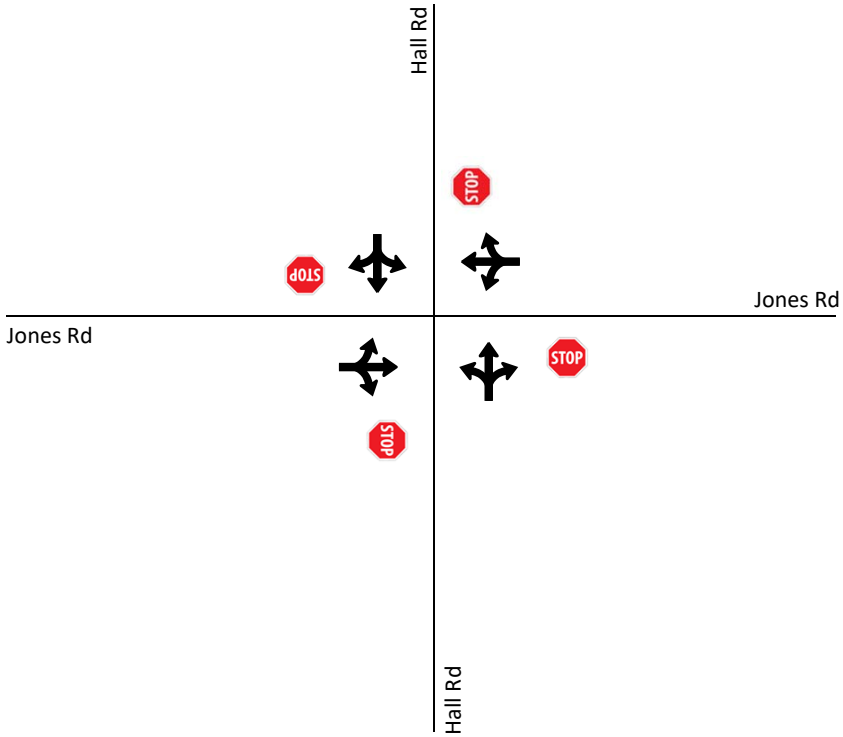
Matchline A

(Local Build-up due to Elementary School Driveway)

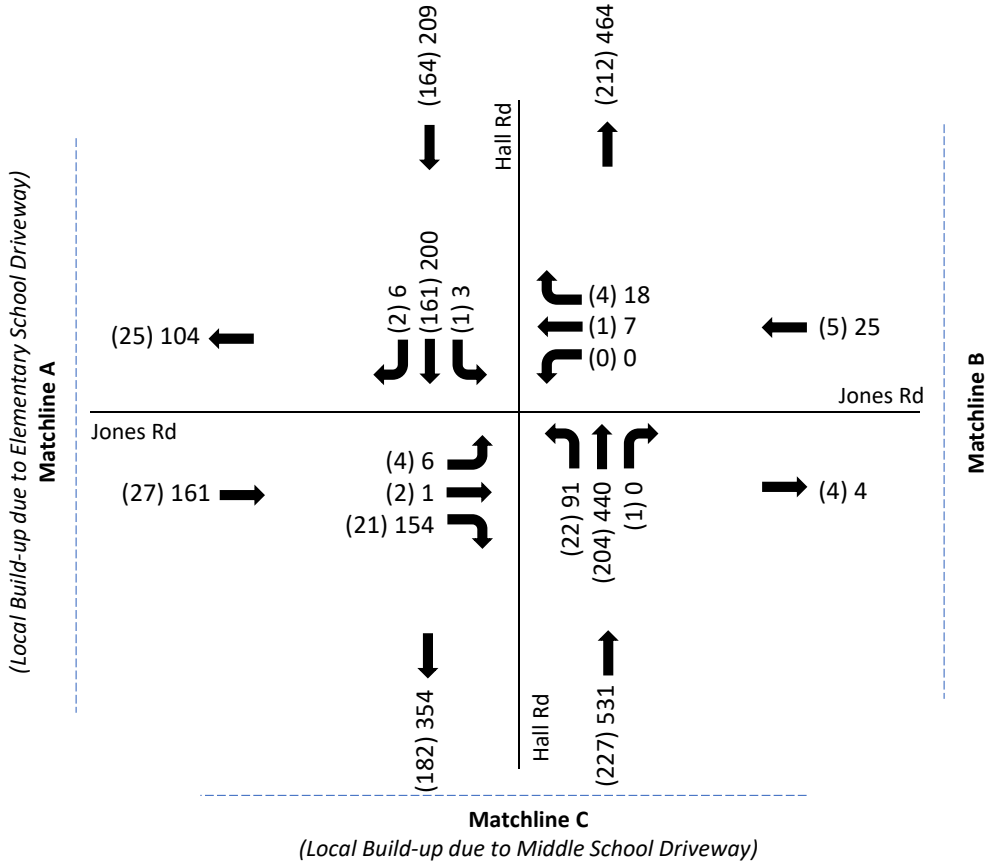


2: Hall Road at Jones Road

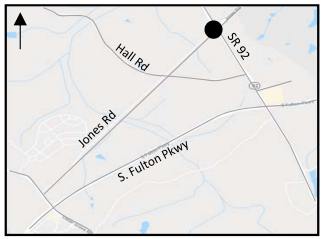
NOT TO SCALE



Existing Lane Configuration

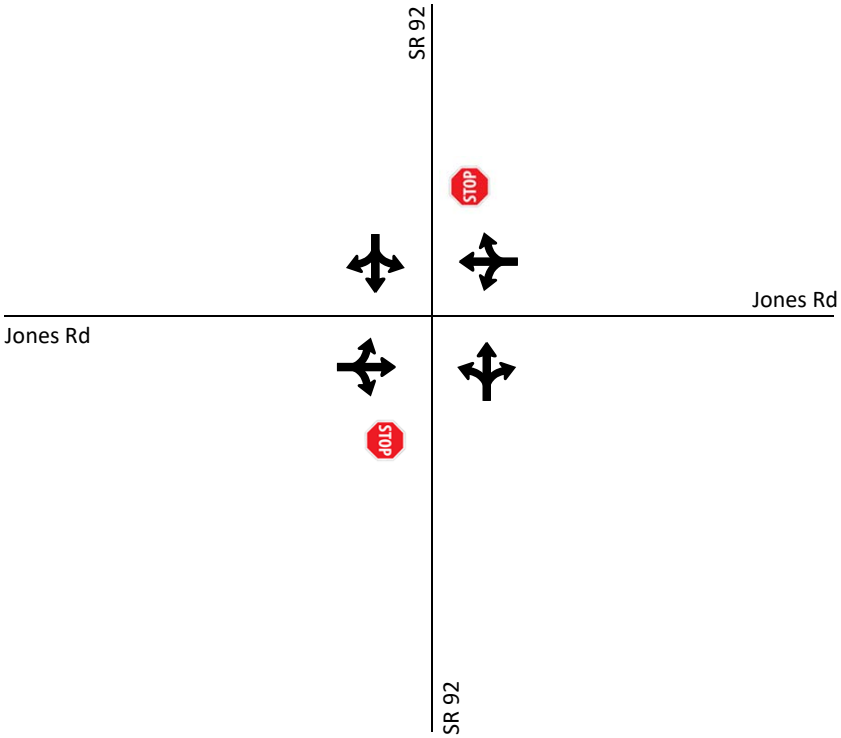


Existing (2019) TMC – (PM)/AM

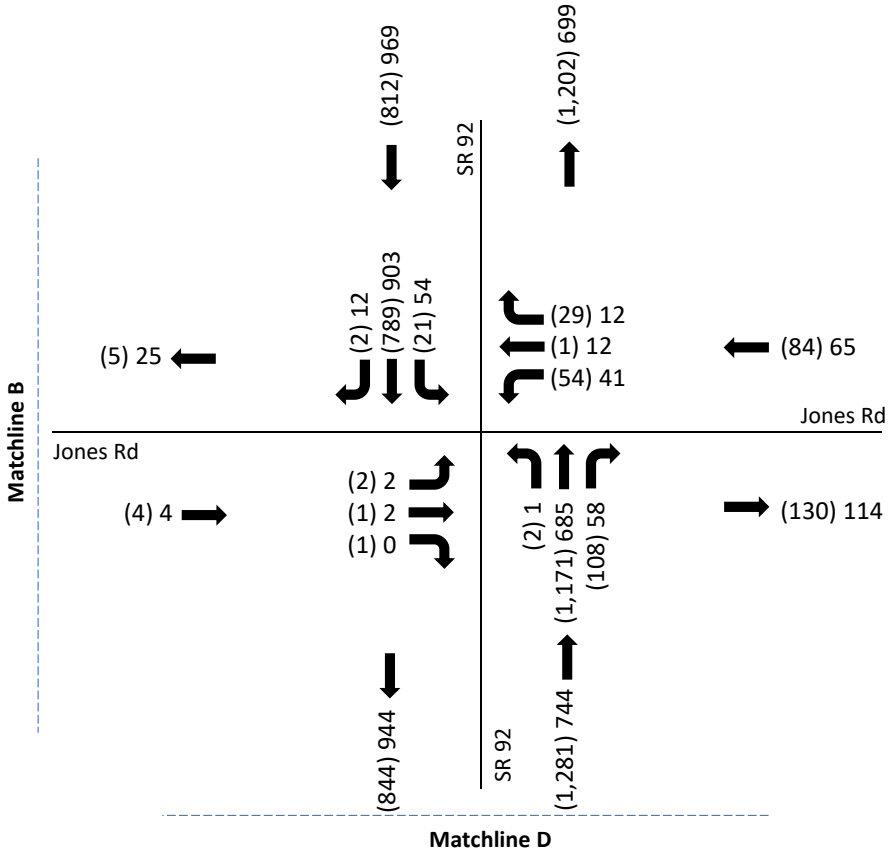


3: SR 92 at Jones Road

NOT TO SCALE



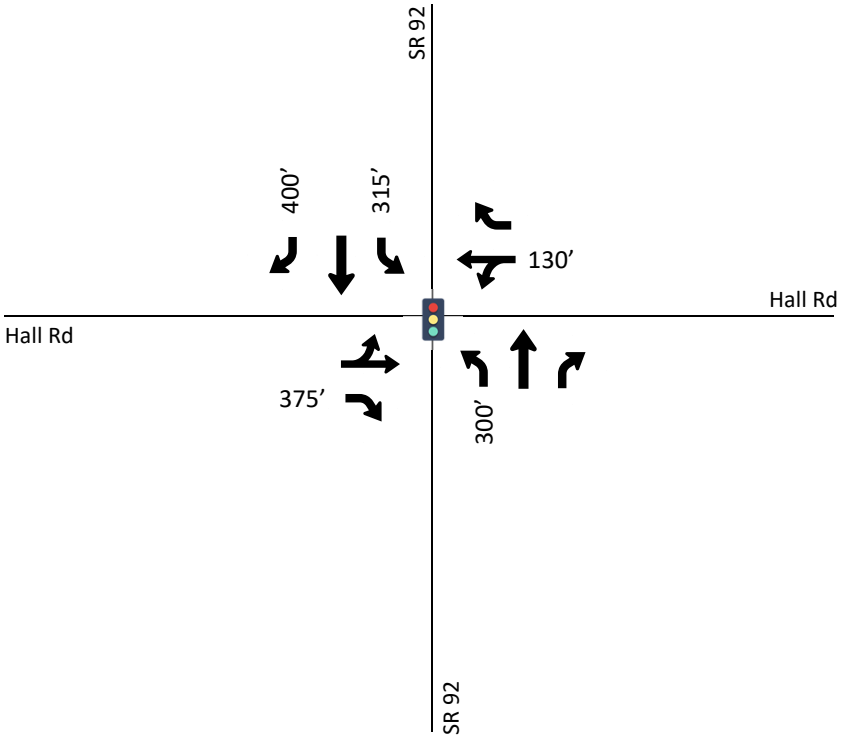
Existing Lane Configuration



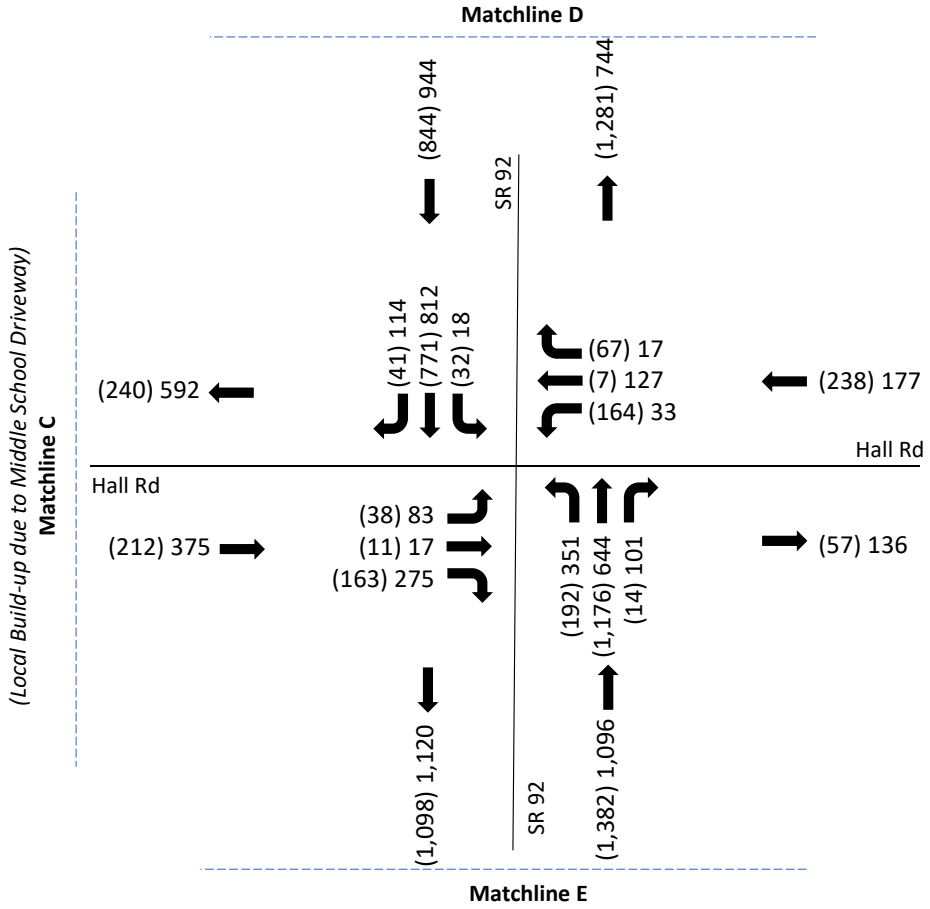
Existing (2019) TMC – (PM)/AM

4: SR 92 at Hall Road

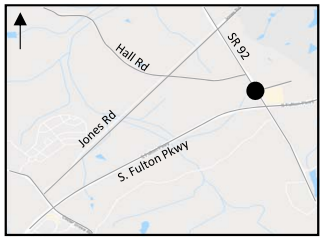
NOT TO SCALE



Existing Lane Configuration

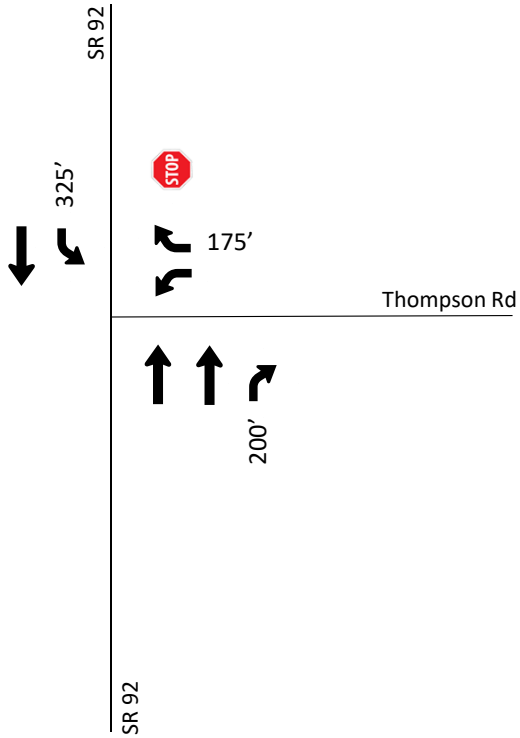


Existing (2019) TMC – (PM)/AM

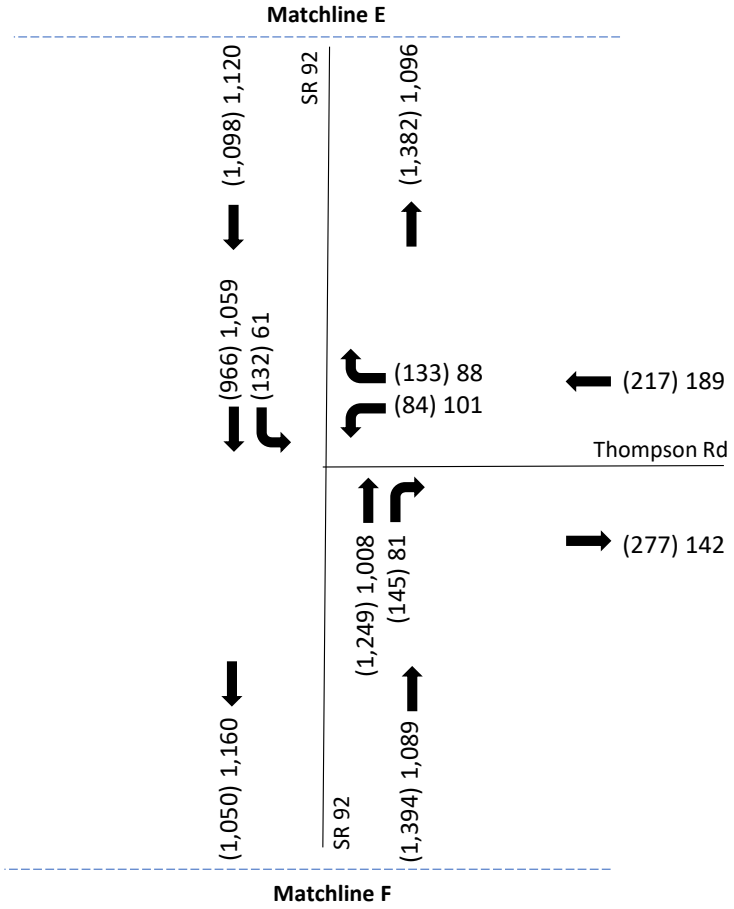


5: SR 92 at Thompson Road

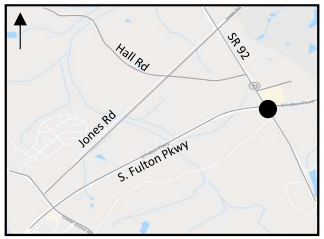
NOT TO SCALE



Existing Lane Configuration

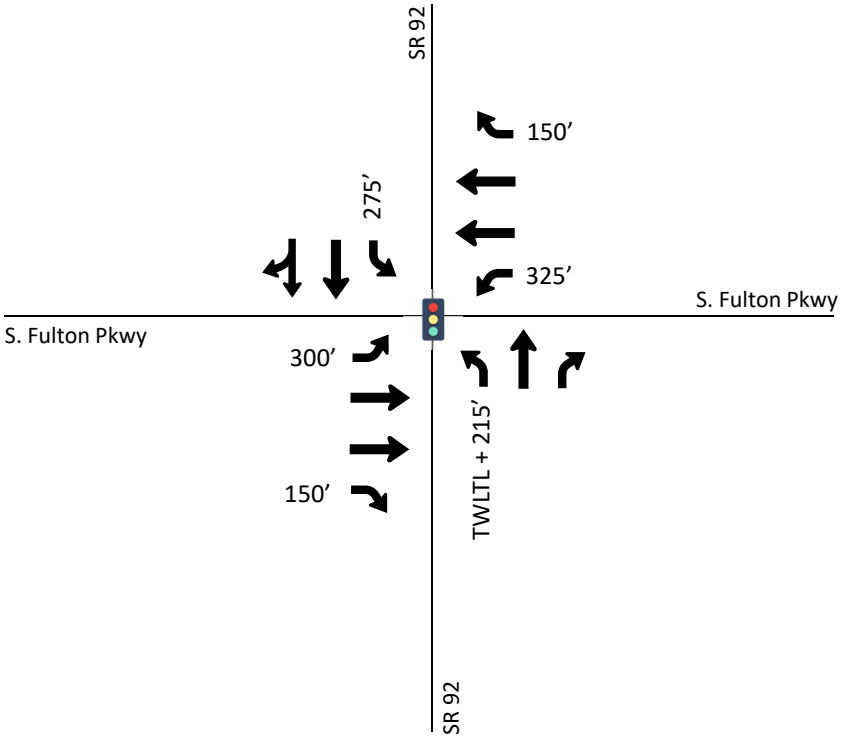


Existing (2019) TMC – (PM)/AM

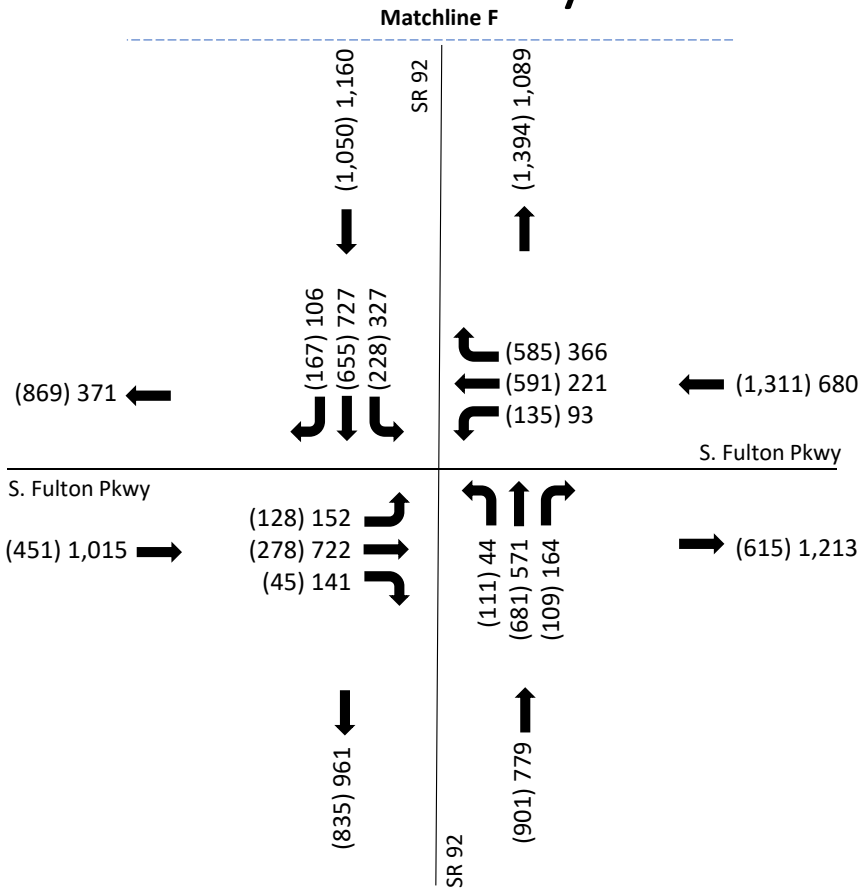


6: SR 92 at South Fulton Parkway

NOT TO SCALE



Existing Lane Configuration



Existing (2019) TMC – (PM)/AM

APPENDIX F

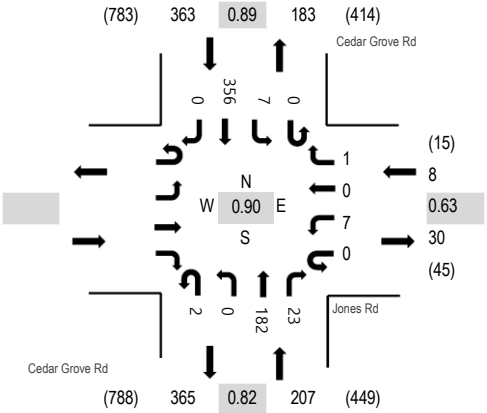
RAW DATA

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

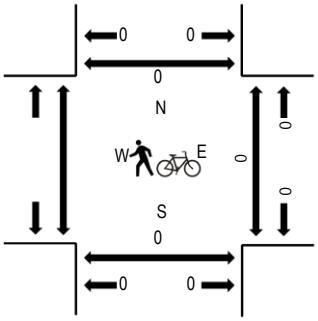
Location: #1 Cedar Grove Rd & Jones Rd AM
Date and Start Time: Wednesday, April 17, 2019
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound				Jones Rd Westbound				Cedar Grove Rd Northbound				Cedar Grove Rd Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:00 AM					0	0	0	0	0	0	25	0	0	0	27	0	52	295	0	0	0	0
6:15 AM					0	0	0	0	0	0	22	0	0	0	52	0	74	352	0	0	0	0
6:30 AM					0	0	0	0	0	0	29	0	0	1	50	0	80	413	0	0	0	0
6:45 AM					0	0	0	0	0	0	26	2	0	0	61	0	89	493	0	0	0	0
7:00 AM					0	1	0	0	0	0	26	4	0	1	77	0	109	555	0	0	0	0
7:15 AM					0	2	0	0	0	0	26	5	0	4	98	0	135	578	0	0	0	0
7:30 AM					0	1	0	0	0	0	45	8	0	3	103	0	160	537	0	0	0	0
7:45 AM					0	2	0	0	0	0	55	4	0	0	90	0	151	474	0	0	0	0
8:00 AM					0	2	0	1	2	0	56	6	0	0	65	0	132	397	0	0	0	0
8:15 AM					0	4	0	0	1	0	32	2	0	1	54	0	94		0	0	0	0
8:30 AM					0	0	0	1	0	0	44	1	0	0	51	0	97		0	0	0	0
8:45 AM					0	1	0	0	0	0	26	2	0	1	44	0	74		0	0	0	0

Peak Rolling Hour Flow Rates

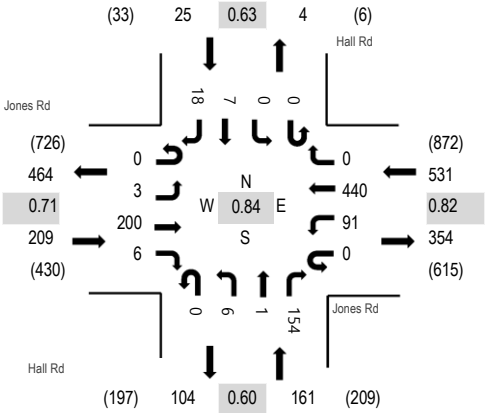
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	0	0	0	0	0	0	0
Lights					0	7	0	1	2	0	177	22	0	7	355	0	571
Mediums					0	0	0	0	0	0	5	1	0	0	1	0	7
Total					0	7	0	1	2	0	182	23	0	7	356	0	578

All Traffic Data Services Inc.

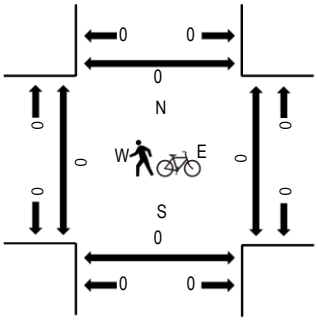
(303) 216-2439
www.alltrafficdata.net

Location: #2 Hall Rd & Jones Rd AM
Date and Start Time: Wednesday, April 17, 2019
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	Jones Rd Eastbound				Jones Rd Westbound				Hall Rd Northbound				Hall Rd Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:00 AM	0	0	19	0	0	1	34	0	0	0	0	0	0	0	0	0	54	185	0	0	0	0
6:15 AM	0	0	44	0	0	1	25	0	0	0	0	0	0	0	0	0	70	259	0	0	0	0
6:30 AM	0	0	10	0	0	8	8	0	0	0	0	0	0	0	0	0	26	379	0	0	0	0
6:45 AM	0	0	13	0	0	13	8	0	0	0	0	1	0	0	0	0	35	583	0	0	0	0
7:00 AM	0	0	8	2	0	50	37	0	0	1	1	26	0	0	3	0	128	780	0	1	0	0
7:15 AM	0	0	13	1	0	45	68	0	0	1	1	55	0	0	5	1	190	926	0	0	0	0
7:30 AM	0	0	28	0	0	32	87	0	0	1	0	72	0	0	2	8	230	880	0	0	0	0
7:45 AM	0	0	70	3	0	6	132	0	0	3	0	15	0	0	0	3	232	741	0	0	0	0
8:00 AM	0	3	89	2	0	8	153	0	0	1	0	12	0	0	0	6	274	579	0	0	0	0
8:15 AM	0	1	62	1	0	2	67	0	0	1	0	6	0	0	0	4	144		0	0	0	0
8:30 AM	0	0	36	0	1	3	42	0	0	1	0	7	0	0	1	0	91		0	0	0	0
8:45 AM	0	0	24	1	0	7	34	0	0	0	0	4	0	0	0	0	70		0	0	0	0

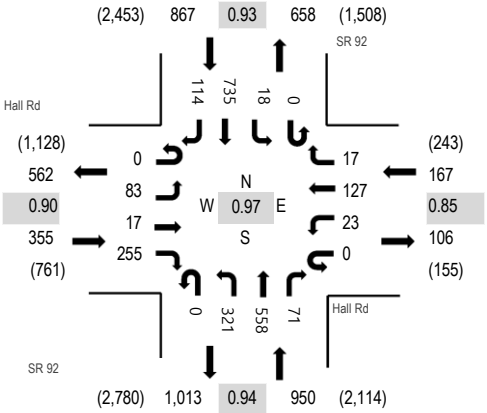
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	3
Lights	0	3	158	5	0	89	398	0	0	5	1	142	0	0	5	15	821
Mediums	0	0	42	1	0	2	39	0	0	1	0	12	0	0	2	3	102
Total	0	3	200	6	0	91	440	0	0	6	1	154	0	0	7	18	926

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

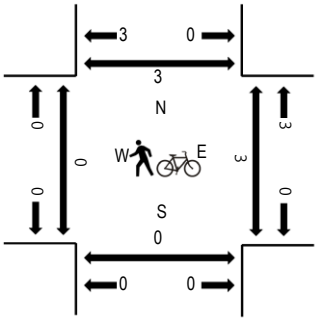
Location: #3 SR 92 & Hall Rd AM
Date and Start Time: Wednesday, April 17, 2019
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Hall Rd Eastbound				Hall Rd Westbound				SR 92 Northbound				SR 92 Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:00 AM	0	1	0	16	0	0	1	0	0	29	47	2	0	1	132	15	244	1,243	0	0	0	0
6:15 AM	0	12	0	31	0	0	0	1	0	16	71	0	0	0	141	6	278	1,480	0	0	0	0
6:30 AM	0	2	0	9	0	1	0	3	0	18	87	0	0	0	223	4	347	1,739	0	0	0	0
6:45 AM	0	3	0	11	0	1	0	1	0	21	101	0	0	4	225	7	374	1,996	0	0	0	0
7:00 AM	0	3	0	21	1	3	2	2	0	70	122	2	0	1	233	21	481	2,221	0	0	0	0
7:15 AM	0	25	3	53	0	2	15	3	0	45	154	5	0	4	205	23	537	2,339	0	0	0	0
7:30 AM	0	27	4	62	0	7	40	4	0	76	160	18	0	5	186	15	604	2,333	0	0	0	0
7:45 AM	0	10	6	57	0	6	40	6	0	90	126	30	0	5	194	29	599	2,275	0	0	0	0
8:00 AM	0	21	4	83	0	8	32	4	0	110	118	18	0	4	150	47	599	2,107	0	3	0	3
8:15 AM	0	16	2	78	0	15	8	6	0	97	101	4	0	7	155	42	531		0	0	0	0
8:30 AM	0	18	4	90	0	6	10	4	0	85	109	5	0	9	170	36	546		0	0	0	0
8:45 AM	0	18	2	69	0	6	0	5	0	60	117	0	0	5	131	18	431		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	1	12	0	0	0	19	1	33
Lights	0	73	16	215	0	23	124	16	0	283	537	71	0	18	704	111	2,191
Mediums	0	10	1	40	0	0	3	1	0	37	9	0	0	0	12	2	115
Total	0	83	17	255	0	23	127	17	0	321	558	71	0	18	735	114	2,339

All Traffic Data Services Inc.
(303) 216-2439
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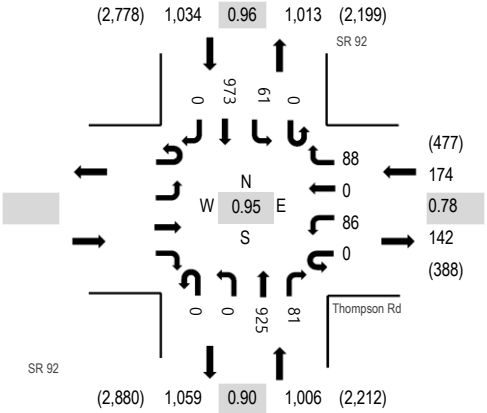
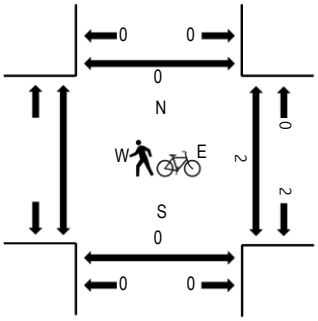
Location: #4 SR 92 & Thompson Rd AM
Date and Start Time: Wednesday, April 17, 2019
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound				Thompson Rd Westbound				SR 92 Northbound				SR 92 Southbound				Total	Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
6:00 AM					0	13	0	2	0	0	75	8	0	4	101	0	203	1,271	0	0	0	0
6:15 AM					0	22	0	10	0	0	77	8	0	8	167	0	292	1,563	0	0	0	0
6:30 AM					0	23	0	12	0	0	90	13	0	7	221	0	366	1,792	0	0	0	0
6:45 AM					0	20	0	7	0	0	127	11	0	10	235	0	410	2,009	0	0	0	0
7:00 AM					0	33	0	15	0	0	181	18	0	15	233	0	495	2,164	3	0	0	0
7:15 AM					0	17	0	16	0	0	214	14	0	14	246	0	521	2,214	0	0	0	0
7:30 AM					0	20	0	26	0	0	246	32	0	16	243	0	583	2,210	0	0	0	0
7:45 AM					0	28	0	26	0	0	236	21	0	17	237	0	565	2,152	0	0	0	0
8:00 AM					0	21	0	20	0	0	229	14	0	14	247	0	545	2,032	2	0	0	0
8:15 AM					0	23	0	15	0	0	193	33	0	23	230	0	517		0	0	0	0
8:30 AM					0	30	0	18	0	0	187	21	0	24	245	0	525		0	0	0	0
8:45 AM					0	32	0	28	0	0	149	15	0	28	193	0	445		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	9	0	0	0	18	0	27
Lights					0	86	0	88	0	0	867	78	0	60	903	0	2,082
Mediums					0	0	0	0	0	0	49	3	0	1	52	0	105
Total					0	86	0	88	0	0	925	81	0	61	973	0	2,214

All Traffic Data Services Inc.
(303) 216-2439
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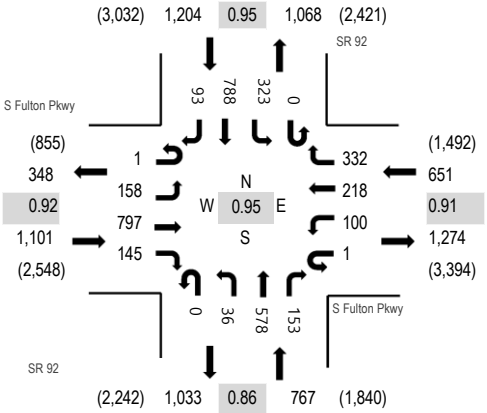
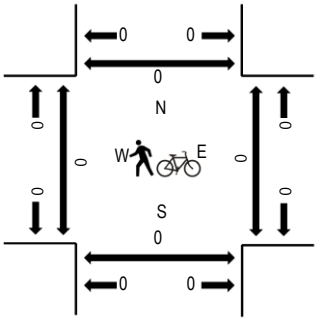
Location: #5 SR 92 & S Fulton Pkwy AM
Date and Start Time: Wednesday, April 17, 2019
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	S Fulton Pkwy Eastbound				S Fulton Pkwy Westbound				SR 92 Northbound				SR 92 Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:00 AM	0	16	107	5	1	6	29	20	0	3	55	23	0	65	61	6	397	2,251	0	0	0	0
6:15 AM	0	12	159	17	0	6	30	20	0	2	63	40	0	86	98	17	550	2,732	0	0	0	0
6:30 AM	0	10	155	12	1	15	25	30	0	5	74	51	0	101	117	13	609	3,089	0	0	0	0
6:45 AM	0	13	184	28	0	4	33	38	0	4	95	33	0	106	146	11	695	3,459	0	0	0	0
7:00 AM	0	38	228	32	0	22	42	72	0	6	103	41	0	91	195	8	878	3,723	0	0	0	0
7:15 AM	0	46	211	31	0	33	50	71	0	0	135	34	0	84	187	25	907	3,651	0	0	0	0
7:30 AM	0	30	169	46	0	26	62	100	0	12	184	34	0	78	209	29	979	3,475	0	0	0	0
7:45 AM	1	44	189	36	1	19	64	89	0	18	156	44	0	70	197	31	959	3,240	0	0	0	0
8:00 AM	0	32	153	28	0	15	45	106	0	14	111	52	0	95	134	21	806	2,938	0	0	0	0
8:15 AM	0	43	93	21	0	7	55	96	2	14	96	47	0	90	137	30	731		0	0	0	0
8:30 AM	0	38	121	19	0	9	43	92	0	17	97	50	1	78	157	22	744		0	0	0	0
8:45 AM	0	32	122	27	0	9	37	69	0	8	94	23	0	84	129	23	657		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	9	1	0	1	1	7	0	0	2	0	0	3	9	0	33
Lights	1	152	780	143	1	97	210	318	0	34	541	150	0	314	748	87	3,576
Mediums	0	6	8	1	0	2	7	7	0	2	35	3	0	6	31	6	114
Total	1	158	797	145	1	100	218	332	0	36	578	153	0	323	788	93	3,723

All Traffic Data Services Inc.

(303) 216-2439
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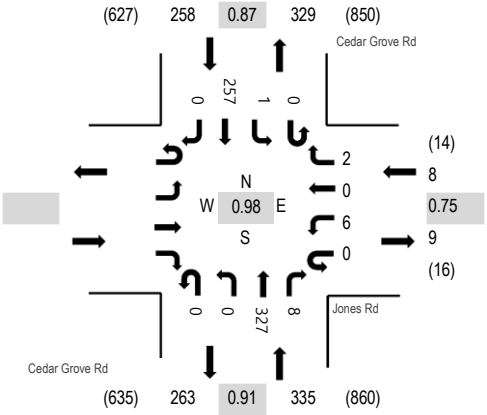
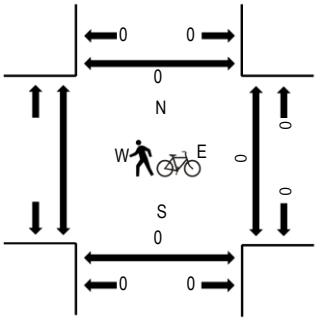
Location: #1 Cedar Grove Rd & Jones Rd PM
Date and Start Time: Wednesday, April 17, 2019
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound				Jones Rd Westbound				Cedar Grove Rd Northbound				Cedar Grove Rd Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM					0	0	0	0	0	0	59	1	0	1	39	0	100	461	0	0	0	0
4:15 PM					0	1	0	0	0	0	63	0	0	0	48	0	112	510	0	0	0	0
4:30 PM					0	1	0	0	0	0	62	1	0	0	52	0	116	552	0	0	0	0
4:45 PM					0	0	0	1	0	0	79	2	0	0	51	0	133	588	0	0	0	0
5:00 PM					0	1	0	0	0	0	76	2	0	0	70	0	149	601	0	0	0	0
5:15 PM					0	0	0	2	0	0	89	5	0	0	58	0	154	577	0	0	0	0
5:30 PM					0	3	0	0	0	0	75	0	0	0	74	0	152	559	0	0	0	0
5:45 PM					0	2	0	0	0	0	87	1	0	1	55	0	146	512	0	0	0	0
6:00 PM					0	2	0	0	0	0	87	0	0	1	35	0	125	439	0	0	0	0
6:15 PM					0	0	0	0	0	0	73	1	0	0	62	0	136		0	0	0	0
6:30 PM					0	0	0	0	0	0	60	0	0	0	45	0	105		0	0	0	0
6:45 PM					0	1	0	0	0	0	37	0	0	0	35	0	73		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	0	0	0	0	0	0	0	0	0	0	0	0
Lights					0	6	0	2	0	0	323	5	0	1	252	0	589
Mediums					0	0	0	0	0	0	4	3	0	0	5	0	12
Total					0	6	0	2	0	0	327	8	0	1	257	0	601

All Traffic Data Services Inc.
(303) 216-2439
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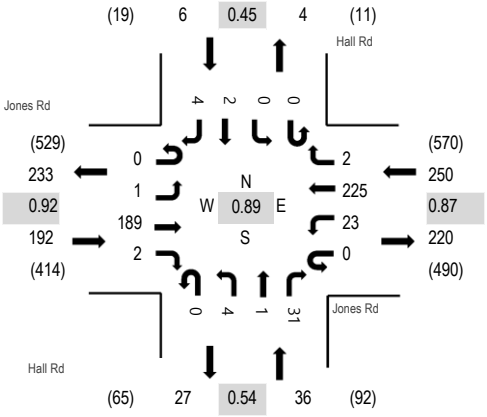
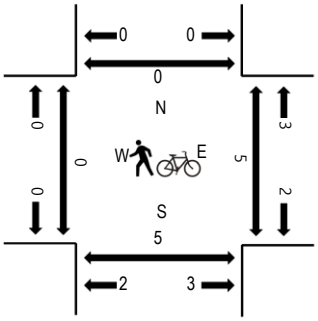
Location: #2 Hall Rd & Jones Rd PM
Date and Start Time: Wednesday, April 17, 2019
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Jones Rd Eastbound				Jones Rd Westbound				Hall Rd Northbound				Hall Rd Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	1	40	0	1	6	30	0	0	0	0	18	0	0	0	1	97	395	3	0	2	0
4:15 PM	0	0	36	0	0	1	35	3	0	1	0	4	0	0	0	2	82	419	1	0	0	7
4:30 PM	0	0	28	1	0	2	41	0	0	0	0	6	0	0	1	1	80	457	2	0	1	0
4:45 PM	0	0	51	1	0	8	63	1	0	0	0	10	0	0	1	1	136	484	0	0	0	0
5:00 PM	0	0	50	0	0	6	59	1	0	0	0	4	0	0	0	1	121	423	0	2	2	0
5:15 PM	0	0	45	1	0	6	51	0	0	3	1	11	0	0	1	1	120	389	0	0	0	0
5:30 PM	0	1	43	0	0	3	52	0	0	1	0	6	0	0	0	1	107	328	0	3	3	0
5:45 PM	0	0	23	1	0	7	42	0	0	0	1	0	0	0	0	1	75	295	0	0	0	0
6:00 PM	0	0	26	0	0	3	45	0	0	2	0	6	0	0	1	4	87	277	1	0	0	0
6:15 PM	0	1	20	0	0	4	31	0	0	0	0	3	0	0	0	0	59		0	0	0	0
6:30 PM	0	0	21	1	0	5	36	0	0	0	1	9	0	1	0	0	74		0	0	0	0
6:45 PM	0	0	23	0	0	5	23	0	0	0	0	5	0	0	0	1	57		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	1	183	2	0	20	190	2	0	3	1	30	0	0	2	4	438
Mediums	0	0	6	0	0	3	35	0	0	1	0	1	0	0	0	0	46
Total	0	1	189	2	0	23	225	2	0	4	1	31	0	0	2	4	484

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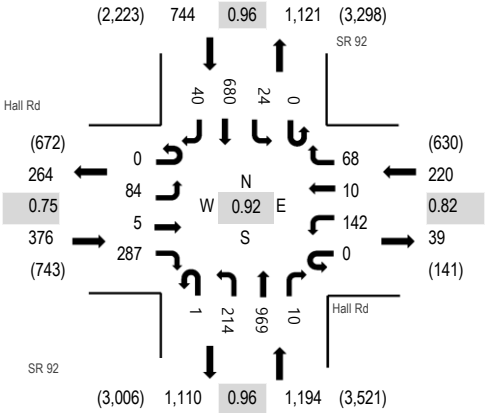
www.alltrafficdata.net

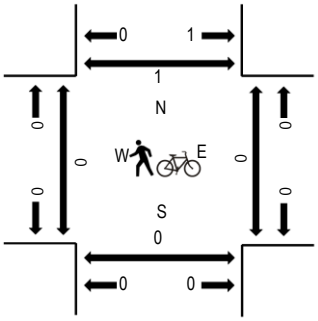
Location: #3 SR 92 & Hall Rd PM
Date and Start Time: Wednesday, April 17, 2019
Peak Hour: 04:15 PM - 05:15 PM
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Hall Rd Eastbound				Hall Rd Westbound				SR 92 Northbound				SR 92 Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	13	3	71	0	30	2	8	0	59	195	1	0	6	147	31	566	2,527	0	0	0	0
4:15 PM	0	31	2	101	0	36	3	20	0	51	247	7	0	3	174	11	686	2,534	0	0	0	0
4:30 PM	0	23	0	73	0	52	4	16	0	51	247	1	0	8	171	7	653	2,507	0	0	0	0
4:45 PM	0	19	0	68	0	29	2	16	1	52	241	1	0	8	173	12	622	2,477	0	0	0	0
5:00 PM	0	11	3	45	0	25	1	16	0	60	234	1	0	5	162	10	573	2,476	0	0	0	1
5:15 PM	0	8	3	43	0	49	1	15	0	50	277	6	0	6	190	11	659	2,496	0	0	0	0
5:30 PM	0	15	2	36	0	38	1	17	0	42	271	3	0	10	179	9	623	2,412	0	0	0	0
5:45 PM	0	4	3	28	0	52	4	19	1	39	262	4	0	11	183	11	621	2,284	0	0	0	0
6:00 PM	0	9	4	22	0	28	0	22	0	40	282	1	0	8	170	7	593	2,114	0	0	0	0
6:15 PM	0	9	0	24	0	35	0	16	0	24	260	0	0	6	189	12	575		0	0	0	0
6:30 PM	0	5	4	31	0	28	0	13	0	34	230	2	0	10	134	4	495		0	0	0	0
6:45 PM	0	3	4	23	0	27	0	5	0	23	219	2	0	3	138	4	451		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	1	0	1	0	0	0	0	20	0	0	0	23	0	45
Lights	0	76	3	260	0	141	9	65	1	191	942	10	0	24	637	36	2,395
Mediums	0	8	2	26	0	0	1	3	0	23	7	0	0	0	20	4	94
Total	0	84	5	287	0	142	10	68	1	214	969	10	0	24	680	40	2,534

All Traffic Data Services Inc.
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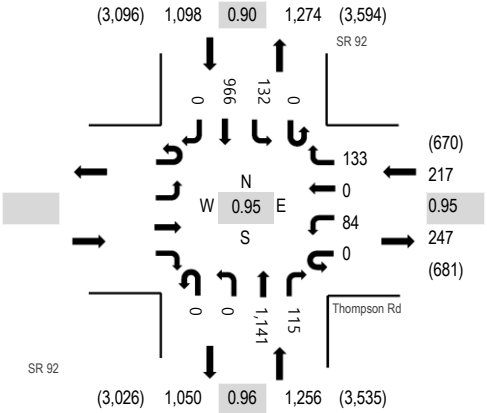
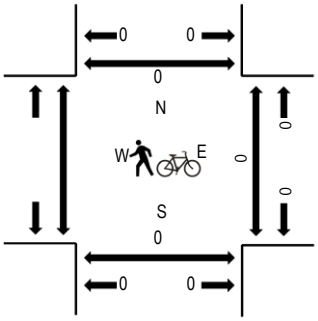
Location: #4 SR 92 & Thompson Rd PM
Date and Start Time: Wednesday, April 17, 2019
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Eastbound				Thompson Rd Westbound				SR 92 Northbound				SR 92 Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM					0	24	0	25	0	0	263	16	0	28	227	0	583	2,512	0	0	0	0
4:15 PM					0	18	0	30	0	0	271	29	0	40	281	0	669	2,544	0	0	0	0
4:30 PM					0	17	0	30	0	0	267	29	0	27	278	0	648	2,553	0	0	0	0
4:45 PM					0	24	0	24	0	0	272	19	0	38	235	0	612	2,538	0	0	0	0
5:00 PM					0	25	0	36	0	0	283	19	0	29	223	0	615	2,571	0	0	0	0
5:15 PM					0	17	0	31	0	0	301	28	0	32	269	0	678	2,538	0	0	0	0
5:30 PM					0	14	0	32	0	0	275	38	0	31	243	0	633	2,465	0	0	0	0
5:45 PM					0	28	0	34	0	0	282	30	0	40	231	0	645	2,370	0	0	0	0
6:00 PM					0	24	0	41	0	0	279	24	0	31	183	0	582	2,218	0	0	0	0
6:15 PM					1	32	0	36	0	0	258	32	0	32	214	0	605		0	0	0	0
6:30 PM					0	42	0	21	0	0	254	25	0	19	177	0	538		0	0	0	0
6:45 PM					0	37	0	27	0	0	222	19	0	25	163	0	493		0	0	0	0

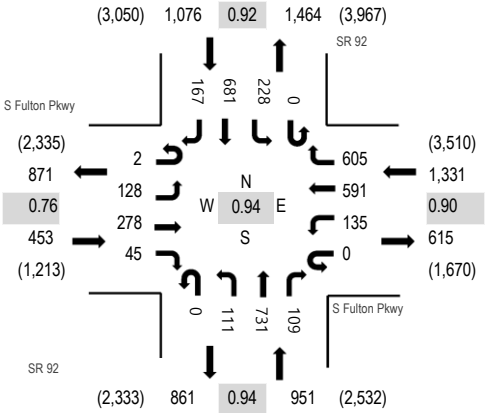
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks					0	1	0	1	0	0	11	0	0	0	27	0	40
Lights					0	80	0	132	0	0	1,095	115	0	127	923	0	2,472
Mediums					0	3	0	0	0	0	35	0	0	5	16	0	59
Total					0	84	0	133	0	0	1,141	115	0	132	966	0	2,571

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

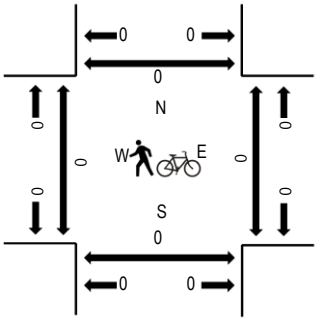
Location: #5 SR 92 & S Fulton Pkwy PM
Date and Start Time: Wednesday, April 17, 2019
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	S Fulton Pkwy Eastbound				S Fulton Pkwy Westbound				SR 92 Northbound				SR 92 Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	32	62	18	0	20	109	114	1	15	173	22	0	71	136	33	806	3,367	0	0	0	0
4:15 PM	2	37	45	17	0	22	155	113	0	18	168	24	0	69	154	31	855	3,435	0	0	0	0
4:30 PM	1	22	49	8	0	23	149	143	0	9	151	33	0	55	162	44	849	3,598	0	0	0	0
4:45 PM	1	25	51	8	0	16	136	119	0	32	162	20	0	70	177	40	857	3,717	0	0	0	0
5:00 PM	1	36	56	13	0	31	131	137	0	29	183	17	0	48	156	36	874	3,811	0	0	0	0
5:15 PM	0	42	96	12	0	39	165	174	0	27	179	17	0	50	171	46	1,018	3,785	0	0	0	0
5:30 PM	1	28	68	1	0	32	145	152	0	30	172	43	0	75	181	40	968	3,618	0	0	0	0
5:45 PM	0	22	58	19	0	33	150	142	0	25	197	32	0	55	173	45	951	3,409	0	0	0	0
6:00 PM	0	35	50	14	0	30	146	150	0	24	180	11	0	51	132	25	848	3,127	0	0	0	0
6:15 PM	0	28	61	16	2	25	114	147	0	18	147	14	0	74	155	50	851		0	0	0	0
6:30 PM	0	25	54	20	0	20	90	106	0	32	168	12	0	56	141	35	759		0	0	0	0
6:45 PM	0	29	36	14	0	21	99	110	0	17	119	11	0	52	122	39	669		0	0	0	0

Peak Rolling Hour Flow Rates

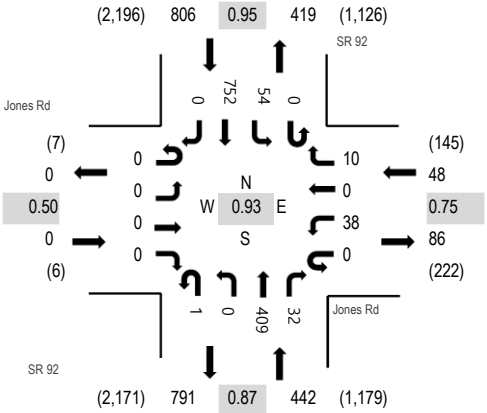
Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	2	1	0	1	3	5	0	0	6	0	0	6	18	0	42
Lights	2	121	273	41	0	131	585	586	0	111	710	106	0	218	647	164	3,695
Mediums	0	7	3	3	0	3	3	14	0	0	15	3	0	4	16	3	74
Total	2	128	278	45	0	135	591	605	0	111	731	109	0	228	681	167	3,811

All Traffic Data Services Inc.

(303) 216-2439
www.alltrafficdata.net

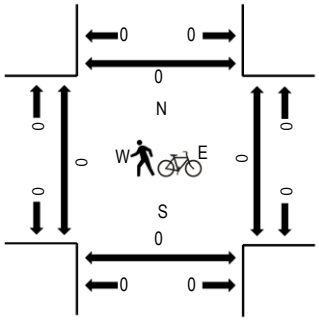
Location: #1 SR 92 & Jones Rd AM
Date and Start Time: Tuesday, June 25, 2019
Peak Hour: 06:45 AM - 07:45 AM
Peak 15-Minutes: 07:30 AM - 07:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Jones Rd Eastbound				Jones Rd Westbound				SR 92 Northbound				SR 92 Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:00 AM	0	0	0	0	0	4	0	1	0	0	48	4	0	3	119	0	179	1,062	0	0	0	0
6:15 AM	0	0	1	1	0	3	1	4	0	0	70	4	0	12	158	1	255	1,174	0	0	0	0
6:30 AM	0	0	0	0	0	10	1	2	0	0	77	4	0	17	175	0	286	1,235	0	0	0	0
6:45 AM	0	0	0	0	0	11	0	2	1	0	113	3	0	18	194	0	342	1,296	0	0	0	0
7:00 AM	0	0	0	0	0	12	0	1	0	0	89	4	0	10	175	0	291	1,284	0	0	0	0
7:15 AM	0	0	0	0	0	5	0	6	0	0	90	15	0	10	190	0	316	1,285	0	0	0	0
7:30 AM	0	0	0	0	0	10	0	1	0	0	117	10	0	16	193	0	347	1,291	0	0	0	0
7:45 AM	0	0	0	0	0	7	0	4	0	1	102	5	0	18	193	0	330	1,233	0	0	0	0
8:00 AM	0	0	0	2	0	11	0	3	0	0	94	8	0	8	165	1	292	1,180	0	0	0	0
8:15 AM	0	1	0	0	0	14	0	6	0	0	91	11	0	11	188	0	322		0	0	0	0
8:30 AM	0	0	0	0	0	10	0	3	0	1	99	8	0	6	162	0	289		0	0	0	0
8:45 AM	0	0	0	1	0	9	0	4	0	1	98	11	0	5	148	0	277		0	0	0	0

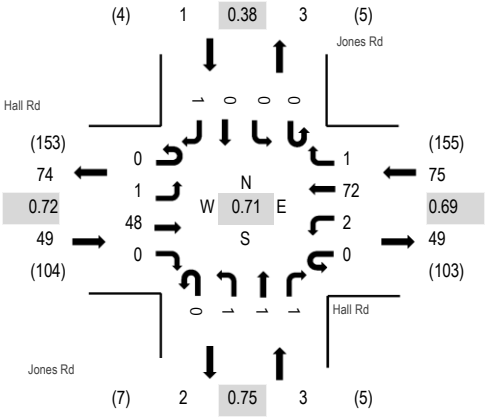
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	1	0	0	0	0	13	1	0	0	16	0	31
Lights	0	0	0	0	0	37	0	10	1	0	381	30	0	54	719	0	1,232
Mediums	0	0	0	0	0	0	0	0	0	0	15	1	0	0	17	0	33
Total	0	0	0	0	0	38	0	10	1	0	409	32	0	54	752	0	1,296

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

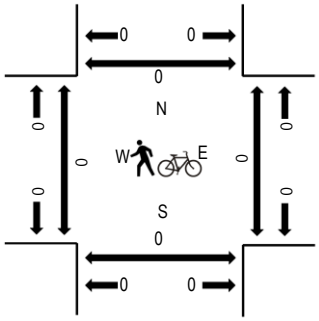
Location: #2 Jones Rd & Hall Rd AM
Date and Start Time: Tuesday, June 25, 2019
Peak Hour: 07:45 AM - 08:45 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Hall Rd Eastbound				Hall Rd Westbound				Jones Rd Northbound				Jones Rd Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:00 AM	0	0	5	0	0	0	10	0	0	0	0	0	0	0	0	0	15	86	0	0	0	0
6:15 AM	0	1	18	0	0	1	21	0	0	0	1	0	0	0	0	2	44	84	0	0	0	0
6:30 AM	0	0	9	0	0	0	8	0	0	0	0	0	0	0	0	1	18	54	0	0	0	0
6:45 AM	0	0	1	0	0	2	6	0	0	0	0	0	0	0	0	0	9	53	0	0	0	0
7:00 AM	0	0	4	0	0	0	9	0	0	0	0	0	0	0	0	0	13	59	0	1	1	0
7:15 AM	0	0	10	0	0	0	3	0	0	1	0	0	0	0	0	0	14	83	0	0	0	0
7:30 AM	0	0	5	0	0	2	10	0	0	0	0	0	0	0	0	0	17	114	0	1	1	0
7:45 AM	0	0	3	0	0	1	10	0	0	0	1	0	0	0	0	0	15	128	0	0	0	0
8:00 AM	0	0	14	0	0	1	19	1	0	1	0	0	0	0	0	1	37	123	0	0	0	0
8:15 AM	0	1	16	0	0	0	27	0	0	0	0	1	0	0	0	0	45		0	0	0	0
8:30 AM	0	0	15	0	0	0	16	0	0	0	0	0	0	0	0	0	31		0	0	0	0
8:45 AM	0	0	2	0	0	0	8	0	0	0	0	0	0	0	0	0	10		0	0	0	0

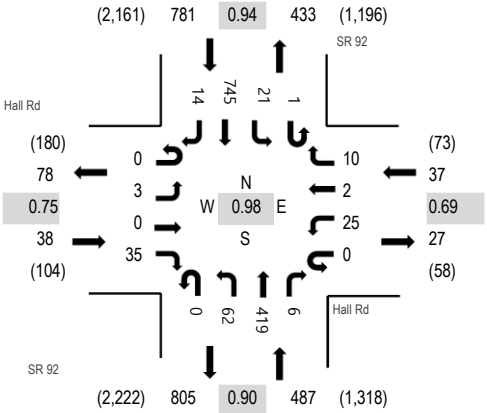
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	1	44	0	0	2	69	1	0	1	1	1	0	0	0	0	120
Mediums	0	0	4	0	0	0	3	0	0	0	0	0	0	0	0	1	8
Total	0	1	48	0	0	2	72	1	0	1	1	1	0	0	0	1	128

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

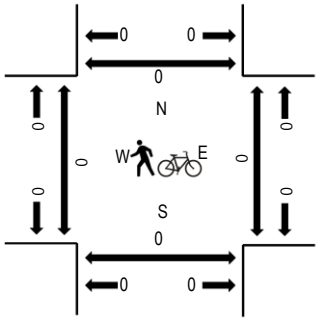
Location: #3 SR 92 & Hall Rd AM
Date and Start Time: Tuesday, June 25, 2019
Peak Hour: 07:30 AM - 08:30 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Hall Rd Eastbound				Hall Rd Westbound				SR 92 Northbound				SR 92 Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
6:00 AM	0	1	0	3	0	0	1	0	0	7	63	0	0	0	109	3	187	1,098	0	0	0	0
6:15 AM	0	5	0	14	0	0	0	0	1	19	81	0	0	1	160	6	287	1,225	0	0	0	0
6:30 AM	0	0	0	6	0	3	0	0	0	10	77	0	0	2	188	1	287	1,242	0	0	0	0
6:45 AM	0	0	0	4	0	2	0	0	0	7	122	1	0	2	195	4	337	1,288	0	0	0	0
7:00 AM	0	0	0	3	0	5	0	3	0	8	101	0	0	4	187	3	314	1,292	0	0	0	0
7:15 AM	0	0	0	10	0	1	0	3	0	3	93	2	0	2	188	2	304	1,312	0	0	0	0
7:30 AM	0	0	0	3	0	5	0	2	0	12	123	0	0	5	183	0	333	1,343	0	0	0	0
7:45 AM	0	1	0	4	0	3	0	1	0	13	108	3	0	5	200	3	341	1,320	0	0	0	0
8:00 AM	0	1	0	16	0	12	0	4	0	16	96	3	0	5	177	4	334	1,266	0	0	0	0
8:15 AM	0	1	0	12	0	5	2	3	0	21	92	0	1	6	185	7	335		0	0	0	0
8:30 AM	0	1	0	15	2	1	0	1	0	15	98	1	0	7	167	2	310		0	0	0	0
8:45 AM	0	1	0	3	0	9	0	5	0	10	108	4	0	3	143	1	287		0	0	0	0

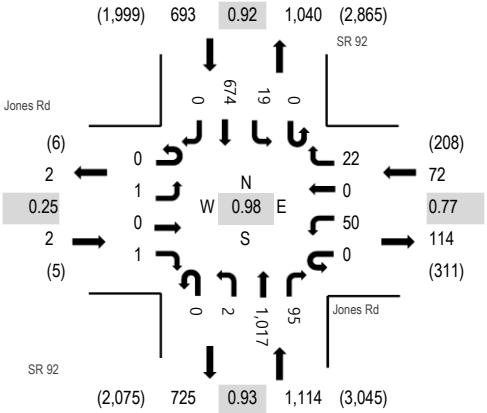
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	6	0	0	0	19	0	25
Lights	0	2	0	29	0	19	2	10	0	54	390	2	1	21	707	14	1,251
Mediums	0	1	0	6	0	6	0	0	0	8	23	4	0	0	19	0	67
Total	0	3	0	35	0	25	2	10	0	62	419	6	1	21	745	14	1,343

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

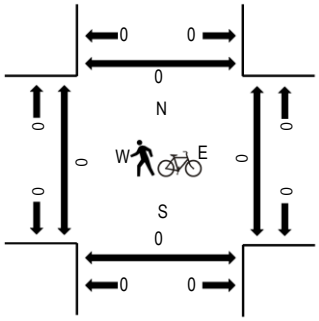
Location: #1 SR 92 & Jones Rd PM
Date and Start Time: Tuesday, June 25, 2019
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Jones Rd Eastbound				Jones Rd Westbound				SR 92 Northbound				SR 92 Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	0	0	0	13	0	1	0	0	203	15	0	3	158	1	394	1,673	0	0	0	0
4:15 PM	0	0	1	1	0	11	0	4	0	0	205	20	0	6	160	0	408	1,698	0	0	0	0
4:30 PM	0	0	0	0	0	9	1	8	0	0	223	21	0	9	140	0	411	1,771	0	0	0	0
4:45 PM	0	0	0	0	0	7	0	7	0	0	247	19	0	4	176	0	460	1,828	0	0	0	0
5:00 PM	0	0	0	0	0	4	0	9	0	1	235	19	0	3	147	1	419	1,840	0	0	0	0
5:15 PM	0	1	0	1	0	16	0	8	0	0	237	24	0	9	185	0	481	1,881	0	0	0	0
5:30 PM	0	0	0	0	0	11	0	5	0	0	246	19	0	6	181	0	468	1,861	0	0	0	0
5:45 PM	0	0	0	0	0	14	0	7	0	1	274	23	0	3	150	0	472	1,812	0	0	0	0
6:00 PM	0	0	0	0	0	9	0	2	0	1	260	29	0	1	158	0	460	1,744	0	0	0	0
6:15 PM	0	0	0	0	0	13	0	4	0	0	221	26	0	4	193	0	461		0	0	0	0
6:30 PM	0	1	0	0	0	12	0	11	0	0	226	16	0	2	151	0	419		0	0	0	0
6:45 PM	0	0	0	0	0	13	0	9	0	0	211	23	0	6	142	0	404		0	0	0	0

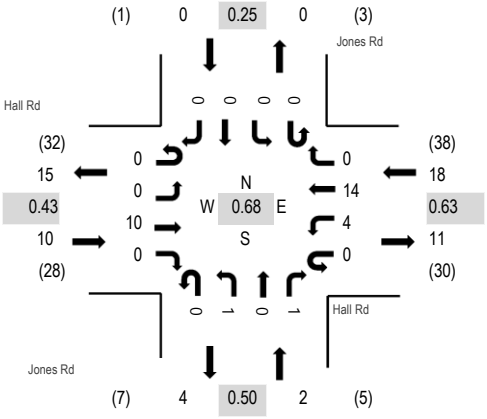
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	12	0	0	0	25	0	37
Lights	0	1	0	1	0	50	0	22	0	2	995	95	0	19	638	0	1,823
Mediums	0	0	0	0	0	0	0	0	0	0	10	0	0	0	11	0	21
Total	0	1	0	1	0	50	0	22	0	2	1,017	95	0	19	674	0	1,881

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

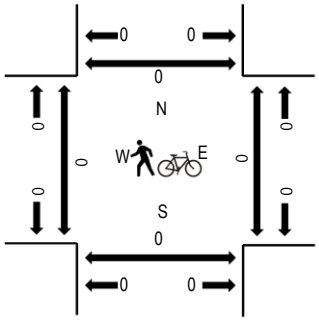
Location: #2 Jones Rd & Hall Rd PM
Date and Start Time: Tuesday, June 25, 2019
Peak Hour: 05:00 PM - 06:00 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Hall Rd Eastbound				Hall Rd Westbound				Jones Rd Northbound				Jones Rd Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	3	0	0	2	0	0	0	0	0	1	0	0	0	0	6	21	0	0	0	0
4:15 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	26	0	0	0	0
4:30 PM	0	0	0	0	0	0	3	0	0	0	0	1	0	1	0	0	5	29	0	0	0	0
4:45 PM	0	0	3	0	0	1	4	0	0	0	0	0	0	0	0	0	8	28	0	0	0	0
5:00 PM	0	0	7	0	0	0	4	0	0	0	0	0	0	0	0	0	11	30	0	0	0	0
5:15 PM	0	0	0	0	0	1	3	0	0	0	0	1	0	0	0	0	5	30	0	0	0	0
5:30 PM	0	0	1	0	0	2	0	0	0	1	0	0	0	0	0	0	4	26	0	0	0	0
5:45 PM	0	0	2	0	0	1	7	0	0	0	0	0	0	0	0	0	10	26	0	0	0	0
6:00 PM	0	0	5	0	0	0	5	1	0	0	0	0	0	0	0	0	11	21	0	0	0	0
6:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		0	0	0	0
6:30 PM	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	4		0	0	0	0
6:45 PM	0	0	3	0	0	0	1	0	0	1	0	0	0	0	0	0	5		0	0	0	0

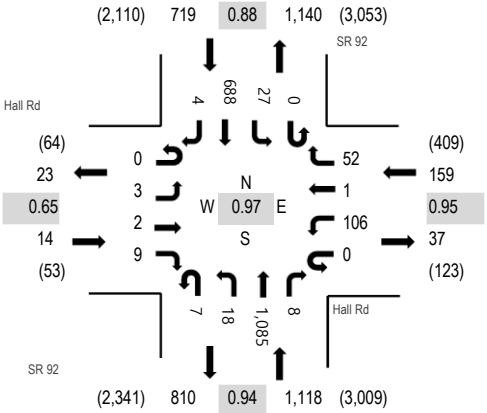
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	9	0	0	4	13	0	0	1	0	1	0	0	0	0	28
Mediums	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
Total	0	0	10	0	0	4	14	0	0	1	0	1	0	0	0	0	30

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

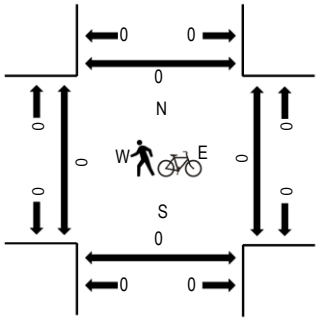
Location: #3 SR 92 & Hall Rd PM
Date and Start Time: Tuesday, June 25, 2019
Peak Hour: 05:15 PM - 06:15 PM
Peak 15-Minutes: 05:30 PM - 05:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles in Crosswalk



Traffic Counts

Interval Start Time	Hall Rd Eastbound				Hall Rd Westbound				SR 92 Northbound				SR 92 Southbound					Rolling Hour	Pedestrain Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	1	10	0	15	0	14	0	4	196	1	0	10	170	0	421	1,755	0	0	0	0
4:15 PM	0	0	0	2	0	11	0	6	1	0	223	3	0	11	168	0	425	1,799	1	0	0	0
4:30 PM	0	1	0	1	0	24	0	12	0	6	238	3	0	5	154	1	445	1,875	1	0	1	0
4:45 PM	0	2	0	5	0	30	0	10	1	11	241	1	0	7	155	1	464	1,946	0	0	0	0
5:00 PM	0	0	0	10	0	21	0	10	0	6	247	1	0	4	166	0	465	1,978	0	0	0	0
5:15 PM	0	1	1	3	0	28	0	14	0	5	258	2	0	9	179	1	501	2,010	0	0	0	0
5:30 PM	0	1	0	3	0	30	0	10	4	4	258	3	0	7	196	0	516	2,009	0	0	0	0
5:45 PM	0	0	1	1	0	25	0	14	2	6	278	1	0	6	159	3	496	1,921	0	0	0	0
6:00 PM	0	1	0	2	0	23	1	14	1	3	291	2	0	5	154	0	497	1,848	0	0	0	0
6:15 PM	0	0	0	1	0	31	0	8	3	0	240	5	0	8	204	0	500		0	0	0	0
6:30 PM	0	0	0	1	0	22	0	8	3	6	225	1	0	14	148	0	428		0	1	0	0
6:45 PM	0	0	0	5	0	16	0	12	0	5	220	0	0	11	153	1	423		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	10	0	0	0	25	0	35
Lights	0	3	2	9	0	105	1	52	7	18	1,064	8	0	27	653	4	1,953
Mediums	0	0	0	0	0	1	0	0	0	0	11	0	0	0	10	0	22
Total	0	3	2	9	0	106	1	52	7	18	1,085	8	0	27	688	4	2,010

APPENDIX G

FDOT GENERALIZED LOS TABLE 5

TABLE 5

Generalized **Peak Hour Two-Way** Volumes for Florida's **Transitioning** and **Areas Over 5,000 Not In Urbanized Areas**[1]

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,300	1,460	**
4	Divided	*	3,060	3,200	**
6	Divided	*	4,690	4,820	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	580	1,200	1,280
4	Divided	*	890	2,590	2,850
6	Divided	*	1,440	4,040	4,280

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	140	550	1,760
50-84%	170	500	1,650	>1,760
85-100%	670	1,760	>1,760	**

PEDESTRIAN MODE[2]

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,410
85-100%	340	950	1,540	>1,760

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	3,970	5,190	6,200	6,460
6	5,860	7,710	9,190	9,990
8	7,660	10,230	12,170	13,500
10	9,550	12,750	15,190	17,010

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 1,800	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	820	1,550	2,190	2,990
4	Divided	3,170	4,460	5,660	6,260
6	Divided	4,750	6,700	8,480	9,400

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

APPENDIX H

EXISTING CONDITIONS SYNCHRO REPORTS

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	1	182	23	7	356
Future Vol, veh/h	7	1	182	23	7	356
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	3	4	0	0
Mvmt Flow	8	1	202	26	8	396

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	627	215	0	0	228	0
Stage 1	215	-	-	-	-	-
Stage 2	412	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	451	830	-	-	1352	-
Stage 1	826	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	447	830	-	-	1352	-
Mov Cap-2 Maneuver	447	-	-	-	-	-
Stage 1	826	-	-	-	-	-
Stage 2	668	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.7	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	474	1352	-
HCM Lane V/C Ratio	-	-	0.019	0.006	-
HCM Control Delay (s)	-	-	12.7	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	24.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	200	6	91	440	0	6	1	154	0	7	18
Future Vol, veh/h	3	200	6	91	440	0	6	1	154	0	7	18
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	21	17	2	10	0	17	0	8	0	29	17
Mvmt Flow	4	238	7	108	524	0	7	1	183	0	8	21
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.9	33.7	11.7	10.1
HCM LOS	B	D	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	1%	17%	0%
Vol Thru, %	1%	96%	83%	28%
Vol Right, %	96%	3%	0%	72%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	161	209	531	25
LT Vol	6	3	91	0
Through Vol	1	200	440	7
RT Vol	154	6	0	18
Lane Flow Rate	192	249	632	30
Geometry Grp	1	1	1	1
Degree of Util (X)	0.314	0.379	0.883	0.055
Departure Headway (Hd)	5.899	5.477	5.029	6.667
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	608	654	721	535
Service Time	3.953	3.523	3.063	4.74
HCM Lane V/C Ratio	0.316	0.381	0.877	0.056
HCM Control Delay	11.7	11.9	33.7	10.1
HCM Lane LOS	B	B	D	B
HCM 95th-tile Q	1.3	1.8	11	0.2

Intersection	
Int Delay, s/veh	11.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	2	0	41	12	12	1	685	58	54	903	12
Future Vol, veh/h	2	2	0	41	12	12	1	685	58	54	903	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	0	45	13	13	1	745	63	59	982	13

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1899	1917	989	1887	1892	777	995	0	0	808	0	0
Stage 1	1107	1107	-	779	779	-	-	-	-	-	-	-
Stage 2	792	810	-	1108	1113	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	53	67	299	54	70	397	695	-	-	817	-	-
Stage 1	255	286	-	389	406	-	-	-	-	-	-	-
Stage 2	382	393	-	255	284	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	37	56	299	46	58	397	695	-	-	817	-	-
Mov Cap-2 Maneuver	37	56	-	46	58	-	-	-	-	-	-	-
Stage 1	254	240	-	388	405	-	-	-	-	-	-	-
Stage 2	356	392	-	212	238	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	93.4	$ 307	0	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	695	-	-	45	58	817	-	-
HCM Lane V/C Ratio	0.002	-	-	0.097	1.218	0.072	-	-
HCM Control Delay (s)	10.2	0	-	93.4	$ 307	9.7	0	-
HCM Lane LOS	B	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	6	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	17	275	33	127	17	351	644	101	18	812	114
Future Volume (veh/h)	83	17	275	33	127	17	351	644	101	18	812	114
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	1900	1712	1638	1900	1870	1792	1696	1827	1900	1900	1827	1845
Adj Flow Rate, veh/h	86	18	0	34	131	0	362	664	0	19	837	0
Adj No. of Lanes	0	1	1	0	1	1	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	6	16	2	2	6	12	4	0	0	4	3
Cap, veh/h	223	37	178	97	199	195	411	1351	1194	529	986	846
Arrive On Green	0.13	0.13	0.00	0.13	0.13	0.00	0.13	0.74	0.00	0.54	0.54	0.00
Sat Flow, veh/h	988	289	1392	260	1555	1524	1616	1827	1615	784	1827	1568
Grp Volume(v), veh/h	104	0	0	165	0	0	362	664	0	19	837	0
Grp Sat Flow(s),veh/h/ln	1277	0	1392	1814	0	1524	1616	1827	1615	784	1827	1568
Q Serve(g_s), s	0.0	0.0	0.0	0.7	0.0	0.0	6.4	10.1	0.0	0.8	26.4	0.0
Cycle Q Clear(g_c), s	5.1	0.0	0.0	5.8	0.0	0.0	6.4	10.1	0.0	0.8	26.4	0.0
Prop In Lane	0.83		1.00	0.21		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	260	0	178	296	0	195	411	1351	1194	529	986	846
V/C Ratio(X)	0.40	0.00	0.00	0.56	0.00	0.00	0.88	0.49	0.00	0.04	0.85	0.00
Avail Cap(c_a), veh/h	428	0	369	536	0	404	572	1695	1498	599	1149	986
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.0	0.0	0.0	28.3	0.0	0.0	14.4	3.6	0.0	7.4	13.3	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.0	1.6	0.0	0.0	11.3	0.3	0.0	0.0	5.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	3.1	0.0	0.0	7.8	5.1	0.0	0.2	14.5	0.0
LnGrp Delay(d),s/veh	29.0	0.0	0.0	30.0	0.0	0.0	25.7	3.9	0.0	7.4	18.7	0.0
LnGrp LOS	C			C			C	A		A	B	
Approach Vol, veh/h		104			165			1026			856	
Approach Delay, s/veh		29.0			30.0			11.6			18.5	
Approach LOS		C			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		54.7		13.2	13.6	41.2		13.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		63.0		18.0	15.8	42.7		18.0
Max Q Clear Time (g_c+I1), s		12.1		7.1	8.4	28.4		7.8
Green Ext Time (p_c), s		14.4		1.0	0.7	8.2		0.9

Intersection Summary	
HCM 2010 Ctrl Delay	16.6
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	51.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	101	0	88	0	1008	81	61	1059	0
Future Vol, veh/h	0	0	0	101	0	88	0	1008	81	61	1059	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	0	-	175	-	-	200	325	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	0	0	0	0	6	4	2	7	0
Mvmt Flow	0	0	0	106	0	93	0	1061	85	64	1115	0

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	2304	-	531	-	0	0	1061	0	0
Stage 1	1061	-	-	-	-	-	-	-	-
Stage 2	1243	-	-	-	-	-	-	-	-
Critical Hdwy	6.6	-	6.9	-	-	-	4.13	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	-	3.3	-	-	-	2.219	-	-
Pot Cap-1 Maneuver	~ 38	0	498	0	-	-	654	-	0
Stage 1	298	0	-	0	-	-	-	-	0
Stage 2	275	0	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 34	0	498	-	-	-	654	-	-
Mov Cap-2 Maneuver	~ 34	0	-	-	-	-	-	-	-
Stage 1	298	0	-	-	-	-	-	-	-
Stage 2	248	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 650	0	0.6
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	34	498	654	-
HCM Lane V/C Ratio	-	-	3.127	0.186	0.098	-
HCM Control Delay (s)	-	-	$ 1204.3	13.9	11.1	-
HCM Lane LOS	-	-	F	B	B	-
HCM 95th %tile Q(veh)	-	-	12.3	0.7	0.3	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	152	722	141	93	221	366	44	571	164	327	727	106
Future Volume (veh/h)	152	722	141	93	221	366	44	571	164	327	727	106
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	1827	1863	1881	1845	1827	1827	1792	1792	1863	1845	1805	1900
Adj Flow Rate, veh/h	160	760	0	98	233	0	46	601	0	344	765	112
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	4	2	1	3	4	4	6	6	2	3	5	5
Cap, veh/h	172	818	370	119	694	311	293	629	556	363	1655	242
Arrive On Green	0.10	0.23	0.00	0.07	0.20	0.00	0.35	0.35	0.00	0.15	0.55	0.55
Sat Flow, veh/h	1740	3539	1599	1757	3471	1553	606	1792	1583	1757	3003	440
Grp Volume(v), veh/h	160	760	0	98	233	0	46	601	0	344	437	440
Grp Sat Flow(s),veh/h/ln	1740	1770	1599	1757	1736	1553	606	1792	1583	1757	1715	1728
Q Serve(g_s), s	8.2	18.9	0.0	5.0	5.2	0.0	4.8	29.5	0.0	12.3	13.8	13.8
Cycle Q Clear(g_c), s	8.2	18.9	0.0	5.0	5.2	0.0	4.8	29.5	0.0	12.3	13.8	13.8
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.25
Lane Grp Cap(c), veh/h	172	818	370	119	694	311	293	629	556	363	945	952
V/C Ratio(X)	0.93	0.93	0.00	0.82	0.34	0.00	0.16	0.95	0.00	0.95	0.46	0.46
Avail Cap(c_a), veh/h	172	818	370	119	694	311	293	629	556	363	945	952
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.2	33.9	0.0	41.4	30.9	0.0	20.5	28.5	0.0	23.5	12.2	12.2
Incr Delay (d2), s/veh	48.6	16.8	0.0	35.2	0.3	0.0	1.1	26.4	0.0	34.0	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.3	11.1	0.0	3.6	2.5	0.0	0.9	19.1	0.0	11.8	6.9	6.9
LnGrp Delay(d),s/veh	88.9	50.7	0.0	76.6	31.2	0.0	21.6	54.9	0.0	57.5	13.8	13.8
LnGrp LOS	F	D		E	C		C	D		E	B	B
Approach Vol, veh/h		920			331			647			1221	
Approach Delay, s/veh		57.3			44.6			52.5			26.1	
Approach LOS		E			D			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	18.0	36.1	10.6	25.3		54.1	13.4	22.5
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	13.5	31.6	6.1	20.8		49.6	8.9	18.0
Max Q Clear Time (g_c+I1), s	14.3	31.5	7.0	20.9		15.8	10.2	7.2
Green Ext Time (p_c), s	0.0	0.1	0.0	0.0		11.8	0.0	4.3

Intersection Summary	
HCM 2010 Ctrl Delay	42.8
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	2	327	8	1	257
Future Vol, veh/h	6	2	327	8	1	257
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	1	38	0	2
Mvmt Flow	6	2	334	8	1	262

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	602	338	0	0	342	0
Stage 1	338	-	-	-	-	-
Stage 2	264	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	466	709	-	-	1228	-
Stage 1	727	-	-	-	-	-
Stage 2	785	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	466	709	-	-	1228	-
Mov Cap-2 Maneuver	466	-	-	-	-	-
Stage 1	727	-	-	-	-	-
Stage 2	784	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	510	1228	-
HCM Lane V/C Ratio	-	-	0.016	0.001	-
HCM Control Delay (s)	-	-	12.2	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	161	2	22	204	1	4	2	21	0	1	4
Future Vol, veh/h	1	161	2	22	204	1	4	2	21	0	1	4
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	3	0	13	16	0	25	0	3	0	0	0
Mvmt Flow	1	181	2	25	229	1	4	2	24	0	1	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.4	9.4	8.1	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	15%	1%	10%	0%
Vol Thru, %	7%	98%	90%	20%
Vol Right, %	78%	1%	0%	80%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	27	164	227	5
LT Vol	4	1	22	0
Through Vol	2	161	204	1
RT Vol	21	2	1	4
Lane Flow Rate	30	184	255	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.041	0.218	0.307	0.007
Departure Headway (Hd)	4.868	4.25	4.34	4.432
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	738	849	819	810
Service Time	2.879	2.25	2.418	2.444
HCM Lane V/C Ratio	0.041	0.217	0.311	0.007
HCM Control Delay	8.1	8.4	9.4	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.8	1.3	0

Intersection	
Int Delay, s/veh	32.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	1	0	54	1	29	2	1171	108	21	789	2
Future Vol, veh/h	2	1	0	54	1	29	2	1171	108	21	789	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	0	59	1	32	2	1273	117	23	858	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2257	2299	859	2242	2242	1332	860	0	0	1390	0	0
Stage 1	905	905	-	1336	1336	-	-	-	-	-	-	-
Stage 2	1352	1394	-	906	906	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	29	39	356	~ 30	42	189	781	-	-	492	-	-
Stage 1	331	355	-	189	222	-	-	-	-	-	-	-
Stage 2	185	208	-	331	355	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	35	356	~ 27	38	189	781	-	-	492	-	-
Mov Cap-2 Maneuver	22	35	-	~ 27	38	-	-	-	-	-	-	-
Stage 1	327	323	-	187	219	-	-	-	-	-	-	-
Stage 2	152	206	-	300	323	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	169.5	$ 833	0	0.3
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	781	-	-	25	39	492	-	-
HCM Lane V/C Ratio	0.003	-	-	0.13	2.341	0.046	-	-
HCM Control Delay (s)	9.6	0	-	169.5	$ 833	12.7	0	-
HCM Lane LOS	A	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	10	0.1	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	38	11	163	164	7	67	192	1176	14	32	771	41
Future Volume (veh/h)	38	11	163	164	7	67	192	1176	14	32	771	41
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	1900	1627	1743	1900	1874	1827	1712	1845	1900	1900	1792	1727
Adj Flow Rate, veh/h	41	12	0	178	8	0	209	1278	0	35	838	0
Adj No. of Lanes	0	1	1	0	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	40	40	9	10	10	4	11	3	0	0	6	10
Cap, veh/h	244	60	222	300	10	233	368	1366	1196	156	1108	908
Arrive On Green	0.15	0.15	0.00	0.15	0.15	0.00	0.07	0.74	0.00	0.62	0.62	0.00
Sat Flow, veh/h	1112	402	1482	1428	64	1553	1630	1845	1615	440	1792	1468
Grp Volume(v), veh/h	53	0	0	186	0	0	209	1278	0	35	838	0
Grp Sat Flow(s),veh/h/ln	1514	0	1482	1493	0	1553	1630	1845	1615	440	1792	1468
Q Serve(g_s), s	0.0	0.0	0.0	7.4	0.0	0.0	3.5	48.1	0.0	6.0	27.6	0.0
Cycle Q Clear(g_c), s	2.4	0.0	0.0	9.8	0.0	0.0	3.5	48.1	0.0	44.1	27.6	0.0
Prop In Lane	0.77		1.00	0.96		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	305	0	222	309	0	233	368	1366	1196	156	1108	908
V/C Ratio(X)	0.17	0.00	0.00	0.60	0.00	0.00	0.57	0.94	0.00	0.22	0.76	0.00
Avail Cap(c_a), veh/h	394	0	324	407	0	339	410	1411	1236	156	1108	908
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	30.8	0.0	0.0	33.7	0.0	0.0	12.1	9.0	0.0	31.8	11.3	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	1.9	0.0	0.0	1.5	11.6	0.0	0.7	3.0	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	1.1	0.0	0.0	4.2	0.0	0.0	2.7	28.2	0.0	0.8	14.4	0.0
LnGrp Delay(d),s/veh	31.0	0.0	0.0	35.6	0.0	0.0	13.6	20.6	0.0	32.6	14.3	0.0
LnGrp LOS	C			D			B	C		C	B	
Approach Vol, veh/h		53			186			1487			873	
Approach Delay, s/veh		31.0			35.6			19.6			15.0	
Approach LOS		C			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		65.5		16.8	10.1	55.4		16.8
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		63.0		18.0	7.7	50.8		18.0
Max Q Clear Time (g_c+I1), s		50.1		4.4	5.5	46.1		11.8
Green Ext Time (p_c), s		10.9		0.9	0.1	4.3		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	19.4
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	79.5

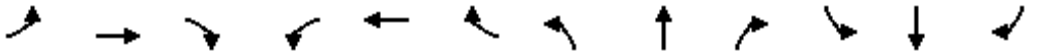
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	84	0	133	0	1249	145	132	966	0
Future Vol, veh/h	0	0	0	84	0	133	0	1249	145	132	966	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	0	-	175	-	-	200	325	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	5	0	1	0	4	0	4	5	0
Mvmt Flow	0	0	0	88	0	140	0	1315	153	139	1017	0

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	2610	-	658	-	0	0	1315	0	0
Stage 1	1315	-	-	-	-	-	-	-	-
Stage 2	1295	-	-	-	-	-	-	-	-
Critical Hdwy	6.675	-	6.915	-	-	-	4.16	-	-
Critical Hdwy Stg 1	5.875	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.475	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5475	-	3.3095	-	-	-	2.238	-	-
Pot Cap-1 Maneuver	~ 22	0	410	0	-	-	515	-	0
Stage 1	212	0	-	0	-	-	-	-	0
Stage 2	251	0	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	~ 16	0	410	-	-	-	515	-	-
Mov Cap-2 Maneuver	~ 16	0	-	-	-	-	-	-	-
Stage 1	212	0	-	-	-	-	-	-	-
Stage 2	183	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	$ 983.6	0	1.7
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	16	410	515	-
HCM Lane V/C Ratio	-	-	5.526	0.341	0.27	-
HCM Control Delay (s)	-	-	$ 2512	18.3	14.6	-
HCM Lane LOS	-	-	F	C	B	-
HCM 95th %tile Q(veh)	-	-	11.9	1.5	1.1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	128	278	45	135	591	585	111	681	109	228	655	167
Future Volume (veh/h)	128	278	45	135	591	585	111	681	109	228	655	167
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	1792	1863	1743	1845	1881	1845	1900	1845	1845	1827	1820	1900
Adj Flow Rate, veh/h	136	296	0	144	629	0	118	724	0	243	697	178
Adj No. of Lanes	1	2	1	1	2	1	1	1	1	1	2	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	2	9	3	1	3	0	3	3	4	5	5
Cap, veh/h	153	724	303	175	766	336	338	793	674	277	1548	395
Arrive On Green	0.09	0.20	0.00	0.10	0.21	0.00	0.43	0.43	0.00	0.09	0.57	0.57
Sat Flow, veh/h	1707	3539	1482	1757	3574	1568	644	1845	1568	1740	2729	697
Grp Volume(v), veh/h	136	296	0	144	629	0	118	724	0	243	441	434
Grp Sat Flow(s),veh/h/ln	1707	1770	1482	1757	1787	1568	644	1845	1568	1740	1729	1697
Q Serve(g_s), s	8.3	7.6	0.0	8.4	17.6	0.0	13.7	38.6	0.0	7.8	15.5	15.6
Cycle Q Clear(g_c), s	8.3	7.6	0.0	8.4	17.6	0.0	14.9	38.6	0.0	7.8	15.5	15.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		0.41
Lane Grp Cap(c), veh/h	153	724	303	175	766	336	338	793	674	277	980	962
V/C Ratio(X)	0.89	0.41	0.00	0.82	0.82	0.00	0.35	0.91	0.00	0.88	0.45	0.45
Avail Cap(c_a), veh/h	153	724	303	278	945	415	338	793	674	302	980	962
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	47.2	36.2	0.0	46.3	39.2	0.0	21.7	28.0	0.0	22.7	13.2	13.2
Incr Delay (d2), s/veh	41.9	0.4	0.0	10.4	4.8	0.0	2.8	16.7	0.0	23.0	1.5	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.7	3.7	0.0	4.6	9.2	0.0	2.7	23.2	0.0	5.4	7.8	7.6
LnGrp Delay(d),s/veh	89.0	36.5	0.0	56.6	44.1	0.0	24.5	44.7	0.0	45.7	14.7	14.7
LnGrp LOS	F	D		E	D		C	D		D	B	B
Approach Vol, veh/h		432			773			842			1118	
Approach Delay, s/veh		53.1			46.4			41.9			21.4	
Approach LOS		D			D			D			C	

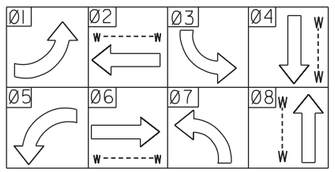
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	14.4	49.5	14.9	25.9		63.9	13.9	27.0
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Max Green Setting (Gmax), s	11.4	43.5	16.6	20.5		59.4	9.4	27.7
Max Q Clear Time (g_c+I1), s	9.8	40.6	10.4	9.6		17.6	10.3	19.6
Green Ext Time (p_c), s	0.1	2.3	0.2	4.0		15.5	0.0	2.9

Intersection Summary	
HCM 2010 Ctrl Delay	37.3
HCM 2010 LOS	D

APPENDIX I

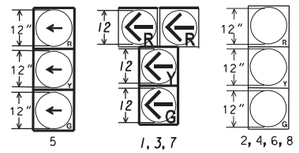
GDOT PI 0010943 PLANS

PHASING DIAGRAM



SIGNAL HEADS

LED SIGNAL HEADS WITH TYPE IX RETROREFLECTIVE BACK PLATE



EXISTING 6X6 SETBACK DETECTION LOOP, 410' FROM STOPBAR (TYP)

INSTALL: PEDESTRIAN POLE LED COUNTDOWN PEDESTRIAN SIGNAL (P2) PUSHBUTTON STATION PULL BOX, TP 2

INSTALL: CONDUIT, NM, TP 3, 2" (35')

GR SF PARKWAY LLC

INSTALL: STRAIN POLE, TP IV PULLBOX, TP 2

INSTALL: CONDUIT, NM, TP 3, 2" (25')

INSTALL: PEDESTRIAN POLE LED COUNTDOWN PEDESTRIAN SIGNAL (P8) PUSHBUTTON STATION PULLBOX, TP 2

EXISTING ROW

INSTALL: TRAFFICWARE PODS WITH NO REPEATER (TYP)

59+00

58+00

SR 14 ALT/SOUTH FULTON PKWY

INSTALL: PEDESTRIAN POLE LED COUNTDOWN PEDESTRIAN SIGNALS (P4, P6) PUSHBUTTON STATION AND SIGN PULLBOX, TP 2

INSTALL: CONDUIT, NM, TP 3, 2" (20')

INSTALL: STRAIN POLE, TP IV PULLBOX, TP 2

WEINGARTEN INVESTMENTS INC.

INSTALL: CONDUIT, NM, TP 2, 2" (15')

INSTALL: 332 CABINET AND BASE W/ BBS W/ 2070E CONTROLLER W/ AUXFILE PULLBOX, TP 5

INSTALL: TRAFFICWARE PODS WITH NO REPEATER (TYP)

TYPE A LANDING PAD

TYPE A LANDING PAD

TYPE A LANDING PAD

TYPE A LANDING PAD

17+00 18+00 18+00 19+00 20+00 21+00 22+00 23+00 23+00 24+00 25+00 26+00

D3-1 *1

D3-1 *2

D3-1 *3

D3-1 *3

D3-1 *2

D3-1 *1

R10-5

R10-5

R10-5

R10-5

57+00

SR 92/CAMPBELLTON-FAIRBURN RD (55 MPH)

SR 92/CAMPBELLTON-FAIRBURN RD (55 MPH)

N 1313921.8064
E 2161137.5308

TYPE D LANDING PAD

TYPE A LANDING PAD

INSTALL: TRAFFICWARE PODS WITH NO REPEATER (TYP)

INSTALL: PEDESTRIAN POLE LED COUNTDOWN PEDESTRIAN SIGNALS (P6, P8) PUSHBUTTON STATION PULLBOX, TP 2

EXISTING ROW

INSTALL: CONDUIT, NM, TP 3, 2" (30')

INSTALL: STRAIN POLE, TP IV PULLBOX, TP 2

INSTALL: TRAFFICWARE PODS WITH NO REPEATER (TYP)

TYPE B WOOD LANDING PAD

BEGIN SIDEWALK STA 21+44.38

TIE IN SIDEWALK STA 22+55.88

EXISTING ROW

INSTALL: PEDESTRIAN POLE LED COUNTDOWN PEDESTRIAN SIGNAL (P4) PUSHBUTTON STATION PULLBOX, TP 2

INSTALL: CONDUIT, NM, TP 3, 2" (25')

INSTALL: STRAIN POLE, TP IV PULLBOX, TP 2

WACHOVIA BANK NATIONAL ASSC.

SOUTH FULTON RETAIL DEVELOPMENT

INSTALL: CONDUIT, NM, TP 3, 2" (40')

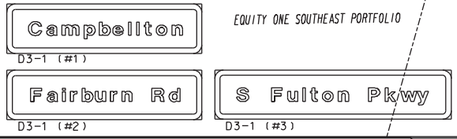
INSTALL: PEDESTRIAN POLE LED COUNTDOWN PEDESTRIAN SIGNAL (P6) PUSHBUTTON STATION PULLBOX, TP 2

SR 14 ALT/SOUTH FULTON PKWY

55+00

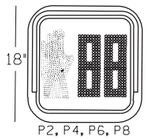
EXISTING 6X6 SETBACK DETECTION LOOP, 410' FROM STOPBAR (TYP)

OVERHEAD STREETNAME SIGNS



EQUITY ONE SOUTHEAST PORTFOLIO

PEDESTRIAN SIGNAL HEADS



P2, P4, P6, P8

PEDESTRIAN SIGNS

R10-3E(L) 9" X 15"

R10-3E(R) 9" X 15"

REGULATORY SIGNS

R10-5
30" X 36"

PROPERTY AND EXISTING R/W LINE
REQUIRED R/W LINE
CONSTRUCTION LIMITS
EASEMENT FOR CONSTR & MAINTENANCE OF SLOPES
EASEMENT FOR CONSTR OF SLOPES
EASEMENT FOR CONSTR OF DRIVES

BEGIN LIMIT OF ACCESS.....BLA
END LIMIT OF ACCESS.....ELA
LIMIT OF ACCESS
REQ'D R/W & LIMIT OF ACCESS

SCALE IN FEET
0 30 60 120

REVISION DATES

SIGNAL PLANS

SR 92 @ SR 14 ALT

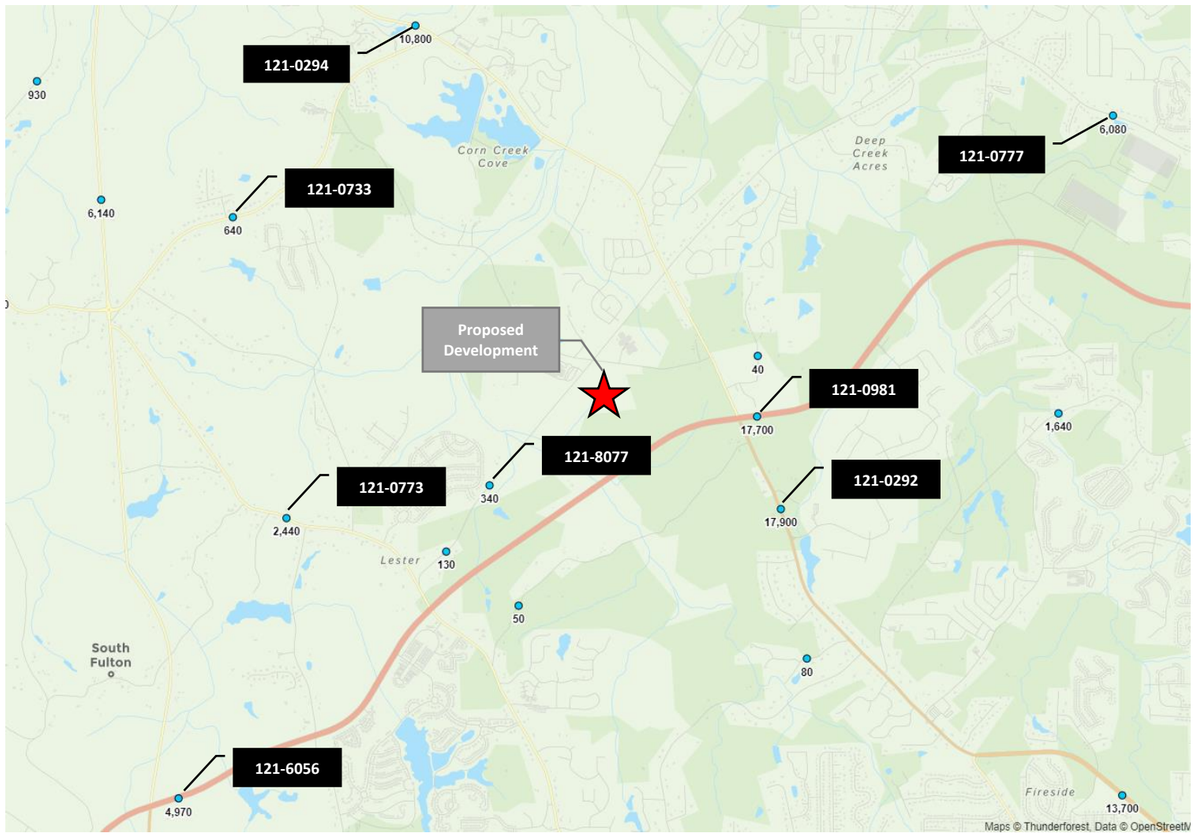
CHECKED:		DATE:		DRAWING No.
BACKCHECKED:		DATE:		27-0003
CORRECTED:		DATE:		
VERIFIED:		DATE:		

10/23/2015 GPLN

APPENDIX J

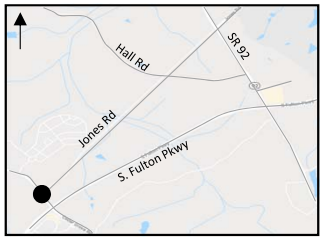
HISTORICAL GROWTH RATE

	Station: 121-0981 (S. Fulton Parkway east of SR 92)		Station: 121-6056 (S. Fulton Parkway east of Cascade Palmetto Highway)		Station: 121-8077 (Jones Road between Cedar Grove Road and SR 92)		Station: 121-0292 (SR 93 south of S. Fulton Parkway)		Station: 121-0294 (SR 92 north of Ridge Road)		Station: 121-0733 (Ridge Road between Cascade Palmetto Highway and SR 92)		Station: 121-0773 (Cedar Grove Road north of Short Road)		Station: 121-0777 (Stonewall Tell Road south of Jones Road)		
	Year	AADT	Year	AADT	Year	AADT	Year	AADT	Year	AADT	Year	AADT	Year	AADT	Year	AADT	
	2008	12410	2008	4200	2008	-	2008	-	2008	-	2008	-	2008	-	2008	4900	
	2009	-	2009	-	2009	250	2009	-	2009	-	2009	-	2009	-	2009	-	
	2010	15290	2010	5670	2010	-	2010	13490	2010	-	2010	800	2010	-	2010	-	
	2011	-	2011	3550	2011	-	2011	-	2011	8470	2011	-	2011	1440	2011	-	
	2012	13620	2012	-	2012	-	2012	13430	2012	-	2012	-	2012	-	2012	4840	
	2013	-	2013	3500	2013	-	2013	-	2013	9110	2013	-	2013	-	2013	-	
	2014	15700	2014	-	2014	310	2014	14000	2014	-	2014	740	2014	-	2014	-	
	2015	-	2015	-	2015	-	2015	-	2015	10100	2015	-	2015	1400	2015	-	
	2016	-	2016	-	2016	-	2016	16900	2016	-	2016	-	2016	-	2016	5740	
	2017	-	2017	4970	2017	-	2017	-	2017	10800	2017	640	2017	2440	2017	-	
	2018	-	2018	-	2018	-	2018	-	2018	-	2018	-	2018	-	2018	-	
	2008	12410	2008	4200	2008	239	2008	12026	2008	7462	2008	864	2008	1062	2008	4900	
	2018	17447	2018	4446	2018	368	2018	17216	2018	11313	2018	632	2018	2234	2018	5792	
	2013	-	2013	3500	2013	-	2013	13430	2013	9110	2013	777	2013	1400	2013	-	
	2018	-	2018	5425	2018	-	2018	20401	2018	11337	2018	610	2018	3221	2018	-	
																	Average
10-yr	08-18	3.3%	08-18	0.6%	08-18	4.2%	08-18	3.5%	08-18	4.1%	08-18	-3.2%	08-18	7.2%	08-18	1.7%	2.7%
5-yr	13-18	-	13-18	8.4%	13-18	-	13-18	8.0%	13-18	4.3%	13-18	-5.0%	13-18	15.3%	13-18	-	6.2%



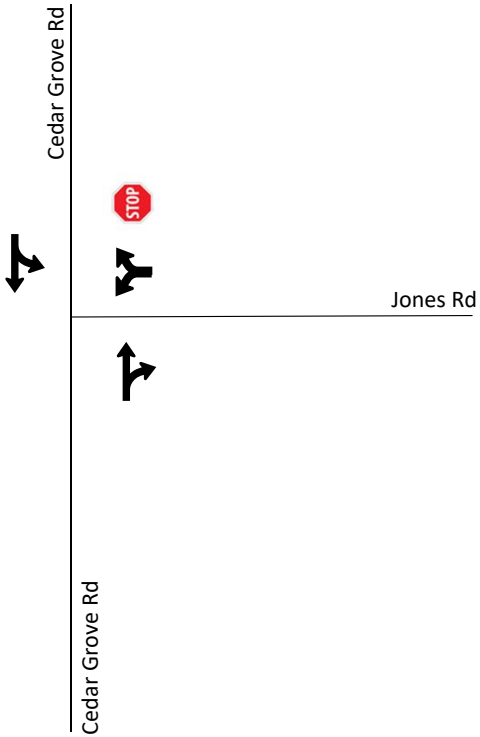
APPENDIX K

FUTURE NO-BUILD LANE CONFIGURATIONS AND VOLUMES

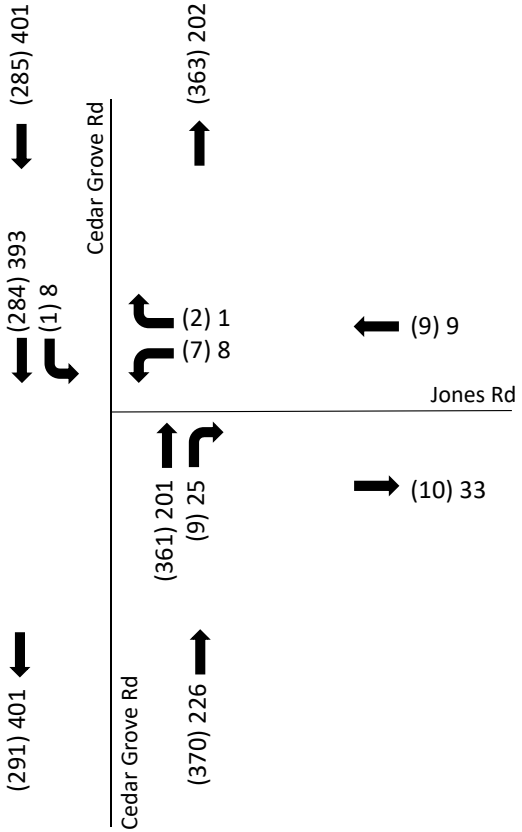


1: Cedar Grove Road at Jones Road

NOT TO SCALE



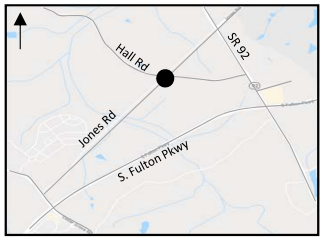
No-Build Lane Configuration



No-Build (2024) TMC – (PM)/AM

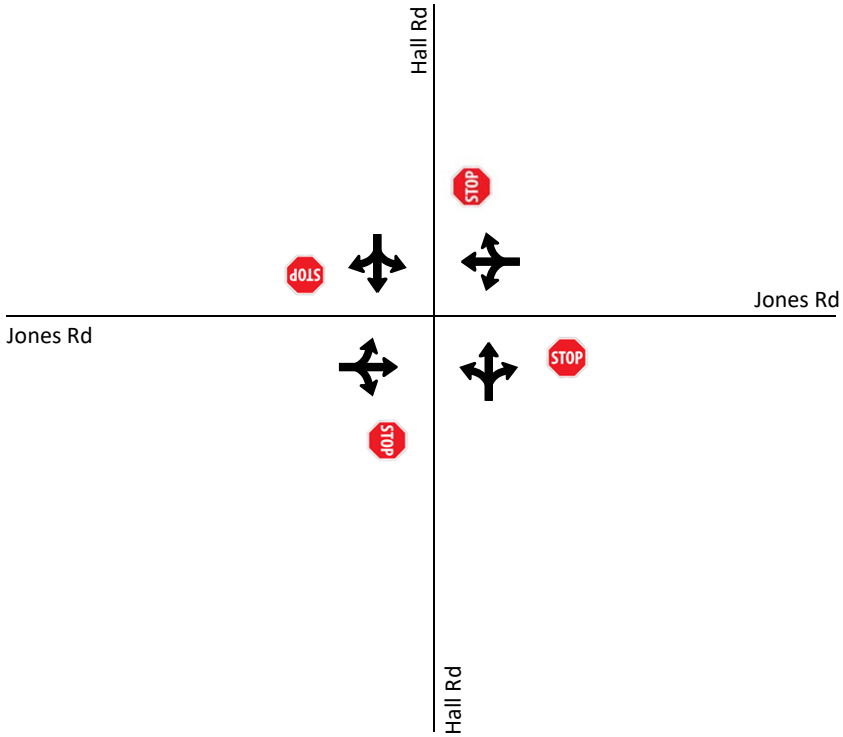
Matchline A

(Local Build-up due to Elementary School Driveway)

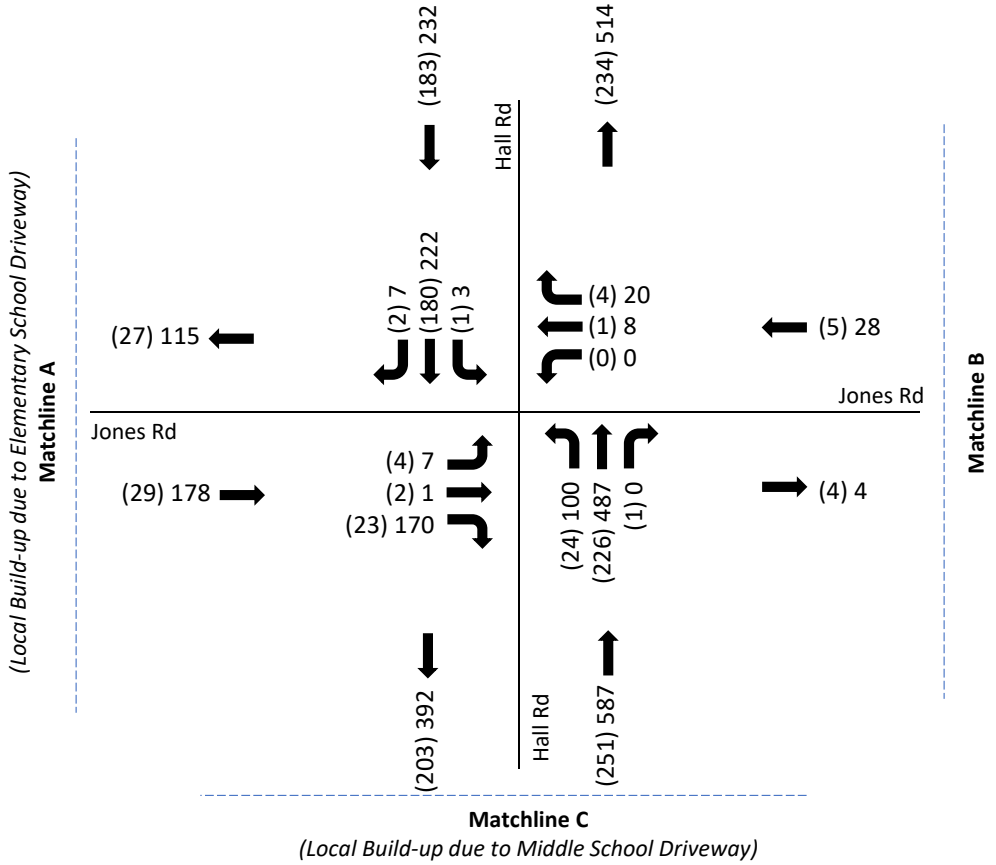


2: Hall Road at Jones Road

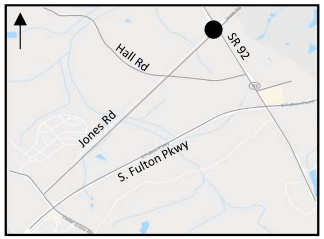
NOT TO SCALE



No-Build Lane Configuration

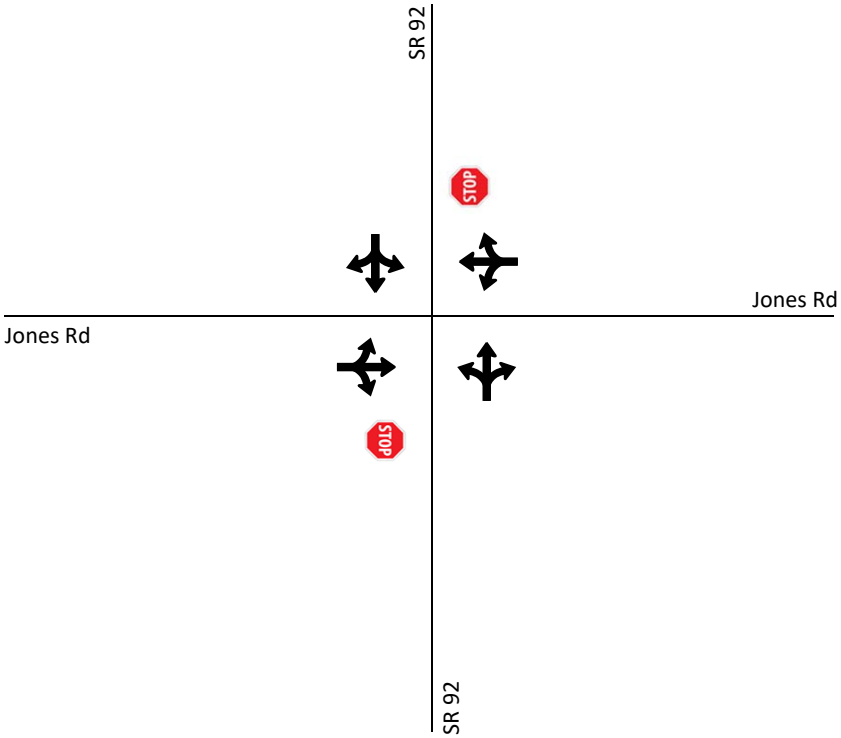


No-Build (2024) TMC – (PM)/AM

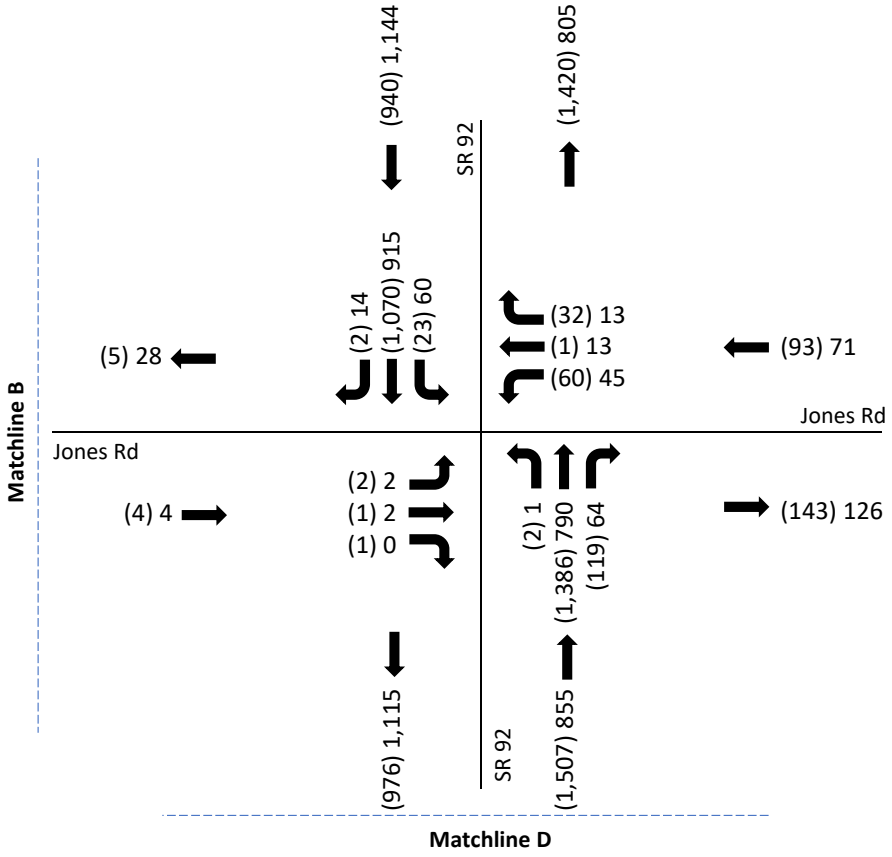


3: SR 92 at Jones Road

NOT TO SCALE



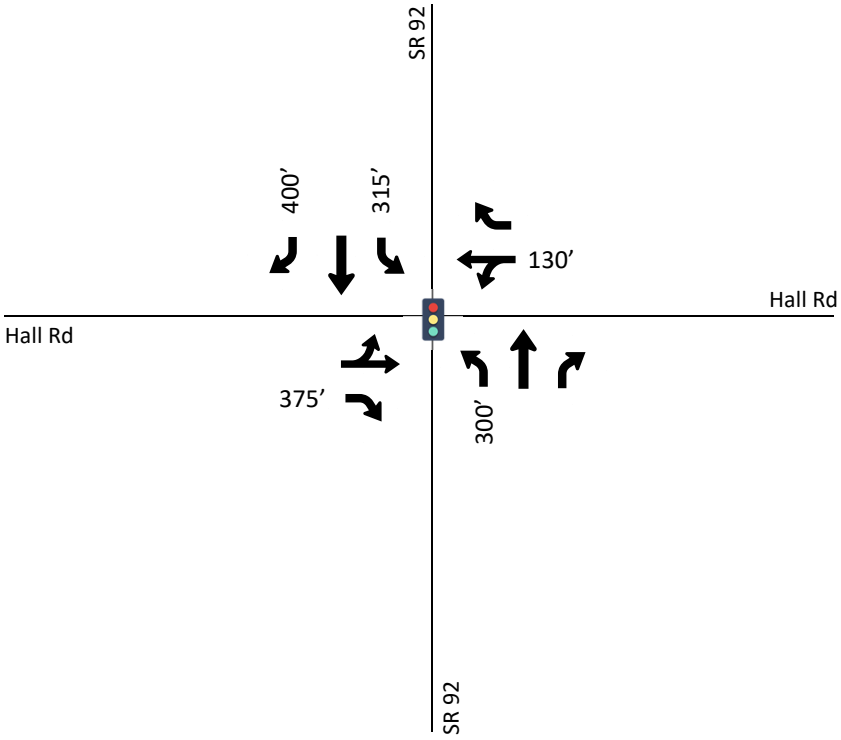
No-Build Lane Configuration



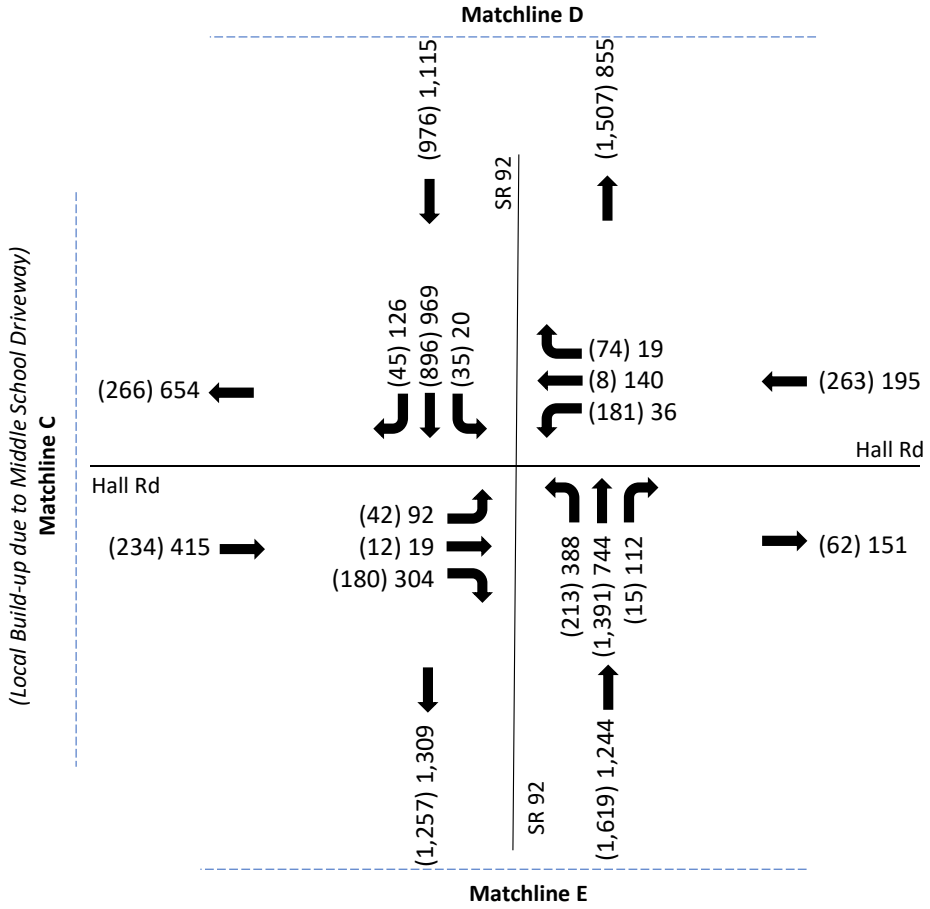
No-Build (2024) TMC – (PM)/AM

4: SR 92 at Hall Road

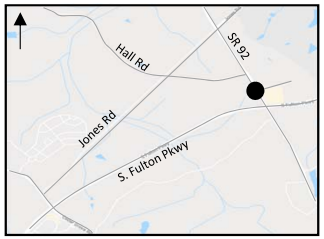
NOT TO SCALE



No-Build Lane Configuration

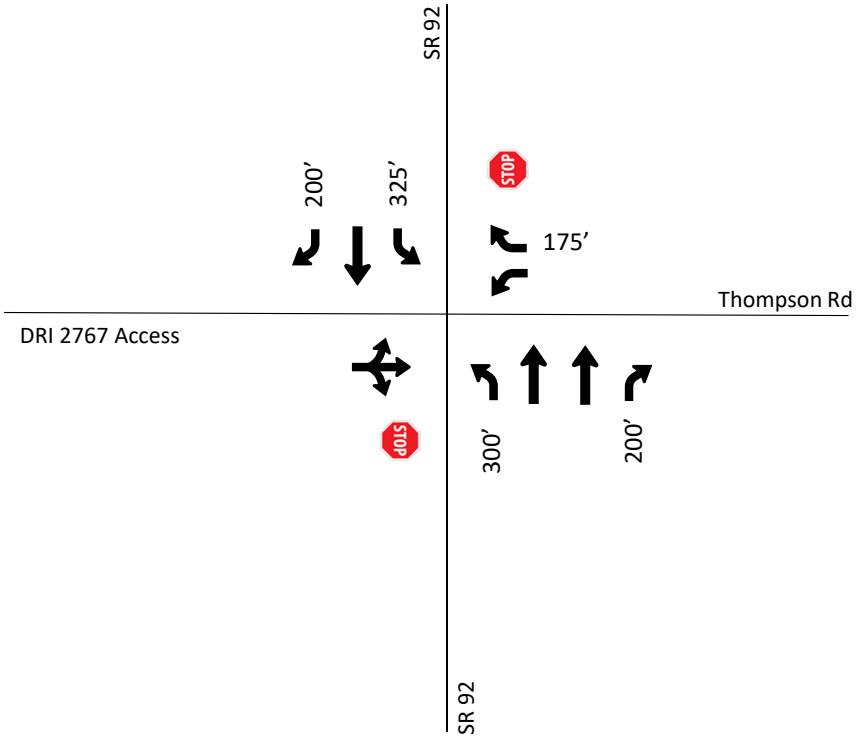


No-Build (2024) TMC – (PM)/AM

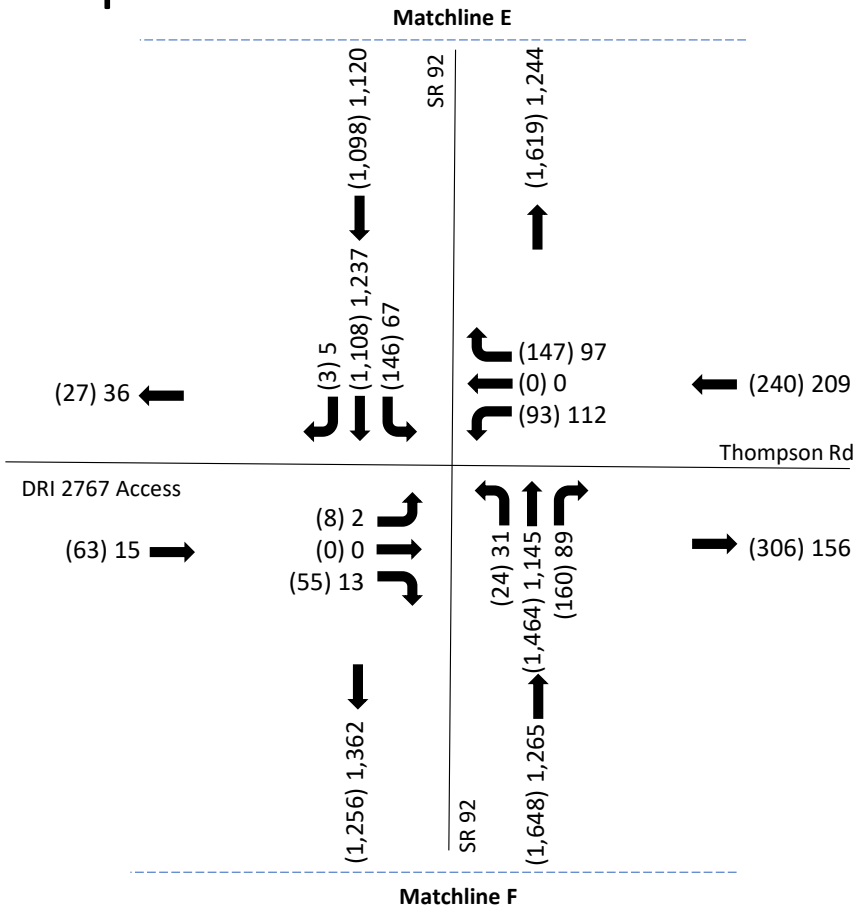


5: SR 92 at Thompson Road

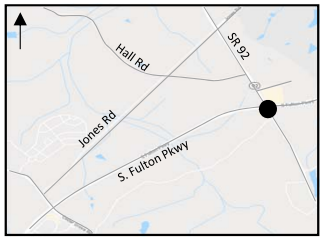
NOT TO SCALE



No-Build Lane Configuration

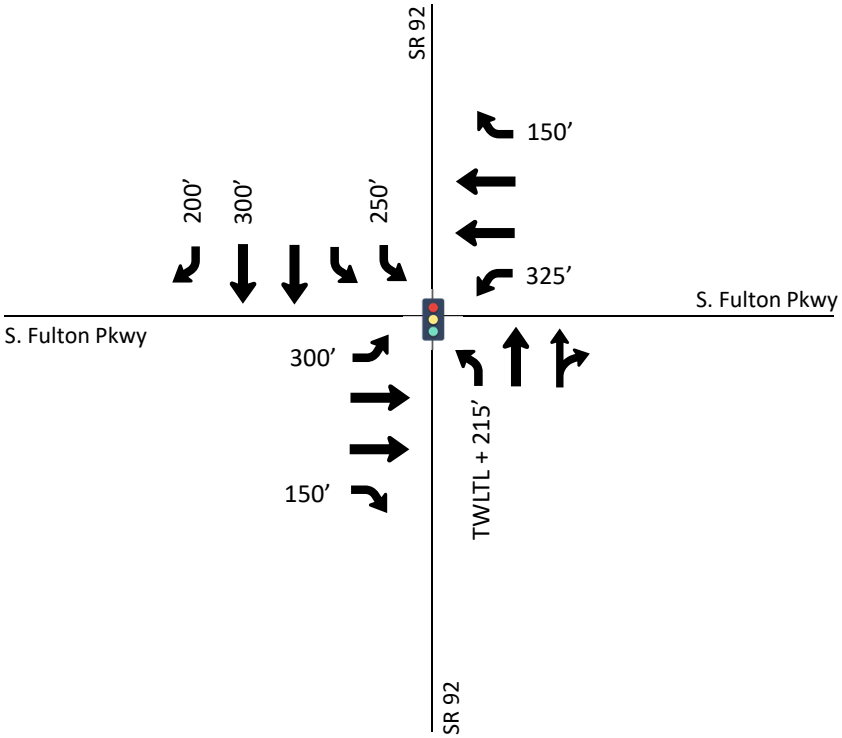


No-Build (2024) TMC – (PM)/AM

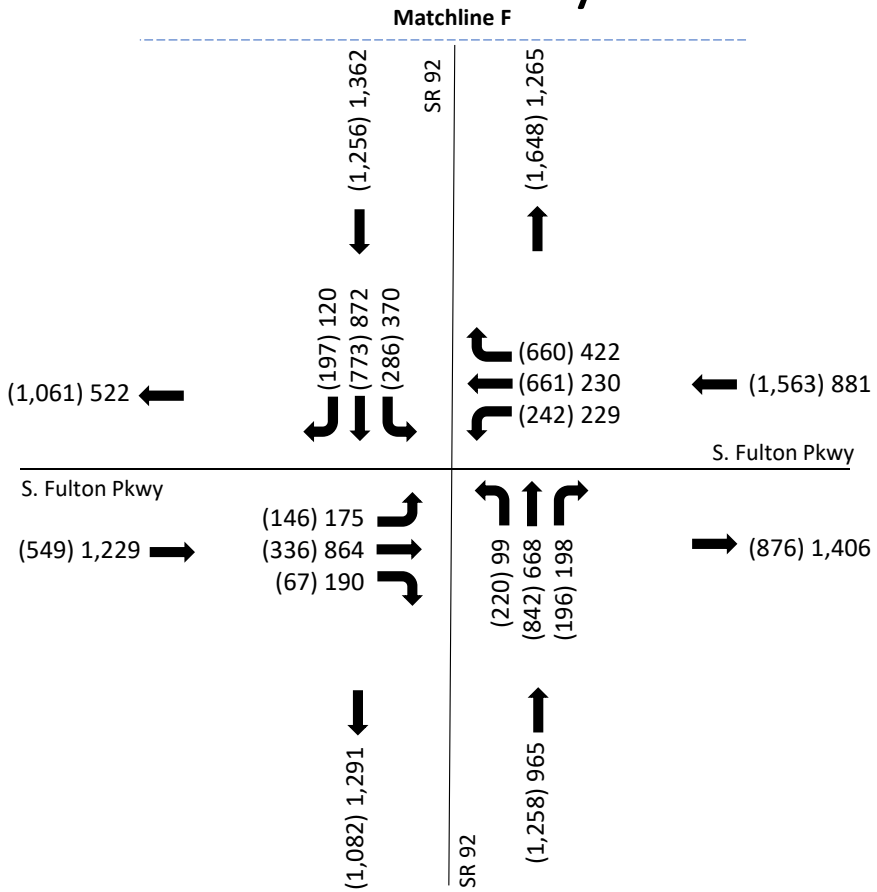


6: SR 92 at South Fulton Parkway

NOT TO SCALE



No-Build Lane Configuration



No-Build (2024) TMC – (PM)/AM

APPENDIX L

FUTURE NO-BUILD CONDITIONS SYNCHRO REPORTS

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	1	201	25	8	393
Future Vol, veh/h	8	1	201	25	8	393
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	3	4	0	0
Mvmt Flow	9	1	223	28	9	437

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	692	237	0	0	251	0
Stage 1	237	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	413	807	-	-	1326	-
Stage 1	807	-	-	-	-	-
Stage 2	643	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	409	807	-	-	1326	-
Mov Cap-2 Maneuver	409	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	637	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	433	1326	-
HCM Lane V/C Ratio	-	-	0.023	0.007	-
HCM Control Delay (s)	-	-	13.5	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	39.5
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	222	7	100	487	0	7	1	170	0	8	20
Future Vol, veh/h	3	222	7	100	487	0	7	1	170	0	8	20
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	21	16	2	10	0	16	0	8	0	29	17
Mvmt Flow	4	264	8	119	580	0	8	1	202	0	10	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	13.3	59.4	12.8	10.7
HCM LOS	B	F	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	4%	1%	17%	0%
Vol Thru, %	1%	96%	83%	29%
Vol Right, %	96%	3%	0%	71%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	178	232	587	28
LT Vol	7	3	100	0
Through Vol	1	222	487	8
RT Vol	170	7	0	20
Lane Flow Rate	212	276	699	33
Geometry Grp	1	1	1	1
Degree of Util (X)	0.364	0.44	1.01	0.066
Departure Headway (Hd)	6.18	5.729	5.203	7.19
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	579	624	699	501
Service Time	4.26	3.799	3.254	5.19
HCM Lane V/C Ratio	0.366	0.442	1	0.066
HCM Control Delay	12.8	13.3	59.4	10.7
HCM Lane LOS	B	B	F	B
HCM 95th-tile Q	1.7	2.2	16.5	0.2

Intersection	
Int Delay, s/veh	33.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	2	0	45	13	13	1	790	64	60	1070	14
Future Vol, veh/h	2	2	0	45	13	13	1	790	64	60	1070	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	0	49	14	14	1	859	70	65	1163	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2211	2232	1171	2198	2204	894	1178	0	0	929	0	0
Stage 1	1301	1301	-	896	896	-	-	-	-	-	-	-
Stage 2	910	931	-	1302	1308	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	32	43	235	~ 32	45	340	593	-	-	736	-	-
Stage 1	198	231	-	335	359	-	-	-	-	-	-	-
Stage 2	329	346	-	198	229	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	17	32	235	~ 24	33	340	593	-	-	736	-	-
Mov Cap-2 Maneuver	17	32	-	~ 24	33	-	-	-	-	-	-	-
Stage 1	197	172	-	334	358	-	-	-	-	-	-	-
Stage 2	302	345	-	145	170	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	205.2	$ 948.6	0	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	593	-	-	22	31	736	-	-
HCM Lane V/C Ratio	0.002	-	-	0.198	2.489	0.089	-	-
HCM Control Delay (s)	11.1	0	-	205.2	$ 948.6	10.4	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	9	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	19	304	36	140	19	388	744	112	20	969	126
Future Volume (veh/h)	92	19	304	36	140	19	388	744	112	20	969	126
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	1900	1712	1652	1900	1870	1792	1712	1827	1900	1900	1810	1845
Adj Flow Rate, veh/h	95	20	0	37	144	0	400	767	0	21	999	0
Adj No. of Lanes	0	1	1	0	1	1	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	6	15	2	2	6	11	4	0	0	5	3
Cap, veh/h	164	27	202	76	220	219	376	1425	1260	451	993	860
Arrive On Green	0.14	0.14	0.00	0.14	0.14	0.00	0.19	0.78	0.00	0.55	0.55	0.00
Sat Flow, veh/h	756	191	1404	276	1532	1524	1630	1827	1615	712	1810	1568
Grp Volume(v), veh/h	115	0	0	181	0	0	400	767	0	21	999	0
Grp Sat Flow(s),veh/h/ln	947	0	1404	1807	0	1524	1630	1827	1615	712	1810	1568
Q Serve(g_s), s	3.6	0.0	0.0	0.0	0.0	0.0	22.9	18.8	0.0	1.6	64.9	0.0
Cycle Q Clear(g_c), s	14.7	0.0	0.0	11.2	0.0	0.0	22.9	18.8	0.0	1.6	64.9	0.0
Prop In Lane	0.83		1.00	0.20		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	192	0	202	297	0	219	376	1425	1260	451	993	860
V/C Ratio(X)	0.60	0.00	0.00	0.61	0.00	0.00	1.06	0.54	0.00	0.05	1.01	0.00
Avail Cap(c_a), veh/h	209	0	222	321	0	241	376	1425	1260	451	993	860
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	50.1	0.0	0.0	48.1	0.0	0.0	41.2	4.9	0.0	12.4	26.7	0.0
Incr Delay (d2), s/veh	4.1	0.0	0.0	2.9	0.0	0.0	64.0	0.4	0.0	0.0	30.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	0.0	0.0	5.9	0.0	0.0	18.9	9.5	0.0	0.3	40.6	0.0
LnGrp Delay(d),s/veh	54.2	0.0	0.0	51.0	0.0	0.0	105.2	5.3	0.0	12.5	56.9	0.0
LnGrp LOS	D			D			F	A		B	F	
Approach Vol, veh/h		115			181			1167			1020	
Approach Delay, s/veh		54.2			51.0			39.6			56.0	
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		96.8		21.5	27.4	69.4		21.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		92.3		18.7	22.9	64.9		18.7
Max Q Clear Time (g_c+I1), s		20.8		16.7	24.9	66.9		13.2
Green Ext Time (p_c), s		22.1		0.3	0.0	0.0		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	47.8
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	251.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	13	112	0	97	31	1145	89	67	1237	5
Future Vol, veh/h	2	0	13	112	0	97	31	1145	89	67	1237	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	0	-	175	300	-	200	325	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	38	0	0	0	35	6	4	2	7	20
Mvmt Flow	2	0	14	118	0	102	33	1205	94	71	1302	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2113	2715	1302	2718	-	603	1307	0	0	1205	0	0
Stage 1	1444	1444	-	1271	-	-	-	-	-	-	-	-
Stage 2	669	1271	-	1447	-	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.77	7.3	-	6.9	4.625	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.661	3.5	-	3.3	2.5325	-	-	2.219	-	-
Pot Cap-1 Maneuver	33	21	153	~ 12	0	447	405	-	-	577	-	-
Stage 1	166	199	-	181	0	-	-	-	-	-	-	-
Stage 2	418	241	-	165	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	22	17	153	~ 9	-	447	405	-	-	577	-	-
Mov Cap-2 Maneuver	22	17	-	~ 9	-	-	-	-	-	-	-	-
Stage 1	153	175	-	166	-	-	-	-	-	-	-	-
Stage 2	296	221	-	132	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	29.1	$ 3358	0.4	0.6
HCM LOS	D	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	405	-	-	165	9	447	577	-	-
HCM Lane V/C Ratio	0.081	-	-	0.096	13.099	0.228	0.122	-	-
HCM Control Delay (s)	14.7	-	-	29.3	$ 6252.9	15.4	12.1	-	-
HCM Lane LOS	B	-	-	D	F	C	B	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.3	16.3	0.9	0.4	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	864	190	229	230	422	99	668	198	370	872	120
Future Volume (veh/h)	175	864	190	229	230	422	99	668	198	370	872	120
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	1792	1863	1827	1570	1810	1792	1727	1787	1900	1827	1743	1776
Adj Flow Rate, veh/h	184	909	0	241	242	0	104	703	208	389	918	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	4	21	5	6	10	7	7	4	9	7
Cap, veh/h	473	924	405	267	1104	489	239	753	223	420	1181	538
Arrive On Green	0.06	0.26	0.00	0.12	0.32	0.00	0.06	0.29	0.29	0.12	0.36	0.00
Sat Flow, veh/h	1707	3539	1553	1495	3438	1524	1645	2585	765	3375	3312	1509
Grp Volume(v), veh/h	184	909	0	241	242	0	104	462	449	389	918	0
Grp Sat Flow(s),veh/h/ln	1707	1770	1553	1495	1719	1524	1645	1698	1652	1688	1656	1509
Q Serve(g_s), s	5.7	23.0	0.0	10.3	4.6	0.0	3.9	23.8	23.8	10.3	22.2	0.0
Cycle Q Clear(g_c), s	5.7	23.0	0.0	10.3	4.6	0.0	3.9	23.8	23.8	10.3	22.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.46	1.00		1.00
Lane Grp Cap(c), veh/h	473	924	405	267	1104	489	239	494	481	420	1181	538
V/C Ratio(X)	0.39	0.98	0.00	0.90	0.22	0.00	0.44	0.93	0.93	0.93	0.78	0.00
Avail Cap(c_a), veh/h	473	924	405	267	1104	489	239	494	481	420	1181	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.1	33.1	0.0	22.5	22.3	0.0	22.1	31.1	31.1	39.0	25.8	0.0
Incr Delay (d2), s/veh	0.5	25.5	0.0	30.7	0.1	0.0	1.3	27.0	27.5	26.4	5.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	14.5	0.0	6.4	2.2	0.0	1.8	14.9	14.5	6.3	10.9	0.0
LnGrp Delay(d),s/veh	23.6	58.6	0.0	53.2	22.4	0.0	23.4	58.1	58.6	65.4	30.8	0.0
LnGrp LOS	C	E		D	C		C	E	E	E	C	
Approach Vol, veh/h		1093			483			1015			1307	
Approach Delay, s/veh		52.7			37.8			54.7			41.1	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.7	30.7	15.6	28.0	9.8	36.6	10.2	33.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	11.2	26.2	11.1	23.5	5.3	32.1	5.7	28.9
Max Q Clear Time (g_c+I1), s	12.3	25.8	12.3	25.0	5.9	24.2	7.7	6.6
Green Ext Time (p_c), s	0.0	0.3	0.0	0.0	0.0	5.8	0.0	7.2

Intersection Summary	
HCM 2010 Ctrl Delay	47.5
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	2	361	9	1	284
Future Vol, veh/h	7	2	361	9	1	284
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	1	37	0	2
Mvmt Flow	7	2	368	9	1	290

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	665	373	0	0	377	0
Stage 1	373	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	428	678	-	-	1193	-
Stage 1	701	-	-	-	-	-
Stage 2	762	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	428	678	-	-	1193	-
Mov Cap-2 Maneuver	428	-	-	-	-	-
Stage 1	701	-	-	-	-	-
Stage 2	761	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	466	1193	-
HCM Lane V/C Ratio	-	-	0.02	0.001	-
HCM Control Delay (s)	-	-	12.9	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	9.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	180	2	24	226	1	4	2	23	0	1	4
Future Vol, veh/h	1	180	2	24	226	1	4	2	23	0	1	4
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	5	0	9	13	0	28	0	3	0	0	0
Mvmt Flow	1	202	2	27	254	1	4	2	26	0	1	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.7	9.6	8.3	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	14%	1%	10%	0%
Vol Thru, %	7%	98%	90%	20%
Vol Right, %	79%	1%	0%	80%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	29	183	251	5
LT Vol	4	1	24	0
Through Vol	2	180	226	1
RT Vol	23	2	1	4
Lane Flow Rate	33	206	282	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.045	0.244	0.336	0.007
Departure Headway (Hd)	5.006	4.279	4.292	4.535
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	718	843	826	792
Service Time	3.016	2.284	2.381	2.548
HCM Lane V/C Ratio	0.046	0.244	0.341	0.008
HCM Control Delay	8.3	8.7	9.6	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	1	1.5	0

Intersection	
Int Delay, s/veh	86.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	0	60	1	32	1	1386	119	23	915	2
Future Vol, veh/h	2	1	0	60	1	32	1	1386	119	23	915	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	0	65	1	35	1	1507	129	25	995	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2638	2684	-	2621	2621	1572	997	0	0	1636	0	0
Stage 1	1046	1046	-	1574	1574	-	-	-	-	-	-	-
Stage 2	1592	1638	-	1047	1047	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	-	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	-	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	15	22	0	~ 16	24	136	694	-	-	396	-	-
Stage 1	276	305	0	138	170	-	-	-	-	-	-	-
Stage 2	135	158	0	276	305	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	9	19	-	~ 13	20	136	694	-	-	396	-	-
Mov Cap-2 Maneuver	9	19	-	~ 13	20	-	-	-	-	-	-	-
Stage 1	271	262	-	135	167	-	-	-	-	-	-	-
Stage 2	98	155	-	236	262	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 436.1	$ 2349.2	0	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	694	-	-	11	19	396	-	-
HCM Lane V/C Ratio	0.002	-	-	0.296	5.32	0.063	-	-
HCM Control Delay (s)	10.2	0	-	$ 436.1	$ 2349.2	14.7	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.7	13.1	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	12	180	181	8	74	213	1391	15	35	896	45
Future Volume (veh/h)	42	12	180	181	8	74	213	1391	15	35	896	45
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	1900	1863	1827	1900	1900	1881	1712	1845	1900	1900	1792	1652
Adj Flow Rate, veh/h	46	13	0	197	9	0	232	1512	0	38	974	0
Adj No. of Lanes	0	1	1	0	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	4	0	0	1	11	3	0	0	6	15
Cap, veh/h	243	63	230	264	10	236	322	1453	1272	51	1259	986
Arrive On Green	0.15	0.15	0.00	0.15	0.15	0.00	0.05	0.79	0.00	0.70	0.70	0.00
Sat Flow, veh/h	1336	429	1553	1446	66	1599	1630	1845	1615	351	1792	1404
Grp Volume(v), veh/h	59	0	0	206	0	0	232	1512	0	38	974	0
Grp Sat Flow(s),veh/h/ln	1765	0	1553	1512	0	1599	1630	1845	1615	351	1792	1404
Q Serve(g_s), s	0.0	0.0	0.0	14.7	0.0	0.0	5.3	110.3	0.0	0.0	49.6	0.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	18.7	0.0	0.0	5.3	110.3	0.0	98.3	49.6	0.0
Prop In Lane	0.78		1.00	0.96		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	307	0	230	274	0	236	322	1453	1272	51	1259	986
V/C Ratio(X)	0.19	0.00	0.00	0.75	0.00	0.00	0.72	1.04	0.00	0.74	0.77	0.00
Avail Cap(c_a), veh/h	307	0	230	274	0	236	347	1453	1272	51	1259	986
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	52.5	0.0	0.0	58.4	0.0	0.0	21.3	14.9	0.0	70.0	13.6	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	11.1	0.0	0.0	6.5	34.8	0.0	42.9	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.0	0.0	8.7	0.0	0.0	6.5	69.0	0.0	2.1	25.4	0.0
LnGrp Delay(d),s/veh	52.8	0.0	0.0	69.5	0.0	0.0	27.8	49.7	0.0	112.9	16.7	0.0
LnGrp LOS	D			E			C	F		F	B	
Approach Vol, veh/h		59			206			1744			1012	
Approach Delay, s/veh		52.8			69.5			46.8			20.3	
Approach LOS		D			E			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		114.8		25.2	12.0	102.8		25.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		110.3		20.7	9.6	96.2		20.7
Max Q Clear Time (g_c+I1), s		112.3		6.0	7.3	100.3		20.7
Green Ext Time (p_c), s		0.0		1.1	0.1	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	39.6
HCM 2010 LOS	D

Intersection	
Int Delay, s/veh	488.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	55	93	0	147	24	1464	160	146	1108	3
Future Vol, veh/h	8	0	55	93	0	147	24	1464	160	146	1108	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	0	-	175	300	-	200	325	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	13	0	27	5	0	1	29	4	0	4	5	0
Mvmt Flow	8	0	58	98	0	155	25	1541	168	154	1166	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2295	3065	1166	3067	-	771	1169	0	0	1541	0	0
Stage 1	1474	1474	-	1591	-	-	-	-	-	-	-	-
Stage 2	821	1591	-	1476	-	-	-	-	-	-	-	-
Critical Hdwy	7.495	6.5	6.605	7.375	-	6.915	4.535	-	-	4.16	-	-
Critical Hdwy Stg 1	6.295	5.5	-	6.575	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.695	5.5	-	6.175	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.6235	4	3.5565	3.5475	-	3.3095	2.4755	-	-	2.238	-	-
Pot Cap-1 Maneuver	21	13	201	~ 6	0	345	485	-	-	421	-	-
Stage 1	145	192	-	110	0	-	-	-	-	-	-	-
Stage 2	317	169	-	153	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 8	8	201	~ 3	-	345	485	-	-	421	-	-
Mov Cap-2 Maneuver	~ 8	8	-	~ 3	-	-	-	-	-	-	-	-
Stage 1	137	122	-	104	-	-	-	-	-	-	-	-
Stage 2	166	160	-	~ 69	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	280.9	$ 6441.1	0.2	2.1
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	485	-	-	58	3	345	421	-	-
HCM Lane V/C Ratio	0.052	-	-	1.143	32.632	0.449	0.365	-	-
HCM Control Delay (s)	12.8	-	-	280.9	$ 16584.9	23.6	18.4	-	-
HCM Lane LOS	B	-	-	F	F	C	C	-	-
HCM 95th %tile Q(veh)	0.2	-	-	5.5	14.4	2.2	1.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

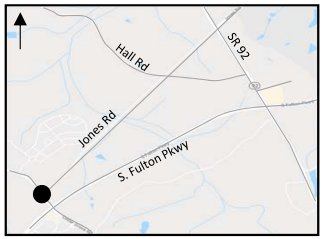
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	146	336	67	242	661	660	220	842	196	286	773	197
Future Volume (veh/h)	146	336	67	242	661	660	220	842	196	286	773	197
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	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	1792	1827	1712	1792	1881	1827	1792	1814	1900	1776	1792	1845
Adj Flow Rate, veh/h	155	357	0	257	703	0	234	896	209	304	822	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	6	4	11	6	1	4	6	4	4	7	6	3
Cap, veh/h	246	627	263	410	929	403	369	986	230	357	1204	554
Arrive On Green	0.06	0.18	0.00	0.14	0.26	0.00	0.11	0.36	0.36	0.11	0.35	0.00
Sat Flow, veh/h	1707	3471	1455	1707	3574	1553	1707	2776	647	3281	3406	1568
Grp Volume(v), veh/h	155	357	0	257	703	0	234	556	549	304	822	0
Grp Sat Flow(s),veh/h/ln	1707	1736	1455	1707	1787	1553	1707	1723	1700	1640	1703	1568
Q Serve(g_s), s	5.1	7.9	0.0	9.7	15.2	0.0	7.1	25.7	25.7	7.6	17.2	0.0
Cycle Q Clear(g_c), s	5.1	7.9	0.0	9.7	15.2	0.0	7.1	25.7	25.7	7.6	17.2	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.38	1.00		1.00
Lane Grp Cap(c), veh/h	246	627	263	410	929	403	369	612	604	357	1204	554
V/C Ratio(X)	0.63	0.57	0.00	0.63	0.76	0.00	0.63	0.91	0.91	0.85	0.68	0.00
Avail Cap(c_a), veh/h	246	876	367	418	1201	522	415	612	604	357	1204	554
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	28.8	31.3	0.0	21.9	28.5	0.0	16.7	25.7	25.7	36.6	23.0	0.0
Incr Delay (d2), s/veh	5.1	0.8	0.0	2.9	2.1	0.0	2.6	19.7	20.1	17.6	3.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	3.8	0.0	4.8	7.7	0.0	3.6	15.6	15.4	4.3	8.5	0.0
LnGrp Delay(d),s/veh	33.8	32.1	0.0	24.8	30.6	0.0	19.3	45.4	45.8	54.2	26.2	0.0
LnGrp LOS	C	C		C	C		B	D	D	D	C	
Approach Vol, veh/h		512			960			1339			1126	
Approach Delay, s/veh		32.6			29.0			41.0			33.7	
Approach LOS		C			C			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.6	34.2	16.2	19.6	13.7	34.1	9.6	26.2
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	9.1	29.7	12.1	21.1	11.5	27.3	5.1	28.1
Max Q Clear Time (g_c+I1), s	9.6	27.7	11.7	9.9	9.1	19.2	7.1	17.2
Green Ext Time (p_c), s	0.0	1.7	0.0	4.6	0.2	6.2	0.0	4.6

Intersection Summary	
HCM 2010 Ctrl Delay	34.9
HCM 2010 LOS	C

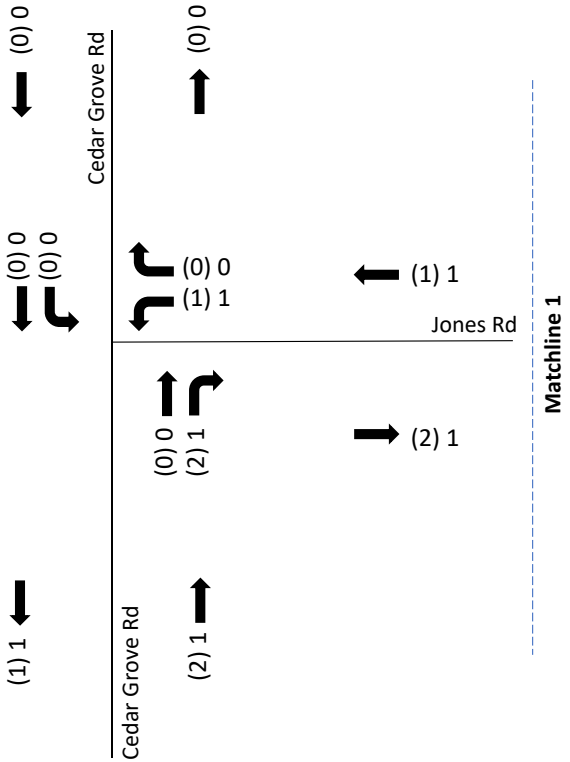
APPENDIX M

PROJECT TRAFFIC VOLUMES

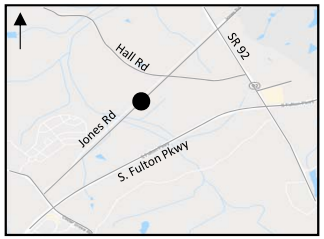


1: Cedar Grove Road at Jones Road

NOT TO SCALE

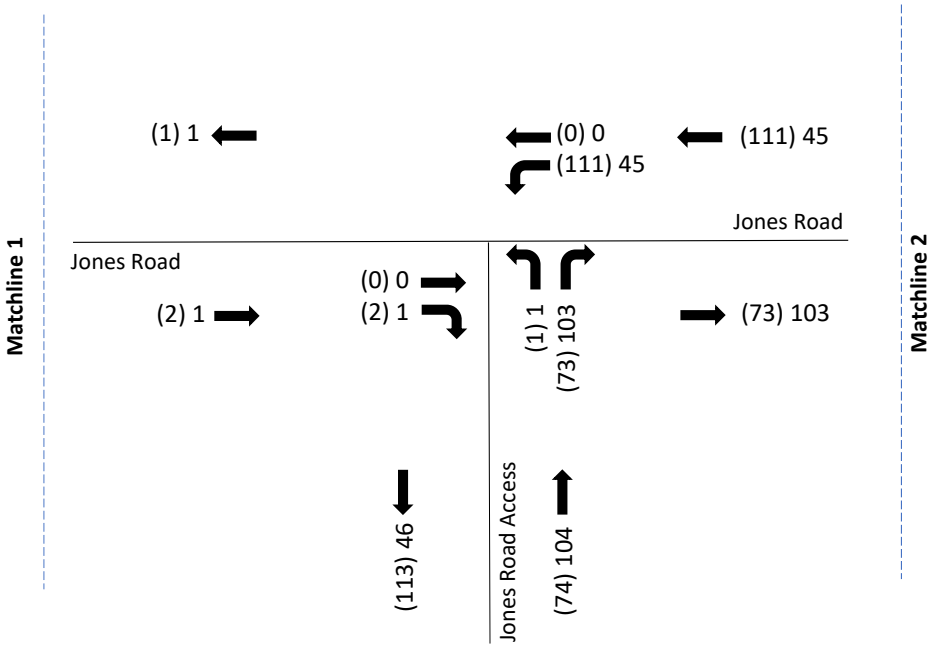


Project Traffic – (PM)/AM

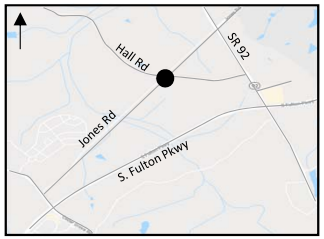


Jones Road Access

NOT TO SCALE

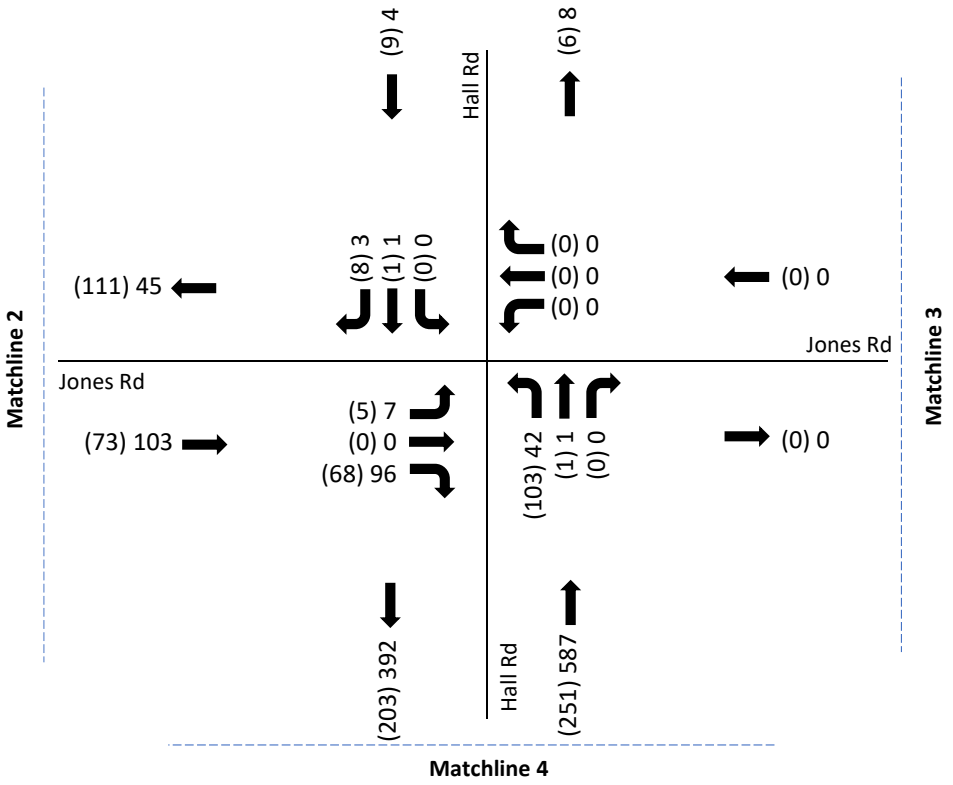


Project Traffic – (PM)/AM

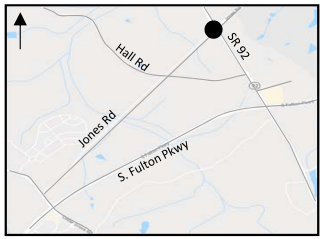


2: Hall Road at Jones Road

NOT TO SCALE

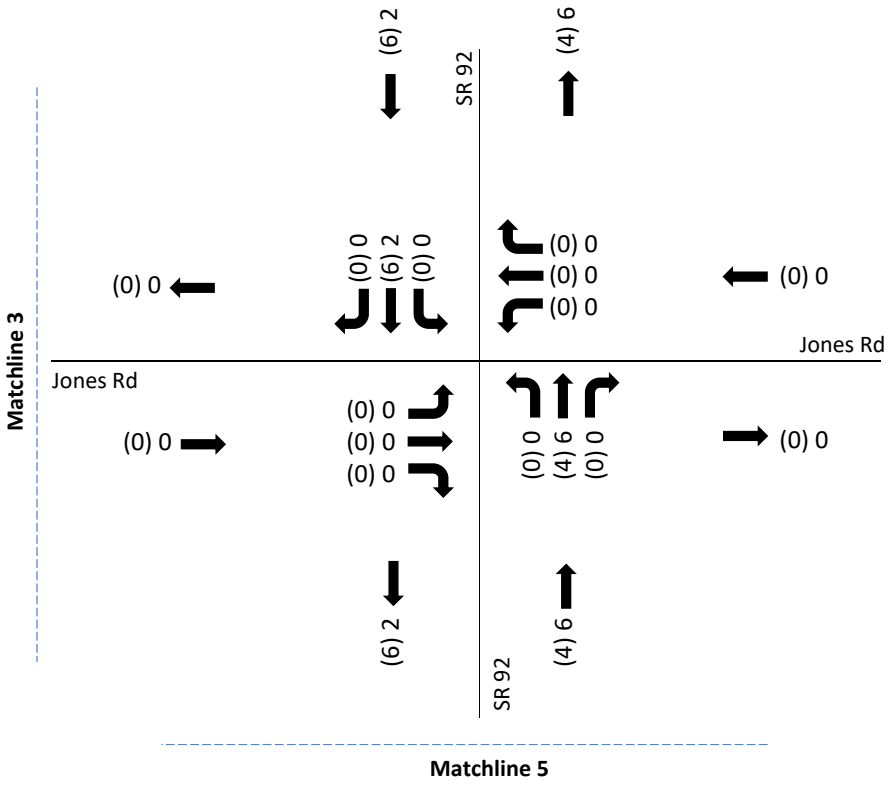


Project Traffic – (PM)/AM

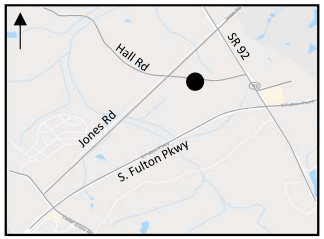


3: SR 92 at Jones Road

NOT TO SCALE

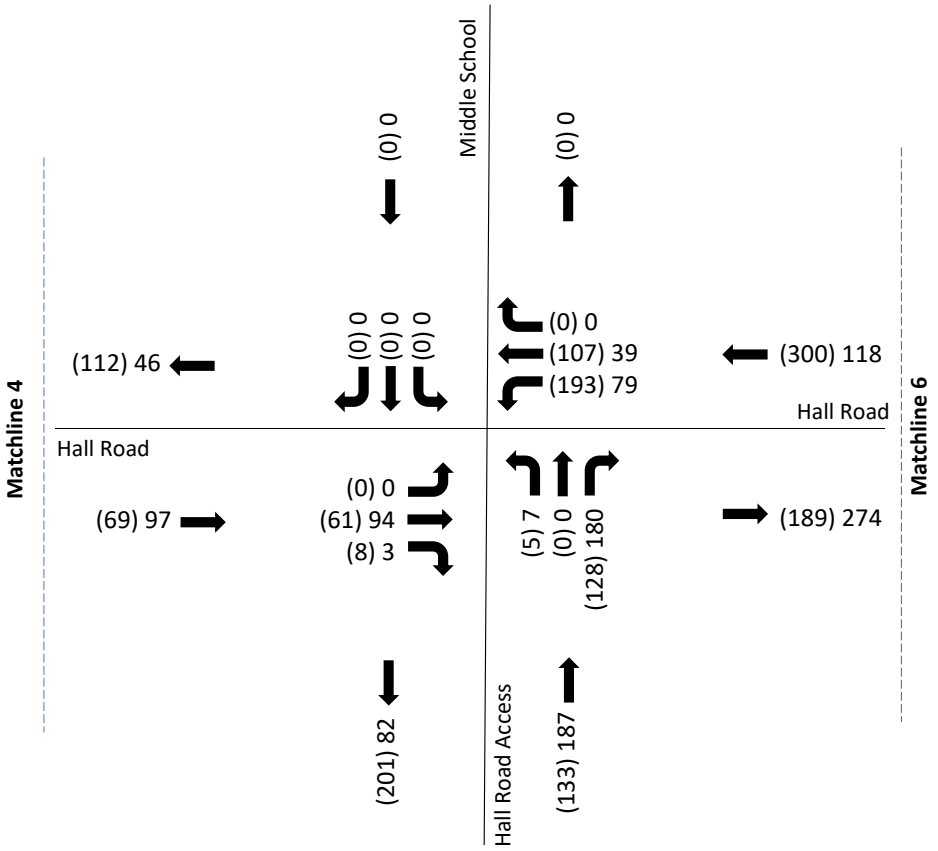


Project Traffic – (PM)/AM

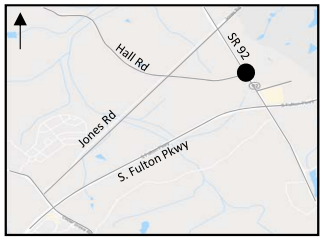


Hall Road Access

NOT TO SCALE

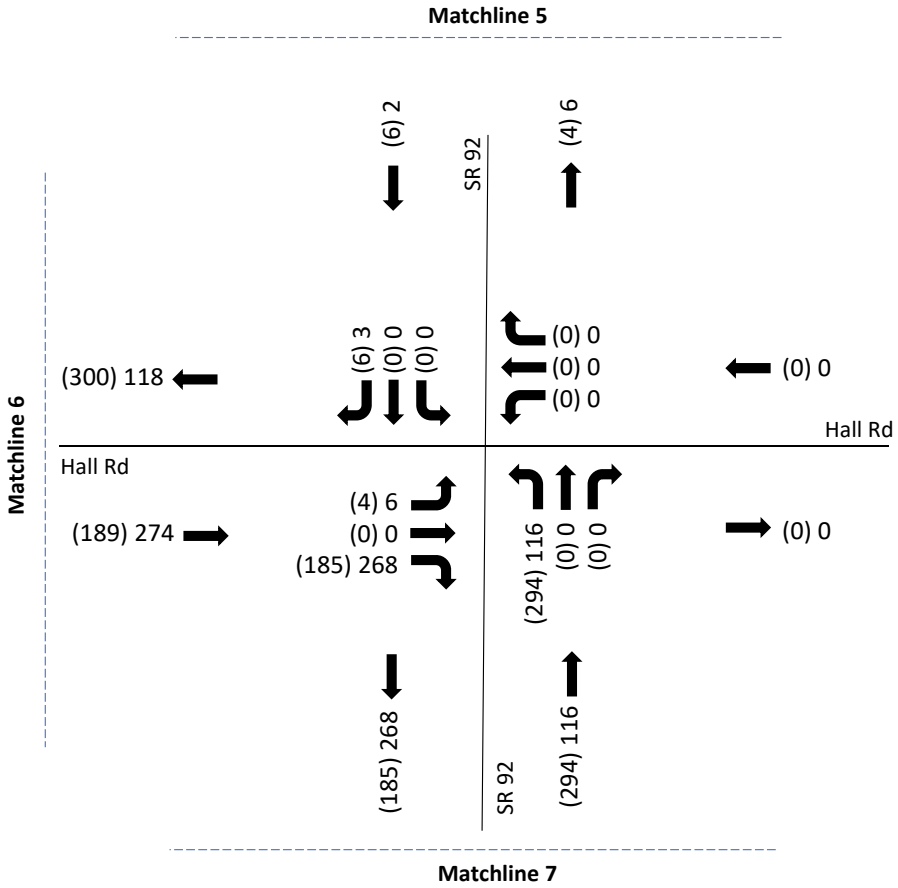


Project Traffic – (PM)/AM

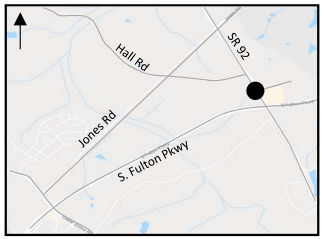


NOT TO SCALE

4: SR 92 at Hall Road

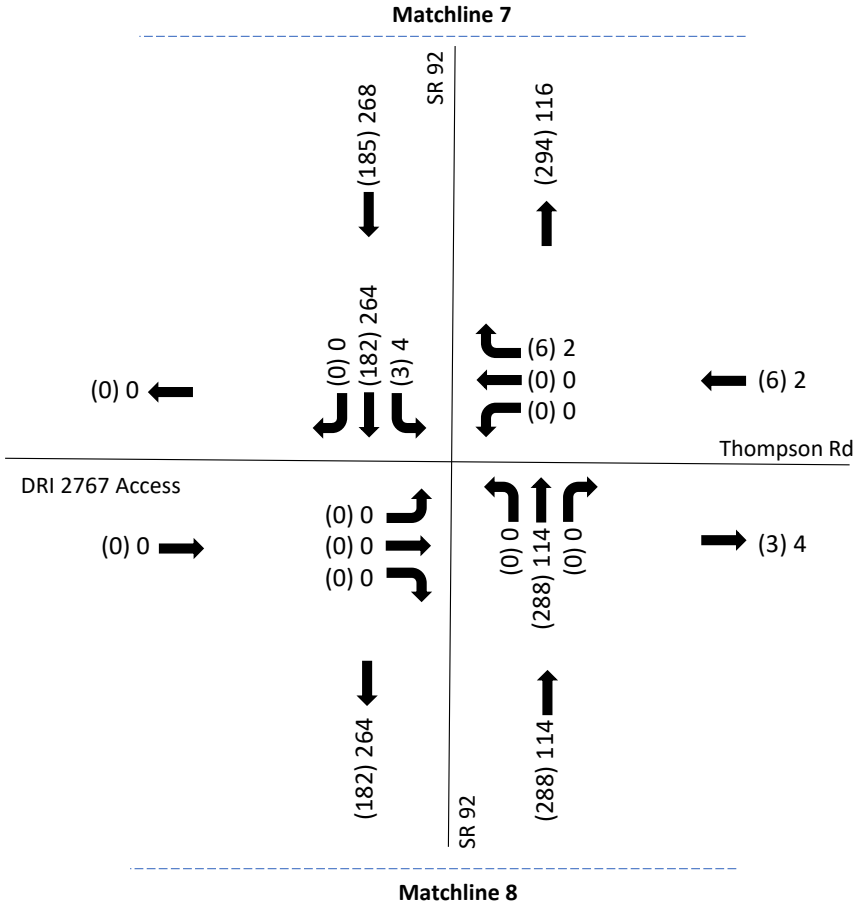


Project Traffic – (PM)/AM

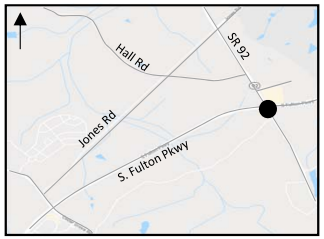


5: SR 92 at Thompson Road

NOT TO SCALE

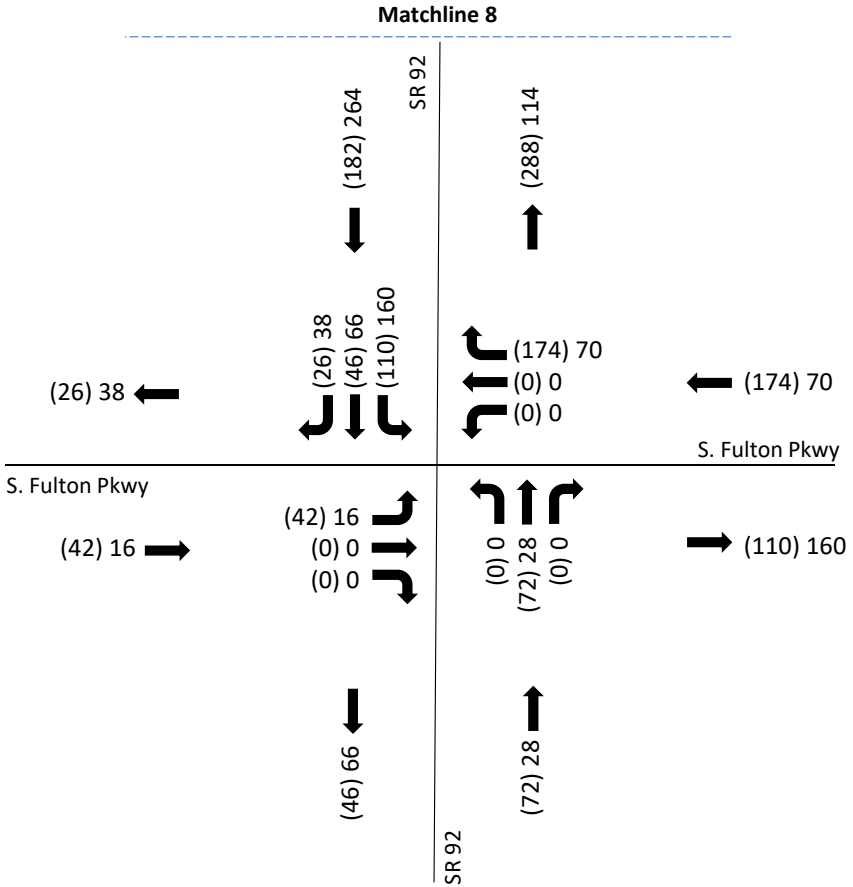


Project Traffic – (PM)/AM



6: SR 92 at South Fulton Parkway

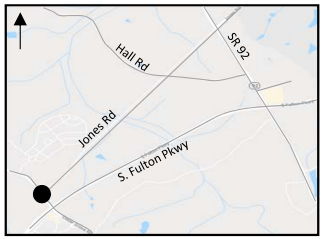
NOT TO SCALE



Project Traffic – (PM)/AM

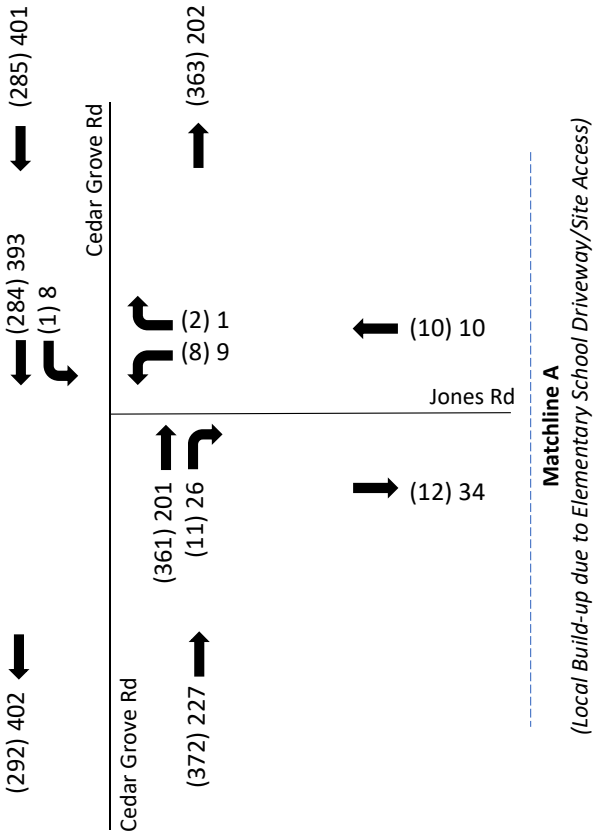
APPENDIX N

FUTURE BUILD CONDITIONS VOLUMES

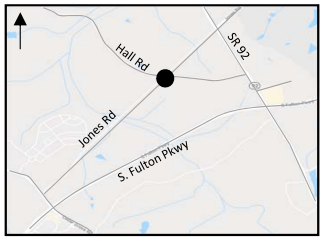


1: Cedar Grove Road at Jones Road

NOT TO SCALE

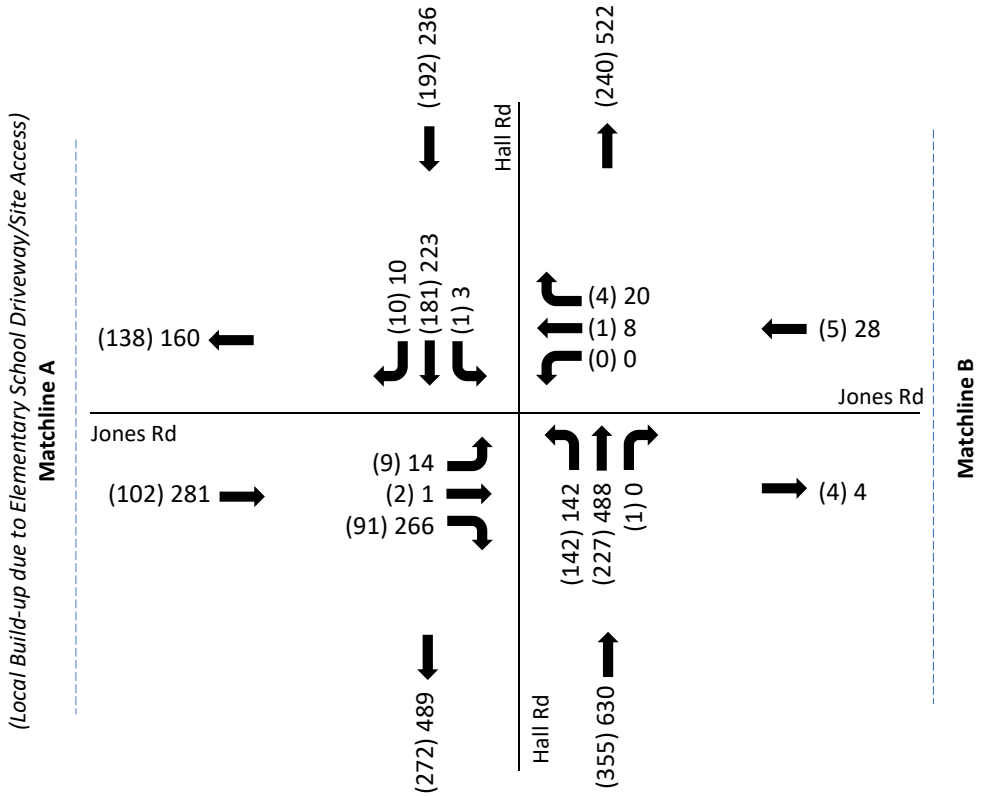


Build (2024) TMC – (PM)/AM

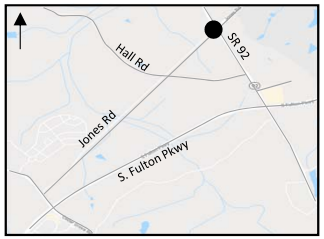


NOT TO SCALE

2: Hall Road at Jones Road

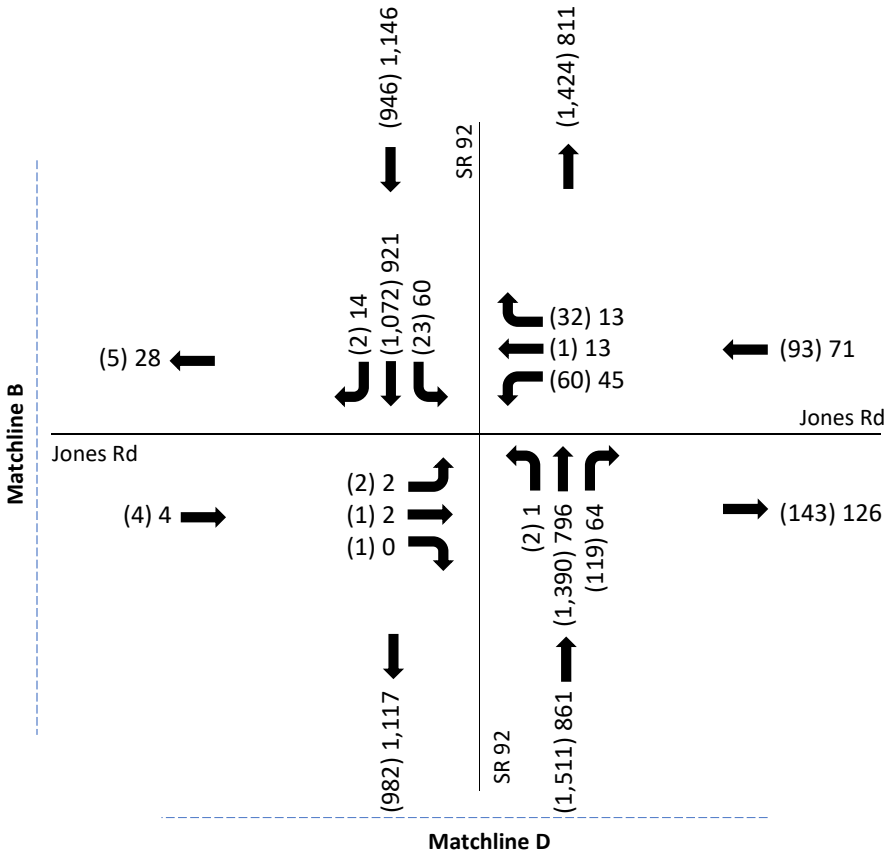


Build (2024) TMC – (PM)/AM

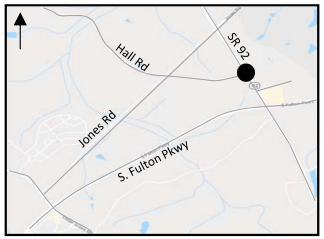


NOT TO SCALE

3: SR 92 at Jones Road

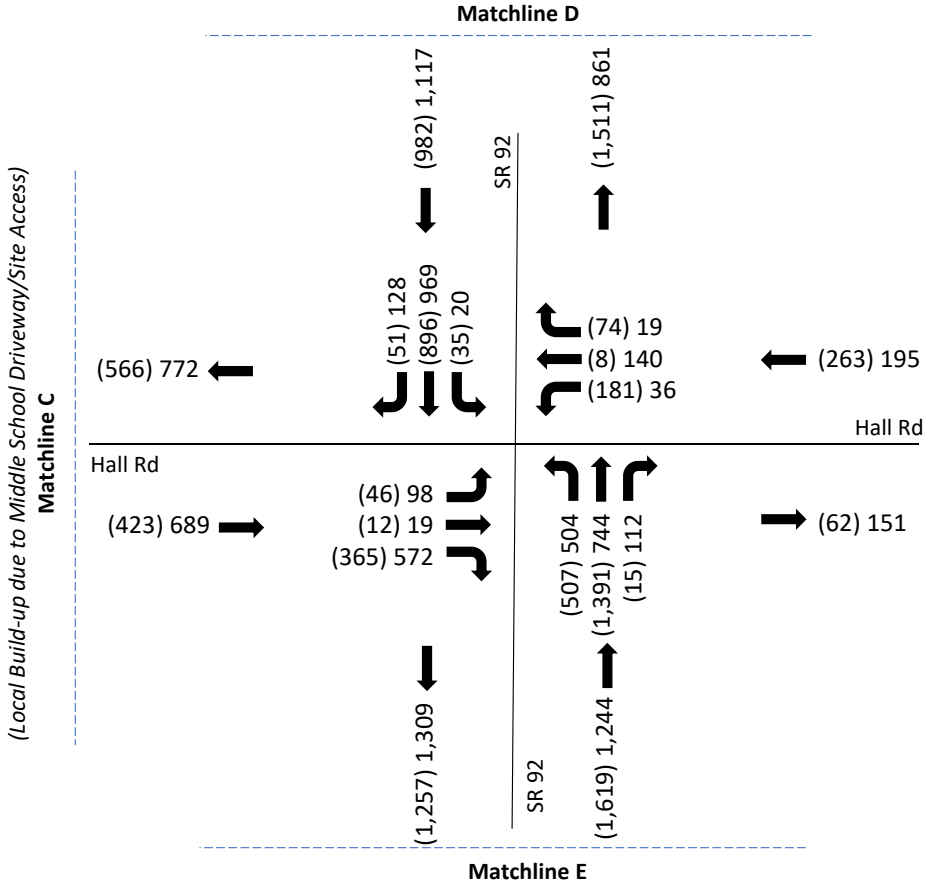


Build (2024) TMC – (PM)/AM

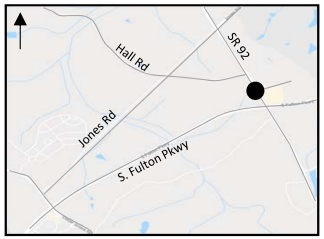


NOT TO SCALE

4: SR 92 at Hall Road

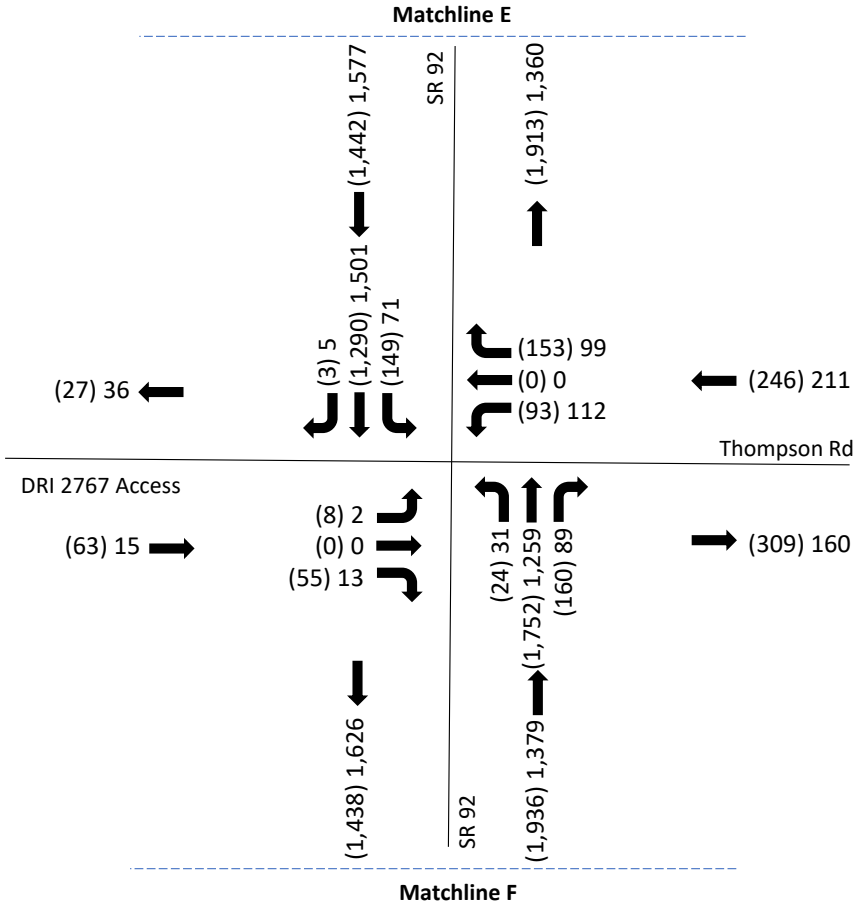


Build (2024) TMC – (PM)/AM

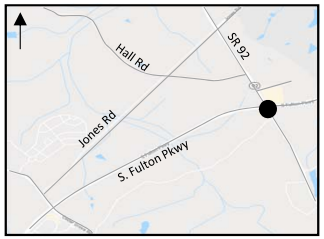


NOT TO SCALE

5: SR 92 at Thompson Road

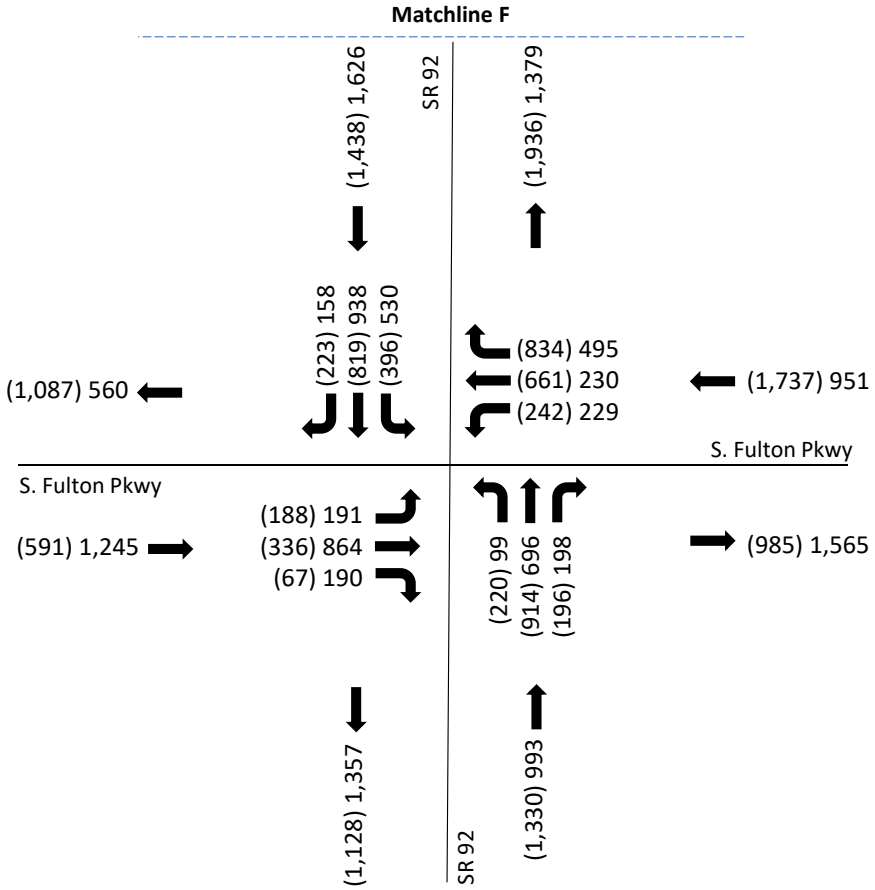


Build (2024) TMC – (PM)/AM



6: SR 92 at South Fulton Parkway

NOT TO SCALE



Build (2024) TMC – (PM)/AM

APPENDIX O

FUTURE BUILD CONDITIONS SYNCHRO REPORTS

Intersection	
Int Delay, s/veh	0.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	1	201	26	8	393
Future Vol, veh/h	9	1	201	26	8	393
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	3	4	0	0
Mvmt Flow	10	1	223	29	9	437

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	693	238	0	0	252	0
Stage 1	238	-	-	-	-	-
Stage 2	455	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	412	806	-	-	1325	-
Stage 1	806	-	-	-	-	-
Stage 2	643	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	408	806	-	-	1325	-
Mov Cap-2 Maneuver	408	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	637	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	429	1325	-
HCM Lane V/C Ratio	-	-	0.026	0.007	-
HCM Control Delay (s)	-	-	13.6	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	73.6
Intersection LOS	F

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	223	7	145	488	0	14	1	266	0	8	20
Future Vol, veh/h	3	223	7	145	488	0	14	1	266	0	8	20
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Heavy Vehicles, %	2	21	16	2	10	0	9	0	6	0	28	17
Mvmt Flow	4	265	8	173	581	0	17	1	317	0	10	24
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.3	122.7	17.7	11.6
HCM LOS	C	F	C	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	5%	1%	23%	0%
Vol Thru, %	0%	96%	77%	29%
Vol Right, %	95%	3%	0%	71%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	281	233	633	28
LT Vol	14	3	145	0
Through Vol	1	223	488	8
RT Vol	266	7	0	20
Lane Flow Rate	335	277	754	33
Geometry Grp	1	1	1	1
Degree of Util (X)	0.566	0.475	1.193	0.069
Departure Headway (Hd)	6.507	6.506	5.697	8.018
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	559	558	641	449
Service Time	4.507	4.506	3.744	6.018
HCM Lane V/C Ratio	0.599	0.496	1.176	0.073
HCM Control Delay	17.7	15.3	122.7	11.6
HCM Lane LOS	C	C	F	B
HCM 95th-tile Q	3.5	2.5	25.9	0.2

Intersection	
Int Delay, s/veh	33

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	2	0	45	13	13	1	796	64	60	1072	14
Future Vol, veh/h	2	2	0	45	13	13	1	796	64	60	1072	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	2	0	49	14	14	1	865	70	65	1165	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2219	2240	1173	2206	2212	900	1180	0	0	935	0	0
Stage 1	1303	1303	-	902	902	-	-	-	-	-	-	-
Stage 2	916	937	-	1304	1310	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	31	42	234	~ 32	44	337	592	-	-	732	-	-
Stage 1	197	231	-	332	356	-	-	-	-	-	-	-
Stage 2	326	343	-	197	229	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	16	31	234	~ 24	32	337	592	-	-	732	-	-
Mov Cap-2 Maneuver	16	31	-	~ 24	32	-	-	-	-	-	-	-
Stage 1	196	171	-	331	355	-	-	-	-	-	-	-
Stage 2	299	342	-	144	170	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	216.7	$ 948.6	0	0.5
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	592	-	-	21	31	732	-	-
HCM Lane V/C Ratio	0.002	-	-	0.207	2.489	0.089	-	-
HCM Control Delay (s)	11.1	0	-	216.7	$ 948.6	10.4	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.6	9	0.3	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	19	572	36	140	19	504	744	112	20	969	128
Future Volume (veh/h)	98	19	572	36	140	19	504	744	112	20	969	128
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	1900	1725	1743	1900	1870	1792	1743	1827	1900	1900	1810	1845
Adj Flow Rate, veh/h	101	20	0	37	144	0	520	767	0	21	999	0
Adj No. of Lanes	0	1	1	0	1	1	1	1	1	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	6	9	2	2	6	9	4	0	0	5	3
Cap, veh/h	168	25	225	76	232	231	439	1421	1256	421	927	803
Arrive On Green	0.15	0.15	0.00	0.15	0.15	0.00	0.23	0.78	0.00	0.51	0.51	0.00
Sat Flow, veh/h	767	164	1482	279	1531	1524	1660	1827	1615	712	1810	1568
Grp Volume(v), veh/h	121	0	0	181	0	0	520	767	0	21	999	0
Grp Sat Flow(s),veh/h/ln	932	0	1482	1809	0	1524	1660	1827	1615	712	1810	1568
Q Serve(g_s), s	5.1	0.0	0.0	0.0	0.0	0.0	29.5	20.5	0.0	1.9	65.5	0.0
Cycle Q Clear(g_c), s	17.0	0.0	0.0	11.9	0.0	0.0	29.5	20.5	0.0	1.9	65.5	0.0
Prop In Lane	0.83		1.00	0.20		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	193	0	225	308	0	231	439	1421	1256	421	927	803
V/C Ratio(X)	0.63	0.00	0.00	0.59	0.00	0.00	1.18	0.54	0.00	0.05	1.08	0.00
Avail Cap(c_a), veh/h	213	0	249	337	0	256	439	1421	1256	421	927	803
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.1	0.0	0.0	51.0	0.0	0.0	43.3	5.4	0.0	15.7	31.2	0.0
Incr Delay (d2), s/veh	4.9	0.0	0.0	2.2	0.0	0.0	103.8	0.4	0.0	0.0	52.9	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	4.5	0.0	0.0	6.2	0.0	0.0	28.0	10.4	0.0	0.4	46.1	0.0
LnGrp Delay(d),s/veh	59.0	0.0	0.0	53.3	0.0	0.0	147.1	5.8	0.0	15.7	84.1	0.0
LnGrp LOS	E			D			F	A		B	F	
Approach Vol, veh/h		121			181			1287			1020	
Approach Delay, s/veh		59.0			53.3			62.9			82.7	
Approach LOS		E			D			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		104.0		23.9	34.0	70.0		23.9
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		99.5		21.5	29.5	65.5		21.5
Max Q Clear Time (g_c+I1), s		22.5		19.0	31.5	67.5		13.9
Green Ext Time (p_c), s		22.4		0.4	0.0	0.0		0.9

Intersection Summary		
HCM 2010 Ctrl Delay		69.8
HCM 2010 LOS		E

Intersection	
Int Delay, s/veh	514.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	13	112	0	99	31	1259	89	71	1501	5
Future Vol, veh/h	2	0	13	112	0	99	31	1259	89	71	1501	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	0	-	175	300	-	200	325	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	38	0	0	0	35	6	4	2	6	20
Mvmt Flow	2	0	14	118	0	104	33	1325	94	75	1580	5

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2459	3121	1580	3124	-	663	1585	0	0	1325	0	0
Stage 1	1730	1730	-	1391	-	-	-	-	-	-	-	-
Stage 2	729	1391	-	1733	-	-	-	-	-	-	-	-
Critical Hdwy	7.3	6.5	6.77	7.3	-	6.9	4.625	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.5	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.5	5.5	-	6.1	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.661	3.5	-	3.3	2.5325	-	-	2.219	-	-
Pot Cap-1 Maneuver	18	12	101	~ 6	0	409	308	-	-	519	-	-
Stage 1	113	144	-	152	0	-	-	-	-	-	-	-
Stage 2	385	211	-	~ 113	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	11	9	101	~ 4	-	409	308	-	-	519	-	-
Mov Cap-2 Maneuver	11	9	-	~ 4	-	-	-	-	-	-	-	-
Stage 1	101	123	-	136	-	-	-	-	-	-	-	-
Stage 2	256	188	-	~ 84	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	58.3	$ 7752.5	0.4	0.6
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	308	-	-	83	4	409	519	-	-
HCM Lane V/C Ratio	0.106	-	-	0.19	29.474	0.255	0.144	-	-
HCM Control Delay (s)	18.1	-	-	58.1	$ 3145	90.4	16.8	13.1	-	-
HCM Lane LOS	C	-	-	F	F	C	B	-	-
HCM 95th %tile Q(veh)	0.4	-	-	0.7	16.9	1	0.5	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	191	864	190	229	230	492	99	696	198	530	938	158
Future Volume (veh/h)	191	864	190	229	230	492	99	696	198	530	938	158
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	1792	1863	1827	1570	1810	1792	1727	1787	1900	1845	1759	1792
Adj Flow Rate, veh/h	201	909	0	241	242	0	104	733	208	558	987	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	6	2	4	21	5	6	10	7	7	3	8	6
Cap, veh/h	473	910	399	256	1062	471	235	708	201	576	1265	577
Arrive On Green	0.07	0.26	0.00	0.12	0.31	0.00	0.06	0.27	0.27	0.17	0.38	0.00
Sat Flow, veh/h	1707	3539	1553	1495	3438	1524	1645	2612	741	3408	3343	1524
Grp Volume(v), veh/h	201	909	0	241	242	0	104	476	465	558	987	0
Grp Sat Flow(s),veh/h/ln	1707	1770	1553	1495	1719	1524	1645	1697	1656	1704	1671	1524
Q Serve(g_s), s	7.1	25.7	0.0	11.5	5.2	0.0	4.5	27.1	27.1	16.3	26.0	0.0
Cycle Q Clear(g_c), s	7.1	25.7	0.0	11.5	5.2	0.0	4.5	27.1	27.1	16.3	26.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.45	1.00		1.00
Lane Grp Cap(c), veh/h	473	910	399	256	1062	471	235	460	449	576	1265	577
V/C Ratio(X)	0.42	1.00	0.00	0.94	0.23	0.00	0.44	1.04	1.04	0.97	0.78	0.00
Avail Cap(c_a), veh/h	473	910	399	256	1062	471	236	460	449	576	1265	577
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.7	37.1	0.0	25.3	25.7	0.0	25.2	36.4	36.5	41.3	27.4	0.0
Incr Delay (d2), s/veh	0.6	29.7	0.0	40.4	0.1	0.0	1.3	51.4	52.0	29.6	4.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	16.2	0.0	7.6	2.5	0.0	2.1	19.2	18.8	10.0	12.8	0.0
LnGrp Delay(d),s/veh	26.3	66.8	0.0	65.7	25.8	0.0	26.5	87.9	88.4	70.9	32.2	0.0
LnGrp LOS	C	E		E	C		C	F	F	E	C	
Approach Vol, veh/h		1110			483			1045			1545	
Approach Delay, s/veh		59.5			45.7			82.0			46.2	
Approach LOS		E			D			F			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.4	31.6	16.8	30.2	10.6	42.4	11.6	35.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.9	27.1	12.3	25.7	6.2	37.8	7.1	30.9
Max Q Clear Time (g_c+I1), s	18.3	29.1	13.5	27.7	6.5	28.0	9.1	7.2
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	7.2	0.0	7.4

Intersection Summary	
HCM 2010 Ctrl Delay	58.6
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	2	361	11	1	284
Future Vol, veh/h	8	2	361	11	1	284
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	1	30	0	2
Mvmt Flow	8	2	368	11	1	290

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	666	374	0	0	379	0
Stage 1	374	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	428	677	-	-	1191	-
Stage 1	700	-	-	-	-	-
Stage 2	762	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	428	677	-	-	1191	-
Mov Cap-2 Maneuver	428	-	-	-	-	-
Stage 1	700	-	-	-	-	-
Stage 2	761	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	462	1191	-
HCM Lane V/C Ratio	-	-	0.022	0.001	-
HCM Control Delay (s)	-	-	13	8	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	181	2	135	227	1	9	2	91	0	1	4
Future Vol, veh/h	1	181	2	135	227	1	9	2	91	0	1	4
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles, %	0	5	0	3	13	0	13	0	1	0	0	0
Mvmt Flow	1	203	2	152	255	1	10	2	102	0	1	4
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	9.4	12.4	9	8.1
HCM LOS	A	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	9%	1%	37%	0%
Vol Thru, %	2%	98%	63%	20%
Vol Right, %	89%	1%	0%	80%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	102	184	363	5
LT Vol	9	1	135	0
Through Vol	2	181	227	1
RT Vol	91	2	1	4
Lane Flow Rate	115	207	408	6
Geometry Grp	1	1	1	1
Degree of Util (X)	0.159	0.267	0.516	0.008
Departure Headway (Hd)	4.995	4.644	4.554	4.988
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	715	771	791	712
Service Time	3.049	2.689	2.593	3.06
HCM Lane V/C Ratio	0.161	0.268	0.516	0.008
HCM Control Delay	9	9.4	12.4	8.1
HCM Lane LOS	A	A	B	A
HCM 95th-tile Q	0.6	1.1	3	0

Intersection	
Int Delay, s/veh	86.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	1	60	1	32	2	1390	119	23	921	2
Future Vol, veh/h	2	1	1	60	1	32	2	1390	119	23	921	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	1	1	65	1	35	2	1511	129	25	1001	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2650	2696	1002	2633	2633	1576	1003	0	0	1640	0	0
Stage 1	1052	1052	-	1580	1580	-	-	-	-	-	-	-
Stage 2	1598	1644	-	1053	1053	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	15	21	294	~ 16	24	135	690	-	-	395	-	-
Stage 1	274	303	-	137	169	-	-	-	-	-	-	-
Stage 2	134	157	-	274	303	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	9	17	294	~ 13	20	135	690	-	-	395	-	-
Mov Cap-2 Maneuver	9	17	-	~ 13	20	-	-	-	-	-	-	-
Stage 1	263	260	-	132	162	-	-	-	-	-	-	-
Stage 2	95	151	-	233	260	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 352	$ 2349.2	0	0.4
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	690	-	-	14	19	395	-	-
HCM Lane V/C Ratio	0.003	-	-	0.311	5.32	0.063	-	-
HCM Control Delay (s)	10.2	0	-	$ 352	$ 2349.2	14.7	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0	-	-	0.8	13.1	0.2	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	12	365	181	8	74	507	1391	15	35	896	51
Future Volume (veh/h)	46	12	365	181	8	74	507	1391	15	35	896	51
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	1900	1865	1845	1900	1900	1881	1792	1845	1900	1900	1792	1681
Adj Flow Rate, veh/h	50	13	0	197	9	0	551	1512	0	38	974	0
Adj No. of Lanes	0	1	1	0	1	1	1	1	1	1	1	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	3	0	0	1	6	3	0	0	6	13
Cap, veh/h	238	57	218	252	9	223	472	1469	1286	51	928	740
Arrive On Green	0.14	0.14	0.00	0.14	0.14	0.00	0.25	0.80	0.00	0.52	0.52	0.00
Sat Flow, veh/h	1379	408	1568	1448	66	1599	1707	1845	1615	351	1792	1429
Grp Volume(v), veh/h	63	0	0	206	0	0	551	1512	0	38	974	0
Grp Sat Flow(s),veh/h/ln	1787	0	1568	1514	0	1599	1707	1845	1615	351	1792	1429
Q Serve(g_s), s	0.0	0.0	0.0	14.6	0.0	0.0	34.5	111.5	0.0	0.0	72.5	0.0
Cycle Q Clear(g_c), s	4.4	0.0	0.0	18.9	0.0	0.0	34.5	111.5	0.0	72.5	72.5	0.0
Prop In Lane	0.79		1.00	0.96		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	0	218	261	0	223	472	1469	1286	51	928	740
V/C Ratio(X)	0.21	0.00	0.00	0.79	0.00	0.00	1.17	1.03	0.00	0.74	1.05	0.00
Avail Cap(c_a), veh/h	295	0	218	261	0	223	472	1469	1286	51	928	740
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.7	0.0	0.0	59.6	0.0	0.0	47.5	14.3	0.0	70.0	33.8	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	14.9	0.0	0.0	96.0	31.3	0.0	42.9	43.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	9.0	0.0	0.0	30.8	68.3	0.0	2.1	46.8	0.0
LnGrp Delay(d),s/veh	54.1	0.0	0.0	74.5	0.0	0.0	143.5	45.5	0.0	112.9	77.1	0.0
LnGrp LOS	D			E			F	F		F	F	
Approach Vol, veh/h		63			206			2063			1012	
Approach Delay, s/veh		54.1			74.5			71.7			78.4	
Approach LOS		D			E			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		116.0		24.0	39.0	77.0		24.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		111.5		19.5	34.5	72.5		19.5
Max Q Clear Time (g_c+I1), s		113.5		6.4	36.5	74.5		20.9
Green Ext Time (p_c), s		0.0		1.1	0.0	0.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	73.6
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	1300.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	0	55	93	0	153	24	1752	160	149	1290	3
Future Vol, veh/h	8	0	55	93	0	153	24	1752	160	149	1290	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Yield	-	-	Yield	-	-	Yield	-	-	None
Storage Length	-	-	-	0	-	175	300	-	200	325	-	200
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	13	0	27	5	0	1	29	4	0	4	4	0
Mvmt Flow	8	0	58	98	0	161	25	1844	168	157	1358	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2644	3566	1358	3568	-	922	1361	0	0	1844	0	0
Stage 1	1672	1672	-	1894	-	-	-	-	-	-	-	-
Stage 2	972	1894	-	1674	-	-	-	-	-	-	-	-
Critical Hdwy	7.495	6.5	6.605	7.375	-	6.915	4.535	-	-	4.16	-	-
Critical Hdwy Stg 1	6.295	5.5	-	6.575	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.695	5.5	-	6.175	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.6235	4	3.5565	3.5475	-	3.3095	2.4755	-	-	2.238	-	-
Pot Cap-1 Maneuver	12	6	152	~ 2	0	274	403	-	-	321	-	-
Stage 1	110	154	-	~ 70	0	-	-	-	-	-	-	-
Stage 2	255	119	-	117	0	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 3	3	152	~ 1	-	274	403	-	-	321	-	-
Mov Cap-2 Maneuver	~ 3	3	-	~ 1	-	-	-	-	-	-	-	-
Stage 1	103	79	-	~ 66	-	-	-	-	-	-	-	-
Stage 2	99	112	-	~ 37	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	$ 1275.6	$ 19144.9	0.2	2.7
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	403	-	-	22	1	274	321	-	-
HCM Lane V/C Ratio	0.063	-	-	3.014	97.895	0.588	0.489	-	-
HCM Control Delay (s)	14.5	-	-	$ 1275.6	$ 60583.4	35.3	26.5	-	-
HCM Lane LOS	B	-	-	F	F	E	D	-	-
HCM 95th %tile Q(veh)	0.2	-	-	8.5	14.6	3.4	2.6	-	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	188	393	67	242	644	834	220	914	196	396	819	223
Future Volume (veh/h)	188	393	67	242	644	834	220	914	196	396	819	223
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	1810	1827	1712	1792	1881	1827	1792	1815	1900	1792	1792	1845
Adj Flow Rate, veh/h	200	418	0	257	685	0	234	972	209	421	871	0
Adj No. of Lanes	1	2	1	1	2	1	1	2	0	2	2	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	5	4	11	6	1	4	6	4	4	6	6	3
Cap, veh/h	216	643	269	361	984	428	372	1100	236	458	1456	670
Arrive On Green	0.05	0.19	0.00	0.14	0.28	0.00	0.10	0.39	0.39	0.14	0.43	0.00
Sat Flow, veh/h	1723	3471	1455	1707	3574	1553	1707	2825	606	3312	3406	1568
Grp Volume(v), veh/h	200	418	0	257	685	0	234	593	588	421	871	0
Grp Sat Flow(s),veh/h/ln	1723	1736	1455	1707	1787	1553	1707	1724	1708	1656	1703	1568
Q Serve(g_s), s	5.5	13.3	0.0	14.0	20.5	0.0	9.7	38.2	38.3	15.0	23.5	0.0
Cycle Q Clear(g_c), s	5.5	13.3	0.0	14.0	20.5	0.0	9.7	38.2	38.3	15.0	23.5	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	216	643	269	361	984	428	372	671	665	458	1456	670
V/C Ratio(X)	0.93	0.65	0.00	0.71	0.70	0.00	0.63	0.88	0.88	0.92	0.60	0.00
Avail Cap(c_a), veh/h	216	1125	472	419	1602	696	443	671	665	458	1456	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	47.5	45.1	0.0	32.1	38.8	0.0	20.5	33.9	33.9	50.8	26.3	0.0
Incr Delay (d2), s/veh	41.7	1.1	0.0	4.7	0.9	0.0	2.1	15.6	15.9	23.8	1.8	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	6.5	0.0	7.0	10.2	0.0	4.8	21.0	20.9	8.4	11.4	0.0
LnGrp Delay(d),s/veh	89.1	46.2	0.0	36.8	39.7	0.0	22.6	49.4	49.9	74.6	28.1	0.0
LnGrp LOS	F	D		D	D		C	D	D	E	C	
Approach Vol, veh/h		618			942			1415			1292	
Approach Delay, s/veh		60.1			38.9			45.2			43.2	
Approach LOS		E			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.0	51.0	20.8	26.6	16.5	55.5	10.0	37.4
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	16.5	46.5	20.3	38.7	16.9	46.1	5.5	53.5
Max Q Clear Time (g_c+I1), s	17.0	40.3	16.0	15.3	11.7	25.5	7.5	22.5
Green Ext Time (p_c), s	0.0	5.0	0.3	6.8	0.3	13.3	0.0	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	45.4
HCM 2010 LOS	D

APPENDIX P

SR 92 HCS ANALYSIS

HCS7 Multilane Highway Report

Project Information

Analyst	VHB	Date	7/3/2019
Agency		Analysis Year	2024
Jurisdiction		Time Period Analyzed	
Project Description	Build Conditions -		

Direction 2 Geometric Data

Direction 2	SB		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12.00
Access Point Density, pts/mi	10.0	Free-Flow Speed (FFS), mi/h	40.9

Direction 2 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 2 Demand and Capacity

Volume(V) veh/h	1438	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	804
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.42

Direction 2 Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	19.7
Median Type Adjustment (f_M)	1.6	Level of Service (LOS)	C
Access Point Density Adjustment (f_A)	2.5		

Direction 2 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	765	Effective Speed Factor (S_t)	4.42
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.73
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

HCS7 Multilane Highway Report

Project Information

Analyst	VHB	Date	7/3/2019
Agency		Analysis Year	2024
Jurisdiction		Time Period Analyzed	
Project Description	Build Conditions -		

Direction 1 Geometric Data

Direction 1	NB		
Number of Lanes (N), ln	2	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	45.0	Total Ramp Density (TRD), ramps/mi	0.00
Lane Width, ft	12	Left-Side Lateral Clearance (LC_R), ft	6
Median Type	Undivided	Total Lateral Clearance (TLC), ft	12.00
Access Point Density, pts/mi	10.0	Free-Flow Speed (FFS), mi/h	40.9

Direction 1 Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Driver Population SAF	1.000	Final Capacity Adjustment Factor (CAF)	1.000
Driver Population CAF	1.000		

Direction 1 Demand and Capacity

Volume(V) veh/h	1936	Heavy Vehicle Adjustment Factor (f_{HV})	0.952
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	1082
Total Trucks, %	5.00	Capacity (c), pc/h/ln	1900
Single-Unit Trucks (SUT), %	-	Adjusted Capacity (c_{adj}), pc/h/ln	1900
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.57

Direction 1 Speed and Density

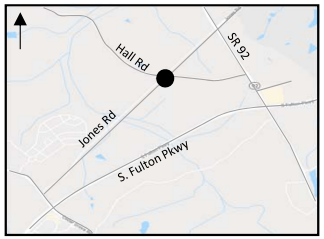
Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	40.9
Total Lateral Clearance Adj. (f_{LLC})	0.0	Density (D), pc/mi/ln	26.5
Median Type Adjustment (f_M)	1.6	Level of Service (LOS)	D
Access Point Density Adjustment (f_A)	2.5		

Direction 1 Bicycle LOS

Flow Rate in Outside Lane (v_{OL}),veh/h	1030	Effective Speed Factor (S_t)	4.42
Effective Width of Volume (W_v), ft	18	Bicyle LOS Score (BLOS)	3.88
Average Effective Width (W_e), ft	24	Bicycle Level of Service (LOS)	D

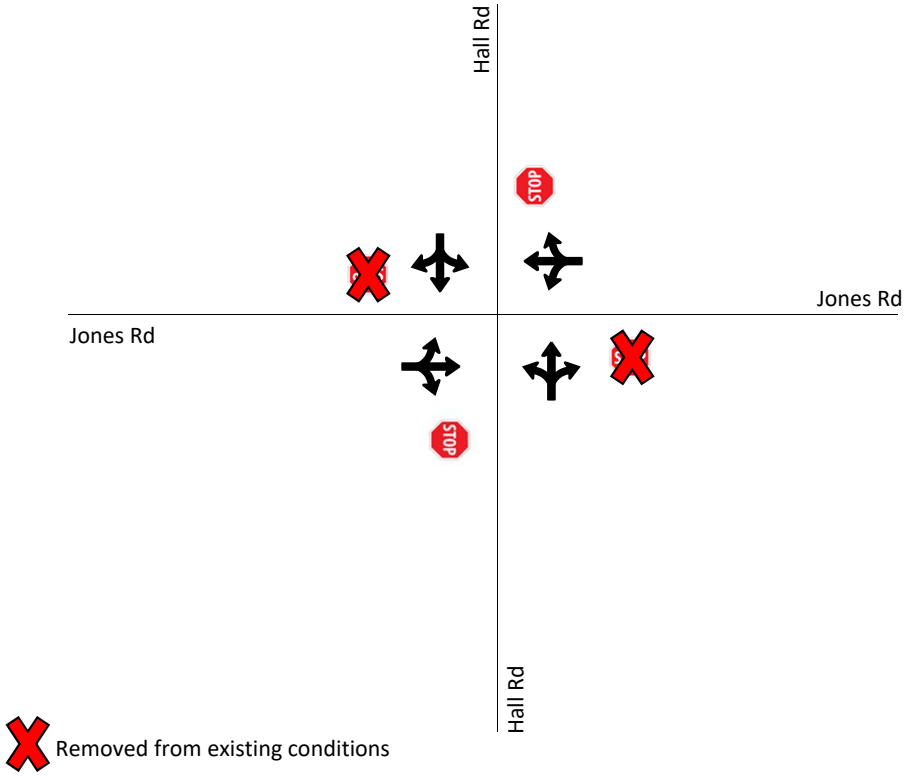
APPENDIX Q

RECOMMENDED LANE CONFIGURATIONS AND IMPROVMENTS SYNCHRO REPORTS

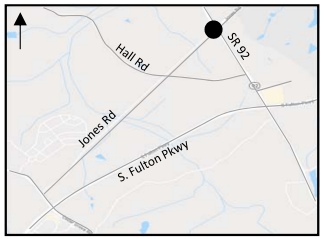


2: Hall Road at Jones Road

NOT TO SCALE

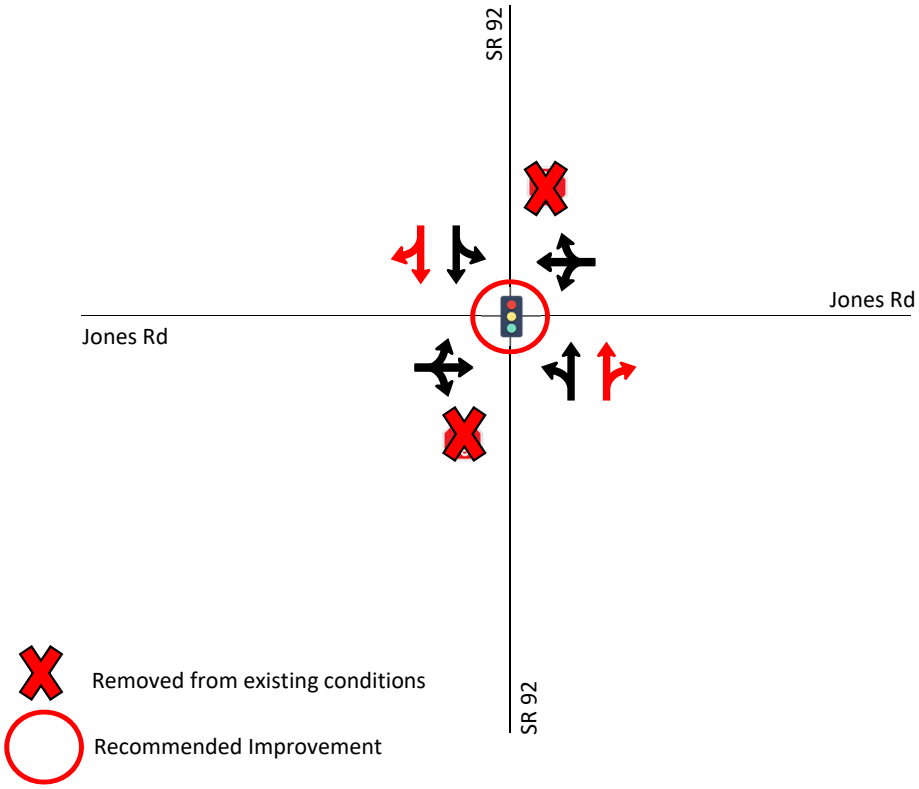


Recommended Improvements

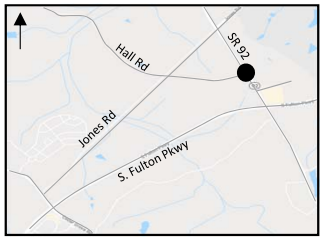


3: SR 92 at Jones Road

NOT TO SCALE

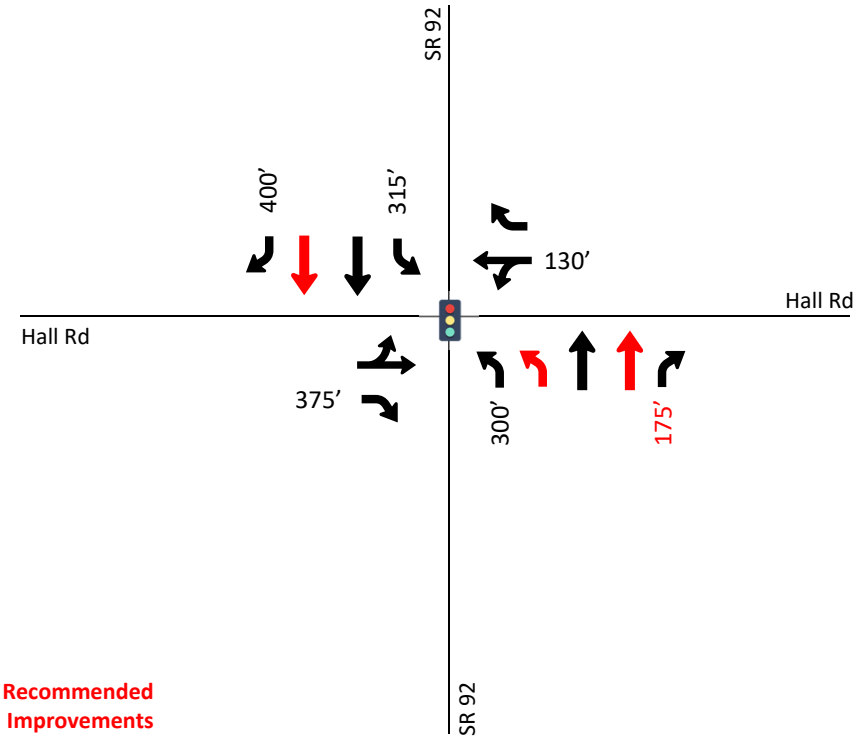


Recommended Improvements

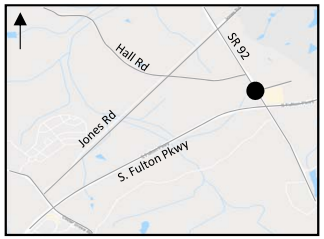


4: SR 92 at Hall Road

NOT TO SCALE

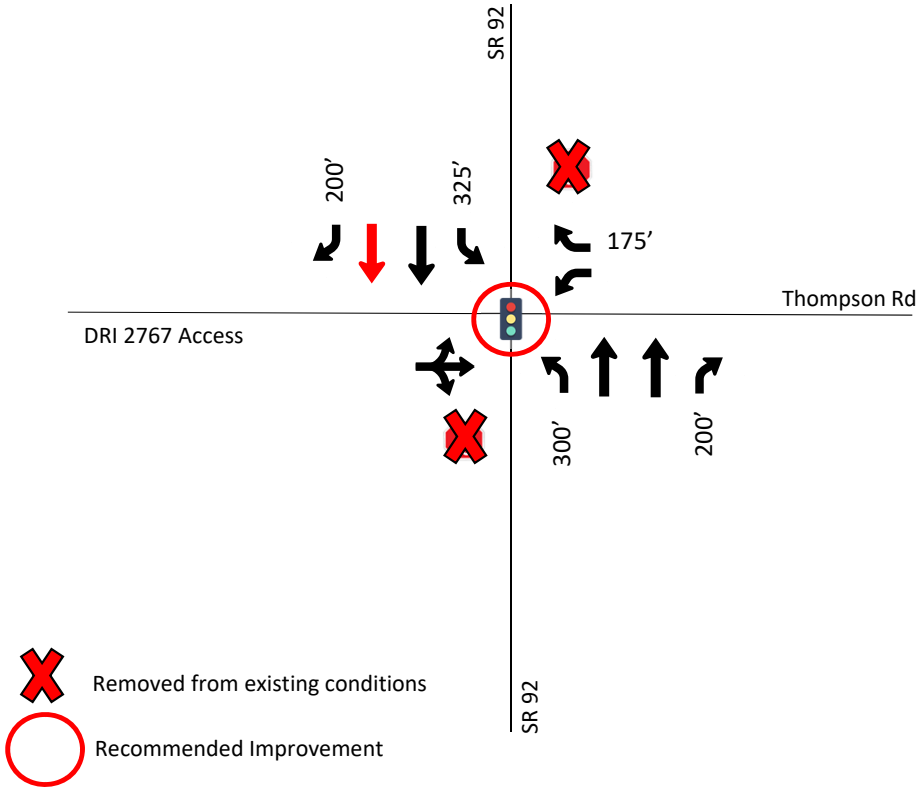


Recommended Improvements



5: SR 92 at Thompson Road

NOT TO SCALE



Recommended Improvements

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	222	7	100	487	0	7	1	170	0	8	20
Future Vol, veh/h	3	222	7	100	487	0	7	1	170	0	8	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	21	16	2	10	0	16	0	8	0	29	17
Mvmt Flow	4	264	8	119	580	0	8	1	202	0	10	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	580	0	0	272	0	0	1111	1094	268	1196	1098	580
Stage 1	-	-	-	-	-	-	276	276	-	818	818	-
Stage 2	-	-	-	-	-	-	835	818	-	378	280	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.26	6.5	6.28	7.1	6.79	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-	6.26	5.5	-	6.1	5.79	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.26	5.5	-	6.1	5.79	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.644	4	3.372	3.5	4.261	3.453
Pot Cap-1 Maneuver	994	-	-	1291	-	-	175	216	756	164	190	487
Stage 1	-	-	-	-	-	-	701	685	-	373	354	-
Stage 2	-	-	-	-	-	-	343	393	-	648	633	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	994	-	-	1291	-	-	142	186	756	107	163	487
Mov Cap-2 Maneuver	-	-	-	-	-	-	142	186	-	107	163	-
Stage 1	-	-	-	-	-	-	697	682	-	371	306	-
Stage 2	-	-	-	-	-	-	273	340	-	471	630	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.4	13.4	18
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	637	994	-	-	1291	-	-	311
HCM Lane V/C Ratio	0.333	0.004	-	-	0.092	-	-	0.107
HCM Control Delay (s)	13.4	8.6	0	-	8.1	0	-	18
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.5	0	-	-	0.3	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	2	0	45	13	13	1	790	64	60	1070	14
Future Volume (veh/h)	2	2	0	45	13	13	1	790	64	60	1070	14
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	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	2	0	49	14	14	1	859	70	65	1163	15
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	82	0	230	21	21	96	2223	181	167	2213	28
Arrive On Green	0.08	0.08	0.00	0.08	0.08	0.08	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	662	1084	0	963	275	275	0	3245	264	90	3230	41
Grp Volume(v), veh/h	4	0	0	77	0	0	493	0	437	624	0	619
Grp Sat Flow(s),veh/h/ln	1746	0	0	1514	0	0	1862	0	1648	1673	0	1688
Q Serve(g_s), s	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	4.3	0.0	0.0	6.9
Cycle Q Clear(g_c), s	0.1	0.0	0.0	1.9	0.0	0.0	4.3	0.0	4.3	6.0	0.0	6.9
Prop In Lane	0.50		0.00	0.64		0.18	0.00		0.16	0.10		0.02
Lane Grp Cap(c), veh/h	276	0	0	271	0	0	1371	0	1129	1252	0	1156
V/C Ratio(X)	0.01	0.00	0.00	0.28	0.00	0.00	0.36	0.00	0.39	0.50	0.00	0.54
Avail Cap(c_a), veh/h	913	0	0	878	0	0	1727	0	1446	1545	0	1480
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.1	0.0	0.0	16.9	0.0	0.0	2.5	0.0	2.5	2.8	0.0	2.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	0.0	0.2	0.0	0.2	0.3	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	0.8	0.0	0.0	2.1	0.0	1.9	3.1	0.0	3.2
LnGrp Delay(d),s/veh	16.1	0.0	0.0	17.5	0.0	0.0	2.7	0.0	2.8	3.1	0.0	3.3
LnGrp LOS	B			B			A		A	A		A
Approach Vol, veh/h		4			77			930			1243	
Approach Delay, s/veh		16.1			17.5			2.7			3.2	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		30.3		7.4		30.3		7.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		33.0		18.0		33.0		18.0
Max Q Clear Time (g_c+I1), s		6.3		2.1		8.9		3.9
Green Ext Time (p_c), s		18.2		0.2		16.9		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	3.5
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	19	304	36	140	19	388	744	112	20	969	126
Future Volume (veh/h)	92	19	304	36	140	19	388	744	112	20	969	126
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	1900	1712	1652	1900	1870	1792	1712	1827	1900	1900	1810	1845
Adj Flow Rate, veh/h	95	20	0	37	144	0	400	767	0	21	999	0
Adj No. of Lanes	0	1	1	0	1	1	2	1	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	6	15	2	2	6	11	4	0	0	5	3
Cap, veh/h	252	42	202	108	224	219	901	1292	1142	472	1822	831
Arrive On Green	0.14	0.14	0.00	0.14	0.14	0.00	0.10	0.71	0.00	0.53	0.53	0.00
Sat Flow, veh/h	999	293	1404	254	1557	1524	3163	1827	1615	712	3438	1568
Grp Volume(v), veh/h	115	0	0	181	0	0	400	767	0	21	999	0
Grp Sat Flow(s),veh/h/ln	1292	0	1404	1811	0	1524	1581	1827	1615	712	1719	1568
Q Serve(g_s), s	0.0	0.0	0.0	0.8	0.0	0.0	2.9	12.8	0.0	0.9	11.6	0.0
Cycle Q Clear(g_c), s	4.8	0.0	0.0	5.6	0.0	0.0	2.9	12.8	0.0	3.0	11.6	0.0
Prop In Lane	0.83		1.00	0.20		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	0	202	332	0	219	901	1292	1142	472	1822	831
V/C Ratio(X)	0.39	0.00	0.00	0.54	0.00	0.00	0.44	0.59	0.00	0.04	0.55	0.00
Avail Cap(c_a), veh/h	496	0	435	622	0	472	1776	2794	2470	860	3697	1686
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	24.1	0.0	0.0	24.5	0.0	0.0	6.4	4.5	0.0	7.9	9.4	0.0
Incr Delay (d2), s/veh	0.8	0.0	0.0	1.4	0.0	0.0	0.3	0.4	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.0	0.0	3.0	0.0	0.0	1.3	6.3	0.0	0.2	5.5	0.0
LnGrp Delay(d),s/veh	25.0	0.0	0.0	25.9	0.0	0.0	6.8	4.9	0.0	8.0	9.7	0.0
LnGrp LOS	C			C			A	A		A	A	
Approach Vol, veh/h		115			181			1167			1020	
Approach Delay, s/veh		25.0			25.9			5.5			9.6	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		47.2		13.2	10.7	36.5		13.2
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		92.3		18.7	22.9	64.9		18.7
Max Q Clear Time (g_c+I1), s		14.8		6.8	4.9	13.6		7.6
Green Ext Time (p_c), s		19.9		1.2	1.3	18.4		1.1

Intersection Summary		
HCM 2010 Ctrl Delay		9.6
HCM 2010 LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	13	112	0	97	31	1145	89	67	1237	5
Future Volume (veh/h)	2	0	13	112	0	97	31	1145	89	67	1237	5
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	1900	1426	1900	1900	1900	1900	1407	1792	1827	1863	1776	1583
Adj Flow Rate, veh/h	2	0	0	118	0	0	33	1205	0	71	1302	5
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	35	6	4	2	7	20
Cap, veh/h	238	0	0	253	0	166	301	2608	1189	400	2584	1031
Arrive On Green	0.10	0.00	0.00	0.10	0.00	0.00	0.77	0.77	0.00	0.77	0.77	0.77
Sat Flow, veh/h	1296	0	0	1445	0	1615	317	3406	1553	462	3374	1346
Grp Volume(v), veh/h	2	0	0	118	0	0	33	1205	0	71	1302	5
Grp Sat Flow(s),veh/h/ln	1296	0	0	1445	0	1615	317	1703	1553	462	1687	1346
Q Serve(g_s), s	0.0	0.0	0.0	5.4	0.0	0.0	3.0	8.8	0.0	4.5	10.1	0.1
Cycle Q Clear(g_c), s	0.1	0.0	0.0	5.5	0.0	0.0	13.1	8.8	0.0	13.3	10.1	0.1
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	238	0	0	253	0	166	301	2608	1189	400	2584	1031
V/C Ratio(X)	0.01	0.00	0.00	0.47	0.00	0.00	0.11	0.46	0.00	0.18	0.50	0.00
Avail Cap(c_a), veh/h	412	0	0	485	0	425	397	3634	1657	539	3600	1436
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	27.6	0.0	0.0	30.0	0.0	0.0	5.6	2.9	0.0	5.3	3.1	1.9
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.3	0.0	0.0	0.2	0.1	0.0	0.2	0.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	2.3	0.0	0.0	0.3	4.1	0.0	0.6	4.6	0.0
LnGrp Delay(d),s/veh	27.6	0.0	0.0	31.3	0.0	0.0	5.7	3.0	0.0	5.5	3.2	1.9
LnGrp LOS	C			C			A	A		A	A	A
Approach Vol, veh/h		2			118			1238			1378	
Approach Delay, s/veh		27.6			31.3			3.1			3.3	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		56.9		11.5		56.9		11.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		73.0		18.0		73.0		18.0
Max Q Clear Time (g_c+I1), s		15.1		2.1		15.3		7.5
Green Ext Time (p_c), s		37.2		0.5		37.1		0.4

Intersection Summary		
HCM 2010 Ctrl Delay		4.4
HCM 2010 LOS		A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1	0	60	1	32	1	1386	119	23	915	2
Future Volume (veh/h)	2	1	0	60	1	32	1	1386	119	23	915	2
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	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	1	0	65	1	35	1	1507	129	25	995	2
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	76	0	223	1	44	86	2262	192	109	2368	5
Arrive On Green	0.09	0.09	0.00	0.09	0.09	0.09	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	870	881	0	949	15	511	0	3234	275	27	3385	7
Grp Volume(v), veh/h	3	0	0	101	0	0	863	0	774	517	0	505
Grp Sat Flow(s),veh/h/ln	1751	0	0	1475	0	0	1862	0	1647	1725	0	1694
Q Serve(g_s), s	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	11.2	0.0	0.0	5.4
Cycle Q Clear(g_c), s	0.1	0.0	0.0	2.8	0.0	0.0	10.9	0.0	11.2	4.8	0.0	5.4
Prop In Lane	0.67		0.00	0.64		0.35	0.00		0.17	0.05		0.00
Lane Grp Cap(c), veh/h	294	0	0	268	0	0	1388	0	1152	1297	0	1185
V/C Ratio(X)	0.01	0.00	0.00	0.38	0.00	0.00	0.62	0.00	0.67	0.40	0.00	0.43
Avail Cap(c_a), veh/h	809	0	0	773	0	0	1552	0	1296	1428	0	1333
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.5	0.0	0.0	18.8	0.0	0.0	3.5	0.0	3.6	2.6	0.0	2.7
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.9	0.0	0.0	0.6	0.0	1.2	0.2	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.2	0.0	0.0	5.5	0.0	5.3	2.5	0.0	2.5
LnGrp Delay(d),s/veh	17.6	0.0	0.0	19.7	0.0	0.0	4.2	0.0	4.7	2.8	0.0	2.9
LnGrp LOS	B			B			A		A	A		A
Approach Vol, veh/h		3			101			1637			1022	
Approach Delay, s/veh		17.6			19.7			4.4			2.9	
Approach LOS		B			B			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		33.8		8.1		33.8		8.1
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		33.0		18.0		33.0		18.0
Max Q Clear Time (g_c+I1), s		13.2		2.1		7.4		4.8
Green Ext Time (p_c), s		16.1		0.4		19.9		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	4.4
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	55	93	0	147	24	1464	160	146	1108	3
Future Volume (veh/h)	8	0	55	93	0	147	24	1464	160	146	1108	3
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	1900	1516	1900	1900	1810	1881	1473	1827	1900	1827	1810	1900
Adj Flow Rate, veh/h	8	0	0	98	0	0	25	1541	0	154	1166	3
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	1	29	4	0	4	5	0
Cap, veh/h	216	0	0	217	0	142	253	2757	1282	301	1437	1282
Arrive On Green	0.09	0.00	0.00	0.09	0.00	0.00	0.79	0.79	0.00	0.79	0.79	0.79
Sat Flow, veh/h	1378	0	0	1392	0	1599	378	3471	1615	329	1810	1615
Grp Volume(v), veh/h	8	0	0	98	0	0	25	1541	0	154	1166	3
Grp Sat Flow(s),veh/h/ln	1378	0	0	1392	0	1599	378	1736	1615	329	1810	1615
Q Serve(g_s), s	0.0	0.0	0.0	4.9	0.0	0.0	3.1	12.6	0.0	25.0	28.6	0.0
Cycle Q Clear(g_c), s	0.4	0.0	0.0	5.3	0.0	0.0	31.8	12.6	0.0	37.7	28.6	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	216	0	0	217	0	142	253	2757	1282	301	1437	1282
V/C Ratio(X)	0.04	0.00	0.00	0.45	0.00	0.00	0.10	0.56	0.00	0.51	0.81	0.00
Avail Cap(c_a), veh/h	384	0	0	418	0	375	263	2852	1327	310	1487	1327
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	32.0	0.0	0.0	34.2	0.0	0.0	13.8	2.9	0.0	9.9	4.6	1.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.5	0.0	0.0	0.2	0.2	0.0	1.3	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.1	0.0	0.0	0.3	5.9	0.0	2.3	15.0	0.0
LnGrp Delay(d),s/veh	32.1	0.0	0.0	35.7	0.0	0.0	13.9	3.2	0.0	11.2	8.0	1.6
LnGrp LOS	C			D			B	A		B	A	A
Approach Vol, veh/h		8			98			1566			1323	
Approach Delay, s/veh		32.1			35.7			3.3			8.4	
Approach LOS		C			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		65.4		11.3		65.4		11.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		63.0		18.0		63.0		18.0
Max Q Clear Time (g_c+I1), s		33.8		2.4		39.7		7.3
Green Ext Time (p_c), s		26.1		0.4		21.2		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	6.7
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	223	7	145	488	0	14	1	266	0	8	20
Future Vol, veh/h	3	223	7	145	488	0	14	1	266	0	8	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	21	16	2	10	0	9	0	6	0	28	17
Mvmt Flow	4	265	8	173	581	0	17	1	317	0	10	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	581	0	0	273	0	0	1221	1204	269	1363	1208	581
Stage 1	-	-	-	-	-	-	277	277	-	927	927	-
Stage 2	-	-	-	-	-	-	944	927	-	436	281	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.19	6.5	6.26	7.1	6.78	6.37
Critical Hdwy Stg 1	-	-	-	-	-	-	6.19	5.5	-	6.1	5.78	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.19	5.5	-	6.1	5.78	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.581	4	3.354	3.5	4.252	3.453
Pot Cap-1 Maneuver	993	-	-	1290	-	-	152	186	760	126	163	486
Stage 1	-	-	-	-	-	-	714	685	-	324	314	-
Stage 2	-	-	-	-	-	-	306	350	-	603	634	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	993	-	-	1290	-	-	116	148	760	62	130	486
Mov Cap-2 Maneuver	-	-	-	-	-	-	116	148	-	62	130	-
Stage 1	-	-	-	-	-	-	710	682	-	322	252	-
Stage 2	-	-	-	-	-	-	225	281	-	349	631	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.9	18.8	20
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	589	993	-	-	1290	-	-	273
HCM Lane V/C Ratio	0.568	0.004	-	-	0.134	-	-	0.122
HCM Control Delay (s)	18.8	8.6	0	-	8.2	0	-	20
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	3.5	0	-	-	0.5	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	2	0	45	13	13	1	796	64	60	1072	14
Future Volume (veh/h)	2	2	0	45	13	13	1	796	64	60	1072	14
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	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	2	0	49	14	14	1	865	70	65	1165	15
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	162	81	0	198	19	19	80	2371	192	157	2347	30
Arrive On Green	0.07	0.07	0.00	0.07	0.07	0.07	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	609	1153	0	964	275	275	0	3248	263	95	3215	41
Grp Volume(v), veh/h	4	0	0	77	0	0	496	0	440	622	0	623
Grp Sat Flow(s),veh/h/ln	1761	0	0	1514	0	0	1862	0	1649	1662	0	1688
Q Serve(g_s), s	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	4.4	0.0	0.0	7.1
Cycle Q Clear(g_c), s	0.1	0.0	0.0	2.2	0.0	0.0	4.4	0.0	4.4	6.1	0.0	7.1
Prop In Lane	0.50		0.00	0.64		0.18	0.00		0.16	0.10		0.02
Lane Grp Cap(c), veh/h	244	0	0	237	0	0	1439	0	1204	1302	0	1233
V/C Ratio(X)	0.02	0.00	0.00	0.32	0.00	0.00	0.34	0.00	0.37	0.48	0.00	0.51
Avail Cap(c_a), veh/h	763	0	0	731	0	0	1439	0	1204	1302	0	1233
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.6	0.0	0.0	20.6	0.0	0.0	2.2	0.0	2.2	2.5	0.0	2.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	0.0	0.7	0.0	0.9	1.3	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.0	0.0	0.0	2.5	0.0	2.2	3.4	0.0	3.6
LnGrp Delay(d),s/veh	19.6	0.0	0.0	21.3	0.0	0.0	2.9	0.0	3.1	3.7	0.0	4.1
LnGrp LOS	B			C			A		A	A		A
Approach Vol, veh/h		4			77			936			1245	
Approach Delay, s/veh		19.6			21.3			3.0			3.9	
Approach LOS		B			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		37.5		7.7		37.5		7.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		33.0		18.0		33.0		18.0
Max Q Clear Time (g_c+I1), s		6.4		2.1		9.1		4.2
Green Ext Time (p_c), s		18.2		0.2		16.8		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	4.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	19	572	36	140	19	504	744	112	20	969	128
Future Volume (veh/h)	98	19	572	36	140	19	504	744	112	20	969	128
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	1900	1725	1743	1900	1870	1792	1743	1827	1900	1900	1810	1845
Adj Flow Rate, veh/h	101	20	0	37	144	0	520	767	0	21	999	0
Adj No. of Lanes	0	1	1	0	1	1	2	1	1	1	2	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	6	6	9	2	2	6	9	4	0	0	5	3
Cap, veh/h	248	39	213	105	224	219	954	1304	1153	475	1785	814
Arrive On Green	0.14	0.14	0.00	0.14	0.14	0.00	0.12	0.71	0.00	0.52	0.52	0.00
Sat Flow, veh/h	996	273	1482	255	1561	1524	3221	1827	1615	712	3438	1568
Grp Volume(v), veh/h	121	0	0	181	0	0	520	767	0	21	999	0
Grp Sat Flow(s),veh/h/ln	1269	0	1482	1817	0	1524	1610	1827	1615	712	1719	1568
Q Serve(g_s), s	0.0	0.0	0.0	0.3	0.0	0.0	4.0	13.1	0.0	0.9	12.4	0.0
Cycle Q Clear(g_c), s	5.5	0.0	0.0	5.8	0.0	0.0	4.0	13.1	0.0	1.7	12.4	0.0
Prop In Lane	0.83		1.00	0.20		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	287	0	213	330	0	219	954	1304	1153	475	1785	814
V/C Ratio(X)	0.42	0.00	0.00	0.55	0.00	0.00	0.55	0.59	0.00	0.04	0.56	0.00
Avail Cap(c_a), veh/h	526	0	505	674	0	519	2061	2879	2545	844	3567	1627
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.5	0.0	0.0	25.6	0.0	0.0	7.4	4.5	0.0	7.9	10.3	0.0
Incr Delay (d2), s/veh	1.0	0.0	0.0	1.4	0.0	0.0	0.5	0.4	0.0	0.0	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.0	0.0	3.1	0.0	0.0	2.1	6.5	0.0	0.2	5.9	0.0
LnGrp Delay(d),s/veh	26.4	0.0	0.0	27.1	0.0	0.0	7.9	4.9	0.0	8.0	10.6	0.0
LnGrp LOS	C			C			A	A		A	B	
Approach Vol, veh/h		121			181			1287			1020	
Approach Delay, s/veh		26.4			27.1			6.1			10.5	
Approach LOS		C			C			A			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		49.6		13.6	12.3	37.3		13.6
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		99.5		21.5	29.5	65.5		21.5
Max Q Clear Time (g_c+I1), s		15.1		7.5	6.0	14.4		7.8
Green Ext Time (p_c), s		20.1		1.3	1.8	18.3		1.3

Intersection Summary		
HCM 2010 Ctrl Delay		10.2
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	0	13	112	0	99	31	1259	89	71	1501	5
Future Volume (veh/h)	2	0	13	112	0	99	31	1259	89	71	1501	5
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	1900	1426	1900	1900	1900	1900	1407	1792	1827	1863	1792	1583
Adj Flow Rate, veh/h	2	0	0	118	0	0	33	1325	0	75	1580	5
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	0	35	6	4	2	6	20
Cap, veh/h	292	0	0	308	0	167	264	2381	1085	367	2381	941
Arrive On Green	0.10	0.00	0.00	0.10	0.00	0.00	0.70	0.70	0.00	0.70	0.70	0.70
Sat Flow, veh/h	1294	0	0	1445	0	1615	243	3406	1553	412	3406	1346
Grp Volume(v), veh/h	2	0	0	118	0	0	33	1325	0	75	1580	5
Grp Sat Flow(s),veh/h/ln	1294	0	0	1445	0	1615	243	1703	1553	412	1703	1346
Q Serve(g_s), s	0.0	0.0	0.0	3.6	0.0	0.0	4.0	8.7	0.0	5.0	11.9	0.1
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.6	0.0	0.0	15.9	8.7	0.0	13.7	11.9	0.1
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	292	0	0	308	0	167	264	2381	1085	367	2381	941
V/C Ratio(X)	0.01	0.00	0.00	0.38	0.00	0.00	0.12	0.56	0.00	0.20	0.66	0.01
Avail Cap(c_a), veh/h	607	0	0	727	0	638	271	2467	1125	378	2467	975
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	18.3	0.0	0.0	19.9	0.0	0.0	8.3	3.4	0.0	6.8	3.9	2.1
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	0.0	0.2	0.3	0.0	0.3	0.6	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.5	0.0	0.0	0.3	4.0	0.0	0.6	5.5	0.0
LnGrp Delay(d),s/veh	18.3	0.0	0.0	20.7	0.0	0.0	8.5	3.6	0.0	7.0	4.5	2.1
LnGrp LOS	B			C			A	A		A	A	A
Approach Vol, veh/h		2			118			1358			1660	
Approach Delay, s/veh		18.3			20.7			3.8			4.6	
Approach LOS		B			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		36.3		9.2		36.3		9.2
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		33.0		18.0		33.0		18.0
Max Q Clear Time (g_c+I1), s		17.9		2.1		15.7		5.6
Green Ext Time (p_c), s		13.9		0.5		15.8		0.4

Intersection Summary		
HCM 2010 Ctrl Delay		4.9
HCM 2010 LOS		A

Intersection	
Int Delay, s/veh	3.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	1	181	2	135	227	1	9	2	91	0	1	4
Future Vol, veh/h	1	181	2	135	227	1	9	2	91	0	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	89	89	89	89	89	89	89	89	89	89	89	89
Heavy Vehicles, %	0	5	0	3	13	0	13	0	1	0	0	0
Mvmt Flow	1	203	2	152	255	1	10	2	102	0	1	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	256	0	0	205	0	0	768	766	204	818	767	256
Stage 1	-	-	-	-	-	-	206	206	-	560	560	-
Stage 2	-	-	-	-	-	-	562	560	-	258	207	-
Critical Hdwy	4.1	-	-	4.13	-	-	7.23	6.5	6.21	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.23	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.23	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.227	-	-	3.617	4	3.309	3.5	4	3.3
Pot Cap-1 Maneuver	1321	-	-	1360	-	-	305	335	839	297	335	788
Stage 1	-	-	-	-	-	-	771	735	-	516	514	-
Stage 2	-	-	-	-	-	-	493	514	-	751	734	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1321	-	-	1360	-	-	272	291	839	233	291	788
Mov Cap-2 Maneuver	-	-	-	-	-	-	272	291	-	233	291	-
Stage 1	-	-	-	-	-	-	770	734	-	515	447	-
Stage 2	-	-	-	-	-	-	425	447	-	657	733	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	3	11.3	11.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	687	1321	-	-	1360	-	-	587
HCM Lane V/C Ratio	0.167	0.001	-	-	0.112	-	-	0.01
HCM Control Delay (s)	11.3	7.7	0	-	8	0	-	11.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.6	0	-	-	0.4	-	-	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1	1	60	1	32	2	1390	119	23	921	2
Future Volume (veh/h)	2	1	1	60	1	32	2	1390	119	23	921	2
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	1900	1863	1900	1900	1863	1900	1900	1863	1900	1900	1863	1900
Adj Flow Rate, veh/h	2	1	1	65	1	35	2	1511	129	25	1001	2
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	164	67	38	211	1	44	79	2321	196	102	2426	5
Arrive On Green	0.09	0.09	0.09	0.09	0.09	0.09	0.72	0.72	0.72	0.72	0.72	0.72
Sat Flow, veh/h	533	769	434	950	15	512	1	3234	274	28	3381	7
Grp Volume(v), veh/h	4	0	0	101	0	0	866	0	776	519	0	509
Grp Sat Flow(s),veh/h/ln	1737	0	0	1477	0	0	1862	0	1647	1722	0	1694
Q Serve(g_s), s	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	11.6	0.0	0.0	5.6
Cycle Q Clear(g_c), s	0.1	0.0	0.0	3.1	0.0	0.0	11.3	0.0	11.6	5.0	0.0	5.6
Prop In Lane	0.50		0.25	0.64		0.35	0.00		0.17	0.05		0.00
Lane Grp Cap(c), veh/h	268	0	0	257	0	0	1414	0	1182	1318	0	1216
V/C Ratio(X)	0.01	0.00	0.00	0.39	0.00	0.00	0.61	0.00	0.66	0.39	0.00	0.42
Avail Cap(c_a), veh/h	731	0	0	704	0	0	1414	0	1182	1318	0	1216
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	0.00	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.2	0.0	0.0	20.6	0.0	0.0	3.4	0.0	3.5	2.5	0.0	2.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	1.0	0.0	0.0	2.0	0.0	2.9	0.9	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.3	0.0	0.0	6.3	0.0	5.9	2.8	0.0	2.9
LnGrp Delay(d),s/veh	19.2	0.0	0.0	21.6	0.0	0.0	5.4	0.0	6.3	3.4	0.0	3.7
LnGrp LOS	B			C			A		A	A		A
Approach Vol, veh/h		4			101			1642			1028	
Approach Delay, s/veh		19.2			21.6			5.8			3.6	
Approach LOS		B			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		37.5		8.5		37.5		8.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		33.0		18.0		33.0		18.0
Max Q Clear Time (g_c+I1), s		13.6		2.1		7.6		5.1
Green Ext Time (p_c), s		15.9		0.4		19.8		0.3

Intersection Summary	
HCM 2010 Ctrl Delay	5.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	12	365	181	8	74	507	1391	15	35	896	51
Future Volume (veh/h)	46	12	365	181	8	74	507	1391	15	35	896	51
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	1900	1865	1845	1900	1900	1881	1792	1845	1900	1900	1792	1681
Adj Flow Rate, veh/h	50	13	0	197	9	0	551	1512	0	38	974	0
Adj No. of Lanes	0	1	1	0	1	1	2	1	1	1	2	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	9	9	3	0	0	1	6	3	0	0	6	13
Cap, veh/h	238	57	218	252	9	223	953	1469	1286	51	2356	989
Arrive On Green	0.14	0.14	0.00	0.14	0.14	0.00	0.07	0.80	0.00	0.69	0.69	0.00
Sat Flow, veh/h	1379	408	1568	1448	66	1599	3312	1845	1615	351	3406	1429
Grp Volume(v), veh/h	63	0	0	206	0	0	551	1512	0	38	974	0
Grp Sat Flow(s),veh/h/ln	1787	0	1568	1514	0	1599	1656	1845	1615	351	1703	1429
Q Serve(g_s), s	0.0	0.0	0.0	14.6	0.0	0.0	6.2	111.5	0.0	0.0	17.3	0.0
Cycle Q Clear(g_c), s	4.4	0.0	0.0	18.9	0.0	0.0	6.2	111.5	0.0	96.8	17.3	0.0
Prop In Lane	0.79		1.00	0.96		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	295	0	218	261	0	223	953	1469	1286	51	2356	989
V/C Ratio(X)	0.21	0.00	0.00	0.79	0.00	0.00	0.58	1.03	0.00	0.74	0.41	0.00
Avail Cap(c_a), veh/h	295	0	218	261	0	223	1529	1469	1286	51	2356	989
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	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	53.7	0.0	0.0	59.6	0.0	0.0	6.8	14.3	0.0	70.0	9.3	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	14.9	0.0	0.0	0.6	31.3	0.0	42.9	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.0	0.0	9.0	0.0	0.0	3.0	68.3	0.0	2.1	8.2	0.0
LnGrp Delay(d),s/veh	54.1	0.0	0.0	74.5	0.0	0.0	7.4	45.5	0.0	112.9	9.4	0.0
LnGrp LOS	D			E			A	F		F	A	
Approach Vol, veh/h		63			206			2063			1012	
Approach Delay, s/veh		54.1			74.5			35.3			13.3	
Approach LOS		D			E			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		116.0		24.0	14.7	101.3		24.0
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		111.5		19.5	34.5	72.5		19.5
Max Q Clear Time (g_c+I1), s		113.5		6.4	8.2	98.8		20.9
Green Ext Time (p_c), s		0.0		1.1	2.0	0.0		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		31.4
HCM 2010 LOS		C

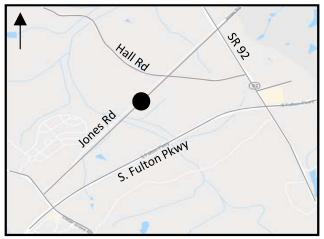
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	0	55	93	0	153	24	1752	160	149	1290	3
Future Volume (veh/h)	8	0	55	93	0	153	24	1752	160	149	1290	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	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	1900	1516	1900	1900	1810	1881	1473	1827	1900	1827	1827	1900
Adj Flow Rate, veh/h	8	0	0	98	0	0	25	1844	0	157	1358	3
Adj No. of Lanes	0	1	0	0	1	1	1	2	1	1	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	0	0	0	1	29	4	0	4	4	0
Cap, veh/h	166	0	0	166	0	133	290	2964	1379	219	2964	1379
Arrive On Green	0.08	0.00	0.00	0.08	0.00	0.00	0.85	0.85	0.00	0.85	0.85	0.85
Sat Flow, veh/h	1394	0	0	1393	0	1599	315	3471	1615	245	3471	1615
Grp Volume(v), veh/h	8	0	0	98	0	0	25	1844	0	157	1358	3
Grp Sat Flow(s),veh/h/ln	1394	0	0	1393	0	1599	315	1736	1615	245	1736	1615
Q Serve(g_s), s	0.0	0.0	0.0	9.2	0.0	0.0	3.0	23.7	0.0	79.7	13.4	0.0
Cycle Q Clear(g_c), s	0.7	0.0	0.0	9.9	0.0	0.0	16.4	23.7	0.0	103.4	13.4	0.0
Prop In Lane	1.00		0.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	166	0	0	166	0	133	290	2964	1379	219	2964	1379
V/C Ratio(X)	0.05	0.00	0.00	0.59	0.00	0.00	0.09	0.62	0.00	0.72	0.46	0.00
Avail Cap(c_a), veh/h	215	0	0	224	0	201	291	2980	1387	220	2980	1387
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	60.5	0.0	0.0	64.7	0.0	0.0	4.5	3.3	0.0	19.4	2.5	1.5
Incr Delay (d2), s/veh	0.1	0.0	0.0	3.3	0.0	0.0	0.1	0.4	0.0	10.6	0.1	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	4.0	0.0	0.0	0.3	11.2	0.0	6.0	6.3	0.0
LnGrp Delay(d),s/veh	60.7	0.0	0.0	68.0	0.0	0.0	4.6	3.7	0.0	30.0	2.6	1.5
LnGrp LOS	E			E			A	A		C	A	A
Approach Vol, veh/h		8			98			1869			1518	
Approach Delay, s/veh		60.7			68.0			3.7			5.4	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		126.8		16.4		126.8		16.4
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		123.0		18.0		123.0		18.0
Max Q Clear Time (g_c+I1), s		25.7		2.7		105.4		11.9
Green Ext Time (p_c), s		81.0		0.4		16.9		0.2

Intersection Summary		
HCM 2010 Ctrl Delay		6.4
HCM 2010 LOS		A

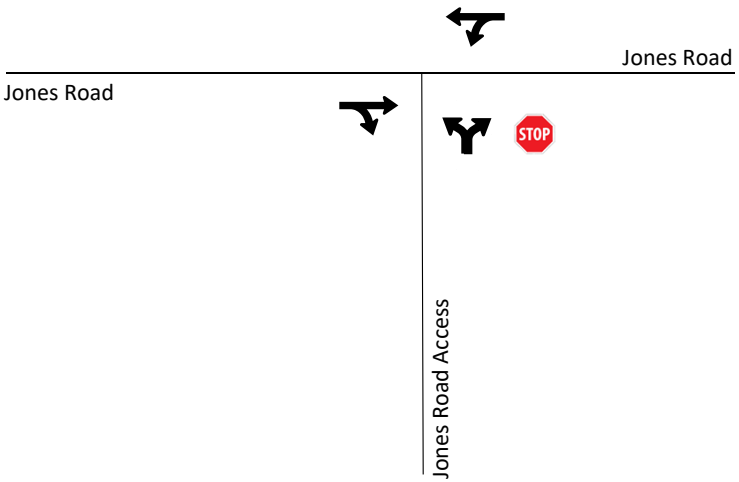
APPENDIX R

SITE ACCESS ANALYSIS DOCUMENTS

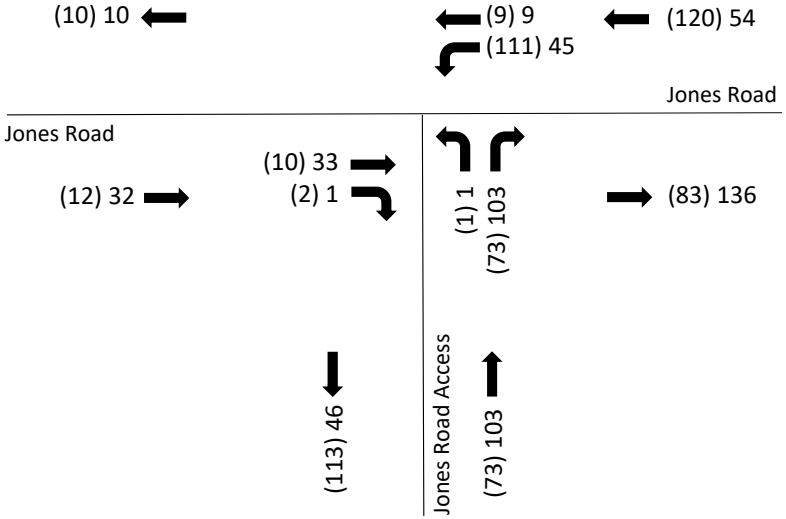


Jones Road Access

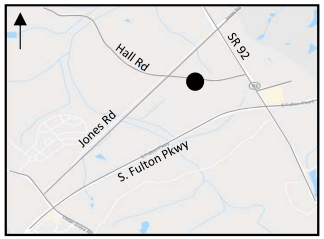
NOT TO SCALE



Recommended Lane Configuration

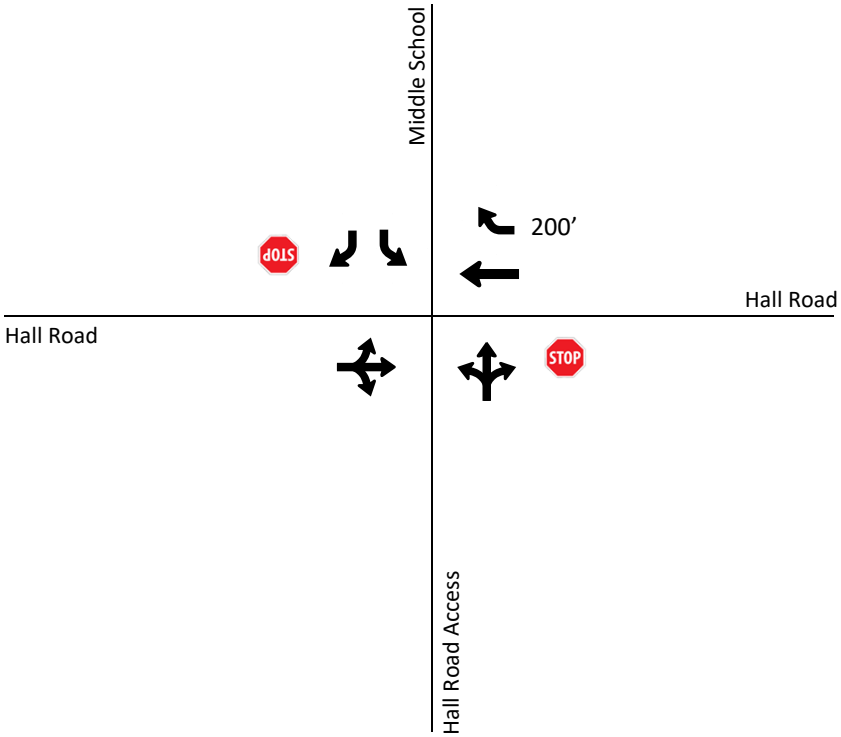


Build (2024) TMC – (PM)/AM

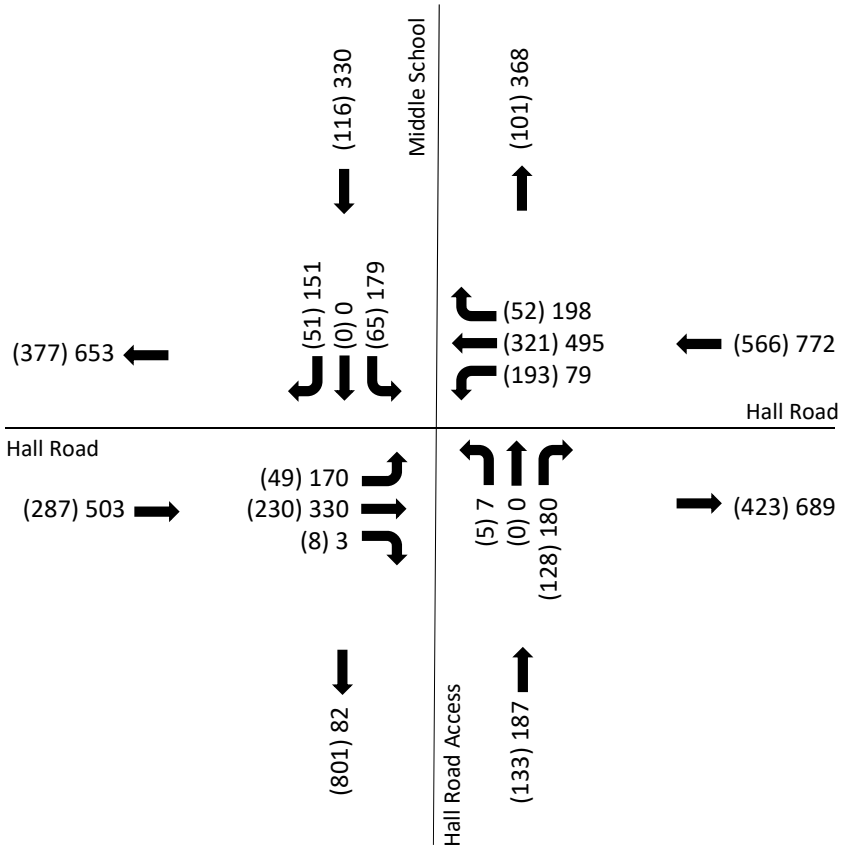


Hall Road Access

NOT TO SCALE



Recommended Lane Configuration



Build (2024) TMC – (PM)/AM

Intersection	
Int Delay, s/veh	6.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	33	1	45	9	1	103
Future Vol, veh/h	33	1	45	9	1	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	2	0	2	2
Mvmt Flow	36	1	49	10	1	112

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	37	0	145	37
Stage 1	-	-	-	-	37	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1574	-	847	1035
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1574	-	821	1035
Mov Cap-2 Maneuver	-	-	-	-	821	-
Stage 1	-	-	-	-	985	-
Stage 2	-	-	-	-	888	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.1	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1032	-	-	1574	-
HCM Lane V/C Ratio	0.11	-	-	0.031	-
HCM Control Delay (s)	8.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

Intersection	
Int Delay, s/veh	151.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	170	330	3	79	495	198	7	0	180	179	0	151
Future Vol, veh/h	170	330	3	79	495	198	7	0	180	179	0	151
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	200	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	18	2	2	10	2	2	2	2	2	2	2
Mvmt Flow	185	359	3	86	538	215	8	0	196	195	0	164

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	538	0	0	362	0	0	1523	1441	361	1539	-	538
Stage 1	-	-	-	-	-	-	731	731	-	710	-	-
Stage 2	-	-	-	-	-	-	792	710	-	829	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	-	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	-	3.318
Pot Cap-1 Maneuver	1030	-	-	1197	-	-	97	133	684	~ 94	0	543
Stage 1	-	-	-	-	-	-	413	427	-	424	0	-
Stage 2	-	-	-	-	-	-	382	437	-	365	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1030	-	-	1197	-	-	51	90	684	~ 50	-	543
Mov Cap-2 Maneuver	-	-	-	-	-	-	51	90	-	~ 50	-	-
Stage 1	-	-	-	-	-	-	320	331	-	329	-	-
Stage 2	-	-	-	-	-	-	232	381	-	202	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	3.1	0.8	18.5	$ 803.3
HCM LOS			C	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	467	1030	-	-	1197	-	-	50	543
HCM Lane V/C Ratio	0.435	0.179	-	-	0.072	-	-	3.891	0.302
HCM Control Delay (s)	18.5	9.3	0	-	8.2	0	-	$ 1468.7	14.5
HCM Lane LOS	C	A	A	-	A	A	-	F	B
HCM 95th %tile Q(veh)	2.2	0.7	-	-	0.2	-	-	21.5	1.3

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	7.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	10	2	111	9	1	73
Future Vol, veh/h	10	2	111	9	1	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	2	2	0	2	2
Mvmt Flow	11	2	121	10	1	79

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	13	0	264	12
Stage 1	-	-	-	-	12	-
Stage 2	-	-	-	-	252	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1606	-	725	1069
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	790	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1606	-	670	1069
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	1011	-
Stage 2	-	-	-	-	730	-

Approach	EB	WB	NB
HCM Control Delay, s	0	6.9	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	1060	-	-	1606	-
HCM Lane V/C Ratio	0.076	-	-	0.075	-
HCM Control Delay (s)	8.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	9.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	230	8	193	321	52	5	0	128	65	0	51
Future Vol, veh/h	49	230	8	193	321	52	5	0	128	65	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Yield	-	-	None	-	-	None
Storage Length	-	-	-	-	-	200	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	1	2	2	1	0	2	0	2	0	0	0
Mvmt Flow	54	256	9	214	357	58	6	0	142	72	0	57

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	357	0	0	265	0	0	1183	1154	261	1225	-	357
Stage 1	-	-	-	-	-	-	369	369	-	785	-	-
Stage 2	-	-	-	-	-	-	814	785	-	440	-	-
Critical Hdwy	4.1	-	-	4.12	-	-	7.12	6.5	6.22	7.1	-	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.5	-	6.1	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.5	-	6.1	-	-
Follow-up Hdwy	2.2	-	-	2.218	-	-	3.518	4	3.318	3.5	-	3.3
Pot Cap-1 Maneuver	1213	-	-	1299	-	-	166	199	778	157	0	692
Stage 1	-	-	-	-	-	-	651	624	-	389	0	-
Stage 2	-	-	-	-	-	-	372	407	-	600	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1213	-	-	1299	-	-	122	148	778	103	-	692
Mov Cap-2 Maneuver	-	-	-	-	-	-	122	148	-	103	-	-
Stage 1	-	-	-	-	-	-	617	592	-	369	-	-
Stage 2	-	-	-	-	-	-	268	319	-	465	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	2.8	12.2	59.3
HCM LOS			B	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	647	1213	-	-	1299	-	-	103	692
HCM Lane V/C Ratio	0.228	0.045	-	-	0.165	-	-	0.701	0.082
HCM Control Delay (s)	12.2	8.1	0	-	8.3	0	-	97.4	10.7
HCM Lane LOS	B	A	A	-	A	A	-	F	B
HCM 95th %tile Q(veh)	0.9	0.1	-	-	0.6	-	-	3.6	0.3

Intersection	
Int Delay, s/veh	12.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	154	213	0	0	413	179	0	0	0	162	0	137
Future Vol, veh/h	154	213	0	0	413	179	0	0	0	162	0	137
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	200	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	167	232	0	0	449	195	0	0	0	176	0	149

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	644	0	-	-	-	0			1015	-	449
Stage 1	-	-	-	-	-	-			449	-	-
Stage 2	-	-	-	-	-	-			566	-	-
Critical Hdwy	4.12	-	-	-	-	-			6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	-	-
Follow-up Hdwy	2.218	-	-	-	-	-			3.518	-	3.318
Pot Cap-1 Maneuver	941	-	0	0	-	-			264	0	610
Stage 1	-	-	0	0	-	-			643	0	-
Stage 2	-	-	0	0	-	-			568	0	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	941	-	-	-	-	-			210	0	610
Mov Cap-2 Maneuver	-	-	-	-	-	-			210	0	-
Stage 1	-	-	-	-	-	-			512	0	-
Stage 2	-	-	-	-	-	-			568	0	-

Approach	EB	WB	SB
HCM Control Delay, s	4.1	0	46
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	941	-	-	-	210	610
HCM Lane V/C Ratio	0.178	-	-	-	0.839	0.244
HCM Control Delay (s)	9.7	0	-	-	74.1	12.8
HCM Lane LOS	A	A	-	-	F	B
HCM 95th %tile Q(veh)	0.6	-	-	-	6.3	1

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	152	0	0	193	47	0	0	0	60	0	46
Future Vol, veh/h	44	152	0	0	193	47	0	0	0	60	0	46
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	200	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	165	0	0	210	51	0	0	0	65	0	50

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	261	0	-	-	-	0			471	-	210
Stage 1	-	-	-	-	-	-			210	-	-
Stage 2	-	-	-	-	-	-			261	-	-
Critical Hdwy	4.12	-	-	-	-	-			6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	-	-
Follow-up Hdwy	2.218	-	-	-	-	-			3.518	-	3.318
Pot Cap-1 Maneuver	1303	-	0	0	-	-			551	0	830
Stage 1	-	-	0	0	-	-			825	0	-
Stage 2	-	-	0	0	-	-			783	0	-
Platoon blocked, %		-			-	-					
Mov Cap-1 Maneuver	1303	-	-	-	-	-			528	0	830
Mov Cap-2 Maneuver	-	-	-	-	-	-			528	0	-
Stage 1	-	-	-	-	-	-			791	0	-
Stage 2	-	-	-	-	-	-			783	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	11.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1303	-	-	-	528	830
HCM Lane V/C Ratio	0.037	-	-	-	0.124	0.06
HCM Control Delay (s)	7.9	0	-	-	12.8	9.6
HCM Lane LOS	A	A	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4	0.2

Intersection	
Int Delay, s/veh	23.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	170	236	0	0	456	198	0	0	0	179	0	151
Future Vol, veh/h	170	236	0	0	456	198	0	0	0	179	0	151
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	200	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	24	2	2	11	2	2	2	2	2	2	2
Mvmt Flow	185	257	0	0	496	215	0	0	0	195	0	164

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	711	0	0	-	-	0			1123	-	496
Stage 1	-	-	-	-	-	-			496	-	-
Stage 2	-	-	-	-	-	-			627	-	-
Critical Hdwy	4.12	-	-	-	-	-			6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	-	-
Follow-up Hdwy	2.218	-	-	-	-	-			3.518	-	3.318
Pot Cap-1 Maneuver	888	-	-	0	-	-			227	0	574
Stage 1	-	-	-	0	-	-			612	0	-
Stage 2	-	-	-	0	-	-			532	0	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	888	-	-	-	-	-			~ 172	0	574
Mov Cap-2 Maneuver	-	-	-	-	-	-			~ 172	0	-
Stage 1	-	-	-	-	-	-			463	0	-
Stage 2	-	-	-	-	-	-			532	0	-

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0	94.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	888	-	-	-	-	172	574
HCM Lane V/C Ratio	0.208	-	-	-	-	1.131	0.286
HCM Control Delay (s)	10.1	-	-	-	-	162.8	13.8
HCM Lane LOS	B	-	-	-	-	F	B
HCM 95th %tile Q(veh)	0.8	-	-	-	-	10.1	1.2

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	49	169	0	0	214	52	0	0	0	65	0	51
Future Vol, veh/h	49	169	0	0	214	52	0	0	0	65	0	51
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	200	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	184	0	0	233	57	0	0	0	71	0	55

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	290	0	0	-	-	0			523	-	233
Stage 1	-	-	-	-	-	-			233	-	-
Stage 2	-	-	-	-	-	-			290	-	-
Critical Hdwy	4.12	-	-	-	-	-			6.42	-	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-			5.42	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.42	-	-
Follow-up Hdwy	2.218	-	-	-	-	-			3.518	-	3.318
Pot Cap-1 Maneuver	1272	-	-	0	-	-			514	0	806
Stage 1	-	-	-	0	-	-			806	0	-
Stage 2	-	-	-	0	-	-			759	0	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	1272	-	-	-	-	-			490	0	806
Mov Cap-2 Maneuver	-	-	-	-	-	-			490	0	-
Stage 1	-	-	-	-	-	-			769	0	-
Stage 2	-	-	-	-	-	-			759	0	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1272	-	-	-	-	490	806
HCM Lane V/C Ratio	0.042	-	-	-	-	0.144	0.069
HCM Control Delay (s)	8	-	-	-	-	13.6	9.8
HCM Lane LOS	A	-	-	-	-	B	A
HCM 95th %tile Q(veh)	0.1	-	-	-	-	0.5	0.2