

TRANSPORTATION IMPACT ANALYSIS

Somerset Heights

Winston-Salem, NC

Prepared for True Homes





Transportation Impact Analysis

Somerset Heights Winston-Salem, NC

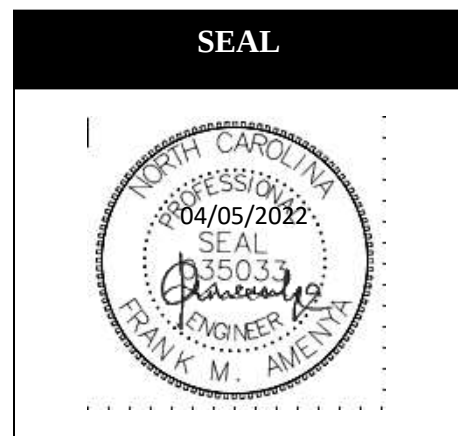
Prepared for True Homes
April 04, 2022

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Executive Summary

The proposed development is located on the south side of Somerset Drive between Sparkling Place and Jonestown Road in Winston-Salem, NC. This subdivision is planned to consist of a combination of 122 single-family homes and 101 townhomes, totaling 223 lots. This development proposes to utilize two (2) access points on Somerset Drive and Lockwood Drive. The construction is anticipated to start in 2023 and +/- 50 single family homes will be constructed each year over the next +/- 4-5 years. For analysis purposes, this study assumed this development will be completed in 2027.

Trip Generation

Based on trip generation rates and equations published in Trip Generation (Institute of Transportation Engineers, 11th Edition), this development has a trip generation potential of 1,931 daily trips, with 136 trips in the AM peak hour and 177 trips in the PM peak hour.

Capacity Analysis and Recommendations

This analysis has been conducted based on the Winston-Salem Department of Transportation (WSDOT) guidelines and has identified the potential traffic impacts of this development. Overall, the analysis indicates LOS D or better can be expected at the study intersections during the future conditions with the exception of the unsignalized intersection of US 158 (South Stratford Road) at Somerset Drive. This unsignalized intersection is anticipated to operate at LOS E/F during the PM peak hour in future no-build and build conditions. This is mainly due to lack of sufficient gaps for left turning vehicles from the minor street approaches in heavy through traffic on the Stratford Road. This is a background condition and will occur regardless of the proposed development and is a typical condition for stop-controlled movements onto major roads such as US 158. It is recommended to retime the adjacent signals, Stratford Road at Hillcrest Center Drive/Cloverleaf Drive and Stratford Road at Kimwell Drive to create gaps at stop-controlled intersection of Stratford Road at Somerset Drive.

Based on the proposed driveway location on Somerset Drive, further examination of the sight distance on the curve looking west will be needed. Possible solutions include: (1) relocating the driveway location further west and installing a 100 foot left turn lane and appropriate taper on Somerset, (2) installation of an all-way stop control (AWSC) with stop ahead pavement markings or appropriate signage on all approaches, (3) providing an automated real-time system to inform drivers of the suitability of available gaps for making turning and crossing maneuvers. These outlined mitigation options would help preserve the left turn exit movements out of the site as it would be valuable to retain the ability to make left turn exits on Somerset Drive to get to US 421 Interchange. These



options should be explored further during the design phase of the project as further coordination with WSDOT will be needed to determine the most appropriate mitigation measure.

The site accesses should be designed in accordance with WSDOT standards as applicable.

Conclusion

In conclusion, this analysis has been conducted based on WSDOT guidelines and has determined the potential traffic impacts of this development. The recommended improvements are summarized in Figure A. With the recommended improvements in place, the impacts of the proposed development can be accommodated. Note that the site accesses should be designed according to WSDOT standards, as applicable.



**Transportation Impact Analysis
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Introduction

The purpose of this report is to assess the transportation impact of the proposed residential development, Somerset Heights. The proposed development is located on the south side of Somerset Drive between Sparkling Place and Jonestown Road in Winston-Salem, NC. This subdivision is planned to consist of a combination of 122 single-family homes and 101 townhomes, totaling 223 lots. This development proposes to utilize two (2) access points on Somerset Drive and Lockwood Drive. Figure 1 shows the site plan. A site location map and vicinity map denoting study intersections are provided in Figures 2A, and 2B, respectively.

The construction is anticipated to start in 2023 and +/- 50 single family homes will be constructed each year over the next +/- 4-5 years. For analysis purposes, this study assumed this development will be completed in 2027. For analysis purposes, this study assumed this development will be completed in 2027. Traffic conditions were assessed during the weekday AM (7-9 AM) and PM (4-6 PM) peak hours for the following conditions:

- 2022 Base Conditions
- 2027 Future No-Build Conditions
- 2027 Future Build Conditions

The study was conducted according to the standards and best practices utilized in the transportation engineering profession. Field data were collected consistent with industry standards and best practices. Trip generation was calculated using the *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE). This is the industry-standard method for trip generation. Data were analyzed using the methodology outlined in the *Highway Capacity Manual, 6th Edition* (HCM) published by the Transportation Research Board (TRB). Both publications are industry-standard publications and are routinely used by City of Winston-Salem Department of Transportation (WSDOT). Capacity and level of service are the design criteria for this traffic study. Modeling and intersection analyses were performed using Synchro (Version 10.3), a state-of-the-art software package widely used and accepted by WSDOT, in addition to transportation professionals and governments all over the United States and the world. These data sources and tools are adequate to reach the conclusions contained within this study.

The scope for this development was determined through coordination with WSDOT staff. This is documented in the Appendix. Information regarding the proposed development was provided by the developer, True Homes.

Existing Study Area

Based on the scoping and coordination with WSDOT, the study area included the following intersections:

- Jonestown Road at Somerset Drive
- Somerset Drive at Ashford Drive/Brandywine Road
- US 158 (South Stratford Road) at Somerset Drive
- US 158 (South Stratford Road) at Jonestown Road/ West Clemmons ville Road
- Jonestown Road at Lockwood Drive
- Somerset Drive at Site Access 1
- Lockwood Drive at Site Access 2

A field investigation was conducted by DAVENPORT staff to determine the existing roadway conditions in the study area. Table 1 summarizes this information. Figure 3 shows the existing lane geometry.

Table 1 - Street Inventory				
Facility Name	Typical Cross Section	Pavement Width	Speed Limit	Maintained By
South Stratford Road (US 158)	5 lanes undivided with center two-way left turn lane (TWLTL)	Approx. 63'	50 MPH	NCDOT
Somerset Drive	2-lane undivided	Approx. 19'	35 MPH	WSDOT
Jonestown Road	2-lane undivided	Approx. 20'	30 MPH	WSDOT
West Clemmons ville Road (SR 1120)	2-lane undivided	Approx. 24'	45 MPH	NCDOT
Lockwood Drive	2-lane undivided	Approx. 21'	45 MPH	WSDOT
Ashford Drive	2-lane undivided	Approx. 29'	Not posted, 35 MPH otherwise	WSDOT
Brandywine Road	2-lane undivided	Approx. 19'	25 MPH	WSDOT

Base Traffic Volumes

New turning movement counts were collected by DAVENPORT staff on 03/16/2022 at the following intersections:

- Jonestown Road at Somerset Drive
- Somerset Drive at Ashford Drive/Brandywine Road
- US 158 (South Stratford Road) at Somerset Drive
- US 158 (South Stratford Road) at Jonestown Road/ West Clemmons ville Road
- Jonestown Road at Lockwood Drive

Traffic volumes were not balanced between the study intersections as the imbalances can be accounted by the existing driveways and land uses. Figure 4 shows base volumes for the AM and PM peak hours. More information can be found in the Traffic Volume Data section of the appendix.

Approved Developments, Committed Improvements and Planned Improvements

Approved Developments

Approved developments are developments that have been recently approved in the area, but not yet constructed. **Hillcrest Storage** is an approved development located on the northwest quadrant of US 158(Stratford Road) and Somerset Drive. Per the site plan, this building is planned to consist of a three (2) story 73,268 square feet building with retail and storage space. Per the rezoning request, the proposed development has a trip generation potential of 183 trips per day. An annual growth rate of 2% was utilized to account for background traffic growth. This growth rate was considered adequate to account for this new storage services and retail facility.

Committed Improvements

Committed Improvements are improvements that are planned by NCDOT or a developer in the area, but not yet constructed. As part of NCDOT's State Transportation Improvement Program (STIP) project number **R-2247A**, proposes to construct a new route - **Future NC 452** connecting Winston-Salem Northern Beltway's Western Section and US 158 (Stratford Road), south of I-40. The right-of-way acquisition and beginning of construction is planned for the year 2029. The below excerpt shows the construction of the new route relative to the development site. This committed improvement will take place after the construction of the proposed development and was not included in the future scenario analyses.



Methodology

The analysis for this TIA was conducted utilizing WSDOT standards. The following table contains a summary of the base assumptions:

Table 2 – Assumptions and Parameters	
Peak Hour Factor	0.90 for all other movements
Background Traffic Annual Growth Rate	2.0% per year for all roadways
Analysis Software	Synchro and SimTraffic Version 10.3 was used for signalized and unsignalized intersections
Lane widths	12-feet
Truck percentages	2%

Trip Generation

As previously mentioned, the land use intensity for the site is yet to be finalized. Based on coordination with the developer, the proposed development was analyzed for 122 single-family homes and 101 townhomes, totaling 223 lots. The trip generation potential of this site was projected based on the most recent edition (11th Edition) of the *ITE Trip Generation Manual*, which is the industry-standard methodology. Also, NCDOT Congestion Management provides guidance on the selection of appropriate rates and equations from the *Trip Generation Manual*, and these guidelines were applied. Table 3 presents the results.

Table 3 - ITE Trip Generation									
Somerset Heights, Winston-Salem, NC									
Average Weekday Driveway Volumes					24 Hour Two-Way	AM Peak Hour		PM Peak Hour	
<u>Land Use</u>	<u>ITE Land Code</u>	<u>Size</u>		<u>Data Source</u>	<u>Volume</u>	<u>Enter</u>	<u>Exit</u>	<u>Enter</u>	<u>Exit</u>
Single-Family Detached Housing	210	122	Dwelling Units	Adjacent-Equation	1,212	23	66	75	45
Townhomes (Single-Family Attached Housing)	215	101	Dwelling Units	Adjacent-Equation	719	15	32	32	25
Total Trips					1,931	38	98	107	70

Trip Distribution

The trip distribution patterns for future site traffic were projected based on existing traffic patterns and engineering judgement. The directional distributions for site trips are as follows:

- 40% to and from the north on Stratford Road
- 25% to and from the south on Stratford Road
- 25% to and from the north on Jonestown Road
- 10% to and from the east on West Clemmons Road

The project trip distribution is shown in Figure 5.

Future No Build Traffic

The 2027 future no-build traffic volumes were computed by applying a 2.0% compounded annual growth rate to the base traffic volumes. Figure 6 shows the 2026 future no-build traffic volumes for AM and PM peaks.

Total Traffic

The 2027 build-out traffic volume was obtained by summing the 2027 future no-build traffic volumes and site trips due to this project. Site trips are shown in Figure 8. The resulting build volume totals for AM and PM peaks are shown in Figure 7. More information can be found in the Traffic Volume Data section of the appendix.

Capacity Analysis

Level of Service Evaluation Criteria

The Transportation Research Board's Highway Capacity Manual (HCM) utilizes a term "level of service" to measure how traffic operates in intersections and on roadway segments. There are currently six levels of service ranging from A to F. Level of service "A" represents low-volume traffic operations and Level of Service "F" represents high-volume, oversaturated traffic operations. Synchro Traffic Modeling software was used to determine the level of service for studied intersections. All worksheet reports from the analyses can be found in the Appendix.

Table 4 – Level of Service and Control Delay Criteria from Highway Capacity Manual			
Levels of Service and Control Delay Criteria			
Signalized Intersection		Unsignalized Intersection	
Level of Service	Control Delay Per vehicle (sec)	Level of Service	Delay Range (sec)
A	≤ 10	A	≤ 10
B	> 10 and ≤ 20	B	> 10 and ≤ 15
C	> 20 and ≤ 35	C	> 15 and ≤ 25
D	> 35 and ≤ 55	D	> 25 and ≤ 35
E	> 55 and ≤ 80	E	> 35 and ≤ 50
F	> 80	F	> 50

Discussion of Results

Jonestown Road at Somerset Drive

This unsignalized intersection operates at LOS B during the AM peak hour and LOS C during the PM peak hour under base and future scenarios. No improvements are recommended.

Somerset Drive at Ashford Drive/Brandywine Road

This unsignalized intersection operates at LOS B during the AM and PM peak hours under base and future scenarios. No improvements are recommended.

US 158 (South Stratford Road) at Somerset Drive

This unsignalized intersection operates at LOS C during the AM peak hour and LOS D during the PM peak hour in the base scenario. In future no-build scenario, this intersection is anticipated to operate at LOS C during the AM peak hour and LOS E during the PM peak hour. In future no-build scenario, this intersection is anticipated to operate at LOS C during the AM peak hour and LOS F during the PM peak hour.

The LOS E/F is mainly due to lack of sufficient gaps in heavy through traffic on the Stratford Road which occur in the PM peak hour. This is a typical condition for stop-controlled movements onto major roads such as US 158. This condition is expected to be limited to the peak hours and is a background condition which occurs regardless of the proposed site. It is recommended to retime the adjacent signals, Stratford Road at Hillcrest Center Drive/Cloverleaf Drive and Stratford Road at Kimwell Drive to create gaps at stop-controlled intersection of Stratford Road at Somerset Drive.

US 158 (South Stratford Road) at Jonestown Road/ West Clemmons Road

This signalized intersection currently operates at LOS C during the AM and PM peak hours. In future no-build and build conditions, this intersection is anticipated to operate at LOS D during the AM and PM peak hours. No improvements are recommended.

Jonestown Road at Lockwood Drive

This unsignalized intersection operates at LOS B during the AM peak hour and LOS C during the PM peak hour under base and future no-build scenarios. In future build scenario, this intersection is anticipated to operate at LOS C during the AM and PM peak hours. No improvements are recommended.

Somerset Drive at Site Access 1

This proposed stop-controlled intersection is expected to operate at LOS B during the AM and PM peak hours in the future build conditions.

Site Distance Review

A field investigation was conducted by DAVENPORT staff to determine if the available sight distances in each direction on Somerset Drive from the proposed Site Access 1 meets the requirements. Sight distance requirements are based on the AASHTO 'Policy on Geometric Design of Highways and Streets' standards. Somerset Drive has a posted speed limit of 35 mph within the vicinity of the proposed site access. Therefore, a design speed of 40 mph (speed limit plus 5 mph) was used to determine the required horizontal and vertical sight distance controls: stopping sight distance (SSD) and intersection sight distance (ISD), respectively. Table 4 below compares the AASHTO standard for appropriate site distances at design speed, in feet, with the existing conditions of the road.

Table 4 – Sight Distance Review				
Direction	Existing SSD*	AASHTO Required SSD	Existing ISD*	AASHTO Required ISD
Looking west	280 feet	305 feet	300 feet	445 feet
Looking east	555 feet	305 feet	575 feet	385 feet
<i>*Approximate Per Field Measurements.</i> <i>**Stopping Sight Distance (SSD) is a sight distance control applied to the vertical alignment.</i> <i>***Intersection Sight Distance (ISD) is a sight distance control applied to the horizontal alignment.</i>				

Based on the proposed driveway location on Somerset Drive, further examination of the sight distance on the curve looking west will be needed. Possible solutions include: (1) relocating the driveway location further west and installing a left turn lane and appropriate taper on Somerset Drive, (2) installation of an all-way stop control (AWSC) with stop ahead pavement markings or appropriate signage on all approaches, (3) providing an automated real-time system to inform drivers of the suitability of available gaps for making turning and crossing maneuvers. These outlined mitigation options would help preserve the left turn exit movements out of the site as it would be valuable to retain the ability to make left turn exits on Somerset Drive to get to US 421 Interchange. These options should be explored further during the design phase of the project as further coordination with WSDOT will be needed to determine the most appropriate mitigation measure. The site access should be designed in accordance with WSDOT standards as applicable.

Lockwood Drive at Site Access 2

In future build scenario, with the site access 2 in place, this intersection is anticipated to operate at LOS A during the AM and PM peak hours. The site access should be designed in accordance with WSDOT standards as applicable.

Recommended improvements at the study intersections are illustrated in Figure 9.

Level of Service Summary

Table 5 presents the summary of the level of service analysis for all study intersections:

Table 5 - Level of Service Summary			
AM Peak	2022 Base	2027 Future No Build	2027 Future Build
Jonestown Road at Somerset Drive	B (12) WB Approach	B (12.8) WB Approach	B (13.1) WB Approach
Somerset Drive at Ashford Drive/Brandywine Road	B (10) SB Approach	B (10.2) NB Approach	B (10.6) NB Approach
US 158 (South Stratford Road) at Somerset Drive	C (16.6) EB Approach	C (18.7) EB Approach	C (22.8) EB Approach
US 158 (South Stratford Road) at Jonestown Road	C (28.8)	D (44.5)	D (45.5)
Jonestown Road at Lockwood Drive	B (13.4) NB Approach	B (14.6) NB Approach	C (15.6) NB Approach
Somerset Drive at Site Access 1			B (10.1) NB Approach
Lockwood Drive at Site Access 2			A (8.8) WB Approach
PM Peak	2022 Base	2027 Future No Build	2027 Future Build
Jonestown Road at Somerset Drive	C (15.5) WB Approach	C (18.2) WB Approach	C (19.8) WB Approach
Somerset Drive at Ashford Drive/Brandywine Road	B (11.6) SB Approach	B (12.2) SB Approach	B (13.1) SB Approach
US 158 (South Stratford Road) at Somerset Drive	D (27.5) EB Approach	E (36.8) EB Approach	F (53.6) EB Approach
US 158 (South Stratford Road) at Jonestown Road	C (28.1)	D (41.6)	D (42.6)
Jonestown Road at Lockwood Drive	C (15.9) NB Approach	C (17.8) NB Approach	C (20.2) NB Approach
Somerset Drive at Site Access 1			B (10.6) NB Approach
Lockwood Drive at Site Access 2			A (8.9) WB Approach
LOS (delay in seconds)			
Note for unsignalized conditions, LOS and delay indicates only minor street approach with longest delay			

Summary and Conclusion

The proposed development is located on the south side of Somerset Drive between Sparkling Place and Jonestown Road in Winston-Salem, NC. This subdivision is planned to consist of a combination of 122 single-family homes and 101 townhomes, totaling 223 lots. This development proposes to utilize two (2) access points on Somerset Drive and Lockwood Drive. The construction is anticipated to start in 2023 and +/- 50 single family homes will be constructed each year over the next +/- 4-5 years. For analysis purposes, this study assumed this development will be completed in 2027.

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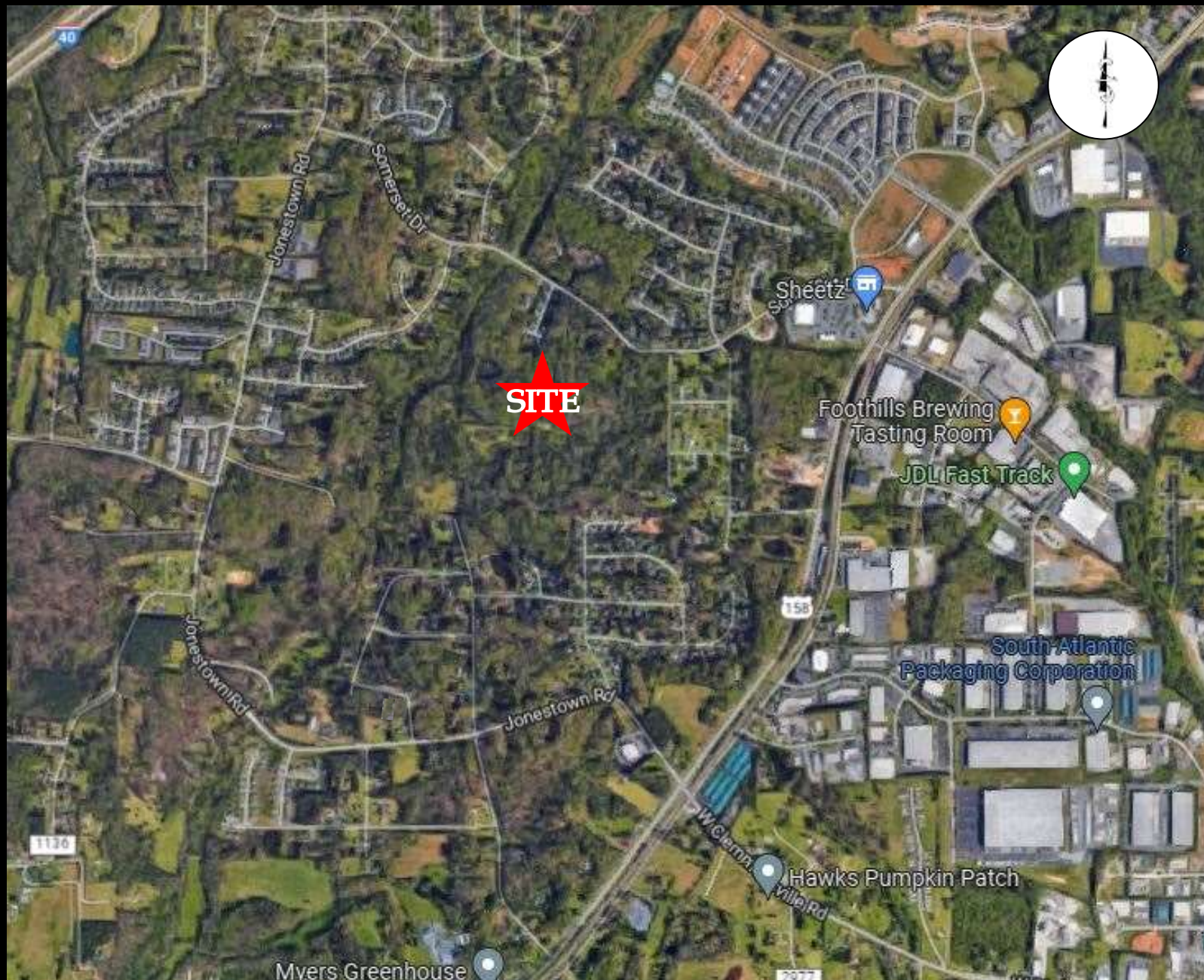
Conclusion

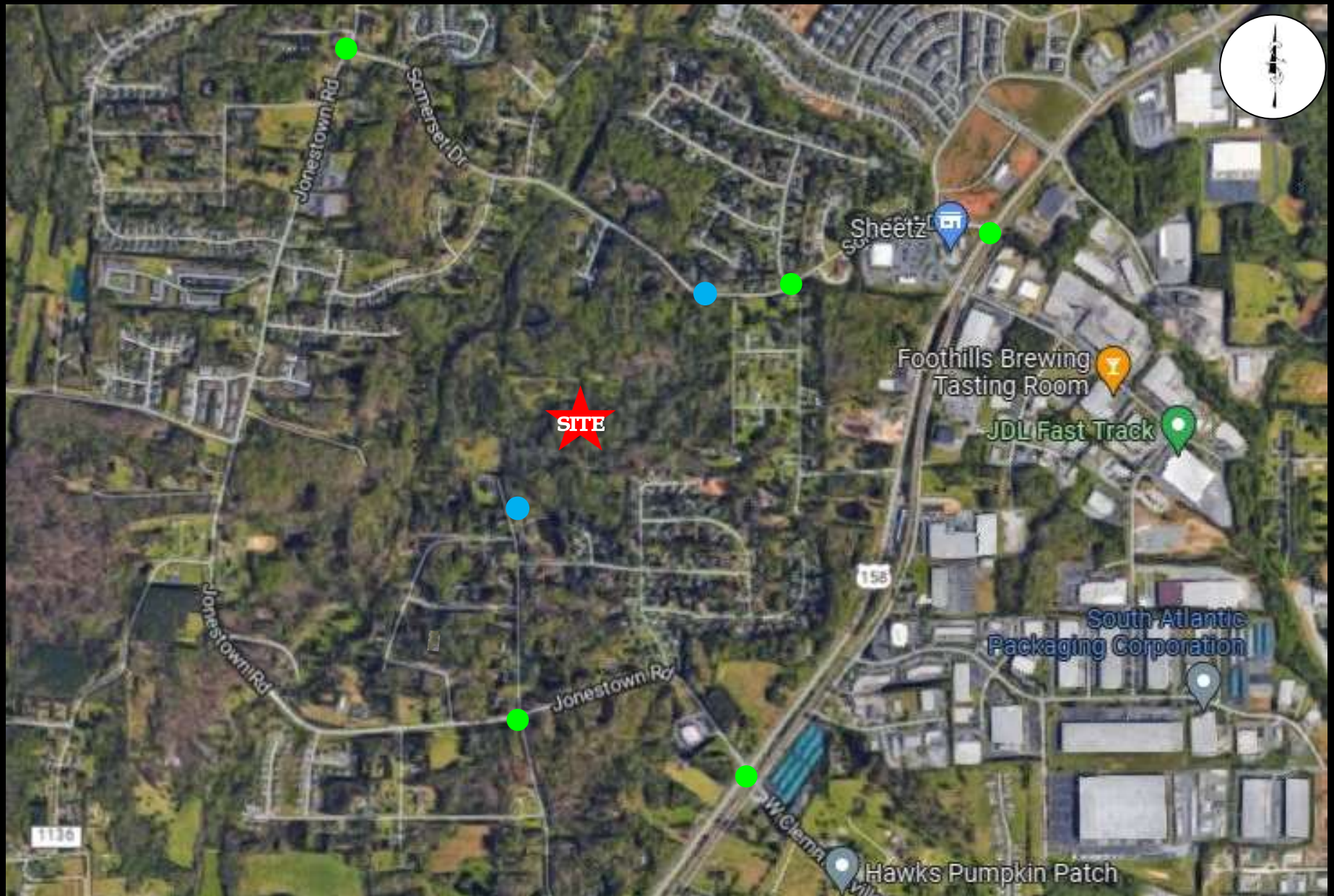
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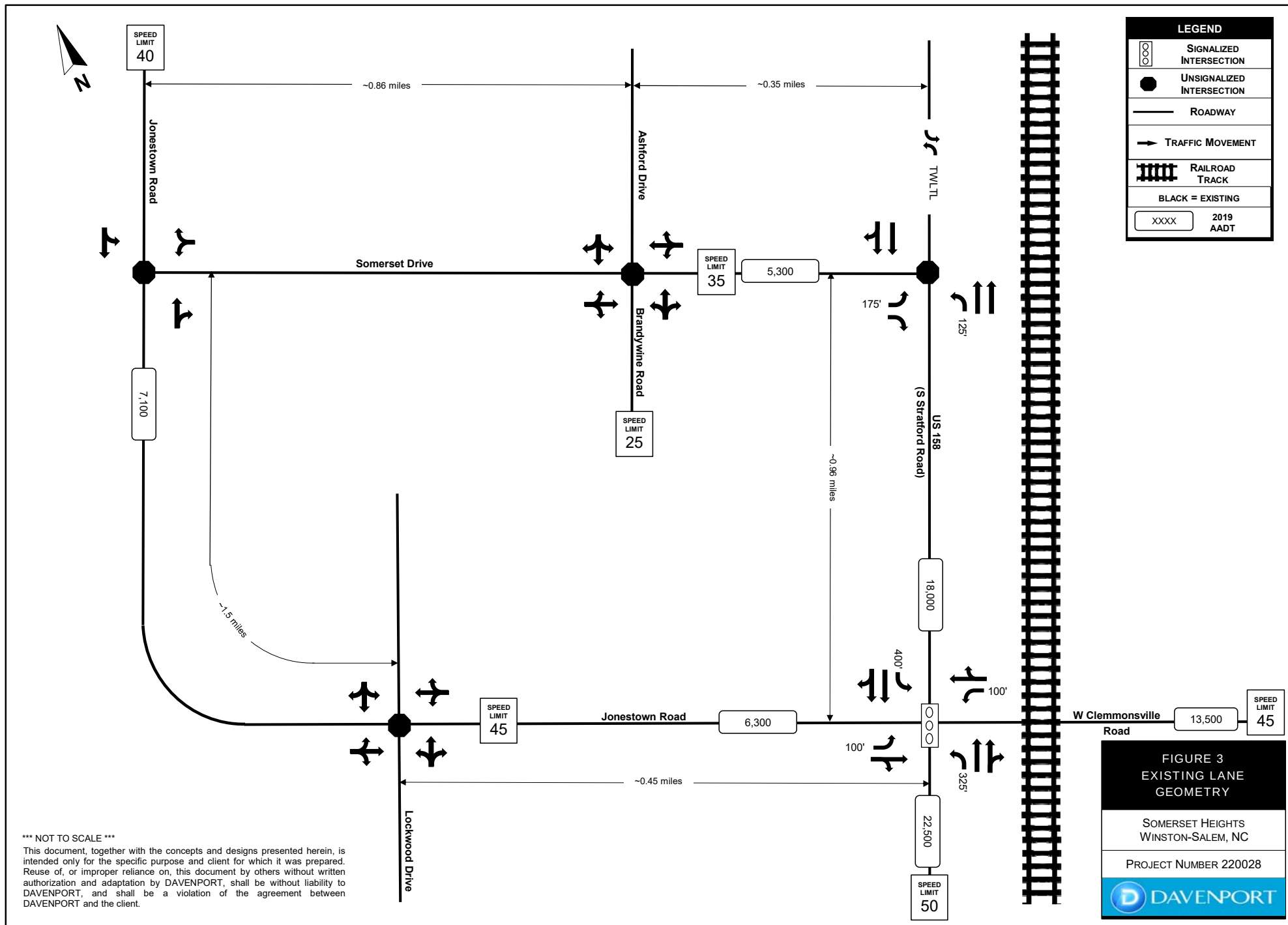
Figures

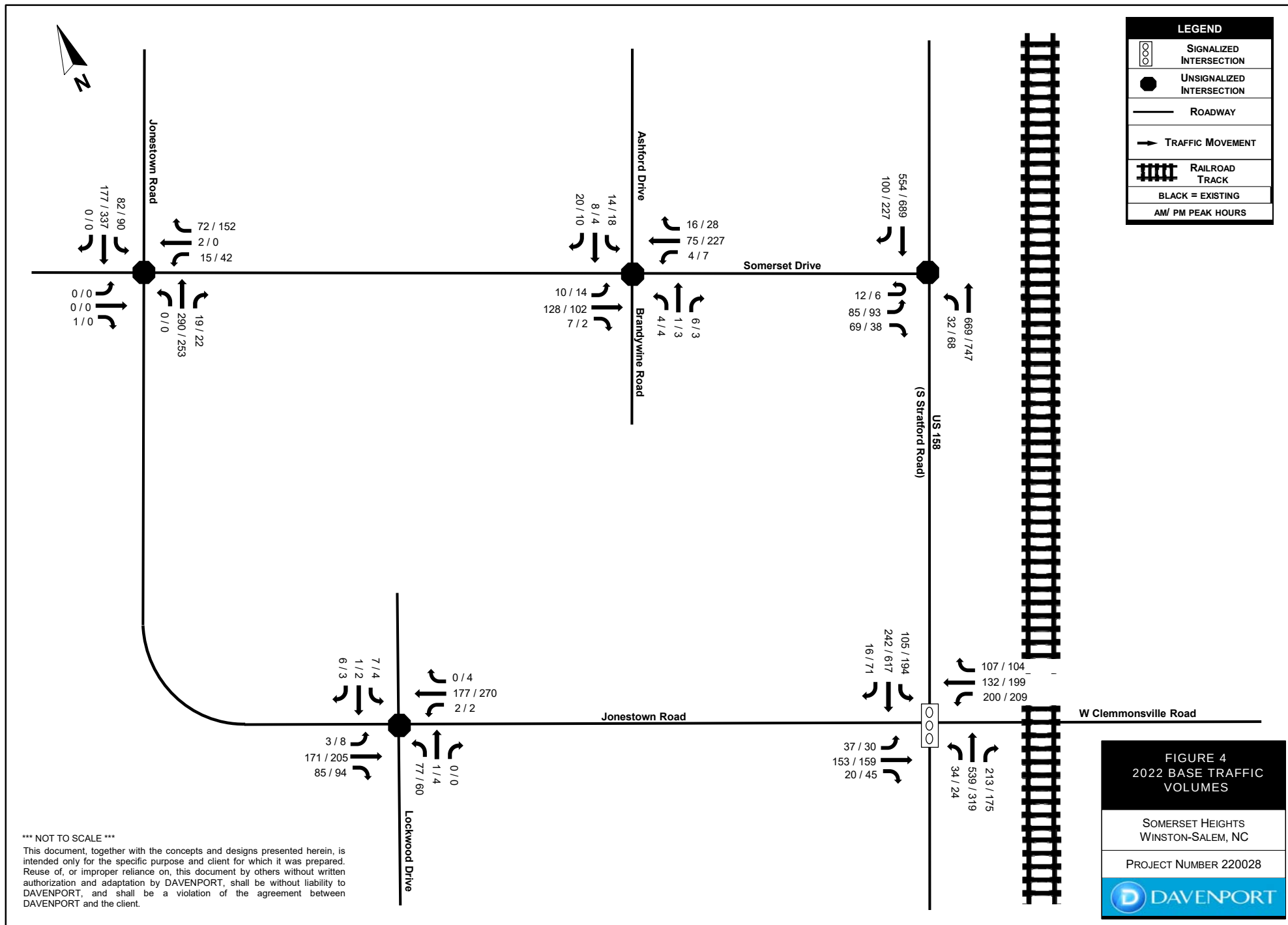
FIGURE 1 CONCEPT PLAN

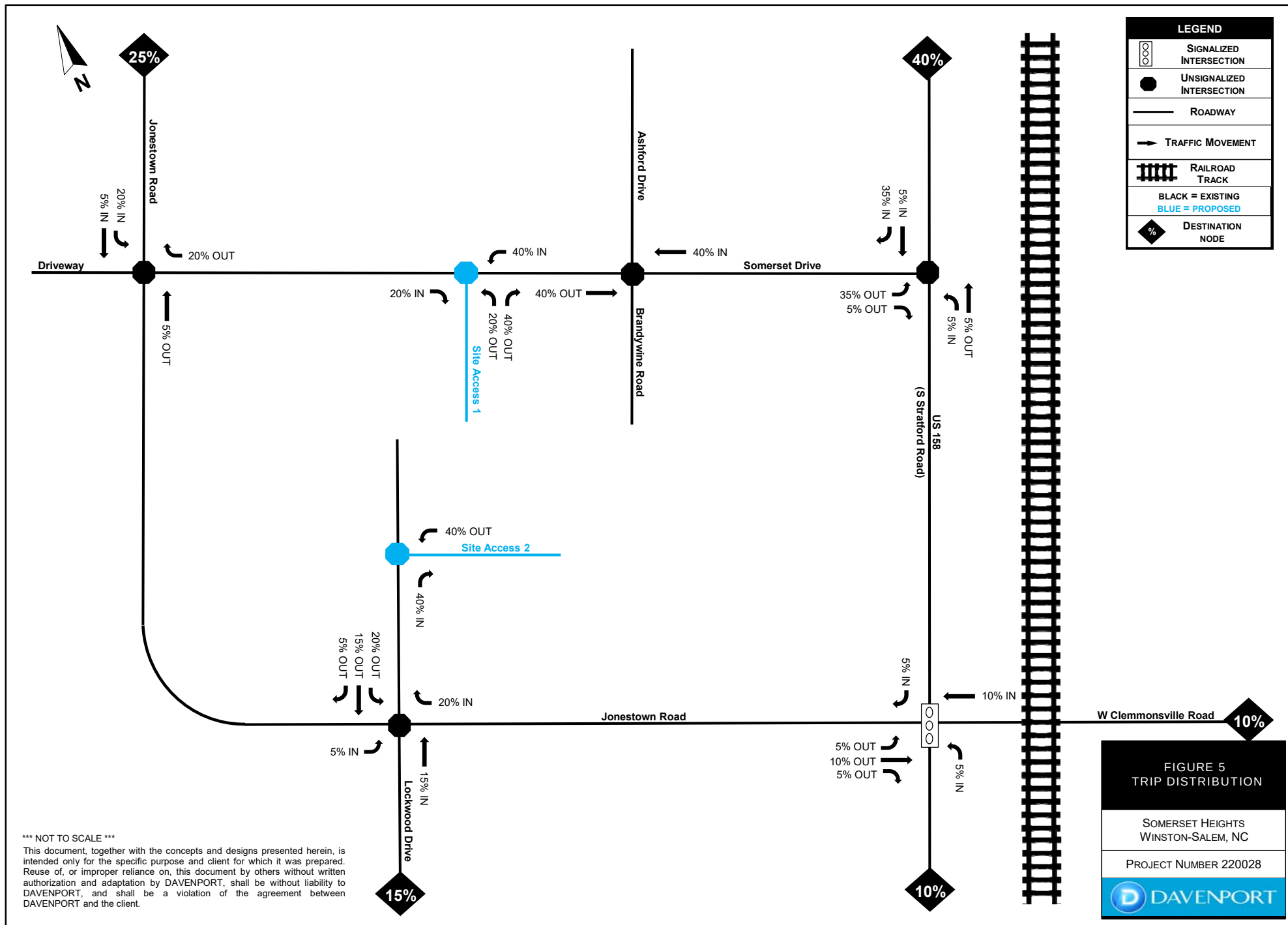
PROPOSED DRIVEWAY LOCATIONS



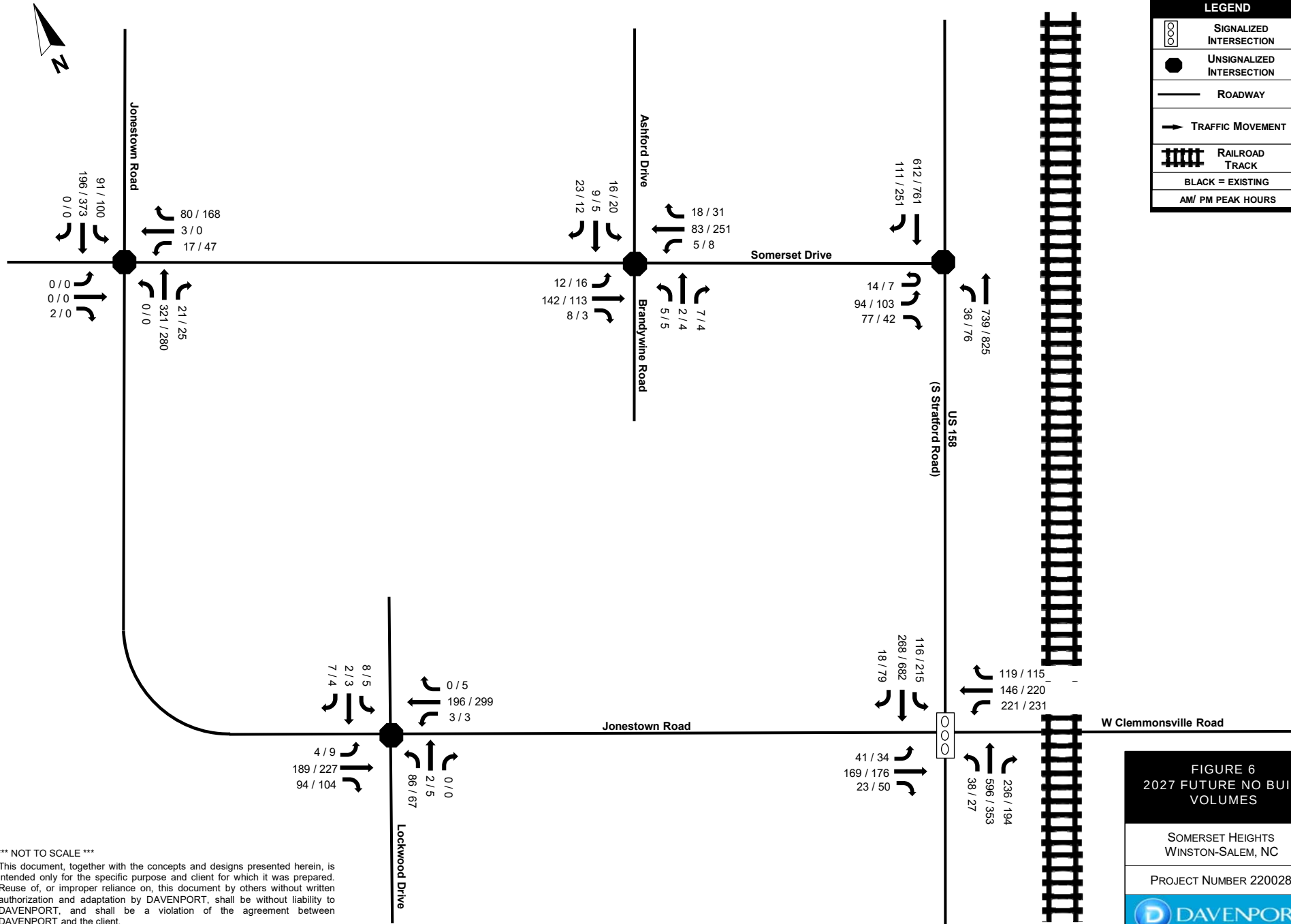








LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	RAILROAD TRACK
BLACK = EXISTING	
AM/ PM PEAK HOURS	



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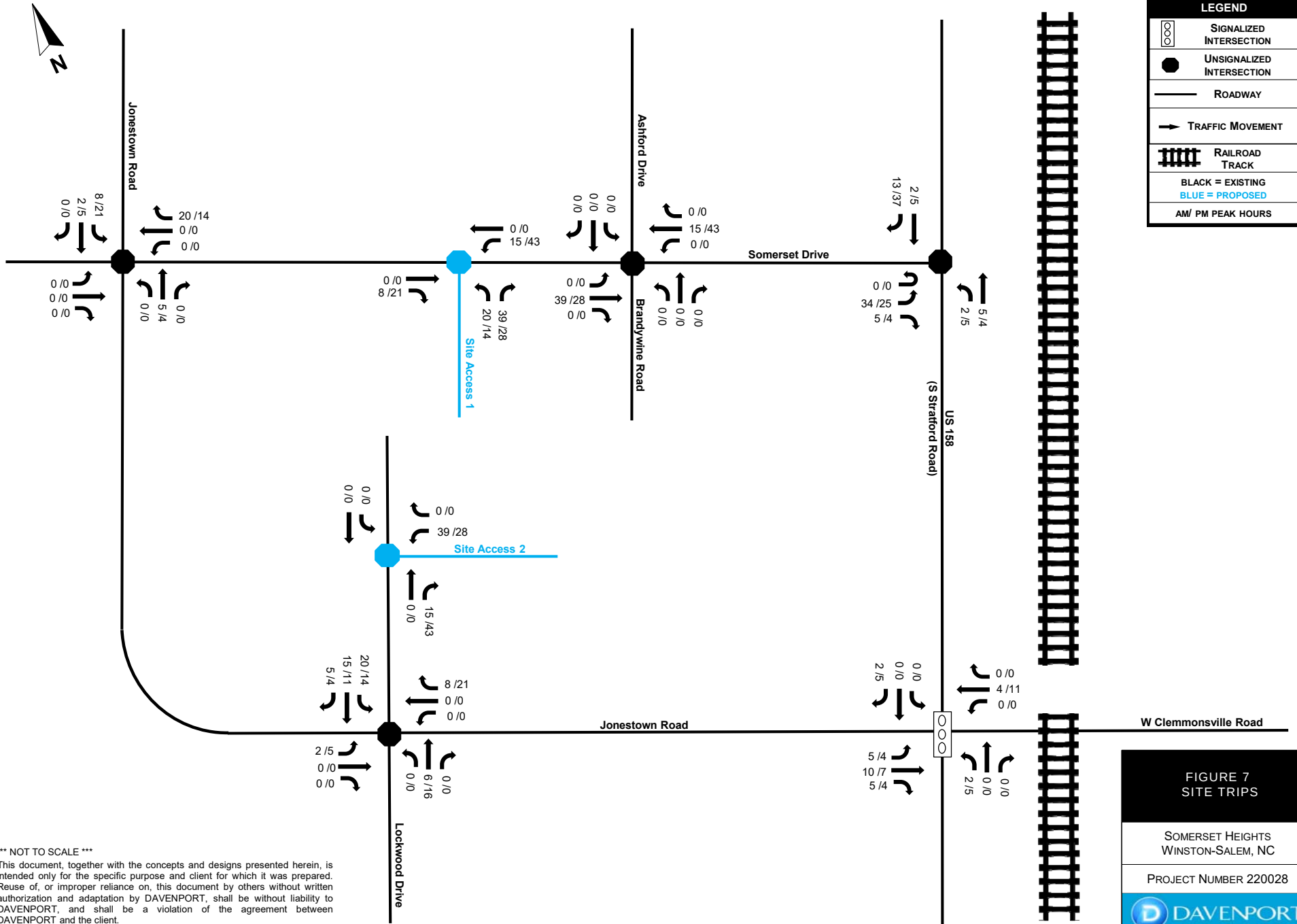
FIGURE 6
2027 FUTURE NO BUILD
VOLUMES

SOMERSET HEIGHTS
WINSTON-SALEM, NC

PROJECT NUMBER 220028



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	RAILROAD TRACK
BLACK = EXISTING	
BLUE = PROPOSED	
AM/ PM PEAK HOURS	



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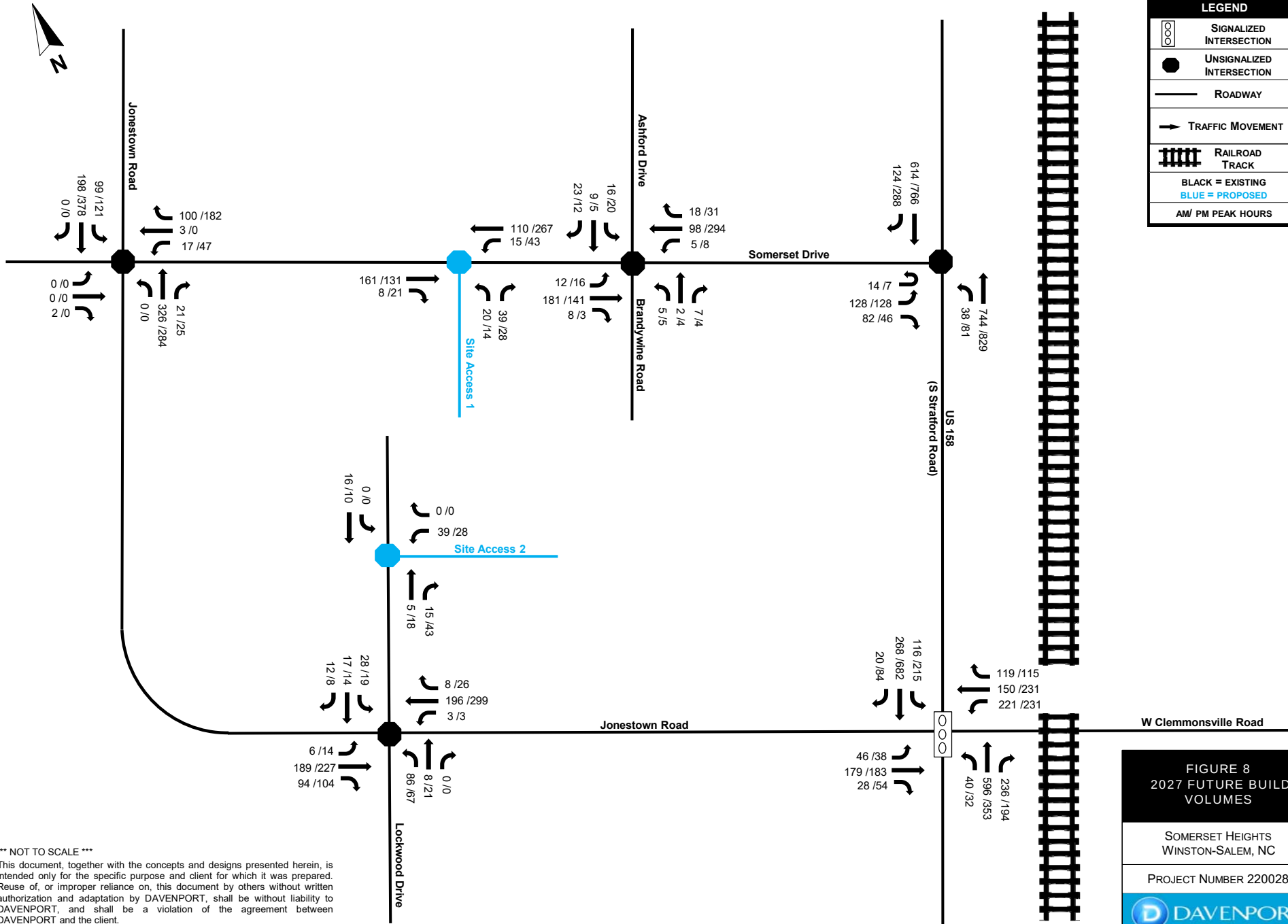
FIGURE 7
SITE TRIPS

SOMERSET HEIGHTS
WINSTON-SALEM, NC

PROJECT NUMBER 220028



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	RAILROAD TRACK
BLACK	EXISTING
BLUE	PROPOSED
AM/ PM PEAK HOURS	



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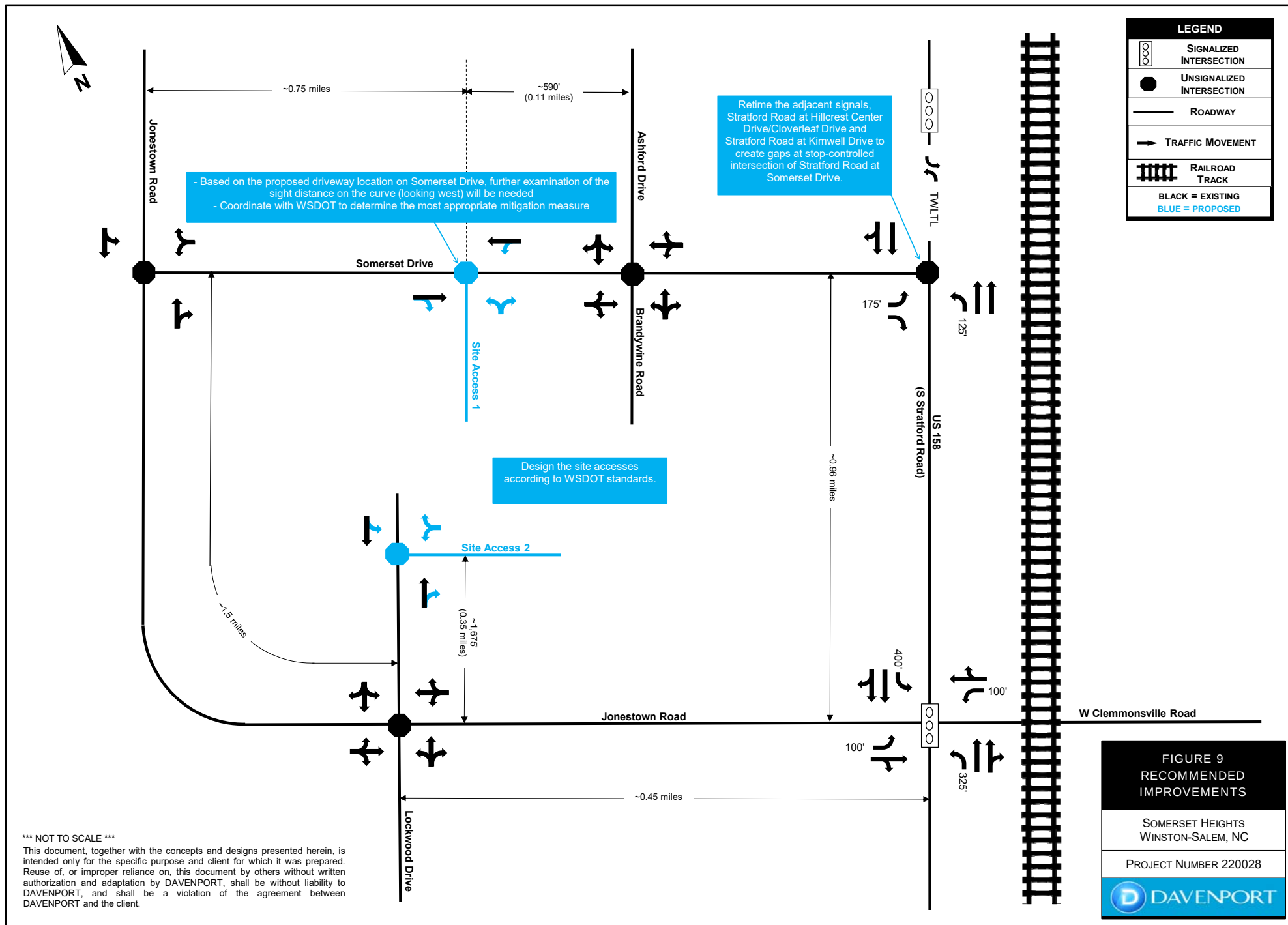
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FIGURE 8
2027 FUTURE BUILD
VOLUMES

SOMERSET HEIGHTS
WINSTON-SALEM, NC

PROJECT NUMBER 220028





Appendix

Trip Generation

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: 192

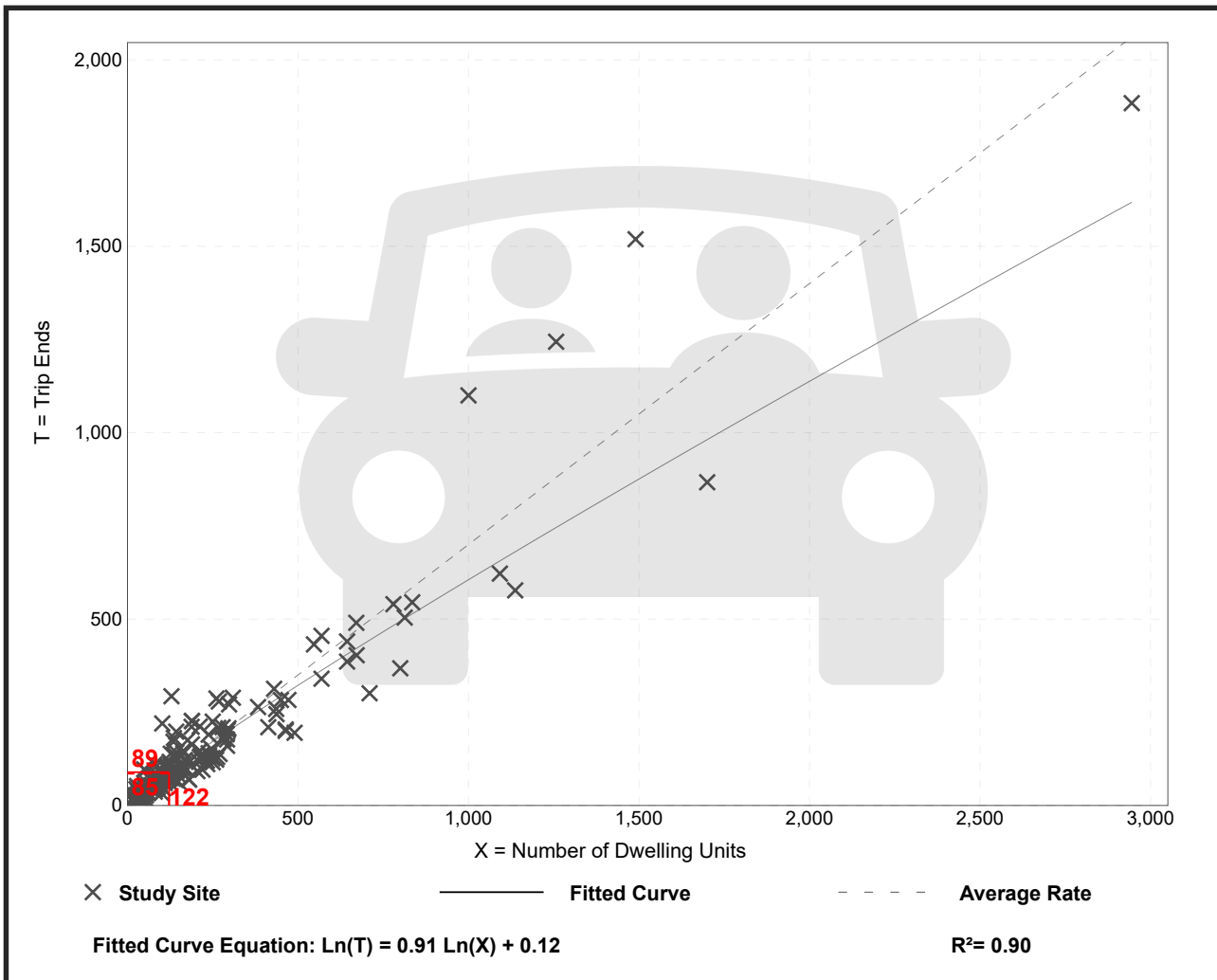
Avg. Num. of Dwelling Units: 226

Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



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: 208

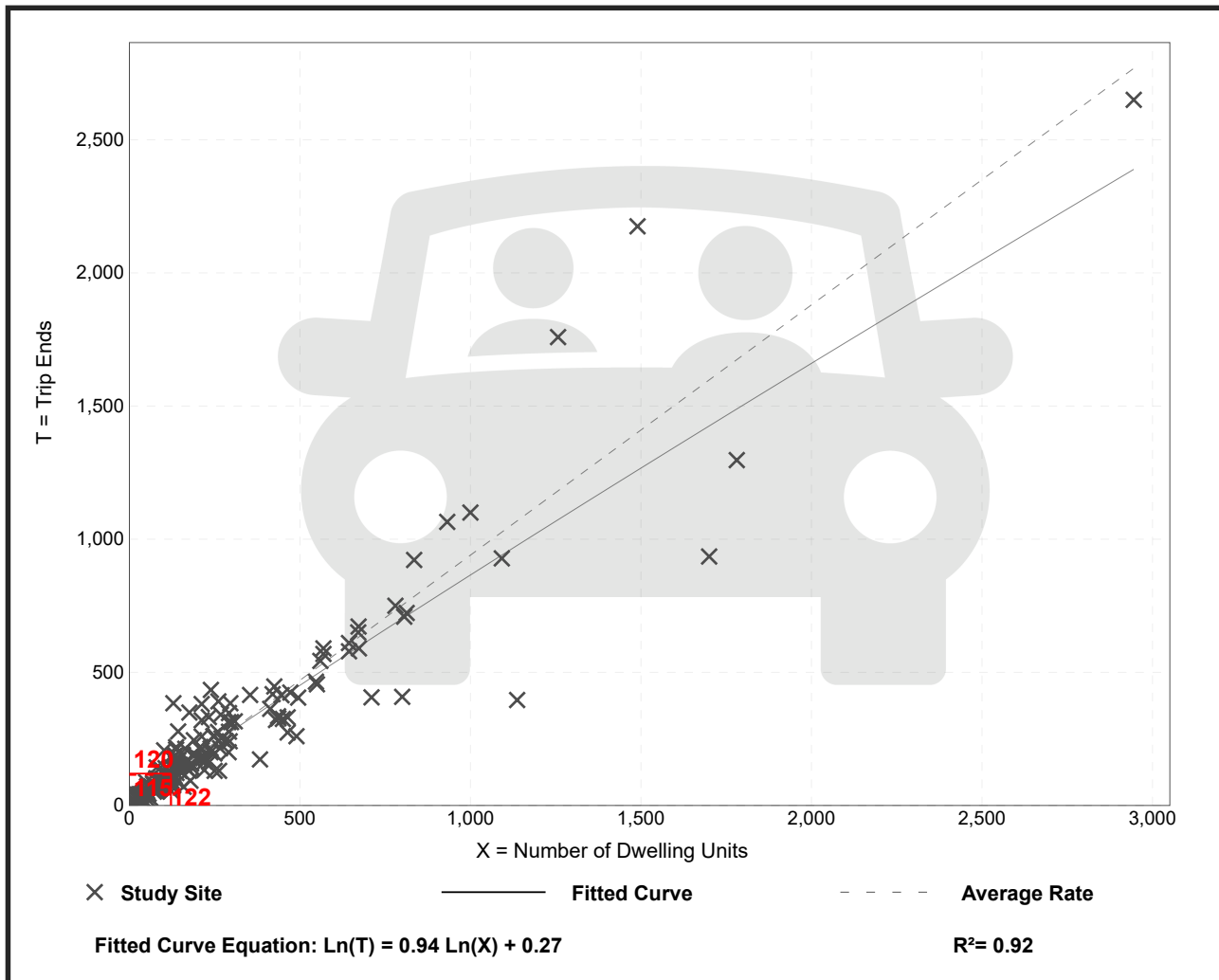
Avg. Num. of Dwelling Units: 248

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



Single-Family Detached Housing (210)

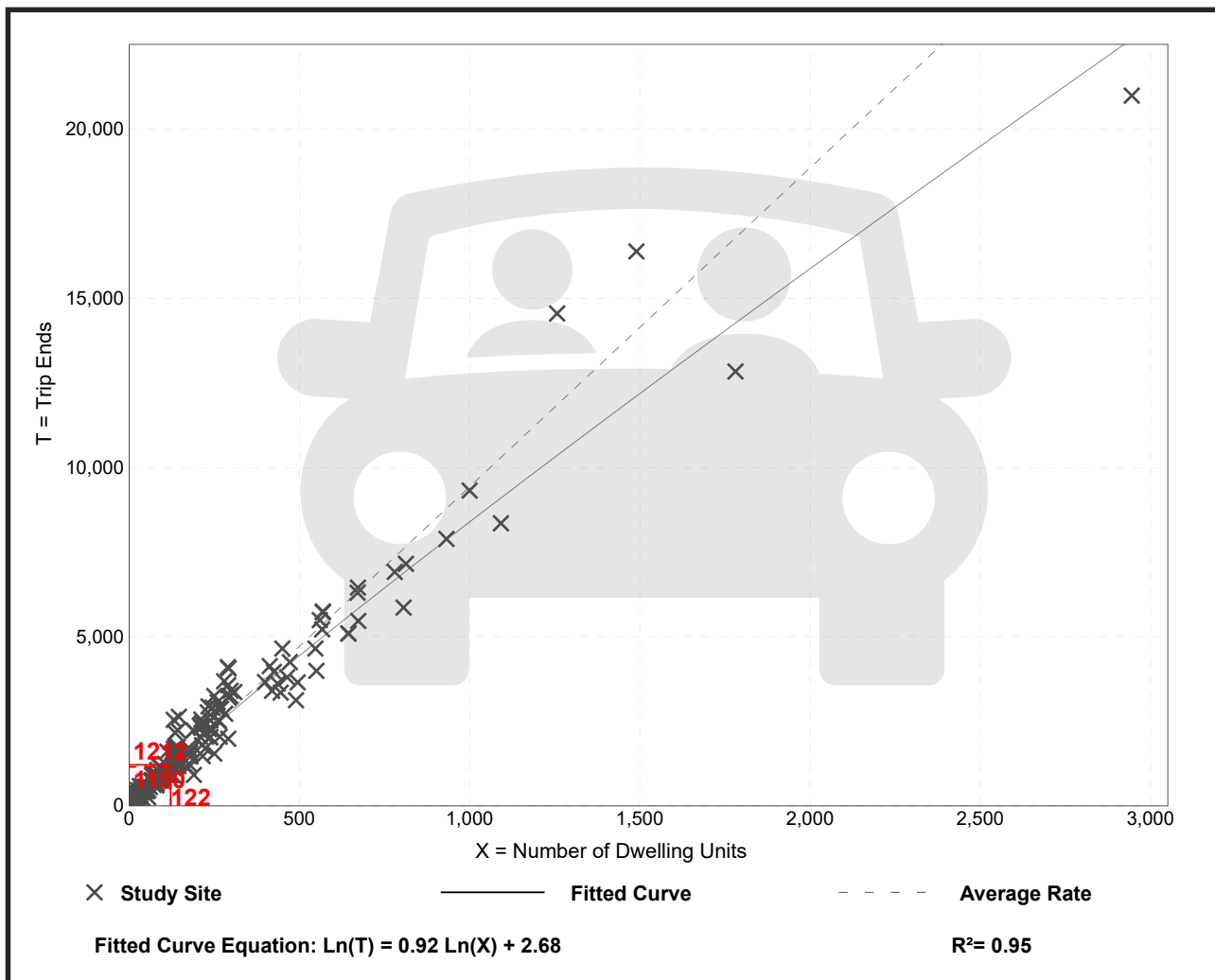
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Single-Family Attached Housing (215)

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: 46

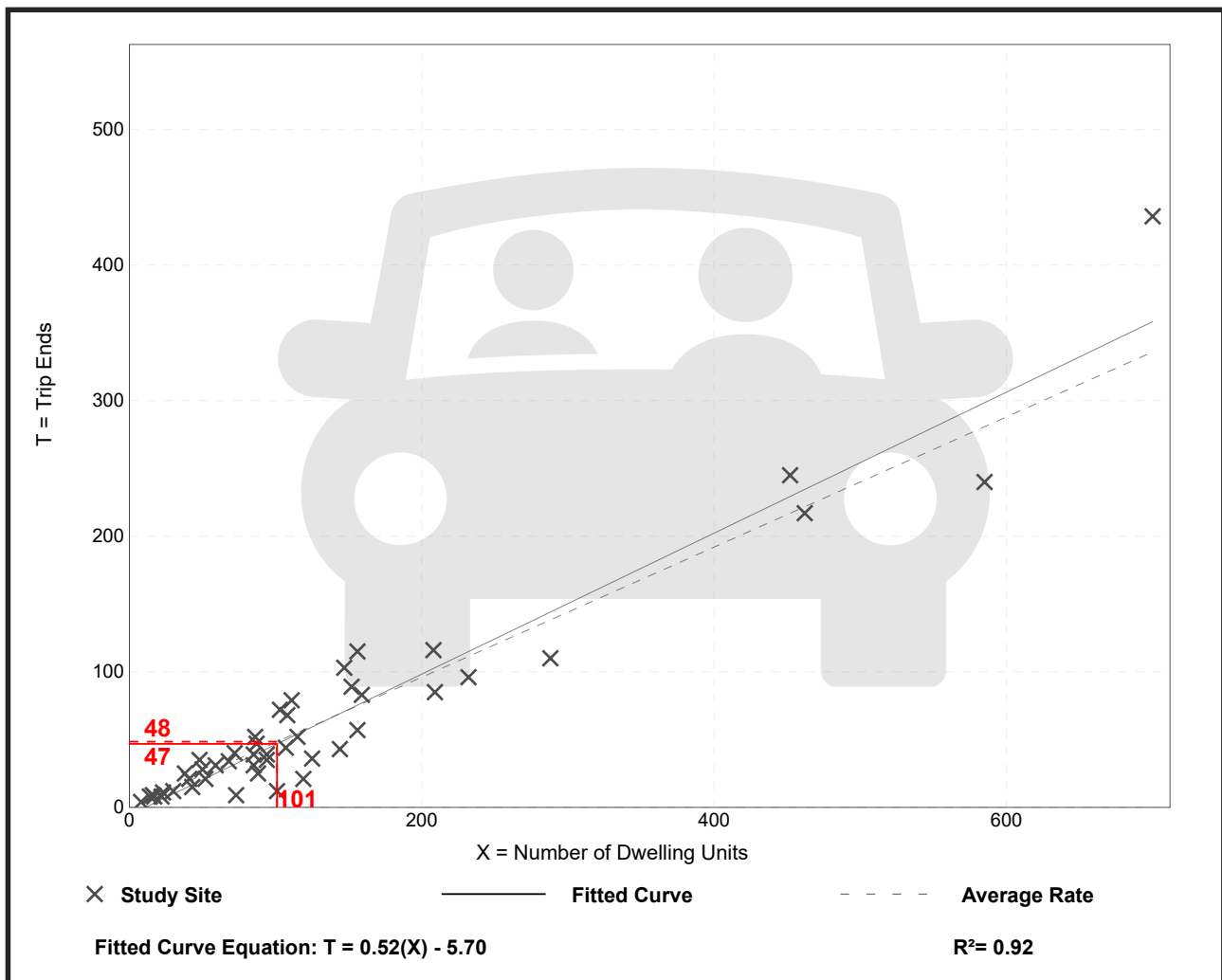
Avg. Num. of Dwelling Units: 135

Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



Single-Family Attached Housing (215)

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: 51

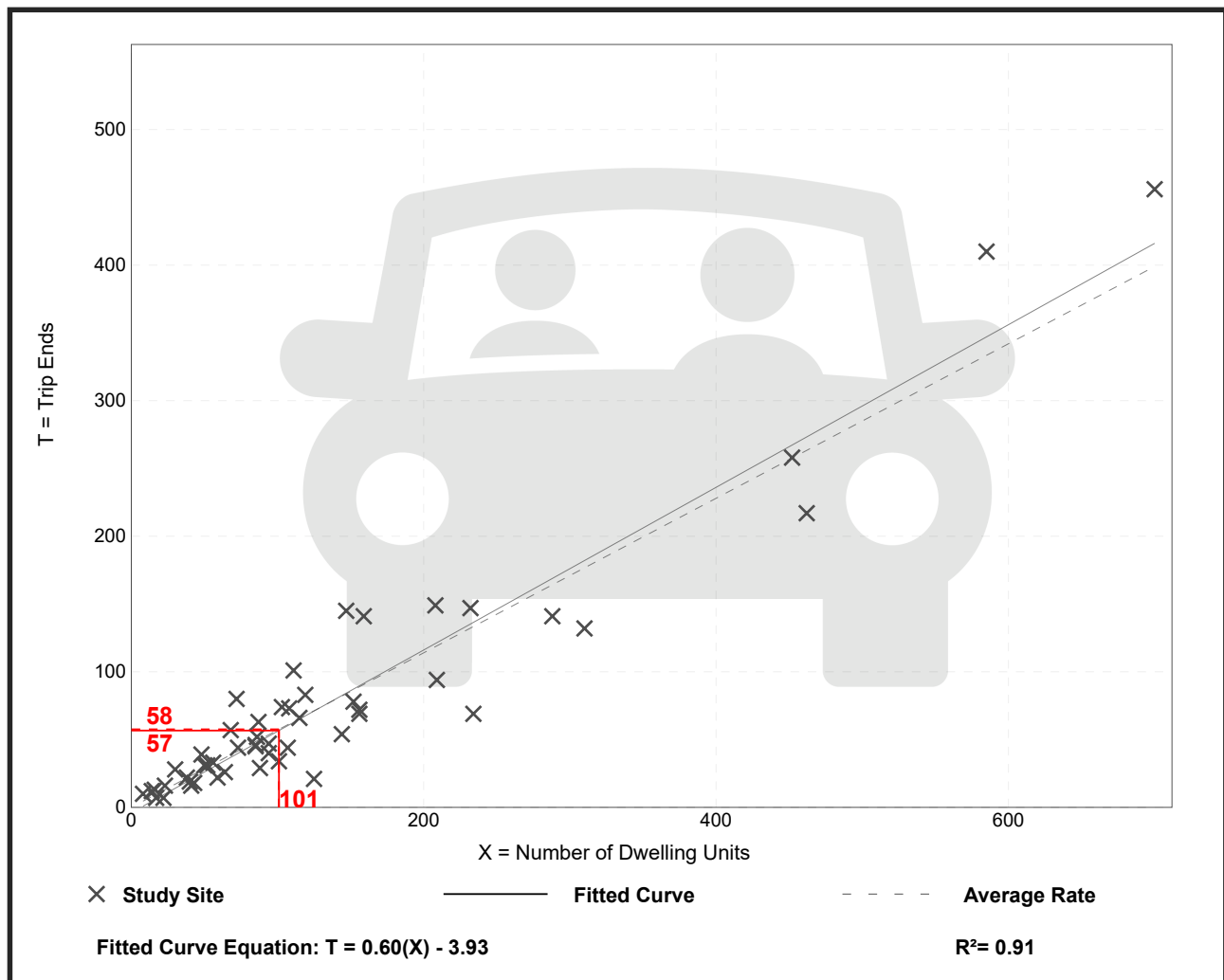
Avg. Num. of Dwelling Units: 136

Directional Distribution: 57% entering, 43% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



Single-Family Attached Housing (215)

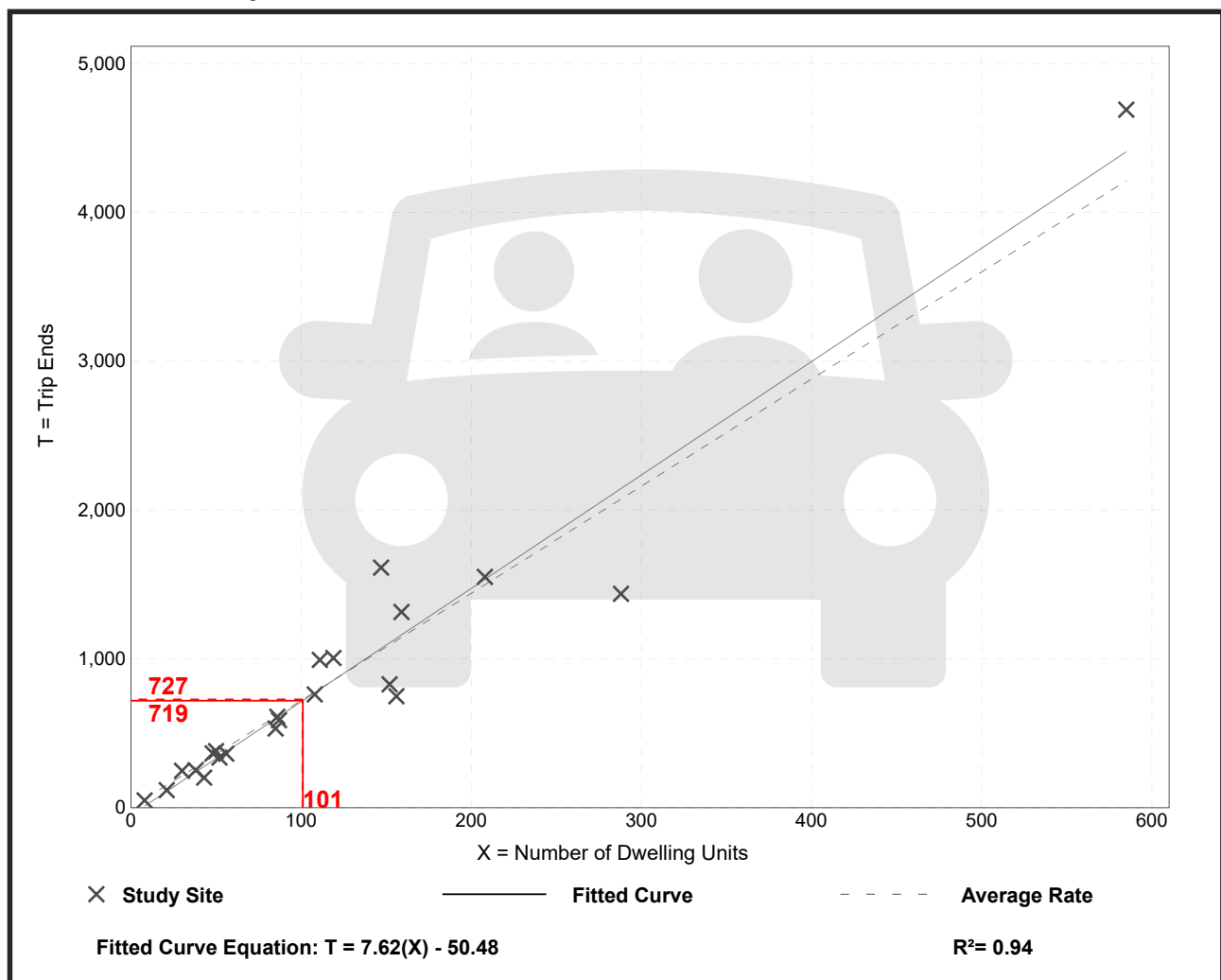
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 22
Avg. Num. of Dwelling Units: 120
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.20	4.70 - 10.97	1.61

Data Plot and Equation



Level of Service Analysis

AM Base Conditions

Lanes, Volumes, Timings
100: Jonestown Road & Somerset Drive

04/05/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	72	290	19	82	177
Future Volume (vph)	15	72	290	19	82	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.889		0.992			
Flt Protected	0.991					0.984
Satd. Flow (prot)	1641	0	1848	0	0	1833
Flt Permitted	0.991					0.984
Satd. Flow (perm)	1641	0	1848	0	0	1833
Link Speed (mph)	35		40			40
Link Distance (ft)	1480		3361			1780
Travel Time (s)	28.8		57.3			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	80	322	21	91	197
Shared Lane Traffic (%)						
Lane Group Flow (vph)	97	0	343	0	0	288
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	45.5%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC
100: Jonestown Road & Somerset Drive

04/05/2022

Intersection

Int Delay, s/veh 2.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	15	72	290	19	82	177
Future Vol, veh/h	15	72	290	19	82	177
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, %	2	2	2	2	2	2
Mvmt Flow	17	80	322	21	91	197

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	712	333	0
Stage 1	333	-	-
Stage 2	379	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	399	709	-
Stage 1	726	-	-
Stage 2	692	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	365	709	-
Mov Cap-2 Maneuver	365	-	-
Stage 1	726	-	-
Stage 2	634	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	2.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	610	1216
HCM Lane V/C Ratio	-	-	0.158	0.075
HCM Control Delay (s)	-	-	12	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.2

Lanes, Volumes, Timings

200: Brandywine Road/Ashford Drive SW & Somerset Drive

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	128	7	4	75	16	4	1	6	14	8	20
Future Volume (vph)	10	128	7	4	75	16	4	1	6	14	8	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.977			0.921			0.937	
Flt Protected		0.997			0.998			0.984			0.983	
Satd. Flow (prot)	0	1844	0	0	1816	0	0	1688	0	0	1716	0
Flt Permitted		0.997			0.998			0.984			0.983	
Satd. Flow (perm)	0	1844	0	0	1816	0	0	1688	0	0	1716	0
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		538			1891			760			884	
Travel Time (s)		10.5			36.8			20.7			17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	142	8	4	83	18	4	1	7	16	9	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	161	0	0	105	0	0	12	0	0	47	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	21.0%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	128	7	4	75	16	4	1	6	14	8	20
Future Vol, veh/h	10	128	7	4	75	16	4	1	6	14	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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	142	8	4	83	18	4	1	7	16	9	22
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	101	0	0	150	0	0	284	277	146	272	272	92
Stage 1	-	-	-	-	-	-	168	168	-	100	100	-
Stage 2	-	-	-	-	-	-	116	109	-	172	172	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1491	-	-	1431	-	-	668	631	901	680	635	965
Stage 1	-	-	-	-	-	-	834	759	-	906	812	-
Stage 2	-	-	-	-	-	-	889	805	-	830	756	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1491	-	-	1431	-	-	640	624	901	668	628	965
Mov Cap-2 Maneuver	-	-	-	-	-	-	640	624	-	668	628	-
Stage 1	-	-	-	-	-	-	827	753	-	899	810	-
Stage 2	-	-	-	-	-	-	856	803	-	816	750	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0.5		0.3			9.8			10			
HCM LOS						A			B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	758	1491	-	-	1431	-	-	772				
HCM Lane V/C Ratio	0.016	0.007	-	-	0.003	-	-	0.06				
HCM Control Delay (s)	9.8	7.4	0	-	7.5	0	-	10				
HCM Lane LOS	A	A	A	-	A	A	-	B				
HCM 95th %tile O(veh)	0	0	-	-	0	-	-	0.2				

Lanes, Volumes, Timings

300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022



Lane Group	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↰	↰	↰	↗↗	↗↗	↰
Traffic Volume (vph)	12	85	69	32	669	554	100
Future Volume (vph)	12	85	69	32	669	554	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175	0	125			0
Storage Lanes		1	1	1			0
Taper Length (ft)		100		0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850			0.977	
Flt Protected		0.950		0.950			
Satd. Flow (prot)	0	1770	1583	1770	3539	3458	0
Flt Permitted		0.950		0.950			
Satd. Flow (perm)	0	1770	1583	1770	3539	3458	0
Link Speed (mph)		35			50	50	
Link Distance (ft)		1891			5105	1133	
Travel Time (s)		36.8			69.6	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	94	77	36	743	616	111
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	107	77	36	743	727	0
Sign Control		Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 37.2%

ICU Level of Service A

Analysis Period (min) 15

HCM 6th TWSC
300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022

Intersection							
Int Delay, s/veh	2						
Movement	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	12	85	69	32	669	554	100
Future Vol, veh/h	12	85	69	32	669	554	100
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	175	0	125	-	-	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	13	94	77	36	743	616	111
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	0	1116	364	727	0	-	0
Stage 1	0	672	-	-	-	-	-
Stage 2	0	444	-	-	-	-	-
Critical Hdwy	-	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	5.84	-	-	-	-	-
Critical Hdwy Stg 2	-	5.84	-	-	-	-	-
Follow-up Hdwy	-	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	202	633	872	-	-	-
Stage 1	0	469	-	-	-	-	-
Stage 2	0	614	-	-	-	-	-
Platoon blocked, %	-				-	-	-
Mov Cap-1 Maneuver	0	194	633	872	-	-	-
Mov Cap-2 Maneuver	0	322	-	-	-	-	-
Stage 1	0	450	-	-	-	-	-
Stage 2	0	614	-	-	-	-	-
Approach	EB		NB		SB		
HCM Control Delay, s	16.6		0.4		0		
HCM LOS	C						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	872	-	322	633	-	-	
HCM Lane V/C Ratio	0.041	-	0.293	0.121	-	-	
HCM Control Delay (s)	9.3	-	20.8	11.5	-	-	
HCM Lane LOS	A	-	C	B	-	-	
HCM 95th %tile O(veh)	0.1	-	1.2	0.4	-	-	

Lanes, Volumes, Timings
400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	153	20	200	132	107	34	539	213	105	242	16
Future Volume (vph)	37	153	20	200	132	107	34	539	213	105	242	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	325		0	400		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.983			0.933			0.957			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1831	0	1770	1738	0	1770	3387	0	1770	3507	0
Flt Permitted	0.595			0.377			0.576			0.161		
Satd. Flow (perm)	1108	1831	0	702	1738	0	1073	3387	0	300	3507	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		2341			955			753			5105	
Travel Time (s)		35.5			14.5			10.3			69.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	41	170	22	222	147	119	38	599	237	117	269	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	192	0	222	266	0	38	836	0	117	287	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	14.0		7.0	14.0	
Minimum Split (s)	12.3	13.2		12.1	13.0		13.3	20.3		13.3	20.3	
Total Split (s)	20.0	35.0		20.0	35.0		20.0	90.0		20.0	90.0	
Total Split (%)	12.1%	21.2%		12.1%	21.2%		12.1%	54.5%		12.1%	54.5%	
Maximum Green (s)	14.7	28.8		14.9	29.0		13.7	83.7		13.7	83.7	
Yellow Time (s)	3.0	4.7		3.0	4.7		3.0	4.9		3.0	4.8	
All-Red Time (s)	2.3	1.5		2.1	1.3		3.3	1.4		3.3	1.5	
Lost Time Adjust (s)	-0.3	-1.2		-0.1	-1.0		-1.3	-1.3		-1.3	-1.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	6.0		2.0	6.0	
Minimum Gap (s)	2.0	2.0		3.0	3.0		2.0	3.0		2.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	30.0		0.0	30.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effect Green (s)	23.1	15.5		33.7	26.8		38.0	29.5		43.2	37.3	
Actuated g/C Ratio	0.26	0.18		0.38	0.30		0.43	0.33		0.49	0.42	
v/c Ratio	0.12	0.60		0.52	0.51		0.07	0.74		0.38	0.19	
Control Delay	20.8	44.0		25.4	32.9		12.9	31.2		16.1	18.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	20.8	44.0		25.4	32.9		12.9	31.2		16.1	18.9	

Lanes, Volumes, Timings

400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	C	D		C	C		B	C		B	B	
Approach Delay		39.9			29.5			30.4			18.1	
Approach LOS		D			C			C			B	
Queue Length 50th (ft)	14	99		84	131		10	213		33	58	
Queue Length 95th (ft)	41	196		172	253		29	331		72	99	
Internal Link Dist (ft)		2261			875			673			5025	
Turn Bay Length (ft)	100			100			325			400		
Base Capacity (vph)	500	637		453	605		655	3123		407	3234	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.08	0.30		0.49	0.44		0.06	0.27		0.29	0.09	

Intersection Summary

Area Type: Other

Cycle Length: 165

Actuated Cycle Length: 88.5

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 28.8

Intersection LOS: C

Intersection Capacity Utilization 64.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 400: US 158 (S Stratford Road) & Jonestown Road

 Ø1	 Ø2	 Ø3	 Ø4
20 s	90 s	20 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8
20 s	90 s	20 s	35 s

Lanes, Volumes, Timings

500: Lockwood Drive & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	3	171	85	2	177	0	77	1	0	2	7	1
Future Volume (vph)	3	171	85	2	177	0	77	1	0	2	7	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.956										0.947
Flt Protected		0.999			0.999			0.953				0.973
Satd. Flow (prot)	0	1779	0	0	1861	0	0	1775	0	0	0	1716
Flt Permitted		0.999			0.999			0.953				0.973
Satd. Flow (perm)	0	1779	0	0	1861	0	0	1775	0	0	0	1716
Link Speed (mph)		45			45			45				45
Link Distance (ft)		2659			2341			886				1803
Travel Time (s)		40.3			35.5			13.4				27.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	3	190	94	2	197	0	86	1	0	2	8	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	287	0	0	199	0	0	87	0	0	0	18
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 29.5% ICU Level of Service A

Analysis Period (min) 15

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	6
Future Volume (vph)	6
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Adj. Flow (vph)	7
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

HCM 6th TWSC
500: Lockwood Drive & Jonestown Road

04/05/2022

Intersection													
Int Delay, s/veh	2.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	3	171	85	2	177	0	77	1	0	2	7	1	6
Future Vol, veh/h	3	171	85	2	177	0	77	1	0	2	7	1	6
Conflicting Peds, #/hr	0	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	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	90	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	190	94	2	197	0	86	1	0	2	8	1	7
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	197	0	0	284	0	0	448	444	237	0	445	491	197
Stage 1	-	-	-	-	-	-	243	243	-	0	201	201	-
Stage 2	-	-	-	-	-	-	205	201	-	0	244	290	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1376	-	-	1278	-	-	521	508	802	0	523	478	844
Stage 1	-	-	-	-	-	-	761	705	-	0	801	735	-
Stage 2	-	-	-	-	-	-	797	735	-	0	760	672	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1376	-	-	1278	-	-	514	505	802	0	520	476	844
Mov Cap-2 Maneuver	-	-	-	-	-	-	514	505	-	0	520	476	-
Stage 1	-	-	-	-	-	-	759	703	-	0	799	734	-
Stage 2	-	-	-	-	-	-	788	734	-	0	757	670	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0.1			0.1			13.4			11			
HCM LOS							B			B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	514	1376	-	-	1278	-	-	618					
HCM Lane V/C Ratio	0.169	0.002	-	-	0.002	-	-	0.025					
HCM Control Delay (s)	13.4	7.6	0	-	7.8	0	-	11					
HCM Lane LOS	B	A	A	-	A	A	-	B					
HCM 95th %tile O(veh)	0.6	0	-	-	0	-	-	0.1					

AM Future No-Build Conditions

Lanes, Volumes, Timings
100: Jonestown Road & Somerset Drive

04/05/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	80	321	21	91	196
Future Volume (vph)	17	80	321	21	91	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.889		0.992			
Flt Protected	0.991					0.984
Satd. Flow (prot)	1641	0	1848	0	0	1833
Flt Permitted	0.991					0.984
Satd. Flow (perm)	1641	0	1848	0	0	1833
Link Speed (mph)	35		40			40
Link Distance (ft)	1480		3361			1780
Travel Time (s)	28.8		57.3			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	89	357	23	101	218
Shared Lane Traffic (%)						
Lane Group Flow (vph)	108	0	380	0	0	319
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	49.4%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC
100: Jonestown Road & Somerset Drive

04/05/2022

Intersection

Int Delay, s/veh 2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	80	321	21	91	196
Future Vol, veh/h	17	80	321	21	91	196
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, %	2	2	2	2	2	2
Mvmt Flow	19	89	357	23	101	218

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	789	369	0
Stage 1	369	-	-
Stage 2	420	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	359	677	-
Stage 1	699	-	-
Stage 2	663	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	324	677	-
Mov Cap-2 Maneuver	324	-	-
Stage 1	699	-	-
Stage 2	598	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.8	0	2.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	568	1178
HCM Lane V/C Ratio	-	-	0.19	0.086
HCM Control Delay (s)	-	-	12.8	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0.3

Lanes, Volumes, Timings

200: Brandywine Road/Ashford Drive SW & Somerset Drive

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	142	8	5	83	18	5	2	7	16	9	23
Future Volume (vph)	12	142	8	5	83	18	5	2	7	16	9	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993			0.977			0.932			0.935	
Flt Protected		0.996			0.997			0.982			0.984	
Satd. Flow (prot)	0	1842	0	0	1814	0	0	1705	0	0	1714	0
Flt Permitted		0.996			0.997			0.982			0.984	
Satd. Flow (perm)	0	1842	0	0	1814	0	0	1705	0	0	1714	0
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		538			1891			760			884	
Travel Time (s)		10.5			36.8			20.7			17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	158	9	6	92	20	6	2	8	18	10	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	118	0	0	16	0	0	54	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 22.5%

ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	142	8	5	83	18	5	2	7	16	9	23
Future Vol, veh/h	12	142	8	5	83	18	5	2	7	16	9	23
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	158	9	6	92	20	6	2	8	18	10	26
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	112	0	0	167	0	0	321	313	163	308	307	102
Stage 1	-	-	-	-	-	-	189	189	-	114	114	-
Stage 2	-	-	-	-	-	-	132	124	-	194	193	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1478	-	-	1411	-	-	632	602	882	644	607	953
Stage 1	-	-	-	-	-	-	813	744	-	891	801	-
Stage 2	-	-	-	-	-	-	871	793	-	808	741	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1478	-	-	1411	-	-	600	593	882	629	598	953
Mov Cap-2 Maneuver	-	-	-	-	-	-	600	593	-	629	598	-
Stage 1	-	-	-	-	-	-	805	737	-	882	797	-
Stage 2	-	-	-	-	-	-	833	789	-	790	734	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.4			10.2			10.2		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	713	1478	-	-	1411	-	-	743				
HCM Lane V/C Ratio	0.022	0.009	-	-	0.004	-	-	0.072				
HCM Control Delay (s)	10.2	7.5	0	-	7.6	0	-	10.2				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0.2				

Lanes, Volumes, Timings

300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022



Lane Group	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↰	↰	↰	↗↗	↗↗	↰
Traffic Volume (vph)	14	94	77	36	739	612	111
Future Volume (vph)	14	94	77	36	739	612	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175	0	125			0
Storage Lanes		1	1	1			0
Taper Length (ft)		100		0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850			0.977	
Flt Protected		0.950		0.950			
Satd. Flow (prot)	0	1770	1583	1770	3539	3458	0
Flt Permitted		0.950		0.950			
Satd. Flow (perm)	0	1770	1583	1770	3539	3458	0
Link Speed (mph)		35			50	50	
Link Distance (ft)		1891			5105	1133	
Travel Time (s)		36.8			69.6	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	104	86	40	821	680	123
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	120	86	40	821	803	0
Sign Control		Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 39.8%

ICU Level of Service A

Analysis Period (min) 15

HCM 6th TWSC
300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022

Intersection

Int Delay, s/veh 2.2

Movement	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	14	94	77	36	739	612	111
Future Vol, veh/h	14	94	77	36	739	612	111
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	175	0	125	-	-	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	16	104	86	40	821	680	123

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	0	1233	402	803	0	0
Stage 1	0	742	-	-	-	-
Stage 2	0	491	-	-	-	-
Critical Hdwy	-	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	-	5.84	-	-	-	-
Critical Hdwy Stg 2	-	5.84	-	-	-	-
Follow-up Hdwy	-	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	0	169	598	817	-	-
Stage 1	0	432	-	-	-	-
Stage 2	0	581	-	-	-	-
Platoon blocked, %	-				-	-
Mov Cap-1 Maneuver	0	161	598	817	-	-
Mov Cap-2 Maneuver	0	290	-	-	-	-
Stage 1	0	411	-	-	-	-
Stage 2	0	581	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.7	0.4	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	817	-	290	598	-	-
HCM Lane V/C Ratio	0.049	-	0.36	0.143	-	-
HCM Control Delay (s)	9.6	-	24.2	12	-	-
HCM Lane LOS	A	-	C	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.6	0.5	-	-

Lanes, Volumes, Timings
400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	41	169	23	221	146	119	38	596	236	116	268	18
Future Volume (vph)	41	169	23	221	146	119	38	596	236	116	268	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	325		0	400		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.982			0.933			0.957			0.991	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1829	0	1770	1738	0	1770	3387	0	1770	3507	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1829	0	1770	1738	0	1770	3387	0	1770	3507	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		2341			955			753			5105	
Travel Time (s)		35.5			14.5			10.3			69.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	46	188	26	246	162	132	42	662	262	129	298	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	46	214	0	246	294	0	42	924	0	129	318	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	14.0		7.0	14.0	
Minimum Split (s)	12.3	13.2		12.1	13.0		13.3	20.3		13.3	20.3	
Total Split (s)	20.0	35.0		20.0	35.0		20.0	90.0		20.0	90.0	
Total Split (%)	12.1%	21.2%		12.1%	21.2%		12.1%	54.5%		12.1%	54.5%	
Maximum Green (s)	14.7	28.8		14.9	29.0		13.7	83.7		13.7	83.7	
Yellow Time (s)	3.0	4.7		3.0	4.7		3.0	4.9		3.0	4.8	
All-Red Time (s)	2.3	1.5		2.1	1.3		3.3	1.4		3.3	1.5	
Lost Time Adjust (s)	-0.3	-1.2		-0.1	-1.0		-1.3	-1.3		-1.3	-1.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	6.0		2.0	6.0	
Minimum Gap (s)	2.0	2.0		3.0	3.0		2.0	3.0		2.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	30.0		0.0	30.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effect Green (s)	8.4	19.4		15.3	29.4		9.2	35.3		13.4	42.9	
Actuated g/C Ratio	0.08	0.19		0.15	0.28		0.09	0.34		0.13	0.41	
v/c Ratio	0.32	0.63		0.94	0.60		0.27	0.80		0.57	0.22	
Control Delay	55.8	49.0		90.3	41.5		53.4	37.6		55.8	21.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	55.8	49.0		90.3	41.5		53.4	37.6		55.8	21.7	

Lanes, Volumes, Timings

400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	D		F	D		D	D		E	C	
Approach Delay		50.2			63.7			38.3			31.5	
Approach LOS		D			E			D			C	
Queue Length 50th (ft)	30	133		167	176		27	298		82	73	
Queue Length 95th (ft)	74	235		#393	314		69	403		165	118	
Internal Link Dist (ft)		2261			875			673			5025	
Turn Bay Length (ft)	100			100			325			400		
Base Capacity (vph)	261	539		261	519		261	2800		261	2899	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.18	0.40		0.94	0.57		0.16	0.33		0.49	0.11	

Intersection Summary

Area Type: Other

Cycle Length: 165

Actuated Cycle Length: 103.8

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 44.5

Intersection LOS: D

Intersection Capacity Utilization 69.6%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 400: US 158 (S Stratford Road) & Jonestown Road

 Ø1	 Ø2	 Ø3	 Ø4
20 s	90 s	20 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8
20 s	90 s	20 s	35 s

Lanes, Volumes, Timings

500: Lockwood Drive & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	4	189	94	3	196	0	86	2	0	3	8	2
Future Volume (vph)	4	189	94	3	196	0	86	2	0	3	8	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.956										0.951
Flt Protected		0.999			0.999			0.953				0.973
Satd. Flow (prot)	0	1779	0	0	1861	0	0	1775	0	0	0	1724
Flt Permitted		0.999			0.999			0.953				0.973
Satd. Flow (perm)	0	1779	0	0	1861	0	0	1775	0	0	0	1724
Link Speed (mph)		45			45			45				45
Link Distance (ft)		2659			2341			886				1803
Travel Time (s)		40.3			35.5			13.4				27.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	210	104	3	218	0	96	2	0	3	9	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	318	0	0	221	0	0	98	0	0	0	22
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 32.5% ICU Level of Service A

Analysis Period (min) 15

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	7
Future Volume (vph)	7
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Adj. Flow (vph)	8
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

HCM 6th TWSC
500: Lockwood Drive & Jonestown Road

04/05/2022

Intersection													
Int Delay, s/veh	2.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	4	189	94	3	196	0	86	2	0	3	8	2	7
Future Vol, veh/h	4	189	94	3	196	0	86	2	0	3	8	2	7
Conflicting Peds, #/hr	0	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	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	90	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	210	104	3	218	0	96	2	0	3	9	2	8
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	218	0	0	314	0	0	499	494	262	0	495	546	218
Stage 1	-	-	-	-	-	-	270	270	-	0	224	224	-
Stage 2	-	-	-	-	-	-	229	224	-	0	271	322	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1352	-	-	1246	-	-	482	476	777	0	485	445	822
Stage 1	-	-	-	-	-	-	736	686	-	0	779	718	-
Stage 2	-	-	-	-	-	-	774	718	-	0	735	651	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1352	-	-	1246	-	-	473	473	777	0	481	442	822
Mov Cap-2 Maneuver	-	-	-	-	-	-	473	473	-	0	481	442	-
Stage 1	-	-	-	-	-	-	733	683	-	0	776	716	-
Stage 2	-	-	-	-	-	-	762	716	-	0	730	648	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0.1			0.1			14.6			11.5			
HCM LOS							B			B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	473	1352	-	-	1246	-	-	573					
HCM Lane V/C Ratio	0.207	0.003	-	-	0.003	-	-	0.033					
HCM Control Delay (s)	14.6	7.7	0	-	7.9	0	-	11.5					
HCM Lane LOS	B	A	A	-	A	A	-	B					
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.1					

AM Future Build Conditions

Lanes, Volumes, Timings
100: Jonestown Road & Somerset Drive

04/05/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	17	100	326	21	99	198
Future Volume (vph)	17	100	326	21	99	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.885		0.992			
Flt Protected	0.993					0.984
Satd. Flow (prot)	1637	0	1848	0	0	1833
Flt Permitted	0.993					0.984
Satd. Flow (perm)	1637	0	1848	0	0	1833
Link Speed (mph)	35		40			40
Link Distance (ft)	1480		3361			1780
Travel Time (s)	28.8		57.3			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	19	111	362	23	110	220
Shared Lane Traffic (%)						
Lane Group Flow (vph)	130	0	385	0	0	330
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	51.4%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC
100: Jonestown Road & Somerset Drive

04/05/2022

Intersection

Int Delay, s/veh 3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	100	326	21	99	198
Future Vol, veh/h	17	100	326	21	99	198
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, %	2	2	2	2	2	2
Mvmt Flow	19	111	362	23	110	220

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	814	374	0
Stage 1	374	-	-
Stage 2	440	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	347	672	-
Stage 1	696	-	-
Stage 2	649	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	310	672	-
Mov Cap-2 Maneuver	310	-	-
Stage 1	696	-	-
Stage 2	580	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.1	0	2.8
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	575	1173
HCM Lane V/C Ratio	-	-	0.226	0.094
HCM Control Delay (s)	-	-	13.1	8.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.9	0.3

Lanes, Volumes, Timings

200: Brandywine Road/Ashford Drive SW & Somerset Drive

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	181	8	5	98	18	5	2	7	16	9	23
Future Volume (vph)	12	181	8	5	98	18	5	2	7	16	9	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.980			0.932			0.935	
Flt Protected		0.997			0.998			0.982			0.984	
Satd. Flow (prot)	0	1848	0	0	1822	0	0	1705	0	0	1714	0
Flt Permitted		0.997			0.998			0.982			0.984	
Satd. Flow (perm)	0	1848	0	0	1822	0	0	1705	0	0	1714	0
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		538			1891			760			884	
Travel Time (s)		10.5			36.8			20.7			17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	13	201	9	6	109	20	6	2	8	18	10	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	223	0	0	135	0	0	16	0	0	54	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 24.8%

ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	181	8	5	98	18	5	2	7	16	9	23
Future Vol, veh/h	12	181	8	5	98	18	5	2	7	16	9	23
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	201	9	6	109	20	6	2	8	18	10	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	129	0	0	210	0	0	381	373	206	368	367	119
Stage 1	-	-	-	-	-	-	232	232	-	131	131	-
Stage 2	-	-	-	-	-	-	149	141	-	237	236	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1457	-	-	1361	-	-	577	557	835	588	562	933
Stage 1	-	-	-	-	-	-	771	713	-	873	788	-
Stage 2	-	-	-	-	-	-	854	780	-	766	710	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1457	-	-	1361	-	-	547	549	835	574	554	933
Mov Cap-2 Maneuver	-	-	-	-	-	-	547	549	-	574	554	-
Stage 1	-	-	-	-	-	-	763	706	-	864	784	-
Stage 2	-	-	-	-	-	-	816	776	-	749	703	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.4			0.3			10.6			10.6		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	661	1457	-	-	1361	-	-	698
HCM Lane V/C Ratio	0.024	0.009	-	-	0.004	-	-	0.076
HCM Control Delay (s)	10.6	7.5	0	-	7.7	0	-	10.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Lanes, Volumes, Timings

300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022



Lane Group	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↩	↩	↩	↗↗	↗↗	↩
Traffic Volume (vph)	14	128	82	38	744	614	124
Future Volume (vph)	14	128	82	38	744	614	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175	0	125			0
Storage Lanes		1	1	1			0
Taper Length (ft)		100		0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850			0.975	
Flt Protected		0.950		0.950			
Satd. Flow (prot)	0	1770	1583	1770	3539	3451	0
Flt Permitted		0.950		0.950			
Satd. Flow (perm)	0	1770	1583	1770	3539	3451	0
Link Speed (mph)		35			50	50	
Link Distance (ft)		1891			5105	1133	
Travel Time (s)		36.8			69.6	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	142	91	42	827	682	138
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	158	91	42	827	820	0
Sign Control		Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 42.1%

ICU Level of Service A

Analysis Period (min) 15

HCM 6th TWSC
300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022

Intersection

Int Delay, s/veh 3.2

Movement	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	14	128	82	38	744	614	124
Future Vol, veh/h	14	128	82	38	744	614	124
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	175	0	125	-	-	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	16	142	91	42	827	682	138

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	0	1249	410	820	0	0
Stage 1	0	751	-	-	-	-
Stage 2	0	498	-	-	-	-
Critical Hdwy	-	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	-	5.84	-	-	-	-
Critical Hdwy Stg 2	-	5.84	-	-	-	-
Follow-up Hdwy	-	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	0	165	591	805	-	-
Stage 1	0	427	-	-	-	-
Stage 2	0	576	-	-	-	-
Platoon blocked, %	-				-	-
Mov Cap-1 Maneuver	0	156	591	805	-	-
Mov Cap-2 Maneuver	0	285	-	-	-	-
Stage 1	0	405	-	-	-	-
Stage 2	0	576	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.8	0.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	805	-	285	591	-	-
HCM Lane V/C Ratio	0.052	-	0.499	0.154	-	-
HCM Control Delay (s)	9.7	-	29.6	12.2	-	-
HCM Lane LOS	A	-	D	B	-	-
HCM 95th %tile Q(veh)	0.2	-	2.6	0.5	-	-

Lanes, Volumes, Timings
400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	179	28	221	150	119	40	596	236	116	268	20
Future Volume (vph)	46	179	28	221	150	119	40	596	236	116	268	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	325		0	400		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.980			0.934			0.957			0.990	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1825	0	1770	1740	0	1770	3387	0	1770	3504	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1825	0	1770	1740	0	1770	3387	0	1770	3504	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		2341			955			753			5105	
Travel Time (s)		35.5			14.5			10.3			69.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	51	199	31	246	167	132	44	662	262	129	298	22
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	230	0	246	299	0	44	924	0	129	320	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	14.0		7.0	14.0	
Minimum Split (s)	12.3	13.2		12.1	13.0		13.3	20.3		13.3	20.3	
Total Split (s)	20.0	35.0		20.0	35.0		20.0	90.0		20.0	90.0	
Total Split (%)	12.1%	21.2%		12.1%	21.2%		12.1%	54.5%		12.1%	54.5%	
Maximum Green (s)	14.7	28.8		14.9	29.0		13.7	83.7		13.7	83.7	
Yellow Time (s)	3.0	4.7		3.0	4.7		3.0	4.9		3.0	4.8	
All-Red Time (s)	2.3	1.5		2.1	1.3		3.3	1.4		3.3	1.5	
Lost Time Adjust (s)	-0.3	-1.2		-0.1	-1.0		-1.3	-1.3		-1.3	-1.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	6.0		2.0	6.0	
Minimum Gap (s)	2.0	2.0		3.0	3.0		2.0	3.0		2.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	30.0		0.0	30.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effect Green (s)	8.7	20.4		15.3	30.1		9.3	35.6		13.5	43.2	
Actuated g/C Ratio	0.08	0.19		0.15	0.29		0.09	0.34		0.13	0.41	
v/c Ratio	0.35	0.65		0.96	0.60		0.28	0.81		0.57	0.22	
Control Delay	56.9	49.8		94.1	41.8		54.3	38.2		56.8	22.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	56.9	49.8		94.1	41.8		54.3	38.2		56.8	22.2	

Lanes, Volumes, Timings

400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E	D		F	D		D	D		E	C	
Approach Delay		51.1			65.4			39.0			32.1	
Approach LOS		D			E			D			C	
Queue Length 50th (ft)	34	146		171	182		29	303		83	75	
Queue Length 95th (ft)	81	253		#399	321		72	409		167	122	
Internal Link Dist (ft)		2261			875			673			5025	
Turn Bay Length (ft)	100			100			325			400		
Base Capacity (vph)	257	531		257	518		257	2770		257	2866	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.20	0.43		0.96	0.58		0.17	0.33		0.50	0.11	

Intersection Summary

Area Type: Other

Cycle Length: 165

Actuated Cycle Length: 105.2

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.96

Intersection Signal Delay: 45.5

Intersection LOS: D

Intersection Capacity Utilization 70.5%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 400: US 158 (S Stratford Road) & Jonestown Road

 Ø1	 Ø2	 Ø3	 Ø4
20 s	90 s	20 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8
20 s	90 s	20 s	35 s

Lanes, Volumes, Timings

500: Lockwood Drive & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	189	94	3	196	8	86	8	0	3	28	17
Future Volume (vph)	6	189	94	3	196	8	86	8	0	3	28	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.956			0.995							0.973
Flt Protected		0.999			0.999			0.956				0.975
Satd. Flow (prot)	0	1779	0	0	1852	0	0	1781	0	0	0	1767
Flt Permitted		0.999			0.999			0.956				0.975
Satd. Flow (perm)	0	1779	0	0	1852	0	0	1781	0	0	0	1767
Link Speed (mph)		45			45			45				45
Link Distance (ft)		2659			2341			886				1803
Travel Time (s)		40.3			35.5			13.4				27.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	210	104	3	218	9	96	9	0	3	31	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	321	0	0	230	0	0	105	0	0	0	66
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 34.3% ICU Level of Service A

Analysis Period (min) 15

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	12
Future Volume (vph)	12
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Adj. Flow (vph)	13
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

HCM 6th TWSC
500: Lockwood Drive & Jonestown Road

04/05/2022

Intersection													
Int Delay, s/veh	3.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	6	189	94	3	196	8	86	8	0	3	28	17	12
Future Vol, veh/h	6	189	94	3	196	8	86	8	0	3	28	17	12
Conflicting Peds, #/hr	0	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	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	90	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	210	104	3	218	9	96	9	0	3	31	19	13
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	227	0	0	314	0	0	521	509	262	0	510	557	223
Stage 1	-	-	-	-	-	-	276	276	-	0	229	229	-
Stage 2	-	-	-	-	-	-	245	233	-	0	281	328	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1341	-	-	1246	-	-	466	467	777	0	474	439	817
Stage 1	-	-	-	-	-	-	730	682	-	0	774	715	-
Stage 2	-	-	-	-	-	-	759	712	-	0	726	647	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1341	-	-	1246	-	-	440	463	777	0	464	435	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	440	463	-	0	464	435	-
Stage 1	-	-	-	-	-	-	726	678	-	0	769	713	-
Stage 2	-	-	-	-	-	-	725	710	-	0	712	643	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0.2			0.1			15.6			13.2			
HCM LOS							C			B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	442	1341	-	-	1246	-	-	500					
HCM Lane V/C Ratio	0.236	0.005	-	-	0.003	-	-	0.127					
HCM Control Delay (s)	15.6	7.7	0	-	7.9	0	-	13.2					
HCM Lane LOS	C	A	A	-	A	A	-	B					
HCM 95th %tile Q(veh)	0.9	0	-	-	0	-	-	0.4					

Lanes, Volumes, Timings
600: Site Access 1 & Somerset Drive

04/05/2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	161	8	15	110	20	39
Future Volume (vph)	161	8	15	110	20	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.911	
Flt Protected				0.994	0.983	
Satd. Flow (prot)	1852	0	0	1852	1668	0
Flt Permitted				0.994	0.983	
Satd. Flow (perm)	1852	0	0	1852	1668	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	1409			538	432	
Travel Time (s)	32.0			10.5	9.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	179	9	17	122	22	43
Shared Lane Traffic (%)						
Lane Group Flow (vph)	188	0	0	139	65	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	28.6%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	161	8	15	110	20	39
Future Vol, veh/h	161	8	15	110	20	39
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	179	9	17	122	22	43

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	188
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1386
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1386
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	773	-	-	1386	-
HCM Lane V/C Ratio	0.085	-	-	0.012	-
HCM Control Delay (s)	10.1	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Lanes, Volumes, Timings
700: Lockwood Drive & Site Access 2

04/05/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	39	0	5	15	0	16
Future Volume (vph)	39	0	5	15	0	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.900					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1676	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1676	0	0	1863
Link Speed (mph)	30	45		45		
Link Distance (ft)	302	1803		307		
Travel Time (s)	6.9	27.3		4.7		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	43	0	6	17	0	18
Shared Lane Traffic (%)						
Lane Group Flow (vph)	43	0	23	0	0	18
Sign Control	Stop	Free		Free		
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 13.3%						
ICU Level of Service A						
Analysis Period (min) 15						

HCM 6th TWSC
700: Lockwood Drive & Site Access 2

04/05/2022

Intersection

Int Delay, s/veh 4.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	39	0	5	15	0	16
Future Vol, veh/h	39	0	5	15	0	16
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, %	2	2	2	2	2	2
Mvmt Flow	43	0	6	17	0	18

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	33	15	0
Stage 1	15	-	-
Stage 2	18	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	980	1065	-
Stage 1	1008	-	-
Stage 2	1005	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	980	1065	-
Mov Cap-2 Maneuver	980	-	-
Stage 1	1008	-	-
Stage 2	1005	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	980	1592
HCM Lane V/C Ratio	-	-	0.044	-
HCM Control Delay (s)	-	-	8.8	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

PM Base Conditions

Lanes, Volumes, Timings
100: Jonestown Road & Somerset Drive

04/05/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	42	152	253	22	90	337
Future Volume (vph)	42	152	253	22	90	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.894		0.989			
Flt Protected	0.989					0.990
Satd. Flow (prot)	1647	0	1842	0	0	1844
Flt Permitted	0.989					0.990
Satd. Flow (perm)	1647	0	1842	0	0	1844
Link Speed (mph)	35		40			40
Link Distance (ft)	1480		3361			1780
Travel Time (s)	28.8		57.3			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	47	169	281	24	100	374
Shared Lane Traffic (%)						
Lane Group Flow (vph)	216	0	305	0	0	474
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 59.1%						
ICU Level of Service B						
Analysis Period (min) 15						

HCM 6th TWSC
100: Jonestown Road & Somerset Drive

04/05/2022

Intersection

Int Delay, s/veh 4.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	42	152	253	22	90	337
Future Vol, veh/h	42	152	253	22	90	337
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, %	2	2	2	2	2	2
Mvmt Flow	47	169	281	24	100	374

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	867	293	0
Stage 1	293	-	-
Stage 2	574	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	323	746	-
Stage 1	757	-	-
Stage 2	563	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	290	746	-
Mov Cap-2 Maneuver	290	-	-
Stage 1	757	-	-
Stage 2	506	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	557	1256
HCM Lane V/C Ratio	-	-	0.387	0.08
HCM Control Delay (s)	-	-	15.5	8.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	1.8	0.3

Lanes, Volumes, Timings

200: Brandywine Road/Ashford Drive SW & Somerset Drive

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	102	2	7	227	28	4	3	3	18	4	10
Future Volume (vph)	14	102	2	7	227	28	4	3	3	18	4	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.986			0.959			0.958	
Flt Protected		0.994			0.999			0.980			0.972	
Satd. Flow (prot)	0	1848	0	0	1835	0	0	1751	0	0	1735	0
Flt Permitted		0.994			0.999			0.980			0.972	
Satd. Flow (perm)	0	1848	0	0	1835	0	0	1751	0	0	1735	0
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		538			1891			760			884	
Travel Time (s)		10.5			36.8			20.7			17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	113	2	8	252	31	4	3	3	20	4	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	131	0	0	291	0	0	10	0	0	35	0
Sign Control		Free			Free			Stop			Stop	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	24.9%											
Analysis Period (min)	15											
ICU Level of Service A												

Intersection												
Int Delay, s/veh	1.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	14	102	2	7	227	28	4	3	3	18	4	10
Future Vol, veh/h	14	102	2	7	227	28	4	3	3	18	4	10
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	113	2	8	252	31	4	3	3	20	4	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	283	0	0	115	0	0	437	445	114	433	431	268
Stage 1	-	-	-	-	-	-	146	146	-	284	284	-
Stage 2	-	-	-	-	-	-	291	299	-	149	147	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1279	-	-	1474	-	-	530	508	939	533	517	771
Stage 1	-	-	-	-	-	-	857	776	-	723	676	-
Stage 2	-	-	-	-	-	-	717	666	-	854	775	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1279	-	-	1474	-	-	511	498	939	521	507	771
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	498	-	521	507	-
Stage 1	-	-	-	-	-	-	846	766	-	714	672	-
Stage 2	-	-	-	-	-	-	698	662	-	836	765	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			0.2			11.3			11.6		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	587	1279	-	-	1474	-	-	578				
HCM Lane V/C Ratio	0.019	0.012	-	-	0.005	-	-	0.062				
HCM Control Delay (s)	11.3	7.8	0	-	7.5	0	-	11.6				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0.2				

Lanes, Volumes, Timings

300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022



Lane Group	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	6	93	38	68	747	689	227
Future Volume (vph)	6	93	38	68	747	689	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175	0	125			0
Storage Lanes		1	1	1			0
Taper Length (ft)		100		0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850			0.963	
Flt Protected		0.950		0.950			
Satd. Flow (prot)	0	1770	1583	1770	3539	3408	0
Flt Permitted		0.950		0.950			
Satd. Flow (perm)	0	1770	1583	1770	3539	3408	0
Link Speed (mph)		35			50	50	
Link Distance (ft)		1891			5105	1133	
Travel Time (s)		36.8			69.6	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	103	42	76	830	766	252
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	110	42	76	830	1018	0
Sign Control		Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 45.6%

ICU Level of Service A

Analysis Period (min) 15

HCM 6th TWSC
300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022

Intersection

Int Delay, s/veh 2.4

Movement	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	6	93	38	68	747	689	227
Future Vol, veh/h	6	93	38	68	747	689	227
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	175	0	125	-	-	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	7	103	42	76	830	766	252

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	0	1459	509	1018	0	0
Stage 1	0	892	-	-	-	-
Stage 2	0	567	-	-	-	-
Critical Hdwy	-	6.84	6.94	4.14	-	-
Critical Hdwy Stg 1	-	5.84	-	-	-	-
Critical Hdwy Stg 2	-	5.84	-	-	-	-
Follow-up Hdwy	-	3.52	3.32	2.22	-	-
Pot Cap-1 Maneuver	0	120	509	677	-	-
Stage 1	0	361	-	-	-	-
Stage 2	0	531	-	-	-	-
Platoon blocked, %	-				-	-
Mov Cap-1 Maneuver	0	107	509	677	-	-
Mov Cap-2 Maneuver	0	227	-	-	-	-
Stage 1	0	321	-	-	-	-
Stage 2	0	531	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	27.5	0.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	677	-	227	509	-	-
HCM Lane V/C Ratio	0.112	-	0.455	0.083	-	-
HCM Control Delay (s)	11	-	33.5	12.7	-	-
HCM Lane LOS	B	-	D	B	-	-
HCM 95th %tile Q(veh)	0.4	-	2.2	0.3	-	-

Lanes, Volumes, Timings
400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	159	45	209	199	104	24	319	175	194	617	71
Future Volume (vph)	30	159	45	209	199	104	24	319	175	194	617	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	325		0	400		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.967			0.948			0.947			0.985	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1801	0	1770	1766	0	1770	3352	0	1770	3486	0
Flt Permitted	0.558			0.365			0.318			0.256		
Satd. Flow (perm)	1039	1801	0	680	1766	0	592	3352	0	477	3486	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		2341			955			753			5105	
Travel Time (s)		35.5			14.5			10.3			69.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	33	177	50	232	221	116	27	354	194	216	686	79
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	227	0	232	337	0	27	548	0	216	765	0
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	14.0		7.0	14.0	
Minimum Split (s)	12.3	13.2		12.1	13.0		13.3	20.3		13.3	20.3	
Total Split (s)	20.0	35.0		20.0	35.0		20.0	90.0		20.0	90.0	
Total Split (%)	12.1%	21.2%		12.1%	21.2%		12.1%	54.5%		12.1%	54.5%	
Maximum Green (s)	14.7	28.8		14.9	29.0		13.7	83.7		13.7	83.7	
Yellow Time (s)	3.0	4.7		3.0	4.7		3.0	4.9		3.0	4.8	
All-Red Time (s)	2.3	1.5		2.1	1.3		3.3	1.4		3.3	1.5	
Lost Time Adjust (s)	-0.3	-1.2		-0.1	-1.0		-1.3	-1.3		-1.3	-1.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	6.0		2.0	6.0	
Minimum Gap (s)	2.0	2.0		3.0	3.0		2.0	3.0		2.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	30.0		0.0	30.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effect Green (s)	26.4	18.9		38.0	31.3		29.6	21.2		39.1	34.4	
Actuated g/C Ratio	0.30	0.22		0.44	0.36		0.34	0.24		0.45	0.39	
v/c Ratio	0.09	0.58		0.49	0.53		0.09	0.67		0.54	0.56	
Control Delay	17.1	38.5		20.9	29.0		15.8	35.4		21.0	24.5	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.1	38.5		20.9	29.0		15.8	35.4		21.0	24.5	

Lanes, Volumes, Timings

400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	B	D		C	C		B	D		C	C	
Approach Delay		35.8			25.7			34.4			23.7	
Approach LOS		D			C			C			C	
Queue Length 50th (ft)	10	115		81	162		9	154		79	164	
Queue Length 95th (ft)	30	206		152	280		24	218		131	283	
Internal Link Dist (ft)		2261			875			673			5025	
Turn Bay Length (ft)	100			100			325			400		
Base Capacity (vph)	535	630		487	634		452	3116		440	3240	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.06	0.36		0.48	0.53		0.06	0.18		0.49	0.24	

Intersection Summary

Area Type: Other

Cycle Length: 165

Actuated Cycle Length: 87.3

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 28.1

Intersection LOS: C

Intersection Capacity Utilization 64.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 400: US 158 (S Stratford Road) & Jonestown Road

 Ø1	 Ø2	 Ø3	 Ø4
20 s	90 s	20 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8
20 s	90 s	20 s	35 s

Lanes, Volumes, Timings

500: Lockwood Drive & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	8	205	94	2	270	4	60	4	0	1	4	2
Future Volume (vph)	8	205	94	2	270	4	60	4	0	1	4	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.998							0.959
Flt Protected		0.999						0.955				0.976
Satd. Flow (prot)	0	1785	0	0	1859	0	0	1779	0	0	0	1743
Flt Permitted		0.999						0.955				0.976
Satd. Flow (perm)	0	1785	0	0	1859	0	0	1779	0	0	0	1743
Link Speed (mph)		45			45			45				45
Link Distance (ft)		2659			2341			886				1803
Travel Time (s)		40.3			35.5			13.4				27.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	228	104	2	300	4	67	4	0	1	4	2
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	341	0	0	306	0	0	71	0	0	0	10
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 34.7%

ICU Level of Service A

Analysis Period (min) 15

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	3
Future Volume (vph)	3
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Adj. Flow (vph)	3
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

HCM 6th TWSC
500: Lockwood Drive & Jonestown Road

04/05/2022

Intersection													
Int Delay, s/veh	1.9												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	8	205	94	2	270	4	60	4	0	1	4	2	3
Future Vol, veh/h	8	205	94	2	270	4	60	4	0	1	4	2	3
Conflicting Peds, #/hr	0	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	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	90	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	228	104	2	300	4	67	4	0	1	4	2	3
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	304	0	0	332	0	0	607	606	280	0	606	656	302
Stage 1	-	-	-	-	-	-	298	298	-	0	306	306	-
Stage 2	-	-	-	-	-	-	309	308	-	0	300	350	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1257	-	-	1227	-	-	408	411	759	0	409	385	738
Stage 1	-	-	-	-	-	-	711	667	-	0	704	662	-
Stage 2	-	-	-	-	-	-	701	660	-	0	709	633	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1257	-	-	1227	-	-	401	406	759	0	402	381	738
Mov Cap-2 Maneuver	-	-	-	-	-	-	401	406	-	0	402	381	-
Stage 1	-	-	-	-	-	-	705	661	-	0	698	661	-
Stage 2	-	-	-	-	-	-	694	659	-	0	698	627	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0.2			0.1			15.9			12.9			
HCM LOS							C			B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	401	1257	-	-	1227	-	-	467					
HCM Lane V/C Ratio	0.177	0.007	-	-	0.002	-	-	0.021					
HCM Control Delay (s)	15.9	7.9	0	-	7.9	0	-	12.9					
HCM Lane LOS	C	A	A	-	A	A	-	B					
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	0.1					

PM Future No-Build Conditions

Lanes, Volumes, Timings
100: Jonestown Road & Somerset Drive

04/05/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	47	168	280	25	100	373
Future Volume (vph)	47	168	280	25	100	373
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.894		0.989			
Flt Protected	0.989					0.990
Satd. Flow (prot)	1647	0	1842	0	0	1844
Flt Permitted	0.989					0.990
Satd. Flow (perm)	1647	0	1842	0	0	1844
Link Speed (mph)	35		40			40
Link Distance (ft)	1480		3361			1780
Travel Time (s)	28.8		57.3			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	52	187	311	28	111	414
Shared Lane Traffic (%)						
Lane Group Flow (vph)	239	0	339	0	0	525
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 64.4%						
ICU Level of Service C						
Analysis Period (min) 15						

HCM 6th TWSC
100: Jonestown Road & Somerset Drive

04/05/2022

Intersection

Int Delay, s/veh 4.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	168	280	25	100	373
Future Vol, veh/h	47	168	280	25	100	373
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, %	2	2	2	2	2	2
Mvmt Flow	52	187	311	28	111	414

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	961	325	0
Stage 1	325	-	-
Stage 2	636	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	284	716	-
Stage 1	732	-	-
Stage 2	527	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	250	716	-
Mov Cap-2 Maneuver	250	-	-
Stage 1	732	-	-
Stage 2	465	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.2	0	1.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	509	1220
HCM Lane V/C Ratio	-	-	0.469	0.091
HCM Control Delay (s)	-	-	18.2	8.2
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.5	0.3

Lanes, Volumes, Timings

200: Brandywine Road/Ashford Drive SW & Somerset Drive

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	113	3	8	251	31	5	4	4	20	5	12
Future Volume (vph)	16	113	3	8	251	31	5	4	4	20	5	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.986			0.961			0.957	
Flt Protected		0.994			0.999			0.979			0.974	
Satd. Flow (prot)	0	1846	0	0	1835	0	0	1753	0	0	1736	0
Flt Permitted		0.994			0.999			0.979			0.974	
Satd. Flow (perm)	0	1846	0	0	1835	0	0	1753	0	0	1736	0
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		538			1891			760			884	
Travel Time (s)		10.5			36.8			20.7			17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	18	126	3	9	279	34	6	4	4	22	6	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	147	0	0	322	0	0	14	0	0	41	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 26.5% ICU Level of Service A

Analysis Period (min) 15

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	113	3	8	251	31	5	4	4	20	5	12
Future Vol, veh/h	16	113	3	8	251	31	5	4	4	20	5	12
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	126	3	9	279	34	6	4	4	22	6	13

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	313	0	0	129	0	0	488	495	128	482	479	296
Stage 1	-	-	-	-	-	-	164	164	-	314	314	-
Stage 2	-	-	-	-	-	-	324	331	-	168	165	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1247	-	-	1457	-	-	490	476	922	495	486	743
Stage 1	-	-	-	-	-	-	838	762	-	697	656	-
Stage 2	-	-	-	-	-	-	688	645	-	834	762	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1247	-	-	1457	-	-	468	465	922	480	474	743
Mov Cap-2 Maneuver	-	-	-	-	-	-	468	465	-	480	474	-
Stage 1	-	-	-	-	-	-	825	750	-	686	651	-
Stage 2	-	-	-	-	-	-	665	640	-	812	750	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.2			11.7			12.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	550	1247	-	-	1457	-	-	541
HCM Lane V/C Ratio	0.026	0.014	-	-	0.006	-	-	0.076
HCM Control Delay (s)	11.7	7.9	0	-	7.5	0	-	12.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.2

Lanes, Volumes, Timings

300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022



Lane Group	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	7	103	42	76	825	761	251
Future Volume (vph)	7	103	42	76	825	761	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175	0	125			0
Storage Lanes		1	1	1			0
Taper Length (ft)		100		0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850			0.963	
Flt Protected		0.950		0.950			
Satd. Flow (prot)	0	1770	1583	1770	3539	3408	0
Flt Permitted		0.950		0.950			
Satd. Flow (perm)	0	1770	1583	1770	3539	3408	0
Link Speed (mph)		35			50	50	
Link Distance (ft)		1891			5105	1133	
Travel Time (s)		36.8			69.6	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	8	114	47	84	917	846	279
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	122	47	84	917	1125	0
Sign Control		Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 49.4%

ICU Level of Service A

Analysis Period (min) 15

HCM 6th TWSC
300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022

Intersection							
Int Delay, s/veh	3.1						
Movement	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	7	103	42	76	825	761	251
Future Vol, veh/h	7	103	42	76	825	761	251
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	175	0	125	-	-	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	8	114	47	84	917	846	279
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	0	1613	563	1125	0	-	0
Stage 1	0	986	-	-	-	-	-
Stage 2	0	627	-	-	-	-	-
Critical Hdwy	-	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	5.84	-	-	-	-	-
Critical Hdwy Stg 2	-	5.84	-	-	-	-	-
Follow-up Hdwy	-	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	~ 95	470	617	-	-	-
Stage 1	0	322	-	-	-	-	-
Stage 2	0	495	-	-	-	-	-
Platoon blocked, %	-				-	-	-
Mov Cap-1 Maneuver	0	~ 82	470	617	-	-	-
Mov Cap-2 Maneuver	0	196	-	-	-	-	-
Stage 1	0	278	-	-	-	-	-
Stage 2	0	495	-	-	-	-	-
Approach	EB		NB		SB		
HCM Control Delay, s	36.8		1		0		
HCM LOS	E						
Minor Lane/Major Mvmt	NBL		NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	617		-	196	470	-	-
HCM Lane V/C Ratio	0.137		-	0.584	0.099	-	-
HCM Control Delay (s)	11.8		-	46.3	13.5	-	-
HCM Lane LOS	B		-	E	B	-	-
HCM 95th %tile Q(veh)	0.5		-	3.2	0.3	-	-
Notes							
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined		*: All major volume in platoon

Lanes, Volumes, Timings
400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	176	50	231	220	115	27	353	194	215	682	79
Future Volume (vph)	34	176	50	231	220	115	27	353	194	215	682	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	325		0	400		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.967			0.948			0.947			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1801	0	1770	1766	0	1770	3352	0	1770	3483	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1801	0	1770	1766	0	1770	3352	0	1770	3483	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		2341			955			753			5105	
Travel Time (s)		35.5			14.5			10.3			69.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	196	56	257	244	128	30	392	216	239	758	88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	252	0	257	372	0	30	608	0	239	846	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	14.0		7.0	14.0	
Minimum Split (s)	12.3	13.2		12.1	13.0		13.3	20.3		13.3	20.3	
Total Split (s)	20.0	35.0		20.0	35.0		20.0	90.0		20.0	90.0	
Total Split (%)	12.1%	21.2%		12.1%	21.2%		12.1%	54.5%		12.1%	54.5%	
Maximum Green (s)	14.7	28.8		14.9	29.0		13.7	83.7		13.7	83.7	
Yellow Time (s)	3.0	4.7		3.0	4.7		3.0	4.9		3.0	4.8	
All-Red Time (s)	2.3	1.5		2.1	1.3		3.3	1.4		3.3	1.5	
Lost Time Adjust (s)	-0.3	-1.2		-0.1	-1.0		-1.3	-1.3		-1.3	-1.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	6.0		2.0	6.0	
Minimum Gap (s)	2.0	2.0		3.0	3.0		2.0	3.0		2.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	30.0		0.0	30.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effect Green (s)	7.9	20.2		15.2	33.0		8.7	24.6		15.2	37.1	
Actuated g/C Ratio	0.08	0.21		0.16	0.35		0.09	0.26		0.16	0.39	
v/c Ratio	0.26	0.66		0.91	0.61		0.19	0.70		0.85	0.62	
Control Delay	49.3	44.2		78.5	33.9		47.1	37.2		68.7	28.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	49.3	44.2		78.5	33.9		47.1	37.2		68.7	28.1	

Lanes, Volumes, Timings

400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		E	C		D	D		E	C	
Approach Delay		44.8			52.1			37.7			37.1	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	23	139		158	198		17	180		145	243	
Queue Length 95th (ft)	60	244		#368	349		51	254		#339	342	
Internal Link Dist (ft)		2261			875			673			5025	
Turn Bay Length (ft)	100			100			325			400		
Base Capacity (vph)	281	573		281	611		281	2988		281	3104	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.44		0.91	0.61		0.11	0.20		0.85	0.27	

Intersection Summary

Area Type: Other

Cycle Length: 165

Actuated Cycle Length: 95.4

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 41.6

Intersection LOS: D

Intersection Capacity Utilization 69.6%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 400: US 158 (S Stratford Road) & Jonestown Road

 Ø1	 Ø2	 Ø3	 Ø4
20 s	90 s	20 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8
20 s	90 s	20 s	35 s

Lanes, Volumes, Timings

500: Lockwood Drive & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	9	227	104	3	299	5	67	5	0	2	5	3
Future Volume (vph)	9	227	104	3	299	5	67	5	0	2	5	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.998							0.964
Flt Protected		0.999						0.956				0.974
Satd. Flow (prot)	0	1785	0	0	1859	0	0	1781	0	0	0	1749
Flt Permitted		0.999						0.956				0.974
Satd. Flow (perm)	0	1785	0	0	1859	0	0	1781	0	0	0	1749
Link Speed (mph)		45			45			45				45
Link Distance (ft)		2659			2341			886				1803
Travel Time (s)		40.3			35.5			13.4				27.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	10	252	116	3	332	6	74	6	0	2	6	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	378	0	0	341	0	0	80	0	0	0	15
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 37.6%

ICU Level of Service A

Analysis Period (min) 15

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	4
Future Volume (vph)	4
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Adj. Flow (vph)	4
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

HCM 6th TWSC
500: Lockwood Drive & Jonestown Road

04/05/2022

Intersection													
Int Delay, s/veh	2.1												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations		↕			↕			↕				↕	
Traffic Vol, veh/h	9	227	104	3	299	5	67	5	0	2	5	3	4
Future Vol, veh/h	9	227	104	3	299	5	67	5	0	2	5	3	4
Conflicting Peds, #/hr	0	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	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	90	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	252	116	3	332	6	74	6	0	2	6	3	4
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	338	0	0	368	0	0	675	674	310	0	674	729	335
Stage 1	-	-	-	-	-	-	330	330	-	0	341	341	-
Stage 2	-	-	-	-	-	-	345	344	-	0	333	388	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1221	-	-	1191	-	-	368	376	730	0	368	350	707
Stage 1	-	-	-	-	-	-	683	646	-	0	674	639	-
Stage 2	-	-	-	-	-	-	671	637	-	0	681	609	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1221	-	-	1191	-	-	360	371	730	0	360	345	707
Mov Cap-2 Maneuver	-	-	-	-	-	-	360	371	-	0	360	345	-
Stage 1	-	-	-	-	-	-	676	640	-	0	667	637	-
Stage 2	-	-	-	-	-	-	661	635	-	0	668	603	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0.2			0.1			17.8			13.7			
HCM LOS							C			B			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	361	1221	-	-	1191	-	-	425					
HCM Lane V/C Ratio	0.222	0.008	-	-	0.003	-	-	0.031					
HCM Control Delay (s)	17.8	8	0	-	8	0	-	13.7					
HCM Lane LOS	C	A	A	-	A	A	-	B					
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.1					

PM Future Build Conditions

Lanes, Volumes, Timings
100: Jonestown Road & Somerset Drive

04/05/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	47	182	284	25	121	378
Future Volume (vph)	47	182	284	25	121	378
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.893		0.989			
Flt Protected	0.990					0.988
Satd. Flow (prot)	1647	0	1842	0	0	1840
Flt Permitted	0.990					0.988
Satd. Flow (perm)	1647	0	1842	0	0	1840
Link Speed (mph)	35		40			40
Link Distance (ft)	1480		3361			1780
Travel Time (s)	28.8		57.3			30.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	52	202	316	28	134	420
Shared Lane Traffic (%)						
Lane Group Flow (vph)	254	0	344	0	0	554
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	66.9%			ICU Level of Service C		
Analysis Period (min)	15					

HCM 6th TWSC
100: Jonestown Road & Somerset Drive

04/05/2022

Intersection

Int Delay, s/veh 5.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	182	284	25	121	378
Future Vol, veh/h	47	182	284	25	121	378
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, %	2	2	2	2	2	2
Mvmt Flow	52	202	316	28	134	420

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	1018	330	0
Stage 1	330	-	-
Stage 2	688	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	263	712	-
Stage 1	728	-	-
Stage 2	499	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	225	712	-
Mov Cap-2 Maneuver	225	-	-
Stage 1	728	-	-
Stage 2	427	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.8	0	2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	493	1215
HCM Lane V/C Ratio	-	-	0.516	0.111
HCM Control Delay (s)	-	-	19.8	8.3
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.9	0.4

Lanes, Volumes, Timings

200: Brandywine Road/Ashford Drive SW & Somerset Drive

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	141	3	8	294	31	5	4	4	20	5	12
Future Volume (vph)	16	141	3	8	294	31	5	4	4	20	5	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.988			0.961			0.957	
Flt Protected		0.995			0.999			0.979			0.974	
Satd. Flow (prot)	0	1850	0	0	1839	0	0	1753	0	0	1736	0
Flt Permitted		0.995			0.999			0.979			0.974	
Satd. Flow (perm)	0	1850	0	0	1839	0	0	1753	0	0	1736	0
Link Speed (mph)		35			35			25			35	
Link Distance (ft)		538			1891			760			884	
Travel Time (s)		10.5			36.8			20.7			17.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	18	157	3	9	327	34	6	4	4	22	6	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	178	0	0	370	0	0	14	0	0	41	0
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 29.0% ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	141	3	8	294	31	5	4	4	20	5	12
Future Vol, veh/h	16	141	3	8	294	31	5	4	4	20	5	12
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	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	157	3	9	327	34	6	4	4	22	6	13
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	361	0	0	160	0	0	567	574	159	561	558	344
Stage 1	-	-	-	-	-	-	195	195	-	362	362	-
Stage 2	-	-	-	-	-	-	372	379	-	199	196	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1198	-	-	1419	-	-	434	429	886	438	438	699
Stage 1	-	-	-	-	-	-	807	739	-	657	625	-
Stage 2	-	-	-	-	-	-	648	615	-	803	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1198	-	-	1419	-	-	414	419	886	424	427	699
Mov Cap-2 Maneuver	-	-	-	-	-	-	414	419	-	424	427	-
Stage 1	-	-	-	-	-	-	794	727	-	646	620	-
Stage 2	-	-	-	-	-	-	625	610	-	781	727	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.2			12.5			13.1		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	497	1198	-	-	1419	-	-	487				
HCM Lane V/C Ratio	0.029	0.015	-	-	0.006	-	-	0.084				
HCM Control Delay (s)	12.5	8.1	0	-	7.6	0	-	13.1				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0.3				

Lanes, Volumes, Timings

300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022



Lane Group	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↰	↰	↰	↗	↗	↰
Traffic Volume (vph)	7	128	46	81	829	766	288
Future Volume (vph)	7	128	46	81	829	766	288
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)		175	0	125			0
Storage Lanes		1	1	1			0
Taper Length (ft)		100		0			
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	0.95	0.95
Frt			0.850			0.959	
Flt Protected		0.950		0.950			
Satd. Flow (prot)	0	1770	1583	1770	3539	3394	0
Flt Permitted		0.950		0.950			
Satd. Flow (perm)	0	1770	1583	1770	3539	3394	0
Link Speed (mph)		35			50	50	
Link Distance (ft)		1891			5105	1133	
Travel Time (s)		36.8			69.6	15.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	8	142	51	90	921	851	320
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	150	51	90	921	1171	0
Sign Control		Stop			Free	Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 52.3%

ICU Level of Service A

Analysis Period (min) 15

HCM 6th TWSC
300: US 158 (S Stratford Road) & Somerset Drive

04/05/2022

Intersection							
Int Delay, s/veh	5						
Movement	EBU	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	7	128	46	81	829	766	288
Future Vol, veh/h	7	128	46	81	829	766	288
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	175	0	125	-	-	-
Veh in Median Storage, #	-	0	-	-	0	0	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	8	142	51	90	921	851	320
Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	0	1652	586	1171	0	-	0
Stage 1	0	1011	-	-	-	-	-
Stage 2	0	641	-	-	-	-	-
Critical Hdwy	-	6.84	6.94	4.14	-	-	-
Critical Hdwy Stg 1	-	5.84	-	-	-	-	-
Critical Hdwy Stg 2	-	5.84	-	-	-	-	-
Follow-up Hdwy	-	3.52	3.32	2.22	-	-	-
Pot Cap-1 Maneuver	0	~ 89	454	592	-	-	-
Stage 1	0	312	-	-	-	-	-
Stage 2	0	487	-	-	-	-	-
Platoon blocked, %	-				-	-	-
Mov Cap-1 Maneuver	0	~ 75	454	592	-	-	-
Mov Cap-2 Maneuver	0	187	-	-	-	-	-
Stage 1	0	265	-	-	-	-	-
Stage 2	0	487	-	-	-	-	-
Approach	EB		NB		SB		
HCM Control Delay, s	53.6		1.1		0		
HCM LOS	F						
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR	
Capacity (veh/h)	592	-	187	454	-	-	
HCM Lane V/C Ratio	0.152	-	0.761	0.113	-	-	
HCM Control Delay (s)	12.2	-	67.8	13.9	-	-	
HCM Lane LOS	B	-	F	B	-	-	
HCM 95th %tile Q(veh)	0.5	-	5	0.4	-	-	
Notes							
~: Volume exceeds capacity		\$: Delay exceeds 300s		+: Computation Not Defined		*: All major volume in platoon	

Lanes, Volumes, Timings
400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	183	54	231	231	115	32	353	194	215	682	84
Future Volume (vph)	38	183	54	231	231	115	32	353	194	215	682	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	325		0	400		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	100			100			0			0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Frt		0.966			0.950			0.947			0.984	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1799	0	1770	1770	0	1770	3352	0	1770	3483	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1799	0	1770	1770	0	1770	3352	0	1770	3483	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			45			50			50	
Link Distance (ft)		2341			955			753			5105	
Travel Time (s)		35.5			14.5			10.3			69.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	42	203	60	257	257	128	36	392	216	239	758	93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	263	0	257	385	0	36	608	0	239	851	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	14.0		7.0	14.0	
Minimum Split (s)	12.3	13.2		12.1	13.0		13.3	20.3		13.3	20.3	
Total Split (s)	20.0	35.0		20.0	35.0		20.0	90.0		20.0	90.0	
Total Split (%)	12.1%	21.2%		12.1%	21.2%		12.1%	54.5%		12.1%	54.5%	
Maximum Green (s)	14.7	28.8		14.9	29.0		13.7	83.7		13.7	83.7	
Yellow Time (s)	3.0	4.7		3.0	4.7		3.0	4.9		3.0	4.8	
All-Red Time (s)	2.3	1.5		2.1	1.3		3.3	1.4		3.3	1.5	
Lost Time Adjust (s)	-0.3	-1.2		-0.1	-1.0		-1.3	-1.3		-1.3	-1.3	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		3.0	3.0		2.0	6.0		2.0	6.0	
Minimum Gap (s)	2.0	2.0		3.0	3.0		2.0	3.0		2.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0		0.0	15.0	
Time To Reduce (s)	0.0	30.0		0.0	30.0		0.0	30.0		0.0	30.0	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effect Green (s)	8.1	21.0		15.2	33.7		8.9	25.2		15.2	37.5	
Actuated g/C Ratio	0.08	0.22		0.16	0.35		0.09	0.26		0.16	0.39	
v/c Ratio	0.29	0.68		0.92	0.63		0.22	0.70		0.86	0.63	
Control Delay	50.5	44.9		81.6	34.8		48.2	37.3		71.0	28.7	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	50.5	44.9		81.6	34.8		48.2	37.3		71.0	28.7	

Lanes, Volumes, Timings

400: US 158 (S Stratford Road) & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	D		F	C		D	D		E	C	
Approach Delay		45.6			53.5			37.9			38.0	
Approach LOS		D			D			D			D	
Queue Length 50th (ft)	25	147		158	208		21	180		146	245	
Queue Length 95th (ft)	66	258		#379	369		58	257		#347	353	
Internal Link Dist (ft)		2261			875			673			5025	
Turn Bay Length (ft)	100			100			325			400		
Base Capacity (vph)	278	564		278	615		278	2956		278	3072	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.15	0.47		0.92	0.63		0.13	0.21		0.86	0.28	

Intersection Summary

Area Type: Other

Cycle Length: 165

Actuated Cycle Length: 96.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 42.6

Intersection LOS: D

Intersection Capacity Utilization 70.3%

ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 400: US 158 (S Stratford Road) & Jonestown Road

 Ø1	 Ø2	 Ø3	 Ø4
20 s	90 s	20 s	35 s
 Ø5	 Ø6	 Ø7	 Ø8
20 s	90 s	20 s	35 s

Lanes, Volumes, Timings

500: Lockwood Drive & Jonestown Road

04/05/2022

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	14	227	104	3	299	26	67	21	0	2	19	14
Future Volume (vph)	14	227	104	3	299	26	67	21	0	2	19	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.959			0.989							0.975
Flt Protected		0.998						0.963				0.977
Satd. Flow (prot)	0	1783	0	0	1842	0	0	1794	0	0	0	1774
Flt Permitted		0.998						0.963				0.977
Satd. Flow (perm)	0	1783	0	0	1842	0	0	1794	0	0	0	1774
Link Speed (mph)		45			45			45				45
Link Distance (ft)		2659			2341			886				1803
Travel Time (s)		40.3			35.5			13.4				27.3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	252	116	3	332	29	74	23	0	2	21	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	384	0	0	364	0	0	97	0	0	0	48
Sign Control		Free			Free			Stop				Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 41.8%

ICU Level of Service A

Analysis Period (min) 15

Lane Group	SBR
Lane Configurations	
Traffic Volume (vph)	8
Future Volume (vph)	8
Ideal Flow (vphpl)	1900
Lane Util. Factor	1.00
Frt	
Flt Protected	
Satd. Flow (prot)	0
Flt Permitted	
Satd. Flow (perm)	0
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.90
Adj. Flow (vph)	9
Shared Lane Traffic (%)	
Lane Group Flow (vph)	0
Sign Control	

Intersection Summary

HCM 6th TWSC
500: Lockwood Drive & Jonestown Road

04/05/2022

Intersection													
Int Delay, s/veh	3.2												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	14	227	104	3	299	26	67	21	0	2	19	14	8
Future Vol, veh/h	14	227	104	3	299	26	67	21	0	2	19	14	8
Conflicting Peds, #/hr	0	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	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	90	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	16	252	116	3	332	29	74	23	0	2	21	16	9
Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	361	0	0	368	0	0	707	709	310	0	707	753	347
Stage 1	-	-	-	-	-	-	342	342	-	0	353	353	-
Stage 2	-	-	-	-	-	-	365	367	-	0	354	400	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	-	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1198	-	-	1191	-	-	350	359	730	0	350	339	696
Stage 1	-	-	-	-	-	-	673	638	-	0	664	631	-
Stage 2	-	-	-	-	-	-	654	622	-	0	663	602	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1198	-	-	1191	-	-	328	352	730	0	327	332	696
Mov Cap-2 Maneuver	-	-	-	-	-	-	328	352	-	0	327	332	-
Stage 1	-	-	-	-	-	-	662	627	-	0	653	629	-
Stage 2	-	-	-	-	-	-	628	620	-	0	627	592	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	0.3			0.1			20.2			16.2			
HCM LOS							C			C			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1					
Capacity (veh/h)	333	1198	-	-	1191	-	-	367					
HCM Lane V/C Ratio	0.294	0.013	-	-	0.003	-	-	0.124					
HCM Control Delay (s)	20.2	8	0	-	8	0	-	16.2					
HCM Lane LOS	C	A	A	-	A	A	-	C					
HCM 95th %tile O(veh)	1.2	0	-	-	0	-	-	0.4					

Lanes, Volumes, Timings
600: Site Access 1 & Somerset Drive

04/05/2022

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	131	21	43	267	14	28
Future Volume (vph)	131	21	43	267	14	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.982				0.911	
Flt Protected				0.993	0.983	
Satd. Flow (prot)	1829	0	0	1850	1668	0
Flt Permitted				0.993	0.983	
Satd. Flow (perm)	1829	0	0	1850	1668	0
Link Speed (mph)	30			35	30	
Link Distance (ft)	1409			538	432	
Travel Time (s)	32.0			10.5	9.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	146	23	48	297	16	31
Shared Lane Traffic (%)						
Lane Group Flow (vph)	169	0	0	345	47	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	37.9%			ICU Level of Service A		
Analysis Period (min)	15					

Intersection

Int Delay, s/veh 1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	131	21	43	267	14	28
Future Vol, veh/h	131	21	43	267	14	28
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	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	146	23	48	297	16	31

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	169
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1409
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1409
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	688	-	-	1409	-
HCM Lane V/C Ratio	0.068	-	-	0.034	-
HCM Control Delay (s)	10.6	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lanes, Volumes, Timings
700: Lockwood Drive & Site Access 2

04/05/2022

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	28	0	18	43	0	10
Future Volume (vph)	28	0	18	43	0	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905					
Flt Protected	0.950					
Satd. Flow (prot)	1770	0	1686	0	0	1863
Flt Permitted	0.950					
Satd. Flow (perm)	1770	0	1686	0	0	1863
Link Speed (mph)	30		45			45
Link Distance (ft)	302		1803			307
Travel Time (s)	6.9		27.3			4.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	31	0	20	48	0	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	68	0	0	11
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	13.6%			ICU Level of Service A		
Analysis Period (min)	15					

HCM 6th TWSC
700: Lockwood Drive & Site Access 2

04/05/2022

Intersection

Int Delay, s/veh 2.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	28	0	18	43	0	10
Future Vol, veh/h	28	0	18	43	0	10
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, %	2	2	2	2	2	2
Mvmt Flow	31	0	20	48	0	11

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	55	44	0
Stage 1	44	-	-
Stage 2	11	-	-
Critical Hdwy	6.42	6.22	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	-
Pot Cap-1 Maneuver	953	1026	-
Stage 1	978	-	-
Stage 2	1012	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	953	1026	-
Mov Cap-2 Maneuver	953	-	-
Stage 1	978	-	-
Stage 2	1012	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	953	1533
HCM Lane V/C Ratio	-	-	0.033	-
HCM Control Delay (s)	-	-	8.9	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

Traffic Volume Data



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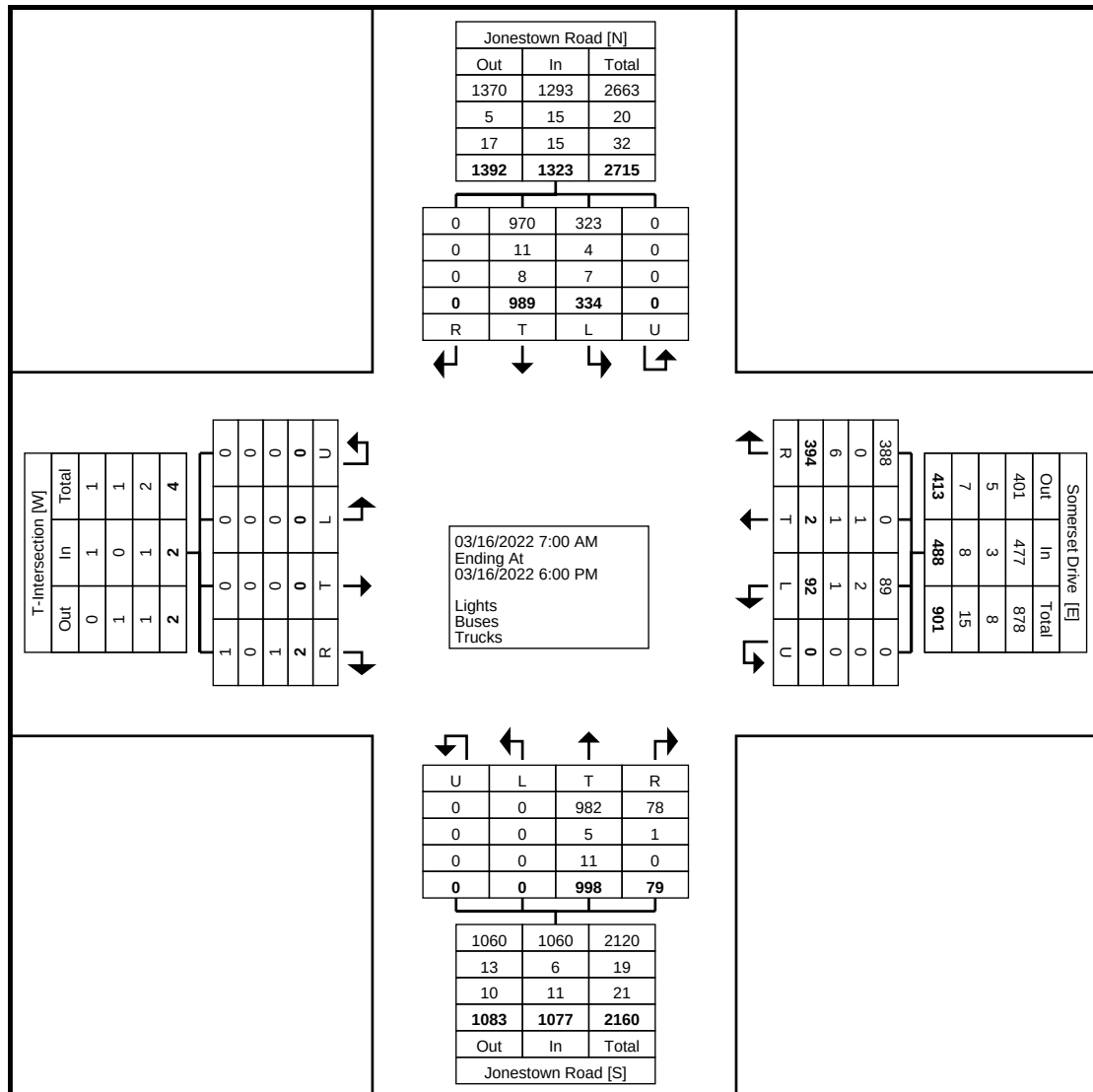
Count Name: Somerset Drive
and Jonestown Road
Site Code: 2200283
Start Date: 03/16/2022
Page No: 1

Turning Movement Data

Start Time	Jonestown Road Southbound					Somerset Drive Westbound					Jonestown Road Northbound					T-Intersection Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:00 AM	0	29	19	0	48	10	0	0	0	10	4	48	0	0	52	0	0	0	0	0	110
7:15 AM	0	39	23	0	62	19	0	0	0	19	3	58	0	0	61	0	0	0	0	0	142
7:30 AM	0	45	13	0	58	12	0	5	0	17	5	85	0	0	90	0	0	0	0	0	165
7:45 AM	0	56	25	0	81	18	1	1	0	20	7	75	0	0	82	0	0	0	0	0	183
Hourly Total	0	169	80	0	249	59	1	6	0	66	19	266	0	0	285	0	0	0	0	0	600
8:00 AM	0	39	30	0	69	19	1	3	0	23	4	61	0	0	65	0	0	0	0	0	157
8:15 AM	0	37	14	0	51	23	0	6	0	29	3	69	0	0	72	1	0	0	0	1	153
8:30 AM	0	54	19	0	73	20	0	6	0	26	5	53	0	0	58	0	0	0	0	0	157
8:45 AM	0	31	16	0	47	18	0	2	0	20	6	57	0	0	63	0	0	0	0	0	130
Hourly Total	0	161	79	0	240	80	1	17	0	98	18	240	0	0	258	1	0	0	0	1	597
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	100	22	0	122	34	0	5	0	39	4	59	0	0	63	0	0	0	0	0	224
4:15 PM	0	68	26	0	94	35	0	13	0	48	5	63	0	0	68	0	0	0	0	0	210
4:30 PM	0	88	19	0	107	26	0	7	0	33	5	68	0	0	73	0	0	0	0	0	213
4:45 PM	0	74	18	0	92	43	0	9	0	52	5	62	0	0	67	0	0	0	0	0	211
Hourly Total	0	330	85	0	415	138	0	34	0	172	19	252	0	0	271	0	0	0	0	0	858
5:00 PM	0	107	27	0	134	48	0	13	0	61	7	60	0	0	67	0	0	0	0	0	262
5:15 PM	0	78	26	0	104	29	0	8	0	37	8	57	0	0	65	0	0	0	0	0	206
5:30 PM	0	77	18	0	95	17	0	5	0	22	4	65	0	0	69	1	0	0	0	1	187
5:45 PM	0	67	19	0	86	23	0	9	0	32	4	58	0	0	62	0	0	0	0	0	180
Hourly Total	0	329	90	0	419	117	0	35	0	152	23	240	0	0	263	1	0	0	0	1	835
Grand Total	0	989	334	0	1323	394	2	92	0	488	79	998	0	0	1077	2	0	0	0	2	2890
Approach %	0.0	74.8	25.2	0.0	-	80.7	0.4	18.9	0.0	-	7.3	92.7	0.0	0.0	-	100.0	0.0	0.0	0.0	-	-
Total %	0.0	34.2	11.6	0.0	45.8	13.6	0.1	3.2	0.0	16.9	2.7	34.5	0.0	0.0	37.3	0.1	0.0	0.0	0.0	0.1	-
Lights	0	970	323	0	1293	388	0	89	0	477	78	982	0	0	1060	1	0	0	0	1	2831
% Lights	-	98.1	96.7	-	97.7	98.5	0.0	96.7	-	97.7	98.7	98.4	-	-	98.4	50.0	-	-	-	50.0	98.0
Buses	0	11	4	0	15	0	1	2	0	3	1	5	0	0	6	0	0	0	0	0	24
% Buses	-	1.1	1.2	-	1.1	0.0	50.0	2.2	-	0.6	1.3	0.5	-	-	0.6	0.0	-	-	-	0.0	0.8
Trucks	0	8	7	0	15	6	1	1	0	8	0	11	0	0	11	1	0	0	0	1	35
% Trucks	-	0.8	2.1	-	1.1	1.5	50.0	1.1	-	1.6	0.0	1.1	-	-	1.0	50.0	-	-	-	50.0	1.2



Count Name: Somerset Drive
and Jonestown Road
Site Code: 2200283
Start Date: 03/16/2022
Page No: 2



Turning Movement Data Plot



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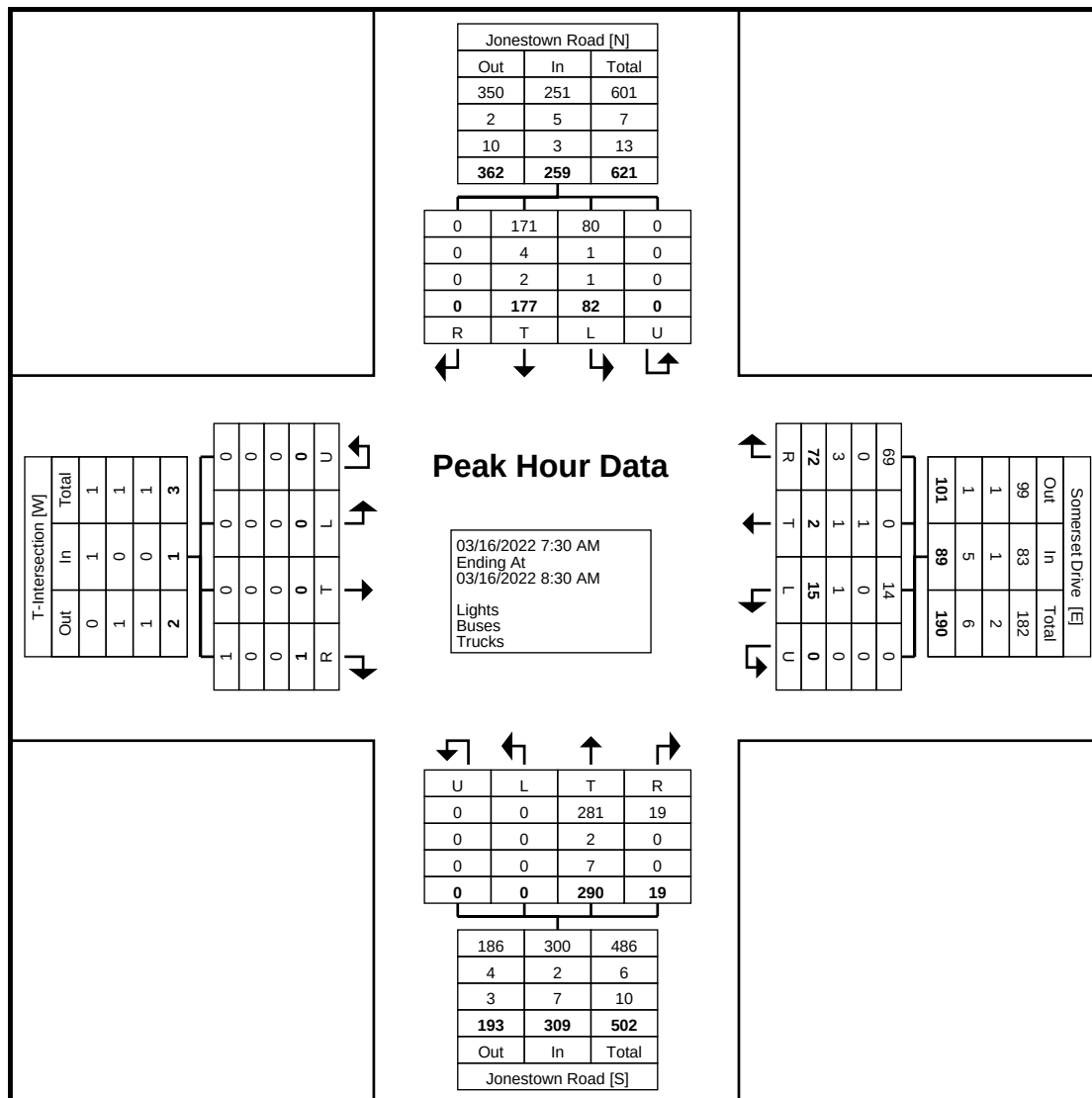
Count Name: Somerset Drive
and Jonestown Road
Site Code: 2200283
Start Date: 03/16/2022
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

Start Time	Jonestown Road Southbound					Somerset Drive Westbound					Jonestown Road Northbound					T-Intersection Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:30 AM	0	45	13	0	58	12	0	5	0	17	5	85	0	0	90	0	0	0	0	0	165
7:45 AM	0	56	25	0	81	18	1	1	0	20	7	75	0	0	82	0	0	0	0	0	183
8:00 AM	0	39	30	0	69	19	1	3	0	23	4	61	0	0	65	0	0	0	0	0	157
8:15 AM	0	37	14	0	51	23	0	6	0	29	3	69	0	0	72	1	0	0	0	1	153
Total	0	177	82	0	259	72	2	15	0	89	19	290	0	0	309	1	0	0	0	1	658
Approach %	0.0	68.3	31.7	0.0	-	80.9	2.2	16.9	0.0	-	6.1	93.9	0.0	0.0	-	100.0	0.0	0.0	0.0	-	-
Total %	0.0	26.9	12.5	0.0	39.4	10.9	0.3	2.3	0.0	13.5	2.9	44.1	0.0	0.0	47.0	0.2	0.0	0.0	0.0	0.2	-
PHF	0.000	0.790	0.683	0.000	0.799	0.783	0.500	0.625	0.000	0.767	0.679	0.853	0.000	0.000	0.858	0.250	0.000	0.000	0.000	0.250	0.899
Lights	0	171	80	0	251	69	0	14	0	83	19	281	0	0	300	1	0	0	0	1	635
% Lights	-	96.6	97.6	-	96.9	95.8	0.0	93.3	-	93.3	100.0	96.9	-	-	97.1	100.0	-	-	-	100.0	96.5
Buses	0	4	1	0	5	0	1	0	0	1	0	2	0	0	2	0	0	0	0	0	8
% Buses	-	2.3	1.2	-	1.9	0.0	50.0	0.0	-	1.1	0.0	0.7	-	-	0.6	0.0	-	-	-	0.0	1.2
Trucks	0	2	1	0	3	3	1	1	0	5	0	7	0	0	7	0	0	0	0	0	15
% Trucks	-	1.1	1.2	-	1.2	4.2	50.0	6.7	-	5.6	0.0	2.4	-	-	2.3	0.0	-	-	-	0.0	2.3



Count Name: Somerset Drive
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Page No: 4





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Count Name: Somerset Drive
and Jonestown Road
Site Code: 2200283
Start Date: 03/16/2022
Page No: 5

Turning Movement Peak Hour Data (4:15 PM)

Start Time	Jonestown Road Southbound					Somerset Drive Westbound					Jonestown Road Northbound					T-Intersection Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
4:15 PM	0	68	26	0	94	35	0	13	0	48	5	63	0	0	68	0	0	0	0	0	210
4:30 PM	0	88	19	0	107	26	0	7	0	33	5	68	0	0	73	0	0	0	0	0	213
4:45 PM	0	74	18	0	92	43	0	9	0	52	5	62	0	0	67	0	0	0	0	0	211
5:00 PM	0	107	27	0	134	48	0	13	0	61	7	60	0	0	67	0	0	0	0	0	262
Total	0	337	90	0	427	152	0	42	0	194	22	253	0	0	275	0	0	0	0	0	896
Approach %	0.0	78.9	21.1	0.0	-	78.4	0.0	21.6	0.0	-	8.0	92.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-
Total %	0.0	37.6	10.0	0.0	47.7	17.0	0.0	4.7	0.0	21.7	2.5	28.2	0.0	0.0	30.7	0.0	0.0	0.0	0.0	0.0	-
PHF	0.000	0.787	0.833	0.000	0.797	0.792	0.000	0.808	0.000	0.795	0.786	0.930	0.000	0.000	0.942	0.000	0.000	0.000	0.000	0.000	0.855
Lights	0	329	87	0	416	151	0	40	0	191	22	251	0	0	273	0	0	0	0	0	880
% Lights	-	97.6	96.7	-	97.4	99.3	-	95.2	-	98.5	100.0	99.2	-	-	99.3	-	-	-	-	-	98.2
Buses	0	5	2	0	7	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	10
% Buses	-	1.5	2.2	-	1.6	0.0	-	4.8	-	1.0	0.0	0.4	-	-	0.4	-	-	-	-	-	1.1
Trucks	0	3	1	0	4	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	6
% Trucks	-	0.9	1.1	-	0.9	0.7	-	0.0	-	0.5	0.0	0.4	-	-	0.4	-	-	-	-	-	0.7



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Count Name: Somerset Drive
and Ashton Drive
Site Code: 22200286
Start Date: 03/16/2022
Page No: 1

Turning Movement Data

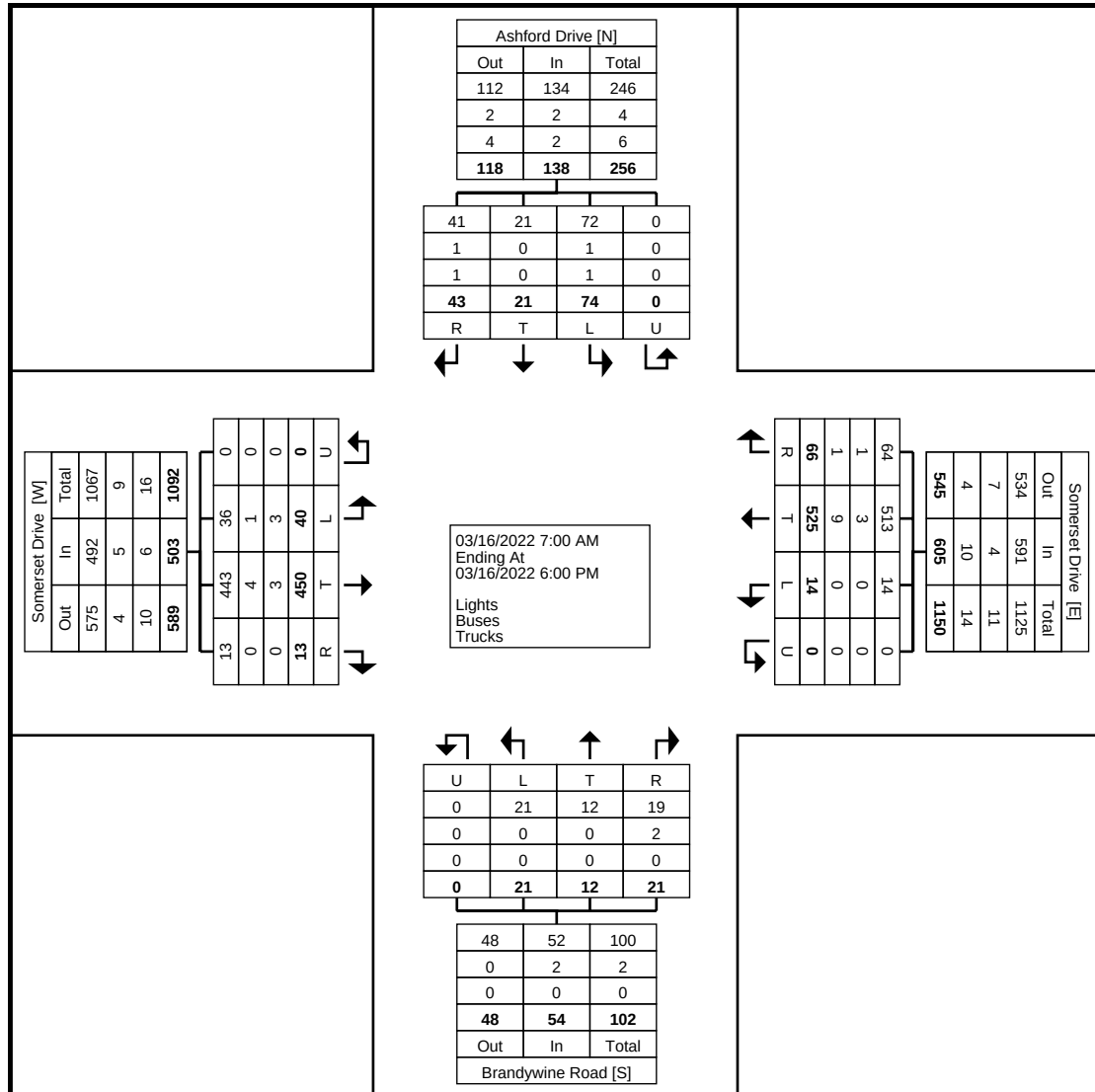
Start Time	Ashford Drive Southbound					Somerset Drive Westbound					Brandywine Road Northbound					Somerset Drive Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:00 AM	1	1	0	0	2	0	10	0	0	10	0	0	2	0	2	1	28	1	0	30	44
7:15 AM	4	2	8	0	14	0	9	0	0	9	0	1	2	0	3	0	35	1	0	36	62
7:30 AM	2	1	12	0	15	0	17	0	0	17	3	1	0	0	4	0	20	0	0	20	56
7:45 AM	1	1	5	0	7	1	16	2	0	19	0	1	1	0	2	0	31	3	0	34	62
Hourly Total	8	5	25	0	38	1	52	2	0	55	3	3	5	0	11	1	114	5	0	120	224
8:00 AM	6	1	3	0	10	5	16	1	0	22	1	0	1	0	2	2	43	2	0	47	81
8:15 AM	8	2	4	0	14	4	23	2	0	29	1	0	0	0	1	2	24	3	0	29	73
8:30 AM	3	0	1	0	4	3	18	0	0	21	2	1	2	0	5	2	37	3	0	42	72
8:45 AM	3	5	6	0	14	4	18	1	0	23	2	0	1	0	3	1	24	2	0	27	67
Hourly Total	20	8	14	0	42	16	75	4	0	95	6	1	4	0	11	7	128	10	0	145	293
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	1	1	3	0	5	5	54	0	0	59	4	0	2	0	6	2	30	3	0	35	105
4:15 PM	0	0	7	0	7	6	49	0	0	55	2	1	0	0	3	0	26	3	0	29	94
4:30 PM	2	0	6	0	8	10	52	1	0	63	0	0	2	0	2	0	22	3	0	25	98
4:45 PM	3	0	5	0	8	5	54	1	0	60	2	2	0	0	4	0	19	3	0	22	94
Hourly Total	6	1	21	0	28	26	209	2	0	237	8	3	4	0	15	2	97	12	0	111	391
5:00 PM	2	2	3	0	7	9	65	4	0	78	0	0	1	0	1	1	28	6	0	35	121
5:15 PM	3	2	4	0	9	4	56	1	0	61	1	1	1	0	3	1	33	2	0	36	109
5:30 PM	2	1	3	0	6	3	31	1	0	35	1	1	4	0	6	1	23	3	0	27	74
5:45 PM	2	2	4	0	8	7	37	0	0	44	2	3	2	0	7	0	27	2	0	29	88
Hourly Total	9	7	14	0	30	23	189	6	0	218	4	5	8	0	17	3	111	13	0	127	392
Grand Total	43	21	74	0	138	66	525	14	0	605	21	12	21	0	54	13	450	40	0	503	1300
Approach %	31.2	15.2	53.6	0.0	-	10.9	86.8	2.3	0.0	-	38.9	22.2	38.9	0.0	-	2.6	89.5	8.0	0.0	-	-
Total %	3.3	1.6	5.7	0.0	10.6	5.1	40.4	1.1	0.0	46.5	1.6	0.9	1.6	0.0	4.2	1.0	34.6	3.1	0.0	38.7	-
Lights	41	21	72	0	134	64	513	14	0	591	19	12	21	0	52	13	443	36	0	492	1269
% Lights	95.3	100.0	97.3	-	97.1	97.0	97.7	100.0	-	97.7	90.5	100.0	100.0	-	96.3	100.0	98.4	90.0	-	97.8	97.6
Buses	1	0	1	0	2	1	3	0	0	4	2	0	0	0	2	0	4	1	0	5	13
% Buses	2.3	0.0	1.4	-	1.4	1.5	0.6	0.0	-	0.7	9.5	0.0	0.0	-	3.7	0.0	0.9	2.5	-	1.0	1.0
Trucks	1	0	1	0	2	1	9	0	0	10	0	0	0	0	0	0	3	3	0	6	18
% Trucks	2.3	0.0	1.4	-	1.4	1.5	1.7	0.0	-	1.7	0.0	0.0	0.0	-	0.0	0.0	0.7	7.5	-	1.2	1.4



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Count Name: Somerset Drive
and Ashton Drive
Site Code: 22200286
Start Date: 03/16/2022
Page No: 2



Turning Movement Data Plot



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Count Name: Somerset Drive
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Page No: 3

Turning Movement Peak Hour Data (8:00 AM)

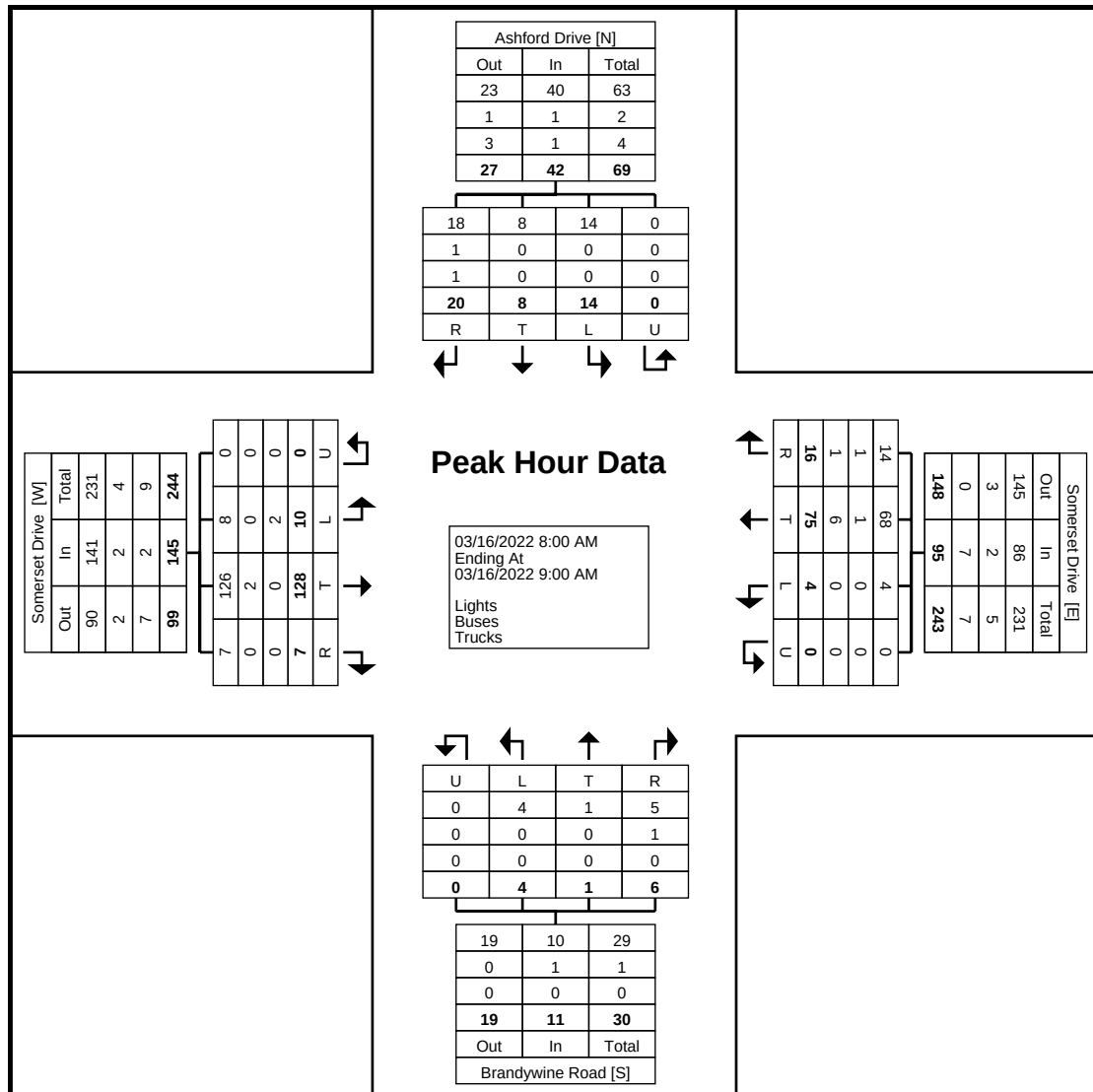
Start Time	Ashford Drive Southbound					Somerset Drive Westbound					Brandywine Road Northbound					Somerset Drive Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
8:00 AM	6	1	3	0	10	5	16	1	0	22	1	0	1	0	2	2	43	2	0	47	81
8:15 AM	8	2	4	0	14	4	23	2	0	29	1	0	0	0	1	2	24	3	0	29	73
8:30 AM	3	0	1	0	4	3	18	0	0	21	2	1	2	0	5	2	37	3	0	42	72
8:45 AM	3	5	6	0	14	4	18	1	0	23	2	0	1	0	3	1	24	2	0	27	67
Total	20	8	14	0	42	16	75	4	0	95	6	1	4	0	11	7	128	10	0	145	293
Approach %	47.6	19.0	33.3	0.0	-	16.8	78.9	4.2	0.0	-	54.5	9.1	36.4	0.0	-	4.8	88.3	6.9	0.0	-	-
Total %	6.8	2.7	4.8	0.0	14.3	5.5	25.6	1.4	0.0	32.4	2.0	0.3	1.4	0.0	3.8	2.4	43.7	3.4	0.0	49.5	-
PHF	0.625	0.400	0.583	0.000	0.750	0.800	0.815	0.500	0.000	0.819	0.750	0.250	0.500	0.000	0.550	0.875	0.744	0.833	0.000	0.771	0.904
Lights	18	8	14	0	40	14	68	4	0	86	5	1	4	0	10	7	126	8	0	141	277
% Lights	90.0	100.0	100.0	-	95.2	87.5	90.7	100.0	-	90.5	83.3	100.0	100.0	-	90.9	100.0	98.4	80.0	-	97.2	94.5
Buses	1	0	0	0	1	1	1	0	0	2	1	0	0	0	1	0	2	0	0	2	6
% Buses	5.0	0.0	0.0	-	2.4	6.3	1.3	0.0	-	2.1	16.7	0.0	0.0	-	9.1	0.0	1.6	0.0	-	1.4	2.0
Trucks	1	0	0	0	1	1	6	0	0	7	0	0	0	0	0	0	0	2	0	2	10
% Trucks	5.0	0.0	0.0	-	2.4	6.3	8.0	0.0	-	7.4	0.0	0.0	0.0	-	0.0	0.0	0.0	20.0	-	1.4	3.4



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Site Code: 22200286
Start Date: 03/16/2022
Page No: 4



Turning Movement Peak Hour Data Plot (8:00 AM)



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Count Name: Somerset Drive
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Start Date: 03/16/2022
Page No: 5

Turning Movement Peak Hour Data (4:30 PM)

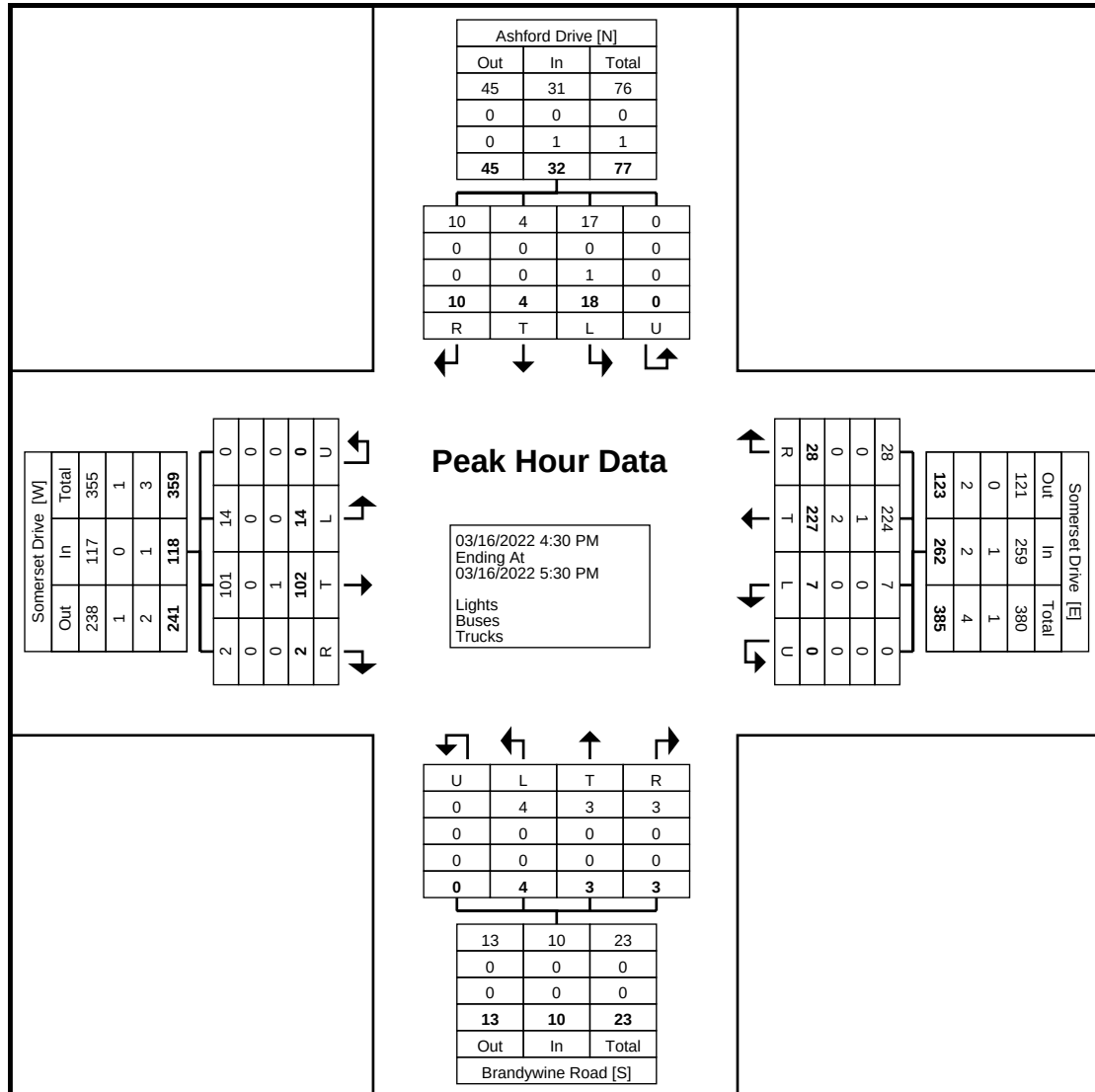
Start Time	Ashford Drive Southbound					Somerset Drive Westbound					Brandywine Road Northbound					Somerset Drive Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
4:30 PM	2	0	6	0	8	10	52	1	0	63	0	0	2	0	2	0	22	3	0	25	98
4:45 PM	3	0	5	0	8	5	54	1	0	60	2	2	0	0	4	0	19	3	0	22	94
5:00 PM	2	2	3	0	7	9	65	4	0	78	0	0	1	0	1	1	28	6	0	35	121
5:15 PM	3	2	4	0	9	4	56	1	0	61	1	1	1	0	3	1	33	2	0	36	109
Total	10	4	18	0	32	28	227	7	0	262	3	3	4	0	10	2	102	14	0	118	422
Approach %	31.3	12.5	56.3	0.0	-	10.7	86.6	2.7	0.0	-	30.0	30.0	40.0	0.0	-	1.7	86.4	11.9	0.0	-	-
Total %	2.4	0.9	4.3	0.0	7.6	6.6	53.8	1.7	0.0	62.1	0.7	0.7	0.9	0.0	2.4	0.5	24.2	3.3	0.0	28.0	-
PHF	0.833	0.500	0.750	0.000	0.889	0.700	0.873	0.438	0.000	0.840	0.375	0.375	0.500	0.000	0.625	0.500	0.773	0.583	0.000	0.819	0.872
Lights	10	4	17	0	31	28	224	7	0	259	3	3	4	0	10	2	101	14	0	117	417
% Lights	100.0	100.0	94.4	-	96.9	100.0	98.7	100.0	-	98.9	100.0	100.0	100.0	-	100.0	100.0	99.0	100.0	-	99.2	98.8
Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
% Buses	0.0	0.0	0.0	-	0.0	0.0	0.4	0.0	-	0.4	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.2
Trucks	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4
% Trucks	0.0	0.0	5.6	-	3.1	0.0	0.9	0.0	-	0.8	0.0	0.0	0.0	-	0.0	0.0	1.0	0.0	-	0.8	0.9



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Count Name: Somerset Drive
and Ashton Drive
Site Code: 22200286
Start Date: 03/16/2022
Page No: 6



Turning Movement Peak Hour Data Plot (4:30 PM)



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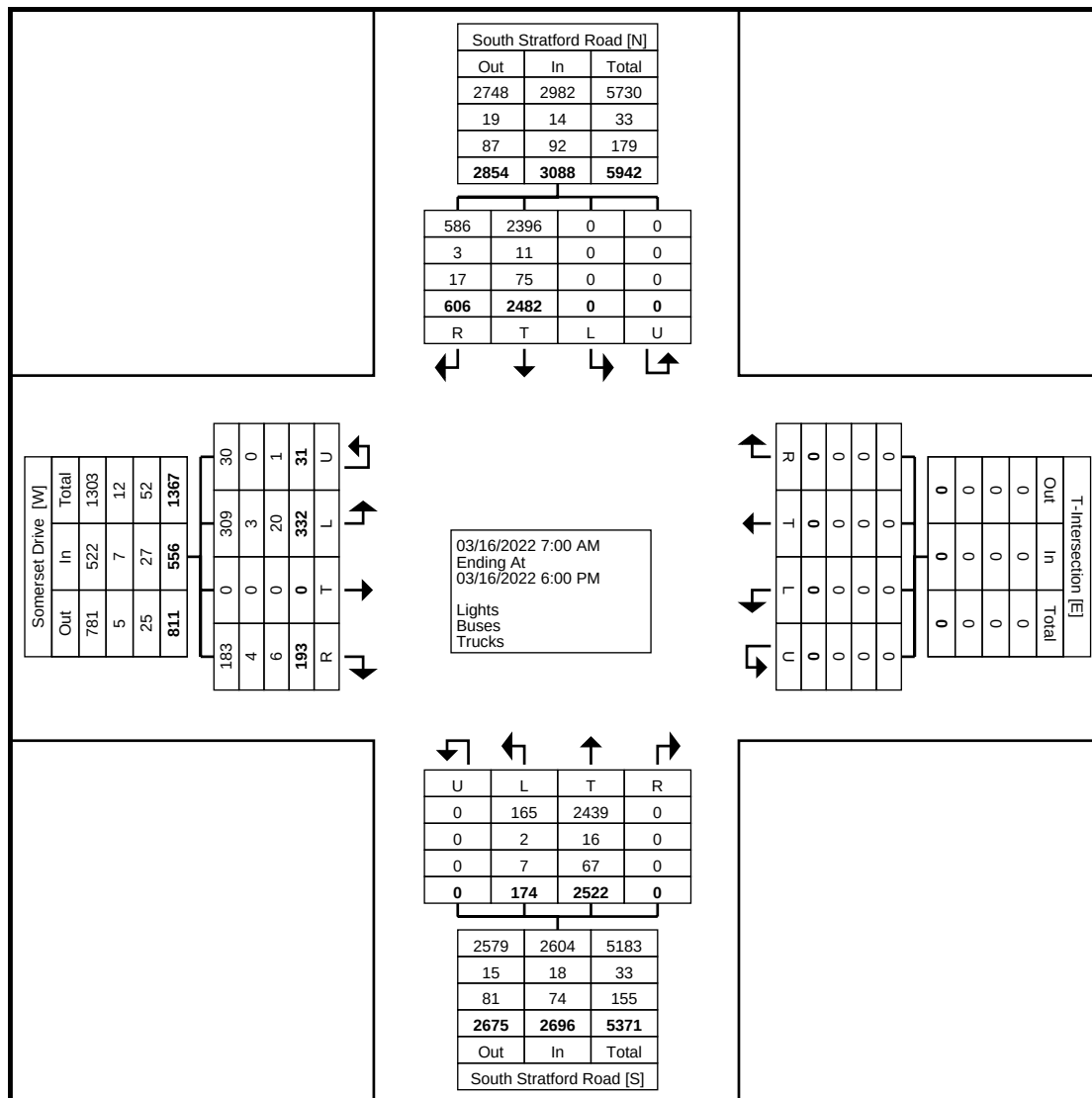
Count Name: Somerset Drive
and South Stratford Road
Site Code: 2200284
Start Date: 03/16/2022
Page No: 1

Turning Movement Data

Start Time	South Stratford Road Southbound					T-Intersection Westbound					South Stratford Road Northbound					Somerset Drive Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:00 AM	10	131	0	0	141	0	0	0	0	0	0	103	9	0	112	12	0	12	2	26	279
7:15 AM	12	116	0	0	128	0	0	0	0	0	0	177	3	0	180	19	0	18	1	38	346
7:30 AM	33	127	0	0	160	0	0	0	0	0	0	163	6	0	169	16	0	21	4	41	370
7:45 AM	22	172	0	0	194	0	0	0	0	0	0	186	13	0	199	13	0	30	3	46	439
Hourly Total	77	546	0	0	623	0	0	0	0	0	0	629	31	0	660	60	0	81	10	151	1434
8:00 AM	33	139	0	0	172	0	0	0	0	0	0	143	10	0	153	21	0	16	4	41	366
8:15 AM	23	124	0	0	147	0	0	0	0	0	0	153	6	0	159	13	0	22	2	37	343
8:30 AM	23	144	0	0	167	0	0	0	0	0	0	147	9	0	156	22	0	18	3	43	366
8:45 AM	25	116	0	0	141	0	0	0	0	0	0	150	5	0	155	10	0	15	1	26	322
Hourly Total	104	523	0	0	627	0	0	0	0	0	0	593	30	0	623	66	0	71	10	147	1397
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	54	187	0	0	241	0	0	0	0	0	0	165	16	0	181	9	0	22	2	33	455
4:15 PM	41	164	0	0	205	0	0	0	0	0	0	185	17	0	202	8	0	26	2	36	443
4:30 PM	53	193	0	0	246	0	0	0	0	0	0	193	18	0	211	12	0	22	2	36	493
4:45 PM	62	167	0	0	229	0	0	0	0	0	0	176	14	0	190	10	0	24	1	35	454
Hourly Total	210	711	0	0	921	0	0	0	0	0	0	719	65	0	784	39	0	94	7	140	1845
5:00 PM	71	165	0	0	236	0	0	0	0	0	0	193	19	0	212	8	0	21	1	30	478
5:15 PM	50	189	0	0	239	0	0	0	0	0	0	131	13	0	144	5	0	23	0	28	411
5:30 PM	50	189	0	0	239	0	0	0	0	0	0	129	7	0	136	6	0	22	0	28	403
5:45 PM	44	159	0	0	203	0	0	0	0	0	0	128	9	0	137	9	0	20	3	32	372
Hourly Total	215	702	0	0	917	0	0	0	0	0	0	581	48	0	629	28	0	86	4	118	1664
Grand Total	606	2482	0	0	3088	0	0	0	0	0	0	2522	174	0	2696	193	0	332	31	556	6340
Approach %	19.6	80.4	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	93.5	6.5	0.0	-	34.7	0.0	59.7	5.6	-	-
Total %	9.6	39.1	0.0	0.0	48.7	0.0	0.0	0.0	0.0	0.0	0.0	39.8	2.7	0.0	42.5	3.0	0.0	5.2	0.5	8.8	-
Lights	586	2396	0	0	2982	0	0	0	0	0	0	2439	165	0	2604	183	0	309	30	522	6108
% Lights	96.7	96.5	-	-	96.6	-	-	-	-	-	-	96.7	94.8	-	96.6	94.8	-	93.1	96.8	93.9	96.3
Buses	3	11	0	0	14	0	0	0	0	0	0	16	2	0	18	4	0	3	0	7	39
% Buses	0.5	0.4	-	-	0.5	-	-	-	-	-	-	0.6	1.1	-	0.7	2.1	-	0.9	0.0	1.3	0.6
Trucks	17	75	0	0	92	0	0	0	0	0	0	67	7	0	74	6	0	20	1	27	193
% Trucks	2.8	3.0	-	-	3.0	-	-	-	-	-	-	2.7	4.0	-	2.7	3.1	-	6.0	3.2	4.9	3.0



Count Name: Somerset Drive
and South Stratford Road
Site Code: 2200284
Start Date: 03/16/2022
Page No: 2





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Count Name: Somerset Drive
and South Stratford Road
Site Code: 2200284
Start Date: 03/16/2022
Page No: 3

Turning Movement Peak Hour Data (7:15 AM)

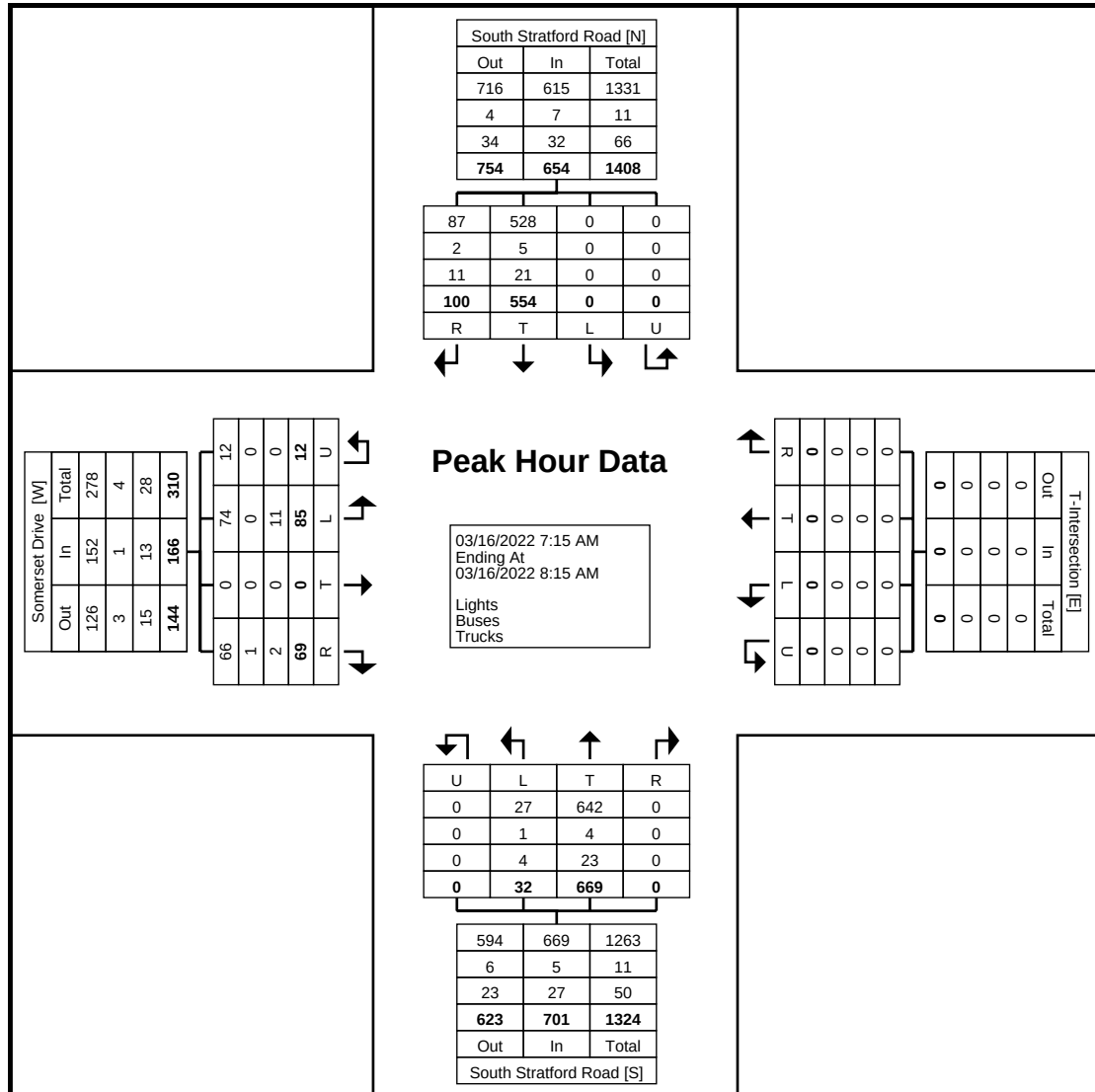
Start Time	South Stratford Road Southbound					T-Intersection Westbound					South Stratford Road Northbound					Somerset Drive Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:15 AM	12	116	0	0	128	0	0	0	0	0	0	177	3	0	180	19	0	18	1	38	346
7:30 AM	33	127	0	0	160	0	0	0	0	0	0	163	6	0	169	16	0	21	4	41	370
7:45 AM	22	172	0	0	194	0	0	0	0	0	0	186	13	0	199	13	0	30	3	46	439
8:00 AM	33	139	0	0	172	0	0	0	0	0	0	143	10	0	153	21	0	16	4	41	366
Total	100	554	0	0	654	0	0	0	0	0	0	669	32	0	701	69	0	85	12	166	1521
Approach %	15.3	84.7	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	95.4	4.6	0.0	-	41.6	0.0	51.2	7.2	-	-
Total %	6.6	36.4	0.0	0.0	43.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	2.1	0.0	46.1	4.5	0.0	5.6	0.8	10.9	-
PHF	0.758	0.805	0.000	0.000	0.843	0.000	0.000	0.000	0.000	0.000	0.000	0.899	0.615	0.000	0.881	0.821	0.000	0.708	0.750	0.902	0.866
Lights	87	528	0	0	615	0	0	0	0	0	0	642	27	0	669	66	0	74	12	152	1436
% Lights	87.0	95.3	-	-	94.0	-	-	-	-	-	-	96.0	84.4	-	95.4	95.7	-	87.1	100.0	91.6	94.4
Buses	2	5	0	0	7	0	0	0	0	0	0	4	1	0	5	1	0	0	0	1	13
% Buses	2.0	0.9	-	-	1.1	-	-	-	-	-	-	0.6	3.1	-	0.7	1.4	-	0.0	0.0	0.6	0.9
Trucks	11	21	0	0	32	0	0	0	0	0	0	23	4	0	27	2	0	11	0	13	72
% Trucks	11.0	3.8	-	-	4.9	-	-	-	-	-	-	3.4	12.5	-	3.9	2.9	-	12.9	0.0	7.8	4.7



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Count Name: Somerset Drive
and South Stratford Road
Site Code: 2200284
Start Date: 03/16/2022
Page No: 4



Turning Movement Peak Hour Data Plot (7:15 AM)



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Count Name: Somerset Drive
 and South Stratford Road
 Site Code: 2200284
 Start Date: 03/16/2022
 Page No: 5

Turning Movement Peak Hour Data (4:15 PM)

Start Time	South Stratford Road Southbound					T-Intersection Westbound					South Stratford Road Northbound					Somerset Drive Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
4:15 PM	41	164	0	0	205	0	0	0	0	0	0	185	17	0	202	8	0	26	2	36	443
4:30 PM	53	193	0	0	246	0	0	0	0	0	0	193	18	0	211	12	0	22	2	36	493
4:45 PM	62	167	0	0	229	0	0	0	0	0	0	176	14	0	190	10	0	24	1	35	454
5:00 PM	71	165	0	0	236	0	0	0	0	0	0	193	19	0	212	8	0	21	1	30	478
Total	227	689	0	0	916	0	0	0	0	0	0	747	68	0	815	38	0	93	6	137	1868
Approach %	24.8	75.2	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	91.7	8.3	0.0	-	27.7	0.0	67.9	4.4	-	-
Total %	12.2	36.9	0.0	0.0	49.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	3.6	0.0	43.6	2.0	0.0	5.0	0.3	7.3	-
PHF	0.799	0.892	0.000	0.000	0.931	0.000	0.000	0.000	0.000	0.000	0.000	0.968	0.895	0.000	0.961	0.792	0.000	0.894	0.750	0.951	0.947
Lights	226	671	0	0	897	0	0	0	0	0	0	726	66	0	792	34	0	91	6	131	1820
% Lights	99.6	97.4	-	-	97.9	-	-	-	-	-	-	97.2	97.1	-	97.2	89.5	-	97.8	100.0	95.6	97.4
Buses	1	4	0	0	5	0	0	0	0	0	0	5	0	0	5	2	0	0	0	2	12
% Buses	0.4	0.6	-	-	0.5	-	-	-	-	-	-	0.7	0.0	-	0.6	5.3	-	0.0	0.0	1.5	0.6
Trucks	0	14	0	0	14	0	0	0	0	0	0	16	2	0	18	2	0	2	0	4	36
% Trucks	0.0	2.0	-	-	1.5	-	-	-	-	-	-	2.1	2.9	-	2.2	5.3	-	2.2	0.0	2.9	1.9



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Count Name: South Stratford
Road and Jonestown Road
Site Code: 2200285
Start Date: 03/16/2022
Page No: 1

Turning Movement Data

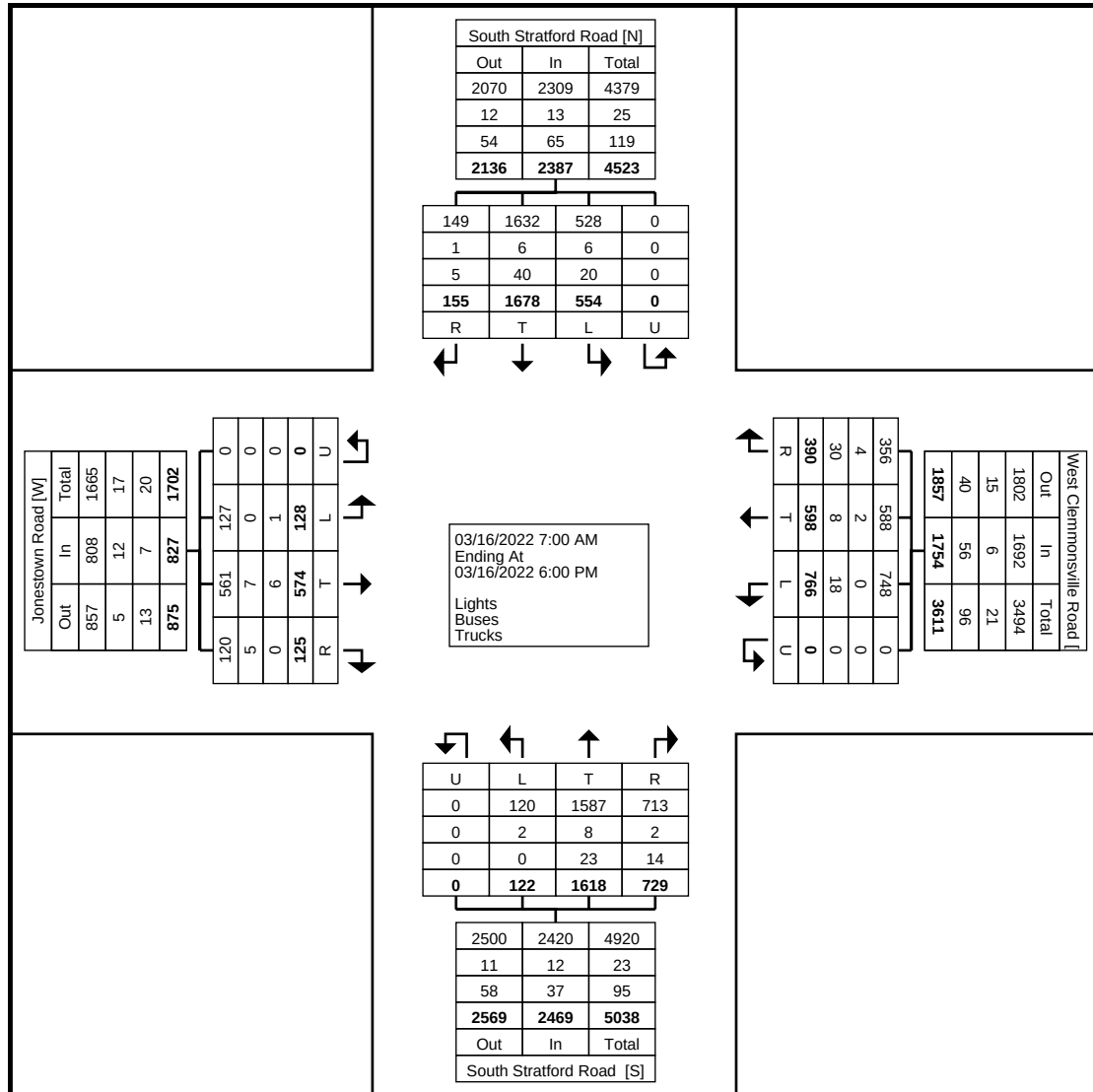
Start Time	South Stratford Road Southbound					West Clemmons Road Westbound					South Stratford Road Northbound					Jonestown Road Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:00 AM	1	34	23	0	58	21	24	30	0	75	46	85	4	0	135	4	25	10	0	39	307
7:15 AM	4	50	29	0	83	21	28	39	0	88	36	129	8	0	173	6	32	8	0	46	390
7:30 AM	2	56	17	0	75	37	31	45	0	113	67	156	10	0	233	4	37	7	0	48	469
7:45 AM	4	54	34	0	92	28	33	52	0	113	59	158	7	0	224	4	47	9	0	60	489
Hourly Total	11	194	103	0	308	107	116	166	0	389	208	528	29	0	765	18	141	34	0	193	1655
8:00 AM	5	53	24	0	82	19	31	50	0	100	49	102	6	0	157	7	42	12	0	61	400
8:15 AM	5	79	30	0	114	23	37	53	0	113	38	123	11	0	172	5	27	9	0	41	440
8:30 AM	5	87	29	0	121	23	35	59	0	117	35	109	5	0	149	5	29	6	0	40	427
8:45 AM	4	73	20	0	97	35	32	48	0	115	41	111	7	0	159	6	26	9	0	41	412
Hourly Total	19	292	103	0	414	100	135	210	0	445	163	445	29	0	637	23	124	36	0	183	1679
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	12	146	45	0	203	21	38	45	0	104	46	71	7	0	124	6	41	5	0	52	483
4:15 PM	14	137	43	0	194	21	27	47	0	95	50	85	12	0	147	16	47	7	0	70	506
4:30 PM	21	141	49	0	211	27	67	54	0	148	45	88	10	0	143	12	33	9	0	54	556
4:45 PM	23	168	37	0	228	26	40	52	0	118	32	88	5	0	125	15	39	10	0	64	535
Hourly Total	70	592	174	0	836	95	172	198	0	465	173	332	34	0	539	49	160	31	0	240	2080
5:00 PM	16	137	56	0	209	30	52	54	0	136	52	68	4	0	124	13	46	7	0	66	535
5:15 PM	11	171	52	0	234	21	40	49	0	110	46	75	5	0	126	5	41	4	0	50	520
5:30 PM	15	154	42	0	211	17	40	40	0	97	57	85	10	0	152	12	28	6	0	46	506
5:45 PM	13	138	24	0	175	20	43	49	0	112	30	85	11	0	126	5	34	10	0	49	462
Hourly Total	55	600	174	0	829	88	175	192	0	455	185	313	30	0	528	35	149	27	0	211	2023
Grand Total	155	1678	554	0	2387	390	598	766	0	1754	729	1618	122	0	2469	125	574	128	0	827	7437
Approach %	6.5	70.3	23.2	0.0	-	22.2	34.1	43.7	0.0	-	29.5	65.5	4.9	0.0	-	15.1	69.4	15.5	0.0	-	-
Total %	2.1	22.6	7.4	0.0	32.1	5.2	8.0	10.3	0.0	23.6	9.8	21.8	1.6	0.0	33.2	1.7	7.7	1.7	0.0	11.1	-
Lights	149	1632	528	0	2309	356	588	748	0	1692	713	1587	120	0	2420	120	561	127	0	808	7229
% Lights	96.1	97.3	95.3	-	96.7	91.3	98.3	97.7	-	96.5	97.8	98.1	98.4	-	98.0	96.0	97.7	99.2	-	97.7	97.2
Buses	1	6	6	0	13	4	2	0	0	6	2	8	2	0	12	5	7	0	0	12	43
% Buses	0.6	0.4	1.1	-	0.5	1.0	0.3	0.0	-	0.3	0.3	0.5	1.6	-	0.5	4.0	1.2	0.0	-	1.5	0.6
Trucks	5	40	20	0	65	30	8	18	0	56	14	23	0	0	37	0	6	1	0	7	165
% Trucks	3.2	2.4	3.6	-	2.7	7.7	1.3	2.3	-	3.2	1.9	1.4	0.0	-	1.5	0.0	1.0	0.8	-	0.8	2.2



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Count Name: South Stratford
Road and Jonestown Road
Site Code: 2200285
Start Date: 03/16/2022
Page No: 2



Turning Movement Data Plot



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Count Name: South Stratford
Road and Jonestown Road
Site Code: 2200285
Start Date: 03/16/2022
Page No: 3

Turning Movement Peak Hour Data (7:30 AM)

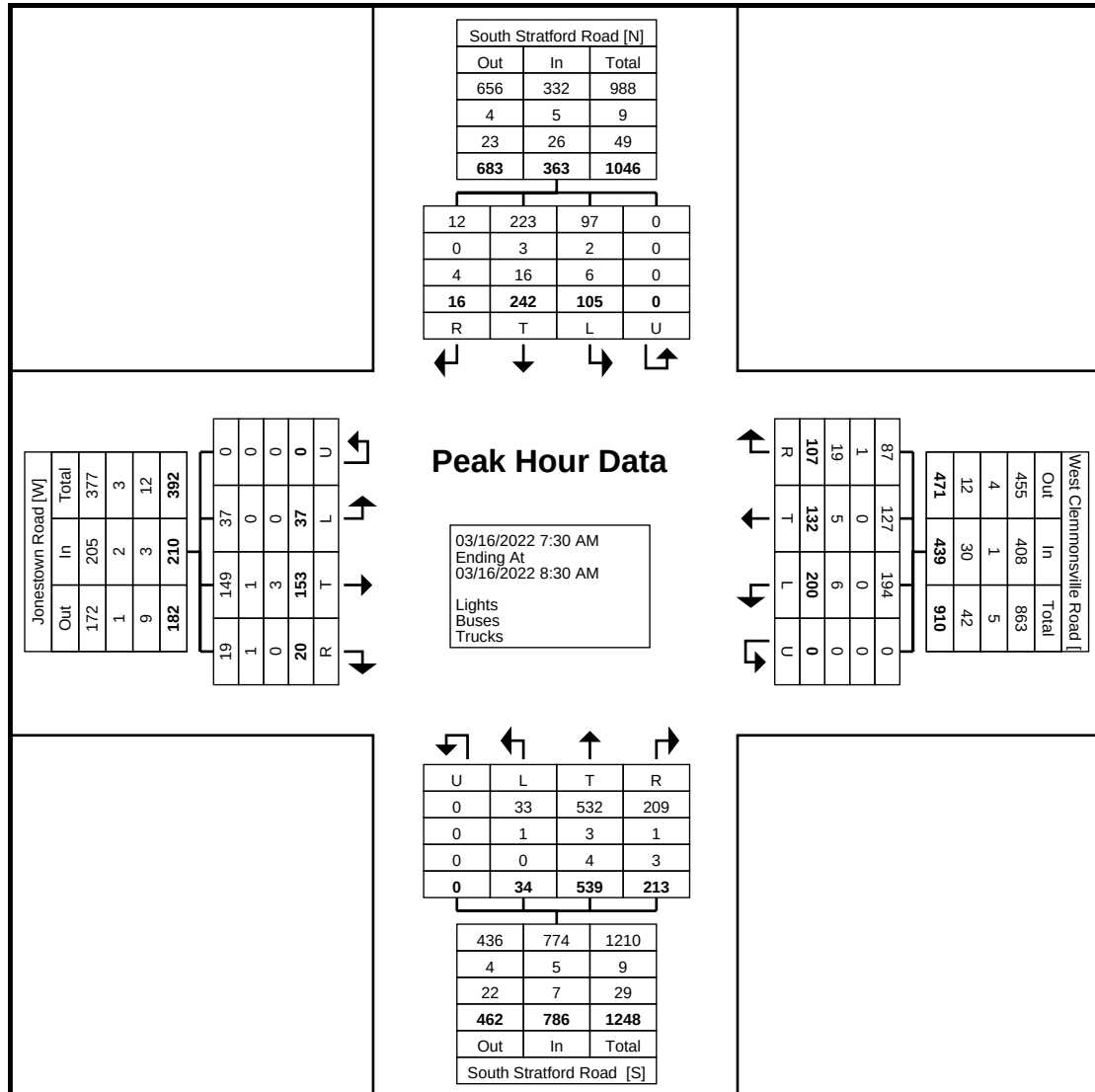
Start Time	South Stratford Road Southbound					West Clemmons Road Westbound					South Stratford Road Northbound					Jonestown Road Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:30 AM	2	56	17	0	75	37	31	45	0	113	67	156	10	0	233	4	37	7	0	48	469
7:45 AM	4	54	34	0	92	28	33	52	0	113	59	158	7	0	224	4	47	9	0	60	489
8:00 AM	5	53	24	0	82	19	31	50	0	100	49	102	6	0	157	7	42	12	0	61	400
8:15 AM	5	79	30	0	114	23	37	53	0	113	38	123	11	0	172	5	27	9	0	41	440
Total	16	242	105	0	363	107	132	200	0	439	213	539	34	0	786	20	153	37	0	210	1798
Approach %	4.4	66.7	28.9	0.0	-	24.4	30.1	45.6	0.0	-	27.1	68.6	4.3	0.0	-	9.5	72.9	17.6	0.0	-	-
Total %	0.9	13.5	5.8	0.0	20.2	6.0	7.3	11.1	0.0	24.4	11.8	30.0	1.9	0.0	43.7	1.1	8.5	2.1	0.0	11.7	-
PHF	0.800	0.766	0.772	0.000	0.796	0.723	0.892	0.943	0.000	0.971	0.795	0.853	0.773	0.000	0.843	0.714	0.814	0.771	0.000	0.861	0.919
Lights	12	223	97	0	332	87	127	194	0	408	209	532	33	0	774	19	149	37	0	205	1719
% Lights	75.0	92.1	92.4	-	91.5	81.3	96.2	97.0	-	92.9	98.1	98.7	97.1	-	98.5	95.0	97.4	100.0	-	97.6	95.6
Buses	0	3	2	0	5	1	0	0	0	1	1	3	1	0	5	1	1	0	0	2	13
% Buses	0.0	1.2	1.9	-	1.4	0.9	0.0	0.0	-	0.2	0.5	0.6	2.9	-	0.6	5.0	0.7	0.0	-	1.0	0.7
Trucks	4	16	6	0	26	19	5	6	0	30	3	4	0	0	7	0	3	0	0	3	66
% Trucks	25.0	6.6	5.7	-	7.2	17.8	3.8	3.0	-	6.8	1.4	0.7	0.0	-	0.9	0.0	2.0	0.0	-	1.4	3.7



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Count Name: South Stratford
Road and Jonestown Road
Site Code: 2200285
Start Date: 03/16/2022
Page No: 4



Turning Movement Peak Hour Data Plot (7:30 AM)



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Count Name: South Stratford
Road and Jonestown Road
Site Code: 2200285
Start Date: 03/16/2022
Page No: 5

Turning Movement Peak Hour Data (4:30 PM)

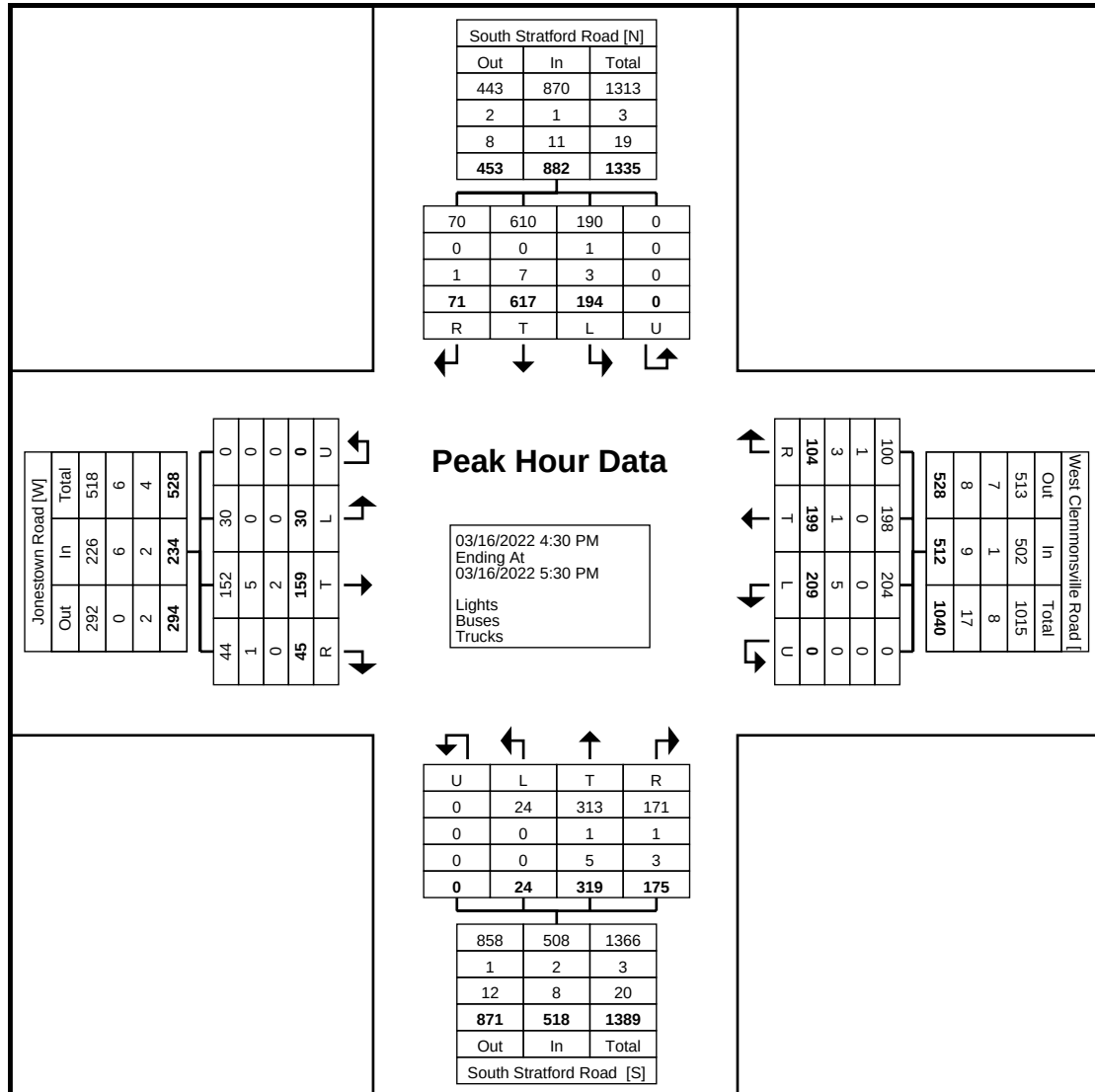
Start Time	South Stratford Road Southbound					West Clemmons Road Westbound					South Stratford Road Northbound					Jonestown Road Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
4:30 PM	21	141	49	0	211	27	67	54	0	148	45	88	10	0	143	12	33	9	0	54	556
4:45 PM	23	168	37	0	228	26	40	52	0	118	32	88	5	0	125	15	39	10	0	64	535
5:00 PM	16	137	56	0	209	30	52	54	0	136	52	68	4	0	124	13	46	7	0	66	535
5:15 PM	11	171	52	0	234	21	40	49	0	110	46	75	5	0	126	5	41	4	0	50	520
Total	71	617	194	0	882	104	199	209	0	512	175	319	24	0	518	45	159	30	0	234	2146
Approach %	8.0	70.0	22.0	0.0	-	20.3	38.9	40.8	0.0	-	33.8	61.6	4.6	0.0	-	19.2	67.9	12.8	0.0	-	-
Total %	3.3	28.8	9.0	0.0	41.1	4.8	9.3	9.7	0.0	23.9	8.2	14.9	1.1	0.0	24.1	2.1	7.4	1.4	0.0	10.9	-
PHF	0.772	0.902	0.866	0.000	0.942	0.867	0.743	0.968	0.000	0.865	0.841	0.906	0.600	0.000	0.906	0.750	0.864	0.750	0.000	0.886	0.965
Lights	70	610	190	0	870	100	198	204	0	502	171	313	24	0	508	44	152	30	0	226	2106
% Lights	98.6	98.9	97.9	-	98.6	96.2	99.5	97.6	-	98.0	97.7	98.1	100.0	-	98.1	97.8	95.6	100.0	-	96.6	98.1
Buses	0	0	1	0	1	1	0	0	0	1	1	1	0	0	2	1	5	0	0	6	10
% Buses	0.0	0.0	0.5	-	0.1	1.0	0.0	0.0	-	0.2	0.6	0.3	0.0	-	0.4	2.2	3.1	0.0	-	2.6	0.5
Trucks	1	7	3	0	11	3	1	5	0	9	3	5	0	0	8	0	2	0	0	2	30
% Trucks	1.4	1.1	1.5	-	1.2	2.9	0.5	2.4	-	1.8	1.7	1.6	0.0	-	1.5	0.0	1.3	0.0	-	0.9	1.4



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Count Name: South Stratford
Road and Jonestown Road
Site Code: 2200285
Start Date: 03/16/2022
Page No: 6



Turning Movement Peak Hour Data Plot (4:30 PM)



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Count Name: Lockwood Drive
and Jonestown Road
Site Code: 2200281
Start Date: 03/16/2022
Page No: 1

Turning Movement Data

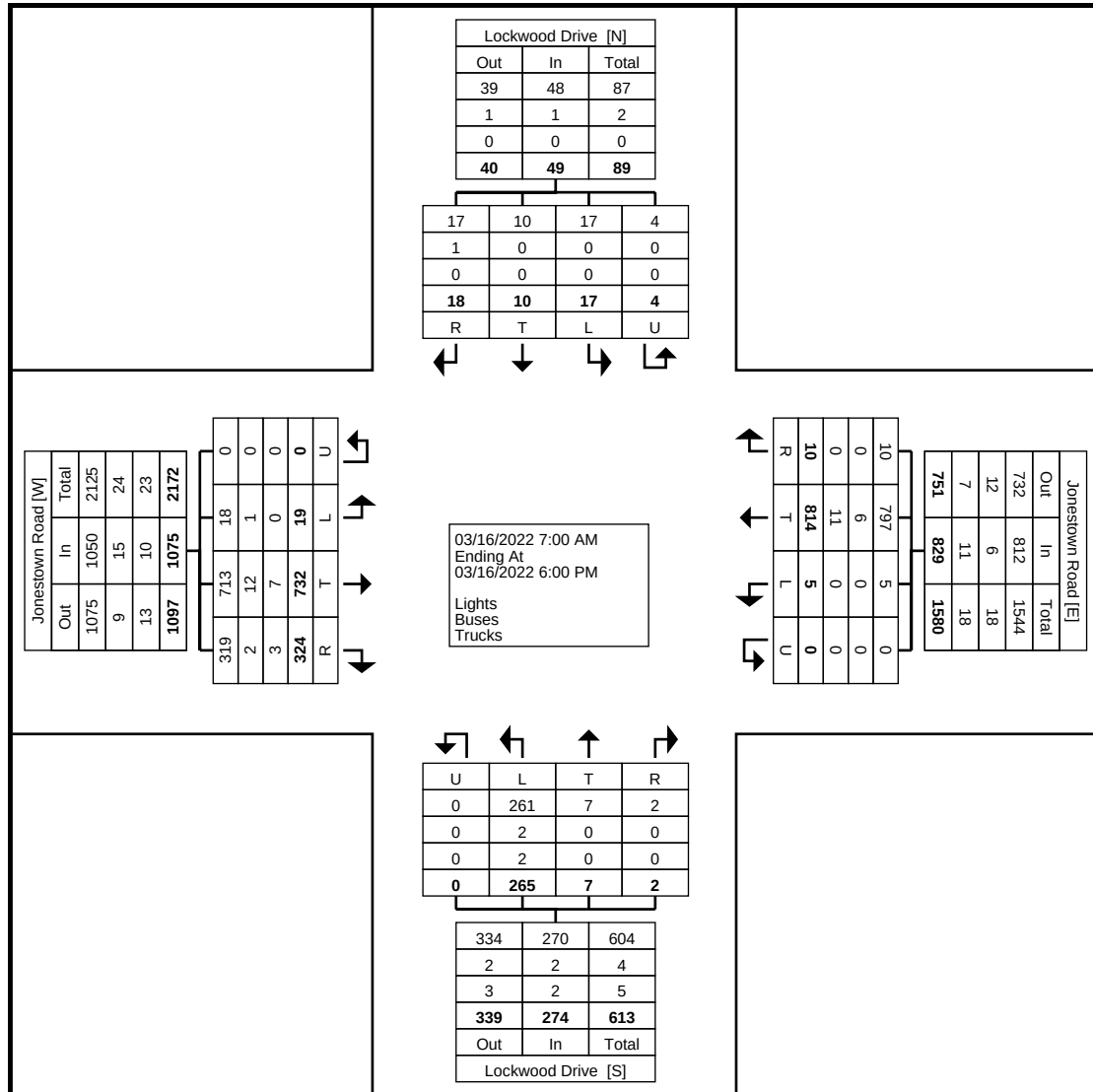
Start Time	Lockwood Drive Southbound					Jonestown Road Westbound					Lockwood Drive Northbound					Jonestown Road Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:00 AM	1	2	2	1	6	1	28	0	0	29	0	1	11	0	12	13	37	0	0	50	97
7:15 AM	1	2	0	0	3	0	41	0	0	41	0	0	19	0	19	13	40	0	0	53	116
7:30 AM	1	0	3	0	4	1	44	0	0	45	0	0	19	0	19	19	38	2	0	59	127
7:45 AM	1	1	5	0	7	0	43	1	0	44	0	0	27	0	27	23	52	0	0	75	153
Hourly Total	4	5	10	1	20	2	156	1	0	159	0	1	76	0	77	68	167	2	0	237	493
8:00 AM	2	0	0	1	3	0	37	1	0	38	0	0	16	0	16	13	45	0	0	58	115
8:15 AM	1	0	1	1	3	0	54	0	0	54	0	1	17	0	18	20	36	2	0	58	133
8:30 AM	2	0	1	0	3	0	43	0	0	43	0	0	17	0	17	29	38	1	0	68	131
8:45 AM	3	0	0	0	3	0	35	0	0	35	0	0	19	0	19	8	32	0	0	40	97
Hourly Total	8	0	2	2	12	0	169	1	0	170	0	1	69	0	70	70	151	3	0	224	476
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	1	1	0	0	2	0	59	0	0	59	0	1	14	0	15	18	56	2	0	76	152
4:15 PM	0	0	0	0	0	0	49	0	0	49	1	0	15	0	16	22	62	1	0	85	150
4:30 PM	0	1	0	0	1	1	81	0	0	82	0	1	14	0	15	20	49	1	0	70	168
4:45 PM	1	0	1	1	3	1	69	0	0	70	0	2	12	0	14	23	57	3	0	83	170
Hourly Total	2	2	1	1	6	2	258	0	0	260	1	4	55	0	60	83	224	7	0	314	640
5:00 PM	1	1	2	0	4	2	62	2	0	66	0	0	17	0	17	21	56	3	0	80	167
5:15 PM	1	0	1	0	2	0	58	0	0	58	0	1	17	0	18	30	43	1	0	74	152
5:30 PM	0	2	0	0	2	3	55	1	0	59	1	0	21	0	22	30	48	3	0	81	164
5:45 PM	2	0	1	0	3	1	56	0	0	57	0	0	10	0	10	22	43	0	0	65	135
Hourly Total	4	3	4	0	11	6	231	3	0	240	1	1	65	0	67	103	190	7	0	300	618
Grand Total	18	10	17	4	49	10	814	5	0	829	2	7	265	0	274	324	732	19	0	1075	2227
Approach %	36.7	20.4	34.7	8.2	-	1.2	98.2	0.6	0.0	-	0.7	2.6	96.7	0.0	-	30.1	68.1	1.8	0.0	-	-
Total %	0.8	0.4	0.8	0.2	2.2	0.4	36.6	0.2	0.0	37.2	0.1	0.3	11.9	0.0	12.3	14.5	32.9	0.9	0.0	48.3	-
Lights	17	10	17	4	48	10	797	5	0	812	2	7	261	0	270	319	713	18	0	1050	2180
% Lights	94.4	100.0	100.0	100.0	98.0	100.0	97.9	100.0	-	97.9	100.0	100.0	98.5	-	98.5	98.5	97.4	94.7	-	97.7	97.9
Buses	1	0	0	0	1	0	6	0	0	6	0	0	2	0	2	2	12	1	0	15	24
% Buses	5.6	0.0	0.0	0.0	2.0	0.0	0.7	0.0	-	0.7	0.0	0.0	0.8	-	0.7	0.6	1.6	5.3	-	1.4	1.1
Trucks	0	0	0	0	0	0	11	0	0	11	0	0	2	0	2	3	7	0	0	10	23
% Trucks	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	-	1.3	0.0	0.0	0.8	-	0.7	0.9	1.0	0.0	-	0.9	1.0



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Count Name: Lockwood Drive
and Jonestown Road
Site Code: 2200281
Start Date: 03/16/2022
Page No: 2



Turning Movement Data Plot



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Count Name: Lockwood Drive
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Start Date: 03/16/2022
Page No: 3

Turning Movement Peak Hour Data (7:45 AM)

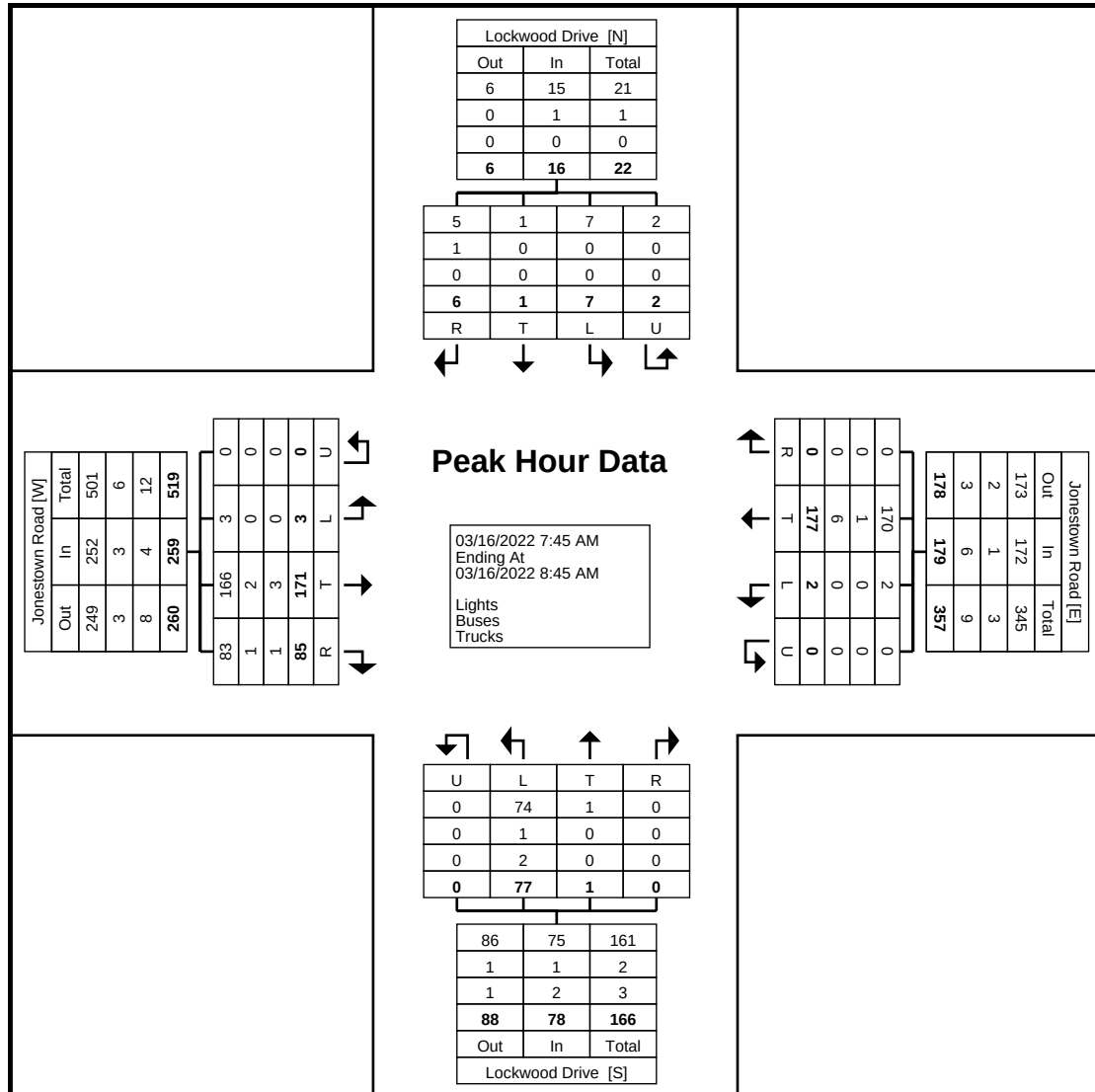
Start Time	Lockwood Drive Southbound					Jonestown Road Westbound					Lockwood Drive Northbound					Jonestown Road Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
7:45 AM	1	1	5	0	7	0	43	1	0	44	0	0	27	0	27	23	52	0	0	75	153
8:00 AM	2	0	0	1	3	0	37	1	0	38	0	0	16	0	16	13	45	0	0	58	115
8:15 AM	1	0	1	1	3	0	54	0	0	54	0	1	17	0	18	20	36	2	0	58	133
8:30 AM	2	0	1	0	3	0	43	0	0	43	0	0	17	0	17	29	38	1	0	68	131
Total	6	1	7	2	16	0	177	2	0	179	0	1	77	0	78	85	171	3	0	259	532
Approach %	37.5	6.3	43.8	12.5	-	0.0	98.9	1.1	0.0	-	0.0	1.3	98.7	0.0	-	32.8	66.0	1.2	0.0	-	-
Total %	1.1	0.2	1.3	0.4	3.0	0.0	33.3	0.4	0.0	33.6	0.0	0.2	14.5	0.0	14.7	16.0	32.1	0.6	0.0	48.7	-
PHF	0.750	0.250	0.350	0.500	0.571	0.000	0.819	0.500	0.000	0.829	0.000	0.250	0.713	0.000	0.722	0.733	0.822	0.375	0.000	0.863	0.869
Lights	5	1	7	2	15	0	170	2	0	172	0	1	74	0	75	83	166	3	0	252	514
% Lights	83.3	100.0	100.0	100.0	93.8	-	96.0	100.0	-	96.1	-	100.0	96.1	-	96.2	97.6	97.1	100.0	-	97.3	96.6
Buses	1	0	0	0	1	0	1	0	0	1	0	0	1	0	1	1	2	0	0	3	6
% Buses	16.7	0.0	0.0	0.0	6.3	-	0.6	0.0	-	0.6	-	0.0	1.3	-	1.3	1.2	1.2	0.0	-	1.2	1.1
Trucks	0	0	0	0	0	0	6	0	0	6	0	0	2	0	2	1	3	0	0	4	12
% Trucks	0.0	0.0	0.0	0.0	0.0	-	3.4	0.0	-	3.4	-	0.0	2.6	-	2.6	1.2	1.8	0.0	-	1.5	2.3



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Count Name: Lockwood Drive
and Jonestown Road
Site Code: 2200281
Start Date: 03/16/2022
Page No: 4



Turning Movement Peak Hour Data Plot (7:45 AM)



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Count Name: Lockwood Drive
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Start Date: 03/16/2022
Page No: 5

Turning Movement Peak Hour Data (4:30 PM)

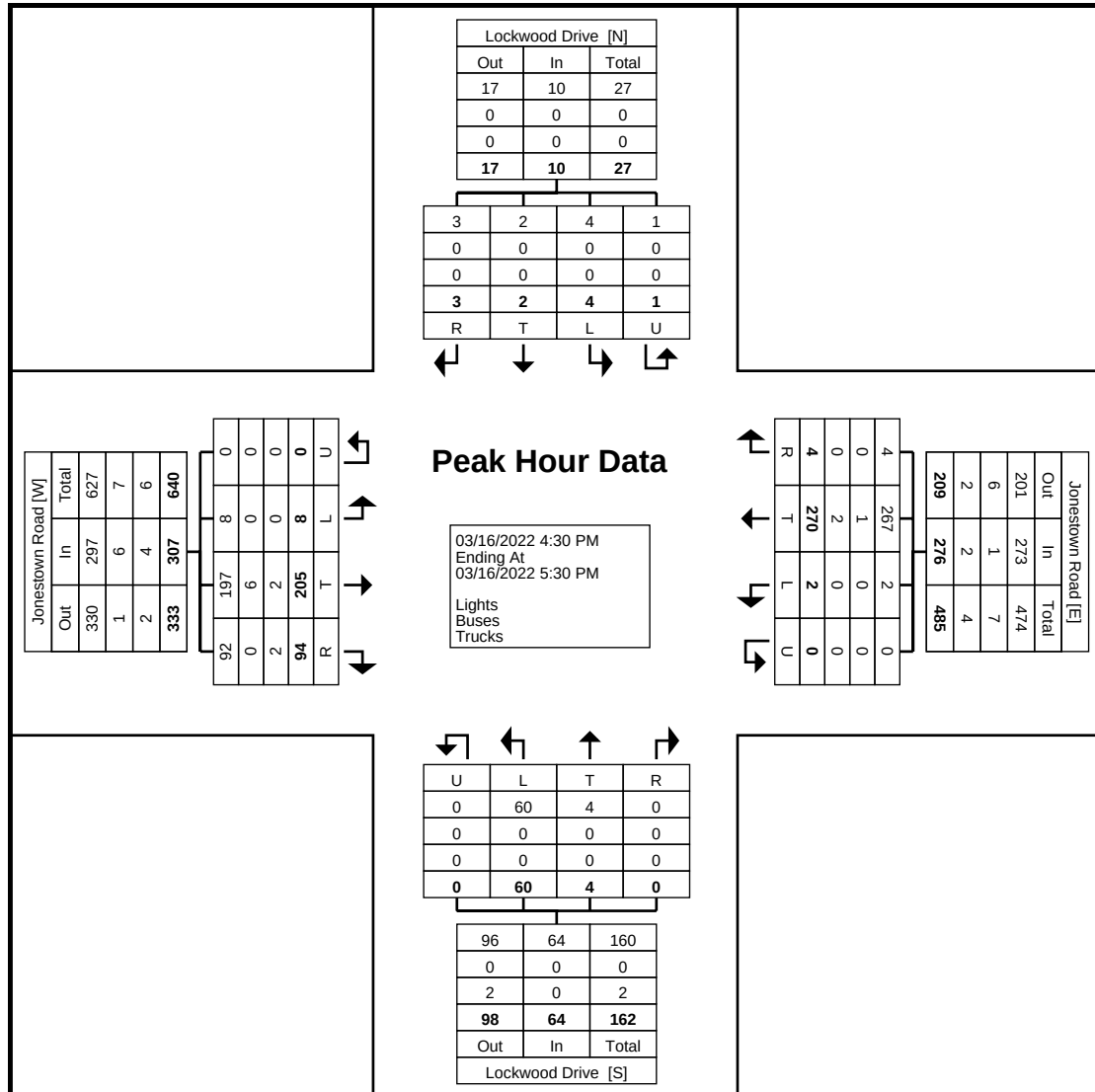
Start Time	Lockwood Drive Southbound					Jonestown Road Westbound					Lockwood Drive Northbound					Jonestown Road Eastbound					Int. Total
	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	Right	Thru	Left	U-Turn	App. Total	
4:30 PM	0	1	0	0	1	1	81	0	0	82	0	1	14	0	15	20	49	1	0	70	168
4:45 PM	1	0	1	1	3	1	69	0	0	70	0	2	12	0	14	23	57	3	0	83	170
5:00 PM	1	1	2	0	4	2	62	2	0	66	0	0	17	0	17	21	56	3	0	80	167
5:15 PM	1	0	1	0	2	0	58	0	0	58	0	1	17	0	18	30	43	1	0	74	152
Total	3	2	4	1	10	4	270	2	0	276	0	4	60	0	64	94	205	8	0	307	657
Approach %	30.0	20.0	40.0	10.0	-	1.4	97.8	0.7	0.0	-	0.0	6.3	93.8	0.0	-	30.6	66.8	2.6	0.0	-	-
Total %	0.5	0.3	0.6	0.2	1.5	0.6	41.1	0.3	0.0	42.0	0.0	0.6	9.1	0.0	9.7	14.3	31.2	1.2	0.0	46.7	-
PHF	0.750	0.500	0.500	0.250	0.625	0.500	0.833	0.250	0.000	0.841	0.000	0.500	0.882	0.000	0.889	0.783	0.899	0.667	0.000	0.925	0.966
Lights	3	2	4	1	10	4	267	2	0	273	0	4	60	0	64	92	197	8	0	297	644
% Lights	100.0	100.0	100.0	100.0	100.0	100.0	98.9	100.0	-	98.9	-	100.0	100.0	-	100.0	97.9	96.1	100.0	-	96.7	98.0
Buses	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	0	0	6	7
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	-	0.4	-	0.0	0.0	-	0.0	0.0	2.9	0.0	-	2.0	1.1
Trucks	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	2	0	0	4	6
% Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	-	0.7	-	0.0	0.0	-	0.0	2.1	1.0	0.0	-	1.3	0.9



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Site Code: 2200281
Start Date: 03/16/2022
Page No: 6



Turning Movement Peak Hour Data Plot (4:30 PM)

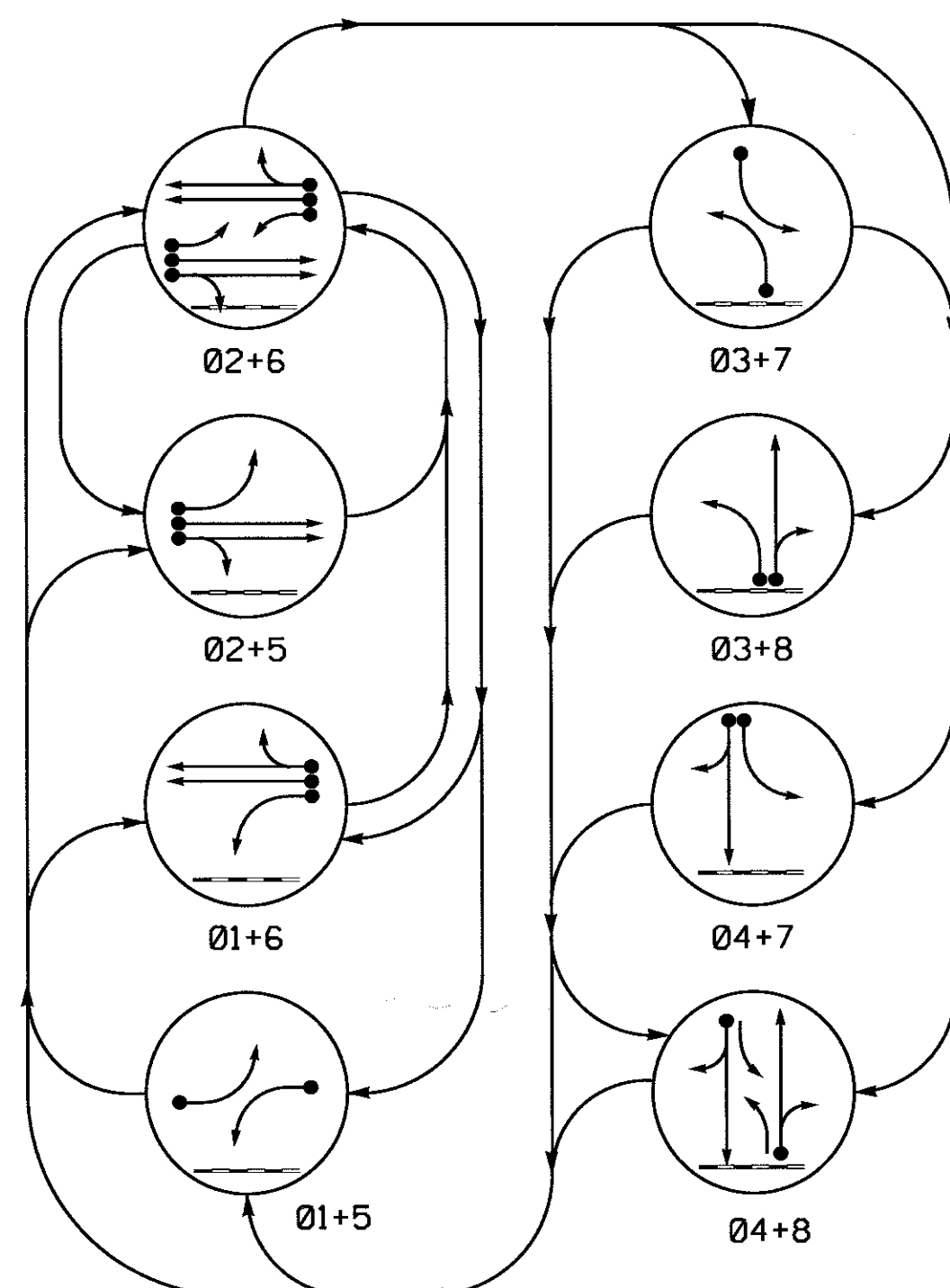
Signal Plans and Timing

8 Phase
Fully Actuated
(Winston-Salem Signal System)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012 and "Standard Specifications for Roads and Structures" dated January 2012.
2. Maintain (ON or OFF) TOD late night flash based on existing programming for this location.
3. Omit phase 3 during phase 4 on.
4. Omit phase 7 during phase 8 on.
5. Enable Backup Protect for phase 2+6 to allow the controller to clear from phase 2+6 to phase 1 and or 5 by progressing through an all red display.
6. Set all detector units to presence mode.
7. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
8. The cabinet should be designed to include an Auxiliary Output file for future use.
9. Existing "Left Turn Yield on Green" ball signs (R10-12) may be removed at the direction of the Engineer.
10. Pavement markings are existing.
11. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
12. Railroad Crossing 721 503J is currently out of service and protected by a "Stop and Flag" order, as issued by Norfolk Southern Railway. This signal operates as shown without Railroad Preemption. If the tracks are returned to service and the "Stop and Flag" order is removed, this signal shall be redesigned to operate with Railroad Preemption. The Railroad Preemption shall be in operation before the "Stop and Flag" order is removed.

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

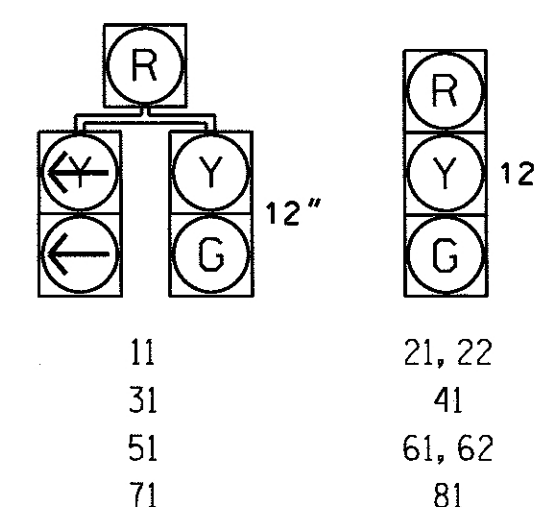
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

SIGNAL FACE	PHASE									
	01+5	01+6	02+5	02+6	03+7	03+8	04+7	04+8	05+5	05+6
11	R	G	R	G	R	R	R	R	Y	
21, 22	R	R	G	G	R	R	R	R	Y	
31	R	R	R	R	R	G	R	G	R	
41	R	R	R	R	R	R	G	G	R	
51	R	G	R	G	R	R	R	R	Y	
61, 62	R	G	R	G	R	R	R	R	Y	
71	R	R	R	R	R	G	R	G	R	
81	R	R	R	R	R	G	R	G	R	

SIGNAL FACE I.D.

All Heads L.E.D.



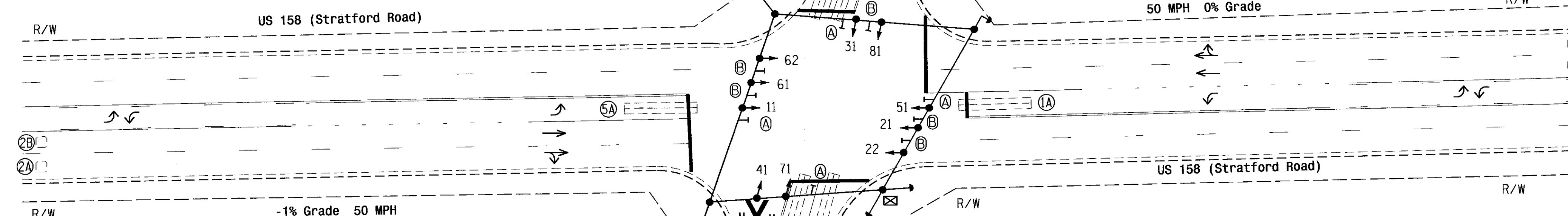
OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	DETECTOR PROGRAMMING					
					PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME
1A	6X40	+5	EXIST	-	1	Y	Y	-	-	15
2A, 2B	6X6	355	EXIST	-	2	Y	Y	-	-	-
3A	6X40	+5	EXIST	-	3	Y	Y	-	-	10
4A	6X40	+5	EXIST	-	4	Y	Y	-	-	10
5A	6X40	+5	EXIST	-	5	Y	Y	-	-	15
6A, 6B	6X6	355	EXIST	-	6	Y	Y	-	-	-
7A	6X40	+5	EXIST	-	7	Y	Y	-	-	10
8A	6X40	+5	EXIST	-	8	Y	Y	-	-	10

OASIS 2070L TIMING CHART

FEATURE	PHASE							
	1	2	3	4	5	6	7	8
Min Green 1 *	7	14	7	7	7	14	7	7
Extension 1 *	2.0	6.0	3.0	2.0	2.0	6.0	2.0	3.0
Max Green 1 *	20	90	20	35	20	90	20	35
Yellow Clearance	3.0	4.9	3.0	4.7	3.0	4.8	3.0	4.7
Red Clearance	3.3	1.4	2.1	1.5	3.3	1.5	2.3	1.3
Red Revert	2.0	5.0	2.0	2.0	2.0	5.0	2.0	2.0
Walk 1 *	-	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-	-
Seconds Per Actuation *	-	1.8	-	-	-	1.8	-	-
Max Variable Initial *	-	40	-	-	-	40	-	-
Time Before Reduction *	-	15	-	-	-	15	-	-
Time To Reduce *	-	30	-	-	-	30	-	-
Minimum Gap	-	3.0	-	-	-	3.0	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	ON	-	-	-	ON
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

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



LEGEND

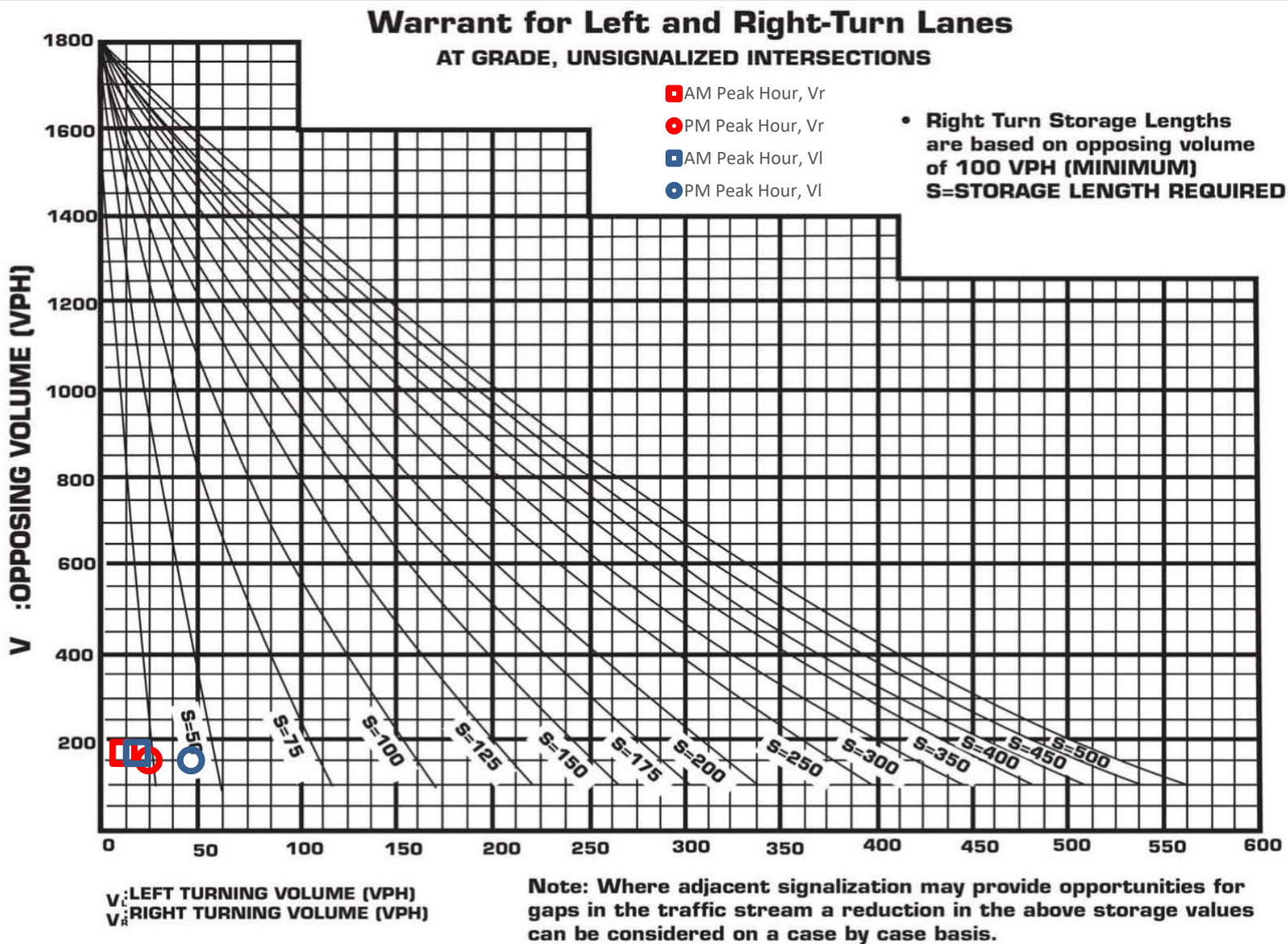
PROPOSED		EXISTING	
○	Traffic Signal Head	●	N/A
○	Modified Signal Head	○	N/A
○	Sign	○	N/A
○	Pedestrian Signal Head	○	N/A
○	With Push Button & Sign	○	N/A
○	Signal Pole with Guy	○	N/A
○	Signal Pole with Sidewalk Guy	○	N/A
○	Inductive Loop Detector	○	N/A
○	Controller & Cabinet	○	N/A
○	Junction Box	○	N/A
○	2-in Underground Conduit	○	N/A
○	Right of Way	○	N/A
○	Directional Arrow	○	N/A
○	Railroad Tracks	○	N/A

Signal Upgrade

	US 158 (Stratford Road) at SR 1120 (W. Clemmons Rd.) and Jonestown Road		
	Division 9 Forsyth County Winston-Salem		
	PLAN DATE: November 2011	REVIEWED BY:	
	PREPARED BY: M. Bazzarrie	REVIEWED BY:	
SCALE 0 40 1"=40'	REVISIONS	INIT.	DATE
SIGNATURE		DATE	
SIGN. INVENTORY NO.		09-0472	

Supporting Documents

Peak Hour	Volumes		Peak Hour	Volumes	
	Opposing	Lefts		Opposing	Rights
AM	169	15	AM	169	8
PM	152	43	PM	152	21



Peak Hour	Volumes		Peak Hour	Volumes	
	Opposing	Lefts		Opposing	Rights
AM	207	6	AM	207	8
PM	328	14	PM	328	26

