

# TRANSPORTATION IMPACT ANALYSIS

## **Sidbury Crossing**

New Hanover County, NC

*Prepared for HH Multi, LLC*





# Transportation Impact Analysis

Sidbury Crossing  
New Hanover County, NC

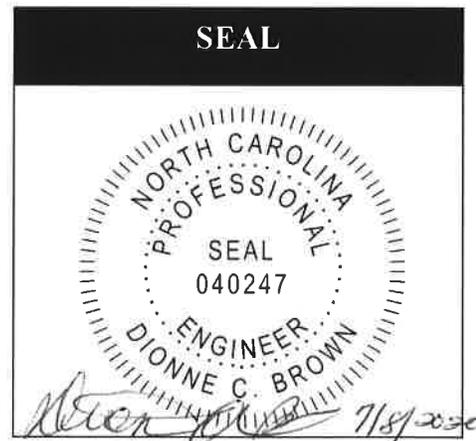
Prepared for HH Multi, LLC  
June 26, 2020

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**Sidbury Crossing – Transportation Impact Analysis**  
**New Hanover County, NC**  
**Prepared for HH Multi, LLC**  
**June 26, 2020**

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## **1.0 Introduction**

The proposed Sidbury Crossing is to be located across Sidbury Road between I-40 and Dairy Farm Road in New Hanover County, North Carolina. The development will utilize three (3) site accesses. All three site accesses are proposed to be full access with each located on Dairy Farm Road between Sidbury Road and Blue Clay Road. Figure 1 shows the site plan. Figures 2A and 2B show the site location map and vicinity map, respectively.

The Sidbury Crossing will be analyzed for one (1) full build:

- **Full Build** will consist of 320 apartment dwelling units. The build year for Full Build is assumed to be 2024.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic. The following intersections were included in the study:

1. Sidbury Road at Dairy Farm Road (unsignalized)
2. Sidbury Road at Blue Clay Road (unsignalized)
3. Blue Clay Road at N. College Road (signalized)
4. Dairy Farm Road / S.R. 2181 at Site Access 1 (unsignalized)
5. Dairy Farm Road / S.R. 2181 at Site Access 2 (unsignalized)
6. Dairy Farm Road / S.R. 2181 at Site Access 3 (unsignalized)

The intersections were analyzed during the AM (7-9 am) and PM (4-6 pm) peaks for the following conditions:

- 2020 Existing Conditions
- 2024 Future No-Build Conditions
- 2024 Full Build Conditions
- 2024 Full Build Conditions with Improvements (as necessary)

The Wilmington Urban Metropolitan Planning Organization (WMPO) and NCDOT were contacted to obtain background information and to ascertain the elements to be covered in this Transportation Impact Analysis (TIA). The approved scope for this TIA is included in the supporting documentation section of the appendix. Information regarding the property was provided by HH Multi, LLC.



FIGURE 1  
CONCEPT PLAN

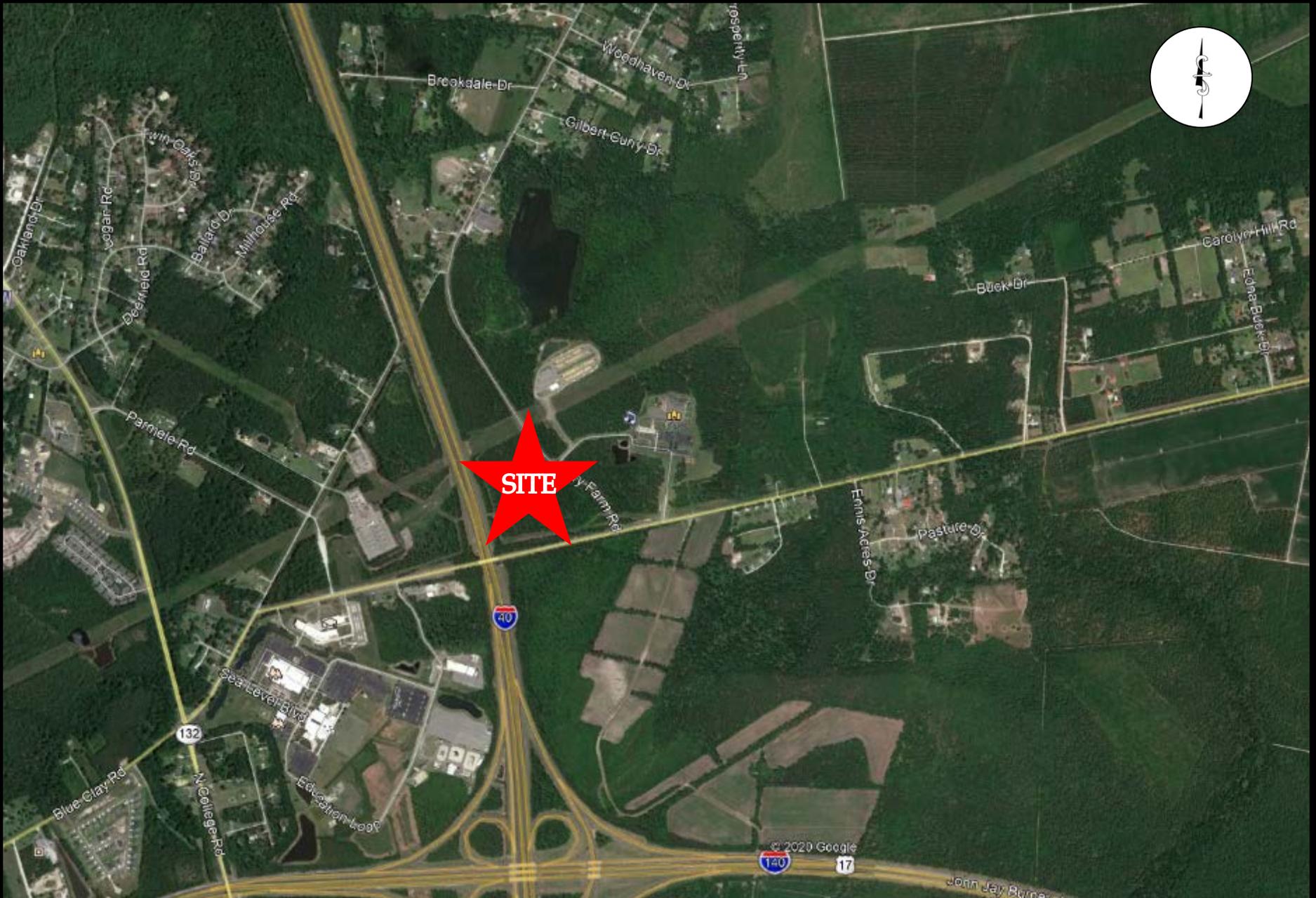


FIGURE 2A  
SITE LOCATION MAP

SITE INDICATOR



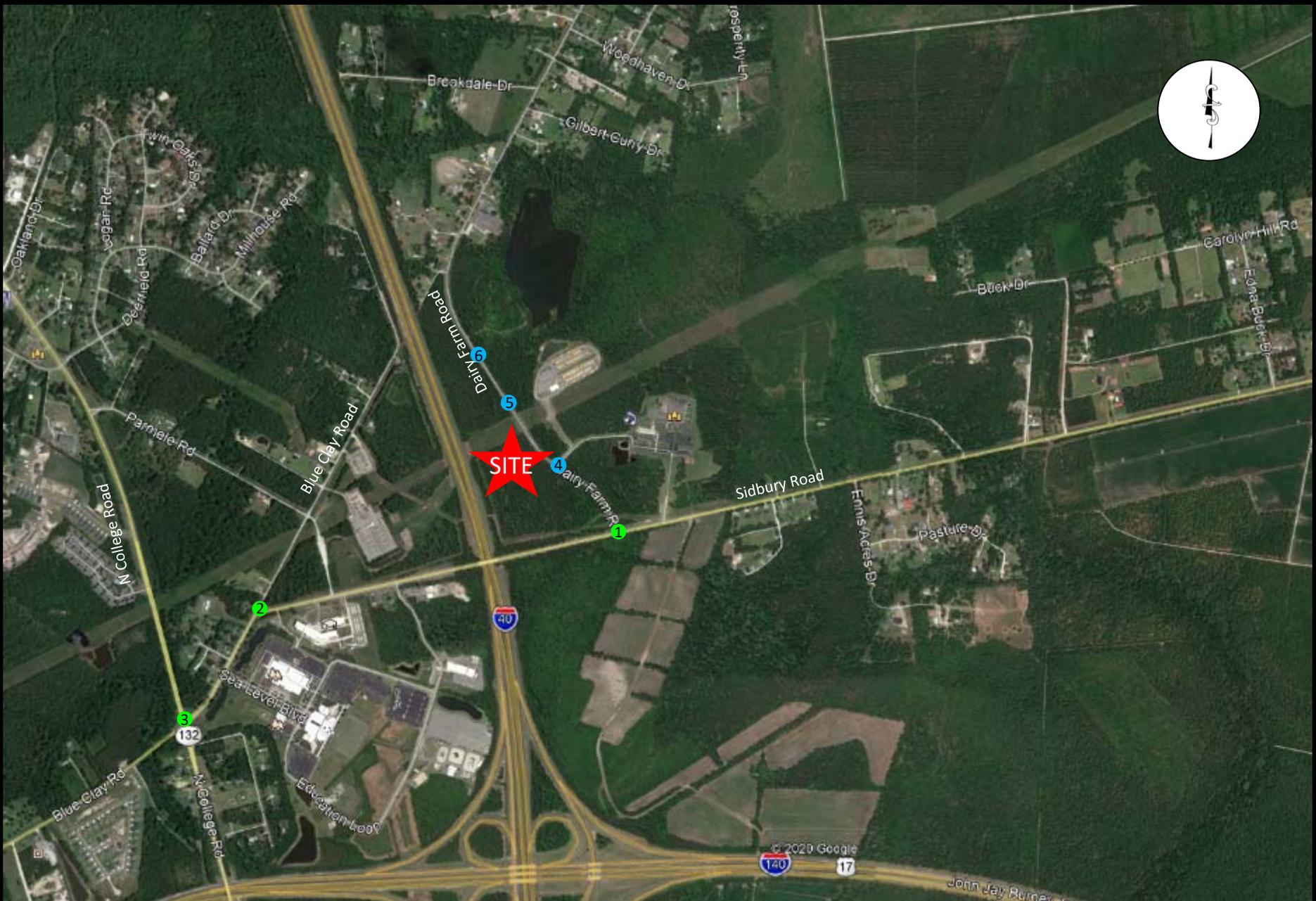


FIGURE 2B  
VICINITY MAP

STUDY INTERSECTIONS  
BACKGROUND  
PROPOSED



## 2.0 Existing Conditions

### 2.1 Inventory

A field investigation was conducted by DAVENPORT staff to determine the existing roadway conditions in the study area. Table 2.1 contains the results of this effort. Figure 3 illustrates the existing lane geometry.

<b>Table 2.1 - Street Inventory</b>					
<b>Facility Name</b>	<b>Route #</b>	<b>Typical Cross Section</b>	<b>Pavement Width</b>	<b>Speed Limit</b>	<b>Maintained By</b>
N. College Road	US 117	2-lane undivided	Approx. 22'	45 MPH	NCDOT
Blue Clay Road	SR 1318	2-lane undivided	Approx. 20'	55 MPH	NCDOT
Sidbury Road	SR 1336/SR 1572	2-lane undivided	Approx. 22'	55 MPH	NCDOT
Dairy Farm Road	SR 2181	2-lane undivided	Approx. 20'	55 MPH	NCDOT

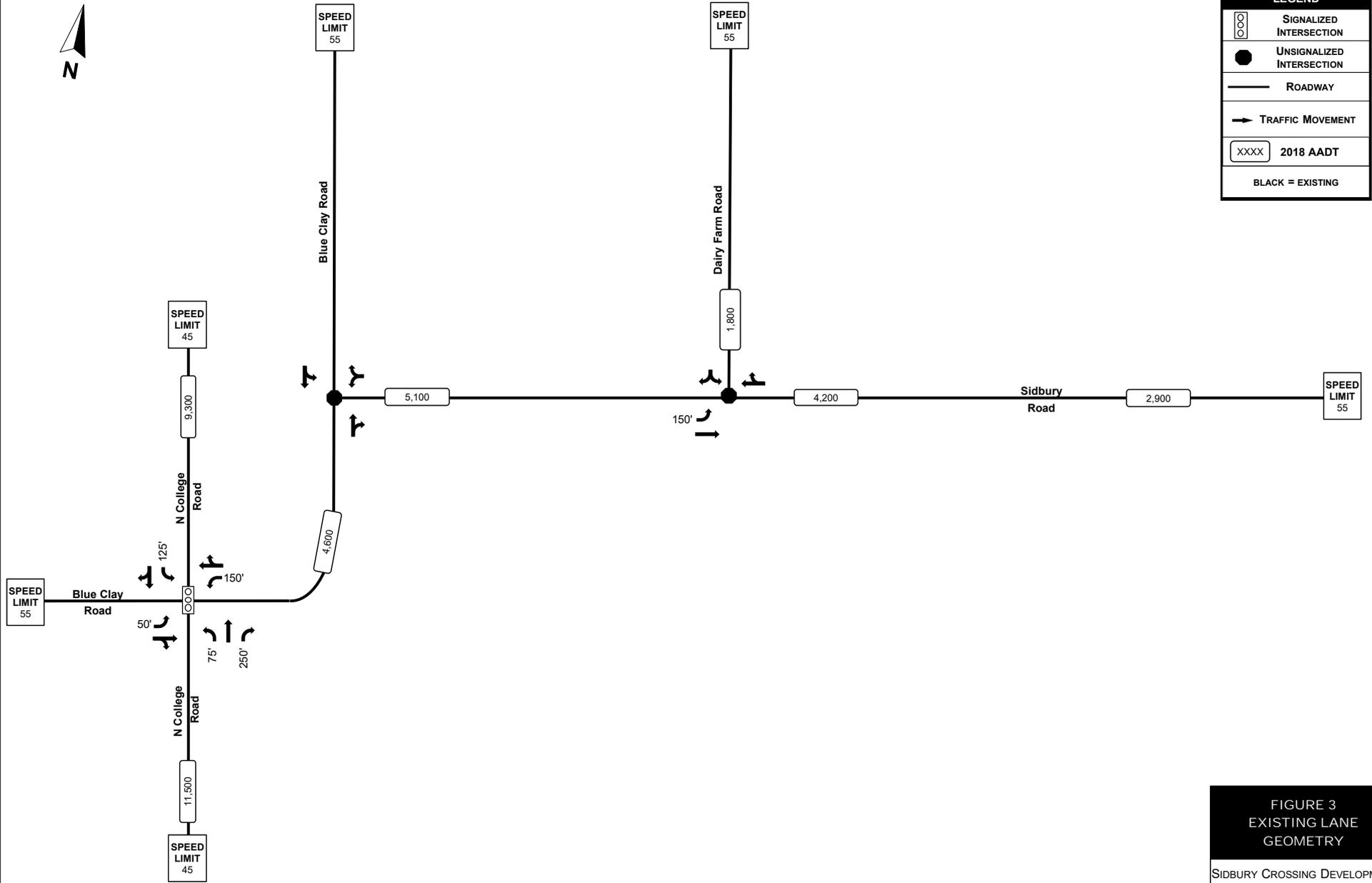
## 2.2 Existing Traffic Volumes

Existing traffic volumes for this project were collected by DAVENPORT staff. During scope approval of the development, it was agreed upon to use data collected from the Sidbury Farms Development that included similar intersections and to project the volumes by 1% over one year. Table 2.2 contains the dates these counts were collected. Schools were in session at the time of traffic counts. A system peak hour was used for the traffic analysis. The peak hour occurred at approximately 7:15 to 8:15 AM, and 4:15 to 5:15 PM. Figure 4 shows the 2020 base AM and PM peak hour volumes. More information can be found in the Traffic Volume Data section of the appendix.

<b>Table 2.2 - Traffic Volume Data</b>		
<b><u>Count Location:</u></b>	<b><u>Date Taken:</u></b>	<b><u>By:</u></b>
Blue Clay Road at N. College Road	9/24/2019	DAVENPORT
Sidbury Road at Blue Clay Road	9/24/2019	DAVENPORT
Sidbury Road at Dairy Farm Road	9/24/2019	DAVENPORT



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	2018 AADT
BLACK = EXISTING	



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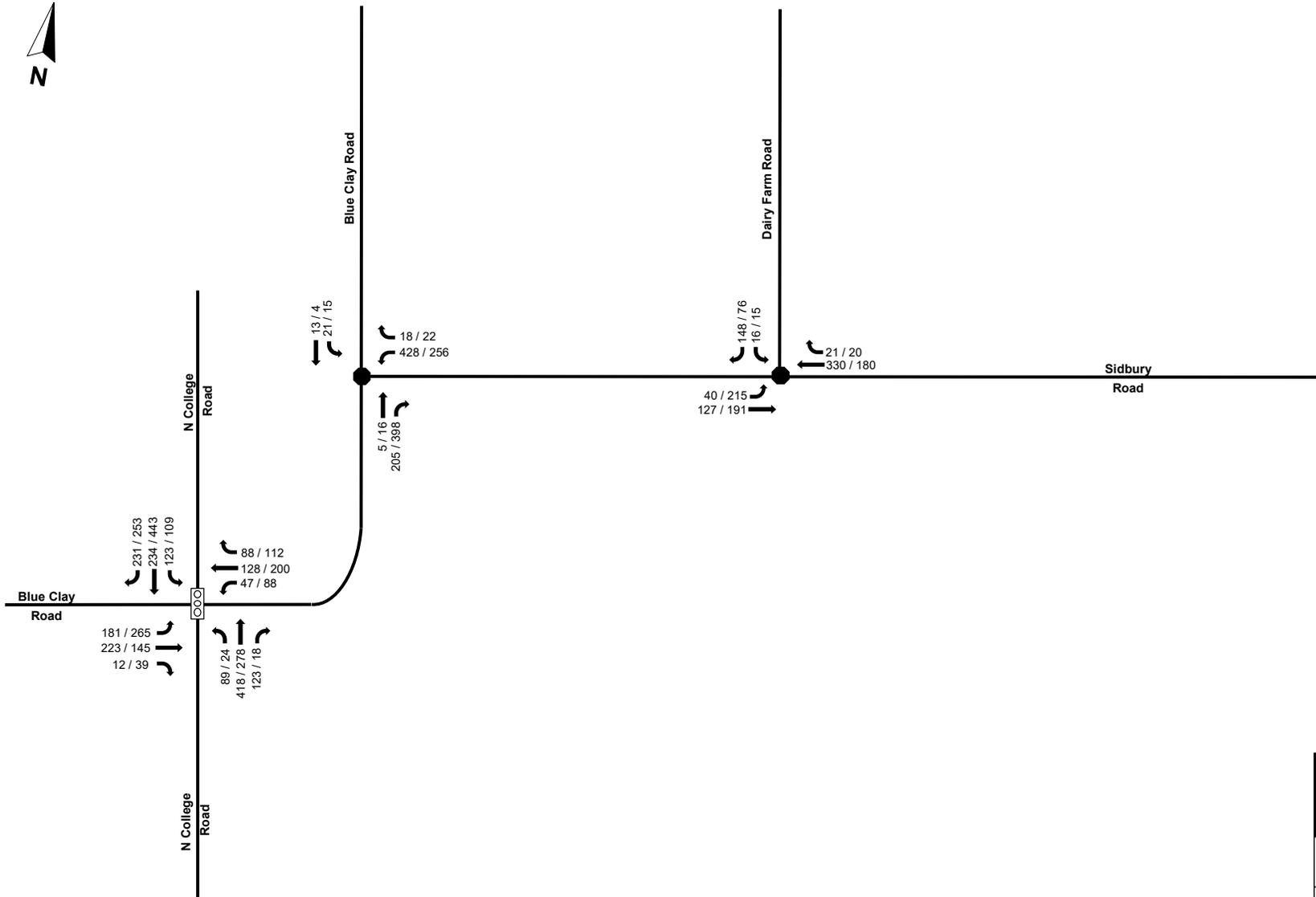
FIGURE 3  
EXISTING LANE  
GEOMETRY

SIDBURY CROSSING DEVELOPMENT  
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200218



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	BLACK = EXISTING
	AM / PM PEAKS



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**FIGURE 4**  
**EXISTING TRAFFIC VOLUMES**

SIDBURY CROSSING DEVELOPMENT  
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200218

### **3.0 Approved Developments and Committed Improvements**

#### **3.1 *Approved Developments***

Approved developments are developments that have been recently approved in the area, but not yet constructed. Per WMPO staff, there are three (3) approved developments to be considered in this analysis.

The first is the Sidbury Road Development located across Sidbury Road between Edna Buck Drive and Buck Drive. This development consists of 655 single family dwelling units and 103 townhomes.

The second is the Cape Landing Development located west of Blue Clay Road and N. College Road. This development consists of 126 single family homes to be built by 2021. However, 37 homes are currently built and occupied, so volumes were adjusted accordingly based on the submitted TIA's distribution.

The new trip generation and associated site trips figure can be found in the appendix and in Figure A.

#### **3.2 *Committed Improvements***

Committed Improvements are improvements that are planned by NCDOT, a local municipality, or a developer in the area, but not yet constructed. Per NCDOT and WMPO, there are a few committed improvements during the 2024 conditions in the vicinity of this project.

Cape Landing committed improvements:

##### ***Blue Clay Road at N. College Road***

- Extend the existing eastbound left turn lane to provide 150 feet of storage, and appropriate full-width deceleration and taper. Provide permitted + protected phasing on movement.
- Restripe northbound approach between the existing painted island, south of the intersection, and the existing northbound left turn lane to provide a two-way-left—turn-lane. Provide permitted + protected phasing on movement.
- Revise signal

Sidbury Road Development committed improvements were not included in the analysis as the improvements were not associated with the study intersections.

## 4.0 Methodology

### 4.1 Base Assumptions and Standards

In general, the analysis for this project was conducted utilizing commonly accepted NCDOT standards. The following table contains a summary of the base assumptions:

<b>Table 4.1 - Assumptions</b>	
Peak Hour Factor	0.90
Background Traffic Annual Growth Rate	1.0% per year for all roadways
Analysis Software	Synchro/SimTraffic Version 10.0
Base Signal Timing/Phasing	NCDOT
Lane widths	12-feet
Truck percentages	2%

## 5.0 Capacity Analysis

### 5.1 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. Note for unsignalized intersection analysis, the level of service noted is for the worst approach of the intersection. This is typically the left turn movement for the side street approach, due to the number of opposing movements. All worksheet reports from the analyses can be found in the Appendix.

**Table 5.1 – 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

## 6.0 2024 Full Build Conditions

As discussed in the introduction, the full build consists of 320 single family homes to be built by 2024.

### 6.1 Trip Generation

Trips for this development were projected based on the 10<sup>th</sup> Edition of ITE Trip Generation Manual. Table 6.1 presents the results.

Table 6.1 - ITE Trip Generation									
Sidbury Crossing									
Average Weekday Driveway Volumes					24 Hour	AM Peak Hour		PM Peak Hour	
					Two-Way	Enter	Exit	Enter	Exit
Land Use	ITE Land Code	Size		Data Source	Volume	Enter	Exit	Enter	Exit
Multifamily Housing (mid-rise)	221	320	Dwelling Units	Adjacent /Equation	1741	30	85	86	55
<b>Total Trips</b>					<b>1,741</b>	<b>30</b>	<b>85</b>	<b>86</b>	<b>55</b>

### 6.2 Trip Distribution

Site trips for this proposed development were distributed based on the existing traffic patterns and engineering judgment. These distributions were reviewed and approved by WMPO and is shown in Figure 5. The directional distributions for the full build site trips are as follows:

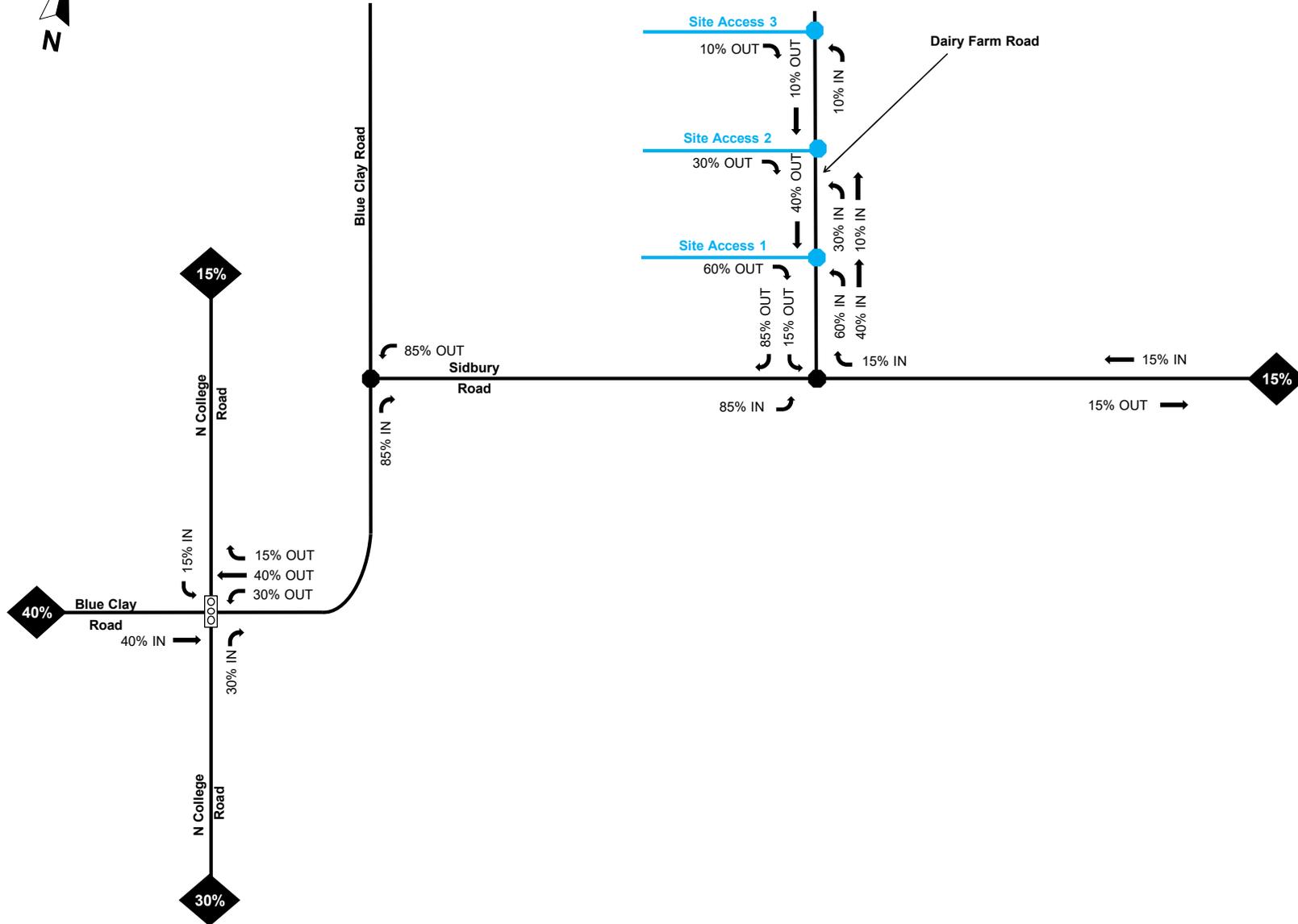
- 40% to and from the west of Blue Clay Road
- 30% to and from the south of N. College Road
- 15% to and from the west of Sidbury Road
- 15% to and from the north of N. College Road

### 6.3 2024 Future No Build Traffic

The 2024 future no build traffic volumes were computed by applying a 1.0% compounded annual growth rate to the 2020 base traffic volumes and adding approved development trips. Figure 6 shows 2024 future no build traffic volumes for AM and PM peaks.

### 6.4 2024 Full Build Total Traffic

The 2024 future build traffic volumes were obtained by summing the 2024 future no build volumes and the full build site trips due to the proposed development. Full build site trips are shown in Figure 7. The 2024 future build volumes are shown for AM and PM peaks in Figure 8. More information can be found in the Traffic volume Data section of the appendix.



LEGEND	
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	BLACK = EXISTING
	BLUE = PROPOSED
	IN = ENTERING
	OUT = EXITING
	DESTINATION NODE

FIGURE 5  
TRIP DISTRIBUTION

SIDBURY CROSSING DEVELOPMENT  
NEW HANOVER COUNTY, NC

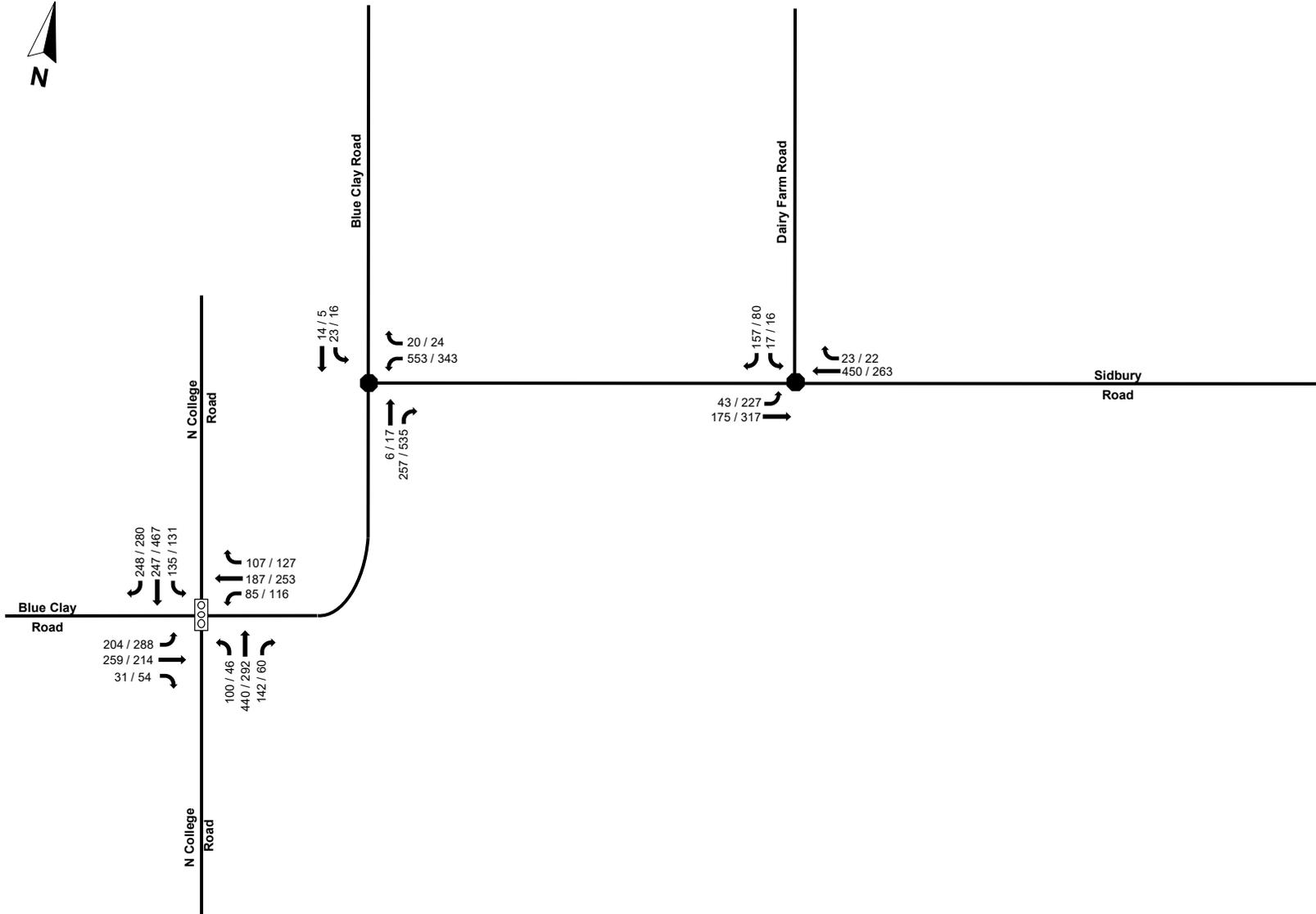
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LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	BLACK = EXISTING
	AM / PM PEAKS



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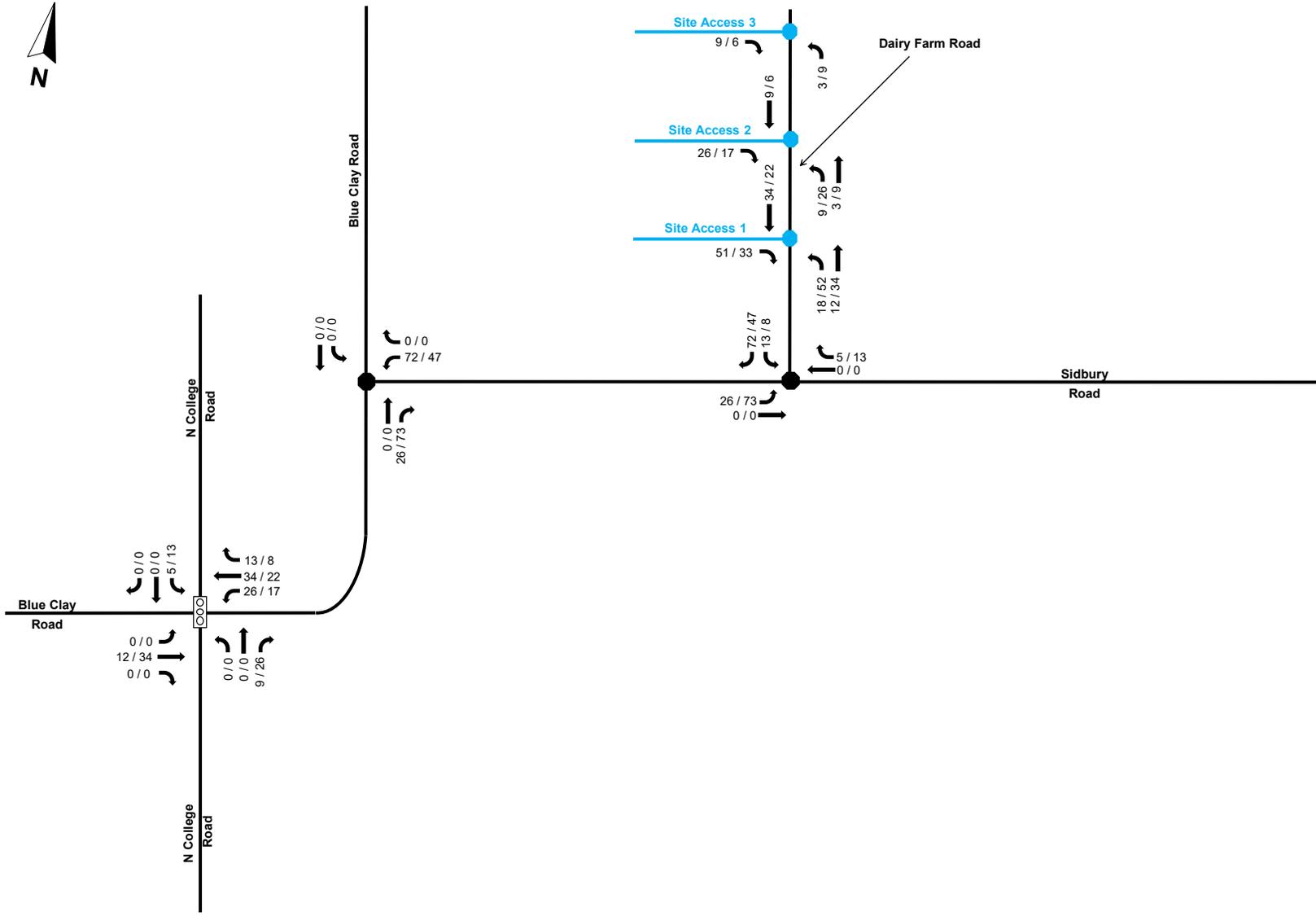
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FIGURE 6  
FUTURE NO BUILD  
VOLUMES

SIDBURY CROSSING DEVELOPMENT  
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200218





LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	BLACK = EXISTING
	BLUE = PROPOSED
	AM / PM PEAKS

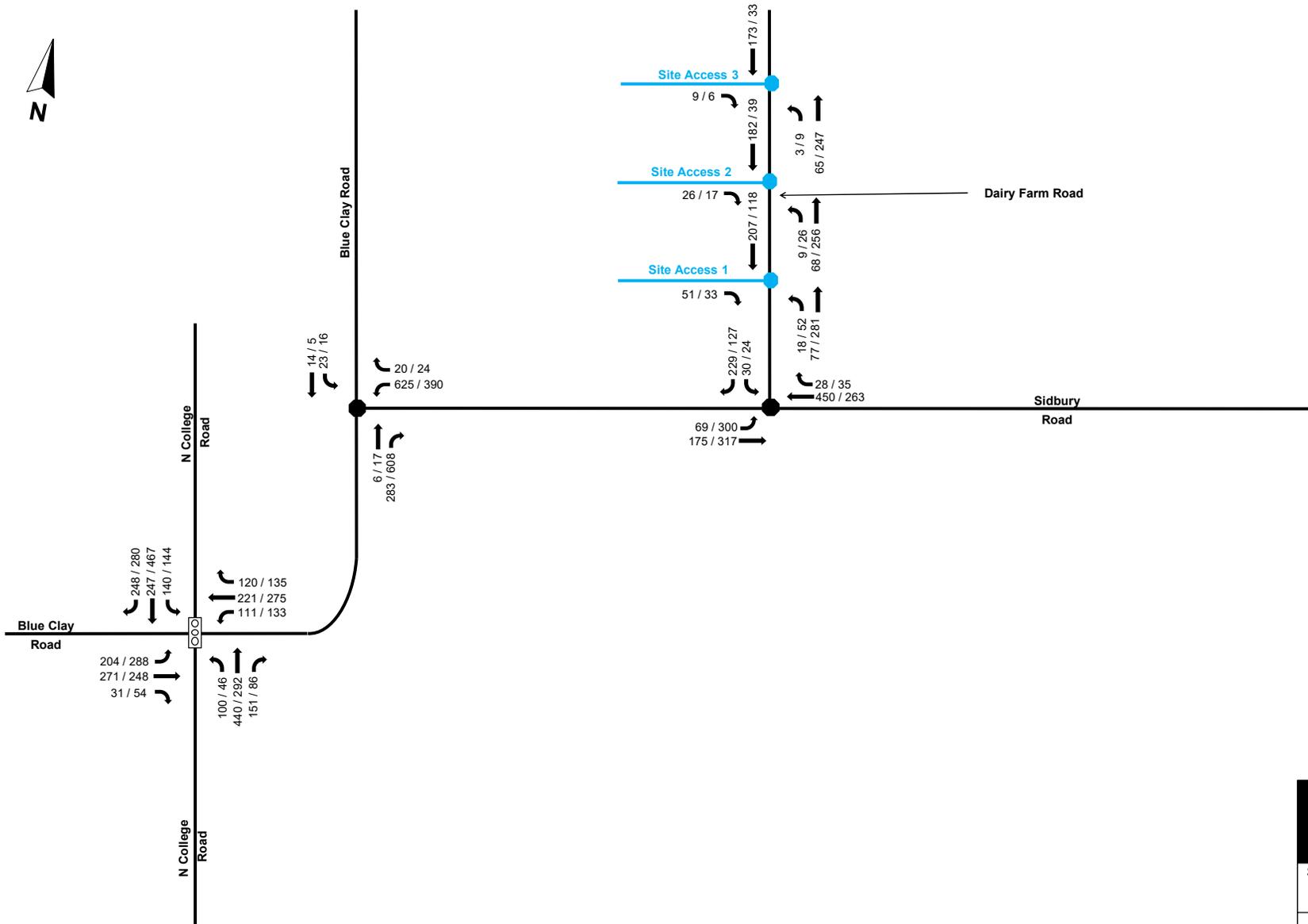
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FIGURE 7  
SITE TRIPS

SIDBURY CROSSING DEVELOPMENT  
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200218



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	BLACK = EXISTING
	BLUE = PROPOSED
	AM / PM PEAKS

**FIGURE 8**  
2024 BUILD VOLUMES

SIDBURY CROSSING DEVELOPMENT  
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## 6.5 Full Build Discussion of Results

The following section discusses 2024 full build level of service for each intersection. Recommended improvements for full build are illustrated in Figure 9.

### Sidbury Road at Dairy Farm Road

The unsignalized intersection currently operates at LOS B in the AM and PM peaks. In 2024 future no build conditions, LOS C is expected in the AM peak and LOS B in the PM peak. In full build conditions, LOS C is expected in both the AM and PM peaks. Though there is an existing eastbound left turn, based on the NCDOT Driveway Manual, it is recommended to extend the eastbound left turn to 400 feet of storage with appropriate taper.

Table 6.2 - Dairy Farm Road at Sidbury Road										
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)								
		Eastbound			Westbound			Southbound		
		L	T	R	L	T	R	L	T	R
AM Peak Hour										
Existing	B (12.9) SB Approach	A (8.2)	- (-)			- (-)	- (-)			B (12.9)
		A (2)			A (0)			B (12.9)		
2024 No Build	C (15.7) SB Approach	A (8.6)	- (-)			- (-)	- (-)			C (15.7)
		A (1.7)			A (0)			C (15.7)		
2024 Build	C (20.9) SB Approach	A (8.8)	- (-)			- (-)	- (-)			C (20.9)
		A (2.5)			A (0)			C (20.9)		
2024 Build + Imp	C (16.9) SB Approach	A (8.8)	- (-)			- (-)	- (-)			C (18.4)    C (16.7)
		A (2.5)			A (0)			C (16.9)		
PM Peak Hour										
Existing	B (12.2) SB Approach	A (8.2)	- (-)			- (-)	- (-)			B (12.2)
		A (4.4)			A (0)			B (12.2)		
2024 No Build	B (14.7) SB Approach	A (8.6)	- (-)			- (-)	- (-)			B (14.7)
		A (3.6)			A (0)			B (14.7)		
2024 Build	C (19.6) SB Approach	A (9)	- (-)			- (-)	- (-)			C (19.6)
		A (4.4)			A (0)			C (19.6)		
2024 Build + Imp	C (15.9) SB Approach	A (9)	- (-)			- (-)	- (-)			E (41.4)    B (11.1)
		A (4.4)			A (0)			C (15.9)		

### Blue Clay Road at Sidbury Road

This unsignalized intersection currently operated at LOS C in the AM peak and LOS B in the PM peak. In 2024 future no build conditions, LOS D is expected in the AM peak and LOS C in the PM peak. In full build conditions, LOS E is expected in the AM peak and LOS D in the PM peak. While a drop in LOS is not ideal, this is typical for a stop-controlled intersection of this nature (northbound and westbound being the major approach). The delay is expected to be short-lived. It is recommended to convert this intersection into an all-way stop control. This improvement will decrease the queues at this intersection.

Note, these improvements are not solely the responsibility of the developer and were offered as potential interim intersection improvements and NCDOT will need to further investigate mitigations for future traffic capacity issues.

Table 6.3 - Blue Clay Road at Sidbury Road										
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)								
		Westbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R
AM Peak Hour										
Existing	C (16.5) WB Approach	C (16.5)			- (-)	- (-)	A (7.7)	A (0)		
		C (16.5)			A (0)			A (4.8)		
2024 No Build	D (29.3) WB Approach	D (29.3)			- (-)	- (-)	A (7.9)	A (0)		
		D (29.3)			A (0)			A (4.9)		
2024 Build	E (48.1) WB Approach	E (48.1)			- (-)	- (-)	A (8)	A (0)		
		E (48.1)			A (0)			A (5)		
2024 Build + Imp	F (62.8) WB Approach	F (62.8)			B (13.2)	- (-)		B (10.2)		
		F (62.8)			B (13.2)			B (10.2)		
PM Peak Hour										
Existing	B (13.9) WB Approach	B (13.9)			- (-)	- (-)	A (8.3)	A (0)		
		B (13.9)			A (0)			A (6.6)		
2024 No Build	C (20.4) WB Approach	C (20.4)			- (-)	- (-)	A (8.8)	A (0)		
		C (20.4)			A (0)			A (6.7)		
2024 Build	D (28) WB Approach	D (28)			- (-)	- (-)	A (9.1)	A (0)		
		D (28)			A (0)			A (6.9)		
2024 Build + Imp	E (40.4) NB Approach	D (25.2)			E (40.4)	- (-)		A (10.0)		
		D (25.2)			E (40.4)			A (10.0)		

### N. College Road at Blue Clay Road

This signalized intersection currently operates at LOS C in the AM peak and LOS D in the PM peak. In 2024 future no build conditions, LOS E is expected in the AM peak and LOS F in the PM peak. In full build conditions, the level of services is expected to remain the same. To address the queuing issue at this signal, it is recommended to construct a westbound right turn lane of 150 feet of storage and appropriate taper and revise the signal to accommodate the additional traffic.

Note, these improvements are not solely the responsibility of the developer and were offered as potential interim intersection improvements and NCDOT will need to further investigate mitigations for future traffic capacity issues.

Table 6.4 - North College Road at Blue Clay Road													
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)											
		Eastbound			Westbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R	L	T	R
AM Peak Hour													
Existing	C (28)	D (47.1)	C (34.5)		B (18.1)	C (20)		D (45.3)	C (34.6)	A (8.7)	B (19.8)	B (19.9)	
		D (40)			B (19.7)			C (31)			B (19.8)		
2024 No Build	E (61.4)	F (216.9)	D (53.4)		D (53.9)	E (56.4)		E (61.8)	D (40.9)	A (9.4)	D (49.9)	D (42.3)	
		F (121)			E (55.9)			D (37.4)			D (43.9)		
2024 Build	E (65)	F (220)	E (58.6)		E (59.8)	E (74.1)		E (62.2)	D (41.1)	A (9.4)	D (51.3)	D (42.6)	
		F (123.8)			E (70.6)			D (37.2)			D (44.5)		
2024 Build + Imp	E (58.6)	F (220)	E (58.6)		E (59.8)	D (41)	B (13.1)	E (62.2)	D (41.1)	A (9.4)	D (51.3)	D (42.6)	
		F (123.8)			D (38.2)			D (37.2)			D (44.5)		
PM Peak Hour													
Existing	D (49)	F (167.6)	D (37.2)		C (22.8)	C (26.4)		D (38)	C (34.7)	A (9.2)	B (13.9)	C (33)	
		F (114.2)			C (25.6)			C (33.5)			C (30.4)		
2024 No Build	F (145)	F (615.4)	F (85.6)		F (93.4)	F (185.8)		E (66.7)	D (53.6)	B (17.3)	C (30.8)	D (43.2)	
		F (359.9)			F (164.2)			D (49.6)			D (41.4)		
2024 Build	F (164.8)	F (713.6)	F (110.4)		F (114.7)	F (225.1)		E (70.1)	D (53.6)	B (17.7)	C (31.2)	D (43.2)	
		F (404.6)			F (198)			D (48.1)			D (41.3)		
2024 Build + Imp	F (136.2)	F (713.6)	F (110.4)		F (114.7)	E (75.9)	A (9.4)	E (70.1)	D (53.6)	B (17.7)	C (31.2)	D (43.2)	
		F (404.6)			E (68.9)			D (48.1)			D (41.3)		

### ***Dairy Farm Road at Site Access 1***

This site access is proposed to be a full movement configuration. In 2024 future build conditions, LOS A is expected for both the AM and PM peaks. Based on NCDOT Driveway Manual, this intersection will not warrant auxiliary lanes. Therefore, no improvements are recommended for this intersection. Design site access according to NCDOT standards.

<b>Table 6.5 - Old Dairy Road at Site Access 1</b>										
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)								
		Eastbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R
<b>AM Peak Hour</b>										
2024 Build	A (9.8) EB Approach	A (9.8)			A (7.7)	A (0)			- (-)	- (-)
		A (9.8)			A (1.5)			A (0)		
<b>PM Peak Hour</b>										
2024 Build	A (9.1) EB Approach	A (9.1)			A (7.6)	A (0)			- (-)	- (-)
		A (9.1)			A (1.2)			A (0)		

### ***Dairy Farm Road at Site Access 2***

This site access is proposed to be a full movement configuration. In 2024 future build conditions, LOS A is expected for both the AM and PM peaks. Based on NCDOT Driveway Manual, this intersection will not warrant auxiliary lanes. Therefore, no improvements are recommended for this intersection. Design site access according to NCDOT standards.

<b>Table 6.6 - Old Dairy Road at Site Access 2</b>										
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)								
		Eastbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R
<b>AM Peak Hour</b>										
2024 Build	A (9.4) EB Approach	A (9.4)			A (7.6)	A (0)			- (-)	- (-)
		A (9.4)			A (0.9)			A (0)		
<b>PM Peak Hour</b>										
2024 Build	A (8.6) EB Approach	A (8.6)			A (7.3)	A (0)			- (-)	- (-)
		A (8.6)			A (0.7)			A (0)		

### ***Dairy Farm Road at Site Access 3***

This site access is proposed to be a full movement configuration. In 2024 future build conditions, LOS A is expected for both the AM and PM peaks. Based on NCDOT Driveway Manual, this intersection will not warrant auxiliary lanes. Therefore, no improvements are recommended for this intersection. Design site access according to NCDOT standards.

<b>Table 6.7 - Old Dairy Road at Site Access 3</b>										
Scenario	Overall LOS	Level of Service by Approach (Delay in sec/veh)								
		Eastbound			Northbound			Southbound		
		L	T	R	L	T	R	L	T	R
<b>AM Peak Hour</b>										
2024 Build	A (9.3) EB Approach	A (9.3)			A (7.6)	A (0)			- (-)	- (-)
		A (9.3)			A (0.3)			A (0)		
<b>PM Peak Hour</b>										
2024 Build	A (8.5) EB Approach	A (8.5)			A (7.3)	A (0)			- (-)	- (-)
		A (8.5)			A (0.3)			A (0)		

### **6.6 Full Build Recommended Improvements**

The recommended improvements for full build are listed below:

#### Sidbury Road at Dairy Farm Road

- Extend eastbound left turn lane to 400 feet of storage and appropriate taper

#### Blue Clay Road at Sidbury Road

- Convert intersection to an all-way stop control

#### N. College Road at Blue Clay Road

- Provide a westbound right turn lane with 150 feet storage and appropriate taper
- Revise signal

#### Dairy Farm Road at Site Access 1

- Design site access according to NCDOT standards.

#### Dairy Farm Road at Site Access 2

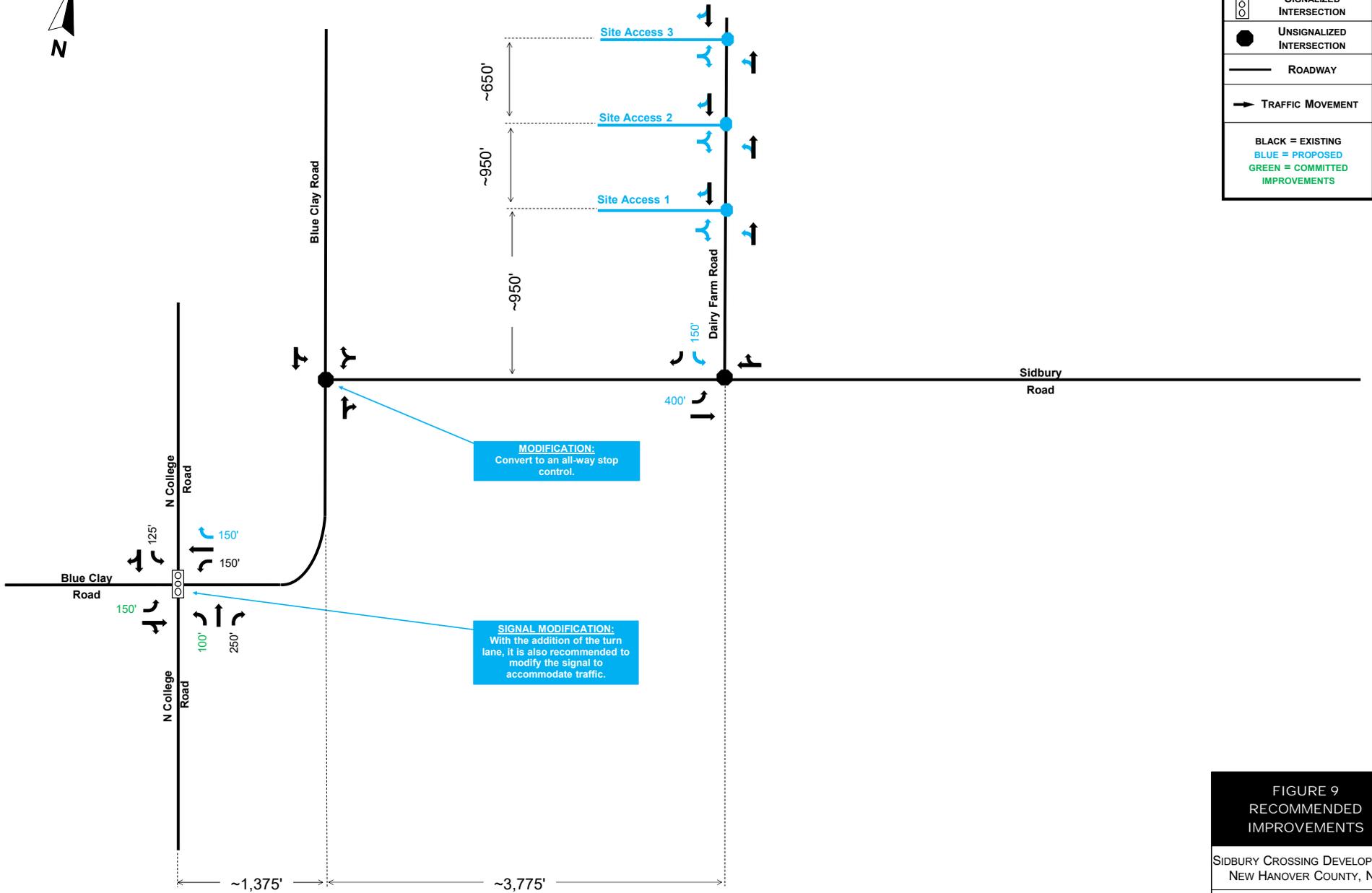
- Design site access according to NCDOT standards.

#### Dairy Farm Road at Site Access 3

- Design site access according to NCDOT standards.



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
BLACK = EXISTING	
BLUE = PROPOSED	
GREEN = COMMITTED IMPROVEMENTS	



**MODIFICATION:**  
Convert to an all-way stop control.

**SIGNAL MODIFICATION:**  
With the addition of the turn lane, it is also recommended to modify the signal to accommodate traffic.

\*\*\* NOT TO SCALE \*\*\*

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FIGURE 9  
RECOMMENDED  
IMPROVEMENTS

SIDBURY CROSSING DEVELOPMENT  
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200218

## 7.0 Queue Results

Below in Tables 7.1-7.4 are the queue results for all exclusive turn lanes.

Scenario	Sidbury Road at Dairy Farm Road			Blue Clay Road & Sidbury Road				N College Road & Blue Clay Road									
	EBL	WBTR		SBLR	WBLR	NBTR	SBLT	EBL	EBTR	WBL		WBTR	NBL	NBT	NBR	SBL	SBTR
<b>2020 Existing</b>																	
Max Queue (ft)	25			51	136		25	100	607	199		283	125	253	70	174	272
95th Percentile Queue (ft)	17			52	116		15	123	382	90		189	119	223	51	120	217
Storage Bay (ft)	150							50		150			75		250	125	
<b>2024 Future No Build</b>																	
Max Queue (ft)	31			92	276		25	200	2903	200		387	100	580	400	174	402
95th Percentile Queue (ft)	30			66	210		14	224	3569	216		341	112	487	292	208	396
Storage Bay (ft)	150							150		150			100		250	125	
<b>2024 Build</b>																	
Max Queue (ft)	53	21		115	314		53	200	2866	200		562	150	486	400	174	440
95th Percentile Queue (ft)	38	7		103	232		27	215	3267	252		527	189	421	264	206	404
Storage Bay (ft)	150							150		150			100		250	125	
<b>2024 Build + Imps</b>																	
Max Queue (ft)	31	22	74	104	162	92	72	200	1841	128	177	195	150	439	400	175	408
95th Percentile Queue (ft)	35	7	44	82	154	73	43	200	1957	112	157	106	185	323	213	225	368
Storage Bay (ft)	400		150					150		150		150	100		250	125	

**Table 7.2 - Queue Results  
PM Peak Hour Queues**

Scenario	Sidbury Road at Dairy Farm Road			Blue Clay Road & Sidbury Road				N College Road & Blue Clay Road									
	EBL	WBTR		SBLR	WBLR	NBTR	SBLT	EBL	EBTR	WBL		WBTR	NBL	NBT	NBR	SBL	SBTR
<b>2020 Existing</b>																	
Max Queue (ft)	54	22		66	161		27	100	2866	200		372	60	202	24	175	362
95th Percentile Queue (ft)	54	7		52	115		24	100	2952	114		260	43	156	8	200	370
Storage Bay (ft)	150							50		150			75		250	125	
<b>2024 Future No Build</b>																	
Max Queue (ft)	53			51	133		48	200	2890	200		1287	100	482	49	174	659
95th Percentile Queue (ft)	54			42	108		21	201	3417	260		1297	97	361	29	190	621
Storage Bay (ft)	150							150		150			100		250	125	
<b>2024 Build</b>																	
Max Queue (ft)	143			70	1019	22	29	200	2885	200		1314	150	444	400	175	594
95th Percentile Queue (ft)	84			61	869	9	25	200	3650	270		1567	94	355	212	212	535
Storage Bay (ft)	150							150		150			100		250	125	
<b>2024 Build + Imps</b>																	
Max Queue (ft)	75	30	45	66	116	114	30	200	2885	200	775	200	149	578	400	175	556
95th Percentile Queue (ft)	73	10	35	45	104	117	33	203	3697	211	678	228	104	399	152	209	506
Storage Bay (ft)	400		150					150		150		150	100		250	125	

**Table 7.3 - Queue Results  
AM Peak Hour Queues**

Scenario	Dairy Farm Road & Site Access 1		Dairy Farm Road & Site Access 2		Dairy Farm Road & Site Access 3	
	EBLR	NBLT	EBLR	NBLT	EBLR	NBLT
2024 Build						
Max Queue (ft)	42	26	66		20	
95th Percentile Queue (ft)	38	15	53		17	
Storage Bay (ft)						

**Table 7.4 - Queue Results  
PM Peak Hour Queues**

Scenario	Dairy Farm Road & Site Access 1		Dairy Farm Road & Site Access 2		Dairy Farm Road & Site Access 3	
	EBLR	NBLT	EBLR	NBLT	EBLR	NBLT
2024 Build						
Max Queue (ft)	42		52	24	18	25
95th Percentile Queue (ft)	38		39	12	13	8
Storage Bay (ft)						

## 8.0 Summary and Conclusion

The proposed Sidbury Crossing is to be located across Sidbury Road between I-40 and Dairy Farm Road in New Hanover County, North Carolina. The development will utilize three (3) site accesses. All three site accesses are proposed to be full access with each located on Dairy Farm Road between Sidbury Road and Blue Clay Road.

The Sidbury Crossing will be analyzed for one (1) full build:

- **Full Build** will consist of 320 apartment dwelling units. The build year for Full Build is assumed to be 2024.

Full Build's trip generation indicates that the proposed development is expected to generate 115 trips in the AM peak, and 141 trips in the PM peak.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of both background traffic and new development traffic.

Based on the analysis of the development there were a couple intersections that operated below the ideal level of service. Note, these improvements are not solely the responsibility of the developer and were offered as potential interim intersection improvements and NCDOT will need to further investigate mitigations for future traffic capacity issues.

The recommended improvements at the study intersections are summarized in Table 8.1 below.

<b>Table 8.1 – Recommended Improvement Summary</b>	
<b>Intersection</b>	<b>2024 Full Build</b>
Sidbury Road at Dairy Farm Road	<ul style="list-style-type: none"> <li>• Extend eastbound left turn lane to 400 feet of storage and appropriate taper</li> </ul>
Sidbury Road at Blue Clay Road	<ul style="list-style-type: none"> <li>• Convert intersection to an all-way stop control</li> </ul>
Blue Clay Road at N. College Road	<ul style="list-style-type: none"> <li>• Provide a westbound right turn lane with 150 feet storage and appropriate taper</li> <li>• Revise signal</li> </ul>
Dairy Farm Road at Site Access 1	<ul style="list-style-type: none"> <li>• Design site access according to NCDOT standards</li> </ul>
Dairy Farm Road at Site Access 2	<ul style="list-style-type: none"> <li>• Design site access according to NCDOT standards</li> </ul>
Dairy Farm Road at Site Access 3	<ul style="list-style-type: none"> <li>• Design site access according to NCDOT standards</li> </ul>

In conclusion, this study has reviewed the impacts of both background traffic and proposed development traffic and has provided recommendations to accommodate future traffic. Please note the proposed site access should be designed according to NCDOT standards.

# Appendix

# Level of Service Analysis

# *Sidbury Road at Dairy Farm Road*

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	127	330	21	16	148
Future Vol, veh/h	40	127	330	21	16	148
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	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	44	141	367	23	18	164

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	390	0	-	0	608 379
Stage 1	-	-	-	-	379 -
Stage 2	-	-	-	-	229 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1169	-	-	-	459 668
Stage 1	-	-	-	-	692 -
Stage 2	-	-	-	-	809 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1169	-	-	-	442 668
Mov Cap-2 Maneuver	-	-	-	-	442 -
Stage 1	-	-	-	-	666 -
Stage 2	-	-	-	-	809 -

Approach	EB	WB	SB
HCM Control Delay, s	2	0	12.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1169	-	-	-	636
HCM Lane V/C Ratio	0.038	-	-	-	0.287
HCM Control Delay (s)	8.2	-	-	-	12.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	215	191	180	20	15	76
Future Vol, veh/h	215	191	180	20	15	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	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	239	212	200	22	17	84

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	222	0	-	0	901 211
Stage 1	-	-	-	-	211 -
Stage 2	-	-	-	-	690 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1347	-	-	-	309 829
Stage 1	-	-	-	-	824 -
Stage 2	-	-	-	-	498 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1347	-	-	-	254 829
Mov Cap-2 Maneuver	-	-	-	-	254 -
Stage 1	-	-	-	-	678 -
Stage 2	-	-	-	-	498 -

Approach	EB	WB	SB
HCM Control Delay, s	4.4	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1347	-	-	-	604
HCM Lane V/C Ratio	0.177	-	-	-	0.167
HCM Control Delay (s)	8.2	-	-	-	12.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.6	-	-	-	0.6

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	43	175	450	23	17	157
Future Vol, veh/h	43	175	450	23	17	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	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	48	194	500	26	19	174

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	526	0	-	0	803 513
Stage 1	-	-	-	-	513 -
Stage 2	-	-	-	-	290 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1041	-	-	-	353 561
Stage 1	-	-	-	-	601 -
Stage 2	-	-	-	-	759 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1041	-	-	-	337 561
Mov Cap-2 Maneuver	-	-	-	-	337 -
Stage 1	-	-	-	-	573 -
Stage 2	-	-	-	-	759 -

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1041	-	-	-	527
HCM Lane V/C Ratio	0.046	-	-	-	0.367
HCM Control Delay (s)	8.6	-	-	-	15.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.7

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	227	317	263	22	16	80
Future Vol, veh/h	227	317	263	22	16	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	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	252	352	292	24	18	89

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	316	0	-	0	1160 304
Stage 1	-	-	-	-	304 -
Stage 2	-	-	-	-	856 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1244	-	-	-	216 736
Stage 1	-	-	-	-	748 -
Stage 2	-	-	-	-	416 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1244	-	-	-	172 736
Mov Cap-2 Maneuver	-	-	-	-	172 -
Stage 1	-	-	-	-	596 -
Stage 2	-	-	-	-	416 -

Approach	EB	WB	SB
HCM Control Delay, s	3.6	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1244	-	-	-	476
HCM Lane V/C Ratio	0.203	-	-	-	0.224
HCM Control Delay (s)	8.6	-	-	-	14.7
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.8	-	-	-	0.9

Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	69	175	450	28	30	229
Future Vol, veh/h	69	175	450	28	30	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	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	77	194	500	31	33	254

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	531	0	-	0	864 516
Stage 1	-	-	-	-	516 -
Stage 2	-	-	-	-	348 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1036	-	-	-	325 559
Stage 1	-	-	-	-	599 -
Stage 2	-	-	-	-	715 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1036	-	-	-	301 559
Mov Cap-2 Maneuver	-	-	-	-	301 -
Stage 1	-	-	-	-	555 -
Stage 2	-	-	-	-	715 -

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	20.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1036	-	-	-	509
HCM Lane V/C Ratio	0.074	-	-	-	0.565
HCM Control Delay (s)	8.8	-	-	-	20.9
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	3.5

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	300	317	263	35	24	127
Future Vol, veh/h	300	317	263	35	24	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	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	333	352	292	39	27	141

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	331	0	-	0	1330 312
Stage 1	-	-	-	-	312 -
Stage 2	-	-	-	-	1018 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1228	-	-	-	171 728
Stage 1	-	-	-	-	742 -
Stage 2	-	-	-	-	349 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1228	-	-	-	125 728
Mov Cap-2 Maneuver	-	-	-	-	125 -
Stage 1	-	-	-	-	541 -
Stage 2	-	-	-	-	349 -

Approach	EB	WB	SB
HCM Control Delay, s	4.4	0	19.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1228	-	-	-	412
HCM Lane V/C Ratio	0.271	-	-	-	0.407
HCM Control Delay (s)	9	-	-	-	19.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	1.1	-	-	-	1.9

Intersection						
Int Delay, s/veh	5.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↑	↗		↖	↗
Traffic Vol, veh/h	69	175	450	28	30	229
Future Vol, veh/h	69	175	450	28	30	229
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	400	-	-	-	150	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	77	194	500	31	33	254

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	531	0	0	864	516
Stage 1	-	-	-	516	-
Stage 2	-	-	-	348	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1036	-	-	325	559
Stage 1	-	-	-	599	-
Stage 2	-	-	-	715	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1036	-	-	301	559
Mov Cap-2 Maneuver	-	-	-	301	-
Stage 1	-	-	-	555	-
Stage 2	-	-	-	715	-

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1036	-	-	-	301	559
HCM Lane V/C Ratio	0.074	-	-	-	0.111	0.455
HCM Control Delay (s)	8.8	-	-	-	18.4	16.7
HCM Lane LOS	A	-	-	-	C	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4	2.4

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↔	↑	↔		↔	↔
Traffic Vol, veh/h	300	317	263	35	24	127
Future Vol, veh/h	300	317	263	35	24	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	400	-	-	-	150	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	333	352	292	39	27	141

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	331	0	-	0	1330 312
Stage 1	-	-	-	-	312 -
Stage 2	-	-	-	-	1018 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1228	-	-	-	171 728
Stage 1	-	-	-	-	742 -
Stage 2	-	-	-	-	349 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1228	-	-	-	125 728
Mov Cap-2 Maneuver	-	-	-	-	125 -
Stage 1	-	-	-	-	541 -
Stage 2	-	-	-	-	349 -

Approach	EB	WB	SB
HCM Control Delay, s	4.4	0	15.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1228	-	-	-	125	728
HCM Lane V/C Ratio	0.271	-	-	-	0.213	0.194
HCM Control Delay (s)	9	-	-	-	41.4	11.1
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	1.1	-	-	-	0.8	0.7

## *Sidbury Road at Blue Clay Road*

Intersection						
Int Delay, s/veh	10.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	428	18	5	205	21	13
Future Vol, veh/h	428	18	5	205	21	13
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	476	20	6	228	23	14

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	180	120	0	0	234
Stage 1	120	-	-	-	-
Stage 2	60	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	810	931	-	-	1333
Stage 1	905	-	-	-	-
Stage 2	963	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	796	931	-	-	1333
Mov Cap-2 Maneuver	796	-	-	-	-
Stage 1	890	-	-	-	-
Stage 2	963	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.5	0	4.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	801	1333
HCM Lane V/C Ratio	-	-	0.619	0.018
HCM Control Delay (s)	-	-	16.5	7.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	4.4	0.1

Intersection						
Int Delay, s/veh	5.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	256	22	16	398	15	4
Future Vol, veh/h	256	22	16	398	15	4
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	284	24	18	442	17	4

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	277	239	0	0	460
Stage 1	239	-	-	-	-
Stage 2	38	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	713	800	-	-	1101
Stage 1	801	-	-	-	-
Stage 2	984	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	702	800	-	-	1101
Mov Cap-2 Maneuver	702	-	-	-	-
Stage 1	789	-	-	-	-
Stage 2	984	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.9	0	6.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	709	1101
HCM Lane V/C Ratio	-	-	0.436	0.015
HCM Control Delay (s)	-	-	13.9	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	2.2	0

Intersection						
Int Delay, s/veh	19.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	553	20	6	257	23	14
Future Vol, veh/h	553	20	6	257	23	14
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	614	22	7	286	26	16

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	218	150	0	0	293
Stage 1	150	-	-	-	-
Stage 2	68	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	770	896	-	-	1269
Stage 1	878	-	-	-	-
Stage 2	955	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	754	896	-	-	1269
Mov Cap-2 Maneuver	754	-	-	-	-
Stage 1	860	-	-	-	-
Stage 2	955	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	29.3	0	4.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	758	1269
HCM Lane V/C Ratio	-	-	0.84	0.02
HCM Control Delay (s)	-	-	29.3	7.9
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	9.6	0.1

Intersection						
Int Delay, s/veh	8.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	343	24	17	535	16	5
Future Vol, veh/h	343	24	17	535	16	5
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	381	27	19	594	18	6

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	358	316	0	0	613	0
Stage 1	316	-	-	-	-	-
Stage 2	42	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	640	724	-	-	966	-
Stage 1	739	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	628	724	-	-	966	-
Mov Cap-2 Maneuver	628	-	-	-	-	-
Stage 1	725	-	-	-	-	-
Stage 2	980	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.4	0	6.7
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	633	966
HCM Lane V/C Ratio	-	-	0.644	0.018
HCM Control Delay (s)	-	-	20.4	8.8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	4.7	0.1

Intersection						
Int Delay, s/veh	32.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	625	20	6	283	23	14
Future Vol, veh/h	625	20	6	283	23	14
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	694	22	7	314	26	16

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	232	164	0	0	321
Stage 1	164	-	-	-	-
Stage 2	68	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	756	881	-	-	1239
Stage 1	865	-	-	-	-
Stage 2	955	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	740	881	-	-	1239
Mov Cap-2 Maneuver	740	-	-	-	-
Stage 1	847	-	-	-	-
Stage 2	955	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	48.1	0	5
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	744	1239
HCM Lane V/C Ratio	-	-	0.963	0.021
HCM Control Delay (s)	-	-	48.1	8
HCM Lane LOS	-	-	E	A
HCM 95th %tile Q(veh)	-	-	14.8	0.1

Intersection						
Int Delay, s/veh	11.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	390	24	17	608	16	5
Future Vol, veh/h	390	24	17	608	16	5
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	433	27	19	676	18	6

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	399	357	0	0	695
Stage 1	357	-	-	-	-
Stage 2	42	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	607	687	-	-	901
Stage 1	708	-	-	-	-
Stage 2	980	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	595	687	-	-	901
Mov Cap-2 Maneuver	595	-	-	-	-
Stage 1	694	-	-	-	-
Stage 2	980	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	28	0	6.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	600	901
HCM Lane V/C Ratio	-	-	0.767	0.02
HCM Control Delay (s)	-	-	28	9.1
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	7	0.1

Intersection	
Intersection Delay, s/veh	46
Intersection LOS	E

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	625	20	6	283	23	14
Future Vol, veh/h	625	20	6	283	23	14
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	694	22	7	314	26	16
Number of Lanes	1	0	1	0	0	1

Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	62.8	13.2	10.2
HCM LOS	F	B	B

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	97%	62%
Vol Thru, %	2%	0%	38%
Vol Right, %	98%	3%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	289	645	37
LT Vol	0	625	23
Through Vol	6	0	14
RT Vol	283	20	0
Lane Flow Rate	321	717	41
Geometry Grp	1	1	1
Degree of Util (X)	0.47	1.025	0.073
Departure Headway (Hd)	5.449	5.148	6.681
Convergence, Y/N	Yes	Yes	Yes
Cap	665	710	539
Service Time	3.449	3.148	4.681
HCM Lane V/C Ratio	0.483	1.01	0.076
HCM Control Delay	13.2	62.8	10.2
HCM Lane LOS	B	F	B
HCM 95th-tile Q	2.5	17.5	0.2

Intersection	
Intersection Delay, s/veh	33.9
Intersection LOS	D

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	390	24	17	608	16	5
Future Vol, veh/h	390	24	17	608	16	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	433	27	19	676	18	6
Number of Lanes	1	0	1	0	0	1

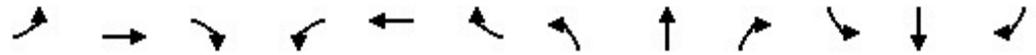
Approach	WB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	NB		WB
Conflicting Lanes Left	1	0	1
Conflicting Approach Right	SB	WB	
Conflicting Lanes Right	1	1	0
HCM Control Delay	25.2	40.4	10
HCM LOS	D	E	A

Lane	NBLn1	WBLn1	SBLn1
Vol Left, %	0%	94%	76%
Vol Thru, %	3%	0%	24%
Vol Right, %	97%	6%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	625	414	21
LT Vol	0	390	16
Through Vol	17	0	5
RT Vol	608	24	0
Lane Flow Rate	694	460	23
Geometry Grp	1	1	1
Degree of Util (X)	0.932	0.757	0.043
Departure Headway (Hd)	4.829	5.926	6.574
Convergence, Y/N	Yes	Yes	Yes
Cap	750	612	541
Service Time	2.885	3.967	4.661
HCM Lane V/C Ratio	0.925	0.752	0.043
HCM Control Delay	40.4	25.2	10
HCM Lane LOS	E	D	A
HCM 95th-tile Q	13.2	6.8	0.1

*Blue Clay Road at N. College Road*

Lanes, Volumes, Timings  
300: N College Road & Blue Clay Road

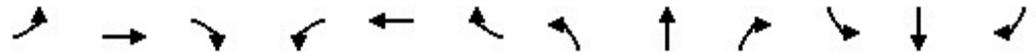
06/30/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	181	223	12	47	128	88	89	418	123	123	234	231
Future Volume (vph)	181	223	12	47	128	88	89	418	123	123	234	231
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	150		0	75		250	125		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
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			0.939				0.850		0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1850	0	1770	1749	0	1770	1863	1583	1770	1723	0
Flt Permitted	0.610			0.342			0.253			0.270		
Satd. Flow (perm)	1136	1850	0	637	1749	0	471	1863	1583	503	1723	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			45			45	
Link Distance (ft)		2906			1387			4316			2501	
Travel Time (s)		36.0			17.2			65.4			37.9	
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)	201	248	13	52	142	98	99	464	137	137	260	257
Shared Lane Traffic (%)												
Lane Group Flow (vph)	201	261	0	52	240	0	99	464	137	137	517	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	pm+pt	NA	
Protected Phases		4		3	8			2	3	1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		14.0	14.0	7.0	7.0	14.0	
Minimum Split (s)	13.2	13.2		12.6	13.2		21.0	21.0	12.6	12.6	20.0	
Total Split (s)	25.0	25.0		15.0	25.0		90.0	90.0	15.0	15.0	90.0	
Total Split (%)	17.2%	17.2%		10.3%	17.2%		62.1%	62.1%	10.3%	10.3%	62.1%	
Maximum Green (s)	18.8	18.8		9.4	18.8		84.0	84.0	9.4	9.4	84.0	
Yellow Time (s)	5.2	5.2		3.0	5.2		4.7	4.7	3.0	3.0	4.7	
All-Red Time (s)	1.0	1.0		2.6	1.0		1.3	1.3	2.6	2.6	1.3	
Lost Time Adjust (s)	-1.2	-1.2		-0.6	-1.2		-1.0	-1.0	-0.6	-0.6	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		6.0	6.0	2.0	1.0	6.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.4	3.4	2.0	1.0	3.4	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0	0.0	0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		30.0	30.0	0.0	0.0	30.0	
Recall Mode	None	None		None	None		Min	Min	None	None	Min	
Act Effct Green (s)	20.1	20.1		32.9	32.9		26.4	26.4	34.2	39.1	39.1	
Actuated g/C Ratio	0.25	0.25		0.40	0.40		0.32	0.32	0.42	0.48	0.48	
v/c Ratio	0.72	0.58		0.14	0.34		0.66	0.77	0.21	0.38	0.63	
Control Delay	47.1	34.5		18.1	20.0		45.3	34.6	8.7	19.8	19.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	47.1	34.5		18.1	20.0		45.3	34.6	8.7	19.8	19.9	

Lanes, Volumes, Timings  
 300: N College Road & Blue Clay Road

06/30/2020

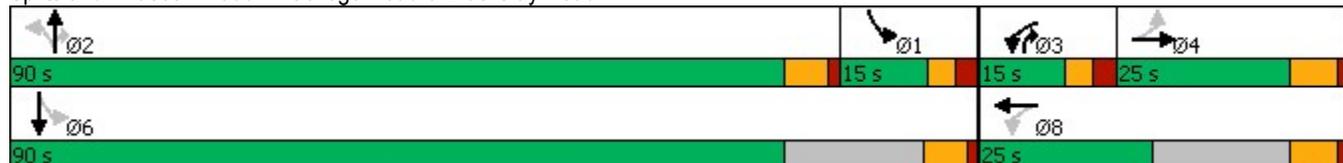


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	D	C		B	C		D	C	A	B	B	
Approach Delay		40.0			19.7			31.0			19.8	
Approach LOS		D			B			C			B	
Queue Length 50th (ft)	94	117		16	83		43	211	25	38	188	
Queue Length 95th (ft)	#228	220		44	163		#103	321	45	69	289	
Internal Link Dist (ft)		2826			1307			4236			2421	
Turn Bay Length (ft)	50			150			75		250	125		
Base Capacity (vph)	278	453		394	749		464	1838	703	409	1723	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	0.72	0.58		0.13	0.32		0.21	0.25	0.19	0.33	0.30	

Intersection Summary

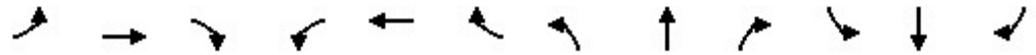
Area Type: Other  
 Cycle Length: 145  
 Actuated Cycle Length: 82  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay: 28.0 Intersection LOS: C  
 Intersection Capacity Utilization 76.9% ICU Level of Service D  
 Analysis Period (min) 15  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 300: N College Road & Blue Clay Road



Lanes, Volumes, Timings  
300: N College Road & Blue Clay Road

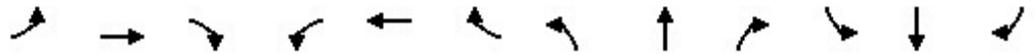
06/30/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	145	39	88	200	112	24	278	18	109	443	253
Future Volume (vph)	265	145	39	88	200	112	24	278	18	109	443	253
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	150		0	75		250	125		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
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		0.968			0.946				0.850		0.945	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1803	0	1770	1762	0	1770	1863	1583	1770	1760	0
Flt Permitted	0.553			0.414			0.172			0.404		
Satd. Flow (perm)	1030	1803	0	771	1762	0	320	1863	1583	753	1760	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			45			45	
Link Distance (ft)		2906			1387			4316			2501	
Travel Time (s)		36.0			17.2			65.4			37.9	
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)	294	161	43	98	222	124	27	309	20	121	492	281
Shared Lane Traffic (%)												
Lane Group Flow (vph)	294	204	0	98	346	0	27	309	20	121	773	0
Turn Type	Perm	NA		pm+pt	NA		Perm	NA	pm+ov	pm+pt	NA	
Protected Phases		4		3	8			2	3	1	6	
Permitted Phases	4			8			2		2	6		
Detector Phase	4	4		3	8		2	2	3	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		14.0	14.0	7.0	7.0	14.0	
Minimum Split (s)	13.2	13.2		12.6	13.2		21.0	21.0	12.6	12.6	20.0	
Total Split (s)	25.0	25.0		15.0	25.0		90.0	90.0	15.0	15.0	90.0	
Total Split (%)	17.2%	17.2%		10.3%	17.2%		62.1%	62.1%	10.3%	10.3%	62.1%	
Maximum Green (s)	18.8	18.8		9.4	18.8		84.0	84.0	9.4	9.4	84.0	
Yellow Time (s)	5.2	5.2		3.0	5.2		4.7	4.7	3.0	3.0	4.7	
All-Red Time (s)	1.0	1.0		2.6	1.0		1.3	1.3	2.6	2.6	1.3	
Lost Time Adjust (s)	-1.2	-1.2		-0.6	-1.2		-1.0	-1.0	-0.6	-0.6	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag		Lead			Lead	Lead	Lead	Lag		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes	Yes	Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		6.0	6.0	2.0	1.0	6.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.4	3.4	2.0	1.0	3.4	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0	0.0	0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		30.0	30.0	0.0	0.0	30.0	
Recall Mode	None	None		None	None		Min	Min	None	None	Min	
Act Effct Green (s)	20.4	20.4		34.2	34.2		23.3	23.3	32.0	43.4	43.4	
Actuated g/C Ratio	0.23	0.23		0.39	0.39		0.27	0.27	0.36	0.49	0.49	
v/c Ratio	1.23	0.49		0.25	0.50		0.32	0.62	0.03	0.22	0.89	
Control Delay	167.6	37.2		22.8	26.4		38.0	34.7	9.2	13.9	33.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	167.6	37.2		22.8	26.4		38.0	34.7	9.2	13.9	33.0	

Lanes, Volumes, Timings  
 300: N College Road & Blue Clay Road

06/30/2020

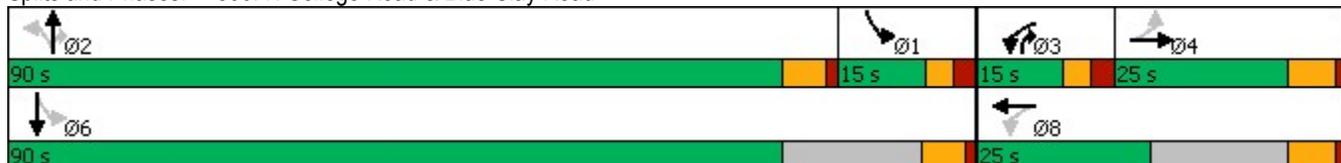


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	D		C	C		D	C	A	B	C	
Approach Delay		114.2			25.6			33.5			30.4	
Approach LOS		F			C			C			C	
Queue Length 50th (ft)	~200	96		34	141		12	148	3	34	356	
Queue Length 95th (ft)	#456	210		89	299		40	254	10	62	538	
Internal Link Dist (ft)		2826			1307			4236			2421	
Turn Bay Length (ft)	50			150			75		250	125		
Base Capacity (vph)	239	419		416	718		298	1737	604	552	1734	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	1.23	0.49		0.24	0.48		0.09	0.18	0.03	0.22	0.45	

Intersection Summary

Area Type: Other  
 Cycle Length: 145  
 Actuated Cycle Length: 87.8  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.23  
 Intersection Signal Delay: 49.0  
 Intersection LOS: D  
 Intersection Capacity Utilization 99.1%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 300: N College Road & Blue Clay Road



Lanes, Volumes, Timings  
300: N College Road & Blue Clay Road

06/30/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	259	31	85	187	107	100	440	142	135	247	248
Future Volume (vph)	204	259	31	85	187	107	100	440	142	135	247	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		250	125		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50			50			0			50		
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		0.984			0.945				0.850		0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1833	0	1770	1760	0	1770	1863	1583	1770	1723	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1833	0	1770	1760	0	1770	1863	1583	1770	1723	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			45			45	
Link Distance (ft)		2906			1387			4316			2501	
Travel Time (s)		36.0			17.2			65.4			37.9	
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)	227	288	34	94	208	119	111	489	158	150	274	276
Shared Lane Traffic (%)												
Lane Group Flow (vph)	227	322	0	94	327	0	111	489	158	150	550	0
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	14.0	7.0	7.0	14.0	
Minimum Split (s)	14.0	13.2		12.6	13.2		14.0	21.0	12.6	12.6	20.0	
Total Split (s)	14.0	25.0		15.0	25.0		14.0	90.0	15.0	15.0	90.0	
Total Split (%)	9.7%	17.2%		10.3%	17.2%		9.7%	62.1%	10.3%	10.3%	62.1%	
Maximum Green (s)	7.0	18.8		9.4	18.8		7.0	84.0	9.4	9.4	84.0	
Yellow Time (s)	5.0	5.2		3.0	5.2		5.0	4.7	3.0	3.0	4.7	
All-Red Time (s)	2.0	1.0		2.6	1.0		2.0	1.3	2.6	2.6	1.3	
Lost Time Adjust (s)	-2.0	-1.2		-0.6	-1.2		-2.0	-1.0	-0.6	-0.6	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	2.0		2.0	2.0		3.0	6.0	2.0	1.0	6.0	
Minimum Gap (s)	3.0	2.0		2.0	2.0		3.0	3.4	2.0	1.0	3.4	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0	0.0	0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	30.0	0.0	0.0	30.0	
Recall Mode	None	None		None	None		None	Min	None	None	Min	
Act Effct Green (s)	9.1	20.5		9.4	20.8		9.1	30.1	39.5	13.5	34.5	
Actuated g/C Ratio	0.10	0.22		0.10	0.22		0.10	0.32	0.42	0.14	0.37	
v/c Ratio	1.33	0.80		0.53	0.84		0.65	0.82	0.24	0.59	0.87	
Control Delay	216.9	53.4		53.9	56.4		61.8	40.9	9.4	49.9	42.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	216.9	53.4		53.9	56.4		61.8	40.9	9.4	49.9	42.3	

Lanes, Volumes, Timings  
 300: N College Road & Blue Clay Road

06/30/2020

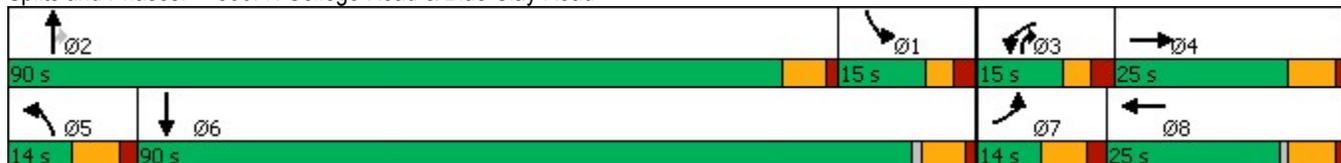


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	D		D	E		E	D	A	D	D	
Approach Delay		121.0			55.9			37.4			43.9	
Approach LOS		F			E			D			D	
Queue Length 50th (ft)	~176	183		53	185		64	265	29	84	297	
Queue Length 95th (ft)	#370	#388		#119	#395		#166	385	50	#171	431	
Internal Link Dist (ft)		2826			1307			4236			2421	
Turn Bay Length (ft)	150			150			100		250	125		
Base Capacity (vph)	171	401		190	398		171	1691	679	254	1578	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	1.33	0.80		0.49	0.82		0.65	0.29	0.23	0.59	0.35	

Intersection Summary

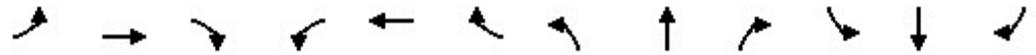
Area Type: Other  
 Cycle Length: 145  
 Actuated Cycle Length: 93.6  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.33  
 Intersection Signal Delay: 61.4  
 Intersection LOS: E  
 Intersection Capacity Utilization 78.3%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 300: N College Road & Blue Clay Road



Lanes, Volumes, Timings  
300: N College Road & Blue Clay Road

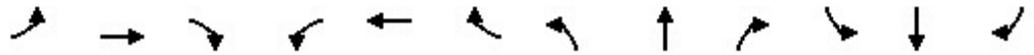
06/30/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	214	54	116	253	127	46	292	60	131	467	280
Future Volume (vph)	288	214	54	116	253	127	46	292	60	131	467	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		250	125		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50			50			0			50		
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		0.970			0.950				0.850		0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1807	0	1770	1770	0	1770	1863	1583	1770	1758	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1807	0	1770	1770	0	1770	1863	1583	1770	1758	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			45			45	
Link Distance (ft)		2906			1387			4316			2501	
Travel Time (s)		36.0			17.2			65.4			37.9	
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)	320	238	60	129	281	141	51	324	67	146	519	311
Shared Lane Traffic (%)												
Lane Group Flow (vph)	320	298	0	129	422	0	51	324	67	146	830	0
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	14.0	7.0	7.0	14.0	
Minimum Split (s)	14.0	13.2		12.6	13.2		14.0	21.0	12.6	12.6	20.0	
Total Split (s)	14.0	25.0		15.0	25.0		14.0	90.0	15.0	15.0	90.0	
Total Split (%)	9.7%	17.2%		10.3%	17.2%		9.7%	62.1%	10.3%	10.3%	62.1%	
Maximum Green (s)	7.0	18.8		9.4	18.8		7.0	84.0	9.4	9.4	84.0	
Yellow Time (s)	5.0	5.2		3.0	5.2		5.0	4.7	3.0	3.0	4.7	
All-Red Time (s)	2.0	1.0		2.6	1.0		2.0	1.3	2.6	2.6	1.3	
Lost Time Adjust (s)	-2.0	-1.2		-0.6	-1.2		-2.0	-1.0	-0.6	-0.6	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	2.0		2.0	2.0		3.0	6.0	2.0	1.0	6.0	
Minimum Gap (s)	3.0	2.0		2.0	2.0		3.0	3.4	2.0	1.0	3.4	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0	0.0	0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	30.0	0.0	0.0	30.0	
Recall Mode	None	None		None	None		None	Min	None	None	Min	
Act Effct Green (s)	9.4	20.9		10.4	21.9		9.4	27.5	38.0	37.4	59.8	
Actuated g/C Ratio	0.08	0.18		0.09	0.19		0.08	0.23	0.32	0.32	0.51	
v/c Ratio	2.27	0.93		0.82	1.27		0.36	0.74	0.13	0.26	0.93	
Control Delay	615.4	85.6		93.4	185.8		66.7	53.6	17.3	30.8	43.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	615.4	85.6		93.4	185.8		66.7	53.6	17.3	30.8	43.2	

Lanes, Volumes, Timings  
 300: N College Road & Blue Clay Road

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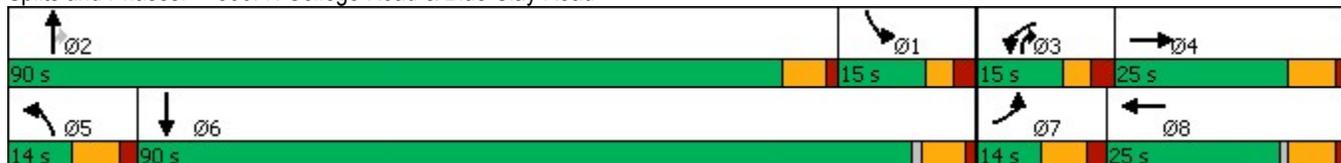


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	F		F	F		E	D	B	C	D	
Approach Delay		359.9			164.2			49.6				41.4
Approach LOS		F			F			D				D
Queue Length 50th (ft)	~412	235		101	~435		39	238	23	79		579
Queue Length 95th (ft)	#709	#526		#270	#784		94	364	50	152		778
Internal Link Dist (ft)		2826			1307			4236				2421
Turn Bay Length (ft)	150			150			100		250	125		
Base Capacity (vph)	141	322		157	331		141	1378	512	565		1312
Starvation Cap Reductn	0	0		0	0		0	0	0	0		0
Spillback Cap Reductn	0	0		0	0		0	0	0	0		0
Storage Cap Reductn	0	0		0	0		0	0	0	0		0
Reduced v/c Ratio	2.27	0.93		0.82	1.27		0.36	0.24	0.13	0.26		0.63

Intersection Summary

Area Type: Other  
 Cycle Length: 145  
 Actuated Cycle Length: 117.2  
 Natural Cycle: 150  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 2.27  
 Intersection Signal Delay: 145.0  
 Intersection LOS: F  
 Intersection Capacity Utilization 101.2%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 300: N College Road & Blue Clay Road



Lanes, Volumes, Timings  
300: N College Road & Blue Clay Road

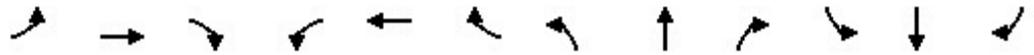
06/30/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	271	31	111	221	120	100	440	151	140	247	248
Future Volume (vph)	204	271	31	111	221	120	100	440	151	140	247	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		250	125		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
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		0.985			0.947				0.850		0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1835	0	1770	1764	0	1770	1863	1583	1770	1723	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1835	0	1770	1764	0	1770	1863	1583	1770	1723	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			45			45	
Link Distance (ft)		2906			1387			4316			2501	
Travel Time (s)		36.0			17.2			65.4			37.9	
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)	227	301	34	123	246	133	111	489	168	156	274	276
Shared Lane Traffic (%)												
Lane Group Flow (vph)	227	335	0	123	379	0	111	489	168	156	550	0
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	14.0	7.0	7.0	14.0	
Minimum Split (s)	14.0	13.2		12.6	13.2		14.0	21.0	12.6	12.6	20.0	
Total Split (s)	14.0	25.0		15.0	25.0		14.0	90.0	15.0	15.0	90.0	
Total Split (%)	9.7%	17.2%		10.3%	17.2%		9.7%	62.1%	10.3%	10.3%	62.1%	
Maximum Green (s)	7.0	18.8		9.4	18.8		7.0	84.0	9.4	9.4	84.0	
Yellow Time (s)	5.0	5.2		3.0	5.2		5.0	4.7	3.0	3.0	4.7	
All-Red Time (s)	2.0	1.0		2.6	1.0		2.0	1.3	2.6	2.6	1.3	
Lost Time Adjust (s)	-2.0	-1.2		-0.6	-1.2		-2.0	-1.0	-0.6	-0.6	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	2.0		2.0	2.0		3.0	6.0	2.0	1.0	6.0	
Minimum Gap (s)	3.0	2.0		2.0	2.0		3.0	3.4	2.0	1.0	3.4	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0	0.0	0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	30.0	0.0	0.0	30.0	
Recall Mode	None	None		None	None		None	Min	None	None	Min	
Act Effct Green (s)	9.1	20.2		10.1	21.2		9.1	30.1	40.2	13.5	34.5	
Actuated g/C Ratio	0.10	0.21		0.11	0.23		0.10	0.32	0.43	0.14	0.37	
v/c Ratio	1.34	0.85		0.65	0.95		0.65	0.82	0.25	0.62	0.87	
Control Delay	220.0	58.6		59.8	74.1		62.2	41.1	9.4	51.3	42.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	220.0	58.6		59.8	74.1		62.2	41.1	9.4	51.3	42.6	

Lanes, Volumes, Timings  
 300: N College Road & Blue Clay Road

06/30/2020

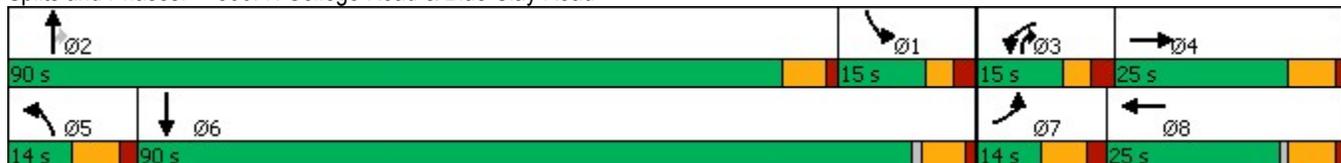


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	E		E	E		E	D	A	D	D	
Approach Delay		123.8			70.6			37.2			44.5	
Approach LOS		F			E			D			D	
Queue Length 50th (ft)	~176	192		71	222		64	265	31	88	297	
Queue Length 95th (ft)	#370	#410		#176	#479		#166	385	53	#186	431	
Internal Link Dist (ft)		2826			1307			4236			2421	
Turn Bay Length (ft)	150			150			100		250	125		
Base Capacity (vph)	170	393		189	397		170	1688	677	253	1575	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	1.34	0.85		0.65	0.95		0.65	0.29	0.25	0.62	0.35	

Intersection Summary

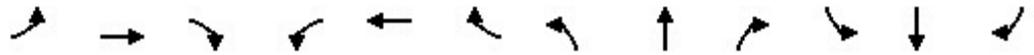
Area Type: Other  
 Cycle Length: 145  
 Actuated Cycle Length: 94  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.34  
 Intersection Signal Delay: 65.0  
 Intersection LOS: E  
 Intersection Capacity Utilization 80.9%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 300: N College Road & Blue Clay Road



Lanes, Volumes, Timings  
300: N College Road & Blue Clay Road

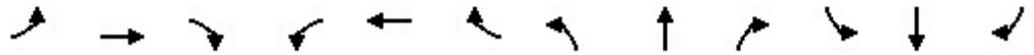
06/30/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	248	54	133	275	135	46	292	86	144	467	280
Future Volume (vph)	288	248	54	133	275	135	46	292	86	144	467	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	100		250	125		0
Storage Lanes	1		0	1		0	1		1	1		0
Taper Length (ft)	50			50			50			50		
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		0.973			0.951				0.850		0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1812	0	1770	1771	0	1770	1863	1583	1770	1758	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1812	0	1770	1771	0	1770	1863	1583	1770	1758	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			45			45	
Link Distance (ft)		2906			1387			4316			2501	
Travel Time (s)		36.0			17.2			65.4			37.9	
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)	320	276	60	148	306	150	51	324	96	160	519	311
Shared Lane Traffic (%)												
Lane Group Flow (vph)	320	336	0	148	456	0	51	324	96	160	830	0
Turn Type	Prot	NA		Prot	NA		Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		5	2	3	1	6	
Permitted Phases									2			
Detector Phase	7	4		3	8		5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	14.0	7.0	7.0	14.0	
Minimum Split (s)	14.0	13.2		12.6	13.2		14.0	21.0	12.6	12.6	20.0	
Total Split (s)	14.0	25.0		15.0	25.0		14.0	90.0	15.0	15.0	90.0	
Total Split (%)	9.7%	17.2%		10.3%	17.2%		9.7%	62.1%	10.3%	10.3%	62.1%	
Maximum Green (s)	7.0	18.8		9.4	18.8		7.0	84.0	9.4	9.4	84.0	
Yellow Time (s)	5.0	5.2		3.0	5.2		5.0	4.7	3.0	3.0	4.7	
All-Red Time (s)	2.0	1.0		2.6	1.0		2.0	1.3	2.6	2.6	1.3	
Lost Time Adjust (s)	-1.2	-1.2		-0.6	-1.2		-1.0	-1.0	-0.6	-0.6	-1.0	
Total Lost Time (s)	5.8	5.0		5.0	5.0		6.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	2.0		2.0	2.0		3.0	6.0	2.0	1.0	6.0	
Minimum Gap (s)	3.0	2.0		2.0	2.0		3.0	3.4	2.0	1.0	3.4	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		0.0	15.0	0.0	0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		0.0	30.0	0.0	0.0	30.0	
Recall Mode	None	None		None	None		None	Min	None	None	Min	
Act Effct Green (s)	8.6	20.9		10.4	21.9		8.4	27.5	38.0	37.4	59.8	
Actuated g/C Ratio	0.07	0.18		0.09	0.19		0.07	0.23	0.32	0.32	0.51	
v/c Ratio	2.48	1.04		0.94	1.38		0.40	0.74	0.19	0.28	0.93	
Control Delay	713.6	110.4		114.7	225.1		70.1	53.6	17.7	31.2	43.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Total Delay	713.6	110.4		114.7	225.1		70.1	53.6	17.7	31.2	43.2	

Lanes, Volumes, Timings  
 300: N College Road & Blue Clay Road

06/30/2020

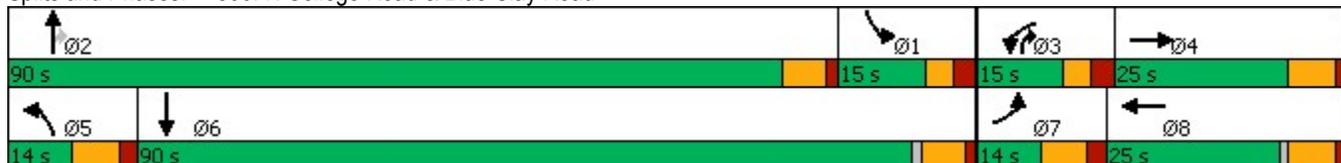


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	F		F	F		E	D	B	C	D	
Approach Delay		404.6			198.0			48.1			41.3	
Approach LOS		F			F			D			D	
Queue Length 50th (ft)	~422	~302		~119	~490		39	238	34	87	579	
Queue Length 95th (ft)	#719	#607		#314	#856		#95	364	68	166	778	
Internal Link Dist (ft)		2826			1307			4236			2421	
Turn Bay Length (ft)	150			150			100		250	125		
Base Capacity (vph)	129	323		157	331		126	1378	512	565	1312	
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	
Reduced v/c Ratio	2.48	1.04		0.94	1.38		0.40	0.24	0.19	0.28	0.63	

Intersection Summary

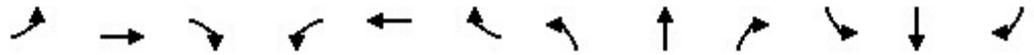
Area Type: Other  
 Cycle Length: 145  
 Actuated Cycle Length: 117.2  
 Natural Cycle: 150  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 2.48  
 Intersection Signal Delay: 164.8  
 Intersection LOS: F  
 Intersection Capacity Utilization 104.0%  
 ICU Level of Service G  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 300: N College Road & Blue Clay Road



Lanes, Volumes, Timings  
300: N College Road & Blue Clay Road

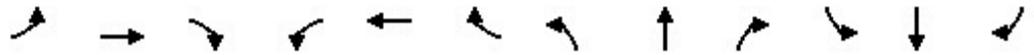
06/30/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	204	271	31	111	221	120	100	440	151	140	247	248
Future Volume (vph)	204	271	31	111	221	120	100	440	151	140	247	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		150	100		250	125		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
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		0.985				0.850			0.850		0.925	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1835	0	1770	1863	1583	1770	1863	1583	1770	1723	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1835	0	1770	1863	1583	1770	1863	1583	1770	1723	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			45			45	
Link Distance (ft)		2906			1387			4316			2501	
Travel Time (s)		36.0			17.2			65.4			37.9	
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)	227	301	34	123	246	133	111	489	168	156	274	276
Shared Lane Traffic (%)												
Lane Group Flow (vph)	227	335	0	123	246	133	111	489	168	156	550	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases						8			2			
Detector Phase	7	4		3	8	1	5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	14.0	7.0	7.0	14.0	
Minimum Split (s)	14.0	13.2		12.6	13.2	12.6	14.0	21.0	12.6	12.6	20.0	
Total Split (s)	14.0	25.0		15.0	25.0	15.0	14.0	90.0	15.0	15.0	90.0	
Total Split (%)	9.7%	17.2%		10.3%	17.2%	10.3%	9.7%	62.1%	10.3%	10.3%	62.1%	
Maximum Green (s)	7.0	18.8		9.4	18.8	9.4	7.0	84.0	9.4	9.4	84.0	
Yellow Time (s)	5.0	5.2		3.0	5.2	3.0	5.0	4.7	3.0	3.0	4.7	
All-Red Time (s)	2.0	1.0		2.6	1.0	2.6	2.0	1.3	2.6	2.6	1.3	
Lost Time Adjust (s)	-2.0	-1.2		-0.6	-1.2	-2.0	-2.0	-1.0	-0.6	-0.6	-1.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	3.6	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	2.0		2.0	2.0	1.0	3.0	6.0	2.0	1.0	6.0	
Minimum Gap (s)	3.0	2.0		2.0	2.0	1.0	3.0	3.4	2.0	1.0	3.4	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	0.0	0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	30.0	0.0	0.0	30.0	
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	
Act Effect Green (s)	9.1	20.2		10.1	21.2	37.4	9.1	30.1	40.2	13.5	34.5	
Actuated g/C Ratio	0.10	0.21		0.11	0.23	0.40	0.10	0.32	0.43	0.14	0.37	
v/c Ratio	1.34	0.85		0.65	0.59	0.21	0.65	0.82	0.25	0.62	0.87	
Control Delay	220.0	58.6		59.8	41.0	13.1	62.2	41.1	9.4	51.3	42.6	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	220.0	58.6		59.8	41.0	13.1	62.2	41.1	9.4	51.3	42.6	

Lanes, Volumes, Timings  
300: N College Road & Blue Clay Road

06/30/2020

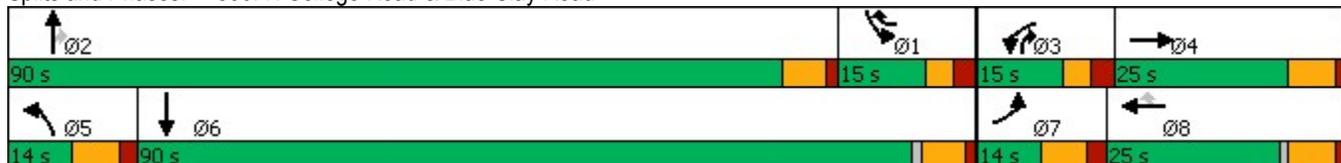


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	E		E	D	B	E	D	A	D	D	
Approach Delay		123.8			38.2			37.2			44.5	
Approach LOS	F			D			D			D		
Queue Length 50th (ft)	~176	192		71	130	33	64	265	31	88	297	
Queue Length 95th (ft)	#370	#410		#176	244	80	#166	385	53	#186	431	
Internal Link Dist (ft)		2826			1307			4236			2421	
Turn Bay Length (ft)	150			150		150	100		250	125		
Base Capacity (vph)	170	393		189	419	630	170	1688	677	253	1575	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	1.34	0.85		0.65	0.59	0.21	0.65	0.29	0.25	0.62	0.35	

Intersection Summary

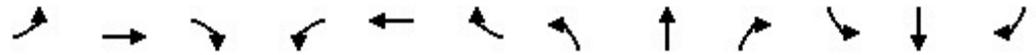
Area Type: Other  
 Cycle Length: 145  
 Actuated Cycle Length: 94  
 Natural Cycle: 90  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 1.34  
 Intersection Signal Delay: 58.6  
 Intersection LOS: E  
 Intersection Capacity Utilization 73.6%  
 ICU Level of Service D  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 300: N College Road & Blue Clay Road



Lanes, Volumes, Timings  
300: N College Road & Blue Clay Road

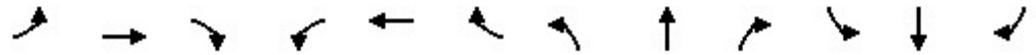
06/30/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	288	248	54	133	275	135	46	292	86	144	467	280
Future Volume (vph)	288	248	54	133	275	135	46	292	86	144	467	280
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		150	100		250	125		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	50			50			50			50		
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		0.973				0.850			0.850		0.944	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1812	0	1770	1863	1583	1770	1863	1583	1770	1758	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1812	0	1770	1863	1583	1770	1863	1583	1770	1758	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			45			45	
Link Distance (ft)		2906			1387			4316			2501	
Travel Time (s)		36.0			17.2			65.4			37.9	
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)	320	276	60	148	306	150	51	324	96	160	519	311
Shared Lane Traffic (%)												
Lane Group Flow (vph)	320	336	0	148	306	150	51	324	96	160	830	0
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8	1	5	2	3	1	6	
Permitted Phases						8			2			
Detector Phase	7	4		3	8	1	5	2	3	1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	14.0	7.0	7.0	14.0	
Minimum Split (s)	14.0	13.2		12.6	13.2	12.6	14.0	21.0	12.6	12.6	20.0	
Total Split (s)	14.0	25.0		15.0	25.0	15.0	14.0	90.0	15.0	15.0	90.0	
Total Split (%)	9.7%	17.2%		10.3%	17.2%	10.3%	9.7%	62.1%	10.3%	10.3%	62.1%	
Maximum Green (s)	7.0	18.8		9.4	18.8	9.4	7.0	84.0	9.4	9.4	84.0	
Yellow Time (s)	5.0	5.2		3.0	5.2	3.0	5.0	4.7	3.0	3.0	4.7	
All-Red Time (s)	2.0	1.0		2.6	1.0	2.6	2.0	1.3	2.6	2.6	1.3	
Lost Time Adjust (s)	-1.2	-1.2		-0.6	-1.2	-2.0	-1.0	-1.0	-0.6	-0.6	-1.0	
Total Lost Time (s)	5.8	5.0		5.0	5.0	3.6	6.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lead	Lead	Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	2.0		2.0	2.0	1.0	3.0	6.0	2.0	1.0	6.0	
Minimum Gap (s)	3.0	2.0		2.0	2.0	1.0	3.0	3.4	2.0	1.0	3.4	
Time Before Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	15.0	0.0	0.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0	0.0	0.0	30.0	0.0	0.0	30.0	
Recall Mode	None	None		None	None	None	None	Min	None	None	Min	
Act Effct Green (s)	8.6	20.9		10.4	21.9	62.3	8.4	27.5	38.0	37.4	59.8	
Actuated g/C Ratio	0.07	0.18		0.09	0.19	0.53	0.07	0.23	0.32	0.32	0.51	
v/c Ratio	2.48	1.04		0.94	0.88	0.18	0.40	0.74	0.19	0.28	0.93	
Control Delay	713.6	110.4		114.7	75.9	9.4	70.1	53.6	17.7	31.2	43.2	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	713.6	110.4		114.7	75.9	9.4	70.1	53.6	17.7	31.2	43.2	

Lanes, Volumes, Timings  
 300: N College Road & Blue Clay Road

06/30/2020

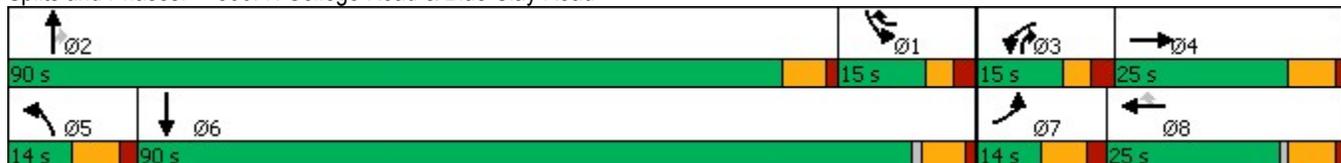


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	F	F		F	E	A	E	D	B	C	D	
Approach Delay		404.6			68.9			48.1			41.3	
Approach LOS		F			E			D			D	
Queue Length 50th (ft)	~422	~302		~119	239	35	39	238	34	87	579	
Queue Length 95th (ft)	#719	#607		#314	#524	83	#95	364	68	166	778	
Internal Link Dist (ft)		2826			1307			4236			2421	
Turn Bay Length (ft)	150			150		150	100		250	125		
Base Capacity (vph)	129	323		157	348	841	126	1378	512	565	1312	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	2.48	1.04		0.94	0.88	0.18	0.40	0.24	0.19	0.28	0.63	

Intersection Summary

Area Type: Other  
 Cycle Length: 145  
 Actuated Cycle Length: 117.2  
 Natural Cycle: 150  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 2.48  
 Intersection Signal Delay: 136.2  
 Intersection LOS: F  
 Intersection Capacity Utilization 95.8%  
 ICU Level of Service F  
 Analysis Period (min) 15  
 ~ Volume exceeds capacity, queue is theoretically infinite.  
 Queue shown is maximum after two cycles.  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

Splits and Phases: 300: N College Road & Blue Clay Road



## *Dairy Farm Road at Site Access 1*

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			L		T
Traffic Vol, veh/h	4	51	18	77	207	4
Future Vol, veh/h	4	51	18	77	207	4
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	4	57	20	86	230	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	358	232	234	0	0
Stage 1	232	-	-	-	-
Stage 2	126	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	640	807	1333	-	-
Stage 1	807	-	-	-	-
Stage 2	900	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	630	807	1333	-	-
Mov Cap-2 Maneuver	630	-	-	-	-
Stage 1	794	-	-	-	-
Stage 2	900	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1333	-	791	-	-
HCM Lane V/C Ratio	0.015	-	0.077	-	-
HCM Control Delay (s)	7.7	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	4	33	52	281	118	4
Future Vol, veh/h	4	33	52	281	118	4
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	4	37	58	312	131	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	561	133	135	0	0
Stage 1	133	-	-	-	-
Stage 2	428	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	489	916	1449	-	-
Stage 1	893	-	-	-	-
Stage 2	657	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	466	916	1449	-	-
Mov Cap-2 Maneuver	466	-	-	-	-
Stage 1	850	-	-	-	-
Stage 2	657	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1449	-	829	-	-
HCM Lane V/C Ratio	0.04	-	0.05	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	51	18	77	207	4
Future Vol, veh/h	4	51	18	77	207	4
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	4	57	20	86	230	4

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	358	232	234	0	-	0
Stage 1	232	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	640	807	1333	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	630	807	1333	-	-	-
Mov Cap-2 Maneuver	630	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	900	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	1.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1333	-	791	-	-
HCM Lane V/C Ratio	0.015	-	0.077	-	-
HCM Control Delay (s)	7.7	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	4	33	52	281	118	4
Future Vol, veh/h	4	33	52	281	118	4
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	4	37	58	312	131	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	561	133	135	0	0
Stage 1	133	-	-	-	-
Stage 2	428	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	489	916	1449	-	-
Stage 1	893	-	-	-	-
Stage 2	657	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	466	916	1449	-	-
Mov Cap-2 Maneuver	466	-	-	-	-
Stage 1	850	-	-	-	-
Stage 2	657	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	1.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1449	-	829	-	-
HCM Lane V/C Ratio	0.04	-	0.05	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

## *Dairy Farm Road at Site Access 2*

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	4	26	9	68	182	4
Future Vol, veh/h	4	26	9	68	182	4
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	4	29	10	76	202	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	300	204	206	0	0
Stage 1	204	-	-	-	-
Stage 2	96	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	691	837	1365	-	-
Stage 1	830	-	-	-	-
Stage 2	928	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	685	837	1365	-	-
Mov Cap-2 Maneuver	685	-	-	-	-
Stage 1	823	-	-	-	-
Stage 2	928	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1365	-	813	-	-
HCM Lane V/C Ratio	0.007	-	0.041	-	-
HCM Control Delay (s)	7.7	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	4	17	26	256	39	0
Future Vol, veh/h	4	17	26	256	39	0
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	4	19	29	284	43	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	385	43	43	0	0
Stage 1	43	-	-	-	-
Stage 2	342	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	618	1027	1566	-	-
Stage 1	979	-	-	-	-
Stage 2	719	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	604	1027	1566	-	-
Mov Cap-2 Maneuver	604	-	-	-	-
Stage 1	957	-	-	-	-
Stage 2	719	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1566	-	906	-	-
HCM Lane V/C Ratio	0.018	-	0.026	-	-
HCM Control Delay (s)	7.3	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	4	26	9	68	182	0
Future Vol, veh/h	4	26	9	68	182	0
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	4	29	10	76	202	0

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	298	202	202	0	0
Stage 1	202	-	-	-	-
Stage 2	96	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	693	839	1370	-	-
Stage 1	832	-	-	-	-
Stage 2	928	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	687	839	1370	-	-
Mov Cap-2 Maneuver	687	-	-	-	-
Stage 1	825	-	-	-	-
Stage 2	928	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1370	-	815	-	-
HCM Lane V/C Ratio	0.007	-	0.041	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T		T		T	
Traffic Vol, veh/h	4	17	26	256	39	4
Future Vol, veh/h	4	17	26	256	39	4
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	4	19	29	284	43	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	387	45	47	0	0
Stage 1	45	-	-	-	-
Stage 2	342	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	616	1025	1560	-	-
Stage 1	977	-	-	-	-
Stage 2	719	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	602	1025	1560	-	-
Mov Cap-2 Maneuver	602	-	-	-	-
Stage 1	956	-	-	-	-
Stage 2	719	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1560	-	904	-	-
HCM Lane V/C Ratio	0.019	-	0.026	-	-
HCM Control Delay (s)	7.4	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

## *Dairy Farm Road at Site Access 3*

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	4	9	4	65	173	4
Future Vol, veh/h	4	9	4	65	173	4
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	4	10	4	72	192	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	274	194	196	0	0
Stage 1	194	-	-	-	-
Stage 2	80	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	716	847	1377	-	-
Stage 1	839	-	-	-	-
Stage 2	943	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	714	847	1377	-	-
Mov Cap-2 Maneuver	714	-	-	-	-
Stage 1	836	-	-	-	-
Stage 2	943	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1377	-	801	-	-
HCM Lane V/C Ratio	0.003	-	0.018	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	4	6	9	247	33	4
Future Vol, veh/h	4	6	9	247	33	4
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	4	7	10	274	37	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	333	39	41	0	0
Stage 1	39	-	-	-	-
Stage 2	294	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	662	1033	1568	-	-
Stage 1	983	-	-	-	-
Stage 2	756	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	657	1033	1568	-	-
Mov Cap-2 Maneuver	657	-	-	-	-
Stage 1	975	-	-	-	-
Stage 2	756	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1568	-	841	-	-
HCM Lane V/C Ratio	0.006	-	0.013	-	-
HCM Control Delay (s)	7.3	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	4	9	3	65	173	4
Future Vol, veh/h	4	9	3	65	173	4
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	4	10	3	72	192	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	272	194	196	0	-
Stage 1	194	-	-	-	-
Stage 2	78	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	717	847	1377	-	-
Stage 1	839	-	-	-	-
Stage 2	945	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	716	847	1377	-	-
Mov Cap-2 Maneuver	716	-	-	-	-
Stage 1	837	-	-	-	-
Stage 2	945	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1377	-	802	-	-
HCM Lane V/C Ratio	0.002	-	0.018	-	-
HCM Control Delay (s)	7.6	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	4	6	9	247	33	4
Future Vol, veh/h	4	6	9	247	33	4
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	4	7	10	274	37	4

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	333	39	41	0	0
Stage 1	39	-	-	-	-
Stage 2	294	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	662	1033	1568	-	-
Stage 1	983	-	-	-	-
Stage 2	756	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	657	1033	1568	-	-
Mov Cap-2 Maneuver	657	-	-	-	-
Stage 1	975	-	-	-	-
Stage 2	756	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1568	-	841	-	-
HCM Lane V/C Ratio	0.006	-	0.013	-	-
HCM Control Delay (s)	7.3	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

# Queueing and Blocking Reports

Queuing and Blocking Report  
AM Existing

06/12/2020

Intersection: 100: Sidbury Road & Dairy Farm Road

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	25	51
Average Queue (ft)	3	33
95th Queue (ft)	17	52
Link Distance (ft)	2916	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 200: Blue Clay Road & Sidbury Road

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	136	25
Average Queue (ft)	75	2
95th Queue (ft)	116	15
Link Distance (ft)	3607	1928
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: N College Road & Blue Clay Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	TR
Maximum Queue (ft)	100	607	199	283	125	253	70	174	272
Average Queue (ft)	80	185	29	103	62	114	18	55	124
95th Queue (ft)	123	382	90	189	124	223	51	120	217
Link Distance (ft)	2851		1300		4261			2443	
Upstream Blk Time (%)									
Queuing Penalty (veh)									
Storage Bay Dist (ft)	50	150		75		250	125		
Storage Blk Time (%)	42	42	3		3	13	7		
Queuing Penalty (veh)	99	77	1		15	27	9		

Network Summary

Network wide Queuing Penalty: 228
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Intersection: 100: Sidbury Road & Dairy Farm Road

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	31	92
Average Queue (ft)	10	37
95th Queue (ft)	30	66
Link Distance (ft)		2916
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 200: Blue Clay Road & Sidbury Road

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	276	25
Average Queue (ft)	118	2
95th Queue (ft)	210	14
Link Distance (ft)	3607	1928
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: N College Road & Blue Clay Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	TR
Maximum Queue (ft)	200	2903	200	387	100	580	400	174	402
Average Queue (ft)	194	2051	101	219	92	300	82	117	245
95th Queue (ft)	224	3569	216	341	112	487	292	208	396
Link Distance (ft)		2851		1300		4261			2443
Upstream Blk Time (%)		38							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)	150		150		100		250	125	
Storage Blk Time (%)	83	19	0	29	11	40		4	31
Queuing Penalty (veh)	241	39	0	25	62	97		22	42

Network Summary

Network wide Queuing Penalty: 528
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Intersection: 100: Sidbury Road & Dairy Farm Road

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	53	21	115
Average Queue (ft)	14	1	60
95th Queue (ft)	38	7	103
Link Distance (ft)		21410	903
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: Blue Clay Road & Sidbury Road

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	314	53
Average Queue (ft)	121	6
95th Queue (ft)	232	27
Link Distance (ft)	3607	1928
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: N College Road & Blue Clay Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	TR
Maximum Queue (ft)	200	2866	200	562	150	486	400	174	440
Average Queue (ft)	197	2008	113	341	118	253	74	110	250
95th Queue (ft)	215	3267	252	527	189	421	264	206	404
Link Distance (ft)		2851		1300		4261			2443
Upstream Blk Time (%)		25							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)	150		150		100		250	125	
Storage Blk Time (%)	95	13	0	60	37	34		5	32
Queuing Penalty (veh)	286	26	2	67	218	86		25	44

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Intersection: 600: Dairy Farm Road & Site Access 1

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Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	42	26
Average Queue (ft)	19	3
95th Queue (ft)	38	15
Link Distance (ft)	546	903
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

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Intersection: 700: Dairy Farm Road & Site Access 2

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Movement	EB
Directions Served	LR
Maximum Queue (ft)	66
Average Queue (ft)	23
95th Queue (ft)	53
Link Distance (ft)	457
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

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Intersection: 800: Dairy Farm Road & Site Access 3

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Movement	EB
Directions Served	LR
Maximum Queue (ft)	20
Average Queue (ft)	4
95th Queue (ft)	17
Link Distance (ft)	503
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

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Network Summary

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Network wide Queuing Penalty: 753

Intersection: 100: Sidbury Road & Dairy Farm Road

Movement	EB	WB	SB	SB
Directions Served	L	TR	L	R
Maximum Queue (ft)	31	22	74	104
Average Queue (ft)	14	1	15	50
95th Queue (ft)	35	7	44	82
Link Distance (ft)		21410		903
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	400		150	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 200: Blue Clay Road & Sidbury Road

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	162	92	72
Average Queue (ft)	95	44	16
95th Queue (ft)	154	73	43
Link Distance (ft)	3595	1293	1928
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 300: N College Road & Blue Clay Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	200	1841	128	177	195	150	439	400	175	408
Average Queue (ft)	199	1413	54	104	50	112	189	51	113	249
95th Queue (ft)	200	1957	112	157	106	185	323	213	225	368
Link Distance (ft)		2851		1293			4261			2429
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)	150		150		150	100		250	125	
Storage Blk Time (%)	90	15		1		25	23		4	31
Queuing Penalty (veh)	272	30		3		146	58		19	43

Intersection: 600: Dairy Farm Road & Site Access 1

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	42	26
Average Queue (ft)	19	2
95th Queue (ft)	38	15
Link Distance (ft)	540	903
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 700: Dairy Farm Road & Site Access 2

Movement	EB
Directions Served	LR
Maximum Queue (ft)	66
Average Queue (ft)	23
95th Queue (ft)	53
Link Distance (ft)	457
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 800: Dairy Farm Road & Site Access 3

Movement	EB
Directions Served	LR
Maximum Queue (ft)	20
Average Queue (ft)	4
95th Queue (ft)	17
Link Distance (ft)	503
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 572

Intersection: 100: Sidbury Road & Dairy Farm Road

Movement	EB	WB	SB
Directions Served	L	TR	LR
Maximum Queue (ft)	54	22	66
Average Queue (ft)	25	1	29
95th Queue (ft)	54	7	52
Link Distance (ft)		21411	2916
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	150		
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 200: Blue Clay Road & Sidbury Road

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	161	27
Average Queue (ft)	60	6
95th Queue (ft)	115	24
Link Distance (ft)	3607	1928
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: N College Road & Blue Clay Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	TR
Maximum Queue (ft)	100	2866	200	372	60	202	24	175	362
Average Queue (ft)	99	1638	57	156	13	82	1	80	247
95th Queue (ft)	100	2952	144	260	43	156	8	200	370
Link Distance (ft)		2851		1300		4261			2443
Upstream Blk Time (%)		13							
Queuing Penalty (veh)		0							
Storage Bay Dist (ft)	50		150		75		250	125	
Storage Blk Time (%)	90	40		12	0	12			28
Queuing Penalty (veh)	166	107		11	0	5			31

Network Summary

Network wide Queuing Penalty: 319
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Intersection: 100: Sidbury Road & Dairy Farm Road

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	53	51
Average Queue (ft)	26	25
95th Queue (ft)	54	42
Link Distance (ft)	2916	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 200: Blue Clay Road & Sidbury Road

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	133	48
Average Queue (ft)	65	4
95th Queue (ft)	108	21
Link Distance (ft)	3607	1928
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 300: N College Road & Blue Clay Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	TR
Maximum Queue (ft)	200	2890	200	1287	100	482	49	174	659
Average Queue (ft)	199	2647	163	951	42	189	8	85	420
95th Queue (ft)	201	3417	260	1297	97	361	29	190	621
Link Distance (ft)	2851		1300		4261			2443	
Upstream Blk Time (%)	75		0						
Queuing Penalty (veh)	0		0						
Storage Bay Dist (ft)	150		150		100		250		125
Storage Blk Time (%)	99	8	6	83	2	36	5		40
Queuing Penalty (veh)	266	22	23	96	5	38	36		52

Network Summary

Network wide Queuing Penalty: 538
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Intersection: 100: Sidbury Road & Dairy Farm Road

Movement	EB	SB
Directions Served	L	LR
Maximum Queue (ft)	143	70
Average Queue (ft)	39	34
95th Queue (ft)	84	61
Link Distance (ft)		928
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 200: Blue Clay Road & Sidbury Road

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	1019	22	29
Average Queue (ft)	354	1	7
95th Queue (ft)	869	9	25
Link Distance (ft)	3607	1300	1928
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 300: N College Road & Blue Clay Road

Movement	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	T	R	L	TR
Maximum Queue (ft)	200	2885	200	1314	150	444	400	175	594
Average Queue (ft)	199	2426	149	1166	33	165	54	104	398
95th Queue (ft)	200	3650	270	1567	94	355	212	212	535
Link Distance (ft)		2851		1300		4261			2443
Upstream Blk Time (%)		66		27					
Queuing Penalty (veh)		0		106					
Storage Bay Dist (ft)	150		150		100		250	125	
Storage Blk Time (%)	97	20	1	82		28		3	40
Queuing Penalty (veh)	293	57	5	110		37		23	58

Intersection: 600: Dairy Farm Road & Site Access 1

Movement	EB
Directions Served	LR
Maximum Queue (ft)	42
Average Queue (ft)	17
95th Queue (ft)	38
Link Distance (ft)	546
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 700: Dairy Farm Road & Site Access 2

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	52	24
Average Queue (ft)	12	2
95th Queue (ft)	39	12
Link Distance (ft)	457	911
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 800: Dairy Farm Road & Site Access 3

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	18	25
Average Queue (ft)	3	1
95th Queue (ft)	13	8
Link Distance (ft)	524	436
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 687

Intersection: 100: Sidbury Road & Dairy Farm Road

Movement	EB	WB	SB	SB
Directions Served	L	TR	L	R
Maximum Queue (ft)	75	30	45	66
Average Queue (ft)	39	1	17	26
95th Queue (ft)	73	10	35	45
Link Distance (ft)		21410		928
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	400		150	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 200: Blue Clay Road & Sidbury Road

Movement	WB	NB	SB
Directions Served	LR	TR	LT
Maximum Queue (ft)	116	114	30
Average Queue (ft)	65	79	11
95th Queue (ft)	104	117	33
Link Distance (ft)	3595	1293	1928
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 300: N College Road & Blue Clay Road

Movement	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	L	T	R	L	T	R	L	TR
Maximum Queue (ft)	200	2885	200	775	200	149	578	400	175	556
Average Queue (ft)	199	2412	116	301	109	35	213	34	96	360
95th Queue (ft)	203	3679	211	678	228	104	399	152	209	506
Link Distance (ft)		2851		1293			4261			2429
Upstream Blk Time (%)		66								
Queuing Penalty (veh)		0								
Storage Bay Dist (ft)	150		150		150	100		250	125	
Storage Blk Time (%)	97	15	5	30	1		44		1	37
Queuing Penalty (veh)	292	43	21	82	3		58		5	54

Intersection: 600: Dairy Farm Road & Site Access 1

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	42	31
Average Queue (ft)	17	4
95th Queue (ft)	39	20
Link Distance (ft)	540	928
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 700: Dairy Farm Road & Site Access 2

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	52	25
Average Queue (ft)	12	2
95th Queue (ft)	39	12
Link Distance (ft)	457	909
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 800: Dairy Farm Road & Site Access 3

Movement	EB
Directions Served	LR
Maximum Queue (ft)	18
Average Queue (ft)	3
95th Queue (ft)	13
Link Distance (ft)	524
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 558

# Trip Generation

## Trip Generation Summary

Alternative: Alternative 1

Phase:

Open Date: 5/5/2020

Project: New Project

Analysis Date: 5/5/2020

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic					
		*	Enter	Exit	Total	*	Enter	Exit	Total	*	Enter	Exit	Total
221	MID-RISE 1 320 Dwelling Units		871	870	1741		30	85	115		86	55	141
Unadjusted Volume			871	870	1741		30	85	115		86	55	141
Internal Capture Trips			0	0	0		0	0	0		0	0	0
Pass-By Trips			0	0	0		0	0	0		0	0	0
Volume Added to Adjacent Streets			871	870	1741		30	85	115		86	55	141

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

\* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

**TRIP GENERATION 10, TRAFFICWARE, LLC**

# Traffic Volume Data

Sidbury Road at Dairy Farm Road											
AM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL	40	40		40	43		43	85%		26	69
EBT	126	127		127	134	41	175				175
EBR											
WBU											
WBL											
WBT	327	330		330	348	102	450				450
WBR	21	21		21	23		23	15%		5	28
NBU											
NBL											
NBT											
NBR											
SBU											
SBL	16	16		16	17		17		15%	13	30
SBT		0									
SBR	147	148		148	157		157		85%	72	229
Total	677	684	0	684	722	143	865	1	1	116	981
200											

Sidbury Road at Blue Clay Road											
AM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL											
EBT											
EBR											
WBU											
WBL	424	428		428	451	102	553		85%	72	625
WBT											
WBR	18	18		18	20		20				20
NBU											
NBL											
NBT	5	5		5	6		6				6
NBR	203	205		205	216	41	257	85%		26	283
SBU											
SBL	21	21		21	23		23				23
SBT	13	13		13	14		14				14
SBR											
Total	684	691	0	691	730	143	873	1	1	98	971
300											

Blue Clay Road at N. College Road											
AM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL	179	181		181	191	13	204				204
EBT	221	223		223	235	24	259	40%		12	271
EBR	12	12		12	13	18	31				31
WBU											
WBL	47	47		47	50	35	85		30%	26	111
WBT	127	128		128	135	52	187	40%		34	221
WBR	87	88		88	93	14	107	15%		13	120
NBU											
NBL	88	89		89	94	6	100				100
NBT	414	418		418	440		440				440
NBR	122	123		123	130	12	142	30%		9	151
SBU											
SBL	122	123		123	130	5	135	15%		5	140
SBT	232	234		234	247		247				247
SBR	229	231		231	244	4	248				248
Total	1880	1899	0	1899	2002	183	2185	1	1	99	2284
400											

Sidbury Road at Dairy Farm Road											
PM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL	213	215		215	227		227	85%		73	300
EBT	189	191		191	201	116	317				317
EBR											
WBU											
WBL											
WBT	178	180		180	189	74	263				263
WBR	20	20		20	22		22	15%		13	35
NBU											
NBL											
NBT											
NBR											
SBU											
SBL	15	15		15	16		16		15%	8	24
SBT											
SBR	75	76		76	80		80		85%	47	127
Total	690	697	0	697	735	190	925	1	1	141	1066
200											

13.41%

Sidbury Road at Blue Clay Road											
PM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL											
EBT											
EBR											
WBU											
WBL	253	256		256	269	74	343		85%	47	390
WBT											
WBR	22	22		22	24		24				24
NBU											
NBL											
NBT	16	16		16	17		17				17
NBR	394	398		398	419	116	535	85%		73	608
SBU											
SBL	15	15		15	16		16				16
SBT	4	4		4	5		5				5
SBR											
Total	704	711	0	711	750	190	940	1	1	120	1060
300											

11.23%

Blue Clay Road at N. College Road											
PM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL	262	265		265	279	9	288				288
EBT	144	145		145	153	61	214	40%		34	248
EBR	39	39		39	42	12	54				54
WBU											
WBL	87	88		88	93	23	116		30%	17	133
WBT	198	200		200	211	42	253	40%		22	275
WBR	111	112		112	118	9	127	15%		8	135
NBU											
NBL	24	24		24	26	20	46				46
NBT	275	278		278	292		292				292
NBR	18	18		18	20	40	60	30%		26	86
SBU											
SBL	108	109		109	115	16	131	15%		13	144
SBT	439	443		443	467	14	467				467
SBR	250	253		253	266	14	280				280
Total	1955	1975	0	1975	2082	246	2328	1	1	120	2448
400											

4.53%

600

Old Dairy Road at Site Access 1											
AM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL											
EBT											
EBR									60%	51	51
WBU											
WBL											
WBT											
WBR											
NBU											
NBL								60%		18	18
NBT		61		61	65		65	40%		12	77
NBR											
SBU											
SBL											
SBT		164		164	173		173		40%	34	207
SBR											
Total	0	225	0	225	238	0	238	1	1	115	353

700

Old Dairy Road at Site Access 2											
AM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL											
EBT											
EBR											
WBU									30%	26	26
WBL											
WBT											
WBR											
NBU											
NBL								30%		9	9
NBT		61		61	65		65	10%		3	68
NBR											
SBU											
SBL											
SBT		164		164	173		173		10%	9	162
SBR											
Total	0	225	0	225	238	0	238	0	0	47	285

800

Old Dairy Road at Site Access 3											
AM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL											
EBT											
EBR											
WBU											
WBL											
WBT											
WBR											
NBU											
NBL								10%		3	3
NBT		61		61	65		65				65
NBR											
SBU											
SBL											
SBT		164		164	173		173				173
SBR											
Total	0	225	0	225	238	0	238	0	0	12	250

5.04%

600

Old Dairy Road at Site Access 1											
PM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL											
EBT											
EBR											
WBU											
WBL											
WBT											
WBR											
NBU											
NBL								60%		52	52
NBT		235		235	247		247	40%		34	281
NBR											
SBU											
SBL											
SBT		91		91	96		96		40%	22	118
SBR											
Total	0	326	0	326	343	0	343	1	1	141	484

700

Old Dairy Road at Site Access 2											
PM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL											
EBT											
EBR											
WBU											
WBL											
WBT											
WBR											
NBU											
NBL								30%		26	26
NBT		235		235	247		247	10%		9	256
NBR											
SBU											
SBL											
SBT		31		31	33		33		10%	6	39
SBR											
Total	0	266	0	266	280	0	280	0	0	58	338

800

Old Dairy Road at Site Access 3											
PM Peak	2019 TMC	2020 Base	Balancing	Existing	2024 Projected	AD Total	2024 Future No Build	Dist % IN	Dist % OUT	Site Trips	2024 Build
EBU											
EBL											
EBT											
EBR											
WBU											
WBL											
WBT											
WBR											
NBU											
NBL								10%		9	9
NBT		235		235	247		247				247
NBR											
SBU											
SBL											
SBT		31		31	33		33				33
SBR											
Total	0	266	0	266	280	0	280	0	0	15	295

5.04%

# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

Counted by: L . Bounds

File Name : Sidbury Rd @ Dairy Farm Rd.

Site Code : 00190205

Start Date : 9/24/2019

Page No : 1

Weather: Clear

## Groups Printed- Cars - Trucks and Buses

Start Time	Dairy Farm Rd North				Sidbury Rd East				South	Sidbury Rd West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	App. Total	Right	Thru	Left	App. Total	
07:00 AM	27	0	2	29	3	50	0	53	0	0	12	9	21	103
07:15 AM	39	0	3	42	3	74	0	77	0	0	25	9	34	153
07:30 AM	46	0	5	51	11	91	0	102	0	0	30	11	41	194
07:45 AM	30	0	4	34	4	103	0	107	0	0	27	7	34	175
Total	142	0	14	156	21	318	0	339	0	0	94	36	130	625
08:00 AM	32	0	4	36	3	59	0	62	0	0	44	13	57	155
08:15 AM	17	0	4	21	4	66	0	70	0	0	29	17	46	137
08:30 AM	26	0	2	28	6	76	0	82	0	0	34	16	50	160
08:45 AM	27	0	5	32	3	72	0	75	0	0	56	23	79	186
Total	102	0	15	117	16	273	0	289	0	0	163	69	232	638
*** BREAK ***														
04:00 PM	17	0	6	23	4	42	0	46	0	0	51	43	94	163
04:15 PM	17	0	3	20	4	71	0	75	0	0	61	59	120	215
04:30 PM	18	0	0	18	5	24	0	29	0	0	40	48	88	135
04:45 PM	23	0	5	28	7	39	0	46	0	0	37	42	79	153
Total	75	0	14	89	20	176	0	196	0	0	189	192	381	666
05:00 PM	17	0	7	24	4	44	0	48	0	0	51	64	115	187
05:15 PM	19	0	4	23	3	43	0	46	0	0	50	47	97	166
05:30 PM	24	0	3	27	5	32	0	37	0	2	50	43	95	159
05:45 PM	10	0	4	14	4	44	0	48	0	0	45	35	80	142
Total	70	0	18	88	16	163	0	179	0	2	196	189	387	654
Grand Total	389	0	61	450	73	930	0	1003	0	2	642	486	1130	2583
Apprch %	86.4	0	13.6		7.3	92.7	0			0.2	56.8	43		
Total %	15.1	0	2.4	17.4	2.8	36	0	38.8	0	0.1	24.9	18.8	43.7	
Cars	369	0	60	429	62	901	0	963	0	2	619	415	1036	2428
% Cars	94.9	0	98.4	95.3	84.9	96.9	0	96	0	100	96.4	85.4	91.7	94
Trucks and Buses	20	0	1	21	11	29	0	40	0	0	23	71	94	155
% Trucks and Buses	5.1	0	1.6	4.7	15.1	3.1	0	4	0	0	3.6	14.6	8.3	6

# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

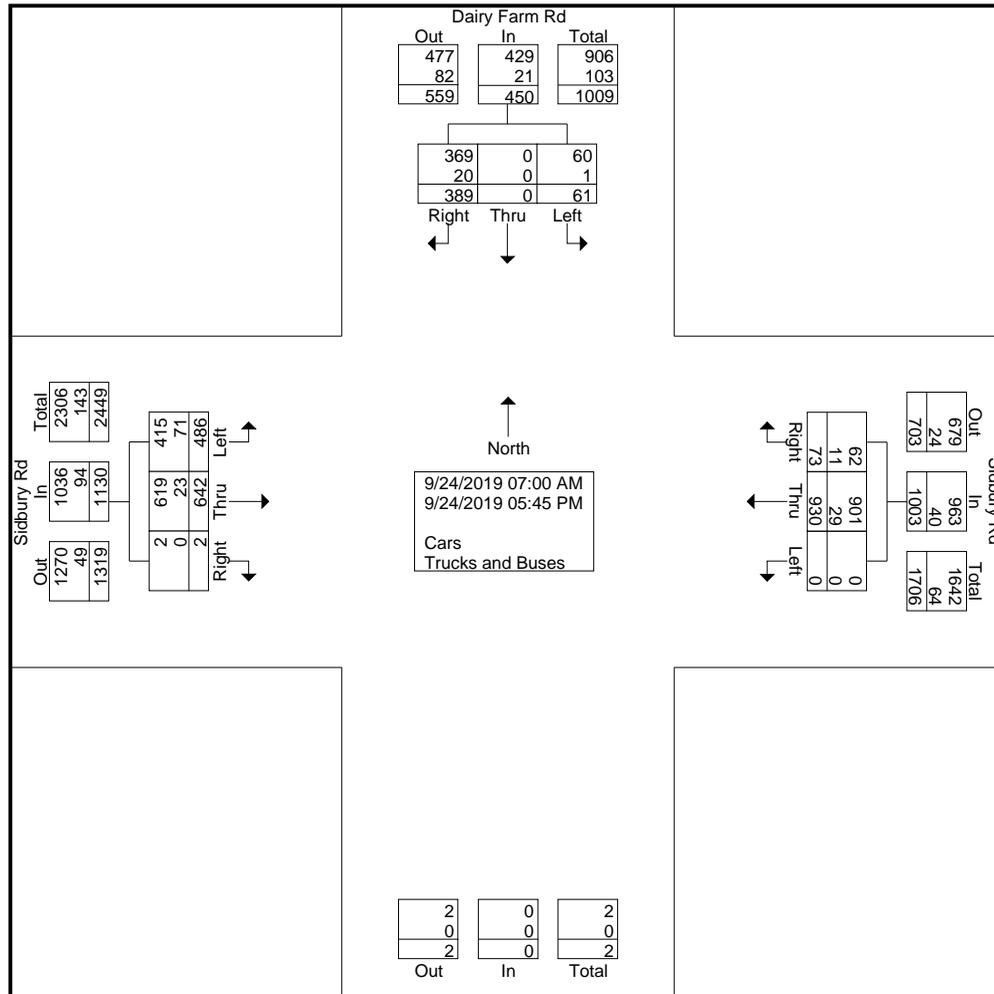
Ph:(336)744-1636

File Name : Sidbury Rd @ Dairy Farm Rd.

Site Code : 00190205

Start Date : 9/24/2019

Page No : 2



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

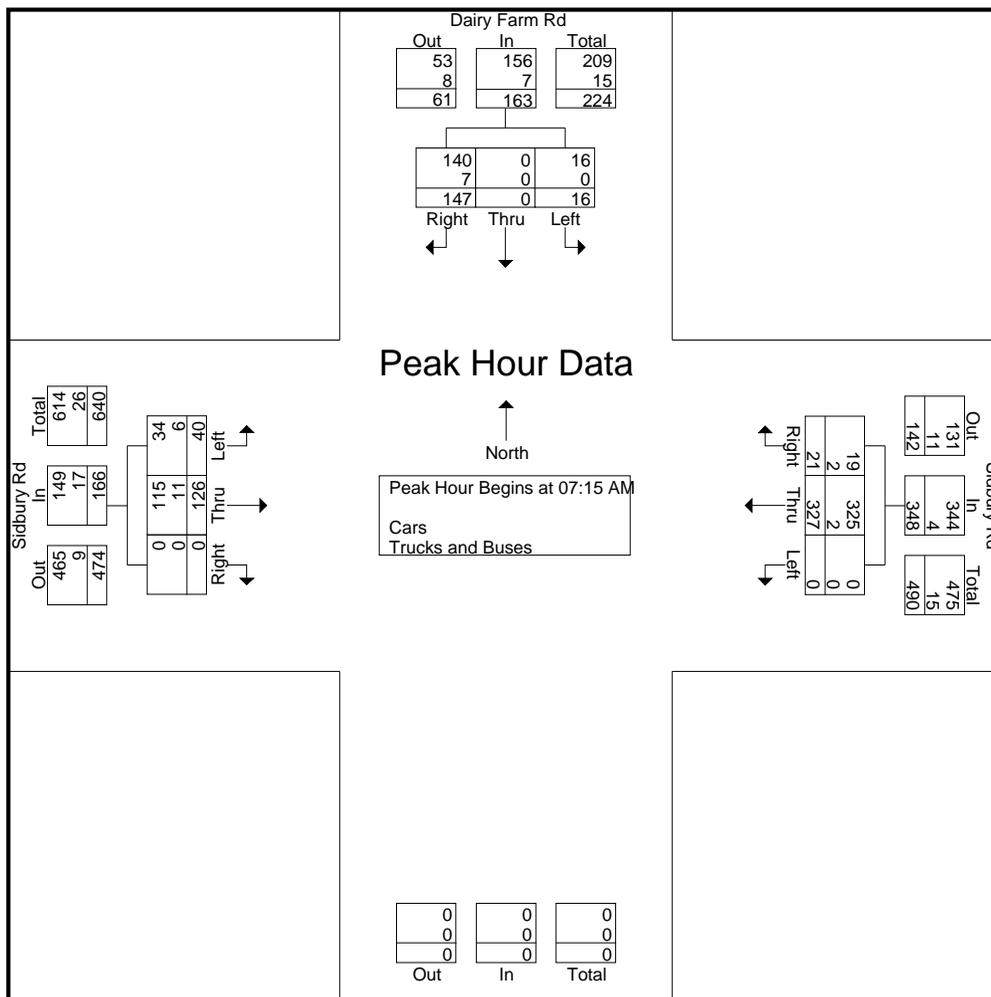
File Name : Sidbury Rd @ Dairy Farm Rd.

Site Code : 00190205

Start Date : 9/24/2019

Page No : 3

Start Time	Dairy Farm Rd North				Sidbury Rd East				South	Sidbury Rd West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	39	0	3	42	3	74	0	77	0	0	25	9	34	153
07:30 AM	46	0	5	51	11	91	0	102	0	0	30	11	41	194
07:45 AM	30	0	4	34	4	103	0	107	0	0	27	7	34	175
08:00 AM	32	0	4	36	3	59	0	62	0	0	44	13	57	155
Total Volume	147	0	16	163	21	327	0	348	0	0	126	40	166	677
% App. Total	90.2	0	9.8		6	94	0			0	75.9	24.1		
PHF	.799	.000	.800	.799	.477	.794	.000	.813	.000	.000	.716	.769	.728	.872
Cars	140	0	16	156	19	325	0	344	0	0	115	34	149	649
% Cars	95.2	0	100	95.7	90.5	99.4	0	98.9	0	0	91.3	85.0	89.8	95.9
Trucks and Buses	7	0	0	7	2	2	0	4	0	0	11	6	17	28
% Trucks and Buses	4.8	0	0	4.3	9.5	0.6	0	1.1	0	0	8.7	15.0	10.2	4.1



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

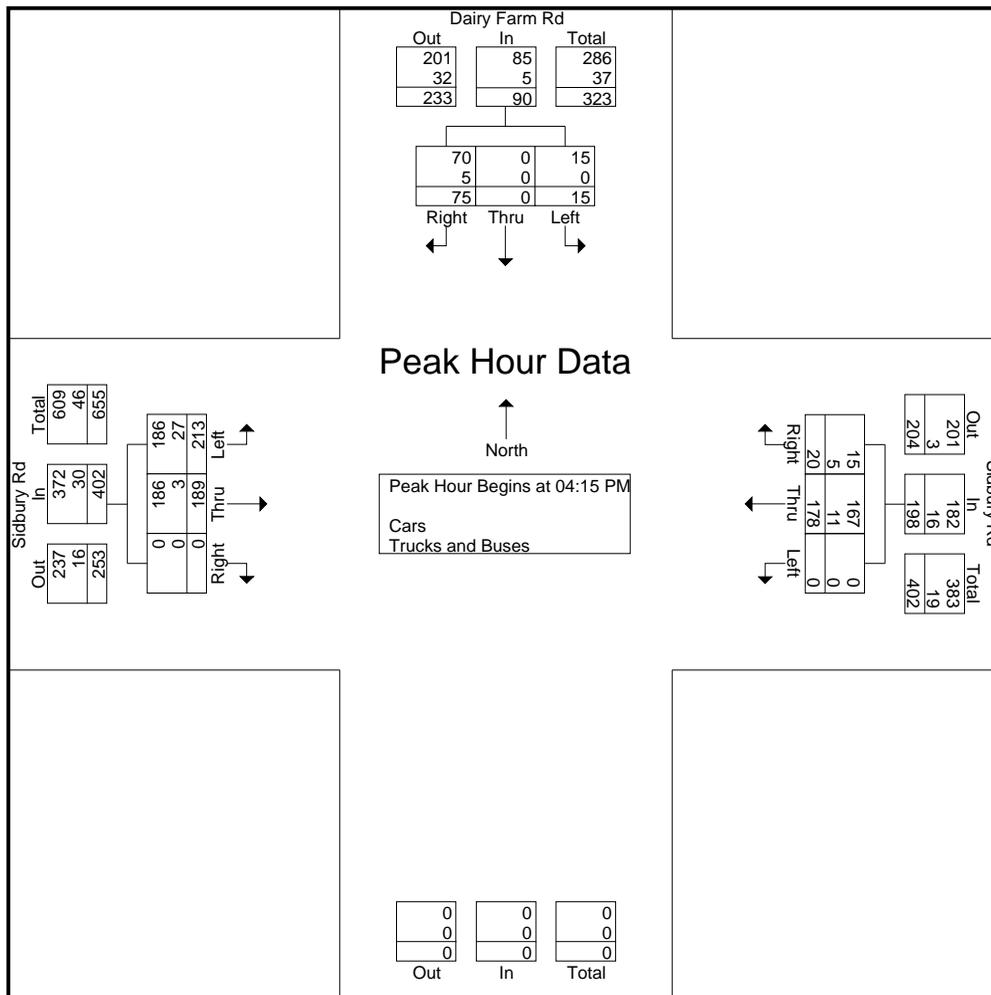
File Name : Sidbury Rd @ Dairy Farm Rd.

Site Code : 00190205

Start Date : 9/24/2019

Page No : 4

Start Time	Dairy Farm Rd North				Sidbury Rd East				South	Sidbury Rd West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:15 PM														
04:15 PM	17	0	3	20	4	71	0	75	0	0	61	59	120	215
04:30 PM	18	0	0	18	5	24	0	29	0	0	40	48	88	135
04:45 PM	23	0	5	28	7	39	0	46	0	0	37	42	79	153
05:00 PM	17	0	7	24	4	44	0	48	0	0	51	64	115	187
Total Volume	75	0	15	90	20	178	0	198	0	0	189	213	402	690
% App. Total	83.3	0	16.7		10.1	89.9	0			0	47	53		
PHF	.815	.000	.536	.804	.714	.627	.000	.660	.000	.000	.775	.832	.838	.802
Cars	70	0	15	85	15	167	0	182	0	0	186	186	372	639
% Cars	93.3	0	100	94.4	75.0	93.8	0	91.9	0	0	98.4	87.3	92.5	92.6
Trucks and Buses	5	0	0	5	5	11	0	16	0	0	3	27	30	51
% Trucks and Buses	6.7	0	0	5.6	25.0	6.2	0	8.1	0	0	1.6	12.7	7.5	7.4



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

Counted by: Lopaka Bounds

File Name : Sidbury Rd @ Blue Clay Rd

Site Code : 00190205

Start Date : 9/24/2019

Page No : 1

Weather: Clear

## Groups Printed- Cars - Trucks and Buses

Start Time	Blue Clay Rd North				Sidbury Rd East				Blue Clay Rd South				West	
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	App. Total	Int. Total
07:00 AM	0	4	3	7	2	0	80	82	27	2	0	29	0	118
07:15 AM	0	3	5	8	2	0	101	103	49	1	0	50	0	161
07:30 AM	0	5	7	12	6	0	117	123	52	0	0	52	0	187
07:45 AM	0	4	6	10	4	0	98	102	46	4	0	50	0	162
Total	0	16	21	37	14	0	396	410	174	7	0	181	0	628
08:00 AM	0	1	3	4	6	0	108	114	56	0	0	56	0	174
08:15 AM	0	3	0	3	3	0	77	80	58	3	0	61	0	144
08:30 AM	0	3	3	6	2	0	82	84	54	6	0	60	0	150
08:45 AM	0	3	3	6	1	0	87	88	105	6	0	111	0	205
Total	0	10	9	19	12	0	354	366	273	15	0	288	0	673
*** BREAK ***														
04:00 PM	0	1	3	4	9	0	54	63	86	3	0	89	0	156
04:15 PM	0	1	2	3	4	0	86	90	120	6	0	126	0	219
04:30 PM	0	1	4	5	4	0	57	61	109	6	0	115	0	181
04:45 PM	0	0	2	2	7	0	52	59	72	3	0	75	0	136
Total	0	3	11	14	24	0	249	273	387	18	0	405	0	692
05:00 PM	0	2	7	9	7	0	58	65	93	1	0	94	0	168
05:15 PM	0	2	3	5	6	0	76	82	97	3	0	100	0	187
05:30 PM	0	1	3	4	4	0	45	49	84	1	0	85	0	138
05:45 PM	0	1	1	2	4	0	58	62	73	5	0	78	0	142
Total	0	6	14	20	21	0	237	258	347	10	0	357	0	635
Grand Total	0	35	55	90	71	0	1236	1307	1181	50	0	1231	0	2628
Apprch %	0	38.9	61.1		5.4	0	94.6		95.9	4.1	0			
Total %	0	1.3	2.1	3.4	2.7	0	47	49.7	44.9	1.9	0	46.8	0	
Cars	0	35	53	88	65	0	1184	1249	1083	47	0	1130	0	2467
% Cars	0	100	96.4	97.8	91.5	0	95.8	95.6	91.7	94	0	91.8	0	93.9
Trucks and Buses	0	0	2	2	6	0	52	58	98	3	0	101	0	161
% Trucks and Buses	0	0	3.6	2.2	8.5	0	4.2	4.4	8.3	6	0	8.2	0	6.1

# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

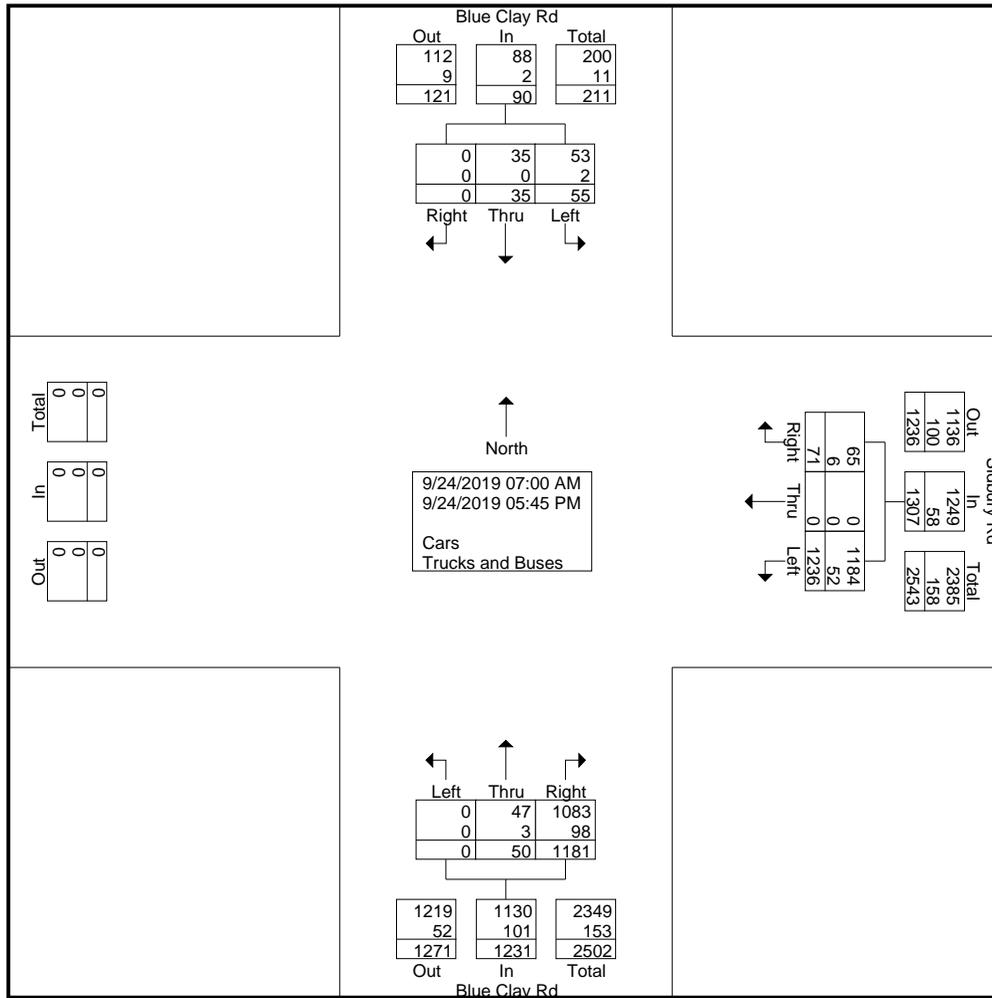
Ph:(336)744-1636

File Name : Sidbury Rd @ Blue Clay Rd

Site Code : 00190205

Start Date : 9/24/2019

Page No : 2



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

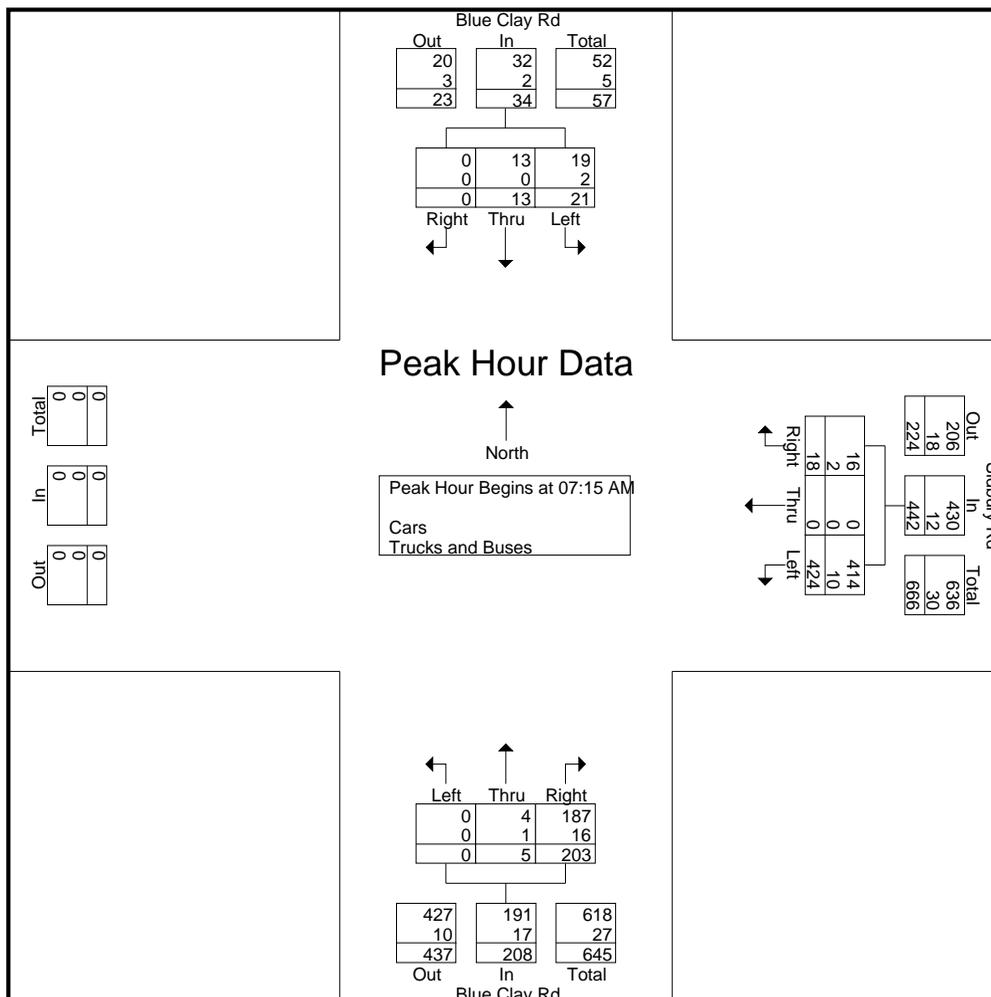
File Name : Sidbury Rd @ Blue Clay Rd

Site Code : 00190205

Start Date : 9/24/2019

Page No : 3

Start Time	Blue Clay Rd North				Sidbury Rd East				Blue Clay Rd South				West	
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	0	3	5	8	2	0	101	103	49	1	0	50	0	161
07:30 AM	0	5	7	12	6	0	117	123	52	0	0	52	0	187
07:45 AM	0	4	6	10	4	0	98	102	46	4	0	50	0	162
08:00 AM	0	1	3	4	6	0	108	114	56	0	0	56	0	174
Total Volume	0	13	21	34	18	0	424	442	203	5	0	208	0	684
% App. Total	0	38.2	61.8		4.1	0	95.9		97.6	2.4	0			
PHF	.000	.650	.750	.708	.750	.000	.906	.898	.906	.313	.000	.929	.000	.914
Cars	0	13	19	32	16	0	414	430	187	4	0	191	0	653
% Cars	0	100	90.5	94.1	88.9	0	97.6	97.3	92.1	80.0	0	91.8	0	95.5
Trucks and Buses	0	0	2	2	2	0	10	12	16	1	0	17	0	31
% Trucks and Buses	0	0	9.5	5.9	11.1	0	2.4	2.7	7.9	20.0	0	8.2	0	4.5



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

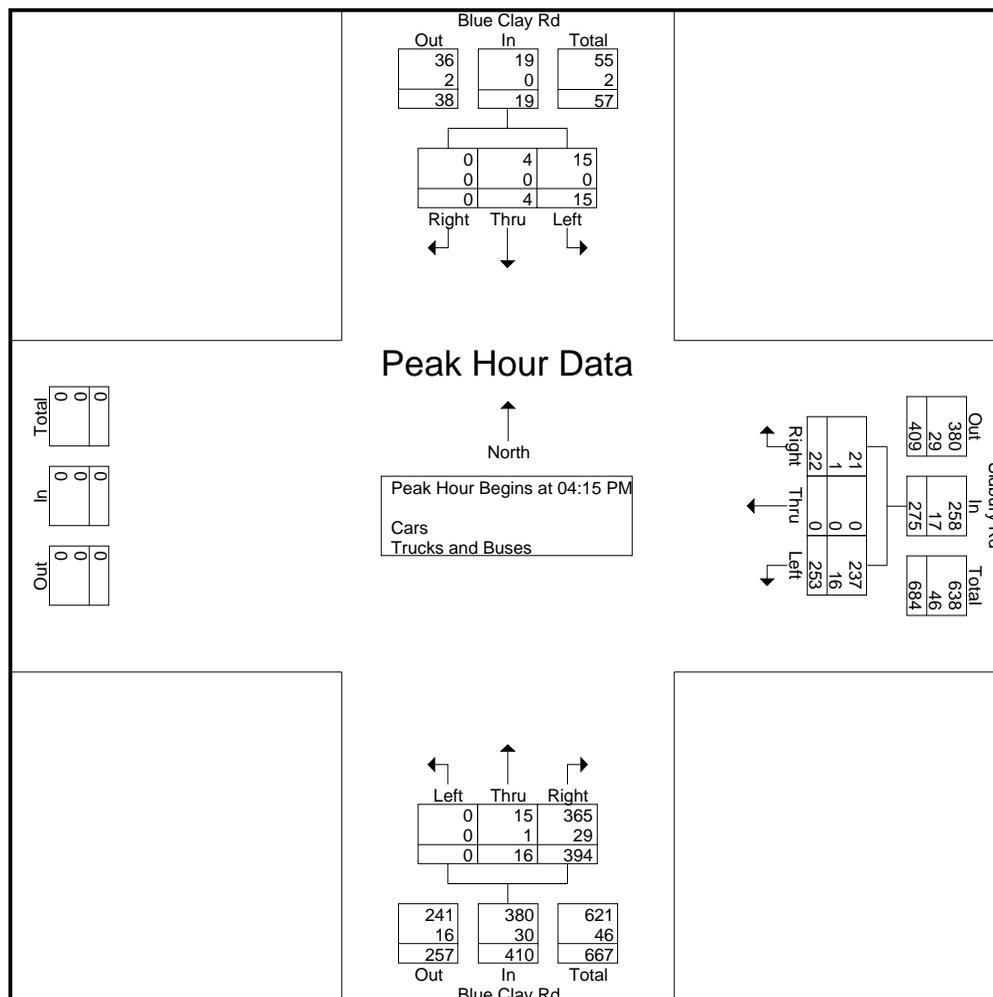
File Name : Sidbury Rd @ Blue Clay Rd

Site Code : 00190205

Start Date : 9/24/2019

Page No : 4

Start Time	Blue Clay Rd North				Sidbury Rd East				Blue Clay Rd South				West	
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:15 PM														
04:15 PM	0	1	2	3	4	0	86	90	120	6	0	126	0	219
04:30 PM	0	1	4	5	4	0	57	61	109	6	0	115	0	181
04:45 PM	0	0	2	2	7	0	52	59	72	3	0	75	0	136
05:00 PM	0	2	7	9	7	0	58	65	93	1	0	94	0	168
Total Volume	0	4	15	19	22	0	253	275	394	16	0	410	0	704
% App. Total	0	21.1	78.9		8	0	92		96.1	3.9	0			
PHF	.000	.500	.536	.528	.786	.000	.735	.764	.821	.667	.000	.813	.000	.804
Cars	0	4	15	19	21	0	237	258	365	15	0	380	0	657
% Cars	0	100	100	100	95.5	0	93.7	93.8	92.6	93.8	0	92.7	0	93.3
Trucks and Buses	0	0	0	0	1	0	16	17	29	1	0	30	0	47
% Trucks and Buses	0	0	0	0	4.5	0	6.3	6.2	7.4	6.3	0	7.3	0	6.7



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

Counted by: L. Bounds

File Name : Blue Clay Rd @ N. College Rd

Site Code : 00190205

Start Date : 9/24/2019

Page No : 1

Weather: Clear

## Groups Printed- Cars - Trucks and Buses

Start Time	N. College Road North				Blue Clay East				N. College Road South				Blue Clay West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
07:00 AM	24	55	26	105	8	14	5	27	27	95	5	127	1	45	35	81	340
07:15 AM	39	52	29	120	19	22	9	50	35	103	23	161	1	53	38	92	423
07:30 AM	74	79	41	194	22	37	18	77	50	123	27	200	3	80	47	130	601
07:45 AM	64	47	20	131	26	38	7	71	27	115	26	168	6	37	33	76	446
Total	201	233	116	550	75	111	39	225	139	436	81	656	11	215	153	379	1810
08:00 AM	52	54	32	138	20	30	13	63	15	95	21	131	2	51	61	114	446
08:15 AM	74	48	18	140	24	33	8	65	14	100	17	131	5	31	38	74	410
08:30 AM	108	34	19	161	19	48	7	74	15	82	32	129	3	35	34	72	436
08:45 AM	122	44	24	190	12	58	8	78	10	57	28	95	2	50	67	119	482
Total	356	180	93	629	75	169	36	280	54	334	98	486	12	167	200	379	1774
*** BREAK ***																	
04:00 PM	58	82	15	155	22	41	29	92	9	63	11	83	14	43	69	126	456
04:15 PM	82	108	18	208	27	59	20	106	5	86	7	98	16	28	77	121	533
04:30 PM	57	103	25	185	26	57	19	102	4	56	7	67	11	48	72	131	485
04:45 PM	52	92	28	172	24	33	22	79	5	57	6	68	5	31	58	94	413
Total	249	385	86	720	99	190	90	379	23	262	31	316	46	150	276	472	1887
05:00 PM	59	136	37	232	34	49	26	109	5	86	5	96	7	37	55	99	536
05:15 PM	42	77	20	139	34	51	30	115	6	72	7	85	13	28	45	86	425
05:30 PM	44	128	47	219	29	70	29	128	8	117	8	133	8	25	63	96	576
05:45 PM	48	109	23	180	27	44	19	90	3	63	4	70	7	14	28	49	389
Total	193	450	127	770	124	214	104	442	22	338	24	384	35	104	191	330	1926
*** BREAK ***																	
Grand Total	999	1248	422	2669	373	684	269	1326	238	1370	234	1842	104	636	820	1560	7397
Apprch %	37.4	46.8	15.8		28.1	51.6	20.3		12.9	74.4	12.7		6.7	40.8	52.6		
Total %	13.5	16.9	5.7	36.1	5	9.2	3.6	17.9	3.2	18.5	3.2	24.9	1.4	8.6	11.1	21.1	
Cars	926	1199	408	2533	361	651	260	1272	227	1314	221	1762	98	611	785	1494	7061
% Cars	92.7	96.1	96.7	94.9	96.8	95.2	96.7	95.9	95.4	95.9	94.4	95.7	94.2	96.1	95.7	95.8	95.5
Trucks and Buses	73	49	14	136	12	33	9	54	11	56	13	80	6	25	35	66	336
% Trucks and Buses	7.3	3.9	3.3	5.1	3.2	4.8	3.3	4.1	4.6	4.1	5.6	4.3	5.8	3.9	4.3	4.2	4.5

# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

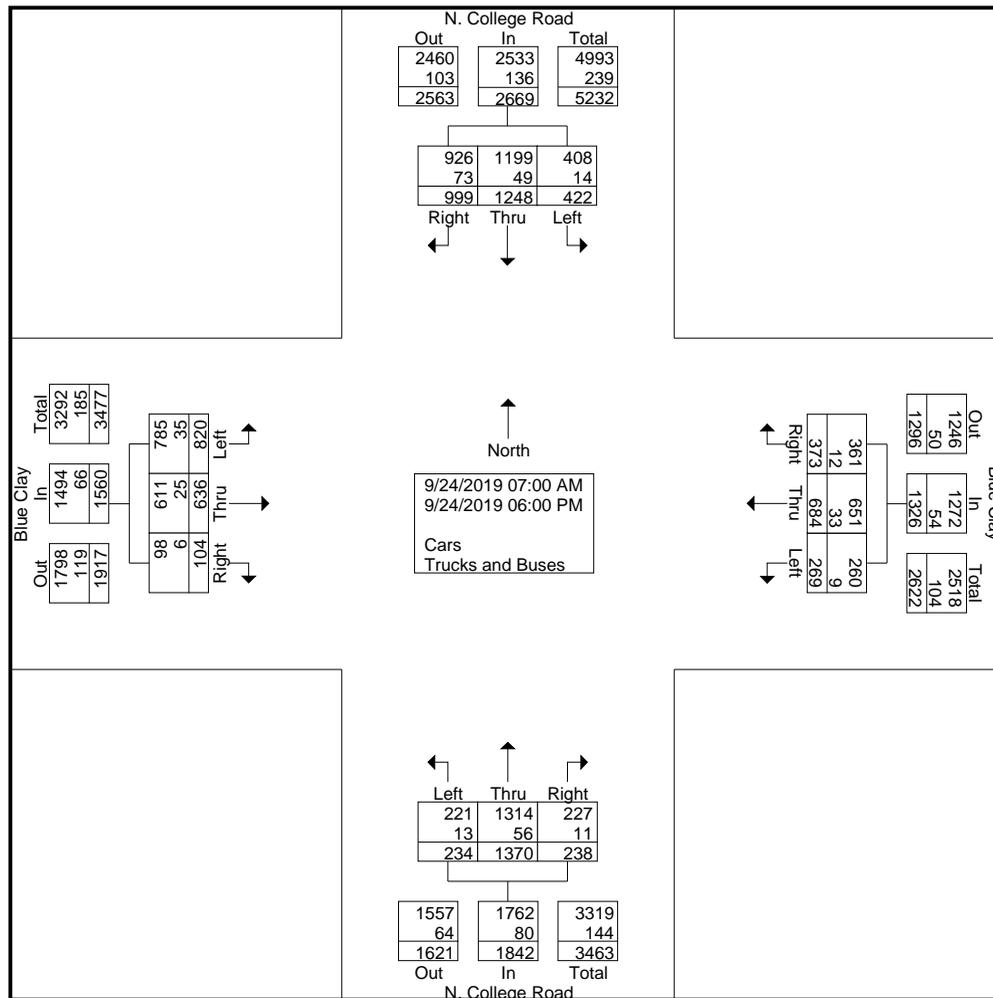
Ph:(336)744-1636

File Name : Blue Clay Rd @ N. College Rd

Site Code : 00190205

Start Date : 9/24/2019

Page No : 2



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

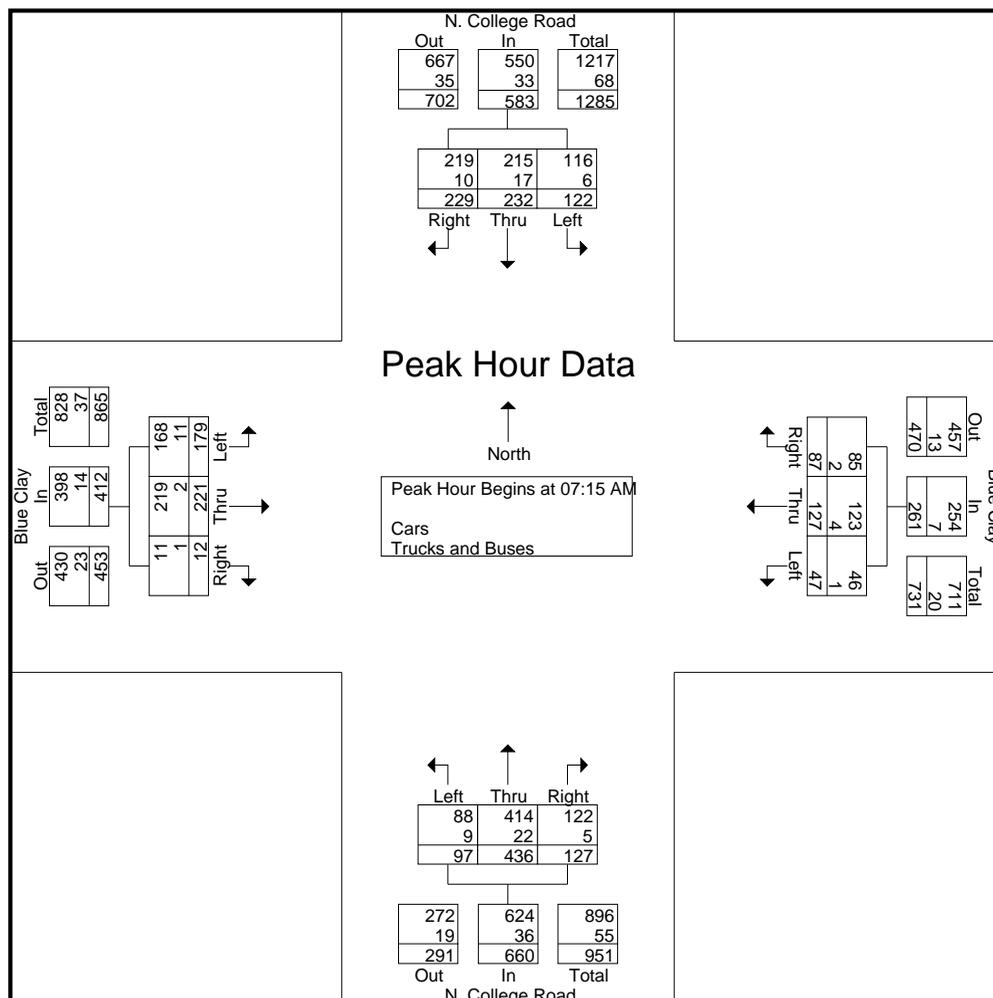
File Name : Blue Clay Rd @ N. College Rd

Site Code : 00190205

Start Date : 9/24/2019

Page No : 3

Start Time	N. College Road North				Blue Clay East				N. College Road South				Blue Clay West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	39	52	29	120	19	22	9	50	35	103	23	161	1	53	38	92	423
07:30 AM	<b>74</b>	<b>79</b>	<b>41</b>	<b>194</b>	22	37	<b>18</b>	<b>77</b>	<b>50</b>	<b>123</b>	<b>27</b>	<b>200</b>	3	<b>80</b>	47	<b>130</b>	<b>601</b>
07:45 AM	64	47	20	131	<b>26</b>	<b>38</b>	7	71	27	115	26	168	<b>6</b>	37	33	76	446
08:00 AM	52	54	32	138	20	30	13	63	15	95	21	131	2	51	<b>61</b>	114	446
Total Volume	229	232	122	583	87	127	47	261	127	436	97	660	12	221	179	412	1916
% App. Total	39.3	39.8	20.9		33.3	48.7	18		19.2	66.1	14.7		2.9	53.6	43.4		
PHF	.774	.734	.744	.751	.837	.836	.653	.847	.635	.886	.898	.825	.500	.691	.734	.792	.797
Cars	219	215	116	550	85	123	46	254	122	414	88	624	11	219	168	398	1826
% Cars	95.6	92.7	95.1	94.3	97.7	96.9	97.9	97.3	96.1	95.0	90.7	94.5	91.7	99.1	93.9	96.6	95.3
Trucks and Buses	10	17	6	33	2	4	1	7	5	22	9	36	1	2	11	14	90
% Trucks and Buses	4.4	7.3	4.9	5.7	2.3	3.1	2.1	2.7	3.9	5.0	9.3	5.5	8.3	0.9	6.1	3.4	4.7



# DAVENPORT

305 West 4th Street, Winston Salem NC, 27101

Ph:(336)744-1636

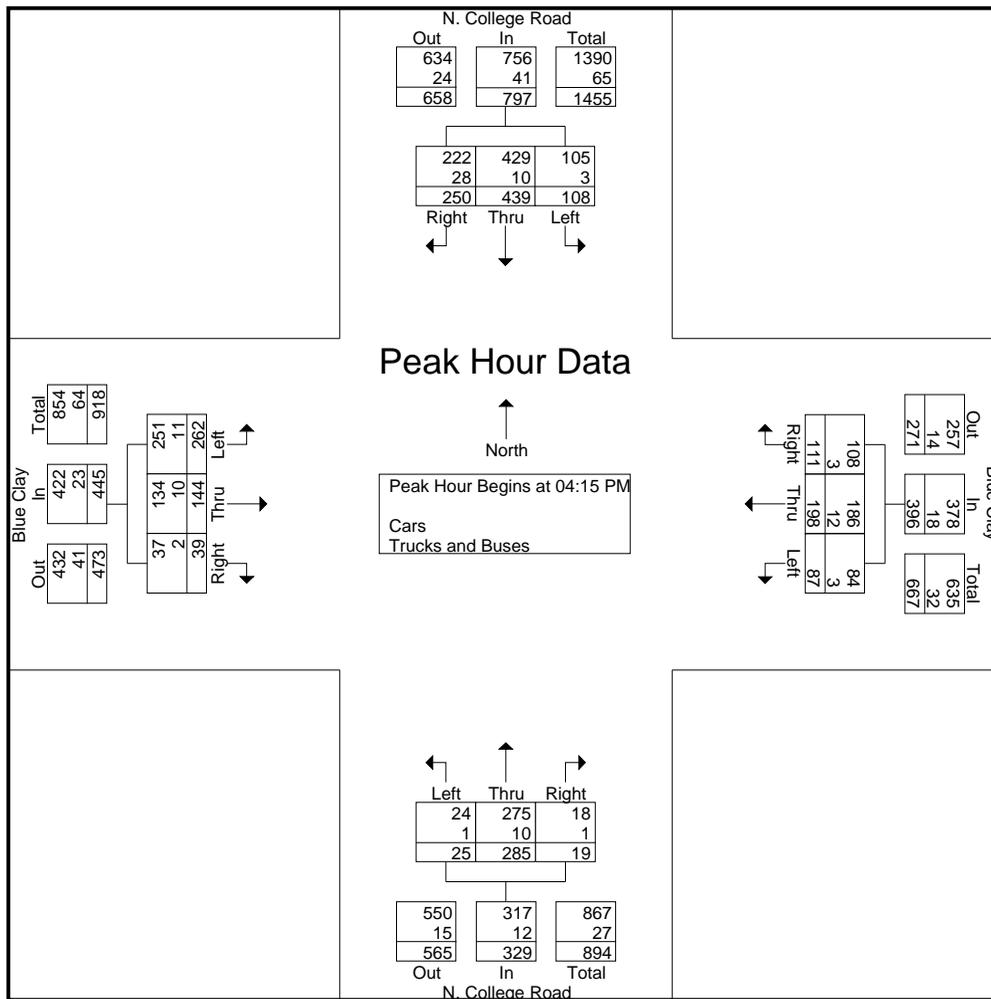
File Name : Blue Clay Rd @ N. College Rd

Site Code : 00190205

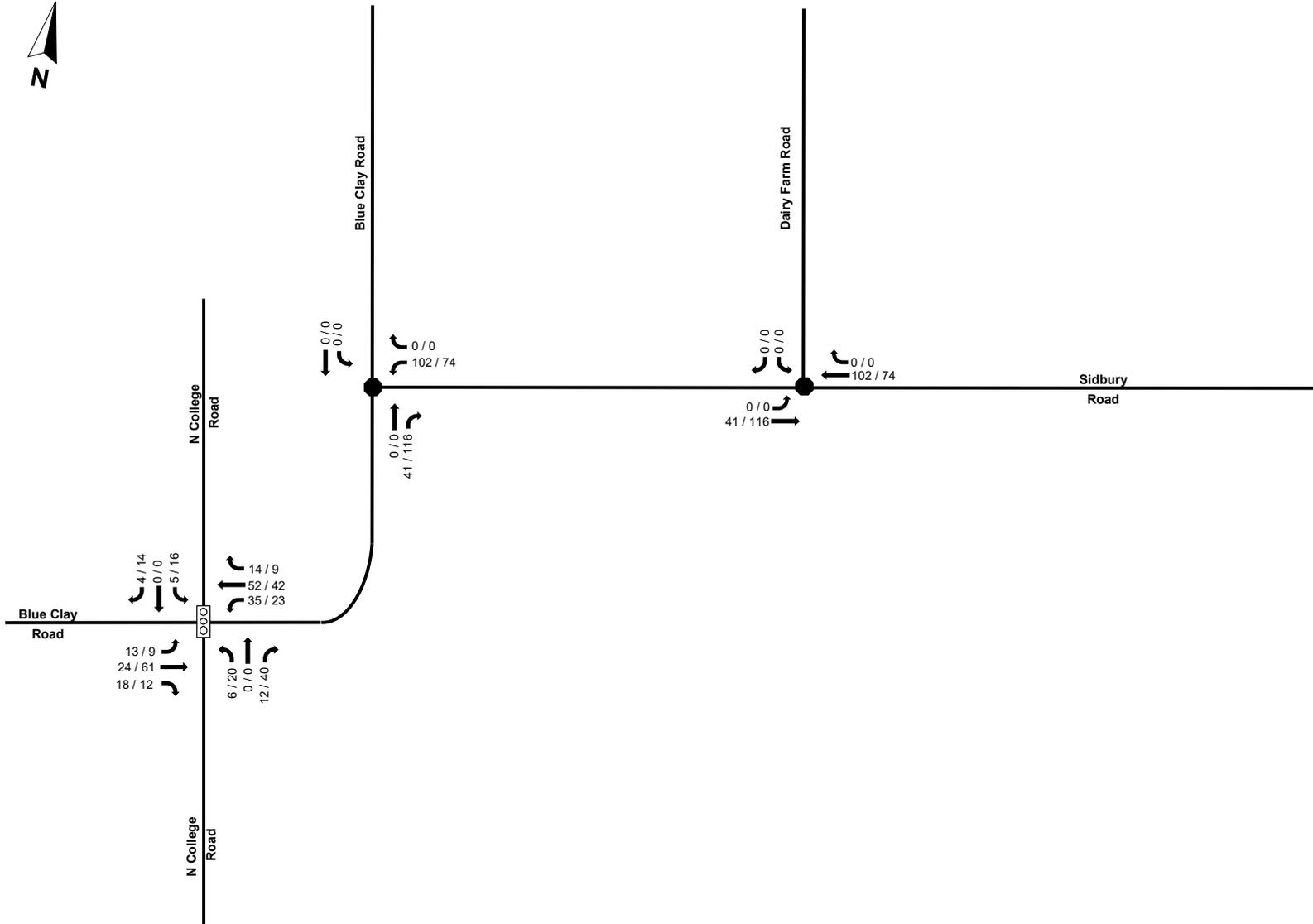
Start Date : 9/24/2019

Page No : 4

Start Time	N. College Road North				Blue Clay East				N. College Road South				Blue Clay West				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	82	108	18	208	27	59	20	106	5	86	7	98	16	28	77	121	533
04:30 PM	57	103	25	185	26	57	19	102	4	56	7	67	11	48	72	131	485
04:45 PM	52	92	28	172	24	33	22	79	5	57	6	68	5	31	58	94	413
05:00 PM	59	136	37	232	34	49	26	109	5	86	5	96	7	37	55	99	536
Total Volume	250	439	108	797	111	198	87	396	19	285	25	329	39	144	262	445	1967
% App. Total	31.4	55.1	13.6		28	50	22		5.8	86.6	7.6		8.8	32.4	58.9		
PHF	.762	.807	.730	.859	.816	.839	.837	.908	.950	.828	.893	.839	.609	.750	.851	.849	.917
Cars	222	429	105	756	108	186	84	378	18	275	24	317	37	134	251	422	1873
% Cars	88.8	97.7	97.2	94.9	97.3	93.9	96.6	95.5	94.7	96.5	96.0	96.4	94.9	93.1	95.8	94.8	95.2
Trucks and Buses	28	10	3	41	3	12	3	18	1	10	1	12	2	10	11	23	94
% Trucks and Buses	11.2	2.3	2.8	5.1	2.7	6.1	3.4	4.5	5.3	3.5	4.0	3.6	5.1	6.9	4.2	5.2	4.8



# Approved Development Information



LEGEND	
	SIGNALIZED INTERSECTION
	UNSIGNALIZED INTERSECTION
	ROADWAY
	TRAFFIC MOVEMENT
	BLACK = EXISTING
	AM / PM PEAKS

\*\*\* NOT TO SCALE \*\*\*

This document, together with the concepts and designs presented herein, is intended only for the specific purpose and client for which it was prepared. Reuse of, or improper reliance on, this document by others without written authorization and adaptation by DAVENPORT, shall be without liability to DAVENPORT, and shall be a violation of the agreement between DAVENPORT and the client.

FIGURE A  
APPROVED  
DEVELOPMENTS

OLD DAIRY ROAD DEVELOPMENT  
NEW HANOVER COUNTY, NC

PROJECT NUMBER 200218

# Supporting Documentation



305 Chestnut Street  
PO Box 1810  
Wilmington, NC 28402  
Ph: (910) 341-3258  
Fax: (910) 341-7801  
[www.wmpo.org](http://www.wmpo.org)

May 13, 2020

**Ms. Dionne Brown, PE**

Davenport  
4600 Marriott Drive, Suite 350  
Raleigh, NC 27612

RE: Approved Scope for the Traffic Impact Analysis (TIA) associated with the proposed  
**Dairy Farm Road**  
Wilmington, NC

Dear Ms. Brown,

Based on the information provided, it is our understanding that the proposed development will consist of:

- 320 apartments (LUC 221 Multifamily Housing Mid-Rise)

Below please find the scope to be used for the Traffic Impact Analysis:

**1. Data Collection - Analysis Parameters**

a) Study Intersections

- For existing intersections, provide turning movement counts for weekday during school (T,W,TH) AM (7:00am-9:00am) and PM (4:00pm-6:00pm) peak periods, signal timing (if applicable), and lane geometry:
  - US 117 (N. College Road) at SR 1318 (Blue Clay Road)
  - SR 1318 (Blue Clay Road) at SR 1336 (Sidbury Road)
  - SR 1336 (Sidbury Road) at SR 2181 (Dairy Farm Road)
  - SR 2181 (Dairy Farm Road) at Site Access 1
  - SR 2181 (Dairy Farm Road) at Site Access 2
  - SR 2181 (Dairy Farm Road) at Site Access 3
- As requested, 2019 turning movement counts from the Sidbury Road Development TIA may be utilized for the study.*
- Signal plans may be acquired by sending an email request to NCDOT Traffic Services: Ross Kimbro, [rkimbro@ncdot.gov](mailto:rkimbro@ncdot.gov) or by calling (910) 341-0300
- Within the Wilmington signal system, traffic signal coordinated timings and controller sequences/settings can be obtained by contacting Denys Vielkanowitz, [denys.vielkanowitz@wilmingtonnc.gov](mailto:denys.vielkanowitz@wilmingtonnc.gov), or by calling 910-341-4676. All signals within the Wilmington system shall use C-Max as the coordinated phase recall position.

Wilmington Urban Area Metropolitan Planning Organization

- b) Site Trip Generation, Site Trip Distribution and Background Traffic Assumptions
  - i. Site Trip Generation Estimate
    - Trip generation is approved as attached
  - ii. Site Trip Distribution
    - To be submitted for approval and approved prior to use in the TIA
    - Please submit the table on page 5 of 12 of the attached NCDOT Congestion Management checklist
  - iii. Adjacent Development (approved but not yet built):
    - Sidbury Road Development
    - Cape Landing
  - iv. Planned Roadway Improvements
    - n/a
  - v. Background Traffic Assumptions
    - Built Out Year: 2024
    - Growth rate – 1% per year

**2. Capacity Analysis: Week day AM & PM Peak Hour**

- a) Technical Analysis
  - i. 2020 Existing
  - ii. 2024 Future No-Build  
[Existing + 1% background growth + approved development trips]
  - iii. 2024 Full Build Conditions  
[Existing + 1% background growth + approved development trips + site trips]
  - iv. 2024 Full Build Conditions + Improvements  
[Existing + 1% background growth + approved development trips + site trips]

**3. Final Report Submittal**

- a) Completed TIA Application
- b) Signed and sealed by a Professional Engineer
- c) Four bound copies
- d) Four Electronic copies to include PDF of TIA and Synchro output files and Synchro analysis files in digital format

**4. Notes**

- a) This scope shall remain valid for three months from the date of this letter.
- b) Please note that if any changes occur (including but not limited to; land use, intensity, phasing, and/or site access) additional analysis may be required.

Please contact me at 910-772-4170 with any questions regarding this scope.

Sincerely,

Kayla Grubb, EI  
Project Manager  
Wilmington Metropolitan Planning Organization

Attachments: Trip Generation Summary (provided by Davenport)  
Site Map (provided by Davenport)  
Traffic Impact Analysis Supplemental Guidelines

ec: Ben Hughes, PE, District Engineer, NCDOT  
Dan Cumbo, PE, Deputy Division Engineer, NCDOT  
Eva Covarrubias, EI, Transportation Engineering Associate, NCDOT  
Jon Roan, Assistant District Engineer, NCDOT  
Jessi Leonard, PE, Division Traffic Engineer, NCDOT  
Don Bennett, PE, City Traffic Engineer, City of Wilmington  
Denys Vielkanowitz, PE, Signal Systems Management Engineer, City of Wilmington  
Brian Chambers, AICP, Senior Planner, City of Wilmington  
Bill McDow, Transportation Planner, WMPO  
Mike Kozlosky, Executive Director, WMPO





### LOGICAL I/O PROCESSOR PROGRAMMING DETAIL TO PRODUCE SPECIAL FYA-PPLT SIGNAL SEQUENCE

(program controller as shown below)

- FROM MAIN MENU PRESS '2' (PHASE CONTROL), THEN '1' (PHASE CONTROL FUNCTIONS). SCROLL TO THE BOTTOM OF THE MENU AND ENABLE ACT LOGIC COMMANDS 1, 2, 3, 4, 5 AND 6.
- FROM MAIN MENU PRESS '6' (OUTPUTS), THEN '3' (LOGICAL I/O PROCESSOR).

LOGICAL I/O COMMAND #1 (+/-COMMAND#)  
IF ACTIVE PHASE #1 IS ON  
AND RED CLEAR ON PHASE #1 IS ON

NOTE: LOGIC FOR PHASE 1 RED CLEAR WHEN TRANSITIONING FROM PHASE 1 TO PHASE 2 (HEAD 11).

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #50 ON  
SET OUTPUT ASSIGNMENT #51 OFF

PRESS '+'

LOGICAL I/O COMMAND #2 (+/-COMMAND#)  
IF ACTIVE PHASE #1 IS ON

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 1 (HEAD 11).

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #52 OFF

PRESS '+'

LOGICAL I/O COMMAND #3 (+/-COMMAND#)  
IF YELLOW ON PHASE #1 IS ON

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 1 (HEAD 11).

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #51 ON

PRESS '+'

LOGICAL I/O COMMAND #4 (+/-COMMAND#)  
IF ACTIVE PHASE #3 IS ON  
AND RED CLEAR ON PHASE #3 IS ON

NOTE: LOGIC FOR PHASE 3 RED CLEAR WHEN TRANSITIONING FROM PHASE 3 TO PHASE 4 (HEAD 31).

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #47 ON  
SET OUTPUT ASSIGNMENT #48 OFF

PRESS '+'

LOGICAL I/O COMMAND #5 (+/-COMMAND#)  
IF ACTIVE PHASE #3 IS ON

NOTE: LOGIC FOR SWITCHING FLASHING YELLOW ARROW "OFF" DURING PHASE 3 (HEAD 31).

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #49 OFF

PRESS '+'

LOGICAL I/O COMMAND #6 (+/-COMMAND#)  
IF YELLOW ON PHASE #3 IS ON

NOTE: LOGIC FOR YELLOW ARROW CLEARANCE FROM PHASE 3 (HEAD 31).

SCROLL DOWN

THEN:  
SET OUTPUT ASSIGNMENT #48 ON

PRESS '+'

LOGIC I/O PROCESSOR PROGRAMMING COMPLETE

**OUTPUT REFERENCE SCHEDULE**

OUTPUT 47 = Overlap B Red
OUTPUT 48 = Overlap B Yellow
OUTPUT 49 = Overlap B Green
OUTPUT 50 = Overlap A Red
OUTPUT 51 = Overlap A Yellow
OUTPUT 52 = Overlap A Green

### OVERLAP PROGRAMMING DETAIL

(program controller as shown below)

FROM MAIN MENU PRESS '8' (OVERLAPS), THEN '1' (VEHICLE OVERLAP SETTINGS).

PAGE 1: VEHICLE OVERLAP 'A' SETTINGS  
PHASE: 12345678910111213141516  
VEH OVL PARENTS: XX  
VEH OVL NOT VEH:  
VEH OVL NOT PED:  
VEH OVL GRN EXT:  
STARTUP COLOR: - RED - YELLOW - GREEN  
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)  
FLASH YELLOW IN CONTROLLER FLASH?...Y  
GREEN EXTENSION (0-255 SEC)...0.0  
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0  
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0  
OUTPUT AS PHASE # (0=NONE, 1-16)...0

← NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'C' SETTINGS  
PHASE: 12345678910111213141516  
VEH OVL PARENTS: X  
VEH OVL NOT VEH:  
VEH OVL NOT PED:  
VEH OVL GRN EXT:  
STARTUP COLOR: - RED - YELLOW - GREEN  
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)  
FLASH YELLOW IN CONTROLLER FLASH?...Y  
GREEN EXTENSION (0-255 SEC)...0.0  
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0  
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0  
OUTPUT AS PHASE # (0=NONE, 1-16)...0

← NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'B' SETTINGS  
PHASE: 12345678910111213141516  
VEH OVL PARENTS: XX  
VEH OVL NOT VEH:  
VEH OVL NOT PED:  
VEH OVL GRN EXT:  
STARTUP COLOR: - RED - YELLOW - GREEN  
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)  
FLASH YELLOW IN CONTROLLER FLASH?...N  
GREEN EXTENSION (0-255 SEC)...0.0  
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0  
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0  
OUTPUT AS PHASE # (0=NONE, 1-16)...0

← NOTICE GREEN FLASH

PAGE 1: VEHICLE OVERLAP 'D' SETTINGS  
PHASE: 12345678910111213141516  
VEH OVL PARENTS: X  
VEH OVL NOT VEH:  
VEH OVL NOT PED:  
VEH OVL GRN EXT:  
STARTUP COLOR: - RED - YELLOW - GREEN  
FLASH COLORS: - RED - YELLOW X GREEN

SELECT VEHICLE OVERLAP OPTIONS: (Y/N)  
FLASH YELLOW IN CONTROLLER FLASH?...N  
GREEN EXTENSION (0-255 SEC)...0.0  
YELLOW CLEAR (0=PARENT,3-25.5 SEC)...0.0  
RED CLEAR (0=PARENT,0.1-25.5 SEC)...0.0  
OUTPUT AS PHASE # (0=NONE, 1-16)...0

← NOTICE GREEN FLASH

OVERLAP PROGRAMMING COMPLETE

### FLASHER CIRCUIT MODIFICATION DETAIL

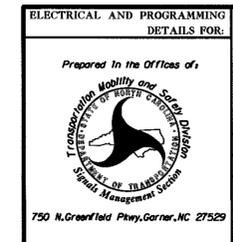
IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
- ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
- REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

Electrical Detail - Sheet 2 of 2

THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 03-0392  
DESIGNED: January 2014  
SEALED: 1/31/14  
REVISED: N/A

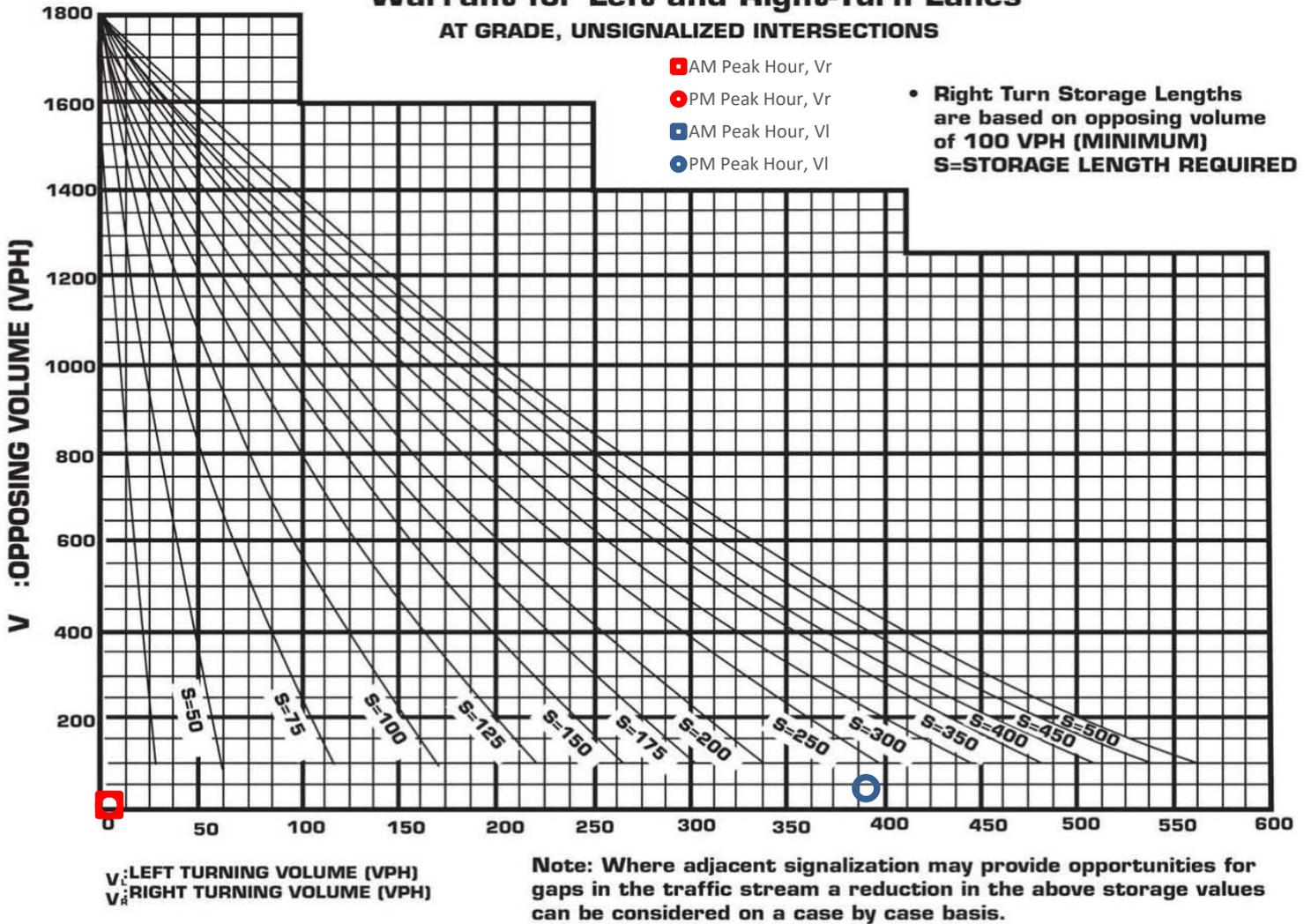


NC 132 (College Road) at SR 1318 (Blue Clay Road)		
Division 3	New Hanover County	Wilmington
PLAN DATE: January 2014	REVIEWED BY: JTR	
PREPARED BY: S. Armstrong	REVIEWED BY:	
REVISIONS	INIT.	DATE

SEAL  
JOHN T. ROWE, JR.  
PROFESSIONAL ENGINEER  
SEAL 008453  
DATE: 2-3-14  
SIGNATURE: John T. Rowe, Jr.  
SIG. INVENTORY NO. 03-0392

Peak Hour	Volumes		Peak Hour	Volumes	
	Opposing	Lefts		Opposing	Rights
AM	43	625	AM	N/A	N/A
PM	38	390	PM	N/A	N/A

### Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

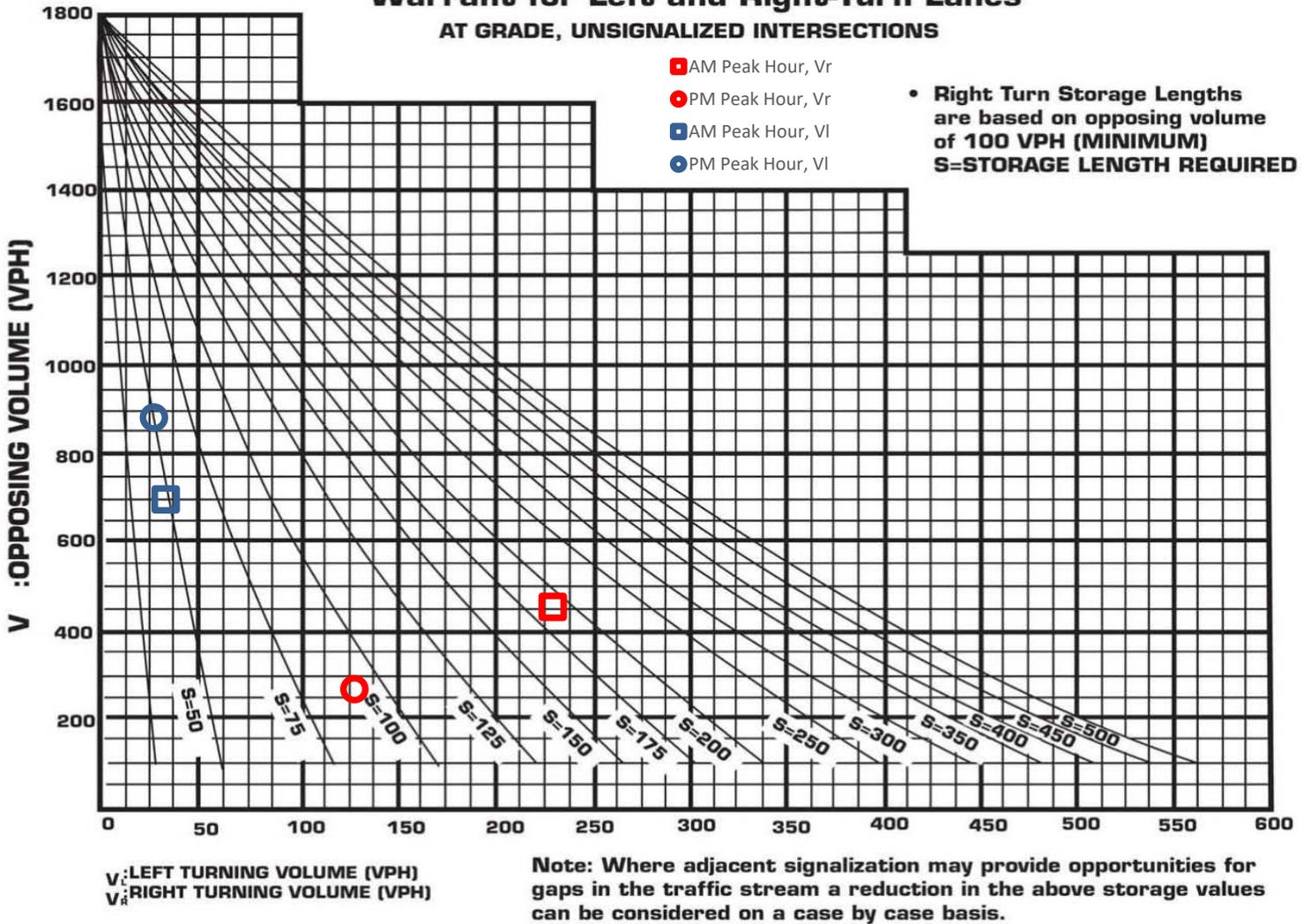


TURN LANE WARRANT SUMMARY

BLUE CLAY AT SIDBURY (ON SIDBURY)

Peak Hour	Volumes		Peak Hour	Volumes	
	Opposing	Lefts		Opposing	Rights
AM	694	30	AM	450	229
PM	880	24	PM	263	127

### Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

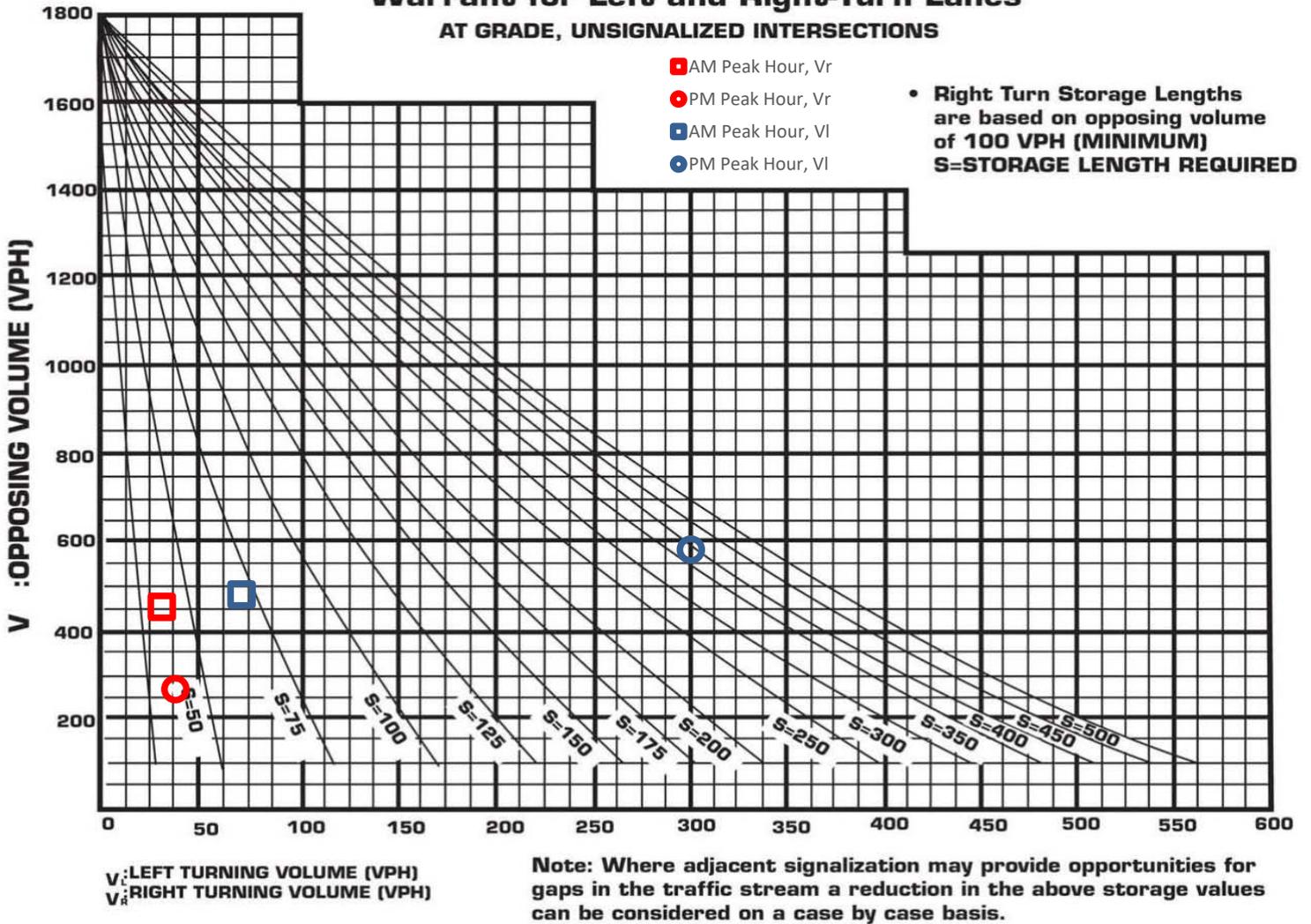


TURN LANE WARRANT SUMMARY

SIDBURY AT DAIRY FARM (ON DAIRY FARM)

Peak Hour	Volumes		Peak Hour	Volumes	
	Opposing	Lefts		Opposing	Rights
AM	478	69	AM	450	28
PM	580	300	PM	263	35

### Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

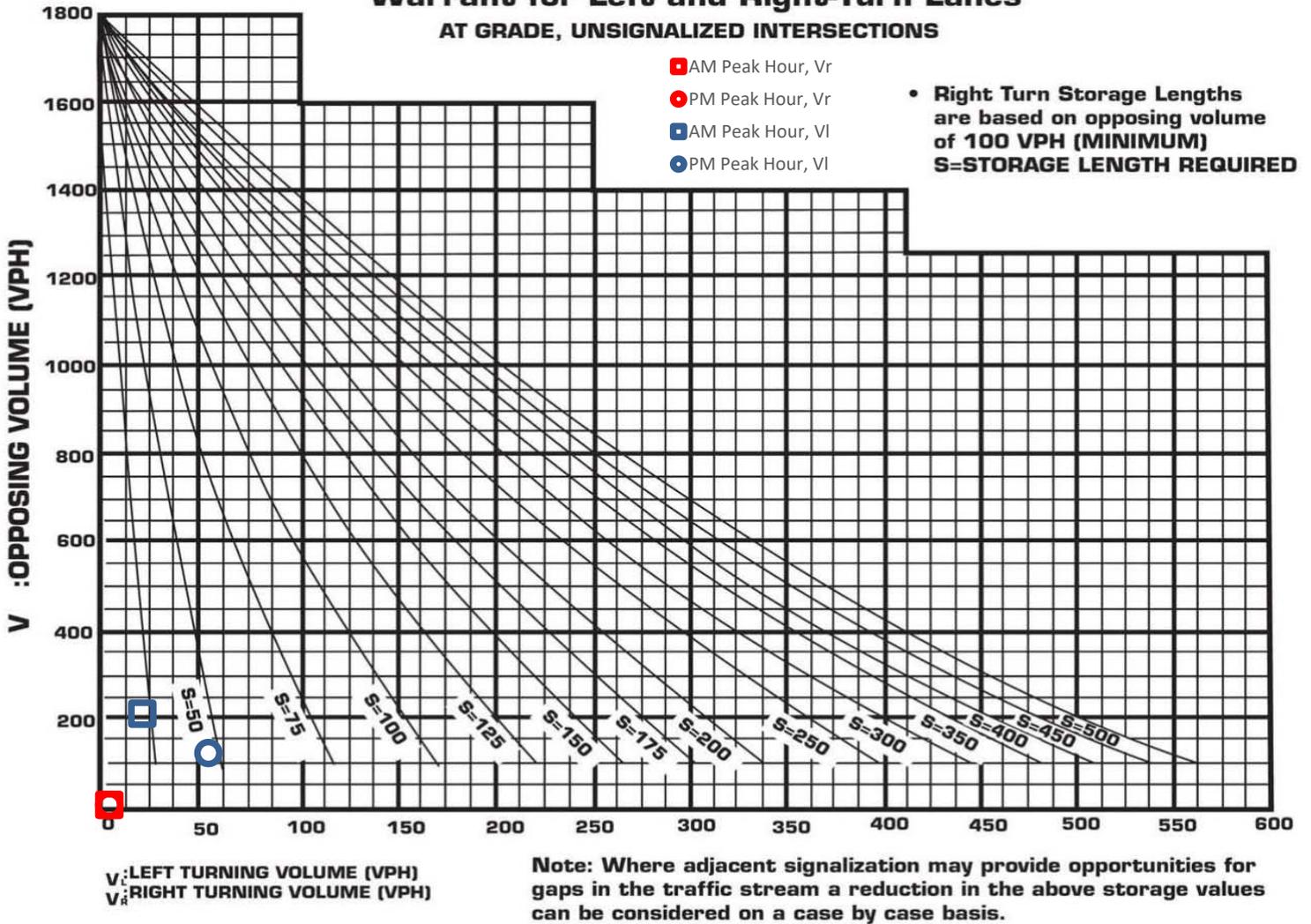


TURN LANE WARRANT SUMMARY

SIDBURY AT DAIRY FARM (ON SIDBURY)

Peak Hour	Volumes		Peak Hour	Volumes	
	Opposing	Lefts		Opposing	Rights
AM	207	18	AM	N/A	N/A
PM	118	52	PM	N/A	N/A

### Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS



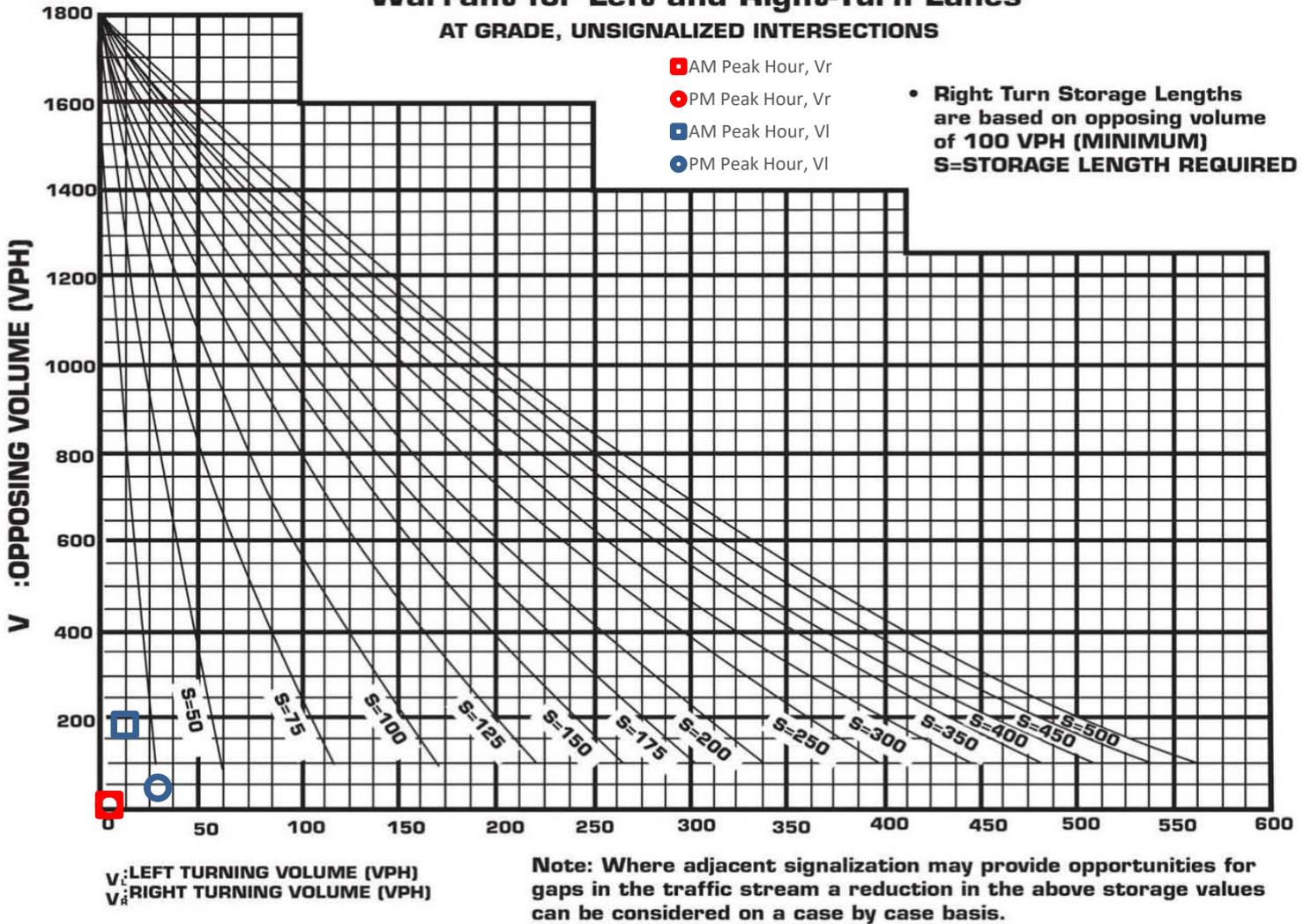
DAVENPORT

TURN LANE WARRANT SUMMARY

SITE ACCESS 1

Peak Hour	Volumes		Peak Hour	Volumes	
	Opposing	Lefts		Opposing	Rights
AM	182	9	AM	N/A	N/A
PM	39	26	PM	N/A	N/A

### Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS



Peak Hour	Volumes		Peak Hour	Volumes	
	Opposing	Lefts		Opposing	Rights
AM	173	3	AM	N/A	N/A
PM	33	9	PM	N/A	N/A

### Warrant for Left and Right-Turn Lanes AT GRADE, UNSIGNALIZED INTERSECTIONS

