

TECHNICAL APPENDIX

APPENDIX A

SCOPING DOCUMENTATION



November 26, 2024

Catherine Farrell

Town of Zebulon

1003 N. Arendell Avenue

Zebulon, NC 27597

E: cfarrell@townofzebulon.org

Reference: Zebulon Mixed-Use – Zebulon, NC

Subject: Memorandum of Understanding for TIA Report

Dear Mrs. Farrell:

The following is an updated Memorandum of Understanding (MOU) outlining the proposed scope of work and assumptions related to the Traffic Impact Analysis (TIA) for the proposed Zebulon Mixed-Use development, to be located east of Zebulon Road and south of Pippin Road in Zebulon, North Carolina. This MOU reflects the assumptions outlined during initial coordination between DRMP, the Town of Zebulon (Town), and the North Carolina Department of Transportation (NCDOT). Refer to the attached site location map. Site access is proposed via one full-movement driveway along Zebulon Road and one right-in/right-out (RIRO) access along Zebulon Road. **Changes from the original MOU will be noted in red.**

The proposed development is expected to be completed in 2028. In accordance with the Town Unified Development Ordinance (UDO) the study will utilize a build+1 for future year traffic conditions. The proposed development is assumed to consist of the following land uses:

- **240 apartments**
- **26,000 square feet (s.f.) retail**
- **5,500 s.f. high-turnover restaurant**
- **600 s.f. coffee shop with drive-through**

Study Area

The study area is proposed to consist of the following intersections:

- NC 96 and Pippin Road (Signalized)
- NC 96 and Riley Hill Road (Unsignalized)
- NC 96 and Pearces Road (Signalized)
- NC 96 and Green Pace Road (Unsignalized)
- Proposed Site Accesses

Existing Traffic Volumes

Existing peak hour traffic volumes will be determined based on traffic counts conducted at the study intersections below, in September 2024 during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods, while schools are in session for in-person learning:

- NC 96 and Pippin Road
- NC 96 and Riley Hill Road
- NC 96 and Pearces Road
- NC 96 and Green Pace Road

Background Traffic Volumes

Based on coordination with NCDOT and the Town, background traffic volumes will be determined by projecting 2024 existing traffic volumes to the year 2029 using a 3% annual growth rate.

Future Roadway Improvements

Based on coordination with the Town and NCDOT, it was determined that there are no future roadway improvements within the study area to consider under future traffic conditions.

Trip Generation

Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 11.1 Edition. Refer to Table 1 for a summary of the proposed site trip generation for full buildout of the proposed development.

Table 1: Trip Generation Summary – Full Buildout

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)			Weekday PM Peak Hour Trips (vph)		
			Enter	Exit	Total	Enter	Exit	Total
Apartments (220)	240 Units	1,614	23	74	97	78	46	124
Strip Retail (822)	26,000 s.f.	1,416	37	24	61	86	85	171
High-Turnover Restaurant (932)	5,500 s.f.	590	29	24	53	31	19	50
Coffee Shop with Drive- Through (937)	600 s.f.	320	27	25	52	12	11	23
Total Trips		3,940	116	147	263	207	161	368
<i>Internal Capture*</i> (15% AM, 16% PM)			-17	-23	-40	-34	-25	-59
External Trips			99	124	223	173	136	309
<i>Pass-By Trips</i> (Shopping Center: 29% PM)			-	-	-	-21	-21	-42
<i>Pass-By Trips</i> (High-Turnover Restaurant: 43% PM)			-	-	-	-9	-9	-18
<i>Pass-By Trips</i> (Coffee Shop with Drive-Through: 90% AM, 98% PM)			-20	-20	-40	-9	-9	-18
Primary Trips			79	104	183	134	97	231

*Utilizing methodology contained in the NCHRP Report 684.

It is estimated that the proposed development will generate approximately 3,940 site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 263 primary trips (116 entering and 147 exiting) will occur during the weekday AM peak hour and 368 primary trips (207 entering and 161 exiting) will occur during the weekday PM peak hour.

Internal capture of trips between the residential and retail uses was considered in this study. Internal capture is the consideration for trips that will be made within the site between different land uses, so the vehicle technically never leaves the internal site but can still be considered as a trip to that specific land use. Internal capture typically only considers trips between residential, office, and retail/restaurant land uses. Based on NCHRP Report 684 methodology, a weekday AM peak hour internal capture rate of 15% and a weekday PM peak hour internal capture rate of 16% was applied to the total trips. The internal capture reductions are expected to account for approximately 40 trips (17 entering and 23 exiting) during the weekday AM peak hour and 59 trips (34 entering and 25 exiting) during the weekday PM peak hour.

Pass-by trips were also taken into consideration in this study. Pass-by trips are made by the traffic already using the adjacent roadway, entering the site as an intermediate stop on their way to another destination. Pass-by percentages are applied to site trips after adjustments for internal capture. Pass-by trips are expected to account for approximately 40 trips (20 entering and 20 exiting) during the weekday AM peak hour and approximately 78 trips (39 entering and 39 exiting) during the weekday PM peak hour. It should be noted that the pass-by trips were balanced, as it is likely that these trips would enter and exit in the same hour.

The total primary site trips are the calculated site trips after the reduction for internal capture and pass-by trips. Primary site trips are expected to generate approximately 183 trips (79 entering and 104 exiting) during the weekday AM peak hour and 231 trips (134 entering and 97 exiting) during the weekday PM peak hour.

Trip Distribution and Assignment

Site trips are distributed based on the locations of existing traffic patterns, population centers adjacent to the study area, and engineering judgment. A summary of the overall residential distributions is below.

- 45% to/from the south via Zebulon Road
- 30% to/from the north via Zebulon Road
- 10% to/from the east via Pearces Road
- 5% to/from the east via Proctor Street
- 5% to/from the east via Pippin Road
- 5% to/from the west via Green Pace Road

A summary of the overall commercial distributions is below.

- 50% to/from the south via Zebulon Road
- 35% to/from the north via Zebulon Road
- 10% to/from the east via Pearces Road
- 5% to/from the east via Proctor Street
- 5% to/from the east via Pippin Road

Refer to the attached site trip distribution figures.

Analysis Scenarios

All capacity analyses will be performed utilizing Synchro (Version 10.3). All study intersections will be analyzed during the weekday AM and PM peak hours under the following proposed traffic scenarios:

- 2024 Existing Traffic Conditions
- 2029 No-Build Traffic Conditions
- 2029 Build Traffic Conditions



Report

The TIA report will be prepared based on the Town and NCDOT requirements.

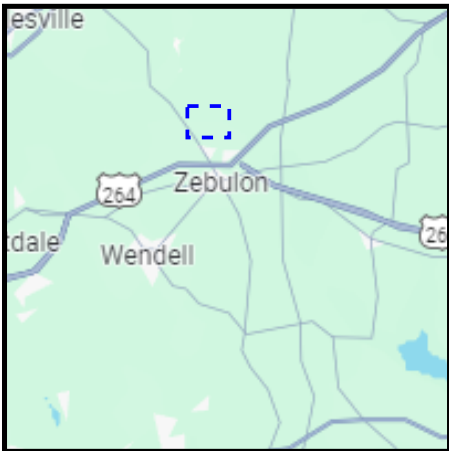
If you find this memorandum of understanding acceptable, please let me know so that we may include it in the TIA report. If you have any questions or concerns, please do not hesitate to contact me.

Sincerely,

Caroline Cheeves, PE
Traffic Analysis Project Manager
DRMP, Inc.

Attachments:

- Site Location Map
- Site Plan
- Existing volume Figure
- Site Trip Distribution Figure
- Trip Generation
- NCHRP Internal Capture Reports
- Growth Rate
- Count Data



LEGEND

- Study Intersection
- ▭ Study Area
- Proposed Site Drive



Zebulon Road Mixed-Use
Zebulon, NC

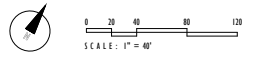
Site Location Map

Scale: Not to Scale | Figure 1



PROJECT DATA TABLE 11.7.2024

Site Area	14.546 Ac				
OUTPARCEL RETAIL					
Lot	Lot Area	Bldg SF	Max. Scats	#'kg Provided	Drive-Thru
OP-1	39,418 sf	3,230 sf	144	36	Drive / 263 SF
OP-2	30,519 sf	2,146 sf	88	22	Drive / 248 SF
OP-3	14,522 sf	576 sf	0	6	Single / 157 SF
MIXED - USE RETAIL					
Bldg	Stories	Floorplate	Leasable SF	#'kg Required	#'kg Provided
MU-1	1	10,656 sf	9,482 sf	37	37
MU-2	1	10,656 sf	9,482 sf	37	37
MIXED - USE APARTMENTS					
Bldg	Stories	1 BR	2 BR	3 BR	Total Units
MU-1	3	24	0	0	24
MU-2	3	24	0	0	24
APARTMENTS					
Bldg	Stories	1 BR	2 BR	3 BR	Total Units
A	4	16	36	0	52
B	3	0	24	6	30
C	3	12	9	12	33
D	3	0	24	6	30
Totals		36	105	24	223
Mix %		42.2%	47.1%	10.8%	
Parking					
Resident Pkg (1.5 per unit)	141	157.5	36	334.5	
Visitor Pkg (0.25 per unit)	23.5	26.25	6	56.25	
Total Base Parking	164.5	183.75	42	390.75	
Total Required Parking - Mixed Use & Apts				464.25	
20% Parking Reduction				371.4	
Total Parking Provided				354	
Proposed Shared Parking				17	



NOVEMBER 2024
 Highway 96 Property | Zebulon, North Carolina

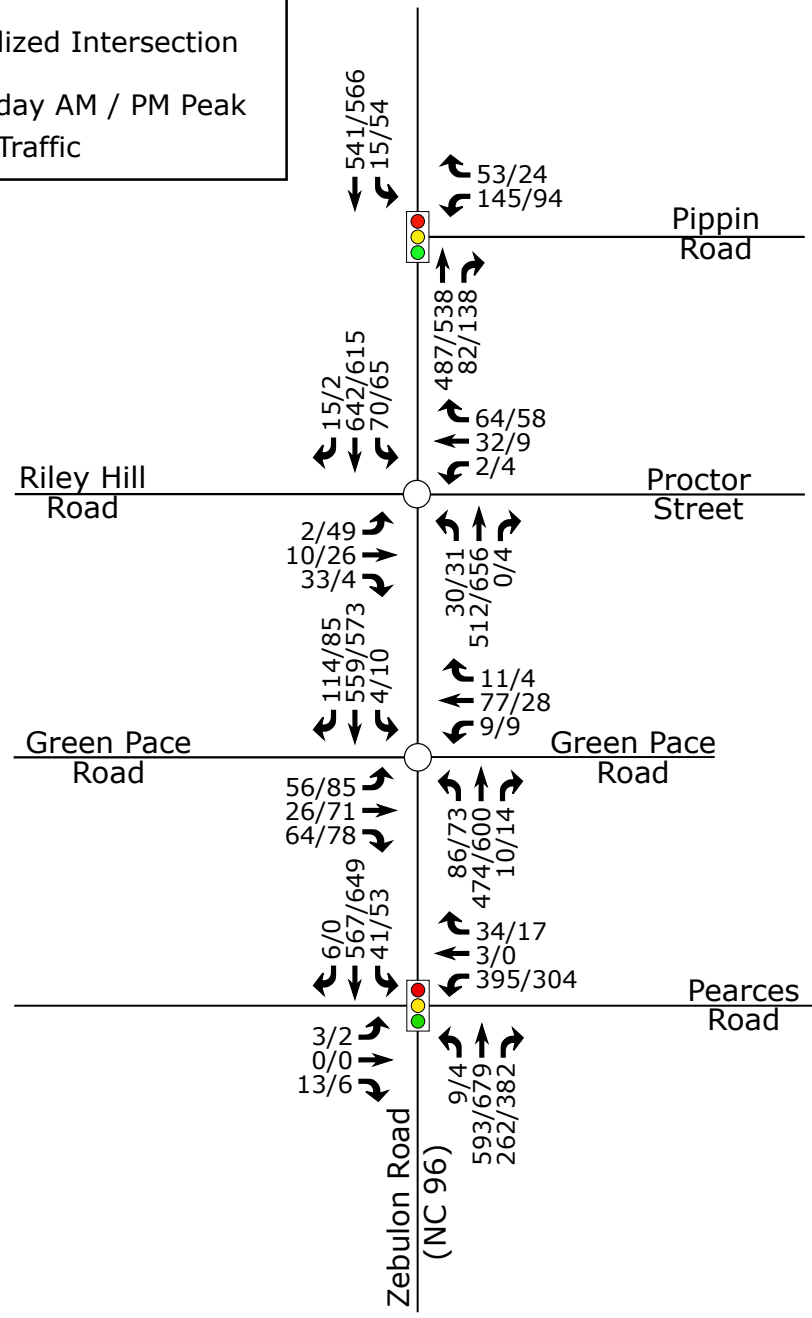


project
 master plan



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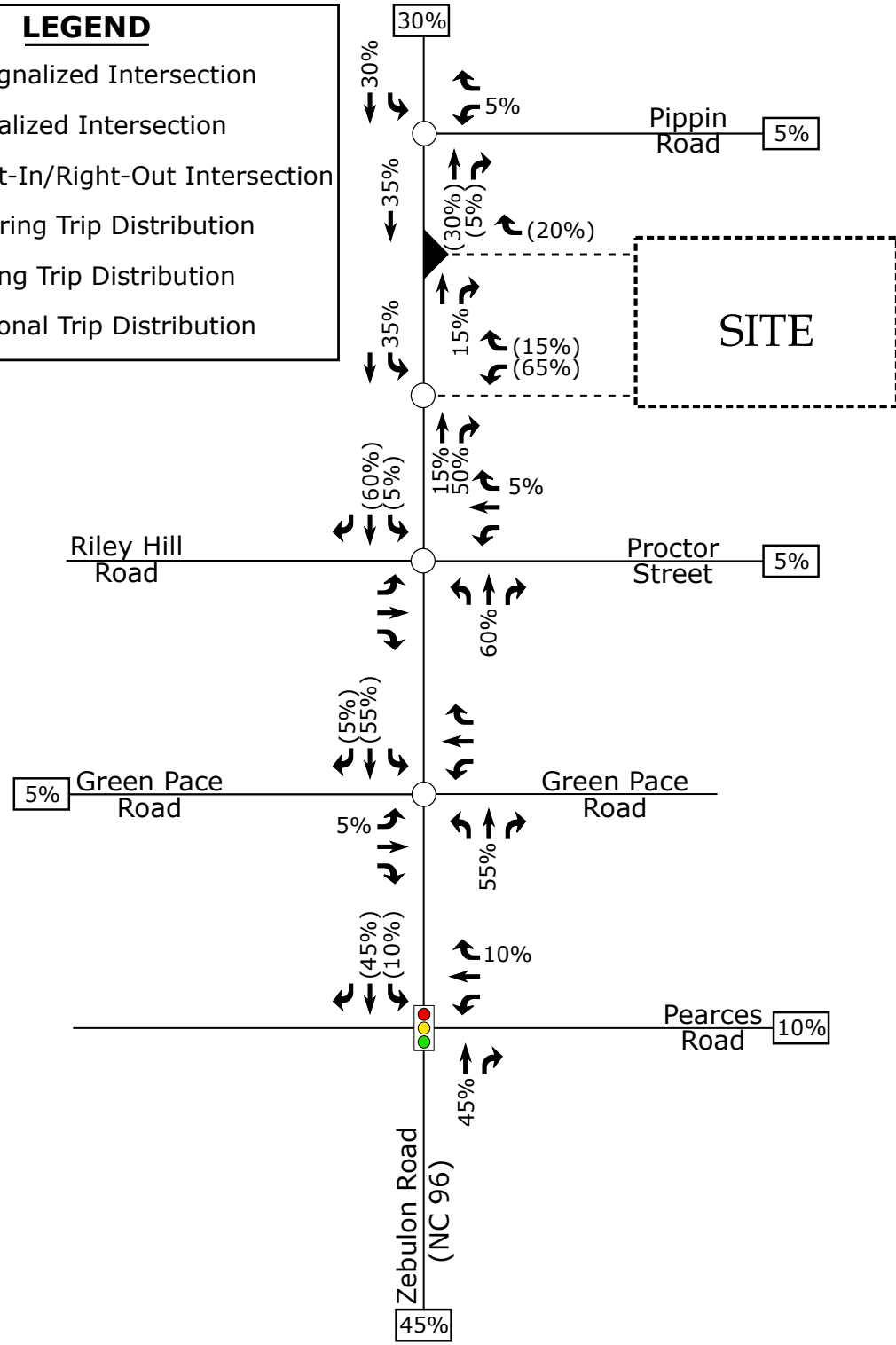
- Unsignalized Intersection
- 🚦 Signalized Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic




	<p>Zebulon Road Mixed-Use Zebulon, NC</p>	<p>2024 Existing Peak Hour Traffic</p>	
		<p>Scale: Not to Scale</p>	<p>Figure 4</p>

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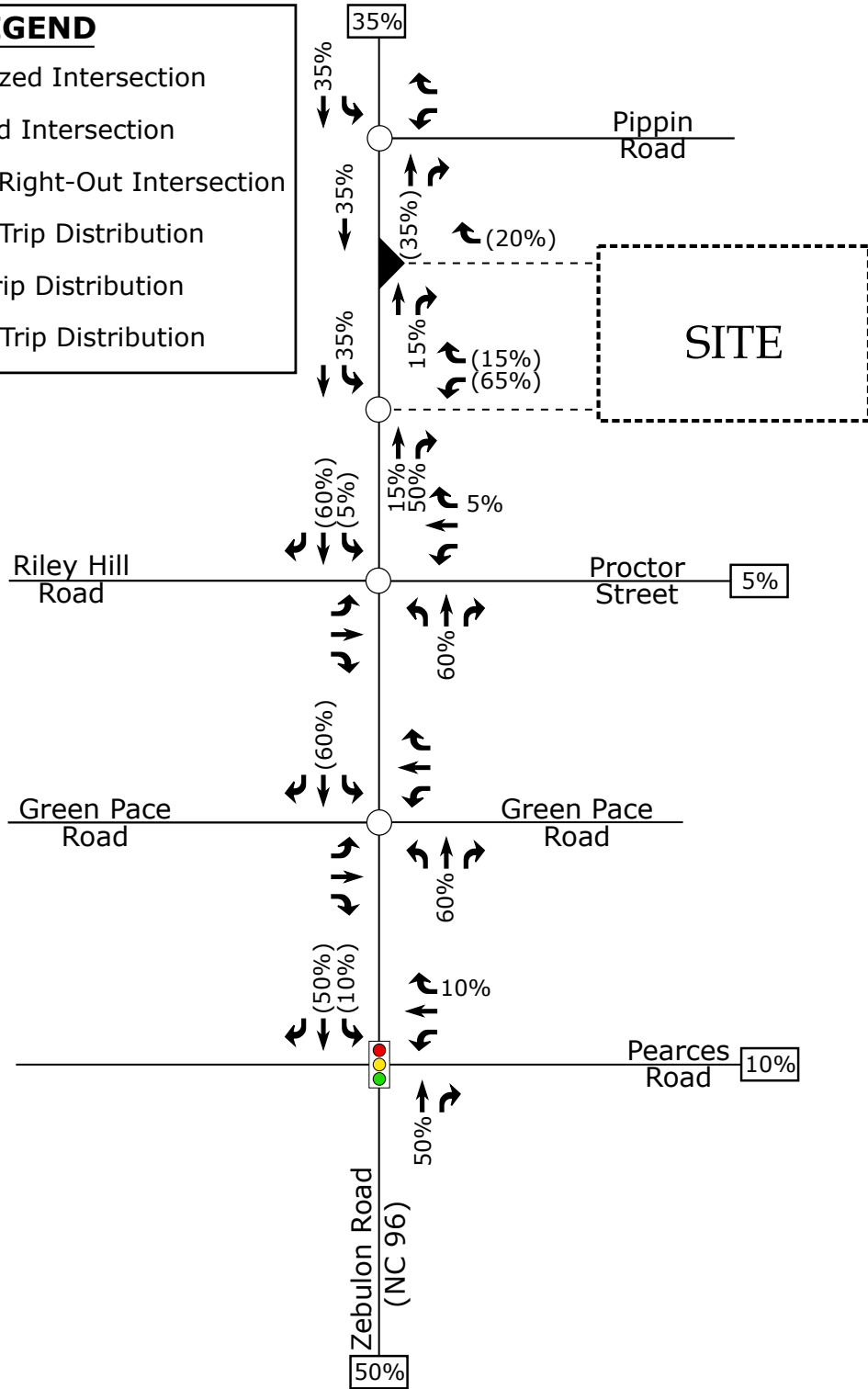
- Unsignalized Intersection
- 🚦 Signalized Intersection
- ▲ Right-In/Right-Out Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution



	Zebulon Road Mixed-Use Zebulon, NC	Residential Site Trip Distribution	
		Scale: Not to Scale	Figure 8a

LEGEND

- Unsignalized Intersection
- 🚦 Signalized Intersection
- ▲ Right-In/Right-Out Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution




	Zebulon Road Mixed-Use Zebulon, NC	Commercial Site Trip Distribution	
		Scale: Not to Scale	Figure 8b

Table 1: Site Trip Generation

TOTAL TRIPS												
Code	Land Use	Size	Unit	Daily			AM Peak			PM Peak		
				In	Out	Total	In	Out	Total	In	Out	Total
220	Apartments	240	units	807	807	1,614	23	74	97	78	46	124
822	Strip Retail	26.0	KSF	708	708	1,416	37	24	61	86	85	171
932	High-Turnover Restaurant	5.5	KSF	295	295	590	29	24	53	31	19	50
937	Coffee/Donut Shop w/ Drive-Thru	0.6	KSF	160	160	320	27	25	52	12	11	23
						0			0			0
						0			0			0
						0			0			0
						0			0			0
						0			0			0
Total Trips				1,970	1,970	3,940	116	147	263	207	161	368

INTERNAL CAPTURE												
				Internal Capture Rate (Table 5A)		AM	15%					
						PM	16%					
Code	Land Use	Size	Unit	Daily			AM Peak			PM Peak		
				In	Out	Total	In	Out	Total	In	Out	Total
220	Apartments	240	units				4	11	15	13	7	20
822	Strip Retail	26	KSF				5	4	9	14	13	27
932	High-Turnover Restaurant	6	KSF				4	4	8	5	3	8
937	Coffee/Donut Shop w/ Drive-Thru	1	KSF				4	4	8	2	2	4
Total Trips				0	0	0	17	23	40	34	25	59

EXTERNAL TRIPS												
Code	Land Use	Size	Unit	Daily			AM Peak			PM Peak		
				In	Out	Total	In	Out	Total	In	Out	Total
220	Apartments	240	units	807	807	1614	19	63	82	65	39	104
822	Strip Retail	26	KSF	708	708	1416	32	20	52	72	72	144
932	High-Turnover Restaurant	6	KSF	295	295	590	25	20	45	26	16	42
937	Coffee/Donut Shop w/ Drive-Thru	1	KSF	160	160	320	23	21	44	10	9	19
Total Trips				1,970	1,970	3,940	99	124	223	173	136	309

PASS-BY RATES				
RATE	Land Use	ITE Pass-By Rates		
		Daily	AM	PM
A	Apartments	0.0%	0.0%	0.0%
B	Strip Retail	0.0%	0.0%	29.0%
C	High-Turnover Restaurant	0.0%	0.0%	43.0%
D	Coffee/Donut Shop w/ Drive-Thru	0.0%	90.0%	98.0%
E		0.0%	0.0%	0.0%
F		0.0%	0.0%	0.0%

PASS-BY TRIPS												
RATE	Land Use	Size	Unit	24 Hour Volumes			AM Peak Hour Trips			PM Peak Hour Trips		
				Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
A	Apartments	240	units	0	0	0	0	0	0	0	0	0
B	Strip Retail	26	KSF	0	0	0	0	0	0	21	21	42
C	High-Turnover Restaurant	6	KSF	0	0	0	0	0	0	9	9	18
D	Coffee/Donut Shop w/ Drive-Thru	1	KSF	0	0	0	20	20	40	9	9	18
Pass-By Trips				0	0	0	20	20	40	39	39	78
Applied Pass-By Trips				0	0	0	20	20	40	39	39	78

TRIP GENERATION SUMMARY												
Code	Land Use	Size	Unit	Daily			AM Peak			PM Peak		
				In	Out	Total	In	Out	Total	In	Out	Total
220	Apartments	240	units	807	807	1614	23	74	97	78	46	124
822	Strip Retail	26	KSF	708	708	1416	37	24	61	86	85	171
932	High-Turnover Restaurant	6	KSF	295	295	590	29	24	53	31	19	50
937	Coffee/Donut Shop w/ Drive-Thru	1	KSF	160	160	320	27	25	52	12	11	23
Total Trips				1,970	1,970	3,940	116	147	263	207	161	368
<i>Internal Capture (15% AM & 16% PM)</i>				<i>0</i>	<i>0</i>	<i>0</i>	<i>-17</i>	<i>-23</i>	<i>-40</i>	<i>-34</i>	<i>-25</i>	<i>-59</i>
Total External Trips				1,970	1,970	3,940	99	124	223	173	136	309
<i>Pass-By Trips</i>				<i>0</i>	<i>0</i>	<i>0</i>	<i>-20</i>	<i>-20</i>	<i>-40</i>	<i>-39</i>	<i>-39</i>	<i>-78</i>
Total Primary Trips				1,970	1,970	3,940	79	104	183	134	97	231

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Zebulon Road Mixed-Use	Organization:	DRMP
Project Location:	Zebulon NC	Performed By:	GB
Scenario Description:		Date:	11/25/2024
Analysis Year:	2029	Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0	0	0
Retail	822	26	KSF	61	37	24
Restaurant	932/937	6	KSF	105	56	49
Cinema/Entertainment				0	0	0
Residential	220	240	du	97	23	74
Hotel				0	0	0
All Other Land Uses ²				0	0	0
				263	116	147

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.10	0%	0%	1.10	0%	0%
Retail	1.10	0%	0%	1.10	0%	0%
Restaurant	1.10	0%	0%	1.10	0%	0%
Cinema/Entertainment	1.10	0%	0%	1.10	0%	0%
Residential	1.10	0%	0%	1.10	0%	0%
Hotel	1.10	0%	0%	1.10	0%	0%
All Other Land Uses ²	1.10	0%	0%	1.10	0%	0%

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		3	0	1	0
Restaurant	0	3		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	12	0		0
Hotel	0	0	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	289	128	161
Internal Capture Percentage	15%	16%	13%
External Vehicle-Trips ⁵	225	98	127
External Transit-Trips ⁶	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	10%	15%
Restaurant	24%	7%
Cinema/Entertainment	N/A	N/A
Residential	8%	16%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in *ITE Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Zebulon Road Mixed-Use	Organization:	DRMP
Project Location:	Zebulon NC	Performed By:	GB
Scenario Description:		Date:	11/25/2024
Analysis Year:	2029	Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (For Information Only)			Estimated Vehicle-Trips ³		
	ITE LUCs ¹	Quantity	Units	Total	Entering	Exiting
Office				0	0	0
Retail	822	26	KSF	171	86	85
Restaurant	932/937	6	KSF	73	43	30
Cinema/Entertainment				0	0	0
Residential	220	240	du	124	78	46
Hotel				0	0	0
All Other Land Uses ²				0	0	0
				368	207	161

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ. ⁴	% Transit	% Non-Motorized	Veh. Occ. ⁴	% Transit	% Non-Motorized
Office	1.10	0%	0%	1.10	0%	0%
Retail	1.10	0%	0%	1.10	0%	0%
Restaurant	1.10	0%	0%	1.10	0%	0%
Cinema/Entertainment	1.10	0%	0%	1.10	0%	0%
Residential	1.10	0%	0%	1.10	0%	0%
Hotel	1.10	0%	0%	1.10	0%	0%
All Other Land Uses ²	1.10	0%	0%	1.10	0%	0%

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		4000	4000		4000	
Retail					4000	
Restaurant					4000	
Cinema/Entertainment					4000	
Residential		4000	4000			
Hotel					4000	

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		0	0	0	0	0
Retail	0		14	0	2	0
Restaurant	0	14		0	1	0
Cinema/Entertainment	0	0	0		0	0
Residential	0	1	1	0		0
Hotel	0	0	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	406	228	178
Internal Capture Percentage	16%	14%	19%
External Vehicle-Trips ⁵	309	177	132
External Transit-Trips ⁵	0	0	0
External Non-Motorized Trips ⁶	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	N/A	N/A
Retail	16%	17%
Restaurant	32%	45%
Cinema/Entertainment	N/A	N/A
Residential	3%	4%
Hotel	N/A	N/A

¹Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

²Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

³Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

⁴Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

⁵Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

⁶Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

APPENDIX B

TRAFFIC COUNTS

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/Zebulon Rd & CR 2337/Pippin Rd
 City: Zebulon
 Control: Signalized

Project ID: 24-160062-001
 Date: 9/5/2024

Data - Total

NS/EW Streets:	NC 96/Zebulon Rd				NC 96/Zebulon Rd				CR 2337/Pippin Rd				CR 2337/Pippin Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	145	15	0	1	119	0	0	0	0	0	0	52	0	23	0	355
7:15 AM	0	112	16	0	3	132	0	0	0	0	0	0	36	0	12	0	311
7:30 AM	0	102	19	0	4	138	0	0	0	0	0	0	29	0	13	0	305
7:45 AM	0	128	32	0	7	152	0	0	0	0	0	0	28	0	5	0	352
8:00 AM	0	123	28	0	9	116	0	0	0	0	0	0	22	0	7	0	305
8:15 AM	0	132	28	0	9	113	0	0	0	0	0	0	31	0	5	0	318
8:30 AM	0	111	29	0	7	102	0	0	0	0	0	0	22	0	5	0	276
8:45 AM	0	91	60	0	8	101	0	0	0	0	0	0	75	0	14	0	349
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	944	227	0	48	973	0	0	0	0	0	0	295	0	84	0	2571
	0.00%	80.61%	19.39%	0.00%	4.70%	95.30%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	77.84%	0.00%	22.16%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	487	82	0	15	541	0	0	0	0	0	0	145	0	53	0	1323
PEAK HR FACTOR :	0.000	0.840	0.641	0.000	0.536	0.890	0.000	0.000	0.000	0.000	0.000	0.000	0.697	0.000	0.576	0.000	0.932
			0.889			0.874								0.660			
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	103	42	0	12	98	0	0	0	0	0	0	54	0	13	0	322
4:15 PM	0	117	31	0	11	154	0	0	0	0	0	0	48	0	14	0	375
4:30 PM	0	115	29	0	10	118	0	0	0	0	0	0	40	0	8	0	320
4:45 PM	0	136	30	0	9	129	0	0	0	0	0	0	32	0	8	0	344
5:00 PM	0	136	29	0	12	132	0	0	0	0	0	0	34	0	5	0	348
5:15 PM	0	151	29	0	9	138	0	0	0	0	0	0	19	0	5	0	351
5:30 PM	0	125	42	0	19	156	0	0	0	0	0	0	17	0	5	0	364
5:45 PM	0	126	38	0	14	140	0	0	0	0	0	0	24	0	9	0	351
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	1009	270	0	96	1065	0	0	0	0	0	0	268	0	67	0	2775
	0.00%	78.89%	21.11%	0.00%	8.27%	91.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	80.00%	0.00%	20.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	538	138	0	54	566	0	0	0	0	0	0	94	0	24	0	1414
PEAK HR FACTOR :	0.000	0.891	0.821	0.000	0.711	0.907	0.000	0.000	0.000	0.000	0.000	0.000	0.691	0.000	0.667	0.000	0.971
			0.939			0.886								0.756			

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/Zebulon Rd & CR 2337/Pippin Rd
 City: Zebulon
 Control: Signalized

Project ID: 24-160062-001
 Date: 9/5/2024

Data - Cars

NS/EW Streets:	NC 96/Zebulon Rd				NC 96/Zebulon Rd				CR 2337/Pippin Rd				CR 2337/Pippin Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	1	1	0	1	1	0	0	0	0	0	0	0.5	0	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	135	15	0	1	116	0	0	0	0	0	0	51	0	23	0	341
7:15 AM	0	105	15	0	3	122	0	0	0	0	0	0	36	0	11	0	292
7:30 AM	0	96	19	0	3	127	0	0	0	0	0	0	29	0	13	0	267
7:45 AM	0	116	32	0	7	147	0	0	0	0	0	0	28	0	5	0	335
8:00 AM	0	112	28	0	9	114	0	0	0	0	0	0	22	0	7	0	292
8:15 AM	0	117	27	0	9	109	0	0	0	0	0	0	30	0	5	0	297
8:30 AM	0	95	29	0	5	91	0	0	0	0	0	0	20	0	5	0	245
8:45 AM	0	79	60	0	7	96	0	0	0	0	0	0	75	0	13	0	330
TOTAL VOLUMES :	0	855	225	0	44	922	0	0	0	0	0	0	291	0	82	0	2419
APPROACH %'s :	0.00%	79.17%	20.83%	0.00%	4.55%	95.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	78.02%	0.00%	21.98%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																
PEAK HR VOL :	0	452	81	0	14	512	0	0	0	0	0	0	144	0	52	0	1255
PEAK HR FACTOR :	0.000	0.837	0.633	0.000	0.500	0.871	0.000	0.000	0.000	0.000	0.000	0.000	0.706	0.000	0.565	0.000	0.920
			0.888			0.854									0.662		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	1	1	0	1	1	0	0	0	0	0	0	0.5	0	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	96	40	0	11	95	0	0	0	0	0	0	53	0	11	0	306
4:15 PM	0	106	29	0	11	140	0	0	0	0	0	0	47	0	13	0	346
4:30 PM	0	108	28	0	8	113	0	0	0	0	0	0	37	0	8	0	302
4:45 PM	0	131	30	0	9	121	0	0	0	0	0	0	32	0	7	0	330
5:00 PM	0	132	29	0	12	127	0	0	0	0	0	0	34	0	5	0	339
5:15 PM	0	146	29	0	9	131	0	0	0	0	0	0	19	0	5	0	339
5:30 PM	0	118	42	0	19	153	0	0	0	0	0	0	17	0	5	0	354
5:45 PM	0	123	38	0	14	132	0	0	0	0	0	0	24	0	9	0	340
TOTAL VOLUMES :	0	960	265	0	93	1012	0	0	0	0	0	0	263	0	63	0	2656
APPROACH %'s :	0.00%	78.37%	21.63%	0.00%	8.42%	91.58%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	80.67%	0.00%	19.33%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																
PEAK HR VOL :	0	519	138	0	54	543	0	0	0	0	0	0	94	0	24	0	1372
PEAK HR FACTOR :	0.000	0.889	0.821	0.000	0.711	0.887	0.000	0.000	0.000	0.000	0.000	0.000	0.691	0.000	0.667	0.000	0.969
			0.939			0.868									0.756		

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/Zebulon Rd & CR 2337/Pippin Rd
 City: Zebulon
 Control: Signalized

Project ID: 24-160062-001
 Date: 9/5/2024

Data - HT

NS/EW Streets:	NC 96/Zebulon Rd				NC 96/Zebulon Rd				CR 2337/Pippin Rd				CR 2337/Pippin Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	1	1	0	1	1	0	0	0	0	0	0	0.5	0	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	10	0	0	0	3	0	0	0	0	0	0	1	0	0	0	14
7:15 AM	0	7	1	0	0	10	0	0	0	0	0	0	0	0	1	0	19
7:30 AM	0	6	0	0	1	11	0	0	0	0	0	0	0	0	0	0	18
7:45 AM	0	12	0	0	0	5	0	0	0	0	0	0	0	0	0	0	17
8:00 AM	0	11	0	0	0	2	0	0	0	0	0	0	0	0	0	0	13
8:15 AM	0	15	1	0	0	4	0	0	0	0	0	0	1	0	0	0	21
8:30 AM	0	16	0	0	2	11	0	0	0	0	0	0	2	0	0	0	31
8:45 AM	0	12	0	0	1	5	0	0	0	0	0	0	0	0	1	0	19
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	89	2	0	4	51	0	0	0	0	0	0	4	0	2	0	152
	0.00%	97.80%	2.20%	0.00%	7.27%	92.73%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	66.67%	0.00%	33.33%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	35	1	0	1	29	0	0	0	0	0	0	1	0	1	0	68
PEAK HR FACTOR :	0.000	0.729	0.250	0.000	0.250	0.659	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.895
			0.750			0.625									0.500		
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	1	1	0	1	1	0	0	0	0	0	0	0.5	0	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	7	2	0	1	3	0	0	0	0	0	0	1	0	2	0	16
4:15 PM	0	11	2	0	0	14	0	0	0	0	0	0	1	0	1	0	29
4:30 PM	0	7	1	0	2	5	0	0	0	0	0	0	3	0	0	0	18
4:45 PM	0	5	0	0	0	8	0	0	0	0	0	0	0	0	1	0	14
5:00 PM	0	4	0	0	0	5	0	0	0	0	0	0	0	0	0	0	9
5:15 PM	0	5	0	0	0	7	0	0	0	0	0	0	0	0	0	0	12
5:30 PM	0	7	0	0	0	3	0	0	0	0	0	0	0	0	0	0	10
5:45 PM	0	3	0	0	0	8	0	0	0	0	0	0	0	0	0	0	11
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	49	5	0	3	53	0	0	0	0	0	0	5	0	4	0	119
	0.00%	90.74%	9.26%	0.00%	5.36%	94.64%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	55.56%	0.00%	44.44%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	19	0	0	0	23	0	0	0	0	0	0	0	0	0	0	42
PEAK HR FACTOR :	0.000	0.679	0.000	0.000	0.000	0.719	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.875
			0.679			0.719											

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/Zebulon Rd & CR 2337/Pippin Rd
 City: Zebulon
 Control: Signalized

Project ID: 24-160062-001
 Date: 9/5/2024

Data - Bikes

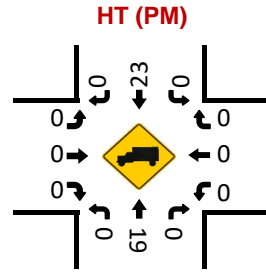
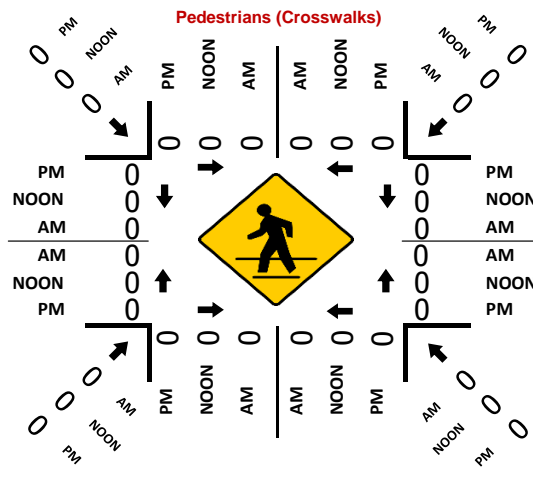
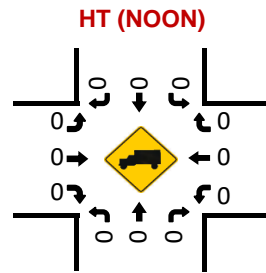
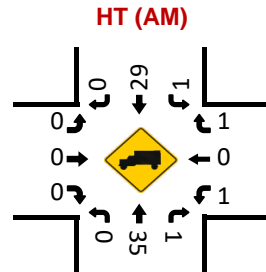
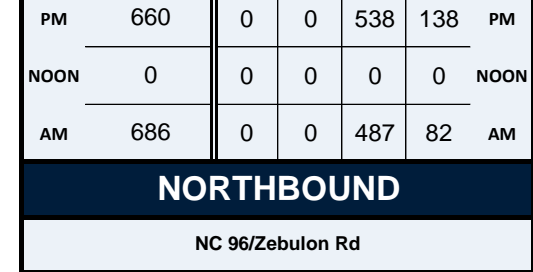
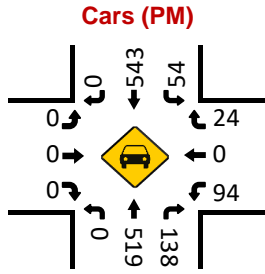
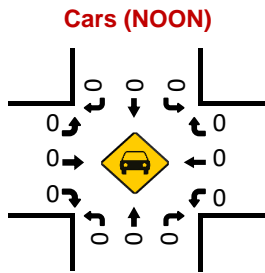
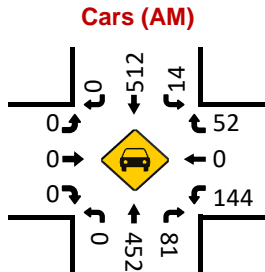
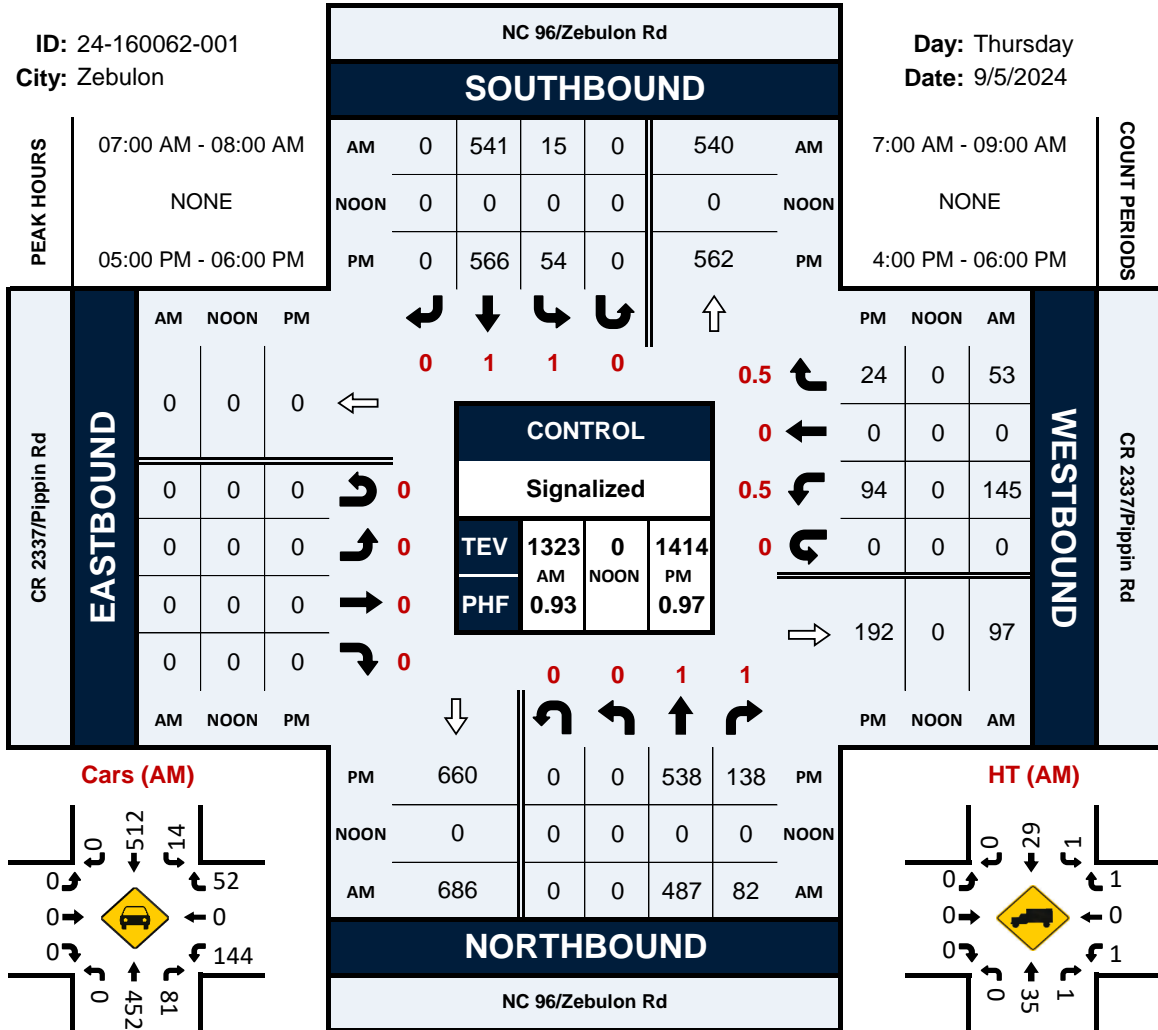
NS/EW Streets:	NC 96/Zebulon Rd				NC 96/Zebulon Rd				CR 2337/Pippin Rd				CR 2337/Pippin Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	0	0	0	0	0.5	0	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	0	1	1	0	1	1	0	0	0	0	0	0	0.5	0	0.5	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
APPROACH %'s :																	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0

NC 96/Zebulon Rd & CR 2337/Pippin Rd

Peak Hour Turning Movement Count

ID: 24-160062-001
City: Zebulon

Day: Thursday
Date: 9/5/2024



Project ID: 24-160062-001
 Location: NC 96/Zebulon Rd & CR 2337/Pippin Rd
 City: Zebulon

Day: Thursday
 Date: 9/5/2024

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	NC 96/Zebulon Rd Northbound						NC 96/Zebulon Rd Southbound						CR 2337/Pippin Rd Eastbound						CR 2337/Pippin Rd Westbound						Int. Total
	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	
7:00 AM	0	145	15	0	0	160	1	119	0	0	0	120	0	0	0	0	0	0	52	0	23	0	0	75	355
7:15 AM	0	112	16	0	0	128	3	132	0	0	0	135	0	0	0	0	0	0	36	0	12	0	0	48	311
7:30 AM	0	102	19	0	0	121	4	138	0	0	0	142	0	0	0	0	0	0	29	0	13	0	0	42	305
7:45 AM	0	128	32	0	0	160	7	152	0	0	0	159	0	0	0	0	0	0	28	0	5	0	0	33	352
Total	0	487	82	0	0	569	15	541	0	0	0	556	0	0	0	0	0	0	145	0	53	0	0	198	1323
8:00 AM	0	123	28	0	0	151	9	116	0	0	0	125	0	0	0	0	0	0	22	0	7	0	0	29	305
8:15 AM	0	132	28	0	0	160	9	113	0	0	0	122	0	0	0	0	0	0	31	0	5	0	0	36	318
8:30 AM	0	111	29	0	0	140	7	102	0	0	0	109	0	0	0	0	0	0	22	0	5	0	0	27	276
8:45 AM	0	91	60	0	0	151	8	101	0	0	0	109	0	0	0	0	0	0	75	0	14	0	0	89	349
Total	0	457	145	0	0	602	33	432	0	0	0	465	0	0	0	0	0	0	150	0	31	0	0	181	1248
BREAK																									
4:00 PM	0	103	42	0	0	145	12	98	0	0	0	110	0	0	0	0	0	0	54	0	13	0	0	67	322
4:15 PM	0	117	31	0	0	148	11	154	0	0	0	165	0	0	0	0	0	0	48	0	14	0	0	62	375
4:30 PM	0	115	29	0	0	144	10	118	0	0	0	128	0	0	0	0	0	0	40	0	8	0	0	48	320
4:45 PM	0	136	30	0	0	166	9	129	0	0	0	138	0	0	0	0	0	0	32	0	8	0	0	40	344
Total	0	471	132	0	0	603	42	499	0	0	0	541	0	0	0	0	0	0	174	0	43	0	0	217	1361
5:00 PM	0	136	29	0	0	165	12	132	0	0	0	144	0	0	0	0	0	0	34	0	5	0	0	39	348
5:15 PM	0	151	29	0	0	180	9	138	0	0	0	147	0	0	0	0	0	0	19	0	5	0	0	24	351
5:30 PM	0	125	42	0	0	167	19	156	0	0	0	175	0	0	0	0	0	0	17	0	5	0	0	22	364
5:45 PM	0	126	38	0	0	164	14	140	0	0	0	154	0	0	0	0	0	0	24	0	9	0	0	33	351
Total	0	538	138	0	0	676	54	566	0	0	0	620	0	0	0	0	0	0	94	0	24	0	0	118	1414
Grand Total	0	1953	497	0	0	2450	144	2038	0	0	0	2182	0	0	0	0	0	0	563	0	151	0	0	714	5346
Apprch %	0.0	79.7	20.3	0.0	0.0		6.6	93.4	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		78.9	0.0	21.1	0.0	0.0		
Total %	0.0	36.5	9.3	0.0	0.0	45.8	2.7	38.1	0.0	0.0	0.0	40.8	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.0	2.8	0.0	0.0	13.4	
Cars, PU, Vans	0	1815	490	0		2305	137	1934	0	0		2071	0	0	0	0	0		554	0	145	0		699	5075
% Cars, PU, Vans	0.0	92.9	98.6	0.0		94.1	95.1	94.9	0.0	0.0		94.9	0.0	0.0	0.0	0.0	0.0		98.4	0.0	96.0	0.0		97.9	94.9
Heavy trucks	0	138	7	0		145	7	104	0	0		111	0	0	0	0	0		9	0	6	0		15	271
% Heavy trucks	0.0	7.1	1.4	0.0		5.9	4.9	5.1	0.0	0.0		5.1	0.0	0.0	0.0	0.0	0.0		1.6	0.0	4.0	0.0		2.1	5.1

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/Zebulon Rd/N Arendell Ave & CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy
 City: Zebulon
 Control: 2-Way Stop (EB/WB)

Project ID: 24-160062-002
 Date: 9/5/2024

Data - Total

NS/EW Streets	NC 96/Zebulon Rd/N Arendell Ave					NC 96/Zebulon Rd/N Arendell Ave					CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				TOTAL										
	NORTHBOUND					SOUTHBOUND					EASTBOUND				WESTBOUND														
AM	1	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	E2L2	E2T2	E2R2	
7:00 AM	13	128	0	0	0	18	154	5	0	1	0	3	4	0	1	1	17	29	0	1	1	0	0	0	0	1	0	0	374
7:15 AM	3	117	0	0	0	14	163	5	0	1	1	4	9	0	0	0	6	11	0	1	0	0	0	0	0	1	0	0	335
7:30 AM	6	118	0	0	1	25	157	4	0	0	0	2	5	0	0	0	4	15	0	0	0	0	0	0	0	0	0	1	338
7:45 AM	8	147	0	0	1	13	165	1	0	1	1	1	15	0	1	1	5	9	0	0	0	0	0	0	0	0	0	0	368
8:00 AM	7	131	0	0	2	15	138	1	0	0	1	4	9	0	0	0	3	25	0	0	0	0	0	0	0	0	0	0	336
8:15 AM	6	146	0	0	0	13	136	0	0	0	0	0	6	0	0	0	3	21	0	0	0	0	0	0	0	0	0	0	331
8:30 AM	3	132	1	0	0	7	114	0	0	3	2	0	5	0	3	0	1	12	0	0	0	0	0	0	0	0	0	0	290
8:45 AM	4	128	0	0	1	17	157	2	0	0	5	3	10	0	0	0	2	15	0	0	0	1	1	1	1	1	1	1	347
TOTAL VOLUMES	NL	NT	NR	NU	NL2	SL	ST	SR	SU	SR2	EL	ET	ER	EU	WL	WT	WR	WU	E2L2	E2T2	E2R2	TOTAL							
APPROACH %'s :	50	1047	1	0	5	122	1184	18	0	6	10	17	63	0	2	41	137	0	3	1	2	2709							
	4.53%	94.92%	0.09%	0.00%	0.45%	9.17%	89.02%	1.35%	0.00%	0.45%	11.11%	18.89%	70.00%	0.00%	1.11%	22.78%	76.11%	0.00%	50.00%	16.67%	33.33%								
PEAK HR :	07:00 AM - 08:00 AM																				TOTAL								
PEAK HR VOL :	30	510	0	0	2	70	639	15	0	3	2	10	33	0	2	32	64	0	2	0	1	1415							
PEAK HR FACTOR :	0.577	0.867	0.000	0.000	0.500	0.700	0.968	0.750	0.000	0.750	0.500	0.625	0.550	0.000	0.500	0.471	0.552	0.000	0.500	0.000	0.250	0.946							
			0.869					0.977					0.662				0.521												
PM	1	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	E2L2	E2T2	E2R2		
4:00 PM	5	139	1	0	0	21	123	1	0	1	1	1	10	1	2	4	14	0	0	0	0	324							
4:15 PM	8	155	1	0	0	19	180	6	0	2	1	3	18	0	1	5	11	0	0	0	0	410							
4:30 PM	11	138	0	0	0	17	145	4	0	0	2	3	9	0	1	1	17	0	0	0	0	349							
4:45 PM	14	164	2	0	2	17	138	1	0	1	0	6	10	0	1	2	12	0	0	1	1	372							
5:00 PM	8	153	1	0	1	14	157	1	0	0	0	3	9	0	0	2	17	0	0	0	1	367							
5:15 PM	2	177	1	0	1	17	150	0	0	0	2	7	17	0	0	4	16	0	0	0	3	397							
5:30 PM	7	160	0	0	0	17	169	0	0	0	2	9	13	0	3	1	13	0	2	0	0	396							
5:45 PM	9	155	0	0	0	13	142	0	0	0	1	12	14	0	0	4	10	0	0	0	1	361							
TOTAL VOLUMES	NL	NT	NR	NU	NL2	SL	ST	SR	SU	SR2	EL	ET	ER	EU	WL	WT	WR	WU	E2L2	E2T2	E2R2	TOTAL							
APPROACH %'s :	64	1241	6	0	4	135	1204	13	0	4	9	44	100	1	8	23	110	0	2	1	7	2976							
	4.87%	94.37%	0.46%	0.00%	0.30%	9.96%	88.79%	0.96%	0.00%	0.29%	5.84%	28.57%	64.94%	0.65%	5.67%	16.31%	78.01%	0.00%	20.00%	10.00%	70.00%								
PEAK HR :	04:45 PM - 05:45 PM																				TOTAL								
PEAK HR VOL :	31	654	4	0	4	65	614	2	0	1	4	25	49	0	4	9	58	0	2	1	5	1532							
PEAK HR FACTOR :	0.554	0.924	0.500	0.000	0.500	0.956	0.908	0.500	0.000	0.250	0.500	0.694	0.721	0.000	0.333	0.563	0.853	0.000	0.250	0.250	0.417	0.965							
			0.952					0.917					0.750				0.888												

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/Zebulon Rd/N Arendell Ave & CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy
 City: Zebulon
 Control: 2-Way Stop (EB/WB)

Project ID: 24-160062-002
 Date: 9/5/2024

Data - Cars

NS/EW Streets	NC 96/Zebulon Rd/N Arendell Ave					NC 96/Zebulon Rd/N Arendell Ave					CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				TOTAL										
	NORTHBOUND					SOUTHBOUND					EASTBOUND				WESTBOUND					EASTBOUND2									
AM	1	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	TOTAL
7:00 AM	13	117	0	0	0	17	149	5	0	1	0	3	4	0	1	1	17	29	0	1	1	17	29	0	1	0	0	0	357
7:15 AM	3	110	0	0	0	14	152	5	0	1	1	4	9	0	0	0	6	11	0	1	0	6	11	0	0	0	0	0	317
7:30 AM	4	108	0	0	1	25	147	4	0	0	0	2	4	0	0	0	3	15	0	0	0	3	15	0	0	0	1	1	314
7:45 AM	8	137	0	0	1	11	161	1	0	1	1	1	15	0	1	1	5	9	0	0	0	5	9	0	0	0	0	0	352
8:00 AM	7	120	0	0	2	15	133	1	0	0	1	4	9	0	0	0	1	25	0	0	0	1	25	0	0	0	0	0	318
8:15 AM	3	129	0	0	0	13	132	0	0	0	0	0	6	0	0	0	3	21	0	0	0	3	21	0	0	0	0	0	307
8:30 AM	3	117	1	0	0	5	102	0	0	3	2	0	5	0	0	0	1	12	0	0	0	1	12	0	0	0	0	0	251
8:45 AM	3	115	0	0	1	17	152	2	0	0	5	3	10	0	0	0	2	14	0	1	0	2	14	0	1	1	1	1	327
TOTAL VOLUMES :	NL	NT	NR	NU	NL2	SL	ST	SR	SU	SR2	EL	ET	ER	EU	WL	WT	WR	WU	E2L2	E2T2	E2R2					TOTAL			
APPROACH % :	4.39%	95.01%	0.10%	0.00%	0.50%	9.22%	88.89%	1.42%	0.00%	0.47%	11.24%	19.10%	69.66%	0.00%	1.14%	21.59%	77.27%	0.00%	50.00%	16.67%	33.33%					2543			
PEAK HR :	07:00 AM - 08:00 AM																				TOTAL								
PEAK HR VOL :	28	472	0	0	2	67	609	15	0	3	2	10	32	0	2	31	64	0	2	0	1					1340			
PEAK HR FACTOR :	0.538	0.861	0.000	0.000	0.500	0.670	0.946	0.750	0.000	0.750	0.500	0.625	0.533	0.000	0.500	0.456	0.552	0.000	0.500	0.000	0.250					0.938			

NS/EW Streets	NC 96/Zebulon Rd/N Arendell Ave					NC 96/Zebulon Rd/N Arendell Ave					CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				TOTAL										
	NORTHBOUND					SOUTHBOUND					EASTBOUND				WESTBOUND					EASTBOUND2									
PM	1	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	TOTAL
4:00 PM	5	131	1	0	0	21	118	1	0	1	1	1	10	1	2	4	13	0	0	0	0					310			
4:15 PM	8	142	1	0	0	18	165	5	0	2	1	3	16	0	1	5	9	0	0	0	0					376			
4:30 PM	11	133	0	0	0	17	137	4	0	0	2	3	9	0	1	1	16	0	0	0	1					335			
4:45 PM	14	156	2	0	2	17	130	1	0	1	0	6	10	0	1	2	12	0	0	1	1					356			
5:00 PM	8	151	1	0	1	13	152	1	0	0	0	3	9	0	0	2	17	0	0	0	1					359			
5:15 PM	2	172	1	0	1	17	143	0	0	0	2	6	17	0	0	4	15	0	0	0	3					383			
5:30 PM	7	153	0	0	0	16	164	0	0	0	2	9	13	0	3	1	13	0	2	0	0					383			
5:45 PM	9	151	0	0	0	13	134	0	0	0	1	12	14	0	0	4	10	0	0	0	1					349			
TOTAL VOLUMES :	NL	NT	NR	NU	NL2	SL	ST	SR	SU	SR2	EL	ET	ER	EU	WL	WT	WR	WU	E2L2	E2T2	E2R2					TOTAL			
APPROACH % :	5.07%	94.14%	0.48%	0.00%	0.32%	10.22%	88.54%	0.93%	0.00%	0.31%	5.96%	28.48%	64.90%	0.66%	5.88%	16.91%	77.21%	0.00%	20.00%	10.00%	70.00%					2851			
PEAK HR :	04:45 PM - 05:45 PM																				TOTAL								
PEAK HR VOL :	31	632	4	0	4	63	589	2	0	1	4	24	49	0	4	9	57	0	2	1	5					1481			
PEAK HR FACTOR :	0.554	0.919	0.500	0.000	0.500	0.926	0.898	0.500	0.000	0.250	0.500	0.667	0.721	0.000	0.333	0.563	0.838	0.000	0.250	0.250	0.417					0.967			

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/Zebulon Rd/N Arendell Ave & CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy
 City: Zebulon
 Control: 2-Way Stop (EB/WB)

Project ID: 24-160062-002
 Date: 9/5/2024

Data - HT

NS/EW Streets	NC 96/Zebulon Rd/N Arendell Ave					NC 96/Zebulon Rd/N Arendell Ave					CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				TOTAL									
	NORTHBOUND					SOUTHBOUND					EASTBOUND				WESTBOUND					EASTBOUND2								
AM	1	1	0	0	0	1	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	TOTAL
7:00 AM	0	11	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
7:15 AM	0	7	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
7:30 AM	2	10	0	0	0	0	10	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	24
7:45 AM	0	10	0	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16
8:00 AM	0	11	0	0	0	0	5	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	18
8:15 AM	3	17	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24
8:30 AM	0	15	0	0	0	2	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29
8:45 AM	1	13	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	20
TOTAL VOLUMES :	NL	NT	NR	NU	NL2	SL	ST	SR	SU	SR2	EL	ET	ER	EU	WL	WT	WR	WU	E2L2	E2T2	E2R2	TOTAL						
APPROACH %'s :	6	94	0	0	0	5	56	0	0	0	0	0	1	0	0	3	1	0	0	0	0	166						
	6.00%	94.00%	0.00%	0.00%	0.00%	8.20%	91.80%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	75.00%	25.00%	0.00%	0.00%	0.00%	0.00%							
PEAK HR :	07:00 AM - 08:00 AM																				TOTAL							
PEAK HR VOL :	2	38	0	0	0	3	30	0	0	0	0	0	1	0	0	1	0	0	0	0	0	75						
PEAK HR FACTOR :	0.250	0.864	0.000	0.000	0.000	0.375	0.682	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.781						
			0.833				0.750					0.250				0.250												
PM	1	1	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	TOTAL						
4:00 PM	0	8	0	0	0	0	5	0	0	0	0	0	0	0	0	0	1	0	0	0	0	14						
4:15 PM	0	13	0	0	0	1	15	1	0	0	0	0	2	0	0	0	2	0	0	0	0	34						
4:30 PM	0	5	0	0	0	0	8	0	0	0	0	0	0	0	0	0	1	0	0	0	0	14						
4:45 PM	0	8	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16						
5:00 PM	0	2	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8						
5:15 PM	0	5	0	0	0	0	7	0	0	0	0	1	0	0	0	0	1	0	0	0	0	14						
5:30 PM	0	7	0	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13						
5:45 PM	0	4	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12						
TOTAL VOLUMES :	NL	NT	NR	NU	NL2	SL	ST	SR	SU	SR2	EL	ET	ER	EU	WL	WT	WR	WU	E2L2	E2T2	E2R2	TOTAL						
APPROACH %'s :	0	52	0	0	0	3	61	1	0	0	0	0	2	0	0	0	5	0	0	0	0	125						
	0.00%	100.00%	0.00%	0.00%	0.00%	4.62%	93.85%	1.54%	0.00%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%							
PEAK HR :	04:45 PM - 05:45 PM																				TOTAL							
PEAK HR VOL :	0	22	0	0	0	2	25	0	0	0	0	1	0	0	0	0	1	0	0	0	0	51						
PEAK HR FACTOR :	0.000	0.688	0.000	0.000	0.000	0.500	0.781	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.797						
			0.688				0.844					0.250					0.250											

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/Zebulon Rd/N Arendell Ave & CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy
 City: Zebulon
 Control: 2-Way Stop (EB/WB)

Project ID: 24-160062-002
 Date: 9/5/2024

Data - Bikes

NS/EW Streets	NC 96/Zebulon Rd/N Arendell Ave					NC 96/Zebulon Rd/N Arendell Ave					CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				TOTAL								
	NORTHBOUND					SOUTHBOUND					EASTBOUND				WESTBOUND												
AM	1	1	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	NL2	SL	ST	SR	SU	SR2	EL	ET	ER	EU	WL	WT	WR	WU	E2L2	E2T2	E2R2					TOTAL	
APPROACH %s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR :	07:00 AM - 08:00 AM																										
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NS/EW Streets	NC 96/Zebulon Rd/N Arendell Ave					NC 96/Zebulon Rd/N Arendell Ave					CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy				TOTAL								
	NORTHBOUND					SOUTHBOUND					EASTBOUND				WESTBOUND												
PM	1	1	0	0	0	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	NL2	SL	ST	SR	SU	SR2	EL	ET	ER	EU	WL	WT	WR	WU	E2L2	E2T2	E2R2					TOTAL	
APPROACH %s :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR :	04:45 PM - 05:45 PM																										
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250

Project ID: 24-160062-002

Location: NC 96/Zebulon Rd/N Arendell Ave & CR 2320/Riley Hill Rd/Proctor St/Brannan Oil & Farm Supply Nc Dwy
 City: Zebulon

Day: Thursday
 Date: 9/5/2024

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	NC 96/Zebulon Rd/N Arendell Ave Northbound						NC 96/Zebulon Rd/N Arendell Ave Southbound						ley Hill Rd/Proctor St/Brannan Oil & Farm Supply Eastbound						ley Hill Rd/Proctor St/Brannan Oil & Farm Supply Westbound						Int. Total
	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	
7:00 AM	13	128	0	0	0	141	18	154	5	0	0	177	0	3	4	0	0	7	1	17	29	0	0	47	372
7:15 AM	3	117	0	0	0	120	14	163	5	0	0	182	1	4	9	0	0	14	0	6	11	0	0	17	333
7:30 AM	6	118	0	0	0	124	25	157	4	0	0	186	0	2	5	0	0	7	0	4	15	0	0	19	336
7:45 AM	8	147	0	0	0	155	13	165	1	0	0	179	1	1	15	0	0	17	1	5	9	0	0	15	366
Total	30	510	0	0	0	540	70	639	15	0	0	724	2	10	33	0	0	45	2	32	64	0	0	98	1407
8:00 AM	7	131	0	0	0	138	15	138	1	0	0	154	1	4	9	0	0	14	0	3	25	0	0	28	334
8:15 AM	6	146	0	0	0	152	13	136	0	0	0	149	0	0	6	0	0	6	0	3	21	0	0	24	331
8:30 AM	3	132	1	0	0	136	7	114	0	0	0	121	2	0	5	0	0	7	0	1	12	0	0	13	277
8:45 AM	4	128	0	0	0	132	17	157	2	0	0	176	5	3	10	0	0	18	0	2	15	0	0	17	343
Total	20	537	1	0	0	558	52	545	3	0	0	600	8	7	30	0	0	45	0	9	73	0	0	82	1285
BREAK																									
4:00 PM	5	139	1	0	0	145	21	123	1	0	0	145	1	1	10	1	0	13	2	4	14	0	1	20	323
4:15 PM	8	155	1	0	0	164	19	180	6	0	0	205	1	3	18	0	0	22	1	5	11	0	0	17	408
4:30 PM	11	138	0	0	0	149	17	145	4	0	0	166	2	3	9	0	0	14	1	1	17	0	0	19	348
4:45 PM	14	164	2	0	0	180	17	138	1	0	0	156	0	6	10	0	0	16	1	2	12	0	0	15	367
Total	38	596	4	0	0	638	74	586	12	0	0	672	4	13	47	1	0	65	5	12	54	0	1	71	1446
5:00 PM	8	153	1	0	0	162	14	157	1	0	0	172	0	3	9	0	0	12	0	2	17	0	0	19	365
5:15 PM	2	177	1	0	0	180	17	150	0	0	0	167	2	7	17	0	0	26	0	4	16	0	0	20	393
5:30 PM	7	160	0	0	0	167	17	169	0	0	0	186	2	9	13	0	0	24	3	1	13	0	0	17	394
5:45 PM	9	155	0	0	0	164	13	142	0	0	0	155	1	12	14	0	0	27	0	4	10	0	0	14	360
Total	26	645	2	0	0	673	61	618	1	0	0	680	5	31	53	0	0	89	3	11	56	0	0	70	1512
Grand Total	114	2288	7	0	0	2409	257	2388	31	0	0	2676	19	61	163	1	0	244	10	64	247	0	1	321	5650
Approch %	4.7	95.0	0.3	0.0	0.0		9.6	89.2	1.2	0.0	0.0		7.8	25.0	66.8	0.4	0.0		3.1	19.9	76.9	0.0	0.3		
Total %	2.0	40.5	0.1	0.0	0.0	42.6	4.5	42.3	0.5	0.0	0.0	47.4	0.3	1.1	2.9	0.0	0.0	4.3	0.2	1.1	4.4	0.0	0.0	5.7	
Cars, PU, Vans	108	2142	7	0		2257	249	2271	30	0		2550	19	60	160	1		240	10	61	241	0		312	5359
% Cars, PU, Vans	94.7	93.6	100.0	0.0		93.7	96.9	95.1	96.8	0.0		95.3	100.0	98.4	98.2	100.0		98.4	100.0	95.3	97.6	0.0		97.2	94.8
Heavy trucks	6	146	0	0		152	8	117	1	0		126	0	1	3	0		4	0	3	6	0		9	291
% Heavy trucks	5.3	6.4	0.0	0.0		6.3	3.1	4.9	3.2	0.0		4.7	0.0	1.6	1.8	0.0		1.6	0.0	4.7	2.4	0.0		2.8	5.2

Project ID: 24-160062-002
 Location: NC 96/Zebulon Rd/N Arendell Ave & CR 2320/Riley
 City: Zebulon

PEAK HOURS

Day: Thursday
 Date: 9/5/2024

AM

Start Time	NC 96/Zebulon Rd/N Arendell Ave Northbound					NC 96/Zebulon Rd/N Arendell Ave Southbound					Hill Rd/Proctor St/Brannan Oil & Farm Eastbound					Hill Rd/Proctor St/Brannan Oil & Farm Westbound					Int. Total
	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	
7:00 AM	13	128	0	0	141	18	154	5	0	177	0	3	4	0	7	1	17	29	0	47	372
7:15 AM	3	117	0	0	120	14	163	5	0	182	1	4	9	0	14	0	6	11	0	17	333
7:30 AM	6	118	0	0	124	25	157	4	0	186	0	2	5	0	7	0	4	15	0	19	336
7:45 AM	8	147	0	0	155	13	165	1	0	179	1	1	15	0	17	1	5	9	0	15	366
Total Volume	30	510	0	0	540	70	639	15	0	724	2	10	33	0	45	2	32	64	0	98	1407
% App. Total	5.6	94.4	0.0	0.0	100	9.7	88.3	2.1	0.0	100	4.4	22.2	73.3	0.0	100	2.0	32.7	65.3	0.0	100	
PHF	0.869					0.977					0.662					0.521					0.946
Cars, PU, Vans	28	472	0	0	500	67	609	15	0	691	2	10	32	0	44	2	31	64	0	97	1332
% Cars, PU, Vans	93.3	92.5	0.0	0.0	92.6	95.7	95.3	100.0	0.0	95.4	100.0	100.0	97.0	0.0	97.8	100.0	96.9	100.0	0.0	99.0	94.7
Heavy trucks	2	38	0	0	40	3	30	0	0	33	0	0	1	0	1	0	1	0	0	1	75
% Heavy trucks	6.7	7.5	0.0	0.0	7.4	4.3	4.7	0.0	0.0	4.6	0.0	0.0	3.0	0.0	2.2	0.0	3.1	0.0	0.0	1.0	5.3

PM

Start Time	NC 96/Zebulon Rd/N Arendell Ave Northbound					NC 96/Zebulon Rd/N Arendell Ave Southbound					Hill Rd/Proctor St/Brannan Oil & Farm Eastbound					Hill Rd/Proctor St/Brannan Oil & Farm Westbound					Int. Total
	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	
4:45 PM	14	164	2	0	180	17	138	1	0	156	0	6	10	0	16	1	2	12	0	15	367
5:00 PM	8	153	1	0	162	14	157	1	0	172	0	3	9	0	12	0	2	17	0	19	365
5:15 PM	2	177	1	0	180	17	150	0	0	167	2	7	17	0	26	0	4	16	0	20	393
5:30 PM	7	160	0	0	167	17	169	0	0	186	2	9	13	0	24	3	1	13	0	17	394
Total Volume	31	654	4	0	689	65	614	2	0	681	4	25	49	0	78	4	9	58	0	71	1519
% App. Total	4.5	94.9	0.6	0.0	100	9.5	90.2	0.3	0.0	100	5.1	32.1	62.8	0.0	100	5.6	12.7	81.7	0.0	100	
PHF	0.952					0.917					0.750					0.888					0.965
Cars, PU, Vans	31	632	4	0	667	63	589	2	0	654	4	24	49	0	77	4	9	57	0	70	1468
% Cars, PU, Vans	100.0	96.6	100.0	0.0	96.8	96.9	95.9	100.0	0.0	96.0	100.0	96.0	100.0	0.0	98.7	100.0	100.0	98.3	0.0	96.6	96.6
Heavy trucks	0	22	0	0	22	2	25	0	0	27	0	1	0	0	1	0	0	1	0	1	51
% Heavy trucks	0.0	3.4	0.0	0.0	3.2	3.1	4.1	0.0	0.0	4.0	0.0	4.0	0.0	0.0	1.3	0.0	0.0	1.7	0.0	1.4	3.4

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/N Arendell Ave & Pearces Rd/Five County Spay and Neuter Clinic Dwy
City: Zebulon
Control: Signalized

Project ID: 24-160062-003
Date: 9/5/2024

Data - Total

NS/EW Streets:	NC 96/N Arendell Ave				NC 96/N Arendell Ave				Pearces Rd/Five County Spay and Neuter Clinic Dwy				Pearces Rd/Five County Spay and Neuter Clinic Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	131	35	0	3	156	2	0	0	0	1	0	116	2	8	0	454
7:15 AM	6	142	50	0	9	145	4	0	0	0	2	0	115	0	8	0	481
7:30 AM	3	121	65	0	6	156	1	0	1	0	3	0	84	1	9	0	450
7:45 AM	4	154	53	0	15	142	1	0	1	0	3	0	108	2	7	0	490
8:00 AM	2	151	69	0	10	140	3	0	0	0	6	0	113	0	10	0	504
8:15 AM	0	167	75	0	10	129	1	0	1	0	1	0	90	0	8	0	482
8:30 AM	5	126	58	0	9	126	1	0	0	0	0	0	106	0	8	0	439
8:45 AM	0	127	59	1	12	151	2	0	0	0	1	0	76	0	10	0	439
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	20	1119	464	1	74	1145	15	0	3	0	17	0	808	5	68	0	3739
	1.25%	69.76%	28.93%	0.06%	6.00%	92.79%	1.22%	0.00%	15.00%	0.00%	85.00%	0.00%	91.71%	0.57%	7.72%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	9	593	262	0	41	567	6	0	3	0	13	0	395	3	34	0	1926
PEAK HR FACTOR :	0.563	0.888	0.873	0.000	0.683	0.909	0.500	0.000	0.750	0.000	0.542	0.000	0.874	0.375	0.850	0.000	0.955
	0.893				0.942				0.667				0.878				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	2	130	95	0	8	115	1	0	0	0	5	0	75	0	6	0	437
4:15 PM	2	167	90	0	6	166	2	0	4	0	1	0	74	0	5	0	517
4:30 PM	0	154	115	0	12	155	1	0	0	0	2	0	69	0	2	0	510
4:45 PM	3	174	99	0	15	153	0	1	0	0	4	0	62	0	6	0	517
5:00 PM	1	164	85	0	6	161	0	0	1	0	0	0	71	0	3	0	492
5:15 PM	0	171	102	0	18	166	0	0	1	0	1	0	75	0	4	0	538
5:30 PM	0	170	96	0	14	169	0	0	0	0	1	0	96	0	4	0	550
5:45 PM	0	170	96	0	10	162	0	0	0	0	0	0	75	0	3	0	516
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	8	1300	778	0	89	1247	4	1	6	0	14	0	597	0	33	0	4077
	0.38%	62.32%	37.30%	0.00%	6.64%	92.99%	0.30%	0.07%	30.00%	0.00%	70.00%	0.00%	94.76%	0.00%	5.24%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	4	679	382	0	53	649	0	1	2	0	6	0	304	0	17	0	2097
PEAK HR FACTOR :	0.333	0.976	0.936	0.000	0.736	0.960	0.000	0.250	0.500	0.000	0.375	0.000	0.792	0.000	0.708	0.000	0.953
	0.965				0.955				0.500				0.803				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/N Arendell Ave & Pearces Rd/Five County Spay and Neuter Clinic Dwy
City: Zebulon
Control: Signalized

Project ID: 24-160062-003
Date: 9/5/2024

Data - Cars

NS/EW Streets:	NC 96/N Arendell Ave				NC 96/N Arendell Ave				Pearces Rd/Five County Spay and Neuter Clinic Dwy				Pearces Rd/Five County Spay and Neuter Clinic Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	120	34	0	3	151	2	0	0	0	1	0	114	2	8	0	435
7:15 AM	6	131	47	0	9	136	4	0	0	0	2	0	112	0	7	0	454
7:30 AM	3	111	61	0	6	143	1	0	1	0	3	0	81	1	9	0	420
7:45 AM	4	142	53	0	14	136	1	0	1	0	3	0	106	2	7	0	469
8:00 AM	2	138	67	0	10	133	3	0	0	0	6	0	106	0	10	0	475
8:15 AM	0	148	68	0	10	126	1	0	1	0	1	0	88	0	8	0	451
8:30 AM	5	114	55	0	9	115	1	0	0	0	0	0	101	0	8	0	408
8:45 AM	0	116	55	0	12	143	2	0	0	0	1	0	76	0	10	0	415
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	20	1020	440	0	73	1083	15	0	3	0	17	0	784	5	67	0	3527
	1.35%	68.92%	29.73%	0.00%	6.23%	92.49%	1.28%	0.00%	15.00%	0.00%	85.00%	0.00%	91.59%	0.58%	7.83%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	9	539	249	0	40	538	6	0	3	0	13	0	381	3	34	0	1815
PEAK HR FACTOR :	0.563	0.910	0.915	0.000	0.714	0.941	0.500	0.000	0.750	0.000	0.542	0.000	0.899	0.375	0.850	0.000	0.955
	0.922				0.967				0.667				0.901				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	2	124	92	0	8	111	1	0	0	0	5	0	74	0	6	0	423
4:15 PM	2	155	87	0	6	154	2	0	4	0	1	0	73	0	5	0	489
4:30 PM	0	152	113	0	11	149	1	0	0	0	2	0	65	0	2	0	495
4:45 PM	3	167	99	0	15	147	0	1	0	0	4	0	56	0	6	0	498
5:00 PM	1	162	84	0	6	157	0	0	1	0	0	0	68	0	3	0	482
5:15 PM	0	165	100	0	17	160	0	0	1	0	0	0	74	0	4	0	521
5:30 PM	0	162	91	0	14	166	0	0	0	0	1	0	94	0	3	0	531
5:45 PM	0	167	93	0	10	155	0	0	0	0	0	0	74	0	3	0	502
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	8	1254	759	0	87	1199	4	1	6	0	13	0	578	0	32	0	3941
	0.40%	62.05%	37.56%	0.00%	6.74%	92.87%	0.31%	0.08%	31.58%	0.00%	68.42%	0.00%	94.75%	0.00%	5.25%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	4	656	374	0	52	630	0	1	2	0	5	0	292	0	16	0	2032
PEAK HR FACTOR :	0.333	0.982	0.935	0.000	0.765	0.949	0.000	0.250	0.500	0.000	0.313	0.000	0.777	0.000	0.667	0.000	0.957
	0.961				0.949				0.438				0.794				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/N Arendell Ave & Pearces Rd/Five County Spay and Neuter Clinic Dwy
City: Zebulon
Control: Signalized

Project ID: 24-160062-003
Date: 9/5/2024

Data - HT

NS/EW Streets:	NC 96/N Arendell Ave				NC 96/N Arendell Ave				Pearces Rd/Five County Spay and Neuter Clinic Dwy				Pearces Rd/Five County Spay and Neuter Clinic Dwy				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	1	1	0	1	1	0	0	0	1	0	0	1	0	1	0	
7:00 AM	0	11	1	0	0	5	0	0	0	0	0	0	2	0	0	0	19
7:15 AM	0	11	3	0	0	9	0	0	0	0	0	0	3	0	1	0	27
7:30 AM	0	10	4	0	0	13	0	0	0	0	0	0	3	0	0	0	30
7:45 AM	0	12	0	0	1	6	0	0	0	0	0	0	2	0	0	0	21
8:00 AM	0	13	2	0	0	7	0	0	0	0	0	0	7	0	0	0	29
8:15 AM	0	19	7	0	0	3	0	0	0	0	0	0	2	0	0	0	31
8:30 AM	0	12	3	0	0	11	0	0	0	0	0	0	5	0	0	0	31
8:45 AM	0	11	4	1	0	8	0	0	0	0	0	0	0	0	0	0	24
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	99	24	1	1	62	0	0	0	0	0	0	24	0	1	0	212
APPROACH %'s :	0.00%	79.84%	19.35%	0.81%	1.59%	98.41%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	96.00%	0.00%	4.00%	0.00%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	0	54	13	0	1	29	0	0	0	0	0	0	14	0	0	0	111
PEAK HR FACTOR :	0.000	0.711	0.464	0.000	0.250	0.558	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.895
	0.644				0.577								0.500				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	1	1	0	1	1	0	0	0	1	0	0	1	0	1	0	
4:00 PM	0	6	3	0	0	4	0	0	0	0	0	0	1	0	0	0	14
4:15 PM	0	12	3	0	0	12	0	0	0	0	0	0	1	0	0	0	28
4:30 PM	0	2	2	0	1	6	0	0	0	0	0	0	4	0	0	0	15
4:45 PM	0	7	0	0	0	6	0	0	0	0	0	0	6	0	0	0	19
5:00 PM	0	2	1	0	0	4	0	0	0	0	0	0	3	0	0	0	10
5:15 PM	0	6	2	0	1	6	0	0	0	0	1	0	1	0	0	0	17
5:30 PM	0	8	5	0	0	3	0	0	0	0	0	0	2	0	1	0	19
5:45 PM	0	3	3	0	0	7	0	0	0	0	0	0	1	0	0	0	14
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	0	46	19	0	2	48	0	0	0	0	1	0	19	0	1	0	136
APPROACH %'s :	0.00%	70.77%	29.23%	0.00%	4.00%	96.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	95.00%	0.00%	5.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	23	8	0	1	19	0	0	0	0	1	0	12	0	1	0	65
PEAK HR FACTOR :	0.000	0.719	0.400	0.000	0.250	0.792	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.250	0.000	0.855
	0.596				0.714				0.250				0.542				

NC 96/N Arendell Ave & Pearces Rd/Five County Spay and Neuter Clinic Dwy

Peak Hour Turning Movement Count

ID: 24-160062-003
City: Zebulon

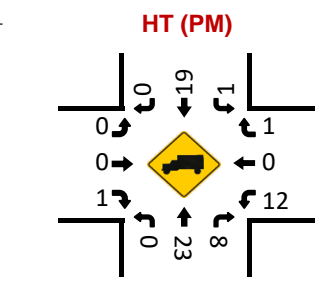
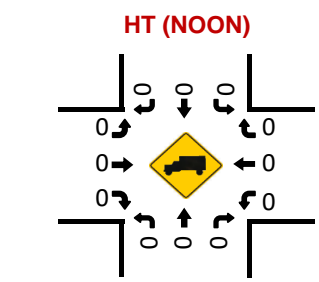
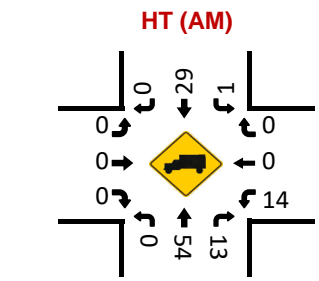
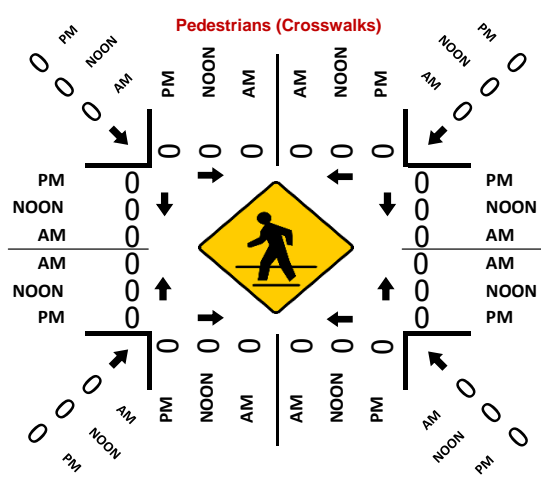
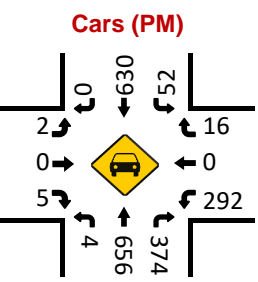
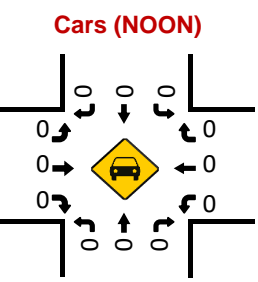
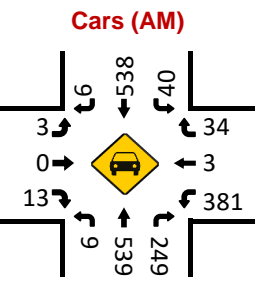
Day: Thursday
Date: 9/5/2024

PEAK HOURS	NC 96/N Arendell Ave					COUNT PERIODS	
	SOUTHBOUND						
07:30 AM - 08:30 AM	AM	6	567	41	0	630	7:00 AM - 09:00 AM
NONE	NOON	0	0	0	0	0	NONE
04:45 PM - 05:45 PM	PM	0	649	53	1	699	4:00 PM - 06:00 PM

PEAK HOURS	NC 96/N Arendell Ave					COUNT PERIODS	
	NORTHBOUND						
AM	PM	959	0	4	679	382	PM
NOON	NOON	0	0	0	0	0	NOON
AM	AM	975	0	9	593	262	AM

CONTROL	
Signalized	
TEV	1926 AM, 0 NOON, 2097 PM
PHF	0.96 AM, 0.95 PM

PEAK HOURS	EASTBOUND			WESTBOUND		
	AM	NOON	PM	PM	NOON	AM
07:30 AM - 08:30 AM	18	0	4	17	0	34
NONE	0	0	0	0	0	3
04:45 PM - 05:45 PM	3	0	2	304	0	395
	0	0	0	0	0	0
	13	0	6	435	0	303



Project ID: 24-160062-003
 Location: NC 96/N Arendell Ave & Pearces Rd/Five County Spay and Neuter Clinic Dwy
 City: Zebulon

Day: Thursday
 Date: 9/5/2024

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	NC 96/N Arendell Ave Northbound						NC 96/N Arendell Ave Southbound						Pearces Rd/Five County Spay and Neuter Clinic Eastbound						Pearces Rd/Five County Spay and Neuter Clinic Westbound						Int. Total
	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	
7:00 AM	0	131	35	0	0	166	3	156	2	0	0	161	0	0	1	0	0	1	116	2	8	0	0	126	454
7:15 AM	6	142	50	0	0	198	9	145	4	0	0	158	0	0	2	0	0	2	115	0	8	0	0	123	481
7:30 AM	3	121	65	0	0	189	6	156	1	0	0	163	1	0	3	0	0	4	84	1	9	0	0	94	450
7:45 AM	4	154	53	0	0	211	15	142	1	0	0	158	1	0	3	0	0	4	108	2	7	0	0	117	490
Total	13	548	203	0	0	764	33	599	8	0	0	640	2	0	9	0	0	11	423	5	32	0	0	460	1875
8:00 AM	2	151	69	0	0	222	10	140	3	0	0	153	0	0	6	0	0	6	113	0	10	0	0	123	504
8:15 AM	0	167	75	0	0	242	10	129	1	0	0	140	1	0	1	0	0	2	90	0	8	0	0	98	482
8:30 AM	5	126	58	0	0	189	9	126	1	0	0	136	0	0	0	0	1	0	106	0	8	0	0	114	439
8:45 AM	0	127	59	1	0	187	12	151	2	0	0	165	0	0	1	0	0	1	76	0	10	0	0	86	439
Total	7	571	261	1	0	840	41	546	7	0	0	594	1	0	8	0	1	9	385	0	36	0	0	421	1864
BREAK																									
4:00 PM	2	130	95	0	0	227	8	115	1	0	0	124	0	0	5	0	0	5	75	0	6	0	0	81	437
4:15 PM	2	167	90	0	0	259	6	166	2	0	0	174	4	0	1	0	0	5	74	0	5	0	0	79	517
4:30 PM	0	154	115	0	0	269	12	155	1	0	0	168	0	0	2	0	2	2	69	0	2	0	0	71	510
4:45 PM	3	174	99	0	0	276	15	153	0	1	0	169	0	0	4	0	0	4	62	0	6	0	0	68	517
Total	7	625	399	0	0	1031	41	589	4	1	0	635	4	0	12	0	2	16	280	0	19	0	0	299	1981
5:00 PM	1	164	85	0	0	250	6	161	0	0	0	167	1	0	0	0	0	1	71	0	3	0	0	74	492
5:15 PM	0	171	102	0	0	273	18	166	0	0	0	184	1	0	1	0	0	2	75	0	4	0	0	79	538
5:30 PM	0	170	96	0	0	266	14	169	0	0	0	183	0	0	1	0	0	1	96	0	4	0	0	100	550
5:45 PM	0	170	96	0	0	266	10	162	0	0	0	172	0	0	0	0	0	0	75	0	3	0	0	78	516
Total	1	675	379	0	0	1055	48	658	0	0	0	706	2	0	2	0	0	4	317	0	14	0	0	331	2096
Grand Total	28	2419	1242	1	0	3690	163	2392	19	1	0	2575	9	0	31	0	3	40	1405	5	101	0	0	1511	7816
Approch %	0.8	65.6	33.7	0.0	0.0		6.3	92.9	0.7	0.0	0.0		22.5	0.0	77.5	0.0	7.5		93.0	0.3	6.7	0.0	0.0		
Total %	0.4	30.9	15.9	0.0	0.0	47.2	2.1	30.6	0.2	0.0	0.0	32.9	0.1	0.0	0.4	0.0	0.0	0.5	18.0	0.1	1.3	0.0	0.0	19.3	
Cars, PU, Vans	28	2274	1199	0		3501	160	2282	19	1		2462	9	0	30	0		39	1362	5	99	0		1466	7468
% Cars, PU, Vans	100.0	94.0	96.5	0.0		94.9	98.2	95.4	100.0	100.0		95.6	100.0	0.0	96.8	0.0		97.5	96.9	100.0	98.0	0.0		97.0	95.5
Heavy trucks	0	145	43	1		189	3	110	0	0		113	0	0	1	0		1	43	0	2	0		45	348
% Heavy trucks	0.0	6.0	3.5	100.0		5.1	1.8	4.6	0.0	0.0		4.4	0.0	0.0	3.2	0.0		2.5	3.1	0.0	2.0	0.0		3.0	4.5

Project ID: 24-160062-003
 Location: NC 96/N Arendell Ave & Pearces Rd/Five County Sp
 City: Zebulon

PEAK HOURS

Day: Thursday
 Date: 9/5/2024

AM

Start Time	NC 96/N Arendell Ave Northbound					NC 96/N Arendell Ave Southbound					Rd/Five County Spay and Neuter Cl Eastbound					Rd/Five County Spay and Neuter Cl Westbound					Int. Total
	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	
Peak Hour Analysis from 07:00 AM - 09:00 AM																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
7:30 AM	3	121	65	0	189	6	156	1	0	163	1	0	3	0	4	84	1	9	0	94	450
7:45 AM	4	154	53	0	211	15	142	1	0	158	1	0	3	0	4	108	2	7	0	117	490
8:00 AM	2	151	69	0	222	10	140	3	0	153	0	0	6	0	6	113	0	10	0	123	504
8:15 AM	0	167	75	0	242	10	129	1	0	140	1	0	1	0	2	90	0	8	0	98	482
Total Volume	9	593	262	0	864	41	567	6	0	614	3	0	13	0	16	395	3	34	0	432	1926
% App. Total	1.0	68.6	30.3	0.0	100	6.7	92.3	1.0	0.0	100	18.8	0.0	81.3	0.0	100	91.4	0.7	7.9	0.0	100	
PHF	0.893					0.942					0.667					0.878					0.955
Cars, PU, Vans	9	539	249	0	797	40	538	6	0	584	3	0	13	0	16	381	3	34	0	418	1815
% Cars, PU, Vans	100.0	90.9	95.0	0.0	92.2	97.6	94.9	100.0	0.0	95.1	100.0	0.0	100.0	0.0	100.0	96.5	100.0	100.0	0.0	96.8	94.2
Heavy trucks	0	54	13	0	67	1	29	0	0	30	0	0	0	0	0	14	0	0	0	14	111
%Heavy trucks	0.0	9.1	5.0	0.0	7.8	2.4	5.1	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	0.0	3.2	5.8

PM

Start Time	NC 96/N Arendell Ave Northbound					NC 96/N Arendell Ave Southbound					Rd/Five County Spay and Neuter Cl Eastbound					Rd/Five County Spay and Neuter Cl Westbound					Int. Total
	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	
Peak Hour Analysis from 04:00 PM - 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
4:45 PM	3	174	99	0	276	15	153	0	1	169	0	0	4	0	4	62	0	6	0	68	517
5:00 PM	1	164	85	0	250	6	161	0	0	167	1	0	0	0	1	71	0	3	0	74	492
5:15 PM	0	171	102	0	273	18	166	0	0	184	1	0	1	0	2	75	0	4	0	79	538
5:30 PM	0	170	96	0	266	14	169	0	0	183	0	0	1	0	1	96	0	4	0	100	550
Total Volume	4	679	382	0	1065	53	649	0	1	703	2	0	6	0	8	304	0	17	0	321	2097
% App. Total	0.4	63.8	35.9	0.0	100	7.5	92.3	0.0	0.1	100	25.0	0.0	75.0	0.0	100	94.7	0.0	5.3	0.0	100	
PHF	0.965					0.955					0.500					0.803					0.953
Cars, PU, Vans	4	656	374	0	1034	52	630	0	1	683	2	0	5	0	7	292	0	16	0	308	2032
% Cars, PU, Vans	100.0	96.6	97.9	0.0	97.1	98.1	97.1	0.0	100.0	97.2	100.0	0.0	83.3	0.0	87.5	96.1	0.0	94.1	0.0	96.0	96.9
Heavy trucks	0	23	8	0	31	1	19	0	0	20	0	0	1	0	1	12	0	1	0	13	65
%Heavy trucks	0.0	3.4	2.1	0.0	2.9	1.9	2.9	0.0	0.0	2.8	0.0	0.0	16.7	0.0	12.5	3.9	0.0	5.9	0.0	4.0	3.1

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/N Arendell Ave & CR 2368/Green Pace Rd
City: Zebulon
Control: Signalized

Project ID: 24-160062-004
Date: 9/5/2024

Data - Total

NS/EW Streets:	NC 96/N Arendell Ave				NC 96/N Arendell Ave				CR 2368/Green Pace Rd				CR 2368/Green Pace Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0.5	0.5	0	1	0.5	0.5	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	31	126	1	0	0	141	24	0	9	5	18	0	2	27	5	0	389
7:15 AM	26	102	4	0	2	133	33	0	18	3	14	0	3	19	1	0	358
7:30 AM	15	112	2	0	1	138	25	0	13	9	17	0	1	15	2	0	350
7:45 AM	14	134	3	0	1	147	32	0	16	9	15	0	3	16	3	0	393
8:00 AM	27	127	3	0	0	123	21	0	14	6	12	0	3	16	0	0	352
8:15 AM	21	126	8	0	0	125	19	0	28	10	10	0	1	15	0	0	363
8:30 AM	18	111	4	0	1	97	21	0	23	4	11	0	7	15	0	0	312
8:45 AM	12	98	6	0	2	134	30	0	34	6	14	0	2	7	1	0	346
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	14.50%	82.76%	2.74%	0.00%	0.56%	83.04%	16.40%	0.00%	48.74%	16.35%	34.91%	0.00%	13.41%	79.27%	7.32%	0.00%	2863
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	86	474	10	0	4	559	114	0	56	26	64	0	9	77	11	0	1490
PEAK HR FACTOR :	0.694	0.884	0.625	0.000	0.500	0.951	0.864	0.000	0.778	0.722	0.889	0.000	0.750	0.713	0.550	0.000	0.948
	0.902				0.940				0.913				0.713				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0.5	0.5	0	1	0.5	0.5	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	17	112	6	0	1	96	33	0	27	16	17	0	3	8	0	0	336
4:15 PM	13	142	10	0	1	160	40	0	22	14	18	0	2	8	0	0	430
4:30 PM	18	122	8	0	2	133	25	0	31	19	23	0	0	6	0	0	387
4:45 PM	22	156	4	0	1	124	24	0	20	24	21	0	3	8	2	0	409
5:00 PM	19	144	3	0	3	140	24	0	23	12	20	0	2	5	2	0	397
5:15 PM	20	155	4	0	4	152	17	0	22	20	22	0	2	8	0	0	426
5:30 PM	12	145	3	0	2	157	20	0	20	15	15	0	2	7	0	0	398
5:45 PM	18	141	7	0	1	142	18	0	23	21	15	0	2	8	0	0	396
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	10.68%	85.86%	3.46%	0.00%	1.14%	83.64%	15.23%	0.00%	39.17%	29.38%	31.46%	0.00%	20.51%	74.36%	5.13%	0.00%	3179
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	73	600	14	0	10	573	85	0	85	71	78	0	9	28	4	0	1630
PEAK HR FACTOR :	0.830	0.962	0.875	0.000	0.625	0.912	0.885	0.000	0.924	0.740	0.886	0.000	0.750	0.875	0.500	0.000	0.957
	0.944				0.933				0.900				0.788				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/N Arendell Ave & CR 2368/Green Pace Rd
City: Zebulon
Control: Signalized

Project ID: 24-160062-004
Date: 9/5/2024

Data - Cars

NS/EW Streets:	NC 96/N Arendell Ave				NC 96/N Arendell Ave				CR 2368/Green Pace Rd				CR 2368/Green Pace Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	0.5 NT	0.5 NR	0 NU	1 SL	0.5 ST	0.5 SR	0 SU	0.3 EL	0.3 ET	0.3 ER	0 EU	0.3 WL	0.3 WT	0.3 WR	0 WU	
7:00 AM	31	116	1	0	0	136	24	0	9	5	17	0	2	27	5	0	373
7:15 AM	25	94	3	0	2	124	32	0	18	3	12	0	3	19	1	0	336
7:30 AM	15	103	1	0	1	127	24	0	11	7	17	0	1	15	2	0	324
7:45 AM	14	125	3	0	1	144	32	0	15	9	12	0	3	15	3	0	376
8:00 AM	27	116	3	0	0	118	20	0	13	5	12	0	3	15	0	0	332
8:15 AM	20	112	8	0	0	121	19	0	23	10	9	0	1	13	0	0	336
8:30 AM	18	95	4	0	1	85	21	0	23	4	11	0	6	14	0	0	282
8:45 AM	12	87	6	0	2	131	28	0	32	6	14	0	2	7	1	0	328
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	162	848	29	0	7	986	200	0	144	49	104	0	21	125	12	0	2687
	15.59%	81.62%	2.79%	0.00%	0.59%	82.65%	16.76%	0.00%	48.48%	16.50%	35.02%	0.00%	13.29%	79.11%	7.59%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	85	438	8	0	4	531	112	0	53	24	58	0	9	76	11	0	1409
PEAK HR FACTOR :	0.685	0.876	0.667	0.000	0.500	0.922	0.875	0.000	0.736	0.667	0.853	0.000	0.750	0.704	0.550	0.000	0.937
	0.897				0.914				0.938				0.706				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	1 NL	0.5 NT	0.5 NR	0 NU	1 SL	0.5 ST	0.5 SR	0 SU	0.3 EL	0.3 ET	0.3 ER	0 EU	0.3 WL	0.3 WT	0.3 WR	0 WU	
4:00 PM	16	106	6	0	1	92	31	0	25	16	16	0	3	8	0	0	320
4:15 PM	12	129	10	0	1	148	35	0	22	14	18	0	2	8	0	0	399
4:30 PM	17	119	8	0	2	127	23	0	29	19	22	0	0	6	0	0	372
4:45 PM	22	148	4	0	1	118	22	0	20	24	20	0	3	7	2	0	391
5:00 PM	19	141	3	0	3	136	24	0	23	11	20	0	2	5	2	0	389
5:15 PM	19	151	4	0	4	144	17	0	22	20	22	0	2	8	0	0	413
5:30 PM	11	138	2	0	2	153	20	0	20	15	15	0	2	7	0	0	385
5:45 PM	18	137	7	0	1	134	17	0	23	21	15	0	2	8	0	0	383
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	134	1069	44	0	15	1052	189	0	184	140	148	0	16	57	4	0	3052
	10.75%	85.73%	3.53%	0.00%	1.19%	83.76%	15.05%	0.00%	38.98%	29.66%	31.36%	0.00%	20.78%	74.03%	5.19%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	71	578	13	0	10	551	83	0	85	70	77	0	9	27	4	0	1578
PEAK HR FACTOR :	0.807	0.957	0.813	0.000	0.625	0.900	0.865	0.000	0.924	0.729	0.875	0.000	0.750	0.844	0.500	0.000	0.955
	0.951				0.920				0.906				0.833				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/N Arendell Ave & CR 2368/Green Pace Rd
City: Zebulon
Control: Signalized

Project ID: 24-160062-004
Date: 9/5/2024

Data - HT

NS/EW Streets:	NC 96/N Arendell Ave				NC 96/N Arendell Ave				CR 2368/Green Pace Rd				CR 2368/Green Pace Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0.5	0.5	0	1	0.5	0.5	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	10	0	0	0	5	0	0	0	0	1	0	0	0	0	0	16
7:15 AM	1	8	1	0	0	9	1	0	0	0	2	0	0	0	0	0	22
7:30 AM	0	9	1	0	0	11	1	0	2	2	0	0	0	0	0	0	26
7:45 AM	0	9	0	0	0	3	0	0	1	0	3	0	0	1	0	0	17
8:00 AM	0	11	0	0	0	5	1	0	1	1	0	0	0	1	0	0	20
8:15 AM	1	14	0	0	0	4	0	0	5	0	1	0	0	2	0	0	27
8:30 AM	0	16	0	0	0	12	0	0	0	0	0	0	1	1	0	0	30
8:45 AM	0	11	0	0	0	3	2	0	2	0	0	0	0	0	0	0	18
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	2	88	2	0	0	52	5	0	11	3	7	0	1	5	0	0	176
APPROACH %'s :	2.17%	95.65%	2.17%	0.00%	0.00%	91.23%	8.77%	0.00%	52.38%	14.29%	33.33%	0.00%	16.67%	83.33%	0.00%	0.00%	
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	1	36	2	0	0	28	2	0	3	2	6	0	0	1	0	0	81
PEAK HR FACTOR :	0.250	0.900	0.500	0.000	0.000	0.636	0.500	0.000	0.375	0.250	0.500	0.000	0.000	0.250	0.000	0.000	0.779
			0.975			0.625				0.688				0.250			
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0.5	0.5	0	1	0.5	0.5	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	1	6	0	0	0	4	2	0	2	0	1	0	0	0	0	0	16
4:15 PM	1	13	0	0	0	12	5	0	0	0	0	0	0	0	0	0	31
4:30 PM	1	3	0	0	0	6	2	0	2	0	1	0	0	0	0	0	15
4:45 PM	0	8	0	0	0	6	2	0	0	0	1	0	0	1	0	0	18
5:00 PM	0	3	0	0	0	4	0	0	0	1	0	0	0	0	0	0	8
5:15 PM	1	4	0	0	0	8	0	0	0	0	0	0	0	0	0	0	13
5:30 PM	1	7	1	0	0	4	0	0	0	0	0	0	0	0	0	0	13
5:45 PM	0	4	0	0	0	8	1	0	0	0	0	0	0	0	0	0	13
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
	5	48	1	0	0	52	12	0	4	1	3	0	0	1	0	0	127
APPROACH %'s :	9.26%	88.89%	1.85%	0.00%	0.00%	81.25%	18.75%	0.00%	50.00%	12.50%	37.50%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	2	22	1	0	0	22	2	0	0	1	1	0	0	1	0	0	52
PEAK HR FACTOR :	0.500	0.688	0.250	0.000	0.000	0.688	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.722
			0.694			0.750				0.500				0.250			

National Data & Surveying Services

Intersection Turning Movement Count

Location: NC 96/N Arendell Ave & CR 2368/Green Pace Rd
City: Zebulon
Control: Signalized

Project ID: 24-160062-004
Date: 9/5/2024

Data - Bikes

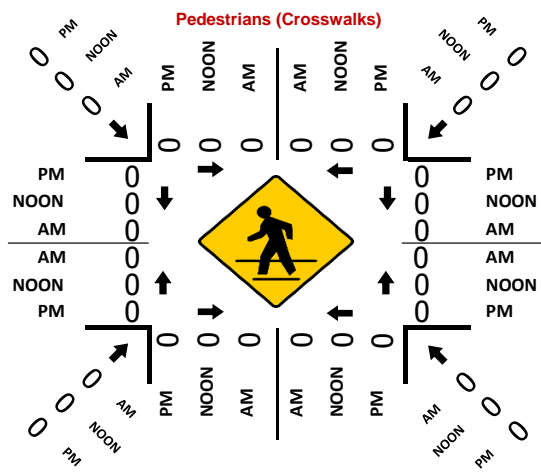
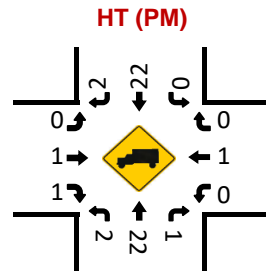
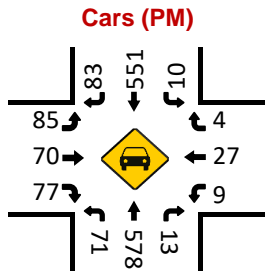
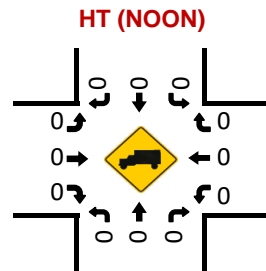
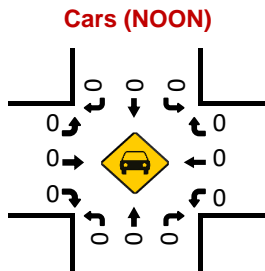
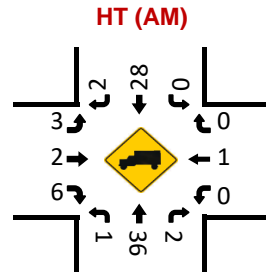
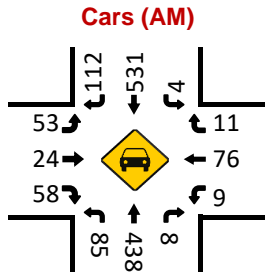
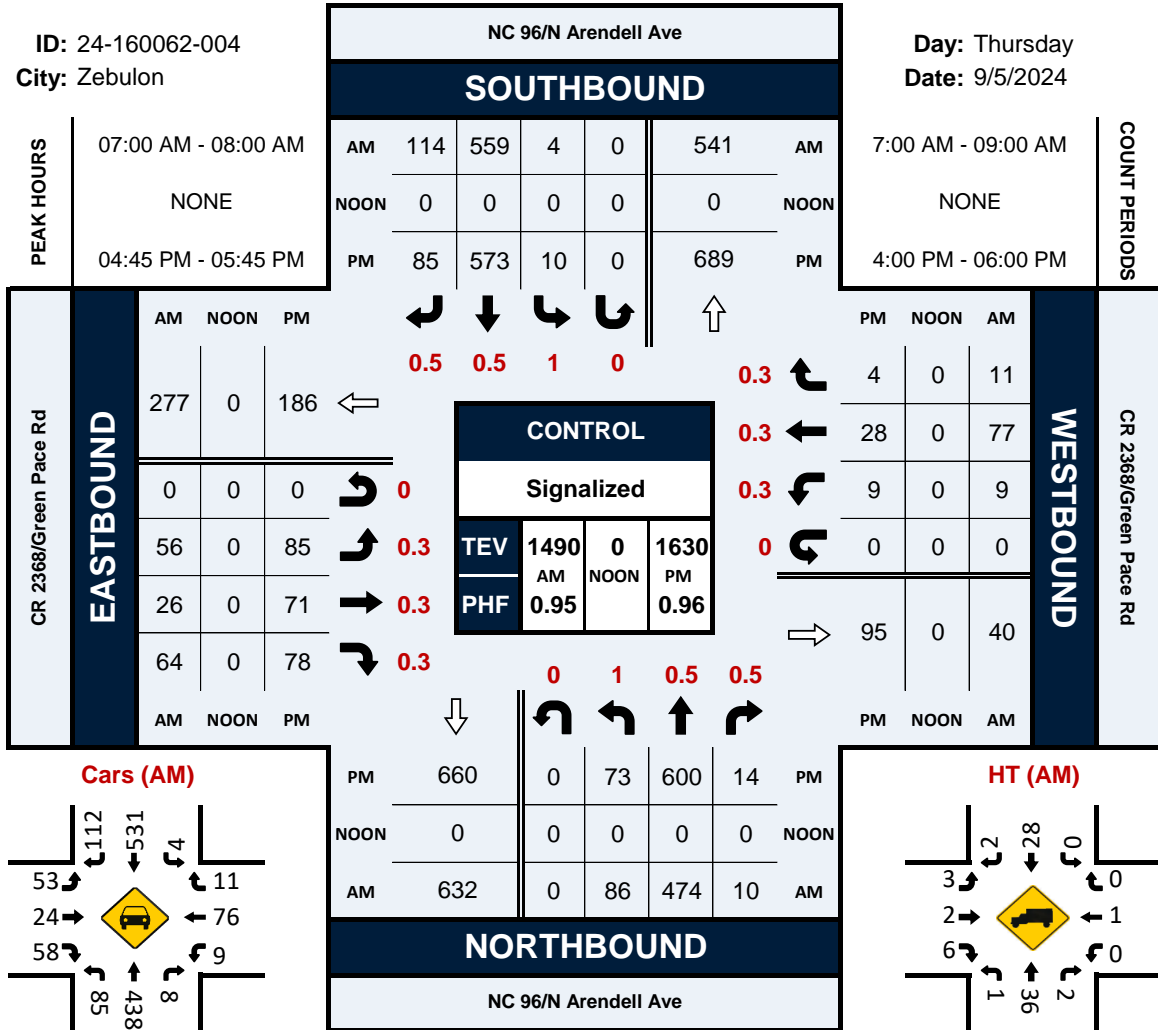
NS/EW Streets:	NC 96/N Arendell Ave				NC 96/N Arendell Ave				CR 2368/Green Pace Rd				CR 2368/Green Pace Rd				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0.5	0.5	0	1	0.5	0.5	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR :	07:00 AM - 08:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
	1	0.5	0.5	0	1	0.5	0.5	0	0.3	0.3	0.3	0	0.3	0.3	0.3	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250

NC 96/N Arendell Ave & CR 2368/Green Pace Rd

Peak Hour Turning Movement Count

ID: 24-160062-004
City: Zebulon

Day: Thursday
Date: 9/5/2024



Project ID: 24-160062-004
 Location: NC 96/N Arendell Ave & CR 2368/Green Pace Rd
 City: Zebulon

Day: Thursday
 Date: 9/5/2024

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	NC 96/N Arendell Ave Northbound						NC 96/N Arendell Ave Southbound						CR 2368/Green Pace Rd Eastbound						CR 2368/Green Pace Rd Westbound						Int. Total
	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	Left	Thru	Rgt	Uturn	Peds	App. Total	
7:00 AM	31	126	1	0	0	158	0	141	24	0	0	165	9	5	18	0	0	32	2	27	5	0	0	34	389
7:15 AM	26	102	4	0	0	132	2	133	33	0	0	168	18	3	14	0	0	35	3	19	1	0	0	23	358
7:30 AM	15	112	2	0	0	129	1	138	25	0	0	164	13	9	17	0	0	39	1	15	2	0	0	18	350
7:45 AM	14	134	3	0	0	151	1	147	32	0	0	180	16	9	15	0	0	40	3	16	3	0	0	22	393
Total	86	474	10	0	0	570	4	559	114	0	0	677	56	26	64	0	0	146	9	77	11	0	0	97	1490
8:00 AM	27	127	3	0	1	157	0	123	21	0	0	144	14	6	12	0	0	32	3	16	0	0	0	19	352
8:15 AM	21	126	8	0	0	155	0	125	19	0	0	144	28	10	10	0	0	48	1	15	0	0	0	16	363
8:30 AM	18	111	4	0	0	133	1	97	21	0	0	119	23	4	11	0	0	38	7	15	0	0	0	22	312
8:45 AM	12	98	6	0	0	116	2	134	30	0	0	166	34	6	14	0	0	54	2	7	1	0	0	10	346
Total	78	462	21	0	1	561	3	479	91	0	0	573	99	26	47	0	0	172	13	53	1	0	0	67	1373
BREAK																									
4:00 PM	17	112	6	0	0	135	1	96	33	0	0	130	27	16	17	0	0	60	3	8	0	0	1	11	336
4:15 PM	13	142	10	0	0	165	1	160	40	0	0	201	22	14	18	0	0	54	2	8	0	0	0	10	430
4:30 PM	18	122	8	0	0	148	2	133	25	0	0	160	31	19	23	0	0	73	0	6	0	0	0	6	387
4:45 PM	22	156	4	0	0	182	1	124	24	0	0	149	20	24	21	0	0	65	3	8	2	0	0	13	409
Total	70	532	28	0	0	630	5	513	122	0	0	640	100	73	79	0	0	252	8	30	2	0	1	40	1562
5:00 PM	19	144	3	0	0	166	3	140	24	0	0	167	23	12	20	0	0	55	2	5	2	0	0	9	397
5:15 PM	20	155	4	0	0	179	4	152	17	0	0	173	22	20	22	0	0	64	2	8	0	0	0	10	426
5:30 PM	12	145	3	0	0	160	2	157	20	0	0	179	20	15	15	0	0	50	2	7	0	0	0	9	398
5:45 PM	18	141	7	0	0	166	1	142	18	0	0	161	23	21	15	0	0	59	2	8	0	0	0	10	396
Total	69	585	17	0	0	671	10	591	79	0	0	680	88	68	72	0	0	228	8	28	2	0	0	38	1617
Grand Total	303	2053	76	0	1	2432	22	2142	406	0	0	2570	343	193	262	0	0	798	38	188	16	0	1	242	6042
Apprch %	12.5	84.4	3.1	0.0	0.0		0.9	83.3	15.8	0.0	0.0		43.0	24.2	32.8	0.0	0.0		15.7	77.7	6.6	0.0	0.4		
Total %	5.0	34.0	1.3	0.0	0.0	40.3	0.4	35.5	6.7	0.0	0.0	42.5	5.7	3.2	4.3	0.0	0.0	13.2	0.6	3.1	0.3	0.0	0.0	4.0	
Cars, PU, Vans	296	1917	73	0		2286	22	2038	389	0		2449	328	189	252	0		769	37	182	16	0		235	5739
% Cars, PU, Vans	97.7	93.4	96.1	0.0		94.0	100.0	95.1	95.8	0.0		95.3	95.6	97.9	96.2	0.0		96.4	97.4	96.8	100.0	0.0		97.1	95.0
Heavy trucks	7	136	3	0		146	0	104	17	0		121	15	4	10	0		29	1	6	0	0		7	303
% Heavy trucks	2.3	6.6	3.9	0.0		6.0	0.0	4.9	4.2	0.0		4.7	4.4	2.1	3.8	0.0		3.6	2.6	3.2	0.0	0.0		2.9	5.0

Project ID: 24-160062-004
 Location: NC 96/N Arendell Ave & CR 2368/Green Pace Rd
 City: Zebulon

PEAK HOURS

Day: Thursday
 Date: 9/5/2024

AM

Start Time	NC 96/N Arendell Ave Northbound					NC 96/N Arendell Ave Southbound					CR 2368/Green Pace Rd Eastbound					CR 2368/Green Pace Rd Westbound					Int. Total
	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	
7:00 AM	31	126	1	0	158	0	141	24	0	165	9	5	18	0	32	2	27	5	0	34	389
7:15 AM	26	102	4	0	132	2	133	33	0	168	18	3	14	0	35	3	19	1	0	23	358
7:30 AM	15	112	2	0	129	1	138	25	0	164	13	9	17	0	39	1	15	2	0	18	350
7:45 AM	14	134	3	0	151	1	147	32	0	180	16	9	15	0	40	3	16	3	0	22	393
Total Volume	86	474	10	0	570	4	559	114	0	677	56	26	64	0	146	9	77	11	0	97	1490
% App. Total	15.1	83.2	1.8	0.0	100	0.6	82.6	16.8	0.0	100	38.4	17.8	43.8	0.0	100	9.3	79.4	11.3	0.0	100	
PHF	0.902					0.940					0.913					0.713					0.948
Cars, PU, Vans	85	438	8	0	531	4	531	112	0	647	53	24	58	0	135	9	76	11	0	96	1409
% Cars, PU, Vans	98.8	92.4	80.0	0.0	93.2	100.0	95.0	98.2	0.0	95.6	94.6	92.3	90.6	0.0	92.5	100.0	98.7	100.0	0.0	99.0	94.6
Heavy trucks	1	36	2	0	39	0	28	2	0	30	3	2	6	0	11	0	1	0	0	1	81
% Heavy trucks	1.2	7.6	20.0	0.0	6.8	0.0	5.0	1.8	0.0	4.4	5.4	7.7	9.4	0.0	7.5	0.0	1.3	0.0	0.0	1.0	5.4

PM

Start Time	NC 96/N Arendell Ave Northbound					NC 96/N Arendell Ave Southbound					CR 2368/Green Pace Rd Eastbound					CR 2368/Green Pace Rd Westbound					Int. Total
	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	Left	Thru	Rgt	Utum	App. Total	
4:45 PM	22	156	4	0	182	1	124	24	0	149	20	24	21	0	65	3	8	2	0	13	409
5:00 PM	19	144	3	0	166	3	140	24	0	167	23	12	20	0	55	2	5	2	0	9	397
5:15 PM	20	155	4	0	179	4	152	17	0	173	22	20	22	0	64	2	8	0	0	10	426
5:30 PM	12	145	3	0	160	2	157	20	0	179	20	15	15	0	50	2	7	0	0	9	398
Total Volume	73	600	14	0	687	10	573	85	0	668	85	71	78	0	234	9	28	4	0	41	1630
% App. Total	10.6	87.3	2.0	0.0	100	1.5	85.8	12.7	0.0	100	36.3	30.3	33.3	0.0	100	22.0	68.3	9.8	0.0	100	
PHF	0.944					0.933					0.900					0.788					0.957
Cars, PU, Vans	71	578	13	0	662	10	551	83	0	644	85	70	77	0	232	9	27	4	0	40	1578
% Cars, PU, Vans	97.3	96.3	92.9	0.0	96.4	100.0	96.2	97.6	0.0	96.4	100.0	98.6	98.7	0.0	99.1	100.0	96.4	100.0	0.0	97.6	96.8
Heavy trucks	2	22	1	0	25	0	22	2	0	24	0	1	1	0	2	0	1	0	0	1	52
% Heavy trucks	2.7	3.7	7.1	0.0	3.6	0.0	3.8	2.4	0.0	3.6	0.0	1.4	1.3	0.0	0.9	0.0	3.6	0.0	0.0	2.4	3.2

APPENDIX C

SIGNAL PLANS

PHASING DIAGRAM

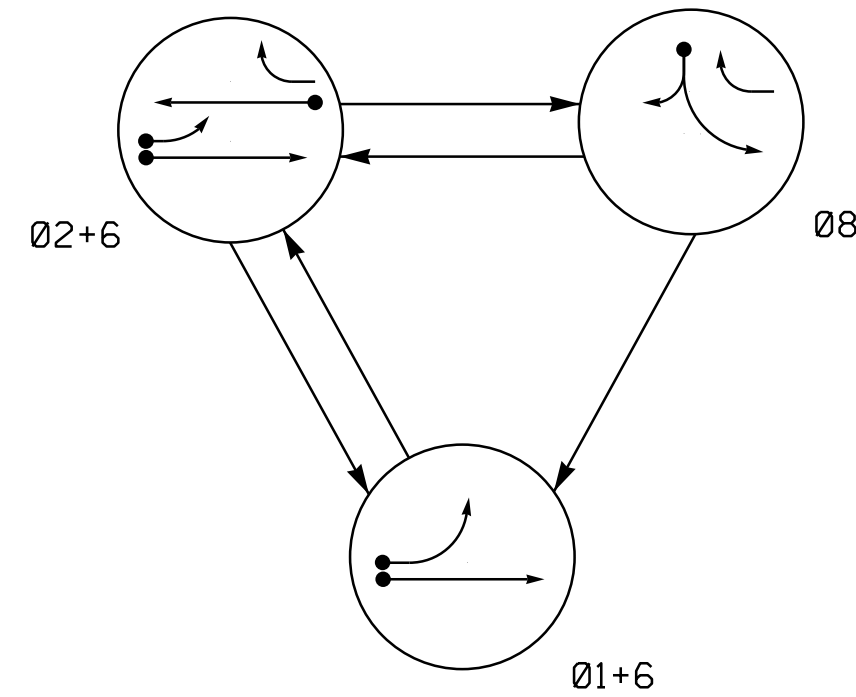
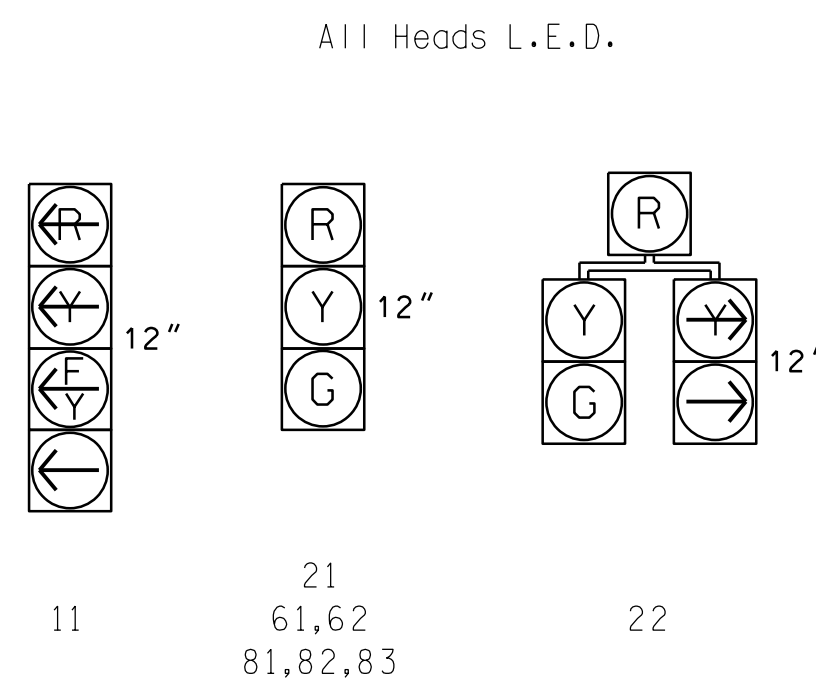


TABLE OF OPERATION table with columns for SIGNAL FACE, PHASE (01+6, 02+6, 08, F, L, H, O, S, I, D), and signal colors (R, G, Y).

SIGNAL FACE I.D.



OASIS 2070 LOOP & DETECTOR INSTALLATION CHART table with columns for LOOP, SIZE, DISTANCE, TURNS, PHASE, CALLING, EXTENSION, FULL TIME DELAY, STRETCH TIME, DELAY TIME, SYSTEM LOOP, and NEW CARD.

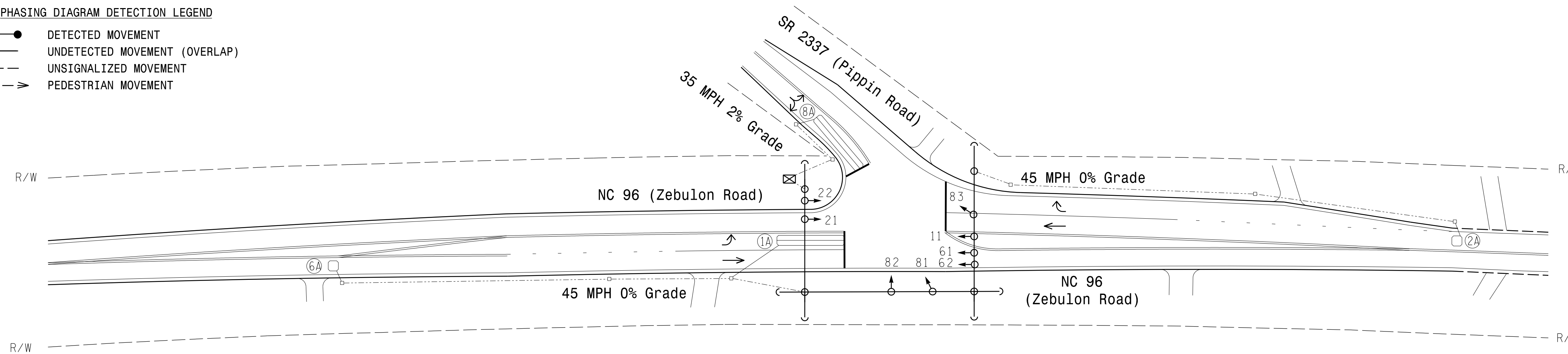
3 Phase Fully Actuated (Isolated)

NOTES

- 1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018, "Standard Specifications for Roads and Structures" dated January 2018... 2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer. 3. Phase 1 may be lagged. 4. Set all detector units to presence mode. 5. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.

PHASING DIAGRAM DETECTION LEGEND

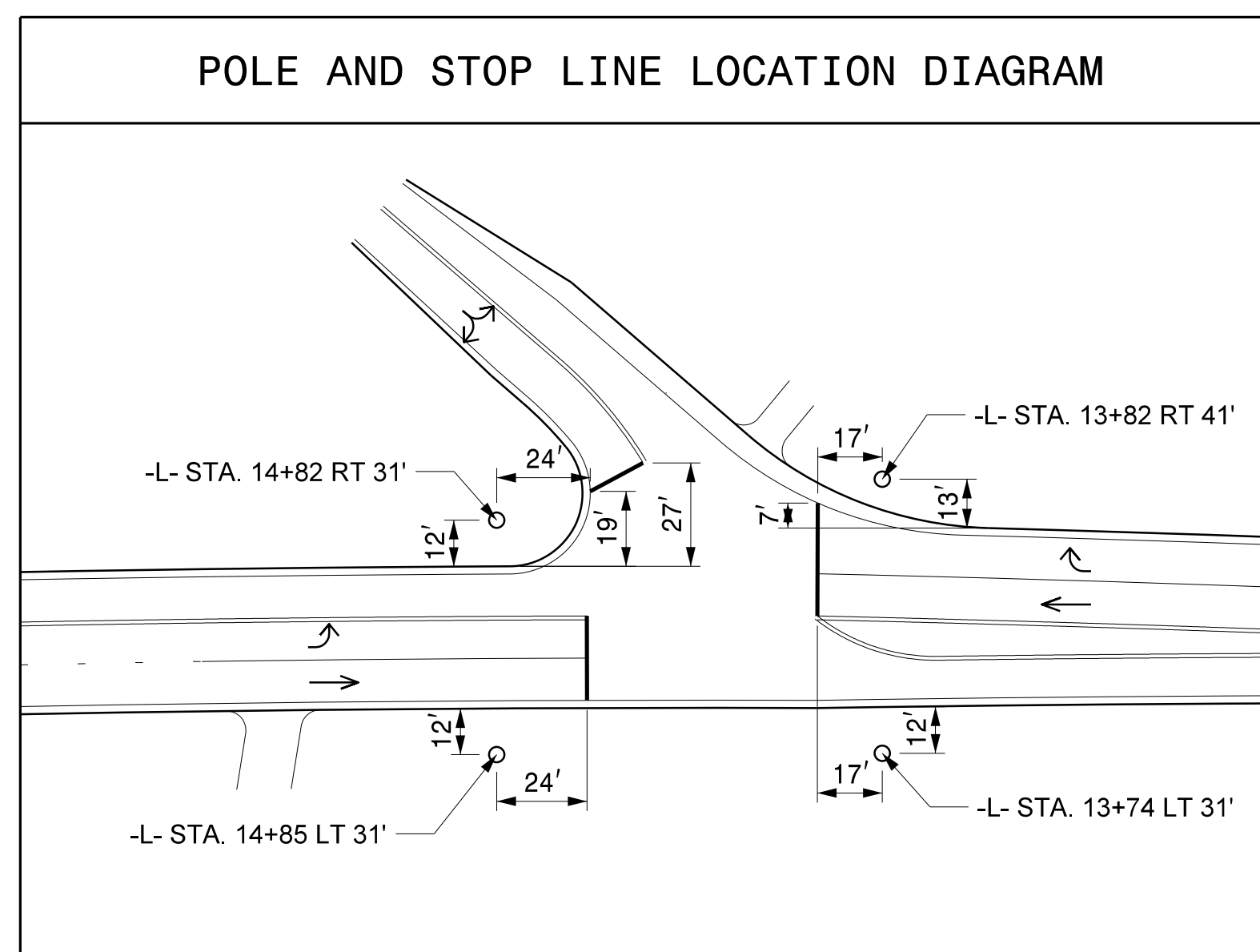
- DETECTED MOVEMENT (arrow with dot)
UNDETECTED MOVEMENT (OVERLAP) (arrow with overlapping lines)
UNSIGNALIZED MOVEMENT (arrow with dashed line)
PEDESTRIAN MOVEMENT (arrow with person icon)



OASIS 2070 TIMING CHART table with columns for FEATURE, PHASE (1, 2, 6, 8), and timing values (Min Green, Extension, Max Green, etc.).

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

POLE AND STOP LINE LOCATION DIAGRAM



NC Dept of Transportation Division of Highways Final Drawing Date: 6/14/2019 (Changed Back) ITS & Signals Unit

LEGEND

- PROPOSED: Traffic Signal Head, Modified Signal Head, Sign, Pedestrian Signal Head, Signal Pole with Guy, Signal Pole with Sidewalk Guy, Inductive Loop Detector, Controller & Cabinet, Junction Box, 2-in Underground Conduit, Right of Way, Directional Arrow.
EXISTING: Traffic Signal Head, Modified Signal Head, Sign, Pedestrian Signal Head, Signal Pole with Guy, Signal Pole with Sidewalk Guy, Inductive Loop Detector, Controller & Cabinet, Junction Box, 2-in Underground Conduit, Right of Way, Directional Arrow.

RAMEY KEMP & ASSOCIATES, INC. logo and address information: 5808 Farington Place, Suite 100, Raleigh, North Carolina 27609.

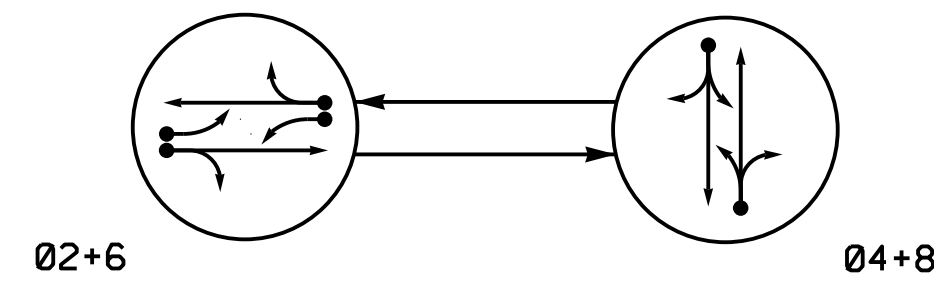
New Installation

Professional Engineer seal for William J. Hamilton, State of North Carolina, License No. 32396.

Project information: NC 96 (Zebulon Road) at SR 2337 (Pippin Road), Division 5, Wake County, Zebulon. Includes plan date (May 2019) and reviewer (WJ Hamilton).

Seal and signature area for William J. Hamilton, dated 5-31-19.

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND

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

SIGNAL FACE	PHASE		
	02+6	04+8	FL/PL/BL/PL
21	F	R	Y
22,23	G	R	Y
41,42	R	G	R
61	F	R	Y
62,63	G	R	Y
81,82	R	G	R

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART												
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
2A/S12	6X6	200	5	Y	2	Y	Y	-	-	-	Y	Y
2B	6X40	0	2-4-2	Y	2	Y	Y	Y	-	3	-	Y
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	5	-	Y
6A/S13	6X6	200	5	Y	6	Y	Y	-	-	-	Y	Y
6B	6X40	0	2-4-2	Y	6	Y	Y	Y	-	3	-	Y
8A	6X40	0	2-4-2	Y	8	Y	Y	-	-	5	-	Y

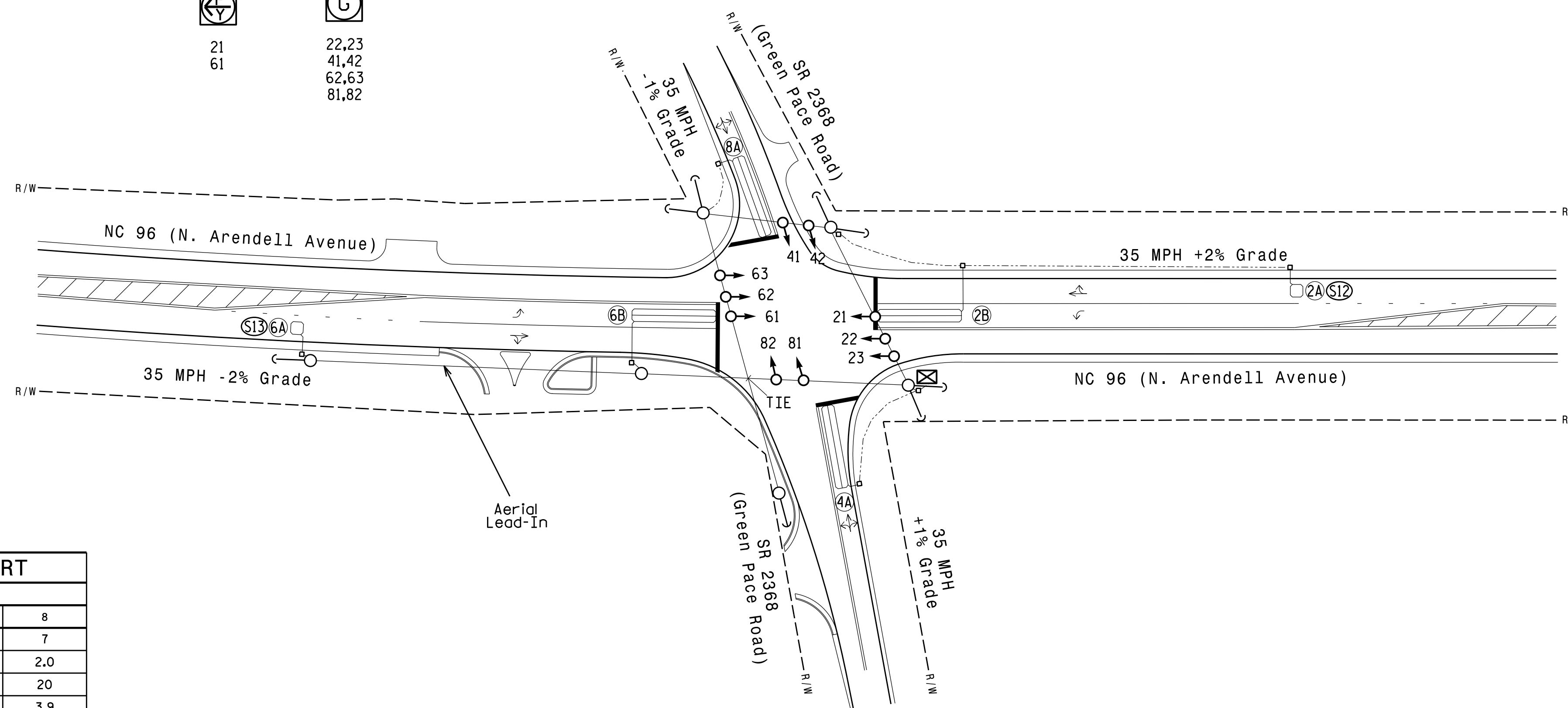
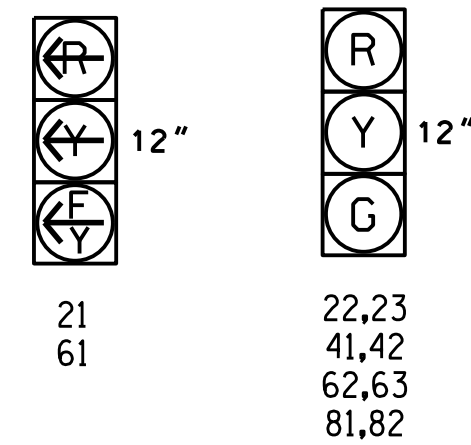
2 Phase Fully Actuated
(NC 96 - N. Arendell Ave. CLS)
Signal System #: D05-30_Zebulon

NOTES

- Refer to "Roadway Standard Drawings NCDOT" dated January 2018 and "Standard Specifications for Roads and Structures" dated January 2018.
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- Set all detector units to presence mode.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
- Closed loop system data: Controller asset #: 0886

SIGNAL FACE I.D.

All Heads L.E.D.



FEATURE	PHASE			
	2	4	6	8
Min Green 1 *	10	7	10	7
Extension 1 *	5.0	2.0	5.0	2.0
Max Green 1 *	45	20	45	20
Yellow Clearance	4.0	3.8	4.0	3.9
Red Clearance	1.3	1.5	1.3	1.2
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	2.5	-	2.5	-
Max Variable Initial *	24	-	24	-
Time Before Reduction *	15	-	15	-
Time To Reduce *	30	-	30	-
Minimum Gap	3.0	-	3.0	-
Recall Mode	MIN RECALL	-	MIN RECALL	-
Vehicle Call Memory	YELLOW	-	YELLOW	-
Dual Entry	-	ON	-	ON
Simultaneous Gap	ON	ON	ON	ON

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

PROPOSED	EXISTING
	N/A
	N/A

NC Dept of Transportation
Division of Highways
Final Drawing Date: 04/25/2022
ITS & Signal Section

Prepared in the Office of:
SUMMIT
DESIGN AND ENGINEERING SERVICES
NC FIRM LICENSE No: P-0339
320 Executive Court
Hillsborough, NC 27278
(919) 732-3883
(919) 732-6676 (FAX)

Prepared For:
TRANSFORMATIONAL MOBILITY AND SAFETY CENTER
UNIVERSITY OF NORTH CAROLINA
SCHOOL OF TRANSPORTATION
Signal Design Section
750 N. Greenfield Pkwy, Corner, NC 27529

New Installation
NC 96 (N. Arendell Avenue)
at
SR 2368 (Green Pace Road)
Division 5 Wake County Zebulon
PLAN DATE: November 2021 REVIEWED BY: E. Sirgany
PREPARED BY: M. Parker REVIEWED BY:

SEAL
EDWARD W. SIRGANY
ENGINEER
4/12/2022
SIG. INVENTORY NO. 05-0886

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

APPENDIX D

CAPACITY ANALYSIS CALCULATIONS












NC 96

&

PIPPIN ROAD

Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2024 Existing
Timing Plan: AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	145	53	487	82	15	541
Future Volume (vph)	145	53	487	82	15	541
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%		0%			0%
Storage Length (ft)	0	0		175	150	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.964			0.850		
Flt Protected	0.965				0.950	
Satd. Flow (prot)	1716	0	1863	1583	1770	1863
Flt Permitted	0.965				0.950	
Satd. Flow (perm)	1716	0	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	1328		2748			2368
Travel Time (s)	25.9		41.6			35.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	161	59	541	91	17	601
Shared Lane Traffic (%)						
Lane Group Flow (vph)	220	0	541	91	17	601
Turn Type	Prot		NA	pm+ov	Prot	NA
Protected Phases	8		2	8	1	6
Permitted Phases				2		
Detector Phase	8		2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0		12.0	7.0	7.0	12.0
Minimum Split (s)	20.0		20.0	20.0	14.0	20.0
Total Split (s)	30.0		90.0	30.0	20.0	90.0
Total Split (%)	21.4%		64.3%	21.4%	14.3%	64.3%
Maximum Green (s)	24.6		84.5	24.6	15.4	84.5
Yellow Time (s)	3.0		4.5	3.0	3.0	4.5
All-Red Time (s)	2.4		1.0	2.4	1.6	1.0
Lost Time Adjust (s)	-0.4		-0.5	-0.4	0.4	-0.5
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		6.0	2.0	2.0	6.0
Minimum Gap (s)	2.0		3.0	2.0	2.0	3.0
Time Before Reduce (s)	0.0		15.0	0.0	0.0	15.0
Time To Reduce (s)	0.0		45.0	0.0	0.0	45.0
Recall Mode	None		Min	None	None	Min
Act Effct Green (s)	12.7		23.8	46.7	7.2	25.3
Actuated g/C Ratio	0.26		0.49	0.96	0.15	0.52
v/c Ratio	0.49		0.60	0.06	0.07	0.62
Control Delay	22.2		13.6	0.9	26.6	11.6
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2024 Existing
Timing Plan: AM Peak Hour

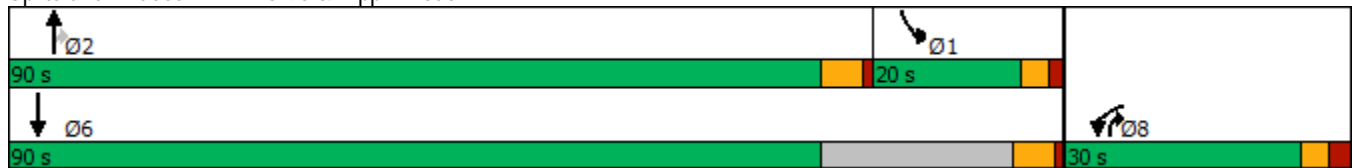


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	22.2		13.6	0.9	26.6	11.6
LOS	C		B	A	C	B
Approach Delay	22.2		11.8			12.0
Approach LOS	C		B			B
Queue Length 50th (ft)	48		83	0	4	97
Queue Length 95th (ft)	152		288	15	26	223
Internal Link Dist (ft)	1248		2668			2288
Turn Bay Length (ft)				175	150	
Base Capacity (vph)	957		1863	1513	592	1863
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.23		0.29	0.06	0.03	0.32

Intersection Summary












Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	48.9
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.62
Intersection Signal Delay:	13.4
Intersection LOS:	B
Intersection Capacity Utilization	48.1%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: NC 96 & Pippin Road



Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2024 Existing
Timing Plan: PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	94	24	538	138	54	566
Future Volume (vph)	94	24	538	138	54	566
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%		0%			0%
Storage Length (ft)	0	0		175	150	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972			0.850		
Flt Protected	0.962				0.950	
Satd. Flow (prot)	1724	0	1863	1583	1770	1863
Flt Permitted	0.962				0.950	
Satd. Flow (perm)	1724	0	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	1328		2748			2368
Travel Time (s)	25.9		41.6			35.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	104	27	598	153	60	629
Shared Lane Traffic (%)						
Lane Group Flow (vph)	131	0	598	153	60	629
Turn Type	Prot		NA	pm+ov	Prot	NA
Protected Phases	8		2	8	1	6
Permitted Phases				2		
Detector Phase	8		2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0		12.0	7.0	7.0	12.0
Minimum Split (s)	20.0		20.0	20.0	14.0	20.0
Total Split (s)	30.0		90.0	30.0	20.0	90.0
Total Split (%)	21.4%		64.3%	21.4%	14.3%	64.3%
Maximum Green (s)	24.6		84.5	24.6	15.4	84.5
Yellow Time (s)	3.0		4.5	3.0	3.0	4.5
All-Red Time (s)	2.4		1.0	2.4	1.6	1.0
Lost Time Adjust (s)	-0.4		-0.5	-0.4	0.4	-0.5
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		6.0	2.0	2.0	6.0
Minimum Gap (s)	2.0		3.0	2.0	2.0	3.0
Time Before Reduce (s)	0.0		15.0	0.0	0.0	15.0
Time To Reduce (s)	0.0		45.0	0.0	0.0	45.0
Recall Mode	None		Min	None	None	Min
Act Effct Green (s)	10.7		25.4	44.9	8.0	31.7
Actuated g/C Ratio	0.20		0.47	0.84	0.15	0.59
v/c Ratio	0.38		0.68	0.12	0.23	0.57
Control Delay	27.4		16.7	2.6	29.5	8.3
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2024 Existing
Timing Plan: PM Peak Hour

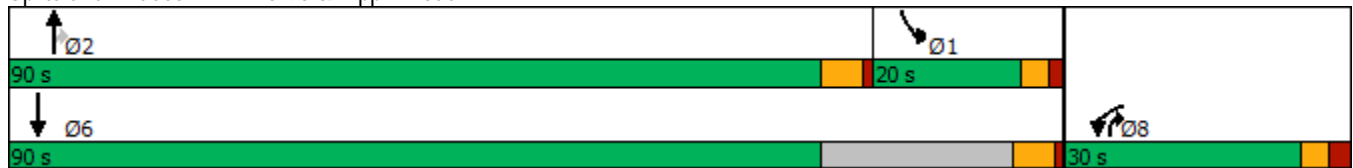


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	27.4		16.7	2.6	29.5	8.3
LOS	C		B	A	C	A
Approach Delay	27.4		13.8			10.1
Approach LOS	C		B			B
Queue Length 50th (ft)	40		154	12	19	90
Queue Length 95th (ft)	108		314	29	62	192
Internal Link Dist (ft)	1248		2668			2288
Turn Bay Length (ft)				175	150	
Base Capacity (vph)	907		1863	1325	558	1863
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.14		0.32	0.12	0.11	0.34

Intersection Summary












Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	53.6
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.68
Intersection Signal Delay:	13.3
Intersection LOS:	B
Intersection Capacity Utilization	53.3%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: NC 96 & Pippin Road



Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2029 No-Build
Timing Plan: AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	152	56	512	86	16	569
Future Volume (vph)	152	56	512	86	16	569
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%		0%			0%
Storage Length (ft)	0	0		175	150	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.964			0.850		
Flt Protected	0.965				0.950	
Satd. Flow (prot)	1716	0	1863	1583	1770	1863
Flt Permitted	0.965				0.950	
Satd. Flow (perm)	1716	0	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	1328		2748			2368
Travel Time (s)	25.9		41.6			35.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	169	62	569	96	18	632
Shared Lane Traffic (%)						
Lane Group Flow (vph)	231	0	569	96	18	632
Turn Type	Prot		NA	pm+ov	Prot	NA
Protected Phases	8		2	8	1	6
Permitted Phases				2		
Detector Phase	8		2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0		12.0	7.0	7.0	12.0
Minimum Split (s)	20.0		20.0	20.0	14.0	20.0
Total Split (s)	30.0		90.0	30.0	20.0	90.0
Total Split (%)	21.4%		64.3%	21.4%	14.3%	64.3%
Maximum Green (s)	24.6		84.5	24.6	15.4	84.5
Yellow Time (s)	3.0		4.5	3.0	3.0	4.5
All-Red Time (s)	2.4		1.0	2.4	1.6	1.0
Lost Time Adjust (s)	-0.4		-0.5	-0.4	0.4	-0.5
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		6.0	2.0	2.0	6.0
Minimum Gap (s)	2.0		3.0	2.0	2.0	3.0
Time Before Reduce (s)	0.0		15.0	0.0	0.0	15.0
Time To Reduce (s)	0.0		45.0	0.0	0.0	45.0
Recall Mode	None		Min	None	None	Min
Act Effct Green (s)	13.8		25.1	49.1	7.2	26.6
Actuated g/C Ratio	0.27		0.49	0.96	0.14	0.52
v/c Ratio	0.50		0.62	0.06	0.07	0.65
Control Delay	22.7		14.5	0.8	28.1	12.6
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2029 No-Build
Timing Plan: AM Peak Hour

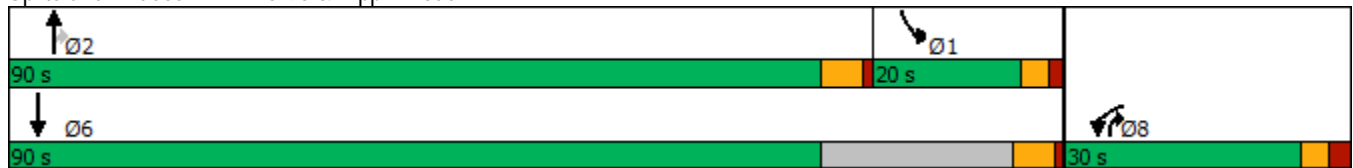


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	22.7		14.5	0.8	28.1	12.6
LOS	C		B	A	C	B
Approach Delay	22.7		12.5			13.0
Approach LOS	C		B			B
Queue Length 50th (ft)	53		95	0	4	111
Queue Length 95th (ft)	165		317	15	28	252
Internal Link Dist (ft)	1248		2668			2288
Turn Bay Length (ft)				175	150	
Base Capacity (vph)	911		1863	1513	563	1863
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.25		0.31	0.06	0.03	0.34

Intersection Summary












Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	51.3
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.65
Intersection Signal Delay:	14.2
Intersection LOS:	B
Intersection Capacity Utilization	50.1%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: NC 96 & Pippin Road



Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2029 No-Build
Timing Plan: PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	99	25	565	145	57	595
Future Volume (vph)	99	25	565	145	57	595
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%		0%			0%
Storage Length (ft)	0	0		175	150	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.973			0.850		
Flt Protected	0.962				0.950	
Satd. Flow (prot)	1726	0	1863	1583	1770	1863
Flt Permitted	0.962				0.950	
Satd. Flow (perm)	1726	0	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	1328		2748			2368
Travel Time (s)	25.9		41.6			35.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	110	28	628	161	63	661
Shared Lane Traffic (%)						
Lane Group Flow (vph)	138	0	628	161	63	661
Turn Type	Prot		NA	pm+ov	Prot	NA
Protected Phases	8		2	8	1	6
Permitted Phases				2		
Detector Phase	8		2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0		12.0	7.0	7.0	12.0
Minimum Split (s)	20.0		20.0	20.0	14.0	20.0
Total Split (s)	30.0		90.0	30.0	20.0	90.0
Total Split (%)	21.4%		64.3%	21.4%	14.3%	64.3%
Maximum Green (s)	24.6		84.5	24.6	15.4	84.5
Yellow Time (s)	3.0		4.5	3.0	3.0	4.5
All-Red Time (s)	2.4		1.0	2.4	1.6	1.0
Lost Time Adjust (s)	-0.4		-0.5	-0.4	0.4	-0.5
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		6.0	2.0	2.0	6.0
Minimum Gap (s)	2.0		3.0	2.0	2.0	3.0
Time Before Reduce (s)	0.0		15.0	0.0	0.0	15.0
Time To Reduce (s)	0.0		45.0	0.0	0.0	45.0
Recall Mode	None		Min	None	None	Min
Act Effct Green (s)	11.1		27.2	47.2	8.1	33.5
Actuated g/C Ratio	0.20		0.49	0.84	0.14	0.60
v/c Ratio	0.40		0.70	0.12	0.25	0.59
Control Delay	28.8		17.3	2.5	31.2	8.7
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2029 No-Build
Timing Plan: PM Peak Hour

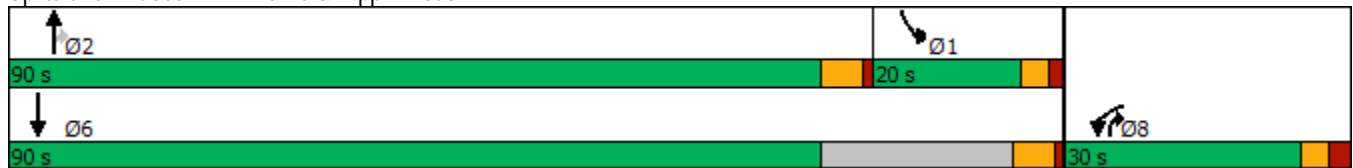


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	28.8		17.3	2.5	31.2	8.7
LOS	C		B	A	C	A
Approach Delay	28.8		14.3			10.6
Approach LOS	C		B			B
Queue Length 50th (ft)	44		169	13	21	101
Queue Length 95th (ft)	120		347	31	68	214
Internal Link Dist (ft)	1248		2668			2288
Turn Bay Length (ft)				175	150	
Base Capacity (vph)	874		1863	1333	538	1863
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.16		0.34	0.12	0.12	0.35

Intersection Summary












Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	56
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	13.9
Intersection LOS:	B
Intersection Capacity Utilization	55.1%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 1: NC 96 & Pippin Road



Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2029 Build
Timing Plan: AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	153	56	545	89	16	596
Future Volume (vph)	153	56	545	89	16	596
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%		0%			0%
Storage Length (ft)	0	0		175	150	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.964			0.850		
Flt Protected	0.965				0.950	
Satd. Flow (prot)	1716	0	1863	1583	1770	1863
Flt Permitted	0.965				0.950	
Satd. Flow (perm)	1716	0	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	1328		429			2368
Travel Time (s)	25.9		6.5			35.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	170	62	606	99	18	662
Shared Lane Traffic (%)						
Lane Group Flow (vph)	232	0	606	99	18	662
Turn Type	Prot		NA	pm+ov	Prot	NA
Protected Phases	8		2	8	1	6
Permitted Phases				2		
Detector Phase	8		2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0		12.0	7.0	7.0	12.0
Minimum Split (s)	20.0		20.0	20.0	14.0	20.0
Total Split (s)	30.0		90.0	30.0	20.0	90.0
Total Split (%)	21.4%		64.3%	21.4%	14.3%	64.3%
Maximum Green (s)	24.6		84.5	24.6	15.4	84.5
Yellow Time (s)	3.0		4.5	3.0	3.0	4.5
All-Red Time (s)	2.4		1.0	2.4	1.6	1.0
Lost Time Adjust (s)	-0.4		-0.5	-0.4	0.4	-0.5
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		6.0	2.0	2.0	6.0
Minimum Gap (s)	2.0		3.0	2.0	2.0	3.0
Time Before Reduce (s)	0.0		15.0	0.0	0.0	15.0
Time To Reduce (s)	0.0		45.0	0.0	0.0	45.0
Recall Mode	None		Min	None	None	Min
Act Effct Green (s)	14.2		27.1	51.5	7.2	28.6
Actuated g/C Ratio	0.26		0.50	0.96	0.13	0.53
v/c Ratio	0.51		0.65	0.07	0.08	0.67
Control Delay	24.0		14.9	0.8	29.8	12.9
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2029 Build
Timing Plan: AM Peak Hour

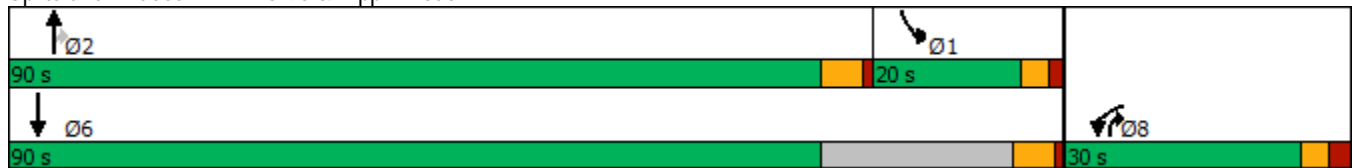


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	24.0		14.9	0.8	29.8	12.9
LOS	C		B	A	C	B
Approach Delay	24.0		12.9			13.3
Approach LOS	C		B			B
Queue Length 50th (ft)	56		107	0	5	122
Queue Length 95th (ft)	173		352	16	29	277
Internal Link Dist (ft)	1248		349			2288
Turn Bay Length (ft)				175	150	
Base Capacity (vph)	873		1863	1513	540	1863
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.27		0.33	0.07	0.03	0.36

Intersection Summary












Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	53.7
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.67
Intersection Signal Delay:	14.7
Intersection LOS:	B
Intersection Capacity Utilization	51.6%
ICU Level of Service	A
Analysis Period (min)	15

Splits and Phases: 1: NC 96 & Pippin Road



Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2029 Build
Timing Plan: PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	102	25	597	147	57	639
Future Volume (vph)	102	25	597	147	57	639
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%		0%			0%
Storage Length (ft)	0	0		175	150	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.973			0.850		
Flt Protected	0.961				0.950	
Satd. Flow (prot)	1724	0	1863	1583	1770	1863
Flt Permitted	0.961				0.950	
Satd. Flow (perm)	1724	0	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	1328		429			2368
Travel Time (s)	25.9		6.5			35.9
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	113	28	663	163	63	710
Shared Lane Traffic (%)						
Lane Group Flow (vph)	141	0	663	163	63	710
Turn Type	Prot		NA	pm+ov	Prot	NA
Protected Phases	8		2	8	1	6
Permitted Phases				2		
Detector Phase	8		2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0		12.0	7.0	7.0	12.0
Minimum Split (s)	20.0		20.0	20.0	14.0	20.0
Total Split (s)	30.0		90.0	30.0	20.0	90.0
Total Split (%)	21.4%		64.3%	21.4%	14.3%	64.3%
Maximum Green (s)	24.6		84.5	24.6	15.4	84.5
Yellow Time (s)	3.0		4.5	3.0	3.0	4.5
All-Red Time (s)	2.4		1.0	2.4	1.6	1.0
Lost Time Adjust (s)	-0.4		-0.5	-0.4	0.4	-0.5
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Vehicle Extension (s)	2.0		6.0	2.0	2.0	6.0
Minimum Gap (s)	2.0		3.0	2.0	2.0	3.0
Time Before Reduce (s)	0.0		15.0	0.0	0.0	15.0
Time To Reduce (s)	0.0		45.0	0.0	0.0	45.0
Recall Mode	None		Min	None	None	Min
Act Effct Green (s)	11.5		29.2	48.2	8.2	38.6
Actuated g/C Ratio	0.19		0.48	0.79	0.13	0.63
v/c Ratio	0.44		0.75	0.13	0.27	0.61
Control Delay	31.9		19.9	2.9	33.9	8.7
Queue Delay	0.0		0.0	0.0	0.0	0.0

Lanes, Volumes, Timings
1: NC 96 & Pippin Road

2029 Build
Timing Plan: PM Peak Hour

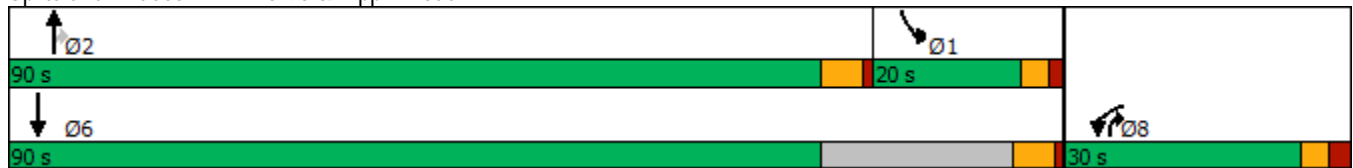


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Total Delay	31.9		19.9	2.9	33.9	8.7
LOS	C		B	A	C	A
Approach Delay	31.9		16.5			10.7
Approach LOS	C		B			B
Queue Length 50th (ft)	47		187	13	22	116
Queue Length 95th (ft)	129		384	32	72	246
Internal Link Dist (ft)	1248		349			2288
Turn Bay Length (ft)				175	150	
Base Capacity (vph)	791		1841	1245	487	1863
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.18		0.36	0.13	0.13	0.38

Intersection Summary

Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	61.3
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	15.2
Intersection LOS:	B
Intersection Capacity Utilization	56.9%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 1: NC 96 & Pippin Road



APPENDIX E

CAPACITY ANALYSIS CALCULATIONS

NC 96

&

RILEY HILL ROAD

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	10	33	4	32	64	30	510	4	70	639	15
Future Vol, veh/h	4	10	33	4	32	64	30	510	4	70	639	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	11	37	4	36	71	33	567	4	78	710	17

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1564	1512	719	1534	1518	569	727	0	0	571	0	0
Stage 1	875	875	-	635	635	-	-	-	-	-	-	-
Stage 2	689	637	-	899	883	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	91	120	428	95	119	522	876	-	-	1002	-	-
Stage 1	344	367	-	467	472	-	-	-	-	-	-	-
Stage 2	436	471	-	334	364	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	53	106	428	73	106	522	876	-	-	1002	-	-
Mov Cap-2 Maneuver	53	106	-	73	106	-	-	-	-	-	-	-
Stage 1	331	338	-	449	454	-	-	-	-	-	-	-
Stage 2	334	453	-	272	336	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	31		40.2		0.5		0.9	
HCM LOS	D		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	876	-	-	190	209	1002	-
HCM Lane V/C Ratio	0.038	-	-	0.275	0.532	0.078	-
HCM Control Delay (s)	9.3	-	-	31	40.2	8.9	-
HCM Lane LOS	A	-	-	D	E	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.1	2.8	0.3	-

Intersection												
Int Delay, s/veh	4.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	25	49	4	9	58	31	654	4	65	614	4
Future Vol, veh/h	4	25	49	4	9	58	31	654	4	65	614	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	28	54	4	10	64	34	727	4	72	682	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1662	1627	684	1666	1627	729	686	0	0	731	0	0
Stage 1	828	828	-	797	797	-	-	-	-	-	-	-
Stage 2	834	799	-	869	830	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	77	102	449	77	102	423	908	-	-	873	-	-
Stage 1	365	386	-	380	399	-	-	-	-	-	-	-
Stage 2	362	398	-	347	385	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	54	90	449	47	90	423	908	-	-	873	-	-
Mov Cap-2 Maneuver	54	90	-	47	90	-	-	-	-	-	-	-
Stage 1	351	354	-	366	384	-	-	-	-	-	-	-
Stage 2	288	383	-	258	353	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	46.8		30.2		0.4		0.9	
HCM LOS	E		D					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	908	-	-	169	220	873	-
HCM Lane V/C Ratio	0.038	-	-	0.513	0.359	0.083	-
HCM Control Delay (s)	9.1	-	-	46.8	30.2	9.5	-
HCM Lane LOS	A	-	-	E	D	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.5	1.5	0.3	-

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	11	35	4	34	67	32	536	4	74	672	16
Future Vol, veh/h	4	11	35	4	34	67	32	536	4	74	672	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	12	39	4	38	74	36	596	4	82	747	18

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1646	1592	756	1616	1599	598	765	0	0	600	0	0
Stage 1	920	920	-	670	670	-	-	-	-	-	-	-
Stage 2	726	672	-	946	929	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	79	107	408	83	106	502	848	-	-	977	-	-
Stage 1	325	350	-	446	455	-	-	-	-	-	-	-
Stage 2	416	454	-	314	346	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	42	94	408	61	93	502	848	-	-	977	-	-
Mov Cap-2 Maneuver	42	94	-	61	93	-	-	-	-	-	-	-
Stage 1	311	321	-	427	436	-	-	-	-	-	-	-
Stage 2	310	435	-	250	317	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	36.7		52.3		0.5		0.9	
HCM LOS	E		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	848	-	-	168	186	977	-
HCM Lane V/C Ratio	0.042	-	-	0.331	0.627	0.084	-
HCM Control Delay (s)	9.4	-	-	36.7	52.3	9	-
HCM Lane LOS	A	-	-	E	F	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.4	3.6	0.3	-

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	26	51	4	9	61	33	687	4	68	645	4
Future Vol, veh/h	4	26	51	4	9	61	33	687	4	68	645	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	29	57	4	10	68	37	763	4	76	717	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1749	1712	719	1753	1712	765	721	0	0	767	0	0
Stage 1	871	871	-	839	839	-	-	-	-	-	-	-
Stage 2	878	841	-	914	873	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	67	90	428	67	90	403	881	-	-	847	-	-
Stage 1	346	368	-	360	381	-	-	-	-	-	-	-
Stage 2	343	380	-	327	368	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	45	78	428	38	78	403	881	-	-	847	-	-
Mov Cap-2 Maneuver	45	78	-	38	78	-	-	-	-	-	-	-
Stage 1	331	335	-	345	365	-	-	-	-	-	-	-
Stage 2	266	364	-	236	335	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	59.7		35.3		0.4		0.9	
HCM LOS	F		E					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	881	-	-	150	199	847	-
HCM Lane V/C Ratio	0.042	-	-	0.6	0.413	0.089	-
HCM Control Delay (s)	9.3	-	-	59.7	35.3	9.7	-
HCM Lane LOS	A	-	-	F	E	A	-
HCM 95th %tile Q(veh)	0.1	-	-	3.2	1.9	0.3	-

Intersection												
Int Delay, s/veh	7.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	11	35	4	34	71	32	583	4	79	735	16
Future Vol, veh/h	4	11	35	4	34	71	32	583	4	79	735	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	12	39	4	38	79	36	648	4	88	817	18

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1783	1726	826	1750	1733	650	835	0	0	652	0	0
Stage 1	1002	1002	-	722	722	-	-	-	-	-	-	-
Stage 2	781	724	-	1028	1011	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	64	89	372	67	88	469	798	-	-	935	-	-
Stage 1	292	320	-	418	431	-	-	-	-	-	-	-
Stage 2	388	430	-	283	317	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	29	77	372	47	76	469	798	-	-	935	-	-
Mov Cap-2 Maneuver	29	77	-	47	76	-	-	-	-	-	-	-
Stage 1	279	290	-	399	412	-	-	-	-	-	-	-
Stage 2	280	411	-	220	287	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	50.2		77.2		0.5		0.9	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	798	-	-	133	159	935	-
HCM Lane V/C Ratio	0.045	-	-	0.418	0.762	0.094	-
HCM Control Delay (s)	9.7	-	-	50.2	77.2	9.2	-
HCM Lane LOS	A	-	-	F	F	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.8	4.8	0.3	-

Intersection												
Int Delay, s/veh	7.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	4	26	51	4	9	67	33	768	4	73	703	4
Future Vol, veh/h	4	26	51	4	9	67	33	768	4	73	703	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	29	57	4	10	74	37	853	4	81	781	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1916	1876	783	1917	1876	855	785	0	0	857	0	0
Stage 1	945	945	-	929	929	-	-	-	-	-	-	-
Stage 2	971	931	-	988	947	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	51	72	394	51	72	358	834	-	-	783	-	-
Stage 1	314	340	-	321	346	-	-	-	-	-	-	-
Stage 2	304	346	-	297	340	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	32	62	394	25	62	358	834	-	-	783	-	-
Mov Cap-2 Maneuver	32	62	-	25	62	-	-	-	-	-	-	-
Stage 1	300	305	-	307	331	-	-	-	-	-	-	-
Stage 2	223	331	-	206	305	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	94		51.4		0.4		0.9	
HCM LOS	F		F					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	834	-	-	120	162	783	-
HCM Lane V/C Ratio	0.044	-	-	0.75	0.549	0.104	-
HCM Control Delay (s)	9.5	-	-	94	51.4	10.1	-
HCM Lane LOS	A	-	-	F	F	B	-
HCM 95th %tile Q(veh)	0.1	-	-	4.2	2.8	0.3	-

APPENDIX F

CAPACITY ANALYSIS CALCULATIONS



















NC 96

&

GREEN PACE ROAD

Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2024 Existing
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	26	64	9	77	11	86	474	10	4	559	114
Future Volume (vph)	56	26	64	9	77	11	86	474	10	4	559	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			-1%			2%			-2%	
Storage Length (ft)	0		0	0		0	175		0	125		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
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		0.941			0.985			0.997			0.975	
Flt Protected		0.981			0.995		0.950			0.950		
Satd. Flow (prot)	0	1711	0	0	1835	0	1752	1839	0	1787	1834	0
Flt Permitted		0.830			0.962		0.269			0.417		
Satd. Flow (perm)	0	1448	0	0	1774	0	496	1839	0	785	1834	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		1335			1692			1666			663	
Travel Time (s)		26.0			33.0			32.5			18.1	
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)	62	29	71	10	86	12	96	527	11	4	621	127
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	162	0	0	108	0	96	538	0	4	748	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0		20.0	20.0		45.0	45.0		45.0	45.0	
Total Split (%)	30.8%	30.8%		30.8%	30.8%		69.2%	69.2%		69.2%	69.2%	
Maximum Green (s)	14.7	14.7		14.9	14.9		39.7	39.7		39.7	39.7	
Yellow Time (s)	3.8	3.8		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5		1.2	1.2		1.3	1.3		1.3	1.3	
Lost Time Adjust (s)		-0.3			-0.1		-0.3	-0.3		-0.3	-0.3	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effct Green (s)		10.2			10.1		28.3	28.3		28.3	28.3	
Actuated g/C Ratio		0.23			0.23		0.64	0.64		0.64	0.64	
v/c Ratio		0.49			0.27		0.30	0.46		0.01	0.64	
Control Delay		23.2			18.7		9.1	7.7		5.0	10.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2024 Existing
Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		23.2			18.7		9.1	7.7		5.0	10.4	
LOS		C			B		A	A		A	B	
Approach Delay		23.2			18.7			7.9			10.4	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)		33			21		11	70		1	117	
Queue Length 95th (ft)		109			74		42	164		3	275	
Internal Link Dist (ft)		1255			1612			1586			583	
Turn Bay Length (ft)							175			125		
Base Capacity (vph)		529			648		435	1614		689	1609	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.31			0.17		0.22	0.33		0.01	0.46	

Intersection Summary



















Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	44.2
Natural Cycle:	55
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	11.2
Intersection LOS:	B
Intersection Capacity Utilization:	72.2%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 3: NC 96 & Green Pace Road



Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2024 Existing
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	71	78	9	28	4	73	600	14	10	573	85
Future Volume (vph)	85	71	78	9	28	4	73	600	14	10	573	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			-1%			2%			-2%	
Storage Length (ft)	0		0	0		0	175		0	125		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
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		0.955			0.988			0.996			0.981	
Flt Protected		0.982			0.989		0.950			0.950		
Satd. Flow (prot)	0	1738	0	0	1829	0	1752	1837	0	1787	1846	0
Flt Permitted		0.862			0.904		0.232			0.268		
Satd. Flow (perm)	0	1526	0	0	1672	0	428	1837	0	504	1846	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		1335			1692			1666			663	
Travel Time (s)		26.0			33.0			32.5			18.1	
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)	94	79	87	10	31	4	81	667	16	11	637	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	260	0	0	45	0	81	683	0	11	731	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0		20.0	20.0		45.0	45.0		45.0	45.0	
Total Split (%)	30.8%	30.8%		30.8%	30.8%		69.2%	69.2%		69.2%	69.2%	
Maximum Green (s)	14.7	14.7		14.9	14.9		39.7	39.7		39.7	39.7	
Yellow Time (s)	3.8	3.8		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5		1.2	1.2		1.3	1.3		1.3	1.3	
Lost Time Adjust (s)		-0.3			-0.1		-0.3	-0.3		-0.3	-0.3	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effct Green (s)		12.2			12.2		25.3	25.3		25.3	25.3	
Actuated g/C Ratio		0.25			0.25		0.53	0.53		0.53	0.53	
v/c Ratio		0.67			0.11		0.36	0.70		0.04	0.75	
Control Delay		28.4			16.8		12.1	13.3		6.0	14.7	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2024 Existing
Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		28.4			16.8		12.1	13.3		6.0	14.7	
LOS		C			B		B	B		A	B	
Approach Delay		28.4			16.8			13.1			14.5	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		60			9		12	129		1	143	
Queue Length 95th (ft)		#192			36		39	236		7	264	
Internal Link Dist (ft)		1255			1612			1586			583	
Turn Bay Length (ft)							175			125		
Base Capacity (vph)		495			543		363	1558		427	1566	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.53			0.08		0.22	0.44		0.03	0.47	

Intersection Summary



















Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	47.9
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	16.0
Intersection LOS:	B
Intersection Capacity Utilization:	76.0%
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: 3: NC 96 & Green Pace Road



Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2029 No-Build
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	27	67	9	81	12	90	498	11	4	588	120
Future Volume (vph)	59	27	67	9	81	12	90	498	11	4	588	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			-1%			2%				-2%
Storage Length (ft)	0		0	0		0	175		0	125		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
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		0.941			0.984			0.997			0.975	
Flt Protected		0.981			0.996		0.950			0.950		
Satd. Flow (prot)	0	1711	0	0	1835	0	1752	1839	0	1787	1834	0
Flt Permitted		0.850			0.966		0.247			0.398		
Satd. Flow (perm)	0	1482	0	0	1779	0	455	1839	0	749	1834	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		1335			1692			1666			663	
Travel Time (s)		26.0			33.0			32.5			18.1	
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)	66	30	74	10	90	13	100	553	12	4	653	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	170	0	0	113	0	100	565	0	4	786	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0		20.0	20.0		45.0	45.0		45.0	45.0	
Total Split (%)	30.8%	30.8%		30.8%	30.8%		69.2%	69.2%		69.2%	69.2%	
Maximum Green (s)	14.7	14.7		14.9	14.9		39.7	39.7		39.7	39.7	
Yellow Time (s)	3.8	3.8		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5		1.2	1.2		1.3	1.3		1.3	1.3	
Lost Time Adjust (s)		-0.3			-0.1		-0.3	-0.3		-0.3	-0.3	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)		10.4			10.3		29.5	29.5		29.5	29.5	
Actuated g/C Ratio		0.23			0.23		0.65	0.65		0.65	0.65	
v/c Ratio		0.50			0.28		0.34	0.47		0.01	0.66	
Control Delay		23.9			19.4		10.2	7.8		5.0	10.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2029 No-Build
Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		23.9			19.4		10.2	7.8		5.0	10.9	
LOS		C			B		B	A		A	B	
Approach Delay		23.9			19.4			8.2			10.9	
Approach LOS		C			B			A			B	
Queue Length 50th (ft)		37			23		12	77		0	130	
Queue Length 95th (ft)		114			76		47	175		3	301	
Internal Link Dist (ft)		1255			1612			1586			583	
Turn Bay Length (ft)							175			125		
Base Capacity (vph)		525			630		391	1579		643	1575	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.32			0.18		0.26	0.36		0.01	0.50	

Intersection Summary



















Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	45.5
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.66
Intersection Signal Delay:	11.7
Intersection LOS:	B
Intersection Capacity Utilization	74.5%
ICU Level of Service	D
Analysis Period (min)	15

Splits and Phases: 3: NC 96 & Green Pace Road



Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2029 No-Build
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	75	82	9	29	4	77	631	15	11	602	89
Future Volume (vph)	89	75	82	9	29	4	77	631	15	11	602	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			-1%			2%			-2%	
Storage Length (ft)	0		0	0		0	175		0	125		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
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		0.955			0.988			0.996			0.981	
Flt Protected		0.982			0.989		0.950			0.950		
Satd. Flow (prot)	0	1738	0	0	1829	0	1752	1837	0	1787	1846	0
Flt Permitted		0.861			0.906		0.205			0.242		
Satd. Flow (perm)	0	1524	0	0	1676	0	378	1837	0	455	1846	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		1335			1692			1666			663	
Travel Time (s)		26.0			33.0			32.5			18.1	
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)	99	83	91	10	32	4	86	701	17	12	669	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	273	0	0	46	0	86	718	0	12	768	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0		20.0	20.0		45.0	45.0		45.0	45.0	
Total Split (%)	30.8%	30.8%		30.8%	30.8%		69.2%	69.2%		69.2%	69.2%	
Maximum Green (s)	14.7	14.7		14.9	14.9		39.7	39.7		39.7	39.7	
Yellow Time (s)	3.8	3.8		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5		1.2	1.2		1.3	1.3		1.3	1.3	
Lost Time Adjust (s)		-0.3			-0.1		-0.3	-0.3		-0.3	-0.3	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)		12.7			12.7		26.3	26.3		26.3	26.3	
Actuated g/C Ratio		0.26			0.26		0.53	0.53		0.53	0.53	
v/c Ratio		0.70			0.11		0.43	0.73		0.05	0.78	
Control Delay		30.8			17.5		14.8	14.2		6.0	15.9	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2029 No-Build
Timing Plan: PM Peak Hour

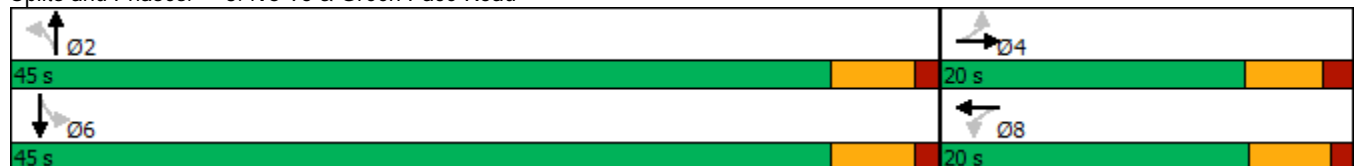


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		30.8			17.5		14.8	14.2		6.0	15.9	
LOS		C			B		B	B		A	B	
Approach Delay		30.8			17.5			14.2			15.7	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		66			9		14	147		2	165	
Queue Length 95th (ft)		#214			38		45	255		7	286	
Internal Link Dist (ft)		1255			1612			1586			583	
Turn Bay Length (ft)							175			125		
Base Capacity (vph)		480			528		312	1517		376	1524	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.57			0.09		0.28	0.47		0.03	0.50	

Intersection Summary



















Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	49.5
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	17.3
Intersection LOS:	B
Intersection Capacity Utilization:	78.5%
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: 3: NC 96 & Green Pace Road



Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2029 Build
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	27	67	9	81	12	90	544	11	4	648	123
Future Volume (vph)	60	27	67	9	81	12	90	544	11	4	648	123
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			-1%			2%			-2%	
Storage Length (ft)	0		0	0		0	175		0	125		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
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		0.942			0.984			0.997			0.976	
Flt Protected		0.981			0.996		0.950			0.950		
Satd. Flow (prot)	0	1713	0	0	1835	0	1752	1839	0	1787	1836	0
Flt Permitted		0.861			0.967		0.211			0.366		
Satd. Flow (perm)	0	1503	0	0	1781	0	389	1839	0	689	1836	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		1335			1692			1666			663	
Travel Time (s)		26.0			33.0			32.5			18.1	
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)	67	30	74	10	90	13	100	604	12	4	720	137
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	171	0	0	113	0	100	616	0	4	857	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0		20.0	20.0		45.0	45.0		45.0	45.0	
Total Split (%)	30.8%	30.8%		30.8%	30.8%		69.2%	69.2%		69.2%	69.2%	
Maximum Green (s)	14.7	14.7		14.9	14.9		39.7	39.7		39.7	39.7	
Yellow Time (s)	3.8	3.8		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5		1.2	1.2		1.3	1.3		1.3	1.3	
Lost Time Adjust (s)		-0.3			-0.1		-0.3	-0.3		-0.3	-0.3	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effect Green (s)		10.8			10.7		32.0	32.0		32.0	32.0	
Actuated g/C Ratio		0.22			0.22		0.67	0.67		0.67	0.67	
v/c Ratio		0.51			0.29		0.39	0.50		0.01	0.70	
Control Delay		25.2			20.5		12.0	8.1		4.8	12.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2029 Build
Timing Plan: AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		25.2			20.5		12.0	8.1		4.8	12.0	
LOS		C			C		B	A		A	B	
Approach Delay		25.2			20.5			8.7			11.9	
Approach LOS		C			C			A			B	
Queue Length 50th (ft)		41			26		13	91		0	159	
Queue Length 95th (ft)		114			76		54	199		3	358	
Internal Link Dist (ft)		1255			1612			1586			583	
Turn Bay Length (ft)							175			125		
Base Capacity (vph)		505			598		322	1525		571	1522	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.34			0.19		0.31	0.40		0.01	0.56	

Intersection Summary



















Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	48.1
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.70
Intersection Signal Delay:	12.4
Intersection LOS:	B
Intersection Capacity Utilization:	77.9%
ICU Level of Service:	D
Analysis Period (min):	15

Splits and Phases: 3: NC 96 & Green Pace Road



Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2029 Build
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	75	82	9	29	4	77	709	15	11	658	91
Future Volume (vph)	92	75	82	9	29	4	77	709	15	11	658	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		1%			-1%			2%			-2%	
Storage Length (ft)	0		0	0		0	175		0	125		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
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		0.955			0.988			0.997			0.982	
Flt Protected		0.982			0.989		0.950			0.950		
Satd. Flow (prot)	0	1738	0	0	1829	0	1752	1839	0	1787	1848	0
Flt Permitted		0.859			0.915		0.171			0.190		
Satd. Flow (perm)	0	1520	0	0	1692	0	315	1839	0	357	1848	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		1335			1692			1666			663	
Travel Time (s)		26.0			33.0			32.5			18.1	
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)	102	83	91	10	32	4	86	788	17	12	731	101
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	276	0	0	46	0	86	805	0	12	832	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.0	20.0		20.0	20.0		20.0	20.0		20.0	20.0	
Total Split (s)	20.0	20.0		20.0	20.0		45.0	45.0		45.0	45.0	
Total Split (%)	30.8%	30.8%		30.8%	30.8%		69.2%	69.2%		69.2%	69.2%	
Maximum Green (s)	14.7	14.7		14.9	14.9		39.7	39.7		39.7	39.7	
Yellow Time (s)	3.8	3.8		3.9	3.9		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.5	1.5		1.2	1.2		1.3	1.3		1.3	1.3	
Lost Time Adjust (s)		-0.3			-0.1		-0.3	-0.3		-0.3	-0.3	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		5.0	5.0		5.0	5.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0		15.0	15.0	
Time To Reduce (s)	0.0	0.0		0.0	0.0		30.0	30.0		30.0	30.0	
Recall Mode	None	None		None	None		Min	Min		Min	Min	
Act Effct Green (s)		13.1			13.1		28.8	28.8		28.8	28.8	
Actuated g/C Ratio		0.25			0.25		0.55	0.55		0.55	0.55	
v/c Ratio		0.72			0.11		0.50	0.79		0.06	0.82	
Control Delay		33.5			18.4		19.0	16.4		6.3	17.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	

Lanes, Volumes, Timings
3: NC 96 & Green Pace Road

2029 Build
Timing Plan: PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Delay		33.5			18.4		19.0	16.4		6.3	17.4	
LOS		C			B		B	B		A	B	
Approach Delay		33.5			18.4			16.6			17.3	
Approach LOS		C			B			B			B	
Queue Length 50th (ft)		75			11		16	189		2	200	
Queue Length 95th (ft)		#217			38		56	314		8	334	
Internal Link Dist (ft)		1255			1612			1586			583	
Turn Bay Length (ft)							175			125		
Base Capacity (vph)		450			501		247	1447		281	1454	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.61			0.09		0.35	0.56		0.04	0.57	

Intersection Summary

Area Type: Other
 Cycle Length: 65
 Actuated Cycle Length: 52.3
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.82
 Intersection Signal Delay: 19.2
 Intersection LOS: B
 Intersection Capacity Utilization 81.7%
 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: 3: NC 96 & Green Pace Road



APPENDIX G

CAPACITY ANALYSIS CALCULATIONS













NC 96

&

PEARCES ROAD

Lanes, Volumes, Timings
4: NC 96 & Pearces Road

2024 Existing
Timing Plan: AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	395	34	593	262	41	567
Future Volume (vph)	395	34	593	262	41	567
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0		0	175	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.228	
Satd. Flow (perm)	1770	1583	1863	1583	425	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		35		35	
Link Distance (ft)	1205		1138		1666	
Travel Time (s)	23.5		22.2		32.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	439	38	659	291	46	630
Shared Lane Traffic (%)						
Lane Group Flow (vph)	439	38	659	291	46	630
Turn Type	Prot	Perm	NA	pm+ov	Perm	NA
Protected Phases	8		2	8		6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	8	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	45.0	20.0	45.0	45.0
Total Split (%)	30.8%	30.8%	69.2%	30.8%	69.2%	69.2%
Maximum Green (s)	13.7	13.7	38.9	13.7	39.4	39.4
Yellow Time (s)	3.0	3.0	3.8	3.0	3.8	3.8
All-Red Time (s)	3.3	3.3	2.3	3.3	1.8	1.8
Lost Time Adjust (s)	-1.3	-1.3	-1.1	-1.3	-0.6	-0.6
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	3.0
Recall Mode	None	None	Min	None	Min	Min
Act Effct Green (s)	15.3	15.3	21.4	46.9	21.4	21.4
Actuated g/C Ratio	0.33	0.33	0.46	1.00	0.46	0.46
v/c Ratio	0.76	0.07	0.78	0.18	0.24	0.74
Control Delay	28.7	14.5	17.4	0.3	10.4	16.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.7	14.5	17.4	0.3	10.4	16.0
LOS	C	B	B	A	B	B
Approach Delay	27.5		12.1			15.7
Approach LOS	C		B			B

Lanes, Volumes, Timings
4: NC 96 & Pearces Road

2024 Existing
Timing Plan: AM Peak Hour

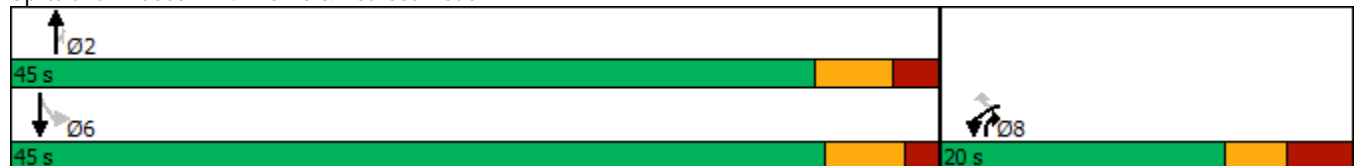


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	101	7	135	0	7	126
Queue Length 95th (ft)	#309	29	226	0	22	211
Internal Link Dist (ft)	1125		1058			1586
Turn Bay Length (ft)	200				175	
Base Capacity (vph)	577	516	1605	1583	366	1605
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.07	0.41	0.18	0.13	0.39

Intersection Summary













Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	46.9
Natural Cycle:	50
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.78
Intersection Signal Delay:	16.8
Intersection LOS:	B
Intersection Capacity Utilization:	64.3%
ICU Level of Service:	C
Analysis Period (min):	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 4: NC 96 & Pearces Road



Lanes, Volumes, Timings
4: NC 96 & Pearces Road

2024 Existing
Timing Plan: PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	304	17	679	382	54	649
Future Volume (vph)	304	17	679	382	54	649
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0		0	175	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.196	
Satd. Flow (perm)	1770	1583	1863	1583	365	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		35		35	
Link Distance (ft)	1205		1138		1666	
Travel Time (s)	23.5		22.2		32.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	338	19	754	424	60	721
Shared Lane Traffic (%)						
Lane Group Flow (vph)	338	19	754	424	60	721
Turn Type	Prot	Perm	NA	pm+ov	Perm	NA
Protected Phases	8		2	8		6
Permitted Phases		8		2	6	
Detector Phase	8	8	2	8	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	10.0	7.0	10.0	10.0
Minimum Split (s)	20.0	20.0	20.0	20.0	20.0	20.0
Total Split (s)	20.0	20.0	45.0	20.0	45.0	45.0
Total Split (%)	30.8%	30.8%	69.2%	30.8%	69.2%	69.2%
Maximum Green (s)	13.7	13.7	38.9	13.7	39.4	39.4
Yellow Time (s)	3.0	3.0	3.8	3.0	3.8	3.8
All-Red Time (s)	3.3	3.3	2.3	3.3	1.8	1.8
Lost Time Adjust (s)	-1.3	-1.3	-1.1	-1.3	-0.6	-0.6
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0	2.0	3.0	2.0	3.0	3.0
Recall Mode	None	None	Min	None	Min	Min
Act Effct Green (s)	13.9	13.9	25.4	49.8	25.4	25.4
Actuated g/C Ratio	0.28	0.28	0.51	1.00	0.51	0.51
v/c Ratio	0.68	0.04	0.79	0.27	0.32	0.76
Control Delay	28.1	17.4	16.8	0.4	12.0	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.1	17.4	16.8	0.4	12.0	15.4
LOS	C	B	B	A	B	B
Approach Delay	27.6		10.9			15.1
Approach LOS	C		B			B

Lanes, Volumes, Timings
4: NC 96 & Pearces Road

2024 Existing
Timing Plan: PM Peak Hour



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	83	4	167	0	10	156
Queue Length 95th (ft)	#257	21	274	0	30	254
Internal Link Dist (ft)	1125		1058			1586
Turn Bay Length (ft)	200				175	
Base Capacity (vph)	558	499	1511	1557	296	1511
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.04	0.50	0.27	0.20	0.48

Intersection Summary














Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	49.8
Natural Cycle:	55
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	14.9
Intersection LOS:	B
Intersection Capacity Utilization	70.1%
ICU Level of Service	C
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 4: NC 96 & Pearces Road



Lanes, Volumes, Timings
4: NC 96 & Pearces Road

2029 No-Build
Timing Plan: AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 					 
Traffic Volume (vph)	415	36	623	275	43	596
Future Volume (vph)	415	36	623	275	43	596
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0		0	175	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.988			0.850		
Flt Protected	0.956				0.950	
Satd. Flow (prot)	3413	0	1863	1583	1770	3539
Flt Permitted	0.956				0.242	
Satd. Flow (perm)	3413	0	1863	1583	451	3539
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		35		35	
Link Distance (ft)	1205		1138		1666	
Travel Time (s)	23.5		22.2		32.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	461	40	692	306	48	662
Shared Lane Traffic (%)						
Lane Group Flow (vph)	501	0	692	306	48	662
Turn Type	Prot		NA	pm+ov	Perm	NA
Protected Phases	8		2	8		6
Permitted Phases				2	6	
Detector Phase	8		2	8	6	6
Switch Phase						
Minimum Initial (s)	7.0		10.0	7.0	10.0	10.0
Minimum Split (s)	13.9		16.4	13.9	16.4	16.4
Total Split (s)	20.0		45.0	20.0	45.0	45.0
Total Split (%)	30.8%		69.2%	30.8%	69.2%	69.2%
Maximum Green (s)	13.1		38.6	13.1	38.6	38.6
Yellow Time (s)	3.0		3.8	3.0	3.8	3.8
All-Red Time (s)	3.9		2.6	3.9	2.6	2.6
Lost Time Adjust (s)	-1.9		-1.4	-1.9	-1.4	-1.4
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		3.0	2.0	3.0	3.0
Recall Mode	None		Min	None	Min	Min
Act Effct Green (s)	12.6		22.9	46.0	22.9	22.9
Actuated g/C Ratio	0.27		0.50	1.00	0.50	0.50
v/c Ratio	0.54		0.75	0.19	0.21	0.38
Control Delay	18.1		14.9	0.3	9.0	7.6
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	18.1		14.9	0.3	9.0	7.6
LOS	B		B	A	A	A
Approach Delay	18.1		10.4			7.7
Approach LOS	B		B			A

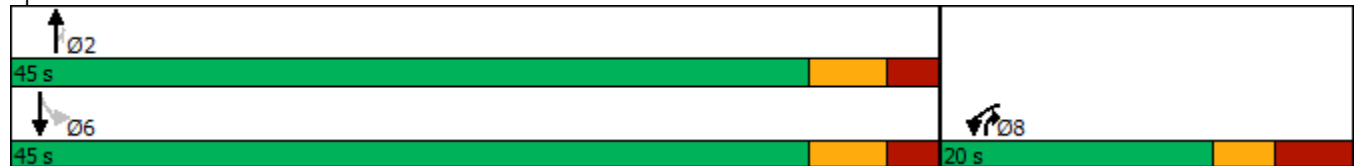


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	55		128	0	6	50
Queue Length 95th (ft)	127		241	0	22	82
Internal Link Dist (ft)	1125		1058			1586
Turn Bay Length (ft)	200				175	
Base Capacity (vph)	1168		1605	1557	388	3049
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.43		0.43	0.20	0.12	0.22

Intersection Summary














Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	46
Natural Cycle:	45
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.75
Intersection Signal Delay:	11.3
Intersection LOS:	B
Intersection Capacity Utilization	57.0%
ICU Level of Service	B
Analysis Period (min)	15

Splits and Phases: 4: NC 96 & Pearces Road



Lanes, Volumes, Timings
4: NC 96 & Pearces Road

2029 No-Build
Timing Plan: PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 					 
Traffic Volume (vph)	320	18	714	401	57	682
Future Volume (vph)	320	18	714	401	57	682
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0		0	175	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.992			0.850		
Flt Protected	0.955				0.950	
Satd. Flow (prot)	3423	0	1863	1583	1770	3539
Flt Permitted	0.955				0.192	
Satd. Flow (perm)	3423	0	1863	1583	358	3539
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		35			35
Link Distance (ft)	1205		1138			1666
Travel Time (s)	23.5		22.2			32.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	356	20	793	446	63	758
Shared Lane Traffic (%)						
Lane Group Flow (vph)	376	0	793	446	63	758
Turn Type	Prot		NA	pm+ov	Perm	NA
Protected Phases	8		2	8		6
Permitted Phases				2	6	
Detector Phase	8		2	8	6	6
Switch Phase						
Minimum Initial (s)	7.0		10.0	7.0	10.0	10.0
Minimum Split (s)	20.0		20.0	20.0	20.0	20.0
Total Split (s)	20.0		45.0	20.0	45.0	45.0
Total Split (%)	30.8%		69.2%	30.8%	69.2%	69.2%
Maximum Green (s)	13.1		38.6	13.1	38.6	38.6
Yellow Time (s)	3.0		3.8	3.0	3.8	3.8
All-Red Time (s)	3.9		2.6	3.9	2.6	2.6
Lost Time Adjust (s)	-1.9		-1.4	-1.9	-1.4	-1.4
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		3.0	2.0	3.0	3.0
Recall Mode	None		Min	None	Min	Min
Act Effct Green (s)	12.1		26.1	48.8	26.1	26.1
Actuated g/C Ratio	0.25		0.53	1.00	0.53	0.53
v/c Ratio	0.44		0.80	0.28	0.33	0.40
Control Delay	19.3		15.9	0.4	11.6	7.1
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	19.3		15.9	0.4	11.6	7.1
LOS	B		B	A	B	A
Approach Delay	19.3		10.3			7.4
Approach LOS	B		B			A



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	44		148	0	8	54
Queue Length 95th (ft)	103		301	0	32	94
Internal Link Dist (ft)	1125		1058			1586
Turn Bay Length (ft)	200				175	
Base Capacity (vph)	1115		1547	1548	297	2938
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.34		0.51	0.29	0.21	0.26

Intersection Summary














Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	48.8
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.80
Intersection Signal Delay:	10.7
Intersection Capacity Utilization	65.4%
Analysis Period (min)	15
Intersection LOS:	B
ICU Level of Service	C

Splits and Phases: 4: NC 96 & Pearces Road



Lanes, Volumes, Timings
4: NC 96 & Pearces Road

2029 Build
Timing Plan: AM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 					 
Traffic Volume (vph)	415	44	661	275	53	646
Future Volume (vph)	415	44	661	275	53	646
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0		0	175	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.986			0.850		
Flt Protected	0.957				0.950	
Satd. Flow (prot)	3410	0	1863	1583	1770	3539
Flt Permitted	0.957				0.221	
Satd. Flow (perm)	3410	0	1863	1583	412	3539
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		35			35
Link Distance (ft)	1205		1138			1666
Travel Time (s)	23.5		22.2			32.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	461	49	734	306	59	718
Shared Lane Traffic (%)						
Lane Group Flow (vph)	510	0	734	306	59	718
Turn Type	Prot		NA	pm+ov	Perm	NA
Protected Phases	8		2	8		6
Permitted Phases				2	6	
Detector Phase	8		2	8	6	6
Switch Phase						
Minimum Initial (s)	7.0		10.0	7.0	10.0	10.0
Minimum Split (s)	20.0		20.0	20.0	20.0	20.0
Total Split (s)	20.0		45.0	20.0	45.0	45.0
Total Split (%)	30.8%		69.2%	30.8%	69.2%	69.2%
Maximum Green (s)	13.1		38.6	13.1	38.6	38.6
Yellow Time (s)	3.0		3.8	3.0	3.8	3.8
All-Red Time (s)	3.9		2.6	3.9	2.6	2.6
Lost Time Adjust (s)	-1.9		-1.4	-1.9	-1.4	-1.4
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		3.0	2.0	3.0	3.0
Recall Mode	None		Min	None	Min	Min
Act Effct Green (s)	12.8		24.8	48.2	24.8	24.8
Actuated g/C Ratio	0.27		0.51	1.00	0.51	0.51
v/c Ratio	0.56		0.77	0.19	0.28	0.39
Control Delay	19.8		15.2	0.3	10.2	7.5
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	19.8		15.2	0.3	10.2	7.5
LOS	B		B	A	B	A
Approach Delay	19.8		10.8			7.7
Approach LOS	B		B			A

Lanes, Volumes, Timings
4: NC 96 & Pearces Road

2029 Build
Timing Plan: AM Peak Hour



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	60		144	0	8	56
Queue Length 95th (ft)	139		262	0	27	89
Internal Link Dist (ft)	1125		1058			1586
Turn Bay Length (ft)	200				175	
Base Capacity (vph)	1117		1554	1553	343	2952
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.46		0.47	0.20	0.17	0.24

Intersection Summary














Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	48.2
Natural Cycle:	55
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.77
Intersection Signal Delay:	11.7
Intersection LOS:	B
Intersection Capacity Utilization	65.6%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 4: NC 96 & Pearces Road



Lanes, Volumes, Timings
4: NC 96 & Pearces Road

2029 Build
Timing Plan: PM Peak Hour

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 					 
Traffic Volume (vph)	320	32	778	401	67	728
Future Volume (vph)	320	32	778	401	67	728
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200	0		0	175	
Storage Lanes	1	0		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	0.97	0.95	1.00	1.00	1.00	0.95
Frt	0.986			0.850		
Flt Protected	0.957				0.950	
Satd. Flow (prot)	3410	0	1863	1583	1770	3539
Flt Permitted	0.957				0.157	
Satd. Flow (perm)	3410	0	1863	1583	292	3539
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		35			35
Link Distance (ft)	1205		1138			1666
Travel Time (s)	23.5		22.2			32.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	356	36	864	446	74	809
Shared Lane Traffic (%)						
Lane Group Flow (vph)	392	0	864	446	74	809
Turn Type	Prot		NA	pm+ov	Perm	NA
Protected Phases	8		2	8		6
Permitted Phases				2	6	
Detector Phase	8		2	8	6	6
Switch Phase						
Minimum Initial (s)	7.0		10.0	7.0	10.0	10.0
Minimum Split (s)	20.0		20.0	20.0	20.0	20.0
Total Split (s)	20.0		45.0	20.0	45.0	45.0
Total Split (%)	30.8%		69.2%	30.8%	69.2%	69.2%
Maximum Green (s)	13.1		38.6	13.1	38.6	38.6
Yellow Time (s)	3.0		3.8	3.0	3.8	3.8
All-Red Time (s)	3.9		2.6	3.9	2.6	2.6
Lost Time Adjust (s)	-1.9		-1.4	-1.9	-1.4	-1.4
Total Lost Time (s)	5.0		5.0	5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	2.0		3.0	2.0	3.0	3.0
Recall Mode	None		Min	None	Min	Min
Act Effct Green (s)	12.4		28.9	51.8	28.9	28.9
Actuated g/C Ratio	0.24		0.56	1.00	0.56	0.56
v/c Ratio	0.48		0.83	0.28	0.46	0.41
Control Delay	21.0		17.6	0.4	17.3	7.0
Queue Delay	0.0		0.0	0.0	0.0	0.0
Total Delay	21.0		17.6	0.4	17.3	7.0
LOS	C		B	A	B	A
Approach Delay	21.0		11.7			7.9
Approach LOS	C		B			A

Lanes, Volumes, Timings
4: NC 96 & Pearces Road

2029 Build
Timing Plan: PM Peak Hour

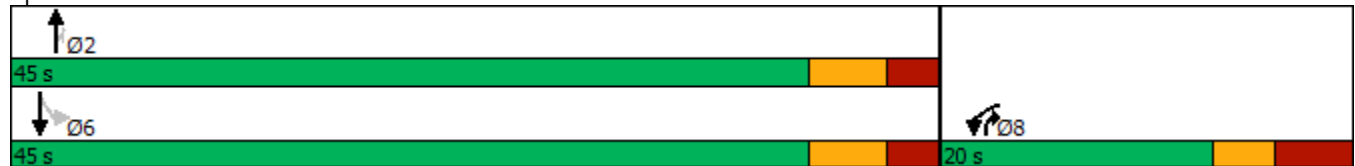


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Queue Length 50th (ft)	54		183	0	11	62
Queue Length 95th (ft)	108		357	0	47	102
Internal Link Dist (ft)	1125		1058			1586
Turn Bay Length (ft)	200				175	
Base Capacity (vph)	1041		1467	1567	229	2786
Starvation Cap Reductn	0		0	0	0	0
Spillback Cap Reductn	0		0	0	0	0
Storage Cap Reductn	0		0	0	0	0
Reduced v/c Ratio	0.38		0.59	0.28	0.32	0.29

Intersection Summary

Area Type:	Other
Cycle Length:	65
Actuated Cycle Length:	51.8
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.83
Intersection Signal Delay:	11.8
Intersection LOS:	B
Intersection Capacity Utilization	71.9%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 4: NC 96 & Pearces Road



APPENDIX H

CAPACITY ANALYSIS CALCULATIONS

NC 96

&

ACCESS 1

Intersection												
Int Delay, s/veh	11.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕	↕	↕	
Traffic Vol, veh/h	4	4	4	78	4	20	4	612	44	38	711	4
Future Vol, veh/h	4	4	4	78	4	20	4	612	44	38	711	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	50	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	4	4	87	4	22	4	680	49	42	790	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1602	1613	792	1568	1566	680	794	0	0	729	0	0
Stage 1	876	876	-	688	688	-	-	-	-	-	-	-
Stage 2	726	737	-	880	878	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	85	104	389	90	111	451	827	-	-	875	-	-
Stage 1	344	367	-	436	447	-	-	-	-	-	-	-
Stage 2	416	425	-	342	366	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	75	98	389	~ 82	105	451	827	-	-	875	-	-
Mov Cap-2 Maneuver	75	98	-	~ 82	105	-	-	-	-	-	-	-
Stage 1	341	349	-	433	443	-	-	-	-	-	-	-
Stage 2	388	422	-	318	348	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.4	162.5	0.1	0.5
HCM LOS	E	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	827	-	-	115	82	291	875
HCM Lane V/C Ratio	0.005	-	-	0.116	1.057	0.092	0.048
HCM Control Delay (s)	9.4	0	-	40.4	206.8	18.6	9.3
HCM Lane LOS	A	A	-	E	F	C	A
HCM 95th %tile Q(veh)	0	-	-	0.4	6	0.3	0.2

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

Intersection												
Int Delay, s/veh	23											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↕	↕			↕	↕	↕	↕	
Traffic Vol, veh/h	4	4	4	82	4	25	4	763	77	66	675	4
Future Vol, veh/h	4	4	4	82	4	25	4	763	77	66	675	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	50	75	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	4	4	91	4	28	4	848	86	73	750	4

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1813	1840	752	1758	1756	848	754	0	0	934	0	0
Stage 1	898	898	-	856	856	-	-	-	-	-	-	-
Stage 2	915	942	-	902	900	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	61	75	410	~ 66	85	361	856	-	-	733	-	-
Stage 1	334	358	-	352	374	-	-	-	-	-	-	-
Stage 2	327	342	-	332	357	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	49	67	410	~ 57	76	361	856	-	-	733	-	-
Mov Cap-2 Maneuver	49	67	-	~ 57	76	-	-	-	-	-	-	-
Stage 1	331	322	-	348	370	-	-	-	-	-	-	-
Stage 2	295	339	-	292	321	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	59.6	\$ 341.9	0	0.9
HCM LOS	F	F		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1WBLn2	SBL	SBT	SBR
Capacity (veh/h)	856	-	-	79 57 238	733	-	-
HCM Lane V/C Ratio	0.005	-	-	0.169 1.598 0.135	0.1	-	-
HCM Control Delay (s)	9.2	0	-	59.6\$ 454.9 22.5	10.5	-	-
HCM Lane LOS	A	A	-	F F C	B	-	-
HCM 95th %tile Q(veh)	0	-	-	0.6 8.4 0.5	0.3	-	-

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

APPENDIX I

CAPACITY ANALYSIS CALCULATIONS

NC 96

&

ACCESS 2

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↗	↗		↗
Traffic Vol, veh/h	0	26	615	17	0	749
Future Vol, veh/h	0	26	615	17	0	749
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	-	25	-	-
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	0	29	683	19	0	832

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	683	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-
Pot Cap-1 Maneuver	0	449	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	449	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	449
HCM Lane V/C Ratio	-	-	0.064
HCM Control Delay (s)	-	-	13.6
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.2

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↑	↖		↑
Traffic Vol, veh/h	0	29	758	30	0	741
Future Vol, veh/h	0	29	758	30	0	741
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	-	25	-	-
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	0	32	842	33	0	823

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	-	842	0	0	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	6.22	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	3.318	-	-	-
Pot Cap-1 Maneuver	0	364	-	-	0
Stage 1	0	-	-	-	0
Stage 2	0	-	-	-	0
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	-	364	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT
Capacity (veh/h)	-	-	364
HCM Lane V/C Ratio	-	-	0.089
HCM Control Delay (s)	-	-	15.8
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.3

APPENDIX J

SIMTRAFFIC QUEUEING REPORTS

Zebulon Road Mixed-Use
Queuing and Blocking Report

2024 Existing
AM Peak Hour

Intersection: 1: NC 96 & Pippin Road

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	R	L	T
Maximum Queue (ft)	169	202	44	52	186
Average Queue (ft)	79	86	9	13	87
95th Queue (ft)	138	166	34	40	152
Link Distance (ft)	1255	2646			2309
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			175	150	
Storage Blk Time (%)		1			1
Queuing Penalty (veh)		1			0

Intersection: 2: NC 96 & Riley Hill Road/Proctor Street

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	80	133	32	55	15
Average Queue (ft)	17	40	7	10	0
95th Queue (ft)	58	101	24	34	7
Link Distance (ft)	2296	1806			2646
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			150	150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: NC 96 & Green Pace Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	148	111	146	231	25	270
Average Queue (ft)	69	43	53	84	2	142
95th Queue (ft)	121	85	109	182	11	247
Link Distance (ft)	1295	1637		1574		538
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			175		125	
Storage Blk Time (%)			0	1		8
Queuing Penalty (veh)			2	1		0

Intersection: 4: NC 96 & Pearces Road

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	297	407	267	71	73	256
Average Queue (ft)	197	87	146	27	31	138
95th Queue (ft)	315	338	229	59	65	229
Link Distance (ft)		1145	1121	1121		1574
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200				175	
Storage Blk Time (%)	20					2
Queuing Penalty (veh)	8					1

Network Summary

Network wide Queuing Penalty: 12

Zebulon Road Mixed-Use
Queuing and Blocking Report

2024 Existing
PM Peak Hour

Intersection: 1: NC 96 & Pippin Road

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	R	L	T
Maximum Queue (ft)	110	296	158	90	130
Average Queue (ft)	54	99	26	40	66
95th Queue (ft)	95	213	93	73	119
Link Distance (ft)	1255	2646			2309
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			175	150	
Storage Blk Time (%)		1			0
Queuing Penalty (veh)		2			0

Intersection: 2: NC 96 & Riley Hill Road/Proctor Street

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	184	83	30	53	2
Average Queue (ft)	62	17	6	11	0
95th Queue (ft)	167	57	19	36	1
Link Distance (ft)	2296	1806			2646
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			150	150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: NC 96 & Green Pace Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	199	73	97	252	30	280
Average Queue (ft)	105	23	46	113	7	138
95th Queue (ft)	171	55	82	222	24	239
Link Distance (ft)	1295	1637		1574		538
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			175		125	
Storage Blk Time (%)				2		7
Queuing Penalty (veh)				2		1

Intersection: 4: NC 96 & Pearces Road

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	263	138	301	182	90	253
Average Queue (ft)	143	21	150	45	41	141
95th Queue (ft)	248	126	242	108	80	238
Link Distance (ft)		1145	1121	1121		1574
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	200				175	
Storage Blk Time (%)	5					3
Queuing Penalty (veh)	1					2

Network Summary

Network wide Queuing Penalty: 7

Intersection: 1: NC 96 & Pippin Road

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	R	L	T
Maximum Queue (ft)	183	236	52	53	214
Average Queue (ft)	85	107	9	14	97
95th Queue (ft)	146	198	32	42	174
Link Distance (ft)	1255	2646			2309
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			175	150	
Storage Blk Time (%)		1			1
Queuing Penalty (veh)		1			0

Intersection: 2: NC 96 & Riley Hill Road/Proctor Street

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	94	228	43	71	10
Average Queue (ft)	18	79	7	12	1
95th Queue (ft)	63	188	25	42	5
Link Distance (ft)	2296	1806			2646
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			150	150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: NC 96 & Green Pace Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	179	101	172	284	25	336
Average Queue (ft)	78	42	66	98	2	165
95th Queue (ft)	139	81	143	228	14	290
Link Distance (ft)	1283	1637		1579		538
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			175		125	
Storage Blk Time (%)			1	1		11
Queuing Penalty (veh)			6	1		0

Intersection: 4: NC 96 & Pearces Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	R	L	T	T
Maximum Queue (ft)	236	268	324	114	103	144	147
Average Queue (ft)	87	149	154	36	39	73	76
95th Queue (ft)	194	228	252	77	80	121	123
Link Distance (ft)		1149	1114	1114		1579	1579
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200				175		
Storage Blk Time (%)	0	2				0	
Queuing Penalty (veh)	0	5				0	

Network Summary

Network wide Queuing Penalty: 14

Intersection: 1: NC 96 & Pippin Road

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	R	L	T
Maximum Queue (ft)	141	294	191	98	204
Average Queue (ft)	64	116	27	44	84
95th Queue (ft)	116	229	103	84	157
Link Distance (ft)	1255	2646			2309
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			175	150	
Storage Blk Time (%)		2			1
Queuing Penalty (veh)		3			0

Intersection: 2: NC 96 & Riley Hill Road/Proctor Street

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	200	145	37	13	64
Average Queue (ft)	72	33	7	1	15
95th Queue (ft)	181	101	24	8	44
Link Distance (ft)	2296	1806		538	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			150		150
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: NC 96 & Green Pace Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	234	71	124	239	106	368
Average Queue (ft)	112	23	48	112	10	164
95th Queue (ft)	190	58	97	226	55	288
Link Distance (ft)	1283	1637		1579		538
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			175		125	
Storage Blk Time (%)			0	2		11
Queuing Penalty (veh)			1	2		1

Intersection: 4: NC 96 & Pearces Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	R	L	T	T
Maximum Queue (ft)	176	202	331	158	132	136	154
Average Queue (ft)	57	120	177	48	53	74	74
95th Queue (ft)	142	187	298	101	107	121	124
Link Distance (ft)		1149	1114	1114		1579	1579
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200				175		
Storage Blk Time (%)	0	0			0		
Queuing Penalty (veh)	0	1			0		

Network Summary

Network wide Queuing Penalty: 9

Intersection: 1: NC 96 & Pippin Road

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	R	L	T
Maximum Queue (ft)	194	224	100	65	206
Average Queue (ft)	86	101	12	20	92
95th Queue (ft)	150	187	55	54	172
Link Distance (ft)	1255	386			2309
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			175	150	
Storage Blk Time (%)		1			1
Queuing Penalty (veh)		1			0

Intersection: 2: NC 96 & Riley Hill Road/Proctor Street

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	146	258	52	75	10
Average Queue (ft)	38	104	10	14	0
95th Queue (ft)	142	252	35	46	6
Link Distance (ft)	2298	1806			1767
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			150	150	
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 3: NC 96 & Green Pace Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	157	95	177	244	61	367
Average Queue (ft)	79	46	66	98	3	177
95th Queue (ft)	138	82	136	204	34	303
Link Distance (ft)	1283	1637		1579		538
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			175		125	
Storage Blk Time (%)			2	1		12
Queuing Penalty (veh)			11	1		0

Intersection: 4: NC 96 & Pearces Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	R	L	T	T
Maximum Queue (ft)	198	248	310	93	112	132	126
Average Queue (ft)	104	160	158	30	44	70	68
95th Queue (ft)	203	231	260	67	89	117	112
Link Distance (ft)		1149	1114	1114		1579	1579
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200				175		
Storage Blk Time (%)	0	2					
Queuing Penalty (veh)	0	4					

Intersection: 5: NC 96 & Bobbfield Way/Site Access 1

Movement	EB	WB	WB	NB	NB	SB
Directions Served	LTR	L	TR	LT	R	L
Maximum Queue (ft)	56	174	35	53	5	52
Average Queue (ft)	13	61	12	4	0	17
95th Queue (ft)	40	150	32	33	2	45
Link Distance (ft)	1048	1018	1018	1767		
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)					50	75
Storage Blk Time (%)				0		0
Queuing Penalty (veh)				0		1

Intersection: 6: NC 96 & Site Access 2

Movement	WB
Directions Served	R
Maximum Queue (ft)	48
Average Queue (ft)	13
95th Queue (ft)	35
Link Distance (ft)	1003
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 20

Intersection: 1: NC 96 & Pippin Road

Movement	WB	NB	NB	SB	SB
Directions Served	LR	T	R	L	T
Maximum Queue (ft)	148	298	187	101	180
Average Queue (ft)	65	121	25	49	80
95th Queue (ft)	119	234	99	92	149
Link Distance (ft)	1255	386			2309
Upstream Blk Time (%)		0			
Queuing Penalty (veh)		0			
Storage Bay Dist (ft)			175	150	
Storage Blk Time (%)		2			1
Queuing Penalty (veh)		3			0

Intersection: 2: NC 96 & Riley Hill Road/Proctor Street

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	446	267	36	3	80	10
Average Queue (ft)	228	79	6	0	18	0
95th Queue (ft)	568	226	22	2	52	4
Link Distance (ft)	2298	1806		538		1767
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			150		150	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 3: NC 96 & Green Pace Road

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	238	68	209	279	30	377
Average Queue (ft)	118	23	58	132	8	185
95th Queue (ft)	198	55	141	254	25	321
Link Distance (ft)	1283	1637		1579		538
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			175		125	
Storage Blk Time (%)			0	4		13
Queuing Penalty (veh)			3	3		2

Intersection: 4: NC 96 & Pearces Road

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	R	L	T	T
Maximum Queue (ft)	196	229	361	211	177	177	154
Average Queue (ft)	81	135	195	49	88	81	78
95th Queue (ft)	175	205	310	133	178	151	137
Link Distance (ft)		1149	1114	1114		1579	1579
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	200				175		
Storage Blk Time (%)	0	1			6	0	
Queuing Penalty (veh)	0	1			26	0	

Intersection: 5: NC 96 & Bobbfield Way/Site Access 1

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	TR	LT	R	L	TR
Maximum Queue (ft)	42	274	64	50	9	75	50
Average Queue (ft)	10	141	18	2	0	27	2
95th Queue (ft)	34	297	45	21	4	58	26
Link Distance (ft)	1048	1018	1018	1767			366
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)					50	75	
Storage Blk Time (%)				0		0	0
Queuing Penalty (veh)				0		1	0

Intersection: 6: NC 96 & Site Access 2

Movement	WB
Directions Served	R
Maximum Queue (ft)	48
Average Queue (ft)	17
95th Queue (ft)	40
Link Distance (ft)	1003
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 41
