

Chatham County Proposed Quarry  
Bonlee-Carbonton Road (SR 1009) north of Vander Oldham Road (SR 2312)  
Goldston, North Carolina

## Traffic Impact Analysis

*Volume II - Appendices*



*Edward W Sircany*

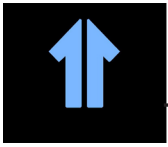
2/16/2024

Prepared by  
**Summit Design & Engineering**  
320 Executive Court  
Hillsborough, NC 27278  
License Number: P-0339

Prepared for  
**The Sunrock Group**  
200 Horizon Drive, Suite 200  
Raleigh, NC 27615

**February 2024**





# APPENDIX A

## Memorandum of Understanding



November 30, 2023

**REVISED** January 1, 2024

**REVISED** January 17, 2024

R.J. "Jeron" Monroe  
NCDOT Division 8  
District One Engineer  
300 DOT Drive  
Pittsboro, NC 27312

Subject: Memorandum of Understanding for a proposed Quarry near Goldston, N.C. in Chatham County.

Dear Jeron,

As you are aware, Summit Design and Engineering has been retained by a developer to perform a traffic engineering analysis and study for a site on the east side of Bonlee-Carbonton Road (SR 1009) and north of J. Cook Road (SR 2310) near Vander-Oldham Road (SR 2312) in Chatham County. Summit will submit a Traffic Impact Analysis for your review, based upon the parameters discussed in our scoping conference. This is a memorandum of understanding to confirm the scope of the study area and procedures that will be used to complete the TIA.

#### Study Area/Scope & Scenarios

After discussions with you and your staff during the scoping conference, it was agreed that the Traffic Analysis will include the following intersections for analysis, with an additional intersection (Main & Church) added due to the proposed RCUT at NC 902 & US 421 (\*\* indicates new data to be collected):

- NC 902 & US 421 \*\*
- NC 902 & Old US 421 (SR 1176) \*\*
- NC 902 & Bonlee-Carbonton Rd. (SR 1009)/Bonlee School Rd. (SR 1139) \*\*
- Bonlee-Carbonton Rd. (SR 1009) & Site Drive
- N. Main St. & Chatham Ave. \*\*
- N. Main St. (SR 2333) & Pittsboro-Goldston Rd. (SR 1010)
- N. Main St. (SR 2333) & Church St./Lancaster Dr.

In addition to these intersections, the following roadways will be evaluated for non-intersection capacity availability as required in the Goldston Unified Development Ordinance (UDO). These roadways will be evaluated using the Highway Capacity Manual procedures, and will use ADT information for the capacity analysis:

- Bonlee-Carbonton Rd. (SR 1009) between NC 902 and J. Cook Rd. (SR 2310)
- Bear Creek Church Rd. (SR 2306) between Bonlee-Carbonton Rd. (SR 1009) and Chatham Ave.
- Goldston-Glendon Rd. (SR 2303) between J. Cook Rd. (SR 2310) and Church St. (SR 2306)

The site is proposed to be constructed in one phase within a single year, with two buildings proposed, an office/scale house and a maintenance facility that would employ 20 to 25 employees on site daily. The quarry itself involves no construction, as it is solely for the purpose of excavating materials and having them hauled/delivered elsewhere. It will

be constructed with one new street connection to SR 1009 (Bonlee-Carbonton Road). Based on the short period of time to construct the quarry features and structures it was determined that a single build phase analysis would be needed in addition to analyzing the existing No Build conditions. **NCDOT project W-5808B that will convert the traffic signal at US 421-NC 902 is scheduled to let in February 2025, and it is planned that the quarry will open in late 2025.**

Therefore the analysis horizons to be included are:

- 2023 Existing Conditions
- **2024 2025** Buildout/No Build Conditions

Based on the timing of the development submittal schedule, turn movement count data will be collected during the month of December, before traditional schools have let out for the holidays. Although there is a high school within the study area, the turn movement counts are planned to be collected in typical 15-minute intervals, as the trips generated by the quarry are anticipated to be uniform throughout the day, and not have as defined a “peak” as other land use types. Based on a review of the historical AADT and discussions with NCDOT, an annual growth rate of 1.5 % will be applied to base year (2023) traffic volumes to determine the future years’ No-Build traffic volumes.

NCDOT staff did not identify any other additional developments nearby or within the study area that would need to be considered for this analysis. However, DOT staff is aware of a safety project scheduled to be let in March 2024 that will involve the transformation of the existing signalized study intersection at NC 902 & US 421 to an R-cut intersection with turn-around bulbs for the NC 902 approaches. As such, the turn movement count for this intersection will be collected for use in signal warrant analysis to determine potential need to signalize one of the U-turn intersections.

**Trip Generation**

Based upon the information provided by the developer of the quarry, trip generation analysis will be performed using data provided for quarries of similar size, maturity and expected traffic and growth. As noted above, the non-employee trips generated by the hauling of materials out of the quarry will be integrated with the background traffic peak hour trips to analyze the impacts to the peak hours of the roadways and intersections.

The weekday average daily trips generated, as well as AM and PM Peak Hour trips is shown below:

**TRIP GENERATION SUMMARY** – rev 1/1/24

Phase	ITE Code	Land Use	Size	Units	Wkday Avg # Trips			Adjacent Street Traffic Volumes					
					Enter	Exit	Total	Weekday AM Peak Hr			Weekday PM Peak Hr		
					Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
2024	712	SMALL OFFICE *	25	EMPLOYEES	98	99	197	22	4	26	9	18	27
2024	n/a	Quarry **	n/a	trips	570	570	1140	58	58	116	58	58	116
				<b>Unadjusted Volume</b>	<b>668</b>	<b>669</b>	<b>1337</b>	<b>80</b>	<b>62</b>	<b>142</b>	<b>67</b>	<b>76</b>	<b>143</b>
				Internal Capture				0	0	0	0	0	0
				Pass-By Trips				0	0	0	0	0	0
				<b>Volume Added to Adjacent Streets</b>	<b>668</b>	<b>669</b>	<b>1337</b>	<b>80</b>	<b>62</b>	<b>142</b>	<b>67</b>	<b>76</b>	<b>143</b>

Source: \* ITE Trip Generation Manual, 10th Edition  
 \*\* Carolina Sunrock Quarry records

Note that the quarry trips calculated were based on records provided by a local quarry operator. Records were provided for years 2018 thru 2022, and noting that each year successively saw an increase in growth, an additional year's growth (6.5%) was estimated for 2023, and used for the hourly truck trips rates above. It was also assumed that the truck traffic in and out of the quarry was relatively equal for all hourly periods. See attached info for quarry trips.

#### Trip Distribution

The site-generated trips to and from the proposed site are based on existing traffic patterns, information on location of customers provided by the owner/operator of the quarry and engineering judgement. The quarry operator anticipates that the majority of the truck traffic in and out of the site will be making pickups from the quarry for construction activities to the north of Goldston, closer to Siler City. Some traffic may develop for sites to the south near Sanford, but very little is anticipated from this direction. Due to current routing options available on apps such as Google Maps and Waze, it is likely that some non-local drivers will use the adjacent east-west routes to access US 421 via the interchange at Pittsboro-Goldston Road by routing thru Goldston, especially after the NC 902 intersection is converted to RCUT intersection. Some southbound traffic is expected to follow current local truck patterns into Goldston and turn onto S. Main Street and head to US 421 south of Goldston. The distribution percentages for the retail/service land use types are estimated as follows:

- 65% to/from the north on US 421 via NC 902
- 25% to/from the north on US 421 via Pittsboro-Goldston Rd.
- 10% to/from the south using S. Main St. and on to US 421

Access to the site is proposed to be provided by one (1) new street connection on Bonlee-Carbonton Road (SR 1009). It is anticipated that the new entrance will be full-access with a single right-left turn lane exiting the site drive, and single lane entering the site. The site will utilize stop control for the proposed driveway.

#### Trip Assignment

To obtain total traffic volumes, the site traffic volumes will be added to the existing traffic volumes plus background traffic growth, to the project build year in 2024. Summit Design & Engineering will perform detailed traffic engineering capacity analysis for the subject intersections, as well as capacity analysis for the roadway segments identified above using the ADT data collected.

General recommendations (turn lanes, realignment, intersection reconfiguration, operational or signage additions) for needed roadway and intersection improvements will be developed for the existing roadway network affected by the proposed project. Additionally, if there are any future improvements identified for the development to be recommended, a threshold level of build will be determined to identify the timing of needed improvements.

NCDOT Congestion Management Guidelines will be followed during the development of the analysis, and any signal warrant analysis, if necessary, will be provided where needed. NCDOT design standards will be followed in designing the site accesses and/or improvements as well. A signal warrant analysis will be provided for the future scenario of the NC 902 intersection from a typical signal with 4 approaches to an RCUT intersection with U-turns, and the site generated traffic integrated into the new traffic pattern.

Traffic Impact Analysis Report

Summit will prepare a summary report for NCDOT and Chatham County staff for review. No hard copies of the final report will be prepared, only electronic PDF copies will be supplied for distribution. Electronic configuration files of the Synchro analysis will be available upon request as well.

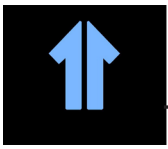
If you have any questions or comments regarding the proposed scope of work or estimate, please call me at (919) 732-3883 x3139, or my mobile number at 919-656-3439.

Very truly yours,

A handwritten signature in black ink that reads "Edward W. Sirgany". The signature is written in a cursive style with a large, sweeping initial "E".

Edward W. Sirgany, PE  
Traffic & Technology Engineer





## **APPENDIX B**

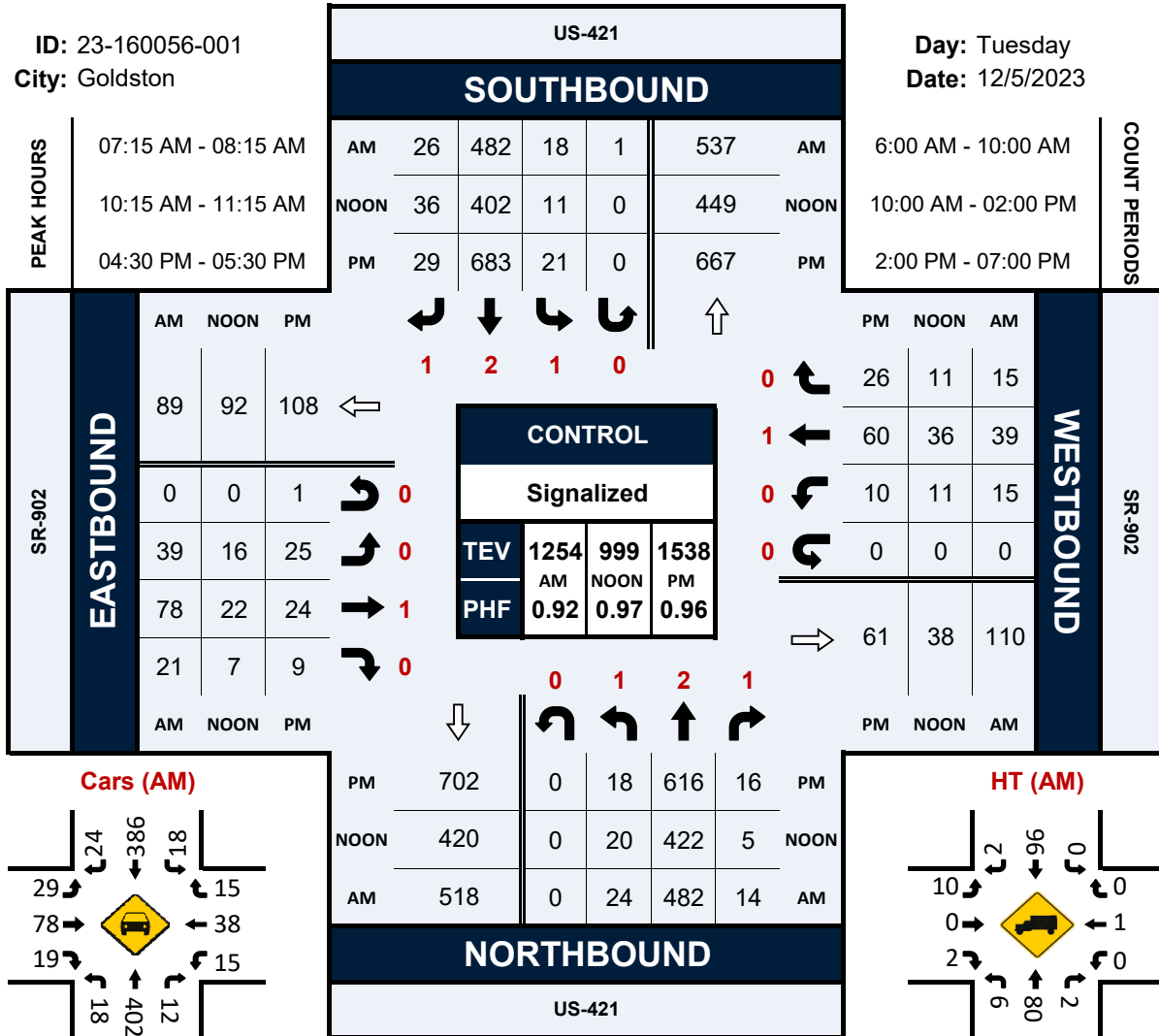
- Intersection Turn Movement Counts (2023)
  - ADT Counts
- Background Growth Spreadsheet
- Truck Trip Diagrams
  - NC 902 & US 421
  - NC 902 & Old US 421
- NC 902 & Bonlee-Carbonton Rd./Bonlee School Rd.
  - Main St. & Chatham Ave.
  - Main St. & Pittsboro-Goldston Rd.
- Main St. & Colonial Ave./Lancaster Dr.

# US-421 & SR-902

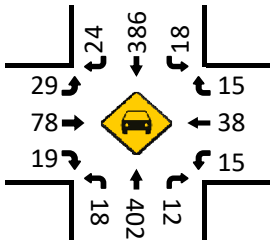
## Peak Hour Turning Movement Count

ID: 23-160056-001  
City: Goldston

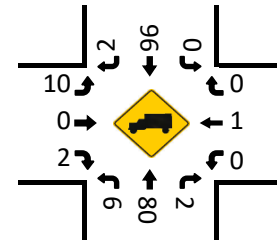
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Date: 12/5/2023



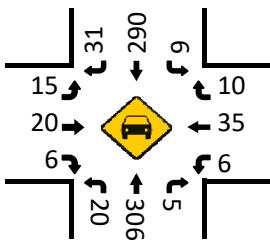
Cars (AM)



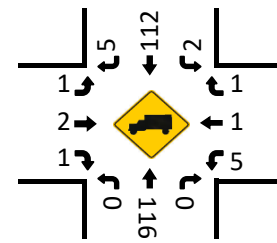
HT (AM)



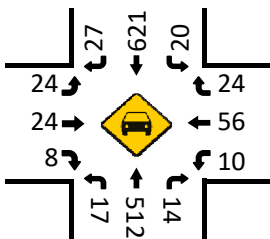
Cars (NOON)



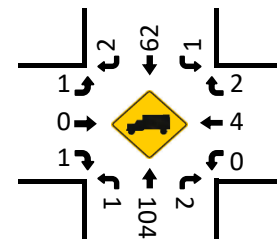
HT (NOON)



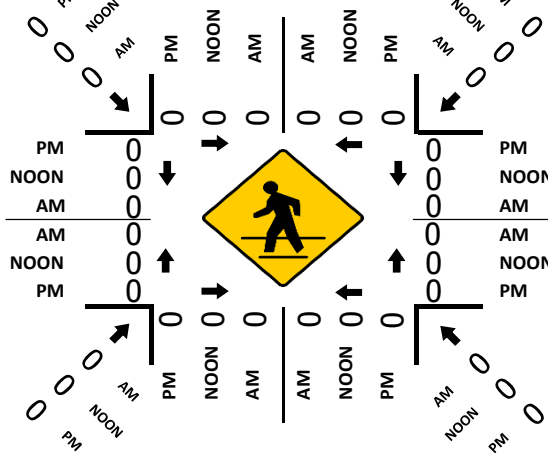
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)







# National Data & Surveying Services

## Intersection Turning Movement Count

Location: CR-1176/Old US 421 S & SR-902  
 City: Goldston  
 Control: 2-Way Stop (EB/WB)

Project ID: 23-160056-002  
 Date: 12/5/2023

### Data - Total

NS/EW Streets:		CR-1176/Old US 421 S											SR-902					SR-902																
		NORTHBOUND					SOUTHBOUND						EASTBOUND					WESTBOUND																
AM		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
6:30 AM		0	1	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	1	0	0	35
6:45 AM		0	0	2	0	4	1	0	0	1	4	1	0	1	2	1	0	1	2	1	0	1	2	1	0	1	2	1	0	2	1	2	0	44
7:00 AM		1	2	3	0	1	3	2	0	2	3	2	0	2	4	3	0	2	4	3	0	2	4	3	0	2	4	3	0	2	4	3	0	51
7:15 AM		10	3	0	0	2	3	2	0	4	4	2	0	4	3	2	0	4	3	2	0	4	4	2	0	4	4	2	0	2	1	1	0	82
7:30 AM		14	6	2	0	4	4	2	0	4	4	2	0	14	4	5	0	14	4	5	0	14	4	5	0	14	4	5	0	2	2	6	0	154
7:45 AM		27	3	0	0	6	3	2	0	6	3	2	0	8	4	2	0	8	4	2	0	8	4	2	0	8	4	2	0	4	5	1	0	167
8:00 AM		2	0	1	0	2	2	1	0	1	2	1	0	1	2	1	0	1	2	1	0	1	2	1	0	1	2	1	0	2	2	1	0	50
8:15 AM		3	2	0	0	2	2	1	0	1	2	1	0	1	2	1	0	1	2	1	0	1	2	1	0	1	2	1	0	1	2	1	0	36
8:30 AM		1	0	3	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	1	1	1	0	31
8:45 AM		0	2	2	0	5	0	1	0	2	2	1	0	2	2	1	0	2	2	1	0	2	2	1	0	2	2	1	0	2	2	1	0	34
9:00 AM		1	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	39
9:15 AM		1	1	1	0	1	0	2	0	1	0	2	0	2	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	1	1	0	0	33
<b>TOTAL VOLUMES :</b>		60	19	15	0	31	23	54	0	37	29	27	0	28	15	17	0	37	29	27	0	28	15	17	0	28	15	17	0	9	17	14	0	756
<b>APPROACH %'s :</b>		63.83%	20.21%	15.96%	0.00%	28.70%	21.30%	50.00%	0.00%	10.31%	82.17%	7.52%	0.00%	4.62%	88.21%	7.18%	0.00%	10.31%	82.17%	7.52%	0.00%	4.62%	88.21%	7.18%	0.00%	4.62%	88.21%	7.18%	0.00%	0.00%				
<b>PEAK HR :</b>		07:00 AM - 08:00 AM																																
<b>PEAK HR VOL :</b>		52	14	5	0	13	13	47	0	28	15	17	0	28	15	17	0	28	15	17	0	28	15	17	0	28	15	17	0	4	10	8	0	454
<b>PEAK HR FACTOR :</b>		0.481	0.583	0.417	0.000	0.542	0.813	0.534	0.000	0.500	0.826	0.607	0.000	0.500	0.826	0.607	0.000	0.500	0.826	0.607	0.000	0.500	0.826	0.607	0.000	0.500	0.826	0.607	0.000	0.500	0.561	0.333	0.000	0.680
		0.592																																
		0.608																																

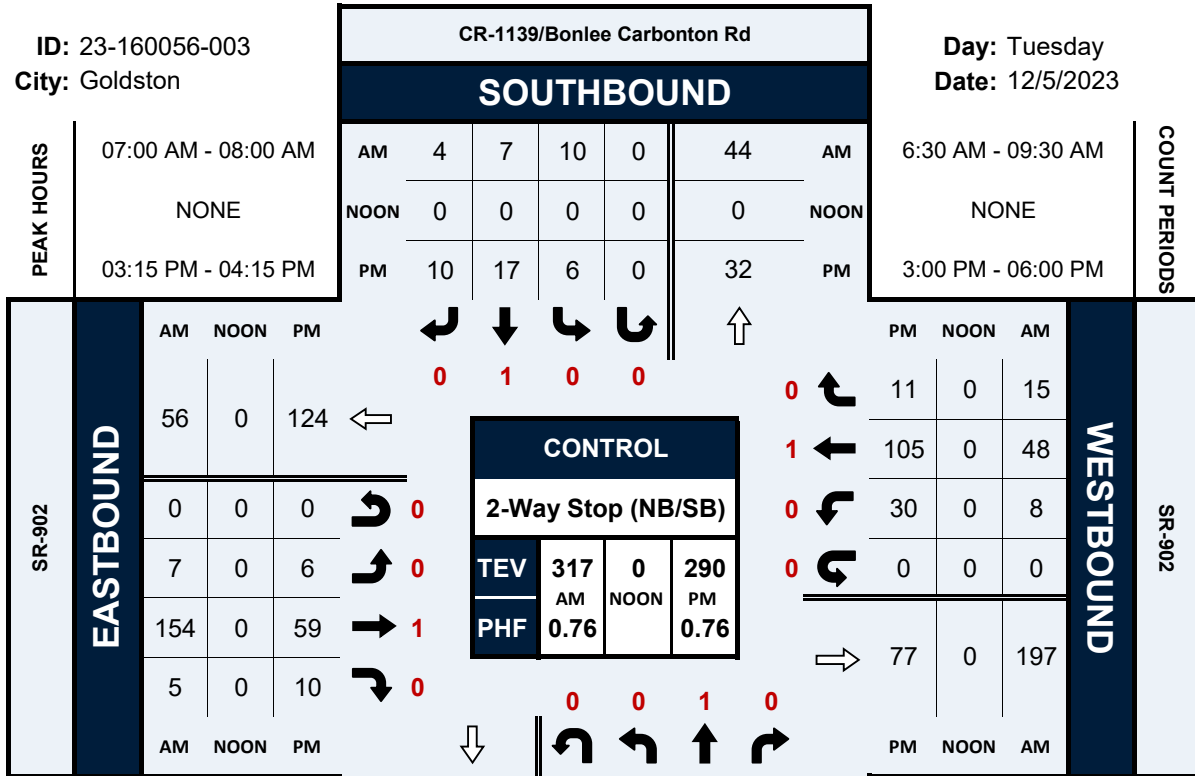
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		NORTHBOUND					SOUTHBOUND						EASTBOUND					WESTBOUND																
PM		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
3:00 PM		0	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81
3:15 PM		3	4	3	0	5	3	6	0	5	2	4	0	3	3	2	0	5	3	2	0	5	2	4	0	3	3	2	0	3	3	2	0	125
3:30 PM		6	1	1	0	3	9	7	0	2	4	5	0	1	4	7	0	4	4	7	0	4	4	7	0	1	4	7	0	2	2	2	0	72
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4:00 PM		3	3	0	0	0	7	7	0	3	2	2	0	3	2	2	0	3	2	2	0	3	2	2	0	3	2	2	0	2	2	3	0	76
4:15 PM		5	4	0	0	0	2	2	0	4	1	2	0	4	1	2	0	4	1	2	0	4	1	2	0	4	1	2	0	1	2	3	0	65
4:30 PM		1	10	2	0	3	2	2	0	4	1	2	0	4	1	2	0	4	1	2	0	4	1	2	0	4	1	2	0	0	0	3	0	71
4:45 PM		4	5	1	0	4	5	1	0	4	5	1	0	4	5	1	0	4	5	1	0	4	5	1	0	4	5	1	0	2	2	3	0	67
5:00 PM		2	5	1	0	4	5	1	0	4	5	1	0	2	2	1	0	2	2	1	0	2	2	1	0	2	2	1	0	1	2	4	0	56
5:15 PM		4	5	0	0	2	4	1	0	2	4	1	0	2	4	1	0	2	4	1	0	2	4	1	0	2	4	1	0	3	3	2	0	70
5:30 PM		2	3	4	0	1	1	3	0	1	1	3	0	1	1	3	0	1	1	3	0	1	1	3	0	1	1	3	0	2	3	5	0	70
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<b>TOTAL VOLUMES :</b>		35	55	16	0	24	50	43	0	53	22	42	0	41	21	28	0	53	22	42	0	41	21	28	0	41	21	28	0	17	30	33	0	888
<b>APPROACH %'s :</b>		33.02%	51.89%	15.09%	0.00%	20.51%	42.74%	36.75%	0.00%	16.83%	69.84%	13.33%	0.00%	16.83%	69.84%	13.33%	0.00%	16.83%	69.84%	13.33%	0.00%	16.83%	69.84%	13.33%	0.00%	4.86%	85.71%	9.43%	0.00%	0.00%				
<b>PEAK HR :</b>		03:00 PM - 04:00 PM																																
<b>PEAK HR VOL :</b>		14	16	5	0	13	21	22	0	35	17	28	0	35	17	28	0	35	17	28	0	35	17	28	0	35	17	28	0	7	8	7	0	356
<b>PEAK HR FACTOR :</b>		0.583	0.667	0.417	0.000	0.650	0.583	0.786	0.000	0.650	0.583	0.786	0.000	0.650	0.583	0.786	0.000	0.650	0.583	0.786	0.000	0.650	0.583	0.786	0.000	0.650	0.583	0.786	0.000	0.583	0.885	0.583	0.000	0.712
		0.875																																
		0.737																																
		0.532																																
		0.853																																

# CR-1139/Bonlee Carbonton Rd & SR-902

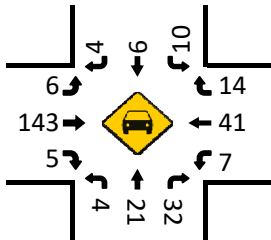
## Peak Hour Turning Movement Count

ID: 23-160056-003  
City: Goldston

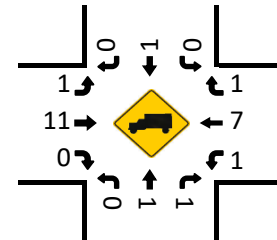
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Date: 12/5/2023



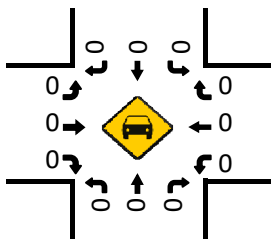
Cars (AM)



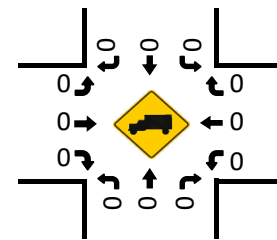
HT (AM)



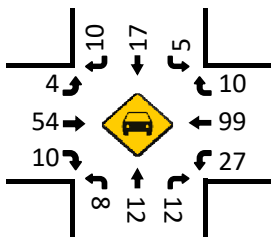
Cars (NOON)



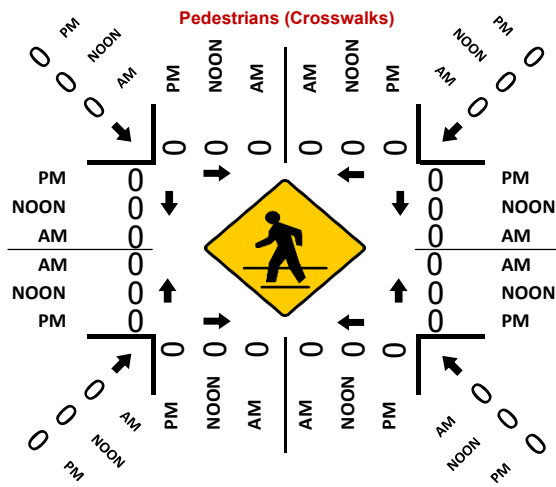
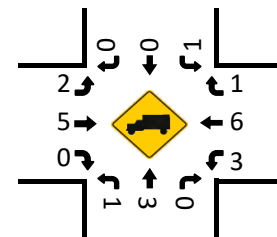
HT (NOON)



Cars (PM)



HT (PM)



# National Data & Surveying Services

## Intersection Turning Movement Count

Location: CR-1139/Bonlee Carbonbont Rd & SR-902  
 City: Goldston  
 Control: 2-Way Stop (NB/SB)

Project ID: 23-160056-003  
 Date: 12/5/2023

### Data - Total

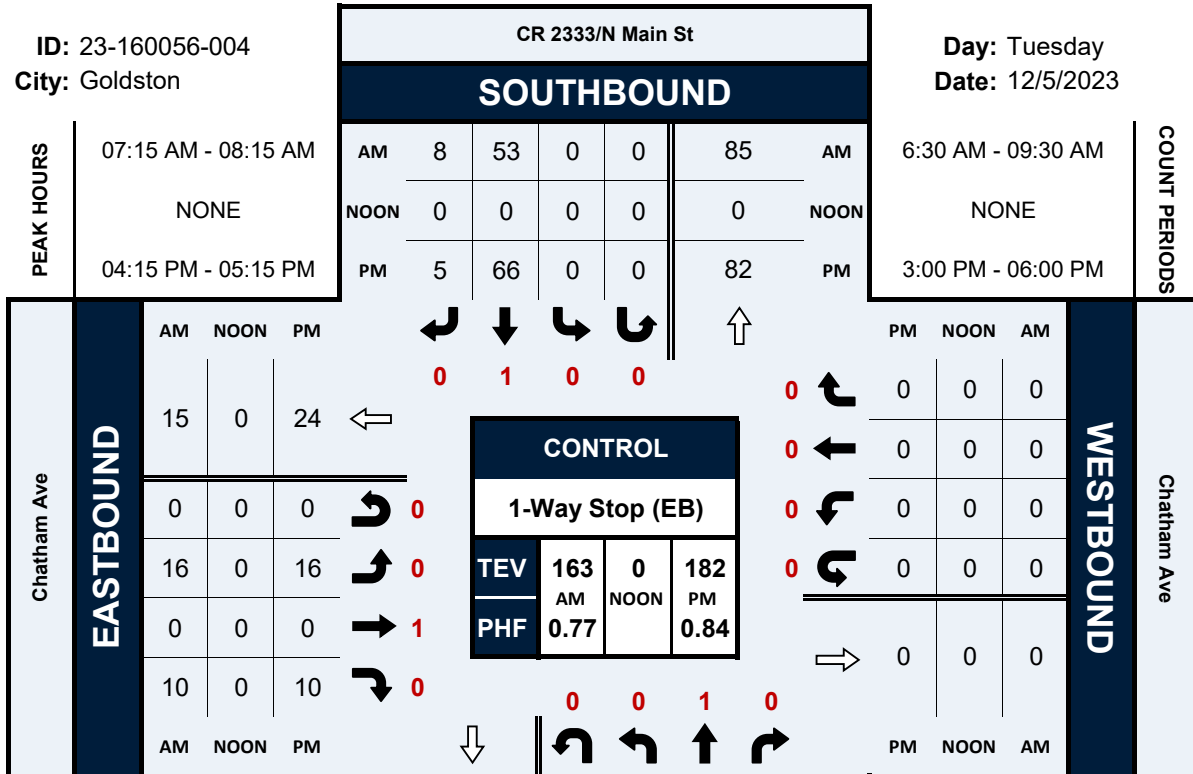
NS/EW Streets:	CR-1139/Bonlee Carbonbont Rd										SR-902										SR-902																			
	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					WESTBOUND					WESTBOUND														
	NL	NT	NR	NU	NJ	SL	ST	SR	SU	SJ	EL	ET	ER	EU	ES	WL	WT	WR	WU	WS	WL	WT	WR	WU	WS	WL	WT	WR	WU	WS										
<b>AM</b>																																								
6:30 AM	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0					
6:45 AM	1	3	3	1	0	0	1	0	0	0	1	18	0	0	0	1	2	0	0	0	1	2	0	0	0	1	2	0	0	0	1	2	0	0	0					
7:00 AM	1	4	1	0	0	1	4	0	0	0	1	29	2	0	0	1	5	0	0	0	1	5	0	0	0	1	5	0	0	0	1	5	0	0	0					
7:15 AM	1	8	7	0	3	1	1	1	0	1	1	31	1	0	0	1	12	4	0	0	1	12	4	0	0	1	12	4	0	0	1	12	4	0	0					
7:30 AM	2	8	11	0	5	1	1	0	0	2	2	52	1	0	0	2	15	4	0	0	2	15	4	0	0	2	15	4	0	0	2	15	4	0	0					
7:45 AM	0	2	14	0	1	1	1	2	0	3	4	42	2	0	0	5	16	7	0	0	5	16	7	0	0	5	16	7	0	0	5	16	7	0	0					
8:00 AM	2	4	3	0	2	4	1	0	0	1	16	0	0	0	0	4	6	1	0	0	4	6	1	0	0	4	6	1	0	0	4	6	1	0	0					
8:15 AM	0	5	3	0	0	1	0	0	0	0	19	0	0	0	0	1	7	2	0	0	1	7	2	0	0	1	7	2	0	0	1	7	2	0	0					
8:30 AM	1	3	2	0	0	2	0	0	0	0	10	1	0	0	0	1	7	0	0	0	1	7	0	0	0	1	7	0	0	0	1	7	0	0	0					
8:45 AM	1	3	1	0	0	0	0	0	0	0	14	1	0	0	0	1	6	0	0	0	1	6	0	0	0	1	6	0	0	0	1	6	0	0	0					
9:00 AM	0	0	0	0	0	2	1	1	0	0	16	1	0	0	0	3	14	0	0	0	3	14	0	0	0	3	14	0	0	0	3	14	0	0	0					
9:15 AM	1	0	0	0	0	2	0	1	0	0	14	0	0	0	0	3	12	1	0	0	3	12	1	0	0	3	12	1	0	0	3	12	1	0	0					
<b>TOTAL VOLUMES :</b>	10	41	46	0	16	17	7	0	0	12	287	8	0	0	0	22	110	19	0	0	22	110	19	0	0	22	110	19	0	0	22	110	19	0	0					
<b>APPROACH %'s :</b>	10.31%	42.27%	47.42%	0.00%	40.00%	42.50%	17.50%	0.00%	0.00%	3.91%	93.49%	2.61%	0.00%	0.00%	0.00%	14.57%	72.85%	12.58%	0.00%	0.00%	14.57%	72.85%	12.58%	0.00%	0.00%	14.57%	72.85%	12.58%	0.00%	0.00%	14.57%	72.85%	12.58%	0.00%	0.00%					
<b>PEAK HR :</b>	4	22	33	0	10	7	4	0	0	7	154	5	0	0	0	8	48	15	0	0	8	48	15	0	0	8	48	15	0	0	8	48	15	0	0					
<b>PEAK HR VOL :</b>	0.500	0.688	0.589	0.000	0.500	0.438	0.500	0.000	0.000	0.583	0.740	0.625	0.000	0.000	0.000	0.400	0.750	0.536	0.000	0.000	0.400	0.750	0.536	0.000	0.000	0.400	0.750	0.536	0.000	0.000	0.400	0.750	0.536	0.000	0.000					
<b>PEAK HR FACTOR :</b>	0.702										0.750										0.755										0.634									
<b>PM</b>																																								
3:00 PM	0	1	0	0	0	0	1	0	0	0	1	19	3	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0	0	1	0	0	0					
3:15 PM	2	7	4	0	2	4	1	0	0	1	8	3	0	0	0	4	18	1	0	0	4	18	1	0	0	4	18	1	0	0	4	18	1	0	0					
3:30 PM	2	5	4	0	6	4	3	0	0	1	8	3	0	0	0	16	36	8	0	0	16	36	8	0	0	16	36	8	0	0	16	36	8	0	0					
3:45 PM	2	1	0	0	0	5	1	0	0	2	12	3	0	0	0	4	25	1	0	0	4	25	1	0	0	4	25	1	0	0	4	25	1	0	0					
4:00 PM	1	4	5	0	0	2	1	0	0	2	18	1	0	0	0	5	17	2	0	0	5	17	2	0	0	5	17	2	0	0	5	17	2	0	0					
4:15 PM	4	5	3	0	0	6	5	0	0	1	21	3	0	0	0	5	27	0	0	0	5	27	0	0	0	5	27	0	0	0	5	27	0	0	0					
4:30 PM	4	2	4	1	0	3	0	0	0	2	15	1	0	0	0	5	20	0	0	0	5	20	0	0	0	5	20	0	0	0	5	20	0	0	0					
4:45 PM	3	4	2	0	1	1	1	0	0	1	16	0	0	0	0	4	27	4	0	0	4	27	4	0	0	4	27	4	0	0	4	27	4	0	0					
5:00 PM	1	4	1	0	0	9	1	0	0	1	13	2	0	0	0	7	15	0	0	0	7	15	0	0	0	7	15	0	0	0	7	15	0	0	0					
5:15 PM	1	6	4	0	0	7	2	0	0	0	12	0	0	0	0	5	34	2	0	0	5	34	2	0	0	5	34	2	0	0	5	34	2	0	0					
5:30 PM	3	4	2	0	2	2	3	0	0	2	7	2	0	0	0	2	26	0	0	0	2	26	0	0	0	2	26	0	0	0	2	26	0	0	0					
5:45 PM	1	5	2	0	0	2	1	0	0	2	11	0	0	0	0	4	23	0	0	0	4	23	0	0	0	4	23	0	0	0	4	23	0	0	0					
<b>TOTAL VOLUMES :</b>	30	49	34	1	12	49	20	0	0	15	167	20	0	0	0	69	290	20	0	0	69	290	20	0	0	69	290	20	0	0	69	290	20	0	0					
<b>APPROACH %'s :</b>	26.32%	42.98%	29.82%	0.88%	14.81%	60.49%	24.69%	0.00%	0.00%	7.43%	82.67%	9.90%	0.00%	0.00%	0.00%	18.21%	76.52%	5.28%	0.00%	0.00%	18.21%	76.52%	5.28%	0.00%	0.00%	18.21%	76.52%	5.28%	0.00%	0.00%	18.21%	76.52%	5.28%	0.00%	0.00%					
<b>PEAK HR :</b>	9	15	12	0	6	17	10	0	0	6	59	10	0	0	0	30	105	11	0	0	30	105	11	0	0	30	105	11	0	0	30	105	11	0	0					
<b>PEAK HR VOL :</b>	0.563	0.750	0.600	0.000	0.250	0.708	0.500	0.000	0.000	0.750	0.702	0.833	0.000	0.000	0.000	0.469	0.729	0.344	0.000	0.000	0.469	0.729	0.344	0.000	0.000	0.469	0.729	0.344	0.000	0.000	0.469	0.729	0.344	0.000	0.000					
<b>PEAK HR FACTOR :</b>	0.750										0.635										0.750										0.608									

# CR 2333/N Main St & Chatham Ave

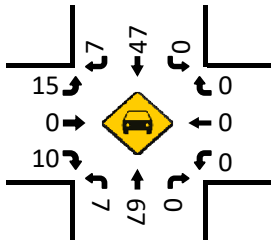
## Peak Hour Turning Movement Count

ID: 23-160056-004  
City: Goldston

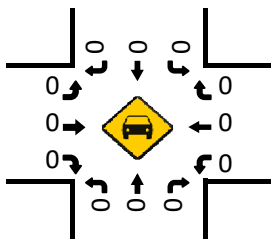
Day: Tuesday  
Date: 12/5/2023



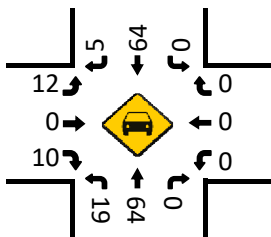
**Cars (AM)**



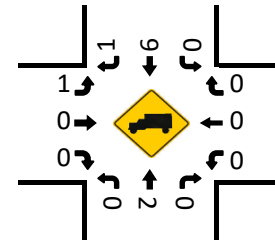
**Cars (NOON)**



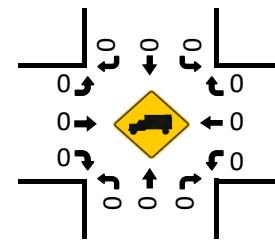
**Cars (PM)**



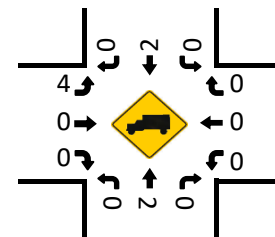
**HT (AM)**



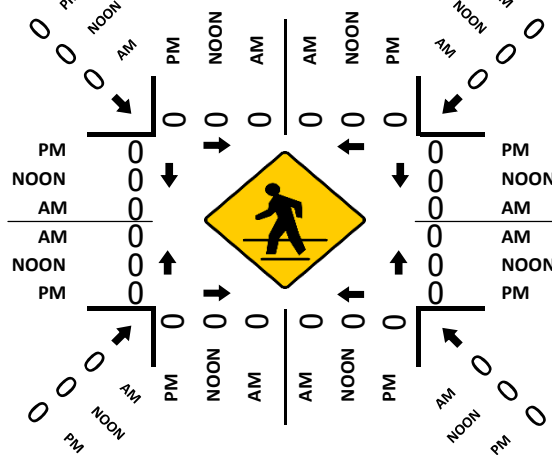
**HT (NOON)**



**HT (PM)**



**Pedestrians (Crosswalks)**





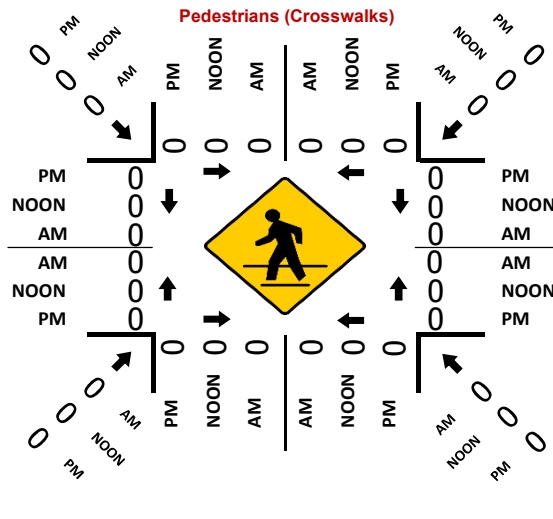
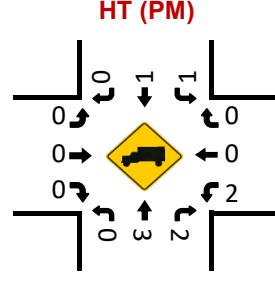
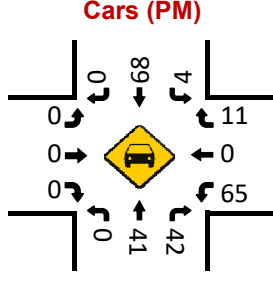
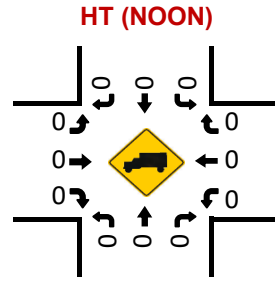
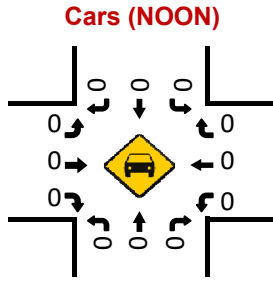
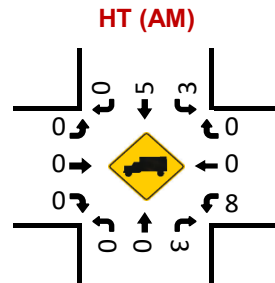
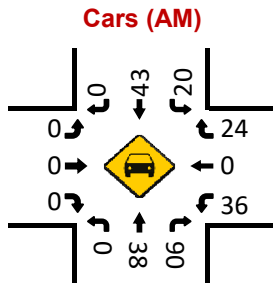
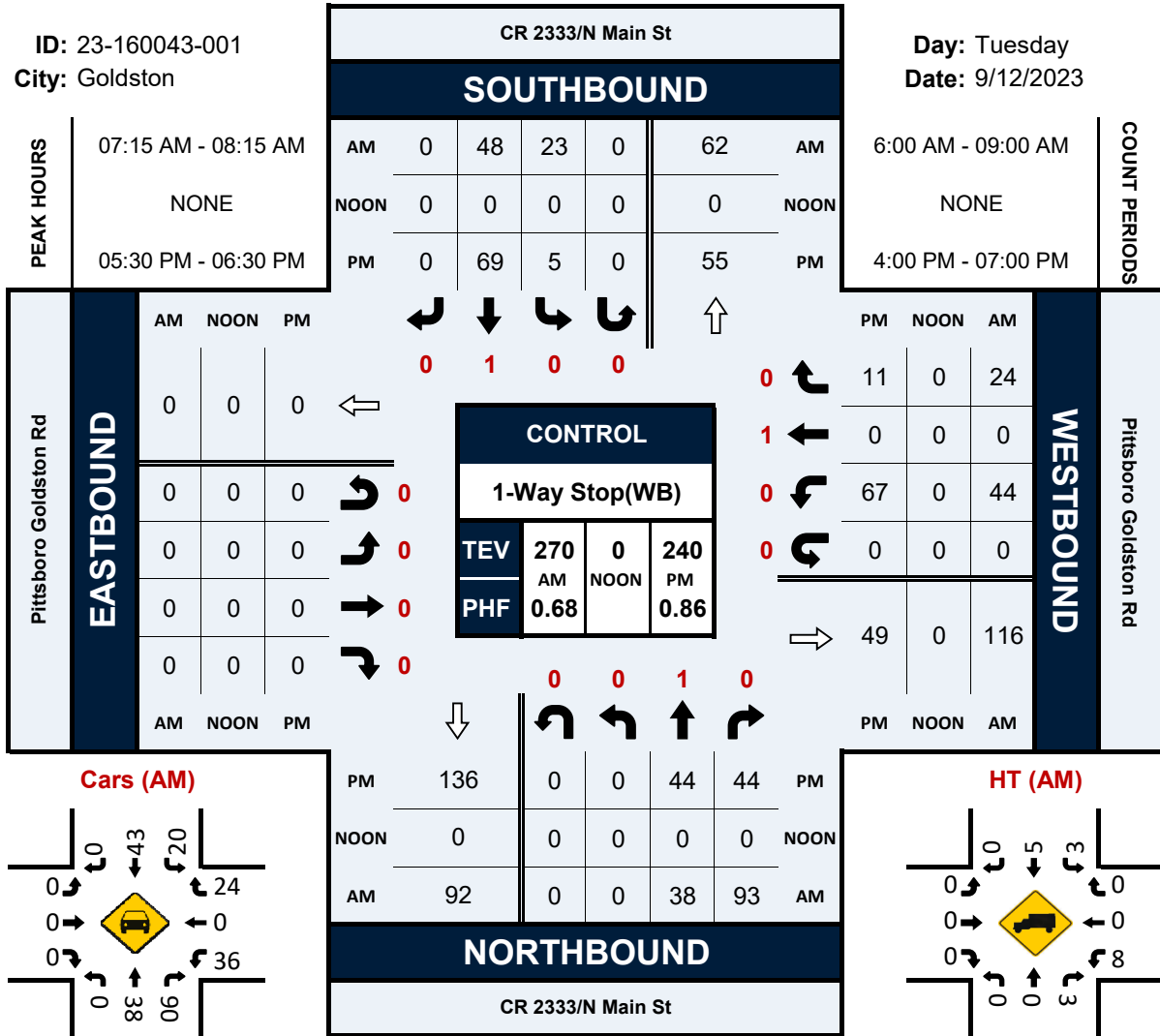


# CR 2333/N Main St & Pittsboro Goldston Rd

## Peak Hour Turning Movement Count

ID: 23-160043-001  
City: Goldston

Day: Tuesday  
Date: 9/12/2023



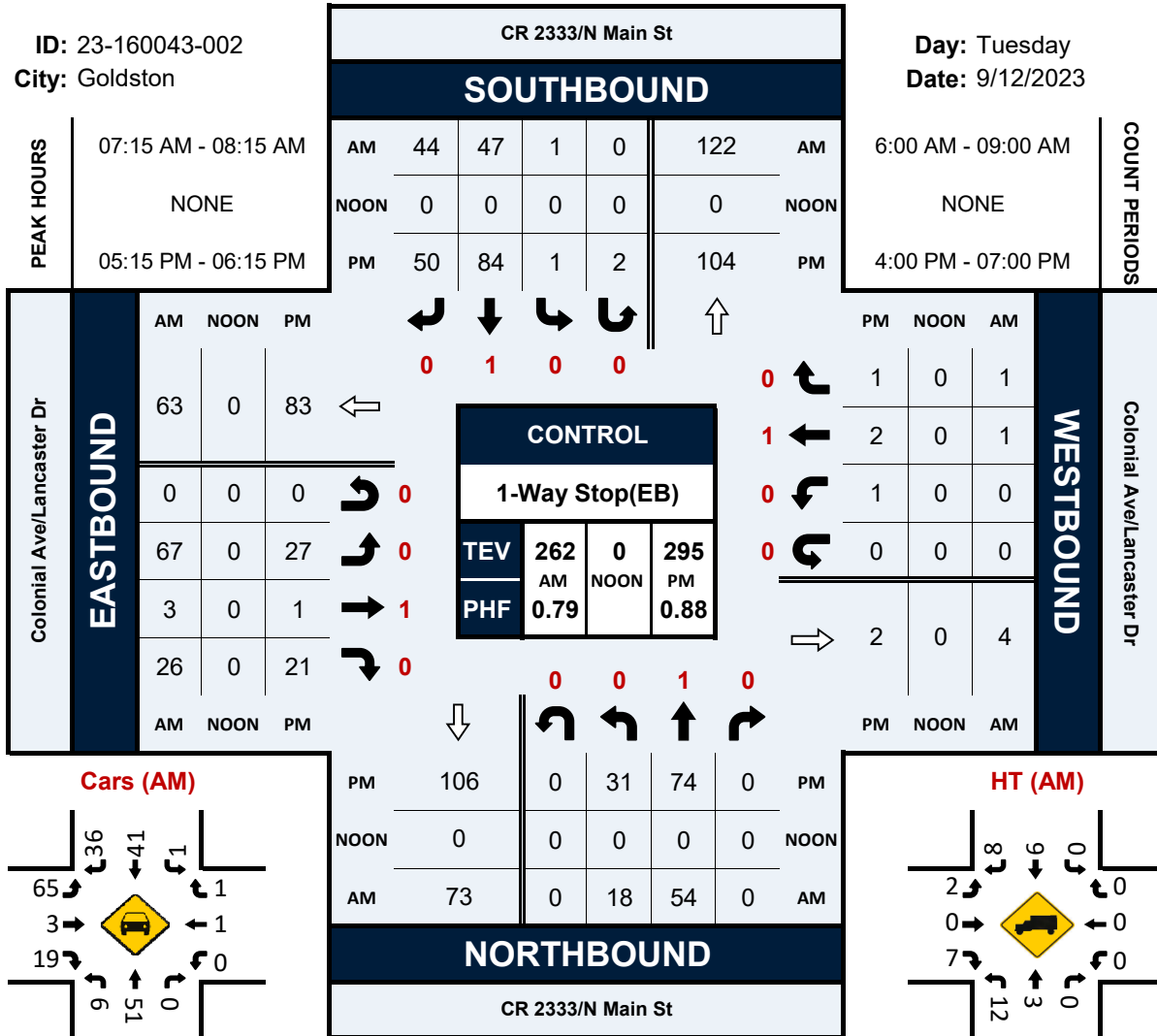


# CR 2333/N Main St & Colonial Ave/Lancaster Dr

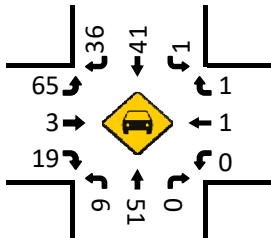
## Peak Hour Turning Movement Count

ID: 23-160043-002  
City: Goldston

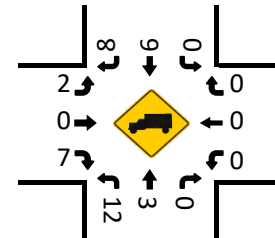
Day: Tuesday  
Date: 9/12/2023



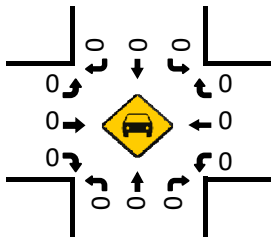
Cars (AM)



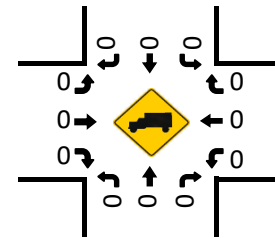
HT (AM)



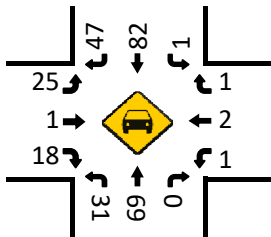
Cars (NOON)



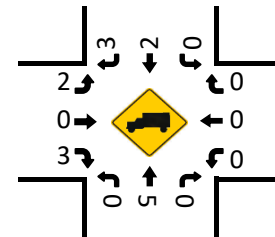
HT (NOON)



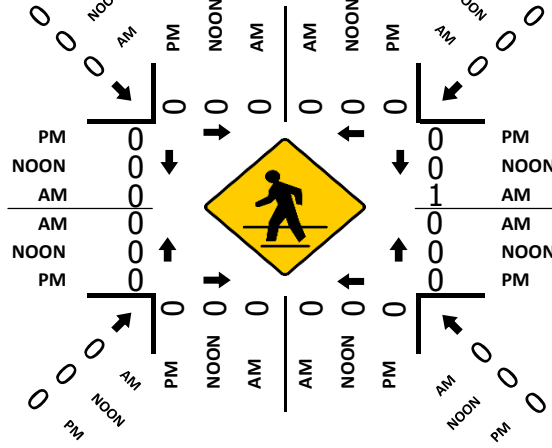
Cars (PM)



HT (PM)



Pedestrians (Crosswalks)



# National Data & Surveying Services Intersection Turning Movement Count

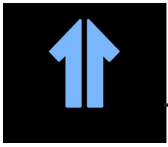
**Location:** CR 2333/N Main St & Colonial Ave/Lancaster Dr  
**City:** Goldston  
**Control:** 1-Way Stop(EB)  
**Project ID:** 23-160043-002  
**Date:** 9/12/2023

## Data - Total

NS/EW Streets:	CR 2333/N Main St													Colonial Ave/Lancaster Dr												
	NORTHBOUND						SOUTHBOUND						EASTBOUND						WESTBOUND							
	NL	NT	NR	NU		SL	ST	SR	SU		EL	ET	ER	EU		WL	WT	WR	WU							
<b>AM</b>	0	1	0	0		0	1	0	0		0	1	0	0		0	0	1	0							
6:00 AM	1	3	4	0		0	4	3	0		4	0	6	0		0	0	0	0							
6:15 AM	2	4	0	0		0	9	2	0		7	0	5	0		0	0	0	0							
6:30 AM	5	5	0	0		1	5	6	0		6	1	2	0		0	0	0	0							
6:45 AM	2	12	0	0		1	4	9	0		7	0	8	0		0	1	0	0							
7:00 AM	4	5	0	0		0	8	7	0		15	0	6	0		1	0	0	0							
7:15 AM	11	12	0	0		0	15	6	0		13	0	0	0		0	0	0	0							
7:30 AM	2	18	0	0		0	11	14	0		26	1	10	0		0	0	1	0							
7:45 AM	3	15	0	0		1	8	13	0		17	1	6	0		0	0	0	0							
8:00 AM	2	9	0	0		0	13	11	0		11	1	4	0		0	1	0	0							
8:15 AM	1	5	0	0		0	9	6	1		12	0	4	0		0	0	0	0							
8:30 AM	1	15	0	0		0	15	8	0		3	0	5	0		0	0	0	0							
8:45 AM	5	10	0	0		0	3	3	1		4	0	5	0		0	0	0	0							
<b>TOTAL VOLUMES :</b>	39	113	0	0		3	104	88	2		125	4	67	0		1	2	1	0							
<b>APPROACH %'s :</b>	25.66%	74.34%	0.00%	0.00%		1.52%	52.79%	44.67%	1.02%		63.78%	2.04%	34.18%	0.00%		25.00%	50.00%	25.00%	0.00%							
<b>PEAK HR :</b>	18	54	0	0		1	47	44	0		67	3	26	0		0	1	1	0							
<b>PEAK HR VOL :</b>	0.409	0.750	0.000	0.000		0.250	0.783	0.786	0.000		0.644	0.750	0.650	0.000		0.000	0.250	0.250	0.000							
<b>PEAK HR FACTOR :</b>							0.920					0.649					0.500									

NS/EW Streets:	CR 2333/N Main St													Colonial Ave/Lancaster Dr												
	NORTHBOUND						SOUTHBOUND						EASTBOUND						WESTBOUND							
	NL	NT	NR	NU		SL	ST	SR	SU		EL	ET	ER	EU		WL	WT	WR	WU							
<b>PM</b>	0	1	0	0		0	1	0	0		0	1	0	0		0	0	1	0							
4:00 PM	5	17	1	0		0	19	9	0		11	0	3	0		1	0	0	0							
4:15 PM	6	12	0	0		0	17	14	0		14	1	2	0		0	0	1	0							
4:30 PM	8	15	0	0		0	12	8	0		7	0	3	0		0	0	2	0							
4:45 PM	6	13	0	0		0	8	12	1		6	0	4	0		2	0	0	0							
5:00 PM	8	19	0	0		0	16	13	0		9	0	4	0		0	1	0	0							
5:15 PM	8	19	0	0		0	15	9	0		5	1	2	0		0	2	1	0							
5:30 PM	6	17	0	0		0	24	20	0		9	0	8	0		0	0	0	0							
5:45 PM	10	16	0	0		0	22	14	1		7	0	5	0		0	0	0	0							
6:00 PM	7	22	0	0		1	23	7	1		6	0	6	0		0	0	0	0							
6:15 PM	7	13	0	0		1	18	8	1		7	0	7	0		0	0	0	0							
6:30 PM	3	14	0	0		1	9	5	0		5	0	3	0		0	0	1	0							
6:45 PM	3	10	0	0		0	8	8	0		5	0	4	0		0	0	0	0							
<b>TOTAL VOLUMES :</b>	77	187	1	0		3	191	127	4		91	2	51	0		4	3	5	0							
<b>APPROACH %'s :</b>	29.06%	70.57%	0.38%	0.00%		0.92%	58.77%	39.08%	1.23%		63.19%	1.39%	35.42%	0.00%		33.33%	25.00%	41.67%	0.00%							
<b>PEAK HR :</b>	31	74	0	0		1	84	50	2		27	1	21	0		1	2	1	0							
<b>PEAK HR VOL :</b>	0.775	0.841	0.000	0.000		0.250	0.875	0.625	0.500		0.750	0.250	0.656	0.000		0.250	0.250	0.250	0.000							
<b>PEAK HR FACTOR :</b>							0.778					0.721					0.250									





## Bonlee-Carbonton Road

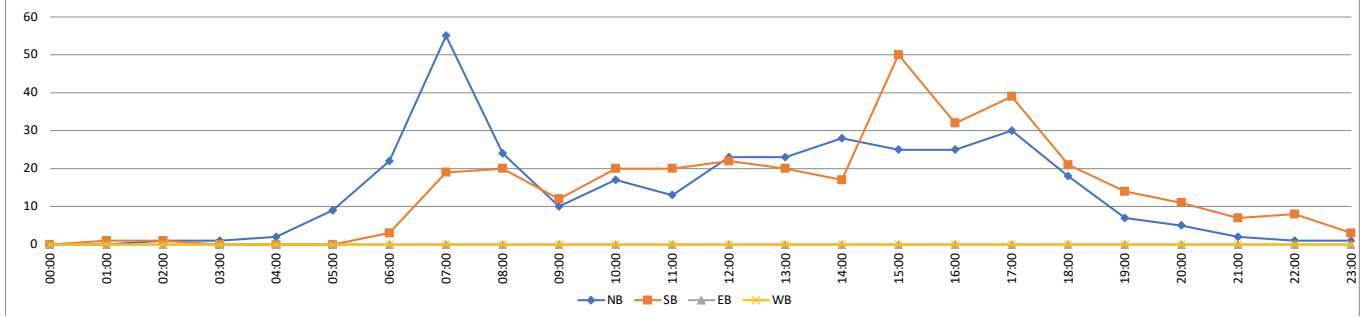
# VOLUME

## Bonlee Carbondon Rd S/O Bear Creek Church Rd

Day: Tuesday  
Date: 12/05/2023

City: Bear Creek  
Project #: NC23\_160057\_001

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS						
						342	340	0	0	682							
15-Minutes Interval											Hourly Intervals						
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
00:00	0	0			0	12:00	3	10			13	00:00	0	0			0
00:15	0	0			0	12:15	2	4			6	01:00	0	1			1
00:30	0	0			0	12:30	7	4			11	02:00	1	1			2
00:45	0	0			0	12:45	11	4			15	03:00	1	0			1
01:00	0	0			0	13:00	7	3			10	04:00	2	0			2
01:15	0	1			1	13:15	6	7			13	05:00	9	0			9
01:30	0	0			0	13:30	6	2			8	06:00	22	3			25
01:45	0	0			0	13:45	4	8			12	07:00	55	19			74
02:00	1	0			1	14:00	7	6			13	08:00	24	20			44
02:15	0	1			1	14:15	8	6			14	09:00	10	12			22
02:30	0	0			0	14:30	8	2			10	10:00	17	20			37
02:45	0	0			0	14:45	5	3			8	11:00	13	20			33
03:00	0	0			0	15:00	11	6			17	12:00	23	22			45
03:15	1	0			1	15:15	4	25			29	13:00	23	20			43
03:30	0	0			0	15:30	2	10			12	14:00	28	17			45
03:45	0	0			0	15:45	8	9			17	15:00	25	50			75
04:00	0	0			0	16:00	8	9			17	16:00	25	32			57
04:15	2	0			2	16:15	5	8			13	17:00	30	39			69
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05:00	2	0			2	17:00	5	15			20	20:00	5	11			16
05:15	3	0			3	17:15	13	14			27	21:00	2	7			9
05:30	2	0			2	17:30	3	4			7	22:00	1	8			9
05:45	2	0			2	17:45	9	6			15	23:00	1	3			4
06:00	4	0			4	18:00	4	7			11	STATISTICS					
06:15	7	1			8	18:15	6	8			14		NB	SB	EB	WB	TOTAL
06:30	9	1			10	18:30	3	1			4	Peak Period	00:00	to	12:00		
06:45	2	1			3	18:45	5	5			10	Volume	154	96			250
07:00	8	6			14	19:00	2	4			6	Peak Hour	7:00	7:45			7:15
07:15	13	5			18	19:15	1	4			5	Peak Volume	55	23			77
07:30	17	3			20	19:30	2	2			4	Peak Hour Factor	0.809	0.639			0.875
07:45	17	5			22	19:45	2	4			6	Peak Period	12:00	to	00:00		
08:00	8	9			17	20:00	2	5			7	Volume	188	244			432
08:15	6	2			8	20:15	2	1			3	Peak Hour	14:15	15:15			15:00
08:30	4	7			11	20:30	1	3			4	Peak Volume	32	53			75
08:45	6	2			8	20:45	0	2			2	Peak Hour Factor	0.727	0.530			0.647
09:00	1	4			5	21:00	1	4			5	Peak Period	07:00	to	09:00		
09:15	1	5			6	21:15	0	1			1	Volume	79	39			118
09:30	3	2			5	21:30	0	1			1	Peak Hour	7:00	7:45			7:15
09:45	5	1			6	21:45	1	1			2	Peak Volume	55	23			77
10:00	3	3			6	22:00	0	3			3	Peak Hour Factor	0.809	0.639			0.875
10:15	5	6			11	22:15	0	1			1	Peak Period	16:00	to	18:00		
10:30	5	6			11	22:30	1	1			2	Volume	55	71			126
10:45	4	5			9	22:45	0	3			3	Peak Hour	16:30	16:30			16:30
11:00	3	3			6	23:00	0	2			2	Peak Volume	30	44			74
11:15	3	4			7	23:15	1	1			2	Peak Hour Factor	0.577	0.733			0.685
11:30	4	2			6	23:30	0	0			0						
11:45	3	11			14	23:45	0	0			0						
<b>TOTALS</b>	<b>154</b>	<b>96</b>	<b>0</b>	<b>0</b>	<b>250</b>	<b>TOTALS</b>	<b>188</b>	<b>244</b>	<b>0</b>	<b>0</b>	<b>432</b>						
<b>SPLIT %</b>	<b>62%</b>	<b>38%</b>	<b>0%</b>	<b>0%</b>	<b>37%</b>	<b>SPLIT %</b>	<b>44%</b>	<b>56%</b>	<b>0%</b>	<b>0%</b>	<b>63%</b>						





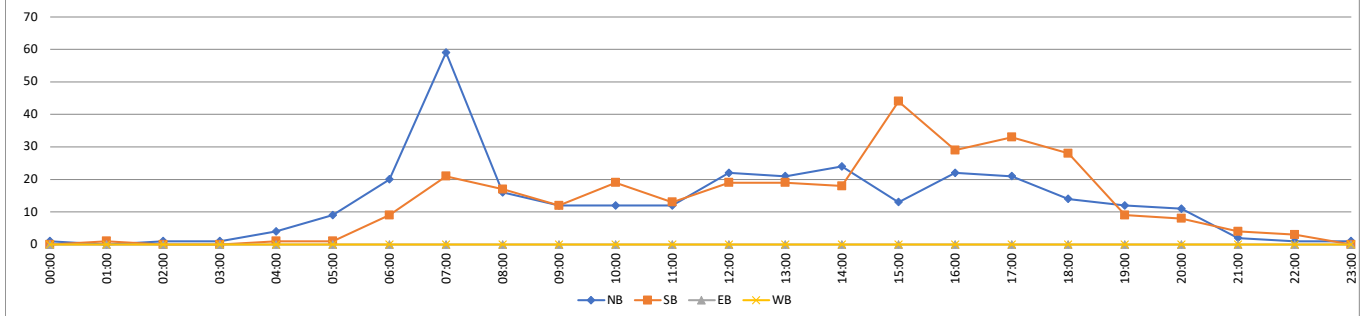
# VOLUME

## Bonlee Carbondon Rd S/O Bear Creek Church Rd

Day: Wednesday  
Date: 12/06/2023

City: Bear Creek  
Project #: NC23\_160057\_001

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS																																																																																																																																										
						311	308	0	0	619																																																																																																																																											
15-Minutes Interval											Hourly Intervals																																																																																																																																										
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06:00	4	0			4	18:00	4	12			16	<table border="1"> <thead> <tr> <th colspan="6">STATISTICS</th> </tr> <tr> <th></th> <th>NB</th> <th>SB</th> <th>EB</th> <th>WB</th> <th>TOTAL</th> </tr> </thead> <tbody> <tr> <td>Peak Period</td> <td>00:00</td> <td>to</td> <td>12:00</td> <td colspan="2"></td> </tr> <tr> <td>Volume</td> <td>147</td> <td>94</td> <td></td> <td></td> <td>241</td> </tr> <tr> <td>Peak Hour</td> <td>7:00</td> <td>6:45</td> <td colspan="2"></td> <td>7:00</td> </tr> <tr> <td>Peak Volume</td> <td>59</td> <td>22</td> <td colspan="2"></td> <td>80</td> </tr> <tr> <td>Peak Hour Factor</td> <td>0.776</td> <td>0.786</td> <td colspan="2"></td> <td>0.800</td> </tr> <tr> <td>Peak Period</td> <td>12:00</td> <td>to</td> <td>00:00</td> <td colspan="2"></td> </tr> <tr> <td>Volume</td> <td>164</td> <td>214</td> <td colspan="2"></td> <td>378</td> </tr> <tr> <td>Peak Hour</td> <td>16:30</td> <td>15:15</td> <td colspan="2"></td> <td>14:30</td> </tr> <tr> <td>Peak Volume</td> <td>28</td> <td>51</td> <td colspan="2"></td> <td>62</td> </tr> <tr> <td>Peak Hour Factor</td> <td>0.636</td> <td>0.490</td> <td colspan="2"></td> <td>0.574</td> </tr> <tr> <td>Peak Period</td> <td>07:00</td> <td>to</td> <td>09:00</td> <td colspan="2"></td> </tr> <tr> <td>Volume</td> <td>75</td> <td>38</td> <td colspan="2"></td> <td>113</td> </tr> <tr> <td>Peak Hour</td> <td>7:00</td> <td>7:00</td> <td colspan="2"></td> <td>7:00</td> </tr> <tr> <td>Peak Volume</td> <td>59</td> <td>21</td> <td colspan="2"></td> <td>80</td> </tr> <tr> <td>Peak Hour Factor</td> <td>0.776</td> <td>0.750</td> <td colspan="2"></td> <td>0.800</td> </tr> <tr> <td>Peak Period</td> <td>16:00</td> <td>to</td> <td>18:00</td> <td colspan="2"></td> </tr> <tr> <td>Volume</td> <td>43</td> <td>62</td> <td colspan="2"></td> <td>105</td> </tr> <tr> <td>Peak Hour</td> <td>16:30</td> <td>16:45</td> <td colspan="2"></td> <td>16:30</td> </tr> <tr> <td>Peak Volume</td> <td>28</td> <td>35</td> <td colspan="2"></td> <td>59</td> </tr> <tr> <td>Peak Hour Factor</td> <td>0.636</td> <td>0.875</td> <td colspan="2"></td> <td>0.868</td> </tr> </tbody> </table>						STATISTICS							NB	SB	EB	WB	TOTAL	Peak Period	00:00	to	12:00			Volume	147	94			241	Peak Hour	7:00	6:45			7:00	Peak Volume	59	22			80	Peak Hour Factor	0.776	0.786			0.800	Peak Period	12:00	to	00:00			Volume	164	214			378	Peak Hour	16:30	15:15			14:30	Peak Volume	28	51			62	Peak Hour Factor	0.636	0.490			0.574	Peak Period	07:00	to	09:00			Volume	75	38			113	Peak Hour	7:00	7:00			7:00	Peak Volume	59	21			80	Peak Hour Factor	0.776	0.750			0.800	Peak Period	16:00	to	18:00			Volume	43	62			105	Peak Hour	16:30	16:45			16:30	Peak Volume	28	35			59	Peak Hour Factor	0.636	0.875			0.868
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<b>TOTALS</b>	<b>147</b>	<b>94</b>	<b>0</b>	<b>0</b>	<b>241</b>	<b>TOTALS</b>	<b>164</b>	<b>214</b>	<b>0</b>	<b>0</b>	<b>378</b>																																																																																																																																										
<b>SPLIT %</b>	<b>61%</b>	<b>39%</b>	<b>0%</b>	<b>0%</b>	<b>39%</b>	<b>SPLIT %</b>	<b>43%</b>	<b>57%</b>	<b>0%</b>	<b>0%</b>	<b>61%</b>																																																																																																																																										



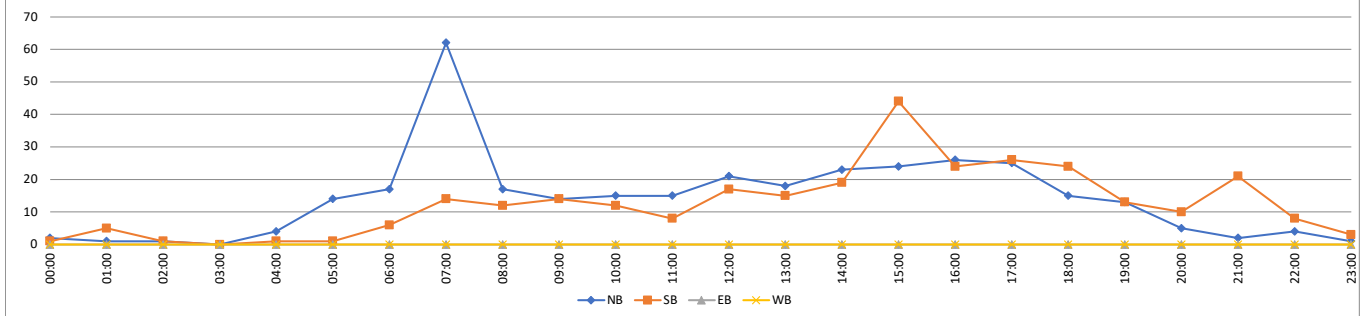
# VOLUME

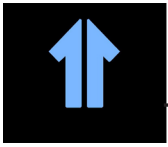
## Bonlee Carbonton Rd S/O Bear Creek Church Rd

Day: Thursday  
Date: 12/07/2023

City: Bear Creek  
Project #: NC23\_160057\_001

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS						
						339	299	0	0	638							
15-Minutes Interval											Hourly Intervals						
TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL	TIME	NB	SB	EB	WB	TOTAL
00:00	0	0			0	12:00	3	4			7	00:00	01:00	2	1		3
00:15	0	0			0	12:15	9	7			16	01:00	02:00	1	5		6
00:30	0	0			0	12:30	6	3			9	02:00	03:00	1	1		2
00:45	2	1			3	12:45	3	3			6	03:00	04:00	0	0		0
01:00	0	4			4	13:00	5	3			8	04:00	05:00	4	1		5
01:15	1	0			1	13:15	4	5			9	05:00	06:00	14	1		15
01:30	0	1			1	13:30	2	4			6	06:00	07:00	17	6		23
01:45	0	0			0	13:45	7	3			10	07:00	08:00	62	14		76
02:00	0	0			0	14:00	4	4			8	08:00	09:00	17	12		29
02:15	0	1			1	14:15	5	5			10	09:00	10:00	14	14		28
02:30	0	0			0	14:30	5	5			10	10:00	11:00	15	12		27
02:45	1	0			1	14:45	9	5			14	11:00	12:00	15	8		23
03:00	0	0			0	15:00	4	8			12	12:00	13:00	21	17		38
03:15	0	0			0	15:15	7	25			32	13:00	14:00	18	15		33
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03:45	0	0			0	15:45	9	2			11	15:00	16:00	24	44		68
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05:15	4	1			5	17:15	5	5			10	21:00	22:00	2	21		23
05:30	3	0			3	17:30	9	12			21	22:00	23:00	4	8		12
05:45	4	0			4	17:45	7	3			10	23:00	00:00	1	3		4
06:00	5	0			5	18:00	6	11			17	<b>STATISTICS</b>					
06:15	4	1			5	18:15	3	4			7		NB	SB	EB	WB	TOTAL
06:30	6	4			10	18:30	5	8			13	Peak Period	00:00	to	12:00		
06:45	2	1			3	18:45	1	1			2	Volume	162	75			237
07:00	11	5			16	19:00	3	8			11	Peak Hour	7:00	8:15			7:00
07:15	12	1			13	19:15	5	3			8	Peak Volume	62	18			76
07:30	18	2			20	19:30	3	2			5	Peak Hour Factor	0.738	0.563			0.704
07:45	21	6			27	19:45	2	0			2	Peak Period	12:00	to	00:00		
08:00	7	2			9	20:00	0	3			3	Volume	177	224			401
08:15	5	2			7	20:15	3	2			5	Peak Hour	15:15	14:45			14:45
08:30	1	5			6	20:30	2	4			6	Peak Volume	30	47			71
08:45	4	3			7	20:45	0	1			1	Peak Hour Factor	0.750	0.470			0.555
09:00	1	8			9	21:00	0	6			6	Peak Period	07:00	to	09:00		
09:15	4	1			5	21:15	0	5			5	Volume	79	26			105
09:30	6	1			7	21:30	1	1			2	Peak Hour	7:00	7:45			7:00
09:45	3	4			7	21:45	1	9			10	Peak Volume	62	15			76
10:00	3	5			8	22:00	1	4			5	Peak Hour Factor	0.738	0.625			0.704
10:15	5	1			6	22:15	1	0			1	Peak Period	16:00	to	18:00		
10:30	6	2			8	22:30	2	2			4	Volume	51	50			101
10:45	1	4			5	22:45	0	2			2	Peak Hour	16:45	16:15			16:45
11:00	3	1			4	23:00	0	0			0	Peak Volume	29	27			55
11:15	5	2			7	23:15	1	1			2	Peak Hour Factor	0.659	0.614			0.655
11:30	5	1			6	23:30	0	2			2						
11:45	2	4			6	23:45	0	0			0						
<b>TOTALS</b>	<b>162</b>	<b>75</b>	<b>0</b>	<b>0</b>	<b>237</b>	<b>TOTALS</b>	<b>177</b>	<b>224</b>	<b>0</b>	<b>0</b>	<b>401</b>						
<b>SPLIT %</b>	<b>68%</b>	<b>32%</b>	<b>0%</b>	<b>0%</b>	<b>37%</b>	<b>SPLIT %</b>	<b>44%</b>	<b>56%</b>	<b>0%</b>	<b>0%</b>	<b>63%</b>						





## Bear Creek Church Road

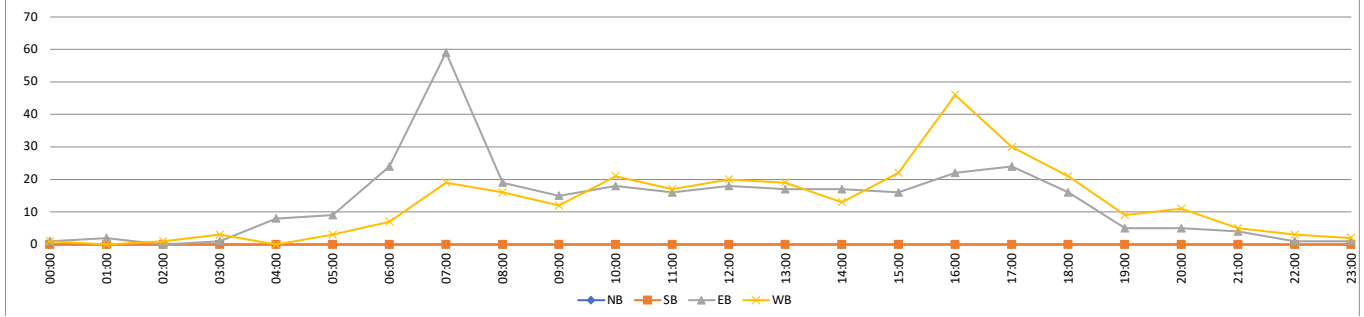
### VOLUME

#### Bear Creek Church Rd E/O Callicutt Rd

Day: Tuesday  
Date: 12/05/2023

City: Bear Creek  
Project #: NC23\_160057\_002

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS																																																																																																																																									
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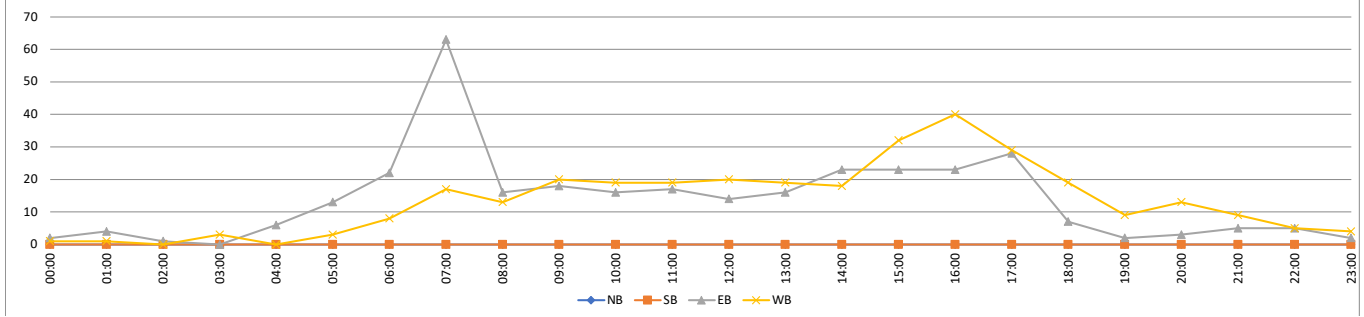
### VOLUME

### Bear Creek Church Rd E/O Callicutt Rd

Day: Wednesday  
Date: 12/06/2023

City: Bear Creek  
Project #: NC23\_160057\_002

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS																																																																																																																																										
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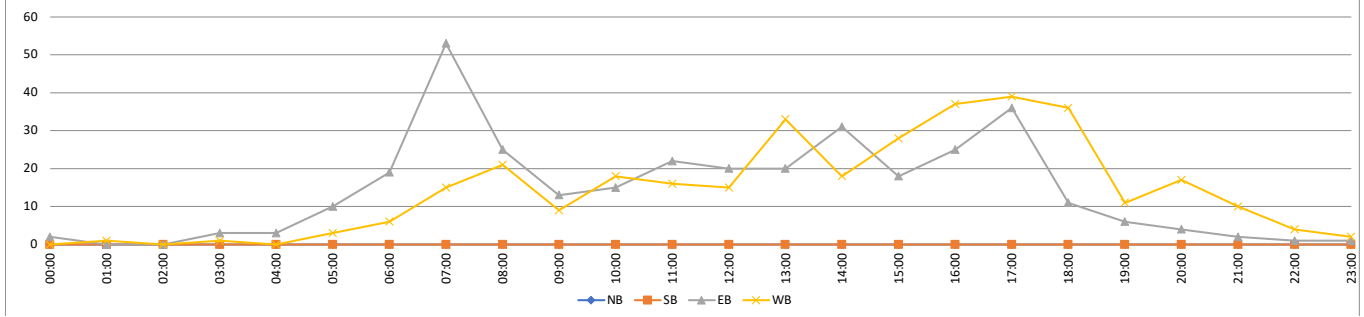
### VOLUME

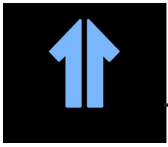
#### Bear Creek Church Rd E/O Callicutt Rd

Day: Thursday  
Date: 12/07/2023

City: Bear Creek  
Project #: NC23\_160057\_002

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS																																																																																																																																										
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## Goldston-Glendon Road

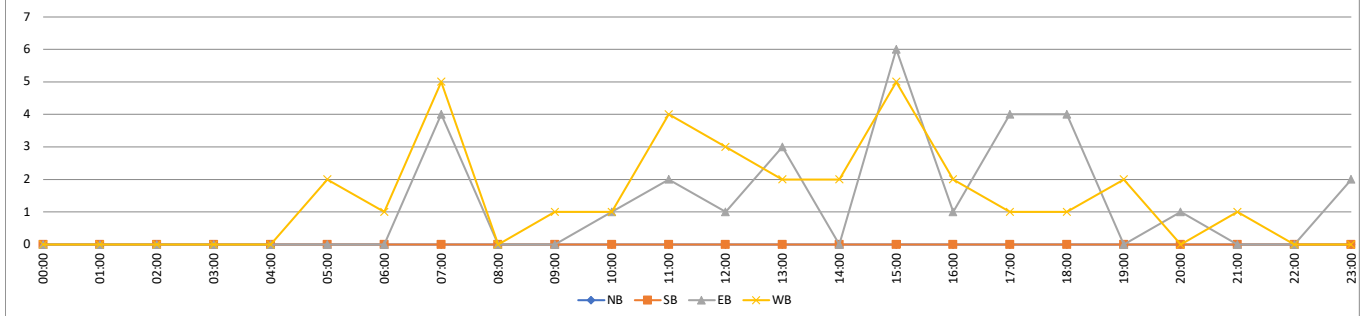
### VOLUME

CR-2303/Goldston Glendon Rd W/O CR-2306/Church St

Day: Tuesday  
Date: 12/5/2023

City: Goldston  
Project #: NC23\_160057\_003

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS																																																																																																																																									
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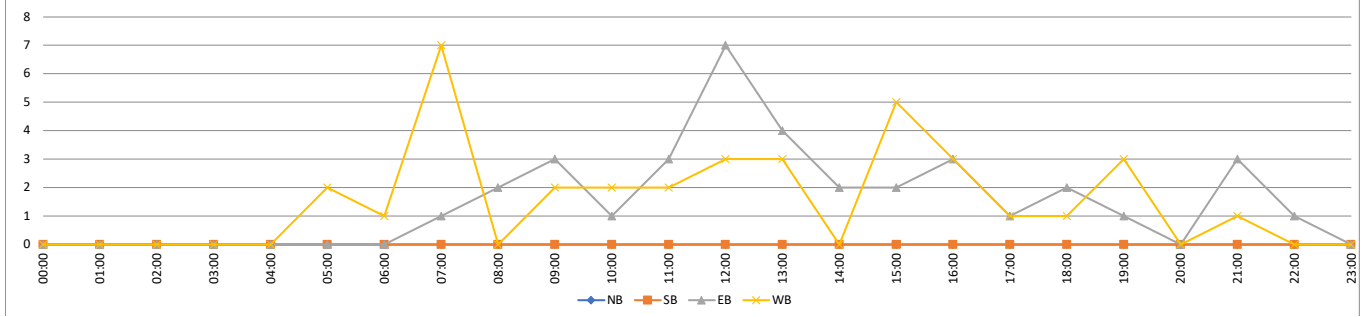
### VOLUME

CR-2303/Goldston Glendon Rd W/O CR-2306/Church St

Day: Wednesday  
Date: 12/6/2023

City: Goldston  
Project #: NC23\_160057\_003

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS																																																																																																																																									
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Peak Hour	10:45		6:30		6:30																																																																																																																																															
Peak Volume	4		8		8																																																																																																																																															
Peak Hour Factor	1.000		0.500		0.500																																																																																																																																															
Peak Period	12:00 to 00:00																																																																																																																																																			
Volume	26		20		46																																																																																																																																															
Peak Hour	12:00		14:45		12:00																																																																																																																																															
Peak Volume	7		5		10																																																																																																																																															
Peak Hour Factor	0.583		0.625		0.625																																																																																																																																															
Peak Period	07:00 to 09:00																																																																																																																																																			
Volume	3		7		10																																																																																																																																															
Peak Hour	7:45		7:00		7:00																																																																																																																																															
Peak Volume	3		7		8																																																																																																																																															
Peak Hour Factor	0.750		0.438		0.500																																																																																																																																															
Peak Period	16:00 to 18:00																																																																																																																																																			
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Peak Volume	3		3		6																																																																																																																																															
Peak Hour Factor	0.375		0.750		0.750																																																																																																																																															
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<b>SPLIT %</b>	<b>0%</b>	<b>0%</b>	<b>38%</b>	<b>62%</b>	<b>36%</b>	<b>SPLIT %</b>	<b>0%</b>	<b>0%</b>	<b>57%</b>	<b>43%</b>	<b>64%</b>																																																																																																																																									



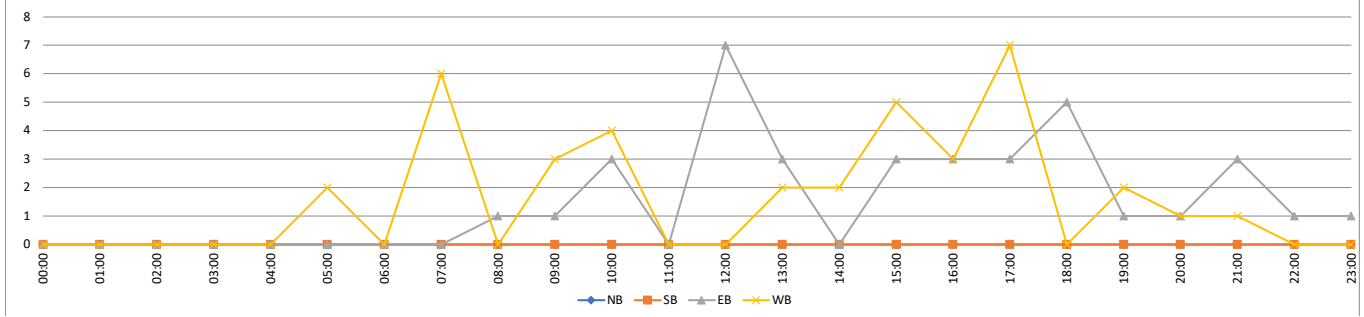
### VOLUME

CR-2303/Goldston Glendon Rd W/O CR-2306/Church St

Day: Thursday  
Date: 12/7/2023

City: Goldston  
Project #: NC23\_160057\_003

DAILY TOTALS						NB	SB	EB	WB	Total	DAILY TOTALS																																																																																																																																									
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6:00			0	0	0	18:00			0	0	0	<table border="1"> <thead> <tr> <th colspan="6">STATISTICS</th> </tr> <tr> <th></th> <th>NB</th> <th>SB</th> <th>EB</th> <th>WB</th> <th>TOTAL</th> </tr> </thead> <tbody> <tr> <td>Peak Period</td> <td colspan="2">00:00 to 12:00</td> <td colspan="3"></td> </tr> <tr> <td>Volume</td> <td colspan="2">5</td> <td colspan="2">15</td> <td>20</td> </tr> <tr> <td>Peak Hour</td> <td colspan="2">9:45</td> <td colspan="2">7:00</td> <td>9:45</td> </tr> <tr> <td>Peak Volume</td> <td colspan="2">4</td> <td colspan="2">6</td> <td>7</td> </tr> <tr> <td>Peak Hour Factor</td> <td colspan="2">0.500</td> <td colspan="2">0.500</td> <td>0.438</td> </tr> <tr> <td>Peak Period</td> <td colspan="2">12:00 to 00:00</td> <td colspan="3"></td> </tr> <tr> <td>Volume</td> <td colspan="2">31</td> <td colspan="2">23</td> <td>54</td> </tr> <tr> <td>Peak Hour</td> <td colspan="2">12:00</td> <td colspan="2">16:30</td> <td>16:30</td> </tr> <tr> <td>Peak Volume</td> <td colspan="2">7</td> <td colspan="2">7</td> <td>10</td> </tr> <tr> <td>Peak Hour Factor</td> <td colspan="2">0.583</td> <td colspan="2">0.438</td> <td>0.625</td> </tr> <tr> <td>Peak Period</td> <td colspan="2">07:00 to 09:00</td> <td colspan="3"></td> </tr> <tr> <td>Volume</td> <td colspan="2">1</td> <td colspan="2">6</td> <td>7</td> </tr> <tr> <td>Peak Hour</td> <td colspan="2">7:30</td> <td colspan="2">7:00</td> <td>7:00</td> </tr> <tr> <td>Peak Volume</td> <td colspan="2">1</td> <td colspan="2">6</td> <td>6</td> </tr> <tr> <td>Peak Hour Factor</td> <td colspan="2">0.250</td> <td colspan="2">0.500</td> <td>0.500</td> </tr> <tr> <td>Peak Period</td> <td colspan="2">16:00 to 18:00</td> <td colspan="3"></td> </tr> <tr> <td>Volume</td> <td colspan="2">6</td> <td colspan="2">10</td> <td>16</td> </tr> <tr> <td>Peak Hour</td> <td colspan="2">16:15</td> <td colspan="2">16:30</td> <td>16:30</td> </tr> <tr> <td>Peak Volume</td> <td colspan="2">4</td> <td colspan="2">7</td> <td>10</td> </tr> <tr> <td>Peak Hour Factor</td> <td colspan="2">0.500</td> <td colspan="2">0.438</td> <td>0.625</td> </tr> </tbody> </table>					STATISTICS							NB	SB	EB	WB	TOTAL	Peak Period	00:00 to 12:00					Volume	5		15		20	Peak Hour	9:45		7:00		9:45	Peak Volume	4		6		7	Peak Hour Factor	0.500		0.500		0.438	Peak Period	12:00 to 00:00					Volume	31		23		54	Peak Hour	12:00		16:30		16:30	Peak Volume	7		7		10	Peak Hour Factor	0.583		0.438		0.625	Peak Period	07:00 to 09:00					Volume	1		6		7	Peak Hour	7:30		7:00		7:00	Peak Volume	1		6		6	Peak Hour Factor	0.250		0.500		0.500	Peak Period	16:00 to 18:00					Volume	6		10		16	Peak Hour	16:15		16:30		16:30	Peak Volume	4		7		10	Peak Hour Factor	0.500		0.438		0.625
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<b>SPLIT %</b>	<b>0%</b>	<b>0%</b>	<b>25%</b>	<b>75%</b>	<b>27%</b>	<b>SPLIT %</b>	<b>0%</b>	<b>0%</b>	<b>57%</b>	<b>43%</b>	<b>73%</b>																																																																																																																																									



# Chatham County Quarry - Goldston

NC 902 & US 421

Data: DEC 2023

SYNCHRO node 1

Phase - Year	NC 902 EB						NC 902 WB						US 421 NB						US 421 SB					
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing traffic 2023	39	26	78	24	21	9	15	10	39	60	15	26	24	18	482	616	14	16	19	26	482	683	26	29
<b>Existing 2023 TMC total</b>	<b>39</b>	<b>26</b>	<b>78</b>	<b>24</b>	<b>21</b>	<b>9</b>	<b>15</b>	<b>10</b>	<b>39</b>	<b>60</b>	<b>15</b>	<b>26</b>	<b>24</b>	<b>18</b>	<b>482</b>	<b>616</b>	<b>14</b>	<b>16</b>	<b>19</b>	<b>26</b>	<b>482</b>	<b>683</b>	<b>26</b>	<b>29</b>
1.5 % growth 2024	40	26	79	24	21	9	15	10	40	61	15	26	24	18	489	625	14	16	19	26	489	693	26	29
1.5 % growth 2025	40	27	80	25	22	9	15	10	40	62	15	27	25	19	497	635	14	16	20	27	497	704	27	30
<i>Volumes translated to R-CUT</i>	0	0	0	0	121	52	0	0	0	0	55	72	0	0	40	27	80	25	0	0	15	10	40	62
<b>No Build TMC total</b>					<b>142</b>	<b>61</b>					<b>70</b>	<b>99</b>	<b>25</b>	<b>19</b>	<b>537</b>	<b>662</b>	<b>94</b>	<b>41</b>	<b>20</b>	<b>27</b>	<b>512</b>	<b>714</b>	<b>67</b>	<b>92</b>
Quarry Site Buildout	0	0	0	0	40	49	0	0	0	0	0	0	0	0	16	19	0	0	0	0	20	17	52	44
<b>Site Buildout TMC total</b>					<b>182</b>	<b>110</b>					<b>70</b>	<b>99</b>	<b>25</b>	<b>19</b>	<b>553</b>	<b>681</b>	<b>94</b>	<b>41</b>	<b>20</b>	<b>27</b>	<b>532</b>	<b>731</b>	<b>119</b>	<b>136</b>



# Chatham County Quarry - Goldston

NC 902 & Old US 421

Data: DEC 23

SYNCHRO node 2

Phase - Year	NC 902 EB						NC 902 WB						Old US 421 NB						Old US 421 SB					
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing traffic 2023	28	41	152	97	17	28	4	7	101	85	8	7	52	14	14	16	5	5	13	13	13	21	47	22
<b>Existing 2023 TMC total</b>	<b>28</b>	<b>41</b>	<b>152</b>	<b>97</b>	<b>17</b>	<b>28</b>	<b>4</b>	<b>7</b>	<b>101</b>	<b>85</b>	<b>8</b>	<b>7</b>	<b>52</b>	<b>14</b>	<b>14</b>	<b>16</b>	<b>5</b>	<b>5</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>21</b>	<b>47</b>	<b>22</b>
1.5 % growth 2024	28	42	154	98	17	28	4	7	103	86	8	7	53	14	14	16	5	5	13	13	13	21	48	22
1.5 % growth 2025	29	42	157	100	18	29	4	7	104	88	8	7	54	14	14	16	5	5	13	13	13	22	48	23
<b>No Build TMC total</b>	<b>29</b>	<b>42</b>	<b>157</b>	<b>100</b>	<b>18</b>	<b>29</b>	<b>4</b>	<b>7</b>	<b>104</b>	<b>88</b>	<b>8</b>	<b>7</b>	<b>54</b>	<b>14</b>	<b>14</b>	<b>16</b>	<b>5</b>	<b>5</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>22</b>	<b>48</b>	<b>23</b>
Quarry Site Buildout	0	0	40	49	0	0	0	0	52	44	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Site Buildout TMC total</b>	<b>29</b>	<b>42</b>	<b>197</b>	<b>149</b>	<b>18</b>	<b>29</b>	<b>4</b>	<b>7</b>	<b>156</b>	<b>132</b>	<b>8</b>	<b>7</b>	<b>54</b>	<b>14</b>	<b>14</b>	<b>16</b>	<b>5</b>	<b>5</b>	<b>13</b>	<b>13</b>	<b>13</b>	<b>22</b>	<b>48</b>	<b>23</b>



# Chatham County Quarry - Goldston

NC 902 & Bonlee School Rd/Bonlee-Carbonton Rd

Data:

DEC 23

SYNCHRO node

3

Phase - Year	NC 902 EB						NC 902 WB						Bonlee-Carbonton Rd NB						Bonlee School Rd SB					
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing traffic 2023	7	6	154	59	5	10	8	30	48	105	15	11	4	9	22	15	33	12	10	6	7	17	4	10
<b>Existing 2023 TMC total</b>	<b>7</b>	<b>6</b>	<b>154</b>	<b>59</b>	<b>5</b>	<b>10</b>	<b>8</b>	<b>30</b>	<b>48</b>	<b>105</b>	<b>15</b>	<b>11</b>	<b>4</b>	<b>9</b>	<b>22</b>	<b>15</b>	<b>33</b>	<b>12</b>	<b>10</b>	<b>6</b>	<b>7</b>	<b>17</b>	<b>4</b>	<b>10</b>
1.5 % growth 2024	7	6	156	60	5	10	8	30	49	107	15	11	4	9	22	15	33	12	10	6	7	17	4	10
1.5 % growth 2025	7	6	159	61	5	10	8	31	49	108	15	11	4	9	23	15	34	12	10	6	7	18	4	10
<b>No Build TMC total</b>	<b>7</b>	<b>6</b>	<b>159</b>	<b>61</b>	<b>5</b>	<b>10</b>	<b>8</b>	<b>31</b>	<b>49</b>	<b>108</b>	<b>15</b>	<b>11</b>	<b>4</b>	<b>9</b>	<b>23</b>	<b>15</b>	<b>34</b>	<b>12</b>	<b>10</b>	<b>6</b>	<b>7</b>	<b>18</b>	<b>4</b>	<b>10</b>
Quarry Site Buildout	0	0	0	0	0	0	52	44	0	0	0	0	0	0	0	0	40	49	0	0	0	0	0	0
<b>Site Buildout TMC total</b>	<b>7</b>	<b>6</b>	<b>159</b>	<b>61</b>	<b>5</b>	<b>10</b>	<b>60</b>	<b>75</b>	<b>49</b>	<b>108</b>	<b>15</b>	<b>11</b>	<b>4</b>	<b>9</b>	<b>23</b>	<b>15</b>	<b>74</b>	<b>61</b>	<b>10</b>	<b>6</b>	<b>7</b>	<b>18</b>	<b>4</b>	<b>10</b>





# Chatham County Quarry - Goldston

## Bonlee-Carbonton Rd & Site Drive

Data: JULY 22

SYNCHRO node

4

Phase - Year	Bonlee-Carbonton Rd NB				Bonlee-Carbonton Rd SB				Site Drive WB			
	Thru		Right		Left		Thru		Left		Right	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing traffic 2023	57	34	0	0	0	0	22	59	0	0	0	0
<b>Existing 2023 TMC total</b>	<b>57</b>	<b>34</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>59</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
1.5 % growth 2024	58	35	0	0	0	0	22	60	0	0	0	0
1.5 % growth 2025	59	35	0	0	0	0	22	61	0	0	0	0
<b>No Build TMC total</b>	<b>59</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>61</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Quarry Site Buildout</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>7</b>	<b>72</b>	<b>60</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>8</b>	<b>56</b>	<b>68</b>
<b>Site Buildout TMC total</b>	<b>59</b>	<b>35</b>	<b>8</b>	<b>7</b>	<b>72</b>	<b>60</b>	<b>22</b>	<b>61</b>	<b>6</b>	<b>8</b>	<b>56</b>	<b>68</b>



# Chatham County Quarry - Goldston

N. Main St. & Chatham Ave

Data: DEC 23

SYNCHRO node 5

Phase - Year	N. Main St. NB				N. Main St. SB				Chatham Ave. EB			
	Left		Thru		Thru		Right		Left		Right	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing traffic 2023	7	19	69	66	53	66	8	5	16	16	10	10
<b>Existing 2023 TMC total</b>	<b>7</b>	<b>19</b>	<b>69</b>	<b>66</b>	<b>53</b>	<b>66</b>	<b>8</b>	<b>5</b>	<b>16</b>	<b>16</b>	<b>10</b>	<b>10</b>
1.5 % growth 2024	7	19	70	67	54	67	8	5	16	16	10	10
1.5 % growth 2025	7	20	71	68	55	68	8	5	16	16	10	10
<b>No Build TMC total</b>	<b>7</b>	<b>20</b>	<b>71</b>	<b>68</b>	<b>55</b>	<b>68</b>	<b>8</b>	<b>5</b>	<b>16</b>	<b>16</b>	<b>10</b>	<b>10</b>
<b>Quarry Site Buildout</b>	<b>20</b>	<b>17</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>19</b>	
<b>Site Buildout TMC total</b>	<b>27</b>	<b>37</b>	<b>71</b>	<b>68</b>	<b>55</b>	<b>68</b>	<b>8</b>	<b>5</b>	<b>16</b>	<b>16</b>	<b>26</b>	<b>29</b>



# Chatham County Quarry - Goldston

N. Main St. & Pittsboro-Goldston Rd

SEPT 23

SYNCHRO node

6

Phase - Year	N. Main St NB				N. Main St SB				Pittsboro-Goldston Rd WB				
	Thru		Right		Left		Thru		Left		Right		
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	
Existing traffic ***	2023	38	44	93	44	23	5	48	69	44	67	24	11
<i>Adjustment to Dec 2023 counts</i>		9	21	-13	-3	-3	7	-6	-5	3	0	5	3
<b>Existing 2023 TMC total</b>		<b>47</b>	<b>65</b>	<b>80</b>	<b>41</b>	<b>20</b>	<b>12</b>	<b>42</b>	<b>64</b>	<b>47</b>	<b>67</b>	<b>29</b>	<b>14</b>
1.5 % growth	2024	48	66	81	42	20	12	43	65	48	68	29	14
1.5 % growth	2025	48	67	82	42	21	12	44	66	48	69	30	14
<b>No Build TMC total</b>		<b>48</b>	<b>67</b>	<b>82</b>	<b>42</b>	<b>21</b>	<b>12</b>	<b>44</b>	<b>66</b>	<b>48</b>	<b>69</b>	<b>30</b>	<b>14</b>
<b>Quarry Site Buildout</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>20</b>	<b>17</b>
<b>Site Buildout TMC total</b>		<b>48</b>	<b>67</b>	<b>82</b>	<b>42</b>	<b>37</b>	<b>31</b>	<b>44</b>	<b>66</b>	<b>48</b>	<b>69</b>	<b>50</b>	<b>31</b>

\*\*\* - Note that this interseciton data was collected in September 2023, while schools were in session.



# Chatham County Quarry - Goldston

N. Main St. & Colonial Ave/Lancaster St.

Data: SEPT 23

SYNCHRO node 7

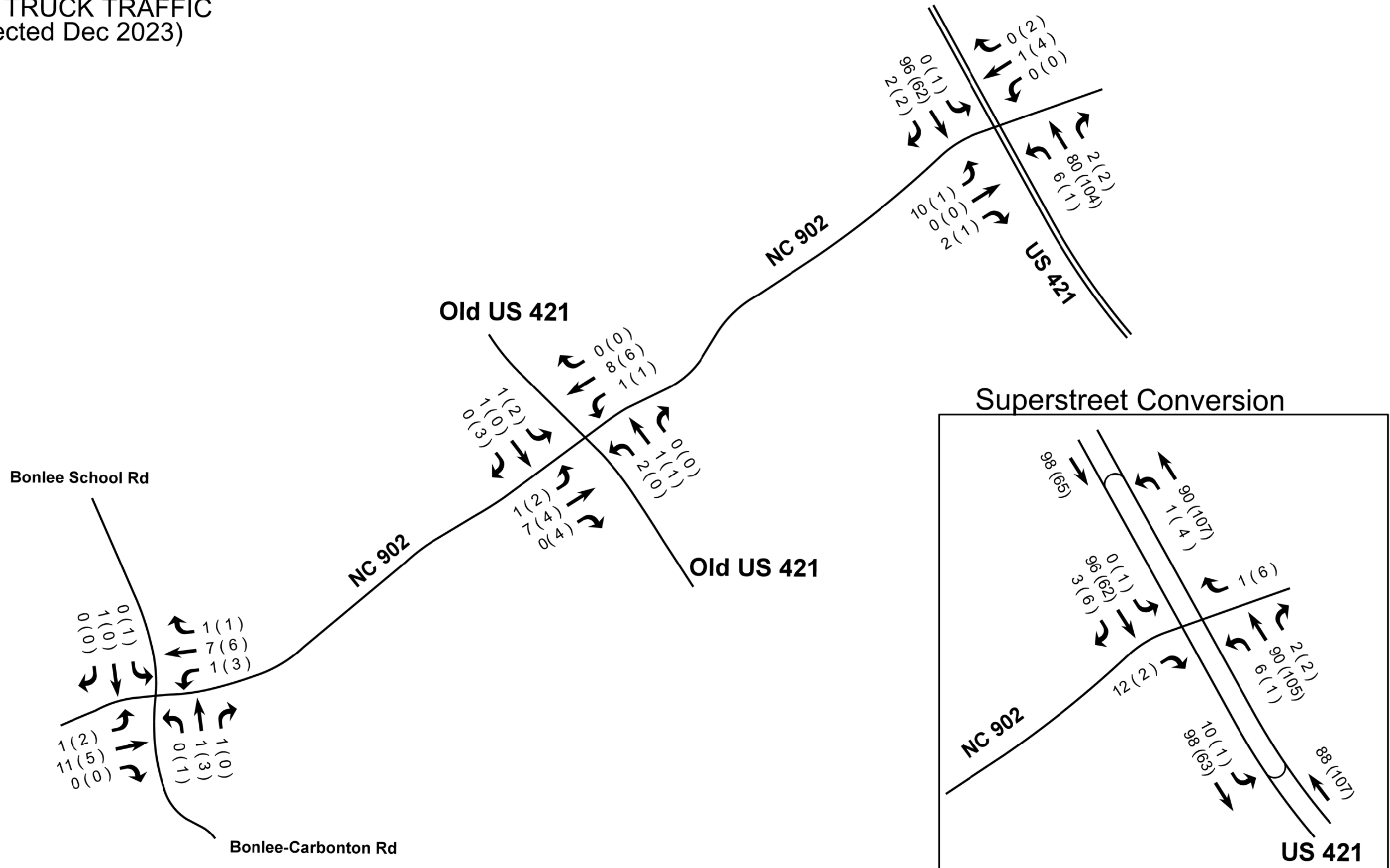
Phase - Year	N. Main St NB						N. Main St SB						Colonial Ave EB						Lancaster St WB					
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Existing traffic *** 2023	18	31	54	74	0	0	1	3	47	84	44	50	67	27	3	1	26	21	0	1	1	2	1	1
<i>Adjustment to Dec 2023 counts</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Existing 2023 TMC total</b>	<b>18</b>	<b>31</b>	<b>54</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>47</b>	<b>84</b>	<b>44</b>	<b>50</b>	<b>67</b>	<b>27</b>	<b>3</b>	<b>1</b>	<b>26</b>	<b>21</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>
1.5 % growth 2024	18	31	55	75	0	0	1	3	48	85	45	51	68	27	3	1	26	21	0	1	1	2	1	1
1.5 % growth 2025	19	32	56	76	0	0	1	3	48	87	45	52	69	28	3	1	27	22	0	1	1	2	1	1
<b>No Build TMC total</b>	<b>19</b>	<b>32</b>	<b>56</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>48</b>	<b>87</b>	<b>45</b>	<b>52</b>	<b>69</b>	<b>28</b>	<b>3</b>	<b>1</b>	<b>27</b>	<b>22</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>
Quarry Site Buildout	8	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	8	0	0	0	0	0	0
<b>Site Buildout TMC total</b>	<b>27</b>	<b>39</b>	<b>56</b>	<b>76</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>3</b>	<b>48</b>	<b>87</b>	<b>45</b>	<b>52</b>	<b>69</b>	<b>28</b>	<b>3</b>	<b>1</b>	<b>33</b>	<b>30</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>





# EXISTING TRUCK TRAFFIC (Data Collected Dec 2023)

MAP 1 of 3

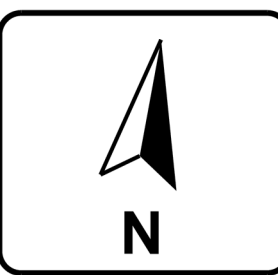


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**CHATHAM COUNTY QUARRY SITE**  
GOLDSTON, NC (CHATHAM COUNTY)

EXISTING TRAFFIC

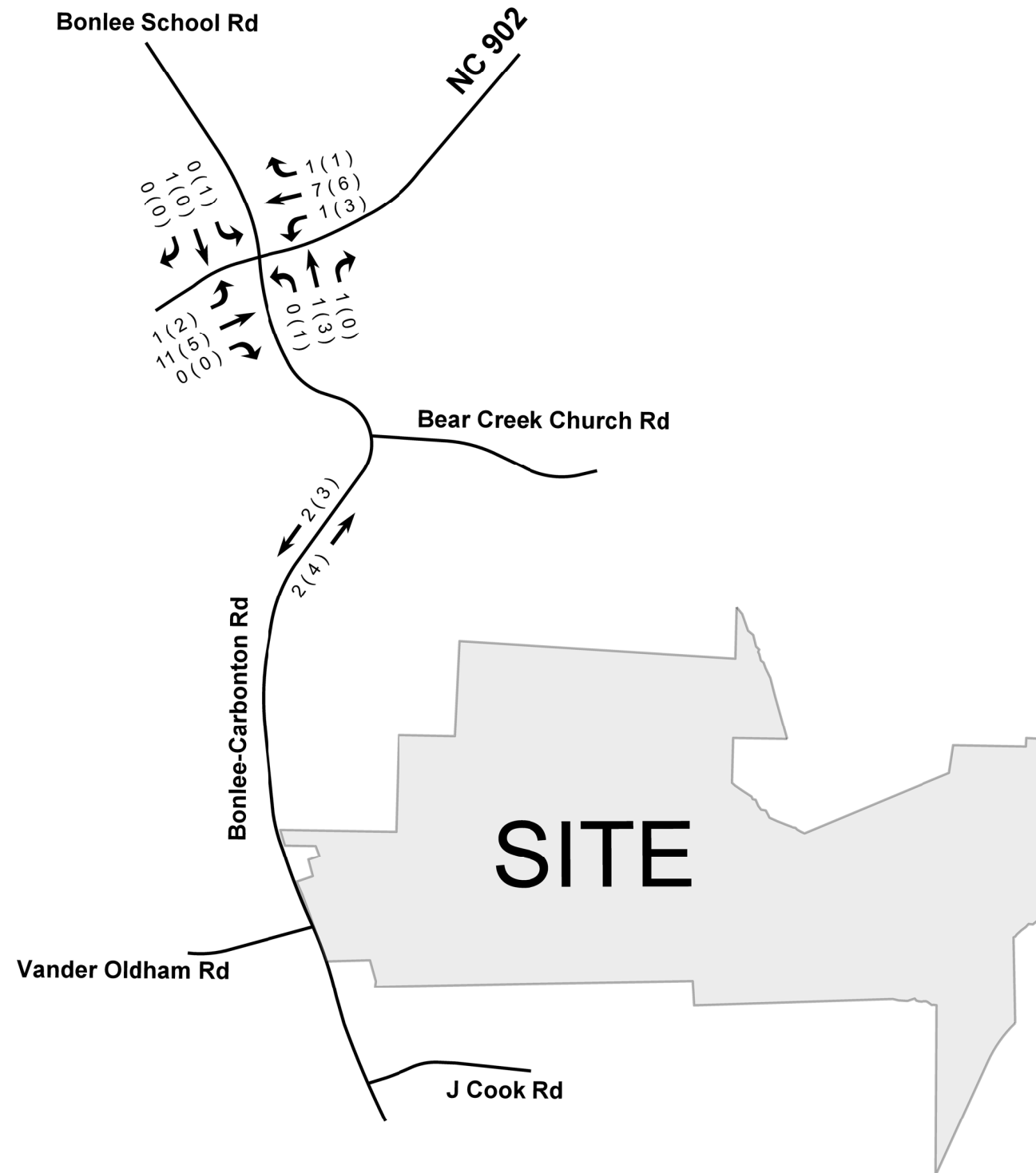
**LEGEND**

→ Vehicular Movement  
123 (789) AM count (PM count)  
AB % Trip Distribution By Movement



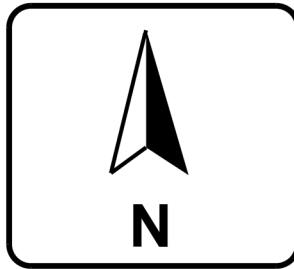
**EXISTING TRUCK TRAFFIC**  
(Data Collected Dec 2023)

MAP 2 of 3



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**CHATHAM COUNTY QUARRY SITE**  
GOLDSTON, NC (CHATHAM COUNTY)  
**EXISTING TRAFFIC**

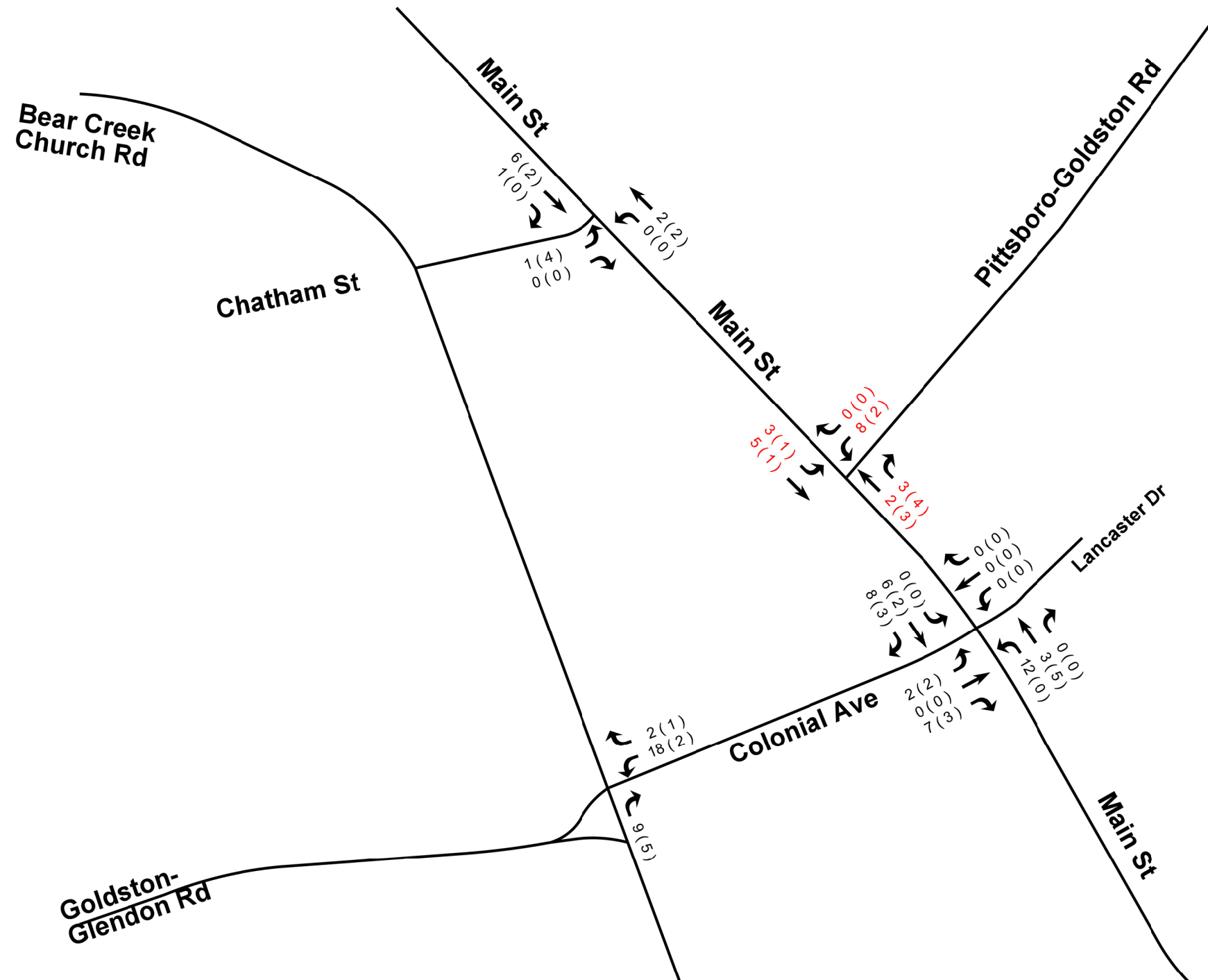
**LEGEND**

→ Vehicular Movement  
123 (789) AM count (PM count)  
AB % Trip Distribution By Movement



**EXISTING TRUCK TRAFFIC**  
(Data Collected Dec 2023)

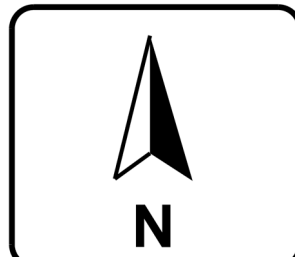
MAP 3 of 3



\*\* Counts shown in red have been adjusted from Sept 2023 data collection

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**CHATHAM COUNTY QUARRY SITE**  
GOLDSTON, NC (CHATHAM COUNTY)  
**EXISTING TRAFFIC**

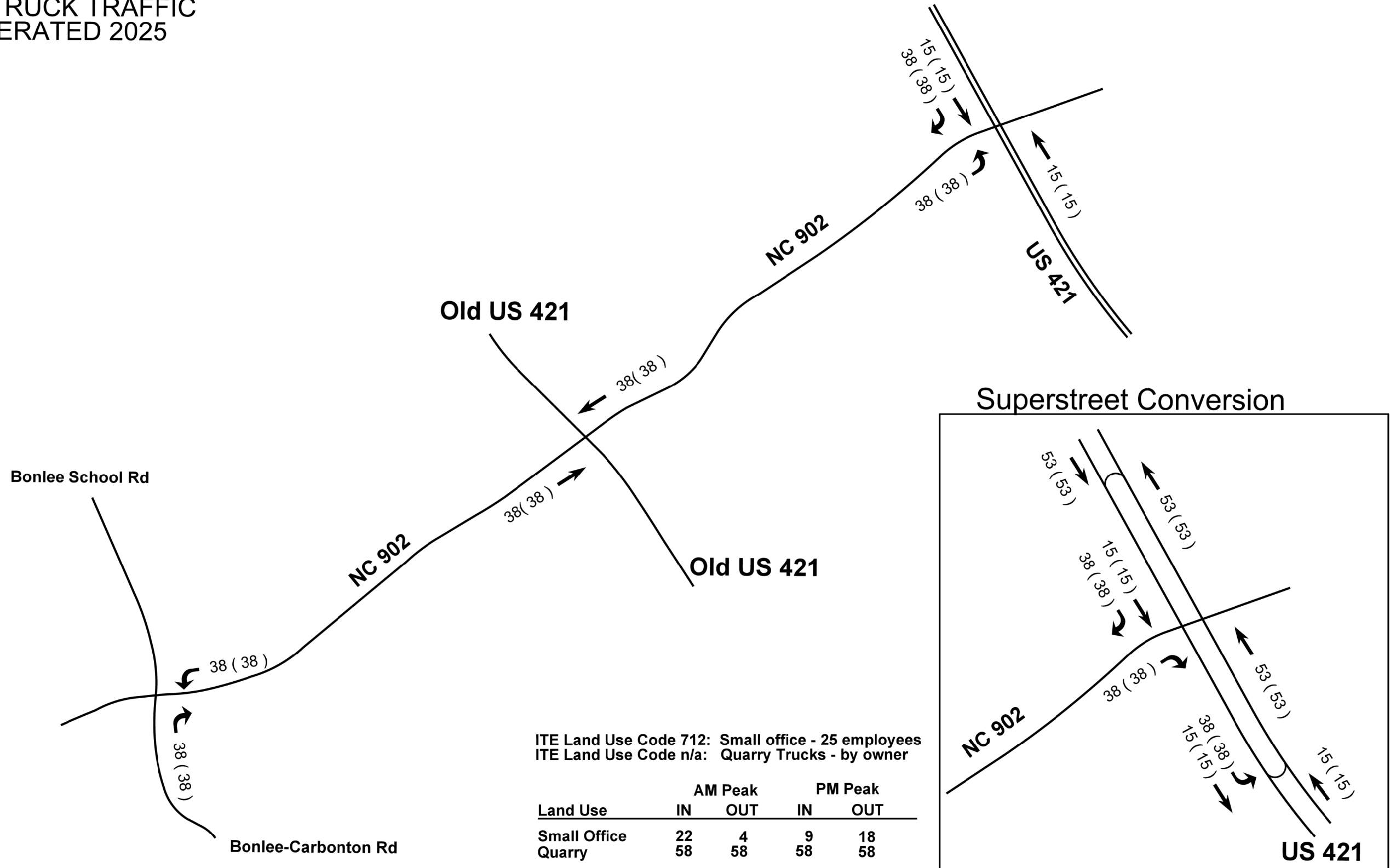
**LEGEND**

→ Vehicular Movement  
123 (789) AM count (PM count)  
AB % Trip Distribution By Movement



# FUTURE TRUCK TRAFFIC SITE GENERATED 2025

MAP 1 of 3



ITE Land Use Code 712: Small office - 25 employees  
 ITE Land Use Code n/a: Quarry Trucks - by owner

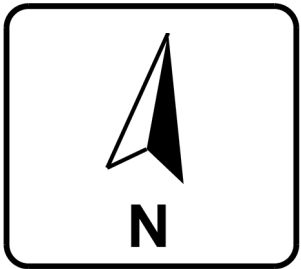
Land Use	AM Peak		PM Peak	
	IN	OUT	IN	OUT
Small Office	22	4	9	18
Quarry	58	58	58	58
<b>Total</b>	<b>80</b>	<b>62</b>	<b>67</b>	<b>76</b>

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**CHATHAM COUNTY QUARRY SITE**  
 GOLDSTON, NC (CHATHAM COUNTY)  
**FUTURE TRAFFIC**

**LEGEND**

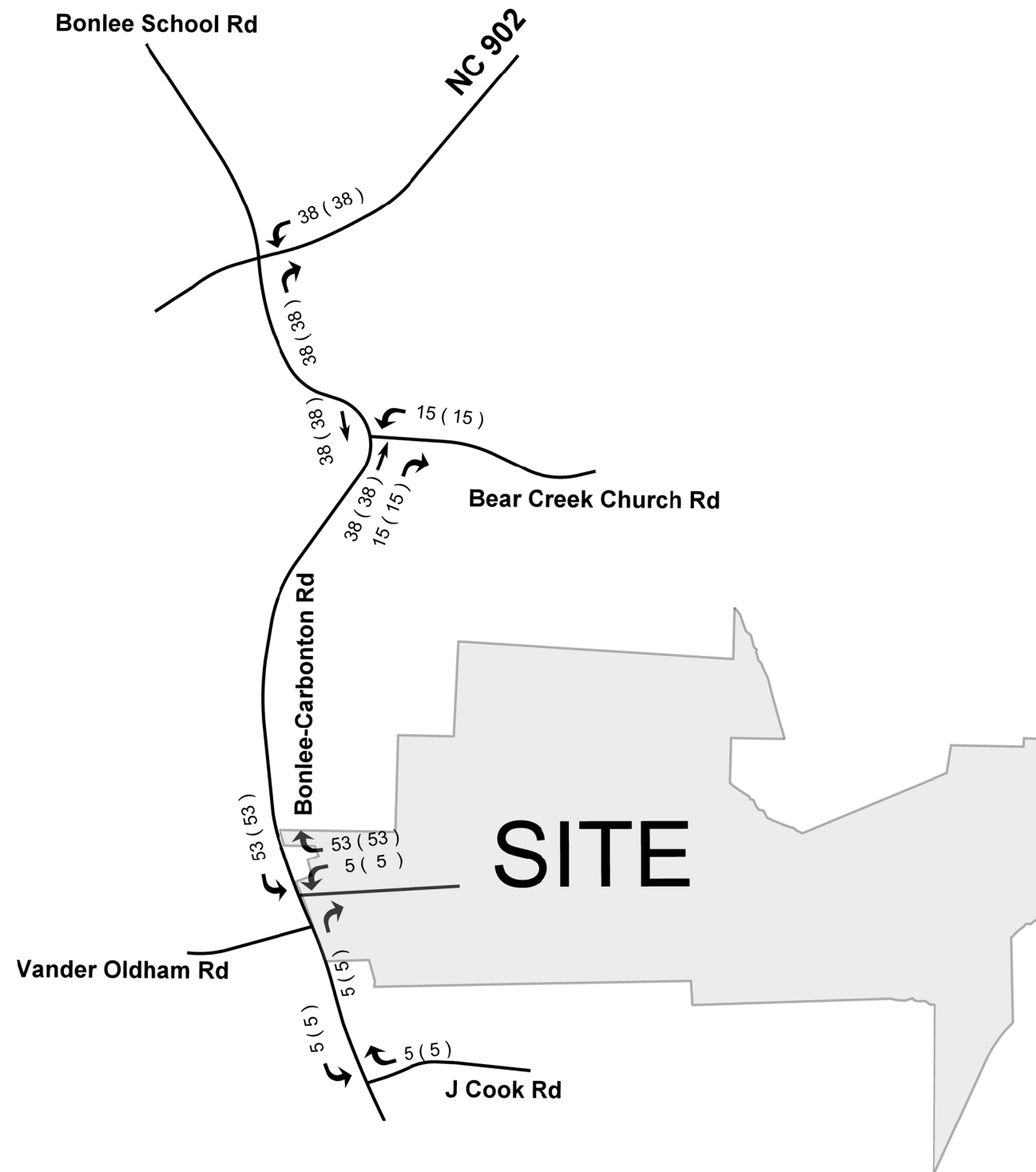
→ Vehicular Movement  
 123 (789) AM count (PM count)  
 AB % Trip Distribution By Movement





# FUTURE TRUCK TRAFFIC SITE GENERATED 2025

MAP 2 of 3

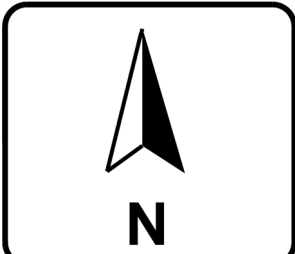


ITE Land Use Code 712: Small office - 25 employees  
 ITE Land Use Code n/a: Quarry Trucks - by owner

Land Use	AM Peak		PM Peak	
	IN	OUT	IN	OUT
Small Office	22	4	9	18
Quarry	58	58	58	58
<b>Total</b>	<b>80</b>	<b>62</b>	<b>67</b>	<b>76</b>

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**CHATHAM COUNTY QUARRY SITE**  
 GOLDSTON, NC (CHATHAM COUNTY)

**FUTURE TRAFFIC**

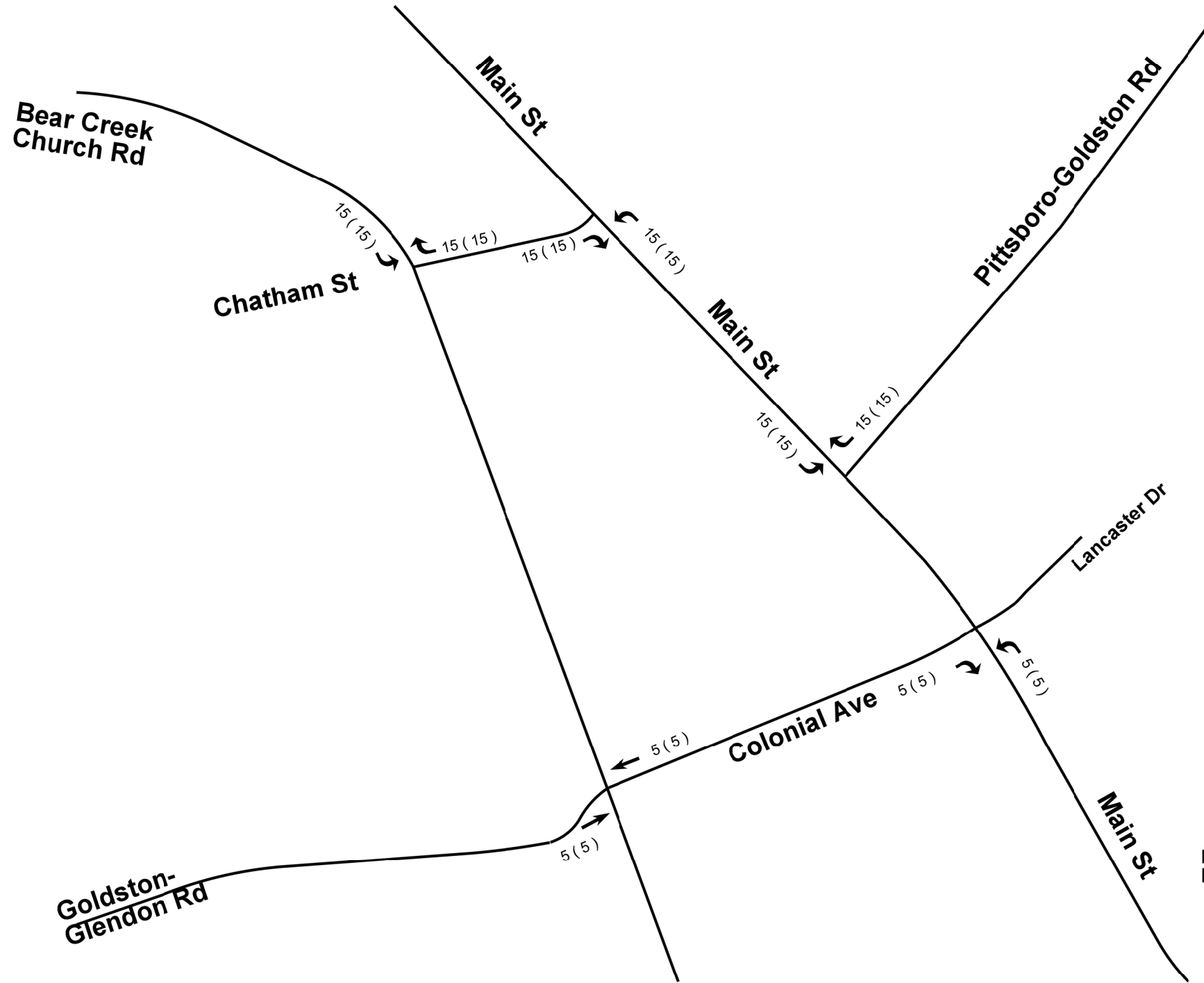
**LEGEND**

→ Vehicular Movement  
 123 (789) AM count (PM count)  
 AB % Trip Distribution By Movement



# FUTURE TRUCK TRAFFIC SITE GENERATED 2025

MAP 3 of 3

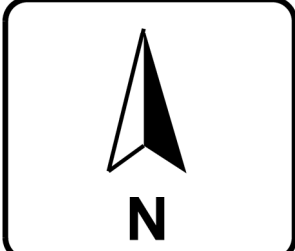


ITE Land Use Code 712: Small office - 25 employees  
 ITE Land Use Code n/a: Quarry Trucks - by owner

Land Use	AM Peak		PM Peak	
	IN	OUT	IN	OUT
Small Office	22	4	9	18
Quarry	58	58	58	58
<b>Total</b>	<b>80</b>	<b>62</b>	<b>67</b>	<b>76</b>

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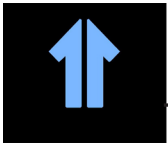
**CHATHAM COUNTY QUARRY SITE**  
 GOLDSTON, NC (CHATHAM COUNTY)

**FUTURE TRAFFIC**

**LEGEND**

→ Vehicular Movement  
 123 (789) AM count (PM count)  
 AB % Trip Distribution By Movement





# APPENDIX C

## ITE 11<sup>th</sup> Edition Trip Generation Summary Report

Phase	ITE Code	Land Use	Size	Units	Adjacent Street Traffic Volumes								
					Wkday Avg # Trips			Weekday AM Peak Hr			Weekday PM Peak Hr		
					Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	Total
2024	712	SMALL OFFICE *	25	EMPLOYEES	98	99	197	22	4	26	9	18	27
2024	n/a	Quarry **	n/a	trips	570	570	1140	58	58	116	58	58	116
				<b>Unadjusted Volume</b>	<b>668</b>	<b>669</b>	<b>1337</b>	<b>80</b>	<b>62</b>	<b>142</b>	<b>67</b>	<b>76</b>	<b>143</b>
				Internal Capture				0	0	0	0	0	0
				Pass-By Trips				0	0	0	0	0	0
				<b>Volume Added to Adjacent Streets</b>	<b>668</b>	<b>669</b>	<b>1337</b>	<b>80</b>	<b>62</b>	<b>142</b>	<b>67</b>	<b>76</b>	<b>143</b>

Source: \* ITE Trip Generation Manual, 11th Edition  
\*\* Carolina Sunrock Quarry records

New Quarry sample:

<b>Sunrock Woodsdale Quarry</b>							
<b>Year</b>	<b>Total Annual Tons Hauled</b>	<b>Number of Tickets</b>	<b>Average Ton per Ticket</b>	<b>Average Trips per year</b>	<b>Average trips per week</b>	<b>Average Trips per day</b>	<b>Average Trips per hour</b>
2017	6,239	306	20.39	612	11.77	2	0.20
2018	336,493	15,505	21.70	31,010	596	99	9.94
2019	253,654	11,512	22.03	23,024	443	74	7.38
2020	250,712	11,887	21.09	23,774	457	76	7.62
2021	279,775	13,388	20.90	26,776	515	86	8.58
2022	477,256	22,428	21.28	44,856	863	144	14.38

Note: Quarry was reopened late 2017 from being dormant since 2006

Established Quarry sample:

<b>Sunrock Kittrell Quarry</b>							
<b>Year</b>	<b>Total Annual Tons Hauled</b>	<b>Number of Tickets</b>	<b>Average Ton per Ticket</b>	<b>Average Trips per year</b>	<b>Average trips per week</b>	<b>Average Trips per day</b>	<b>Average Trips per hour</b>
2017	390,646	19,264	20.28	38,528	741	123	12.35
2018	1,539,251	72,180	21.33	144,360	2,776	463	46.27
2019	1,499,335	70,209	21.36	140,418	2,700	450	45.01
2020	1,606,492	75,054	21.40	150,108	2,887	481	48.11
2021	1,706,300	78,600	21.71	157,200	3,023	504	50.38
2022	1,836,869	83,552	21.98	167,104	3,214	536	53.56

Note: Quarry shut down December of 2016 and facility was rebuilt in 2017 reopening 3rd Q of 2017.

# Small Office Building (712)

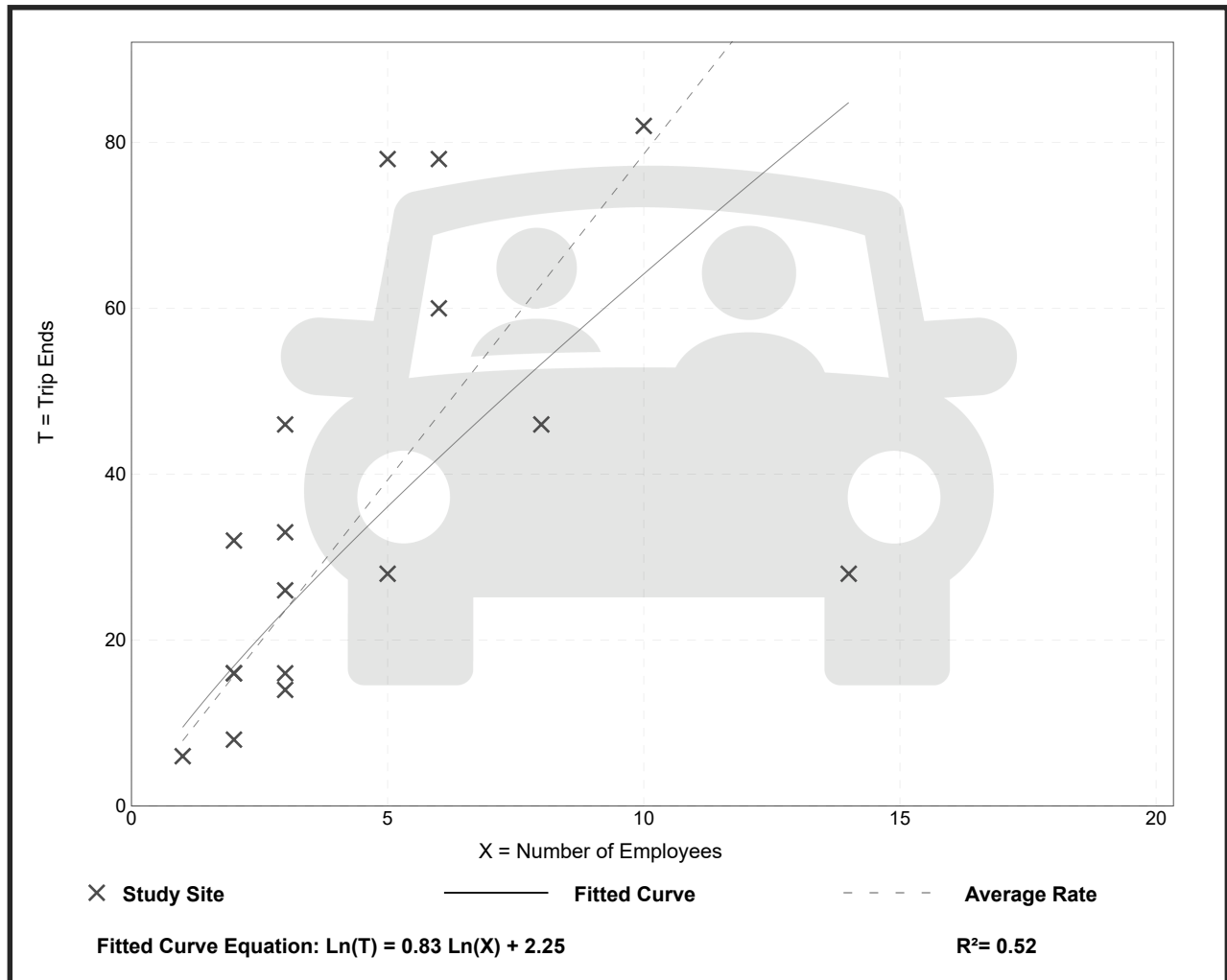
**Vehicle Trip Ends vs: Employees**  
**On a: Weekday**

**Setting/Location: General Urban/Suburban**  
Number of Studies: 17  
Avg. Num. of Employees: 5  
Directional Distribution: 50% entering, 50% exiting

## Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
7.86	2.00 - 16.00	4.43

## Data Plot and Equation





# Small Office Building (712)

**Vehicle Trip Ends vs: Employees**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 7 and 9 a.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 17

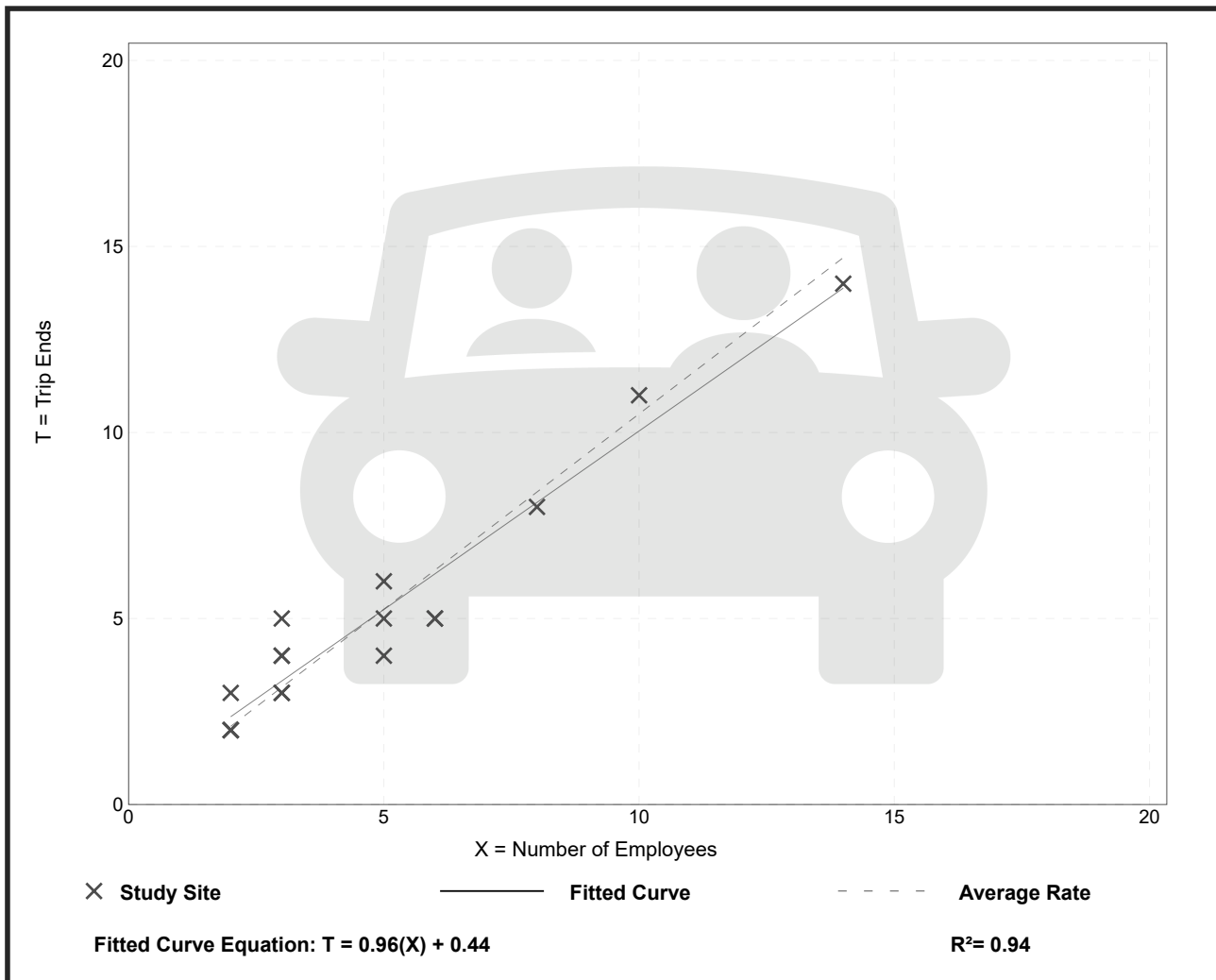
Avg. Num. of Employees: 5

Directional Distribution: 85% entering, 15% exiting

## Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
1.05	0.80 - 1.67	0.20

## Data Plot and Equation



# Small Office Building (712)

**Vehicle Trip Ends vs: Employees**  
**On a: Weekday,**  
**Peak Hour of Adjacent Street Traffic,**  
**One Hour Between 4 and 6 p.m.**

**Setting/Location: General Urban/Suburban**

Number of Studies: 16

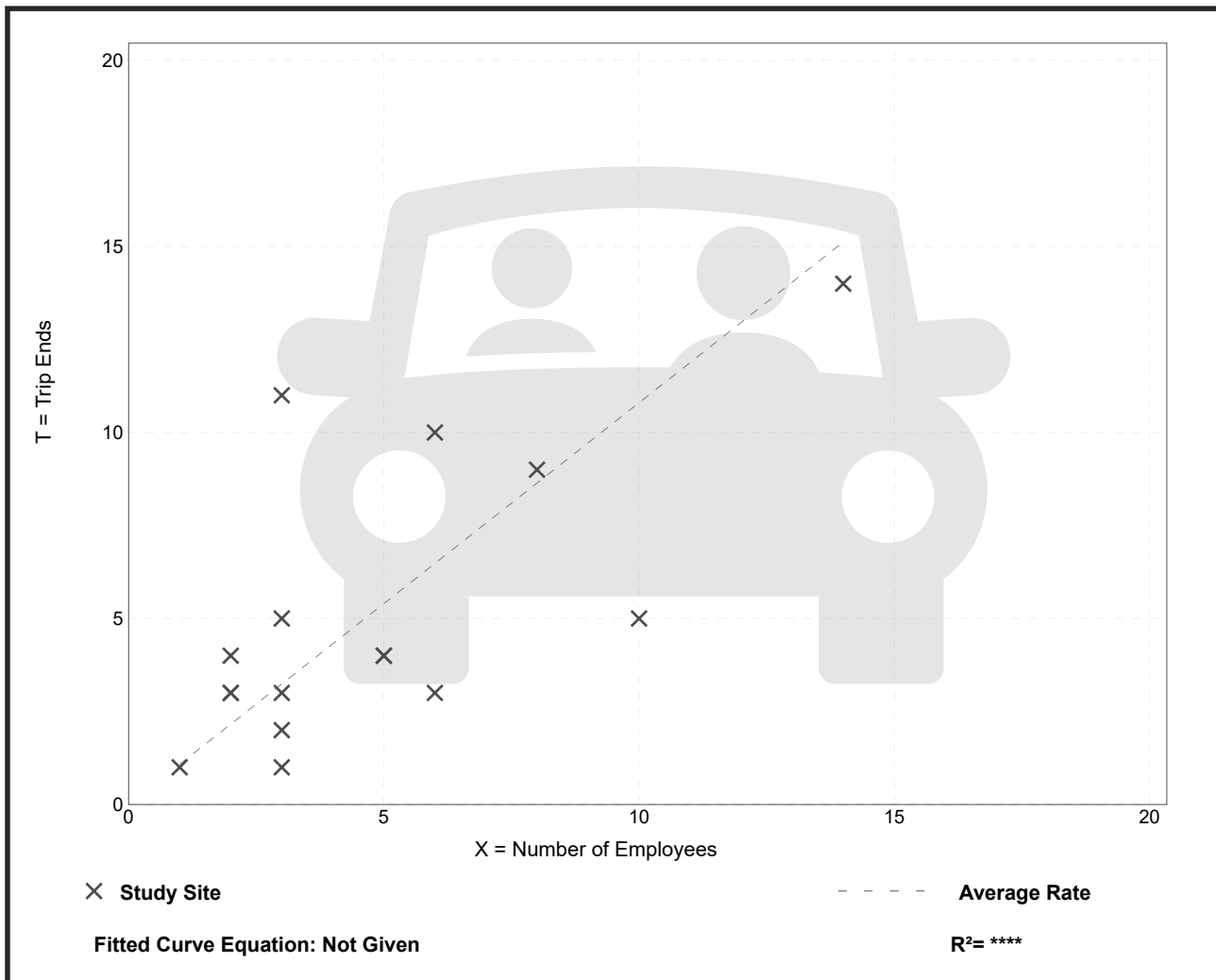
Avg. Num. of Employees: 5

Directional Distribution: 33% entering, 67% exiting

## Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
1.08	0.33 - 3.67	0.69

## Data Plot and Equation



# Graph Look Up



ITETripGen Web-based App

Graph Look Up

How to Use ITETripGen

TGM Desk Reference

TGM Appendices

Support Documents

Add Users

Comments

Query Filter

**DATA SOURCE:**

Trip Generation Manual, 11th Ed

**SEARCH BY LAND USE CODE:**

712

**LAND USE GROUP:**

(700-799) Office

**LAND USE :**

712 - Small Office Building

**LAND USE SUBCATEGORY:**

All Sites

**SETTING/LOCATION:**

General Urban/Suburban

**INDEPENDENT VARIABLE (IV):**

Employees

**TIME PERIOD:**

Weekday

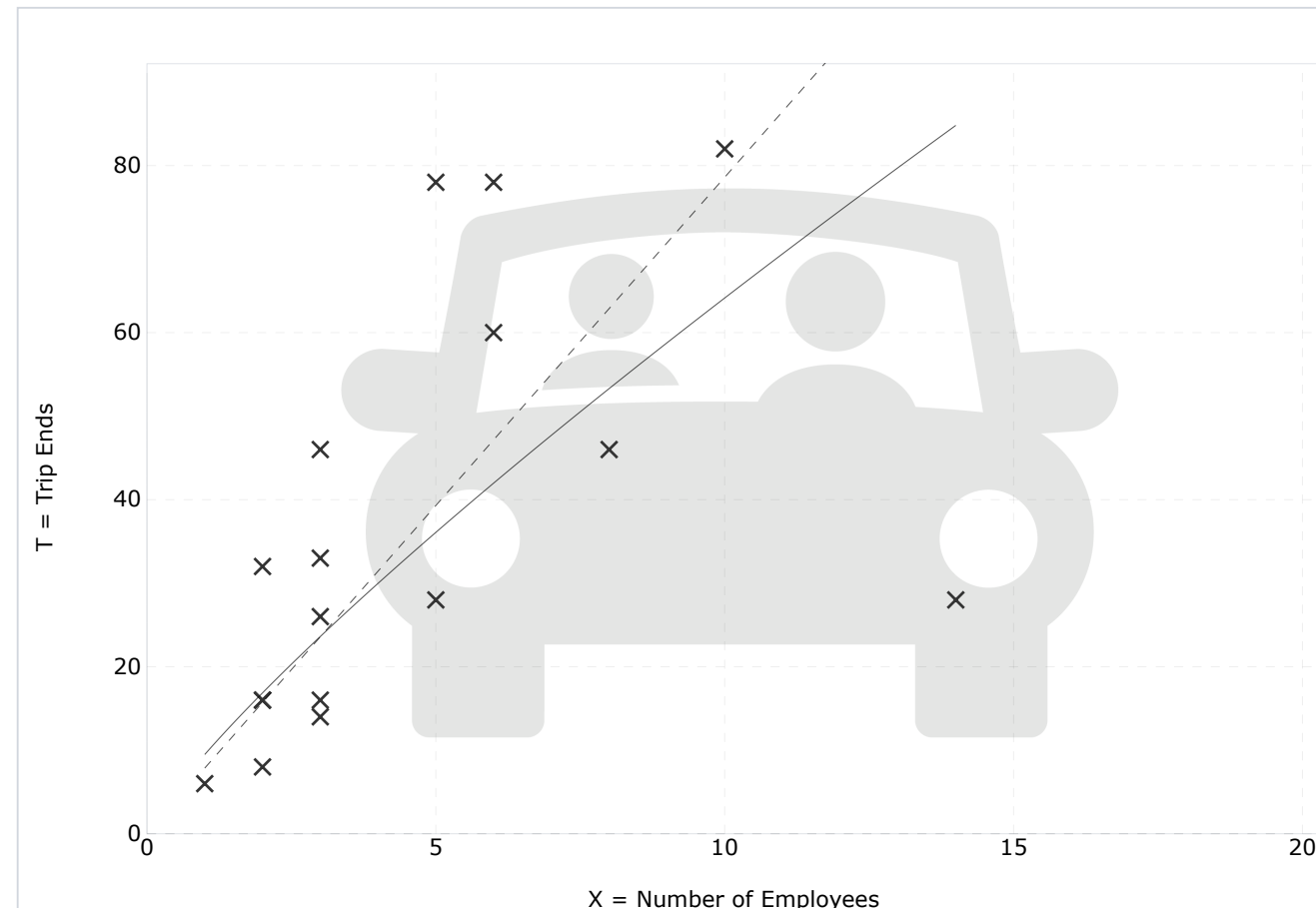
**TRIP TYPE:**

Vehicle

**ENTER IV VALUE TO CALCULATE TRIPS:**

25 Calculate

## Data Plot and Equation



Reset Zoom Restore

x Study Site — Fitted Curve - - - Average Rate

Use the mouse wheel to Zoom Out or Zoom In. Hover the mouse pointer on data points to view X and T values.

**DATA STATISTICS**

**Land Use:**  
Small Office Building (712) [Click for Description and Data Plots](#)

**Independent Variable:**  
Employees

**Time Period:**  
Weekday

**Setting/Location:**  
General Urban/Suburban

**Trip Type:**  
Vehicle

**Number of Studies:**  
17

**Avg. Num. of Employees:**  
5

**Average Rate:**  
7.86

**Range of Rates:**  
2.00 - 16.00

**Standard Deviation:**  
4.43

**Fitted Curve Equation:**  
 $\ln(T) = 0.83 \ln(X) + 2.25$

**R<sup>2</sup>:**  
0.52

**Directional Distribution:**  
50% entering, 50% exiting

**Calculated Trip Ends:**  
Average Rate: 197 (Total), 98 (Entry), 99 (Exit)  
Fitted Curve: 137 (Total), 69 (Entry), 68 (Exit)

Add-ons to do more

Try OTISS Pro



# Graph Look Up



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**DATA SOURCE:**

Trip Generation Manual, 11th Ed

**SEARCH BY LAND USE CODE:**

712

**LAND USE GROUP:**

(700-799) Office

**LAND USE :**

712 - Small Office Building

**LAND USE SUBCATEGORY:**

All Sites

**SETTING/LOCATION:**

General Urban/Suburban

**INDEPENDENT VARIABLE (IV):**

Employees

**TIME PERIOD:**

Weekday, Peak Hour of Adjacent Street Traffic

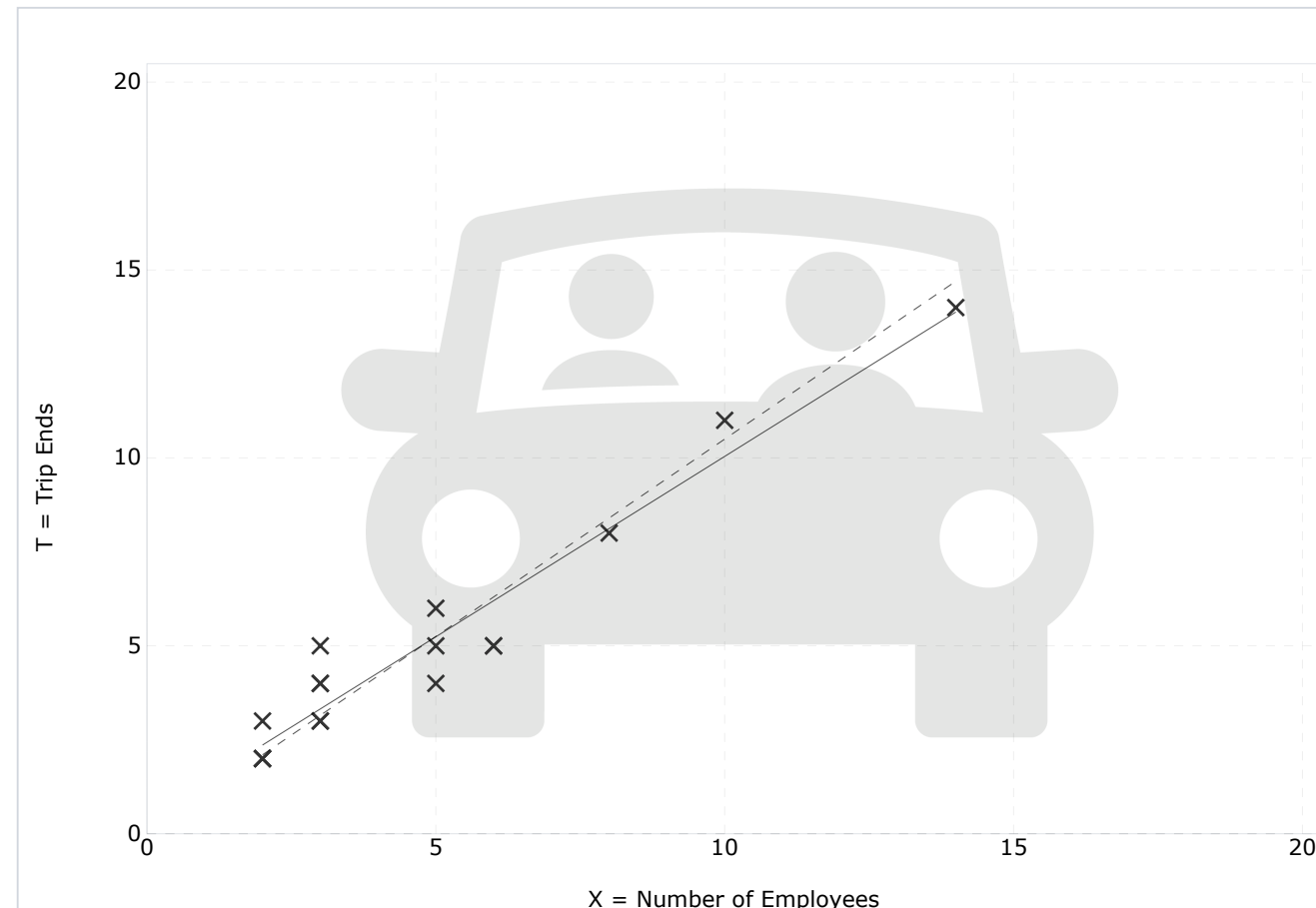
**TRIP TYPE:**

Vehicle

**ENTER IV VALUE TO CALCULATE TRIPS:**

25 Calculate

## Data Plot and Equation



Reset Zoom Restore

x Study Site — Fitted Curve - - - Average Rate

Use the mouse wheel to Zoom Out or Zoom In.  
Hover the mouse pointer on data points to view X and T values.

### DATA STATISTICS

**Land Use:**  
Small Office Building (712) [Click for Description and Data Plots](#)

**Independent Variable:**  
Employees

**Time Period:**  
Weekday  
Peak Hour of Adjacent Street Traffic  
One Hour Between 7 and 9 a.m.

**Setting/Location:**  
General Urban/Suburban

**Trip Type:**  
Vehicle

**Number of Studies:**  
17

**Avg. Num. of Employees:**  
5

**Average Rate:**  
1.05

**Range of Rates:**  
0.80 - 1.67

**Standard Deviation:**  
0.20

**Fitted Curve Equation:**  
 $T = 0.96(X) + 0.44$

**R<sup>2</sup>:**  
0.94

**Directional Distribution:**  
85% entering, 15% exiting

**Calculated Trip Ends:**  
Average Rate: 26 (Total), 22 (Entry), 4 (Exit)  
Fitted Curve: 24 (Total), 21 (Entry), 3 (Exit)



# Graph Look Up



ITETripGen Web-based App

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**DATA SOURCE:**

Trip Generation Manual, 11th Ed

**SEARCH BY LAND USE CODE:**

712

**LAND USE GROUP:**

(700-799) Office

**LAND USE :**

712 - Small Office Building

**LAND USE SUBCATEGORY:**

All Sites

**SETTING/LOCATION:**

General Urban/Suburban

**INDEPENDENT VARIABLE (IV):**

Employees

**TIME PERIOD:**

Weekday, Peak Hour of Adjacent Street Traffic

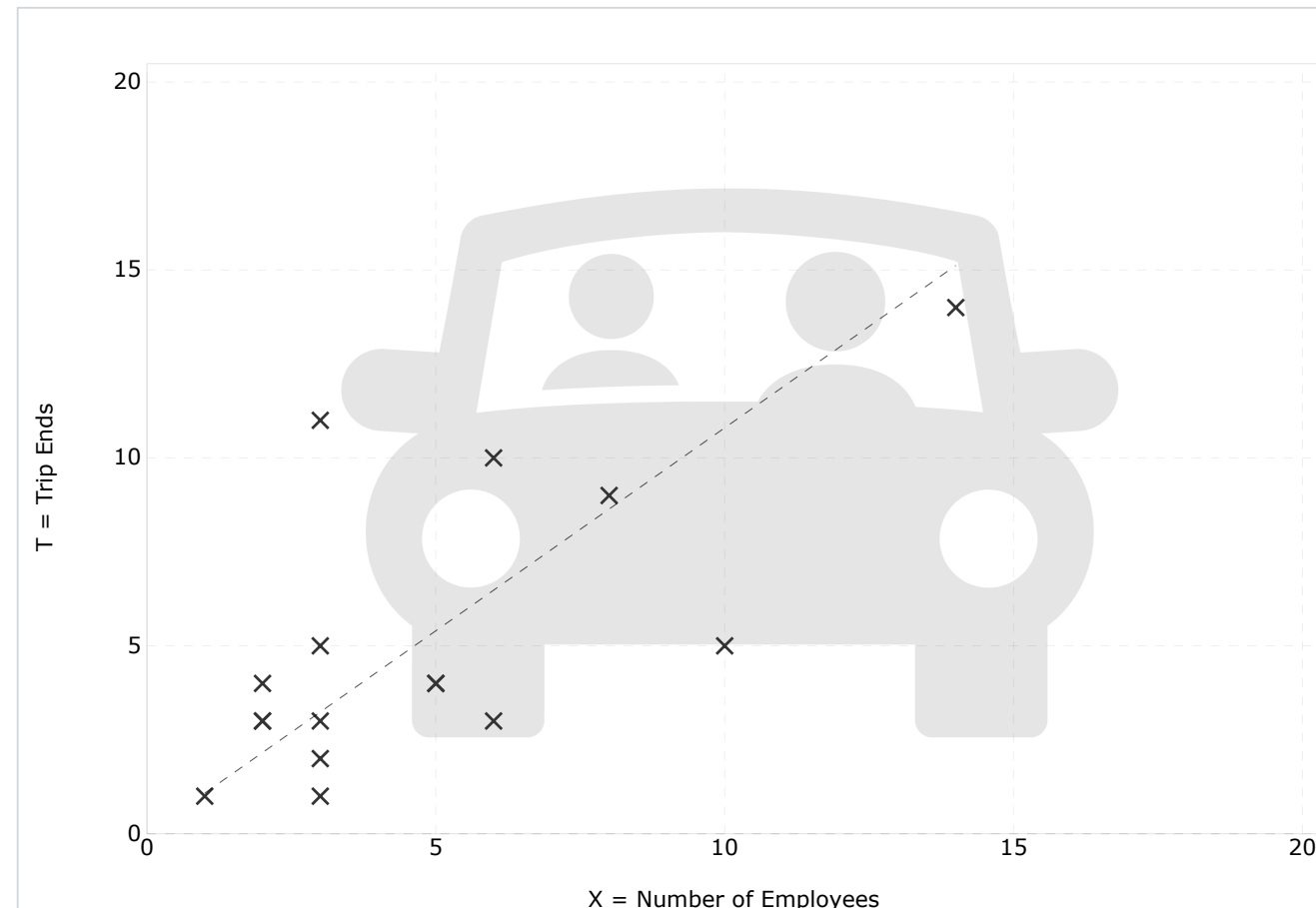
**TRIP TYPE:**

Vehicle

**ENTER IV VALUE TO CALCULATE TRIPS:**

25 Calculate

## Data Plot and Equation



Reset Zoom Restore

X Study Site --- Average Rate

Use the mouse wheel to Zoom Out or Zoom In. Hover the mouse pointer on data points to view X and T values.

**DATA STATISTICS**

**Land Use:**  
Small Office Building (712) [Click for Description and Data Plots](#)

**Independent Variable:**  
Employees

**Time Period:**  
Weekday  
Peak Hour of Adjacent Street Traffic  
One Hour Between 4 and 6 p.m.

**Setting/Location:**  
General Urban/Suburban

**Trip Type:**  
Vehicle

**Number of Studies:**  
16

**Avg. Num. of Employees:**  
5

**Average Rate:**  
1.08

**Range of Rates:**  
0.33 - 3.67

**Standard Deviation:**  
0.69

**Fitted Curve Equation:**  
Not Given

**R<sup>2</sup>:**  
\*\*\*\*

**Directional Distribution:**  
33% entering, 67% exiting

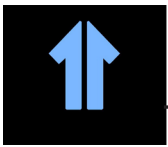
**Calculated Trip Ends:**  
Average Rate: 27 (Total), 9 (Entry), 18 (Exit)

Add-ons to do more

Try OTISS Pro







## **APPENDIX D**

### Signal Warrant Analysis Reports (2025 Buildout Volumes)

-US 421 SB & NC 902 EB U-Turn

### Highway Capacity Analysis Reports

-Bonlee-Carbonton Road (SR 1009)

-Bear Creek Church Road (SR 2306)

-Goldston-Glendon Road (SR 2303)

# SIGNAL WARRANT VOLUMES

**Location:** US-421 & SR-902

**City:** Goldston

**Control:** Signalized

## Data - Total

NS/EW Streets:	US-421				US-421				U-TURN	TOTAL
	NORTHBOUND				SOUTHBOUND				EASTBOUND	
	1 NL	2 NT	1 NR	0 NU	1 SL	2 ST	1 SR	0 SU	0 EL	
6:00 AM	0	112	0	0	2	69	0	0	10	193
6:15 AM	1	122	0	0	1	110	1	0	8	243
6:30 AM	0	106	2	0	4	102	4	0	22	240
6:45 AM	1	104	1	0	2	113	3	0	22	246
2 yrs @1.5% growth	2	444	3	0	9	394	8	0	62	922
Quarry employees	2	457	3	0	9	406	8	0	64	
Quarry trucks		1				6			3	
7:00 AM	1	108	3	0	4	117	3	0	19	255
7:15 AM	6	118	2	0	2	129	3	0	21	281
7:30 AM	11	122	7	0	4	130	7	0	30	311
7:45 AM	6	122	3	0	7	115	11	1	36	301
2 yrs @1.5% growth	24	470	15	0	17	491	24	1	106	1148
Quarry employees	25	484	15	0	18	506	25	1	109	
Quarry trucks		16				20			40	
8:00 AM	1	120	2	0	5	108	5	0	30	271
8:15 AM	1	122	7	0	7	108	2	0	15	262
8:30 AM	1	94	3	0	4	117	2	0	11	232
8:45 AM	0	112	5	0	6	109	4	0	14	250
2 yrs @1.5% growth	3	448	17	0	22	442	13	0	70	1015
Quarry employees	3	462	18	0	23	455	13	0	72	
Quarry trucks		16				20			40	
9:00 AM	6	114	1	1	3	110	7	0	12	254
9:15 AM	2	111	2	0	3	112	6	0	10	246
9:30 AM	4	92	1	0	2	107	6	0	14	226
9:45 AM	4	97	2	0	1	82	8	0	11	205
2 yrs @1.5% growth	16	414	6	1	9	411	27	0	47	931
Quarry employees	16	427	6	1	9	423	28	0	48	
Quarry trucks		16				20			40	
10:00 AM	4	113	1	0	4	82	6	0	14	224
10:15 AM	5	103	2	0	2	97	9	0	3	221
10:30 AM	7	104	1	0	5	108	9	0	9	243
10:45 AM	4	102	1	0	1	93	8	0	13	222
2 yrs @1.5% growth	20	422	5	0	12	380	32	0	39	910
Quarry employees	21	435	5	0	12	391	33	0	40	
Quarry trucks		16				20			40	
11:00 AM	4	113	1	0	3	104	10	0	13	248
11:15 AM	1	93	0	0	2	112	4	0	12	224
11:30 AM	1	105	1	0	2	98	3	0	14	224
11:45 AM	2	95	1	0	4	107	8	0	11	228
2 yrs @1.5% growth	8	406	3	0	11	421	25	0	50	924
Quarry employees	8	418	3	0	11	434	26	0	52	
Quarry trucks		16				20			40	
12:00 PM	3	97	5	0	3	90	3	1	7	209
12:15 PM	5	77	1	0	2	96	1	0	18	200
12:30 PM	2	92	2	0	3	101	6	0	14	220
12:45 PM	6	106	3	0	2	95	5	0	12	229
2 yrs @1.5% growth	16	372	11	0	10	382	15	1	51	858
Quarry employees	16	383	11	0	10	394	15	1	53	
Quarry trucks		16				20			40	



# HCS Warrants Report

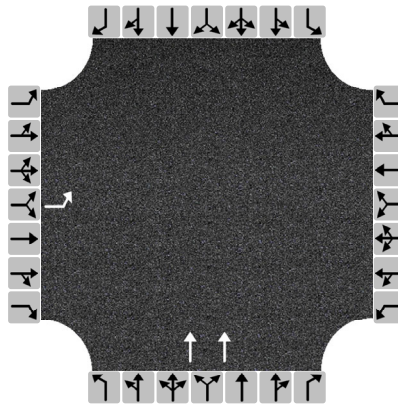
## Project Information

Analyst	ewsirgany	Date	1/16/2024
Agency	NCDOT	Analysis Year	2025
Jurisdiction	NCDOT	Time Period Analyzed	600 - 1900
Project Description	Goldston Quarry		

## General

Major Street Direction	North-South	Population < 10,000	Yes
Starting Time Interval	6	Coordinated Signal System	No
Median Type	Divided	Crashes (crashes/year)	0
Major Street Speed (mi/h)	60	Adequate Trials of Crash Exp. Alt.	No
Nearest Signal (ft)	0		

## Geometry and Traffic



Approach	Eastbound			Westbound			Northbound			Southbound		
Movement	L	T	R	L	T	R	L	T	R	L	T	R
Number of Lanes, N	1	0	0	0	0	0	0	2	0	0	0	0
Lane Usage	L							T				
Vehicle Volumes Averages (veh/h)	94	0	0	0	0	0	0	506	0	0	0	0
Pedestrian Averages (peds/h)	0			0			0			0		
Gap Averages (gaps/h)	0			0			0			0		
Delay (s/veh)	0.0			0.0			0.0			0.0		
Delay (veh-hrs)	0.0			0.0			0.0			0.0		

## School Crossing and Roadway Network

Number of Students in Highest Hour	0	Two or More Major Routes	No
Number of Adequate Gaps in Period	0	Weekend Counts	No
Number of Minutes in Period	0	5-year Growth Factor (%)	0

## Railroad Crossing

Grade Crossing Approach	None	Rail Traffic (trains/day)	4
Highest Volume Hour with Trains	Unknown	High Occupancy Buses (%)	0
Distance to Stop Line (ft)	-	Tractor-Trailer Trucks (%)	10

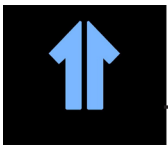
<b>Volume Summary</b>														
Hour	Major Volume	Minor Volume	Total Volume	Peds/h	Gaps/h	1A (70%)	1A (56%)	1B (70%)	1B (56%)	2 (70%)	3A (70%)	3B (56%)	4A (70%)	4B (56%)
07 - 08	463	67	530	0	0	No	No	No	No	No	No	No	No	No
08 - 09	540	149	689	0	0	Yes	Yes	No	Yes	No	No	No	No	No
09 - 10	499	112	621	0	0	Yes	Yes	No	No	No	No	No	No	No
10 - 11	466	88	554	0	0	No	Yes	No	No	No	No	No	No	No
11 - 12	477	80	557	0	0	No	No	No	No	No	No	No	No	No
12 - 13	445	92	537	0	0	No	Yes	No	No	No	No	No	No	No
13 - 14	426	93	519	0	0	No	Yes	No	No	No	No	No	No	No
14 - 15	452	96	548	0	0	No	Yes	No	No	No	No	No	No	No
15 - 16	487	86	573	0	0	No	Yes	No	No	No	No	No	No	No
16 - 17	548	107	655	0	0	Yes	Yes	No	Yes	No	No	No	No	No
17 - 18	683	117	800	0	0	Yes	Yes	Yes	Yes	Yes	No	No	No	No
18 - 19	597	41	638	0	0	No	No	No	No	No	No	No	No	No
Total	6083	1128	7221	0	0	4	9	1	3	1	0	0	0	0

**Warrants**

<b>Warrant 1: Eight-Hour Vehicular Volume</b>														
A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--														
B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--														
56% Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)														
<b>Warrant 2: Four-Hour Vehicular Volume</b>														
Four-Hour Vehicular Volume (Both major approaches --and-- higher minor approach)														
<b>Warrant 3: Peak Hour</b>														
A. Peak-Hour Conditions (Minor delay -- and-- minor volume --and-- total volume) --or--														
B. Peak-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)														
<b>Warrant 4: Pedestrian Volume</b>														
A. Four Hour Volumes --or--														
B. One-Hour Volumes														
<b>Warrant 5: School Crossing</b>														
Gaps Same Period --and--														
Student Volumes														
Nearest Traffic Control Signal (optional)														
<b>Warrant 6: Coordinated Signal System</b>														
Degree of Platooning (Predominant direction or both directions)														
<b>Warrant 7: Crash Experience</b>														
A. Adequate trials of alternatives, observance and enforcement failed --and--														
B. Reported crashes susceptible to correction by signal (12-month period) --and--														
C. 56% Volumes for Warrants 1A, 1B, --or-- 4 are satisfied														
<b>Warrant 8: Roadway Network</b>														
A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2, or 3) --or--														
B. Weekend Volume (Five hours total)														
<b>Warrant 9: Grade Crossing</b>														
A. Grade Crossing within 140 ft --and--														
B. Peak-Hour Vehicular Volumes														







# Highway Capacity Manual Output

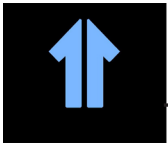
2023 Existing Conditions

2025 No Build Conditions

2025 Buildout Conditions







## Bonlee-Carbonton Road

# HCS Two-Lane Highway Report

## Project Information

Analyst	ewsirgany	Date	1/24/2024
Agency	NCDOT	Analysis Year	2023 Existing Conditions
Jurisdiction	Chatham County	Time Analyzed	
Project Description	Goldston Quarry - Bonlee Carbonton Road	Units	U.S. Customary

## Segment 1

## Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	8900
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

## Demand and Capacity

Directional Demand Flow Rate, veh/h	69	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.04

## Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	57.8
Speed Slope Coefficient (m)	3.72544	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.31252	PF Power Coefficient (p)	0.73976
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

## Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	8900	-	-	57.8

## Vehicle Results

Average Speed, mi/h	57.8	Percent Followers, %	16.6
Segment Travel Time, minutes	1.75	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

## Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	26	0.00	0.2	A

# HCS Two-Lane Highway Report

## Project Information

Analyst	ewsirgany	Date	1/24/2024
Agency	NCDOT	Analysis Year	2025 No Build Conditions
Jurisdiction	Chatham County	Time Analyzed	
Project Description	Goldston Quarry - Bonlee Carbonton Road	Units	U.S. Customary

## Segment 1

## Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	8900
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

## Demand and Capacity

Directional Demand Flow Rate, veh/h	71	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	5.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.04

## Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	57.8
Speed Slope Coefficient (m)	3.72544	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.31252	PF Power Coefficient (p)	0.73976
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.2
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

## Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	8900	-	-	57.8

## Vehicle Results

Average Speed, mi/h	57.8	Percent Followers, %	16.9
Segment Travel Time, minutes	1.75	Follower Density (FD), followers/mi/ln	0.2
Vehicle LOS	A		

## Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	27	0.00	0.2	A

# HCS Two-Lane Highway Report

## Project Information

Analyst	ewsirgany	Date	1/24/2024
Agency	NCDOT	Analysis Year	2025 Buildout Conditions
Jurisdiction	Chatham County	Time Analyzed	
Project Description	Goldston Quarry - Bonlee Carbonton Road	Units	U.S. Customary

## Segment 1

## Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	8900
Lane Width, ft	10	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

## Demand and Capacity

Directional Demand Flow Rate, veh/h	133	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	47.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.08

## Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	56.4
Speed Slope Coefficient (m)	3.64964	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.31814	PF Power Coefficient (p)	0.74205
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.6
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

## Subsegment Data

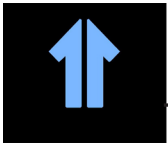
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	8900	-	-	55.6

## Vehicle Results

Average Speed, mi/h	55.6	Percent Followers, %	25.6
Segment Travel Time, minutes	1.82	Follower Density (FD), followers/mi/ln	0.6
Vehicle LOS	A		

## Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	51	0.01	0.6	A



## Bear Creek Church Road

# HCS Two-Lane Highway Report

## Project Information

Analyst	ewsirgany	Date	1/24/2024
Agency	NCDOT	Analysis Year	2023 Existing Conditions
Jurisdiction	Chatham County	Time Analyzed	
Project Description	Goldston Quarry - Bear Creek Church Road	Units	U.S. Customary

## Segment 1

## Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	19500
Lane Width, ft	9	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

## Demand and Capacity

Directional Demand Flow Rate, veh/h	70	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.04

## Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	57.4
Speed Slope Coefficient (m)	3.74477	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38972	PF Power Coefficient (p)	0.67476
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

## Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	19500	-	-	57.4

## Vehicle Results

Average Speed, mi/h	57.4	Percent Followers, %	20.6
Segment Travel Time, minutes	3.86	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

## Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	58	0.00	0.3	A

# HCS Two-Lane Highway Report

## Project Information

Analyst	ewsirgany	Date	1/24/2024
Agency	NCDOT	Analysis Year	2025 No Build Conditions
Jurisdiction	Chatham County	Time Analyzed	
Project Description	Goldston Quarry - Bear Creek Church Road	Units	U.S. Customary

## Segment 1

## Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	19500
Lane Width, ft	9	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

## Demand and Capacity

Directional Demand Flow Rate, veh/h	72	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	1.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.04

## Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	57.4
Speed Slope Coefficient (m)	3.74477	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38972	PF Power Coefficient (p)	0.67476
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.3
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

## Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	19500	-	-	57.4

## Vehicle Results

Average Speed, mi/h	57.4	Percent Followers, %	21.0
Segment Travel Time, minutes	3.86	Follower Density (FD), followers/mi/ln	0.3
Vehicle LOS	A		

## Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	60	0.00	0.3	A

# HCS Two-Lane Highway Report

## Project Information

Analyst	ewsirgany	Date	1/24/2024
Agency	NCDOT	Analysis Year	2025 Buildout Conditions
Jurisdiction	Chatham County	Time Analyzed	
Project Description	Goldston Quarry - Bear Creek Church Road	Units	U.S. Customary

## Segment 1

## Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	19500
Lane Width, ft	9	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

## Demand and Capacity

Directional Demand Flow Rate, veh/h	90	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	19.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.05

## Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	56.8
Speed Slope Coefficient (m)	3.71229	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.39224	PF Power Coefficient (p)	0.67579
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.4
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

## Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	19500	-	-	56.8

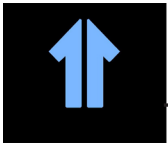
## Vehicle Results

Average Speed, mi/h	56.8	Percent Followers, %	23.9
Segment Travel Time, minutes	3.90	Follower Density (FD), followers/mi/ln	0.4
Vehicle LOS	A		

## Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	75	0.00	0.4	A





## Goldston-Glendon Road

# HCS Two-Lane Highway Report

## Project Information

Analyst	ewsirgany	Date	1/24/2024
Agency	NCDOT	Analysis Year	2023 Existing Conditions
Jurisdiction	Chatham County	Time Analyzed	
Project Description	Goldston Quarry - Goldston Glendon Road	Units	U.S. Customary

## Segment 1

## Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	14750
Lane Width, ft	9	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

## Demand and Capacity

Directional Demand Flow Rate, veh/h	9	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

## Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	57.4
Speed Slope Coefficient (m)	3.74034	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37351	PF Power Coefficient (p)	0.68624
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

## Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	14750	-	-	57.4

## Vehicle Results

Average Speed, mi/h	57.4	Percent Followers, %	5.2
Segment Travel Time, minutes	2.92	Follower Density (FD), followers/mi/ln	0.0
Vehicle LOS	A		

## Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	6	0.00	0.0	A

# HCS Two-Lane Highway Report

## Project Information

Analyst	ewsirgany	Date	1/24/2024
Agency	NCDOT	Analysis Year	2025 No Build Conditions
Jurisdiction	Chatham County	Time Analyzed	
Project Description	Goldston Quarry - Goldston Glendon Road	Units	U.S. Customary

## Segment 1

## Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	14750
Lane Width, ft	9	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

## Demand and Capacity

Directional Demand Flow Rate, veh/h	9	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	0.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

## Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	57.4
Speed Slope Coefficient (m)	3.74034	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.37351	PF Power Coefficient (p)	0.68624
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

## Subsegment Data

#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	14750	-	-	57.4

## Vehicle Results

Average Speed, mi/h	57.4	Percent Followers, %	5.2
Segment Travel Time, minutes	2.92	Follower Density (FD), followers/mi/ln	0.0
Vehicle LOS	A		

## Facility Results

T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	6	0.00	0.0	A

# HCS Two-Lane Highway Report

## Project Information

Analyst	ewsirgany	Date	1/24/2024
Agency	NCDOT	Analysis Year	2025 No Build Conditions
Jurisdiction	Chatham County	Time Analyzed	
Project Description	Goldston Quarry - Goldston Glendon Road	Units	U.S. Customary

## Segment 1

## Vehicle Inputs

Segment Type	Passing Constrained	Length, ft	14750
Lane Width, ft	9	Shoulder Width, ft	1
Speed Limit, mi/h	55	Access Point Density, pts/mi	0.0

## Demand and Capacity

Directional Demand Flow Rate, veh/h	18	Opposing Demand Flow Rate, veh/h	-
Peak Hour Factor	0.90	Total Trucks, %	80.00
Segment Capacity, veh/h	1700	Demand/Capacity (D/C)	0.01

## Intermediate Results

Segment Vertical Class	1	Free-Flow Speed, mi/h	54.7
Speed Slope Coefficient (m)	3.59595	Speed Power Coefficient (p)	0.41674
PF Slope Coefficient (m)	-1.38369	PF Power Coefficient (p)	0.69063
In Passing Lane Effective Length?	No	Total Segment Density, veh/mi/ln	0.0
%Improvement to Percent Followers	0.0	%Improvement to Speed	0.0

## Subsegment Data

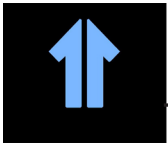
#	Segment Type	Length, ft	Radius, ft	Superelevation, %	Average Speed, mi/h
1	Tangent	14750	-	-	54.7

## Vehicle Results

Average Speed, mi/h	54.7	Percent Followers, %	8.2
Segment Travel Time, minutes	3.06	Follower Density (FD), followers/mi/ln	0.0
Vehicle LOS	A		

## Facility Results

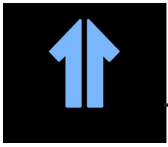
T	VMT veh-mi/AP	VHD veh-h/p	Follower Density, followers/ mi/ln	LOS
1	11	0.00	0.0	A



# APPENDIX E

## Synchro 11.1 Analysis Output

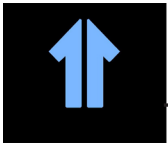




## 2023 EXISTING CONDITIONS


























## AM PEAK HOUR

2023 Existing Conditions AM Peak Hour  
1: US 421 & NC 902

Proposed Quarry  
Goldston, NC

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	78	21	15	39	15	24	482	14	19	482	26
Future Volume (vph)	39	78	21	15	39	15	24	482	14	19	482	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12
Grade (%)		3%			2%			-3%			3%	
Storage Length (ft)	0		0	0		0	250		250	325		100
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			300			225		
Satd. Flow (prot)	0	1611	0	0	1725	0	1466	3132	1438	1778	2963	1473
Flt Permitted		0.878			0.895		0.453			0.453		
Satd. Flow (perm)	0	1434	0	0	1561	0	699	3132	1438	848	2963	1473
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			60			60	
Link Distance (ft)		1337			1492			1849			1972	
Travel Time (s)		16.6			18.5			21.0			22.4	
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
Heavy Vehicles (%)	25%	0%	10%	0%	2%	0%	25%	17%	14%	0%	20%	8%
Adj. Flow (vph)	43	87	23	17	43	17	27	536	16	21	536	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	153	0	0	77	0	27	536	16	21	536	29
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			33			33	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.06	1.06	1.06	0.98	0.98	0.98	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		14.0	14.0	14.0	14.0	14.0	14.0
Minimum Split (s)	14.0	14.0		14.0	14.0		21.3	21.3	21.3	21.3	21.3	21.3
Total Split (s)	32.0	32.0		32.0	32.0		43.0	43.0	43.0	43.0	43.0	43.0
Total Split (%)	42.7%	42.7%		42.7%	42.7%		57.3%	57.3%	57.3%	57.3%	57.3%	57.3%
Maximum Green (s)	25.4	25.4		25.4	25.4		35.7	35.7	35.7	35.7	35.7	35.7
Yellow Time (s)	5.0	5.0		5.0	5.0		5.8	5.8	5.8	5.8	5.8	5.8
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)		-1.6			-1.6		-2.3	-2.3	-2.3	-2.3	-2.3	-2.3
Total Lost Time (s)		5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.5	3.5	3.5	3.5	3.5	3.5
Time Before Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0	15.0	15.0	15.0	15.0

2023 Existing Conditions AM Peak Hour  
1: US 421 & NC 902

Proposed Quarry  
Goldston, NC



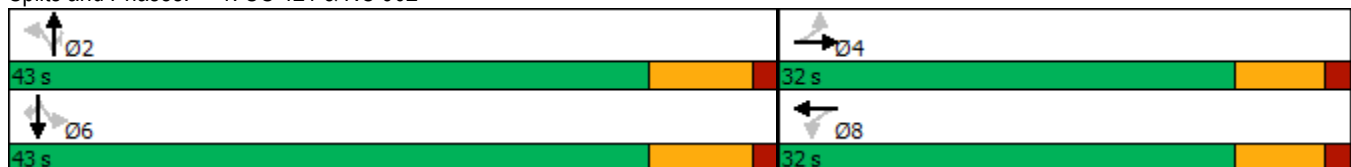
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time To Reduce (s)	0.0	0.0		0.0	0.0		45.0	45.0	45.0	45.0	45.0	45.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Act Effect Green (s)		10.6		10.6			22.4	22.4	22.4	22.4	22.4	22.4
Actuated g/C Ratio		0.27		0.27			0.57	0.57	0.57	0.57	0.57	0.57
v/c Ratio		0.40		0.18			0.07	0.30	0.02	0.04	0.32	0.03
Control Delay		15.5		12.5			7.0	7.0	6.3	6.6	7.2	6.4
Queue Delay		0.0		0.0			0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		15.5		12.5			7.0	7.0	6.3	6.6	7.2	6.4
LOS		B		B			A	A	A	A	A	A
Approach Delay		15.5		12.5				7.0			7.1	
Approach LOS		B		B				A			A	
Queue Length 50th (ft)		24		11			3	32	2	2	32	3
Queue Length 95th (ft)		71		39			14	71	9	11	72	13
Internal Link Dist (ft)		1257		1412				1769			1892	
Turn Bay Length (ft)							250		250	325		100
Base Capacity (vph)		1005		1094			663	2969	1363	804	2809	1396
Starvation Cap Reductn		0		0			0	0	0	0	0	0
Spillback Cap Reductn		0		0			0	0	0	0	0	0
Storage Cap Reductn		0		0			0	0	0	0	0	0
Reduced v/c Ratio		0.15		0.07			0.04	0.18	0.01	0.03	0.19	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 39.1  
 Natural Cycle: 40  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.40  
 Intersection Signal Delay: 8.3  
 Intersection Capacity Utilization 43.4%  
 Analysis Period (min) 15

Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 1: US 421 & NC 902



2023 Existing Conditions AM Peak Hour  
2: Old US 421 & NC 902

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	28	152	17	4	101	8	52	14	5	13	13	47
Future Volume (vph)	28	152	17	4	101	8	52	14	5	13	13	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Satd. Flow (prot)	0	1726	0	0	1680	0	0	1682	0	0	1616	0
Flt Permitted		0.993			0.998			0.965			0.991	
Satd. Flow (perm)	0	1726	0	0	1680	0	0	1682	0	0	1616	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1400			842			1770			1655	
Travel Time (s)		17.4			10.4			21.9			20.5	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	4%	5%	0%	25%	8%	0%	4%	7%	0%	8%	8%	0%
Adj. Flow (vph)	56	304	34	8	202	16	104	28	10	26	26	94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	394	0	0	226	0	0	142	0	0	146	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	34.5%
ICU Level of Service	A
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	12.8
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	152	17	4	101	8	52	14	5	13	13	47
Future Vol, veh/h	28	152	17	4	101	8	52	14	5	13	13	47
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	4	5	0	25	8	0	4	7	0	8	8	0
Mvmt Flow	56	304	34	8	202	16	104	28	10	26	26	94
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	14.8	12	11	10.4
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	73%	14%	4%	18%
Vol Thru, %	20%	77%	89%	18%
Vol Right, %	7%	9%	7%	64%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	71	197	113	73
LT Vol	52	28	4	13
Through Vol	14	152	101	13
RT Vol	5	17	8	47
Lane Flow Rate	142	394	226	146
Geometry Grp	1	1	1	1
Degree of Util (X)	0.238	0.567	0.361	0.229
Departure Headway (Hd)	6.025	5.177	5.743	5.644
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	594	697	626	634
Service Time	4.081	3.216	3.79	3.7
HCM Lane V/C Ratio	0.239	0.565	0.361	0.23
HCM Control Delay	11	14.8	12	10.4
HCM Lane LOS	B	B	B	B
HCM 95th-tile Q	0.9	3.6	1.6	0.9

2023 Existing Conditions AM Peak Hour  
 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Proposed Quarry  
 Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	7	154	5	8	48	15	4	22	33	10	7	4
Future Volume (vph)	7	154	5	8	48	15	4	22	33	10	7	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		2%			-2%			-1%			0%	
Satd. Flow (prot)	0	1688	0	0	1593	0	0	1642	0	0	1691	0
Flt Permitted		0.998			0.994			0.997			0.977	
Satd. Flow (perm)	0	1688	0	0	1593	0	0	1642	0	0	1691	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2123			2106			1669			1852	
Travel Time (s)		26.3			26.1			20.7			23.0	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	14%	7%	0%	13%	14%	7%	0%	5%	3%	0%	10%	0%
Adj. Flow (vph)	14	308	10	16	96	30	8	44	66	20	14	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	332	0	0	142	0	0	118	0	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	20.9%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	154	5	8	48	15	4	22	33	10	7	4
Future Vol, veh/h	7	154	5	8	48	15	4	22	33	10	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	2	-	-	-2	-	-	-1	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	14	7	0	13	14	7	0	5	3	0	10	0
Mvmt Flow	14	308	10	16	96	30	8	44	66	20	14	8

Major/Minor	Major1		Major2		Minor1			Minor2				
Conflicting Flow All	126	0	0	318	0	0	495	499	313	539	489	111
Stage 1	-	-	-	-	-	-	341	341	-	143	143	-
Stage 2	-	-	-	-	-	-	154	158	-	396	346	-
Critical Hdwy	4.24	-	-	4.23	-	-	6.9	6.35	6.13	7.1	6.6	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.35	-	6.1	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.35	-	6.1	5.6	-
Follow-up Hdwy	2.326	-	-	2.317	-	-	3.5	4.045	3.327	3.5	4.09	3.3
Pot Cap-1 Maneuver	1389	-	-	1182	-	-	502	482	731	456	468	948
Stage 1	-	-	-	-	-	-	691	645	-	865	763	-
Stage 2	-	-	-	-	-	-	860	768	-	633	621	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1389	-	-	1182	-	-	476	469	731	377	455	948
Mov Cap-2 Maneuver	-	-	-	-	-	-	476	469	-	377	455	-
Stage 1	-	-	-	-	-	-	683	637	-	855	752	-
Stage 2	-	-	-	-	-	-	824	756	-	530	614	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.3		0.9		12.7		13.7	
HCM LOS					B		B	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	587	1389	-	-	1182	-	-	455
HCM Lane V/C Ratio	0.201	0.01	-	-	0.014	-	-	0.092
HCM Control Delay (s)	12.7	7.6	0	-	8.1	0	-	13.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0	-	-	0.3

2023 Existing Conditions AM Peak Hour  
5: Main St/Main St. & Chatham St

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	10	7	69	53	8
Future Volume (vph)	16	10	7	69	53	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			0%	0%	
Satd. Flow (prot)	1614	0	0	1779	1621	0
Flt Permitted	0.970			0.995		
Satd. Flow (perm)	1614	0	0	1779	1621	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	685			1304	773	
Travel Time (s)	13.3			25.4	15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	0%	0%	3%	11%	13%
Adj. Flow (vph)	18	11	8	77	59	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	85	68	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	19.5%
ICU Level of Service	A
Analysis Period (min)	15



Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	16	10	7	69	53	8
Future Vol, veh/h	16	10	7	69	53	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	0	0	3	11	13
Mvmt Flow	18	11	8	77	59	9

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	157	64	68	0	0
Stage 1	64	-	-	-	-
Stage 2	93	-	-	-	-
Critical Hdwy	6.86	6.4	4.1	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-
Follow-up Hdwy	3.554	3.3	2.2	-	-
Pot Cap-1 Maneuver	811	1002	1546	-	-
Stage 1	942	-	-	-	-
Stage 2	911	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	807	1002	1546	-	-
Mov Cap-2 Maneuver	807	-	-	-	-
Stage 1	937	-	-	-	-
Stage 2	911	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1546	-	872	-	-
HCM Lane V/C Ratio	0.005	-	0.033	-	-
HCM Control Delay (s)	7.3	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

2023 Existing Conditions AM Peak Hour  
6: Main St & Pittsboro-Goldston Rd

Proposed Quarry  
Goldston, NC



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	47	29	47	80	20	42
Future Volume (vph)	47	29	47	80	20	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	12	12	15
Satd. Flow (prot)	1549	0	1602	0	0	1870
Flt Permitted	0.970					0.984
Satd. Flow (perm)	1549	0	1602	0	0	1870
Link Speed (mph)	35		20			35
Link Distance (ft)	1790		403			1304
Travel Time (s)	34.9		13.7			25.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	19%	3%	2%	3%	10%	10%
Parking (#/hr)			8			
Adj. Flow (vph)	52	32	52	89	22	47
Shared Lane Traffic (%)						
Lane Group Flow (vph)	84	0	141	0	0	69
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.07	1.00	1.00	0.88
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.1%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	47	29	47	80	20	42
Future Vol, veh/h	47	29	47	80	20	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	19	3	2	3	10	10
Mvmt Flow	52	32	52	89	22	47

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	188	97	0	0	141	0
Stage 1	97	-	-	-	-	-
Stage 2	91	-	-	-	-	-
Critical Hdwy	6.59	6.23	-	-	4.2	-
Critical Hdwy Stg 1	5.59	-	-	-	-	-
Critical Hdwy Stg 2	5.59	-	-	-	-	-
Follow-up Hdwy	3.671	3.327	-	-	2.29	-
Pot Cap-1 Maneuver	764	956	-	-	1394	-
Stage 1	886	-	-	-	-	-
Stage 2	892	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	752	956	-	-	1394	-
Mov Cap-2 Maneuver	752	-	-	-	-	-
Stage 1	886	-	-	-	-	-
Stage 2	878	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	819	1394
HCM Lane V/C Ratio	-	-	0.103	0.016
HCM Control Delay (s)	-	-	9.9	7.6
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0

2023 Existing Conditions AM Peak Hour  
7: Main St & Colonial Ave./Lancaster Dr

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	67	3	26	4	4	4	18	54	4	1	47	44
Future Volume (vph)	67	3	26	4	4	4	18	54	4	1	47	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	15	11	11	15	11
Satd. Flow (prot)	0	1561	0	0	1726	0	0	1434	0	0	1424	0
Flt Permitted		0.966			0.984			0.988				
Satd. Flow (perm)	0	1561	0	0	1726	0	0	1434	0	0	1424	0
Link Speed (mph)		35			20			20			20	
Link Distance (ft)		1448			341			475			336	
Travel Time (s)		28.2			11.6			16.2			11.5	
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
Heavy Vehicles (%)	3%	0%	27%	0%	0%	0%	67%	6%	0%	0%	13%	18%
Parking (#/hr)								12			12	
Adj. Flow (vph)	74	3	29	4	4	4	20	60	4	1	52	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	106	0	0	12	0	0	84	0	0	102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.11	1.04	1.04	1.11	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	28.0%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	67	3	26	4	4	4	18	54	4	1	47	44
Future Vol, veh/h	67	3	26	4	4	4	18	54	4	1	47	44
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	0	27	0	0	0	67	6	0	0	13	18
Mvmt Flow	74	3	29	4	4	4	20	60	4	1	52	49

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	185	183	77	197	205	62	101	0	0	64	0	0
Stage 1	79	79	-	102	102	-	-	-	-	-	-	-
Stage 2	106	104	-	95	103	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.5	6.47	7.1	6.5	6.2	4.77	-	-	4.1	-	-
Critical Hdwy Stg 1	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.543	3.5	4	3.3	2.803	-	-	2.2	-	-
Pot Cap-1 Maneuver	774	715	919	766	695	1009	1168	-	-	1551	-	-
Stage 1	927	833	-	909	815	-	-	-	-	-	-	-
Stage 2	897	813	-	917	814	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	755	701	919	728	682	1009	1168	-	-	1551	-	-
Mov Cap-2 Maneuver	755	701	-	728	682	-	-	-	-	-	-	-
Stage 1	910	832	-	893	800	-	-	-	-	-	-	-
Stage 2	872	798	-	884	813	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	9.7	1.9	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1168	-	-	791	783	1551	-	-
HCM Lane V/C Ratio	0.017	-	-	0.135	0.017	0.001	-	-
HCM Control Delay (s)	8.1	0	-	10.3	9.7	7.3	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	0.1	0	-	-

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	7:05	7:05	7:05	7:05	7:05	7:05	7:05
End Time	7:45	7:45	7:45	7:45	7:45	7:45	7:45
Total Time (min)	40	40	40	40	40	40	40
Time Recorded (min)	30	30	30	30	30	30	30
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1473	1443	1472	1436	1426	1494	1550
Vehs Exited	1471	1438	1451	1425	1403	1483	1534
Starting Vehs	90	83	93	80	75	89	78
Ending Vehs	92	88	114	91	98	100	94
Travel Distance (mi)	2039	1991	2011	1959	1865	2013	2125
Travel Time (hr)	49.0	47.4	48.5	47.2	44.5	48.1	51.1
Total Delay (hr)	7.1	6.6	7.1	6.6	5.9	6.6	7.0
Total Stops	1194	1136	1160	1132	1068	1151	1182
Fuel Used (gal)	71.4	70.8	71.2	69.6	65.5	71.6	74.3

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	7:05	7:05	7:05	7:05
End Time	7:45	7:45	7:45	7:45
Total Time (min)	40	40	40	40
Time Recorded (min)	30	30	30	30
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	1496	1453	1500	1471
Vehs Exited	1518	1478	1490	1470
Starting Vehs	113	106	86	74
Ending Vehs	91	81	96	79
Travel Distance (mi)	2094	2002	2102	2020
Travel Time (hr)	50.2	47.5	50.3	48.4
Total Delay (hr)	7.1	6.4	6.9	6.7
Total Stops	1201	1122	1184	1152
Fuel Used (gal)	73.4	70.8	73.8	71.2

Interval #0 Information Seeding

Start Time	7:05
End Time	7:15
Total Time (min)	10
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:15
End Time	7:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1473	1443	1472	1436	1426	1494	1550
Vehs Exited	1471	1438	1451	1425	1403	1483	1534
Starting Vehs	90	83	93	80	75	89	78
Ending Vehs	92	88	114	91	98	100	94
Travel Distance (mi)	2039	1991	2011	1959	1865	2013	2125
Travel Time (hr)	49.0	47.4	48.5	47.2	44.5	48.1	51.1
Total Delay (hr)	7.1	6.6	7.1	6.6	5.9	6.6	7.0
Total Stops	1194	1136	1160	1132	1068	1151	1182
Fuel Used (gal)	71.4	70.8	71.2	69.6	65.5	71.6	74.3

Interval #1 Information Recording

Start Time	7:15
End Time	7:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1496	1453	1500	1471
Vehs Exited	1518	1478	1490	1470
Starting Vehs	113	106	86	74
Ending Vehs	91	81	96	79
Travel Distance (mi)	2094	2002	2102	2020
Travel Time (hr)	50.2	47.5	50.3	48.4
Total Delay (hr)	7.1	6.4	6.9	6.7
Total Stops	1201	1122	1184	1152
Fuel Used (gal)	73.4	70.8	73.8	71.2

Queuing and Blocking Report  
 2023 Existing Conditions AM Peak

Chatham County Quarry

Intersection: 1: US 421 & NC 902

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	117	74	63	100	86	28	32	105	111	29
Average Queue (ft)	56	30	17	49	38	4	8	50	41	7
95th Queue (ft)	105	67	54	92	80	20	27	93	96	27
Link Distance (ft)	1233	1419		1784	1784			1902	1902	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			250			250	325			100
Storage Blk Time (%)									0	
Queuing Penalty (veh)									0	

Intersection: 2: Old US 421 & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	114	91	71	68
Average Queue (ft)	64	49	37	36
95th Queue (ft)	102	82	63	59
Link Distance (ft)	1331	782	1738	1623
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	9	28	56	32
Average Queue (ft)	1	3	30	16
95th Queue (ft)	8	18	51	32
Link Distance (ft)	2090	2043	1608	1816
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				



Queuing and Blocking Report  
 2023 Existing Conditions AM Peak

Chatham County Quarry

Intersection: 5: Main St/Main St. & Chatham St

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	31	6
Average Queue (ft)	11	1
95th Queue (ft)	30	8
Link Distance (ft)	606	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Main St & Pittsboro-Goldston Rd

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	68	25
Average Queue (ft)	36	3
95th Queue (ft)	62	18
Link Distance (ft)	1760	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

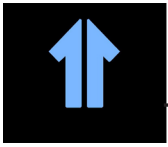
Intersection: 7: Main St & Colonial Ave./Lancaster Dr

Movement	EB	WB	NB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	59	33	45
Average Queue (ft)	31	12	6
95th Queue (ft)	55	36	32
Link Distance (ft)	1378	308	417
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 0

























## PM PEAK HOUR

2023 Existing Conditions PM Peak Hour  
1: US 421 & NC 902

Proposed Quarry  
Goldston, NC

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	24	9	10	60	26	18	616	16	26	683	29
Future Volume (vph)	26	24	9	10	60	26	18	616	16	26	683	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	12	12	12	12	12	12
Grade (%)		3%			2%			-3%			3%	
Storage Length (ft)	0		0	0		0	250		250	325		100
Storage Lanes	0		0	0		0	1		1	1		1
Taper Length (ft)	25			25			300			225		
Satd. Flow (prot)	0	1668	0	0	1619	0	1593	3132	1546	1693	2988	1544
Flt Permitted		0.825			0.953		0.364			0.392		
Satd. Flow (perm)	0	1406	0	0	1550	0	610	3132	1546	699	2988	1544
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		55			55			60			60	
Link Distance (ft)		1337			1492			1849			1972	
Travel Time (s)		16.6			18.5			21.0			22.4	
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
Heavy Vehicles (%)	4%	0%	15%	0%	7%	12%	15%	17%	6%	5%	19%	3%
Adj. Flow (vph)	29	27	10	11	67	29	20	684	18	29	759	32
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	66	0	0	107	0	20	684	18	29	759	32
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			33			33	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.07	1.07	1.07	1.06	1.06	1.06	0.98	0.98	0.98	1.02	1.02	1.02
Turning Speed (mph)	15		9	15		9	15		9	15		9
Turn Type	Perm	NA		Perm	NA		Perm	NA	Perm	Perm	NA	Perm
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	4	4		8	8		2	2	2	6	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		14.0	14.0	14.0	14.0	14.0	14.0
Minimum Split (s)	14.0	14.0		14.0	14.0		21.3	21.3	21.3	21.3	21.3	21.3
Total Split (s)	24.0	24.0		24.0	24.0		51.0	51.0	51.0	51.0	51.0	51.0
Total Split (%)	32.0%	32.0%		32.0%	32.0%		68.0%	68.0%	68.0%	68.0%	68.0%	68.0%
Maximum Green (s)	17.4	17.4		17.4	17.4		43.7	43.7	43.7	43.7	43.7	43.7
Yellow Time (s)	5.0	5.0		5.0	5.0		5.8	5.8	5.8	5.8	5.8	5.8
All-Red Time (s)	1.6	1.6		1.6	1.6		1.5	1.5	1.5	1.5	1.5	1.5
Lost Time Adjust (s)		-1.6			-1.6		-2.3	-2.3	-2.3	-2.3	-2.3	-2.3
Total Lost Time (s)		5.0			5.0		5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0		6.0	6.0	6.0	6.0	6.0	6.0
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.5	3.5	3.5	3.5	3.5	3.5
Time Before Reduce (s)	0.0	0.0		0.0	0.0		15.0	15.0	15.0	15.0	15.0	15.0

2023 Existing Conditions PM Peak Hour  
1: US 421 & NC 902

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Time To Reduce (s)	0.0	0.0		0.0	0.0		45.0	45.0	45.0	45.0	45.0	45.0
Recall Mode	None	None		None	None		Min	Min	Min	Min	Min	Min
Act Effect Green (s)		10.0			10.0		30.1	30.1	30.1	30.1	30.1	30.1
Actuated g/C Ratio		0.24			0.24		0.73	0.73	0.73	0.73	0.73	0.73
v/c Ratio		0.19			0.29		0.04	0.30	0.02	0.06	0.35	0.03
Control Delay		16.4			17.2		5.3	4.9	4.8	5.3	5.3	4.8
Queue Delay		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		16.4			17.2		5.3	4.9	4.8	5.3	5.3	4.8
LOS		B			B		A	A	A	A	A	A
Approach Delay		16.4			17.2			4.9				5.2
Approach LOS		B			B			A				A
Queue Length 50th (ft)		12			19		2	41	2	3	47	3
Queue Length 95th (ft)		45			65		10	81	8	12	95	12
Internal Link Dist (ft)		1257			1412			1769			1892	
Turn Bay Length (ft)							250		250	325		100
Base Capacity (vph)		676			746		589	3024	1493	675	2885	1491
Starvation Cap Reductn		0			0		0	0	0	0	0	0
Spillback Cap Reductn		0			0		0	0	0	0	0	0
Storage Cap Reductn		0			0		0	0	0	0	0	0
Reduced v/c Ratio		0.10			0.14		0.03	0.23	0.01	0.04	0.26	0.02

Intersection Summary

Area Type: Other  
 Cycle Length: 75  
 Actuated Cycle Length: 41.2  
 Natural Cycle: 40  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.35  
 Intersection Signal Delay: 6.3  
 Intersection Capacity Utilization 41.7%  
 Analysis Period (min) 15

Intersection LOS: A  
 ICU Level of Service A

Splits and Phases: 1: US 421 & NC 902



2023 Existing Conditions PM Peak Hour  
2: Old US 421 & NC 902

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	41	97	28	7	85	7	14	16	5	13	21	22
Future Volume (vph)	41	97	28	7	85	7	14	16	5	13	21	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Satd. Flow (prot)	0	1667	0	0	1693	0	0	1719	0	0	1605	0
Flt Permitted		0.988			0.996			0.980			0.989	
Satd. Flow (perm)	0	1667	0	0	1693	0	0	1719	0	0	1605	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1400			842			1770			1655	
Travel Time (s)		17.4			10.4			21.9			20.5	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	5%	3%	20%	14%	7%	0%	0%	6%	0%	9%	0%	13%
Adj. Flow (vph)	82	194	56	14	170	14	28	32	10	26	42	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	332	0	0	198	0	0	70	0	0	112	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.0%
ICU Level of Service	A
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	10.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	41	97	28	7	85	7	14	16	5	13	21	22
Future Vol, veh/h	41	97	28	7	85	7	14	16	5	13	21	22
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	5	3	20	14	7	0	0	6	0	9	0	13
Mvmt Flow	82	194	56	14	170	14	28	32	10	26	42	44
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.2	9.9	9	9.3
HCM LOS	B	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	40%	25%	7%	23%
Vol Thru, %	46%	58%	86%	38%
Vol Right, %	14%	17%	7%	39%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	166	99	56
LT Vol	14	41	7	13
Through Vol	16	97	85	21
RT Vol	5	28	7	22
Lane Flow Rate	70	332	198	112
Geometry Grp	1	1	1	1
Degree of Util (X)	0.103	0.429	0.273	0.162
Departure Headway (Hd)	5.307	4.65	4.969	5.209
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	669	770	719	682
Service Time	3.392	2.705	3.033	3.287
HCM Lane V/C Ratio	0.105	0.431	0.275	0.164
HCM Control Delay	9	11.2	9.9	9.3
HCM Lane LOS	A	B	A	A
HCM 95th-tile Q	0.3	2.2	1.1	0.6

2023 Existing Conditions PM Peak Hour  
 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Proposed Quarry  
 Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	6	59	10	30	105	11	9	15	12	6	17	10
Future Volume (vph)	6	59	10	30	105	11	9	15	12	6	17	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		2%			-2%			-1%			0%	
Satd. Flow (prot)	0	1633	0	0	1698	0	0	1571	0	0	1699	0
Flt Permitted		0.996			0.990			0.988			0.991	
Satd. Flow (perm)	0	1633	0	0	1698	0	0	1571	0	0	1699	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2123			2106			1669			1852	
Travel Time (s)		26.3			26.1			20.7			23.0	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	33%	8%	0%	10%	6%	9%	10%	20%	0%	15%	0%	0%
Adj. Flow (vph)	12	118	20	60	210	22	18	30	24	12	34	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	150	0	0	292	0	0	72	0	0	66	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.5%
Analysis Period (min)	15
	ICU Level of Service A



Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	59	10	30	105	11	9	15	12	6	17	10
Future Vol, veh/h	6	59	10	30	105	11	9	15	12	6	17	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	2	-	-	-2	-	-	-1	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	33	8	0	10	6	9	10	20	0	15	0	0
Mvmt Flow	12	118	20	60	210	22	18	30	24	12	34	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	232	0	0	138	0	0	520	504	128	520	503	221
Stage 1	-	-	-	-	-	-	152	152	-	341	341	-
Stage 2	-	-	-	-	-	-	368	352	-	179	162	-
Critical Hdwy	4.43	-	-	4.2	-	-	7	6.5	6.1	7.25	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6	5.5	-	6.25	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6	5.5	-	6.25	5.5	-
Follow-up Hdwy	2.497	-	-	2.29	-	-	3.59	4.18	3.3	3.635	4	3.3
Pot Cap-1 Maneuver	1173	-	-	1398	-	-	468	458	931	447	474	824
Stage 1	-	-	-	-	-	-	839	745	-	648	642	-
Stage 2	-	-	-	-	-	-	649	613	-	793	768	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1173	-	-	1398	-	-	411	431	931	394	446	824
Mov Cap-2 Maneuver	-	-	-	-	-	-	411	431	-	394	446	-
Stage 1	-	-	-	-	-	-	830	737	-	641	611	-
Stage 2	-	-	-	-	-	-	569	583	-	733	760	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			1.6			13.1			13.2		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	517	1173	-	-	1398	-	-	504
HCM Lane V/C Ratio	0.139	0.01	-	-	0.043	-	-	0.131
HCM Control Delay (s)	13.1	8.1	0	-	7.7	0	-	13.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.4

2023 Existing Conditions PM Peak Hour  
5: Main St/Main St. & Chatham St

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	10	19	66	66	5
Future Volume (vph)	16	10	19	66	66	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			0%	0%	
Satd. Flow (prot)	1613	0	0	1775	1636	0
Flt Permitted	0.970			0.989		
Satd. Flow (perm)	1613	0	0	1775	1636	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	685			1304	773	
Travel Time (s)	13.3			25.4	15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	10%	0%	3%	11%	13%
Adj. Flow (vph)	18	11	21	73	73	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	94	79	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	21.2%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		
Traffic Vol, veh/h	16	10	19	66	66	5
Future Vol, veh/h	16	10	19	66	66	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	10	0	3	11	13
Mvmt Flow	18	11	21	73	73	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	191	76	79	0	0
Stage 1	76	-	-	-	-
Stage 2	115	-	-	-	-
Critical Hdwy	6.8	6.5	4.1	-	-
Critical Hdwy Stg 1	5.8	-	-	-	-
Critical Hdwy Stg 2	5.8	-	-	-	-
Follow-up Hdwy	3.5	3.39	2.2	-	-
Pot Cap-1 Maneuver	786	959	1532	-	-
Stage 1	944	-	-	-	-
Stage 2	903	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	775	959	1532	-	-
Mov Cap-2 Maneuver	775	-	-	-	-
Stage 1	931	-	-	-	-
Stage 2	903	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	1.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1532	-	837	-	-
HCM Lane V/C Ratio	0.014	-	0.035	-	-
HCM Control Delay (s)	7.4	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

2023 Existing Conditions PM Peak Hour  
6: Main St & Pittsboro-Goldston Rd

Proposed Quarry  
Goldston, NC



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	67	14	66	41	12	64
Future Volume (vph)	67	14	66	41	12	64
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	12	12	15
Satd. Flow (prot)	1639	0	1664	0	0	1885
Flt Permitted	0.961					0.992
Satd. Flow (perm)	1639	0	1664	0	0	1885
Link Speed (mph)	35		20			35
Link Distance (ft)	1790		403			1304
Travel Time (s)	34.9		13.7			25.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	10%	3%	2%	3%	10%	10%
Parking (#/hr)			8			
Adj. Flow (vph)	74	16	73	46	13	71
Shared Lane Traffic (%)						
Lane Group Flow (vph)	90	0	119	0	0	84
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.07	1.00	1.00	0.88
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.9%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	14	66	41	12	64
Future Vol, veh/h	67	14	66	41	12	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	10	3	2	3	10	10
Mvmt Flow	74	16	73	46	13	71

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	193	96	0	0	119
Stage 1	96	-	-	-	-
Stage 2	97	-	-	-	-
Critical Hdwy	6.5	6.23	-	-	4.2
Critical Hdwy Stg 1	5.5	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-
Follow-up Hdwy	3.59	3.327	-	-	2.29
Pot Cap-1 Maneuver	778	958	-	-	1421
Stage 1	908	-	-	-	-
Stage 2	907	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	770	958	-	-	1421
Mov Cap-2 Maneuver	770	-	-	-	-
Stage 1	908	-	-	-	-
Stage 2	898	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	797	1421
HCM Lane V/C Ratio	-	-	0.113	0.009
HCM Control Delay (s)	-	-	10.1	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

2023 Existing Conditions PM Peak Hour  
7: Main St & Colonial Ave./Lancaster Dr

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	27	4	21	4	4	4	31	74	4	4	84	50
Future Volume (vph)	27	4	21	4	4	4	31	74	4	4	84	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	15	11	11	15	11
Satd. Flow (prot)	0	1505	0	0	1726	0	0	1399	0	0	1457	0
Flt Permitted		0.974			0.984			0.986			0.999	
Satd. Flow (perm)	0	1505	0	0	1726	0	0	1399	0	0	1457	0
Link Speed (mph)		35			20			20			20	
Link Distance (ft)		1448			341			475			336	
Travel Time (s)		28.2			11.6			16.2			11.5	
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
Heavy Vehicles (%)	3%	0%	27%	0%	0%	0%	67%	6%	0%	0%	13%	18%
Parking (#/hr)								12			12	
Adj. Flow (vph)	30	4	23	4	4	4	34	82	4	4	93	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	12	0	0	120	0	0	153	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.11	1.04	1.04	1.11	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	28.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	27	4	21	4	4	4	31	74	4	4	84	50
Future Vol, veh/h	27	4	21	4	4	4	31	74	4	4	84	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	0	27	0	0	0	67	6	0	0	13	18
Mvmt Flow	30	4	23	4	4	4	34	82	4	4	93	56

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	285	283	121	295	309	84	149	0	0	86	0	0
Stage 1	129	129	-	152	152	-	-	-	-	-	-	-
Stage 2	156	154	-	143	157	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.5	6.47	7.1	6.5	6.2	4.77	-	-	4.1	-	-
Critical Hdwy Stg 1	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4	3.543	3.5	4	3.3	2.803	-	-	2.2	-	-
Pot Cap-1 Maneuver	665	629	867	661	609	981	1117	-	-	1523	-	-
Stage 1	872	793	-	855	775	-	-	-	-	-	-	-
Stage 2	844	774	-	865	772	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	640	607	867	623	588	981	1117	-	-	1523	-	-
Mov Cap-2 Maneuver	640	607	-	623	588	-	-	-	-	-	-	-
Stage 1	844	791	-	828	750	-	-	-	-	-	-	-
Stage 2	808	749	-	834	770	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.5		10.3		2.4		0.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1117	-	-	712	694	1523	-	-
HCM Lane V/C Ratio	0.031	-	-	0.081	0.019	0.003	-	-
HCM Control Delay (s)	8.3	0	-	10.5	10.3	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.1	0	-	-

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	3:05	3:05	3:05	3:05	3:05	3:05	3:05
End Time	3:45	3:45	3:45	3:45	3:45	3:45	3:45
Total Time (min)	40	40	40	40	40	40	40
Time Recorded (min)	30	30	30	30	30	30	30
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1483	1583	1560	1511	1533	1539	1542
Vehs Exited	1496	1547	1557	1492	1553	1529	1564
Starting Vehs	90	82	99	71	107	88	103
Ending Vehs	77	118	102	90	87	98	81
Travel Distance (mi)	1897	2037	2066	1954	2028	1992	2040
Travel Time (hr)	44.9	47.5	48.3	45.1	47.2	46.6	48.1
Total Delay (hr)	5.7	6.0	6.0	5.4	6.0	6.1	6.2
Total Stops	967	1005	1019	980	981	1044	1043
Fuel Used (gal)	66.7	72.2	72.3	68.2	71.0	71.3	72.7

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	3:05	3:05	3:05	3:05
End Time	3:45	3:45	3:45	3:45
Total Time (min)	40	40	40	40
Time Recorded (min)	30	30	30	30
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	1596	1544	1528	1536
Vehs Exited	1590	1535	1540	1537
Starting Vehs	92	95	96	74
Ending Vehs	98	104	84	72
Travel Distance (mi)	2073	1971	1941	2000
Travel Time (hr)	48.8	46.6	45.5	46.9
Total Delay (hr)	6.7	6.0	5.7	6.0
Total Stops	1092	1031	1006	1015
Fuel Used (gal)	73.8	70.5	68.4	70.7

Interval #0 Information Seeding

Start Time	3:05
End Time	3:15
Total Time (min)	10
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	



Interval #1 Information Recording

Start Time	3:15
End Time	3:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1483	1583	1560	1511	1533	1539	1542
Vehs Exited	1496	1547	1557	1492	1553	1529	1564
Starting Vehs	90	82	99	71	107	88	103
Ending Vehs	77	118	102	90	87	98	81
Travel Distance (mi)	1897	2037	2066	1954	2028	1992	2040
Travel Time (hr)	44.9	47.5	48.3	45.1	47.2	46.6	48.1
Total Delay (hr)	5.7	6.0	6.0	5.4	6.0	6.1	6.2
Total Stops	967	1005	1019	980	981	1044	1043
Fuel Used (gal)	66.7	72.2	72.3	68.2	71.0	71.3	72.7

Interval #1 Information Recording

Start Time	3:15
End Time	3:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1596	1544	1528	1536
Vehs Exited	1590	1535	1540	1537
Starting Vehs	92	95	96	74
Ending Vehs	98	104	84	72
Travel Distance (mi)	2073	1971	1941	2000
Travel Time (hr)	48.8	46.6	45.5	46.9
Total Delay (hr)	6.7	6.0	5.7	6.0
Total Stops	1092	1031	1006	1015
Fuel Used (gal)	73.8	70.5	68.4	70.7

Queuing and Blocking Report  
 2023 Existing Conditions PM Peak

Chatham County Quarry

Intersection: 1: US 421 & NC 902

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	LTR	LTR	L	T	T	R	L	T	T	R
Maximum Queue (ft)	78	110	37	103	100	22	39	109	112	30
Average Queue (ft)	30	50	11	47	38	4	11	55	50	5
95th Queue (ft)	69	98	32	94	89	18	32	101	105	23
Link Distance (ft)	1233	1419		1784	1784			1902	1902	
Upstream Blk Time (%)										
Queuing Penalty (veh)										
Storage Bay Dist (ft)			250			250	325			100
Storage Blk Time (%)									1	
Queuing Penalty (veh)									0	

Intersection: 2: Old US 421 & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	89	77	48	75
Average Queue (ft)	49	46	26	35
95th Queue (ft)	80	72	46	61
Link Distance (ft)	1331	782	1738	1623
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	31	48	62	46
Average Queue (ft)	2	9	25	22
95th Queue (ft)	20	36	53	41
Link Distance (ft)	2090	2043	1608	1816
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Queuing and Blocking Report  
 2023 Existing Conditions PM Peak

Chatham County Quarry

Intersection: 5: Main St/Main St. & Chatham St

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	40	12
Average Queue (ft)	13	1
95th Queue (ft)	33	11
Link Distance (ft)	606	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Main St & Pittsboro-Goldston Rd

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	63	25
Average Queue (ft)	35	2
95th Queue (ft)	59	16
Link Distance (ft)	1760	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

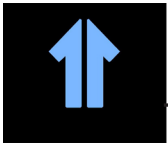
Intersection: 7: Main St & Colonial Ave./Lancaster Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	46	30	62	16
Average Queue (ft)	22	9	11	1
95th Queue (ft)	45	31	46	15
Link Distance (ft)	1378	308	417	259
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 0

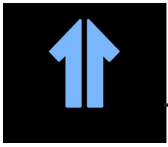




## 2025 NO BUILD CONDITIONS

- Background Growth
- US 421 Conversion to RCUT intersections





## AM PEAK HOUR

2025 No Build Conditions AM Peak Hour  
2004: US 421 SB & NC 902

Proposed Quarry  
Goldston, NC


































Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (vph)	0	0	142	0	0	0	0	512	67	25	0
Future Volume (vph)	0	0	142	0	0	0	0	512	67	25	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	11	11	12	12	11	11
Grade (%)	3%			-3%			3%			-3%	
Storage Length (ft)	0	0		0		0	0		100	0	0
Storage Lanes	0	1		0		0	0		1	1	0
Taper Length (ft)	25			300			225			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00
Frt			0.865						0.850		
Flt Protected										0.950	
Satd. Flow (prot)	0	0	1436	0	0	0	0	2988	1515	1417	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1436	0	0	0	0	2988	1515	1417	0
Link Speed (mph)	55				60			60		35	
Link Distance (ft)	1288				1872			285		392	
Travel Time (s)	16.0				21.3			3.2		7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	9%	0%	0%	0%	0%	19%	5%	25%	0%
Adj. Flow (vph)	0	0	158	0	0	0	0	569	74	28	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	158	0	0	0	0	569	74	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0				11			11		11	
Link Offset(ft)	0				0			0		0	
Crosswalk Width(ft)	16				16			16		16	
Two way Left Turn Lane											
Headway Factor	1.07	1.07	1.07	0.98	0.98	1.02	1.07	1.02	1.02	1.02	1.02
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop				Free			Free		Yield	
















Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.6%
Analysis Period (min)	15
	ICU Level of Service A



											
Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations								 			
Traffic Volume (veh/h)	0	0	142	0	0	0	0	512	67	25	0
Future Volume (Veh/h)	0	0	142	0	0	0	0	512	67	25	0
Sign Control	Stop			Free			Free		Yield		
Grade	3%			-3%			3%		-3%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	158	0	0	0	0	569	74	28	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type						None					
Median storage veh											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	583	569	284	643			0			643	0
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	583	569	284	643			0			643	0
tC, single (s)	7.5	6.5	7.1	4.1			4.1			7.0	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.4	2.2			2.2			4.2	3.3
p0 queue free %	100	100	77	100			100			92	100
cM capacity (veh/h)	375	434	692	951			1636			347	1091
Direction, Lane #											
	EB 1	SB 1	SB 2	SB 3	NW 1						
Volume Total	158	284	284	74	28						
Volume Left	0	0	0	0	0						
Volume Right	158	0	0	74	0						
cSH	692	1700	1700	1700	347						
Volume to Capacity	0.23	0.17	0.17	0.04	0.08						
Queue Length 95th (ft)	22	0	0	0	7						
Control Delay (s)	11.7	0.0	0.0	0.0	16.3						
Lane LOS	B				C						
Approach Delay (s)	11.7	0.0			16.3						
Approach LOS	B				C						
Intersection Summary											
Average Delay			2.8								
Intersection Capacity Utilization			29.6%		ICU Level of Service				A		
Analysis Period (min)			15								

											
Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	0	0	70	0	537	94	0	0	0	20	0
Future Volume (vph)	0	0	70	0	537	94	0	0	0	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	2%				-3%			0%		3%	
Storage Length (ft)	0	0		0		200	0		0	0	0
Storage Lanes	0	1		0		1	0		0	1	0
Taper Length (ft)	25			25			25			25	
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.865			0.850					
Flt Protected										0.950	
Satd. Flow (prot)	0	0	1542	0	3027	1554	0	0	0	1719	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1542	0	3027	1554	0	0	0	1719	0
Link Speed (mph)	55				60			35		35	
Link Distance (ft)	985				335			1685		356	
Travel Time (s)	12.2				3.8			32.8		6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	2%	0%	17%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	78	0	597	104	0	0	0	22	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	78	0	597	104	0	0	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0				11			11		11	
Link Offset(ft)	0				0			0		0	
Crosswalk Width(ft)	16				16			16		16	
Two way Left Turn Lane											
Headway Factor	1.06	1.06	1.06	1.02	1.02	1.02	1.04	1.04	1.04	1.07	1.07
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop				Free			Free		Yield	
<b>Intersection Summary</b>											
Area Type:	Other										
Control Type:	Unsignalized										
Intersection Capacity Utilization	25.8%					ICU Level of Service A					
Analysis Period (min)	15										

											
Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (veh/h)	0	0	70	0	537	94	0	0	0	20	0
Future Volume (Veh/h)	0	0	70	0	537	94	0	0	0	20	0
Sign Control	Stop				Free			Free		Yield	
Grade	2%				-3%			0%		3%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	78	0	597	104	0	0	0	22	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type	None					None					
Median storage veh											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	608	597	298	0			701			701	0
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	608	597	298	0			701			701	0
tC, single (s)	7.5	6.5	6.9	4.1			4.1			6.5	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			4.0	3.3
p0 queue free %	100	100	89	100			100			94	100
cM capacity (veh/h)	366	419	698	1636			905			365	1091
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SE 1						
Volume Total	78	298	298	104	22						
Volume Left	0	0	0	0	0						
Volume Right	78	0	0	104	0						
cSH	698	1700	1700	1700	365						
Volume to Capacity	0.11	0.18	0.18	0.06	0.06						
Queue Length 95th (ft)	9	0	0	0	5						
Control Delay (s)	10.8	0.0	0.0	0.0	15.5						
Lane LOS	B				C						
Approach Delay (s)	10.8	0.0			15.5						
Approach LOS	B				C						
Intersection Summary											
Average Delay			1.5								
Intersection Capacity Utilization			25.8%		ICU Level of Service				A		
Analysis Period (min)			15								



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↶					↷↷
Traffic Volume (vph)	55	0	0	0	0	544
Future Volume (vph)	55	0	0	0	0	544
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			-3%
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.95
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1711	0	0	0	0	3002
Flt Permitted	0.950					
Satd. Flow (perm)	1711	0	0	0	0	3002
Link Speed (mph)	35		60			60
Link Distance (ft)	167		1402			1185
Travel Time (s)	3.3		15.9			13.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	0%	0%	18%
Adj. Flow (vph)	61	0	0	0	0	604
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	0	0	0	604
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		11			16
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	37.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵					↑↑
Traffic Vol, veh/h	55	0	0	0	0	544
Future Vol, veh/h	55	0	0	0	0	544
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	-3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	0	0	18
Mvmt Flow	61	0	0	0	0	604

Major/Minor	Minor1	Major2	
Conflicting Flow All	302	-	-
Stage 1	0	-	-
Stage 2	302	-	-
Critical Hdwy	6.84	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	-	-
Pot Cap-1 Maneuver	665	0	0
Stage 1	-	0	-
Stage 2	724	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	665	-	-
Mov Cap-2 Maneuver	665	-	-
Stage 1	-	-	-
Stage 2	724	-	-

Approach	WB	SB
HCM Control Delay, s	11	0
HCM LOS	B	

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	665	-
HCM Lane V/C Ratio	0.092	-
HCM Control Delay (s)	11	-
HCM Lane LOS	B	-
HCM 95th %tile Q(veh)	0.3	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	120	0	0	536	0	0
Future Volume (vph)	120	0	0	536	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	1.00	1.00
<b>Fr</b>						
Flt Protected	0.950					
Satd. Flow (prot)	1616	0	0	2983	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1616	0	0	2983	0	0
Link Speed (mph)	35			60	60	
Link Distance (ft)	107			723	1498	
Travel Time (s)	2.1			8.2	17.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	8%	0%	0%	17%	0%	0%
Adj. Flow (vph)	133	0	0	596	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	133	0	0	596	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.1%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↑↑		
Traffic Vol, veh/h	120	0	0	536	0	0
Future Vol, veh/h	120	0	0	536	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	8	0	0	17	0	0
Mvmt Flow	133	0	0	596	0	0

Major/Minor	Minor2	Major1	
Conflicting Flow All	298	-	0
Stage 1	0	-	-
Stage 2	298	-	-
Critical Hdwy	6.96	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	5.96	-	-
Follow-up Hdwy	3.58	-	-
Pot Cap-1 Maneuver	653	0	0
Stage 1	-	0	0
Stage 2	709	0	0
Platoon blocked, %			-
Mov Cap-1 Maneuver	653	-	-
Mov Cap-2 Maneuver	653	-	-
Stage 1	-	-	-
Stage 2	709	-	-

Approach	EB	NB
HCM Control Delay, s	11.9	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBT EBLn1
Capacity (veh/h)	- 653
HCM Lane V/C Ratio	- 0.204
HCM Control Delay (s)	- 11.9
HCM Lane LOS	- B
HCM 95th %tile Q(veh)	- 0.8

2025 No Build Conditions AM Peak Hour  
2: Old US 421 & NC 902

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	29	157	18	4	104	8	54	14	5	13	13	48
Future Volume (vph)	29	157	18	4	104	8	54	14	5	13	13	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
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		0.988			0.991			0.991			0.912	
Flt Protected		0.993			0.998			0.964			0.991	
Satd. Flow (prot)	0	1726	0	0	1681	0	0	1682	0	0	1615	0
Flt Permitted		0.993			0.998			0.964			0.991	
Satd. Flow (perm)	0	1726	0	0	1681	0	0	1682	0	0	1615	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1400			842			1770			1655	
Travel Time (s)		17.4			10.4			21.9			20.5	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	4%	5%	0%	25%	8%	0%	4%	7%	0%	8%	8%	0%
Adj. Flow (vph)	58	314	36	8	208	16	108	28	10	26	26	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	408	0	0	232	0	0	146	0	0	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	35.0%
Analysis Period (min)	15
	ICU Level of Service A



Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	157	18	4	104	8	54	14	5	13	13	48
Future Vol, veh/h	29	157	18	4	104	8	54	14	5	13	13	48
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	4	5	0	25	8	0	4	7	0	8	8	0
Mvmt Flow	58	314	36	8	208	16	108	28	10	26	26	96
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.6	12.3	11.2	10.5
HCM LOS	C	B	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	74%	14%	3%	18%
Vol Thru, %	19%	77%	90%	18%
Vol Right, %	7%	9%	7%	65%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	73	204	116	74
LT Vol	54	29	4	13
Through Vol	14	157	104	13
RT Vol	5	18	8	48
Lane Flow Rate	146	408	232	148
Geometry Grp	1	1	1	1
Degree of Util (X)	0.248	0.591	0.374	0.235
Departure Headway (Hd)	6.103	5.219	5.803	5.72
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	587	690	619	625
Service Time	4.162	3.262	3.853	3.78
HCM Lane V/C Ratio	0.249	0.591	0.375	0.237
HCM Control Delay	11.2	15.6	12.3	10.5
HCM Lane LOS	B	C	B	B
HCM 95th-tile Q	1	3.9	1.7	0.9

2025 No Build Conditions AM Peak Hour  
 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Proposed Quarry  
 Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	7	159	5	8	49	15	4	23	34	10	7	4
Future Volume (vph)	7	159	5	8	49	15	4	23	34	10	7	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		2%			-2%			-1%			0%	
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		0.996			0.972			0.925			0.974	
Flt Protected		0.998			0.994			0.997			0.977	
Satd. Flow (prot)	0	1688	0	0	1594	0	0	1644	0	0	1670	0
Flt Permitted		0.998			0.994			0.997			0.977	
Satd. Flow (perm)	0	1688	0	0	1594	0	0	1644	0	0	1670	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2123			2106			1669			1852	
Travel Time (s)		26.3			26.1			20.7			23.0	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	14%	7%	0%	13%	14%	7%	0%	5%	3%	0%	14%	0%
Adj. Flow (vph)	14	318	10	16	98	30	8	46	68	20	14	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	0	0	144	0	0	122	0	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.2%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	159	5	8	49	15	4	23	34	10	7	4
Future Vol, veh/h	7	159	5	8	49	15	4	23	34	10	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	2	-	-	-2	-	-	-1	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	14	7	0	13	14	7	0	5	3	0	14	0
Mvmt Flow	14	318	10	16	98	30	8	46	68	20	14	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	128	0	0	328	0	0	507	511	323	553	501	113
Stage 1	-	-	-	-	-	-	351	351	-	145	145	-
Stage 2	-	-	-	-	-	-	156	160	-	408	356	-
Critical Hdwy	4.24	-	-	4.23	-	-	6.9	6.35	6.13	7.1	6.64	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.35	-	6.1	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.35	-	6.1	5.64	-
Follow-up Hdwy	2.326	-	-	2.317	-	-	3.5	4.045	3.327	3.5	4.126	3.3
Pot Cap-1 Maneuver	1387	-	-	1172	-	-	493	475	722	447	455	945
Stage 1	-	-	-	-	-	-	683	639	-	863	755	-
Stage 2	-	-	-	-	-	-	858	767	-	624	608	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1387	-	-	1172	-	-	467	462	722	367	443	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	467	462	-	367	443	-
Stage 1	-	-	-	-	-	-	675	631	-	853	744	-
Stage 2	-	-	-	-	-	-	822	755	-	518	601	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.9			12.9			14		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	579	1387	-	-	1172	-	-	444
HCM Lane V/C Ratio	0.211	0.01	-	-	0.014	-	-	0.095
HCM Control Delay (s)	12.9	7.6	0	-	8.1	0	-	14
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	0.3

2025 No Build Conditions AM Peak Hour  
5: Main St/Main St. & Chatham St

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	10	7	71	55	8
Future Volume (vph)	16	10	7	71	55	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			0%	0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.949				0.983	
Flt Protected	0.970			0.995		
Satd. Flow (prot)	1614	0	0	1779	1623	0
Flt Permitted	0.970			0.995		
Satd. Flow (perm)	1614	0	0	1779	1623	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	685			1304	773	
Travel Time (s)	13.3			25.4	15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	0%	0%	3%	11%	13%
Adj. Flow (vph)	18	11	8	79	61	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	87	70	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	19.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	16	10	7	71	55	8
Future Vol, veh/h	16	10	7	71	55	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	0	0	3	11	13
Mvmt Flow	18	11	8	79	61	9

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	161	66	70	0	0
Stage 1	66	-	-	-	-
Stage 2	95	-	-	-	-
Critical Hdwy	6.86	6.4	4.1	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-
Follow-up Hdwy	3.554	3.3	2.2	-	-
Pot Cap-1 Maneuver	806	1000	1544	-	-
Stage 1	940	-	-	-	-
Stage 2	909	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	802	1000	1544	-	-
Mov Cap-2 Maneuver	802	-	-	-	-
Stage 1	935	-	-	-	-
Stage 2	909	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1544	-	868	-	-
HCM Lane V/C Ratio	0.005	-	0.033	-	-
HCM Control Delay (s)	7.3	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	30	48	82	21	44
Future Volume (vph)	48	30	48	82	21	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	12	12	15
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.948		0.915			
Flt Protected	0.970					0.984
Satd. Flow (prot)	1581	0	1581	0	0	1824
Flt Permitted	0.970					0.984
Satd. Flow (perm)	1581	0	1581	0	0	1824
Link Speed (mph)	35		20			35
Link Distance (ft)	1790		403			1304
Travel Time (s)	34.9		13.7			25.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	17%	0%	4%	4%	25%	7%
Parking (#/hr)			8			
Adj. Flow (vph)	53	33	53	91	23	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	86	0	144	0	0	72
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.07	1.00	1.00	0.88
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.5%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	48	30	48	82	21	44
Future Vol, veh/h	48	30	48	82	21	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	17	0	4	4	25	7
Mvmt Flow	53	33	53	91	23	49

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	194	99	0	0	144
Stage 1	99	-	-	-	-
Stage 2	95	-	-	-	-
Critical Hdwy	6.57	6.2	-	-	4.35
Critical Hdwy Stg 1	5.57	-	-	-	-
Critical Hdwy Stg 2	5.57	-	-	-	-
Follow-up Hdwy	3.653	3.3	-	-	2.425
Pot Cap-1 Maneuver	762	962	-	-	1309
Stage 1	889	-	-	-	-
Stage 2	892	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	748	962	-	-	1309
Mov Cap-2 Maneuver	748	-	-	-	-
Stage 1	889	-	-	-	-
Stage 2	876	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	2.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	818	1309
HCM Lane V/C Ratio	-	-	0.106	0.018
HCM Control Delay (s)	-	-	9.9	7.8
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1

2025 No Build Conditions AM Peak Hour  
7: Main St & Colonial Ave./Lancaster Dr

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	69	3	27	4	4	4	19	56	4	4	48	45
Future Volume (vph)	69	3	27	4	4	4	19	56	4	4	48	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	15	11	11	15	11
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		0.963			0.955			0.994			0.937	
Flt Protected		0.966			0.984			0.988			0.998	
Satd. Flow (prot)	0	1561	0	0	1726	0	0	1431	0	0	1429	0
Flt Permitted		0.966			0.984			0.988			0.998	
Satd. Flow (perm)	0	1561	0	0	1726	0	0	1431	0	0	1429	0
Link Speed (mph)		35			20			20			20	
Link Distance (ft)		1448			341			475			336	
Travel Time (s)		28.2			11.6			16.2			11.5	
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
Heavy Vehicles (%)	3%	0%	27%	0%	0%	0%	67%	6%	0%	0%	13%	18%
Parking (#/hr)								12			12	
Adj. Flow (vph)	77	3	30	4	4	4	21	62	4	4	53	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	110	0	0	12	0	0	87	0	0	107	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.11	1.04	1.04	1.11	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	28.5%
ICU Level of Service	A
Analysis Period (min)	15



Intersection	
Intersection Delay, s/veh	8.2
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	69	3	27	4	4	4	19	56	4	4	48	45
Future Vol, veh/h	69	3	27	4	4	4	19	56	4	4	48	45
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
Heavy Vehicles, %	3	0	27	0	0	0	67	6	0	0	13	18
Mvmt Flow	77	3	30	4	4	4	21	62	4	4	53	50
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	7.5	9.3	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	24%	70%	33%	4%
Vol Thru, %	71%	3%	33%	49%
Vol Right, %	5%	27%	33%	46%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	79	99	12	97
LT Vol	19	69	4	4
Through Vol	56	3	4	48
RT Vol	4	27	4	45
Lane Flow Rate	88	110	13	108
Geometry Grp	1	1	1	1
Degree of Util (X)	0.133	0.135	0.016	0.121
Departure Headway (Hd)	5.464	4.418	4.367	4.033
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	660	814	822	892
Service Time	3.464	2.429	2.382	2.043
HCM Lane V/C Ratio	0.133	0.135	0.016	0.121
HCM Control Delay	9.3	8.1	7.5	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.5	0	0.4

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	7:05	7:05	7:05	7:05	7:05	7:05	7:05
End Time	7:45	7:45	7:45	7:45	7:45	7:45	7:45
Total Time (min)	40	40	40	40	40	40	40
Time Recorded (min)	30	30	30	30	30	30	30
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1431	1394	1416	1339	1340	1409	1445
Vehs Exited	1440	1405	1417	1318	1362	1405	1464
Starting Vehs	110	105	98	77	102	83	114
Ending Vehs	101	94	97	98	80	87	95
Travel Distance (mi)	2021	2030	2056	1883	1943	2036	1995
Travel Time (hr)	48.5	49.4	50.1	45.8	47.1	49.8	48.8
Total Delay (hr)	4.7	5.4	5.5	4.6	4.9	5.2	5.1
Total Stops	1226	1257	1256	1179	1211	1301	1233
Fuel Used (gal)	70.4	72.3	72.5	65.9	68.5	71.6	70.3

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	7:05	7:05	7:05	7:05
End Time	7:45	7:45	7:45	7:45
Total Time (min)	40	40	40	40
Time Recorded (min)	30	30	30	30
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	1448	1394	1336	1394
Vehs Exited	1436	1407	1346	1400
Starting Vehs	88	99	104	78
Ending Vehs	100	86	94	72
Travel Distance (mi)	2106	2012	1901	1998
Travel Time (hr)	50.8	48.2	46.1	48.5
Total Delay (hr)	5.1	4.8	4.8	5.0
Total Stops	1287	1225	1208	1236
Fuel Used (gal)	75.0	71.5	67.1	70.5

Interval #0 Information Seeding

Start Time	7:05
End Time	7:15
Total Time (min)	10
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:15
End Time	7:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1431	1394	1416	1339	1340	1409	1445
Vehs Exited	1440	1405	1417	1318	1362	1405	1464
Starting Vehs	110	105	98	77	102	83	114
Ending Vehs	101	94	97	98	80	87	95
Travel Distance (mi)	2021	2030	2056	1883	1943	2036	1995
Travel Time (hr)	48.5	49.4	50.1	45.8	47.1	49.8	48.8
Total Delay (hr)	4.7	5.4	5.5	4.6	4.9	5.2	5.1
Total Stops	1226	1257	1256	1179	1211	1301	1233
Fuel Used (gal)	70.4	72.3	72.5	65.9	68.5	71.6	70.3

Interval #1 Information Recording

Start Time	7:15
End Time	7:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1448	1394	1336	1394
Vehs Exited	1436	1407	1346	1400
Starting Vehs	88	99	104	78
Ending Vehs	100	86	94	72
Travel Distance (mi)	2106	2012	1901	1998
Travel Time (hr)	50.8	48.2	46.1	48.5
Total Delay (hr)	5.1	4.8	4.8	5.0
Total Stops	1287	1225	1208	1236
Fuel Used (gal)	75.0	71.5	67.1	70.5

Intersection: 2: Old US 421 & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	145	90	69	68
Average Queue (ft)	73	49	38	36
95th Queue (ft)	129	82	64	59
Link Distance (ft)	1331	782	1738	1623
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	18	38	73	47
Average Queue (ft)	1	5	34	19
95th Queue (ft)	12	28	62	40
Link Distance (ft)	2090	2043	1608	1816
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Main St/Main St. & Chatham St

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	35	11
Average Queue (ft)	13	1
95th Queue (ft)	31	11
Link Distance (ft)	606	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Main St & Pittsboro-Goldston Rd

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	72	37
Average Queue (ft)	37	4
95th Queue (ft)	66	25
Link Distance (ft)	1760	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Main St & Colonial Ave./Lancaster Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	54	28	72	71
Average Queue (ft)	30	8	43	42
95th Queue (ft)	50	29	72	70
Link Distance (ft)	1378	308	417	259
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2002: NC 902 WB U-Turn & US 421 SB

Movement	WB
Directions Served	L
Maximum Queue (ft)	48
Average Queue (ft)	29
95th Queue (ft)	49
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2004: US 421 SB & NC 902

Movement	EB	NW
Directions Served	>	L
Maximum Queue (ft)	97	59
Average Queue (ft)	41	17
95th Queue (ft)	83	53
Link Distance (ft)	1194	339
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3002: US 421 NB & NC 902 EB U-Turn

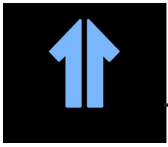
Movement	EB
Directions Served	L
Maximum Queue (ft)	73
Average Queue (ft)	45
95th Queue (ft)	72
Link Distance (ft)	66
Upstream Blk Time (%)	2
Queuing Penalty (veh)	2
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3004: US 421 NB & NC 902

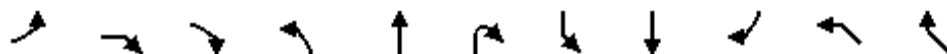
Movement	WB	NB	SE
Directions Served	>	R	L
Maximum Queue (ft)	35	2	36
Average Queue (ft)	16	0	13
95th Queue (ft)	31	3	38
Link Distance (ft)	924		304
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		200	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 2
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## PM PEAK HOUR



Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (vph)	0	0	61	0	0	0	0	714	92	19	0
Future Volume (vph)	0	0	61	0	0	0	0	714	92	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	11	11	12	12	11	11
Grade (%)	3%				-3%			3%		-3%	
Storage Length (ft)	0	0		0		0	0		100	0	0
Storage Lanes	0	1		0		0	0		1	1	0
Taper Length (ft)	25			300			225			25	
Satd. Flow (prot)	0	0	1519	0	0	0	0	3262	1487	1687	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1519	0	0	0	0	3262	1487	1687	0
Link Speed (mph)	55				60			60		35	
Link Distance (ft)	1288				1872			285		392	
Travel Time (s)	16.0				21.3			3.2		7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	3%	0%	0%	0%	0%	9%	7%	5%	0%
Adj. Flow (vph)	0	0	68	0	0	0	0	793	102	21	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	68	0	0	0	0	793	102	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0				11			11		11	
Link Offset(ft)	0				0			0		0	
Crosswalk Width(ft)	16				16			16		16	
Two way Left Turn Lane											
Headway Factor	1.07	1.07	1.07	0.98	0.98	1.02	1.07	1.02	1.02	1.02	1.02
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop				Free			Free		Yield	
















**Intersection Summary**
















Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.2%
ICU Level of Service	A
Analysis Period (min)	15



2025 No Build Conditions PM Peak Hour  
2004: US 421 SB & NC 902
















Proposed Quarry  
Goldston, NC

											
Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (veh/h)	0	0	61	0	0	0	0	714	92	19	0
Future Volume (Veh/h)	0	0	61	0	0	0	0	714	92	19	0
Sign Control	Stop				Free			Free		Yield	
Grade	3%				-3%			3%		-3%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	68	0	0	0	0	793	102	21	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type						None					
Median storage veh											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	804	793	396	895			0			895	0
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	804	793	396	895			0			895	0
tC, single (s)	7.5	6.5	7.0	4.1			4.1			6.6	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			4.0	3.3
p0 queue free %	100	100	89	100			100			92	100
cM capacity (veh/h)	261	323	600	767			1636			274	1091
Direction, Lane #											
	EB 1	SB 1	SB 2	SB 3	NW 1						
Volume Total	68	396	396	102	21						
Volume Left	0	0	0	0	0						
Volume Right	68	0	0	102	0						
cSH	600	1700	1700	1700	274						
Volume to Capacity	0.11	0.23	0.23	0.06	0.08						
Queue Length 95th (ft)	10	0	0	0	6						
Control Delay (s)	11.8	0.0	0.0	0.0	19.2						
Lane LOS	B				C						
Approach Delay (s)	11.8	0.0			19.2						
Approach LOS	B				C						
Intersection Summary											
Average Delay			1.2								
Intersection Capacity Utilization			30.2%		ICU Level of Service				A		
Analysis Period (min)			15								

											
Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	0	0	99	0	662	41	0	0	0	27	0
Future Volume (vph)	0	0	99	0	662	41	0	0	0	27	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	2%				-3%		0%			3%	
Storage Length (ft)	0	0		0		200	0		0	0	0
Storage Lanes	0	1		0		1	0		0	1	0
Taper Length (ft)	25			25			25			25	
Satd. Flow (prot)	0	0	1484	0	3053	1509	0	0	0	1653	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1484	0	3053	1509	0	0	0	1653	0
Link Speed (mph)	55				60		35			35	
Link Distance (ft)	985				335		1685			356	
Travel Time (s)	12.2				3.8		32.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	6%	0%	16%	5%	0%	0%	0%	4%	0%
Adj. Flow (vph)	0	0	110	0	736	46	0	0	0	30	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	110	0	736	46	0	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0				11		11			11	
Link Offset(ft)	0				0		0			0	
Crosswalk Width(ft)	16				16		16			16	
Two way Left Turn Lane											
Headway Factor	1.06	1.06	1.06	1.02	1.02	1.02	1.04	1.04	1.04	1.07	1.07
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop				Free		Free			Yield	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.1%
Analysis Period (min)	15
	ICU Level of Service A

											
Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (veh/h)	0	0	99	0	662	41	0	0	0	27	0
Future Volume (Veh/h)	0	0	99	0	662	41	0	0	0	27	0
Sign Control	Stop				Free			Free		Yield	
Grade	2%				-3%			0%		3%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	110	0	736	46	0	0	0	30	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type	None					None					
Median storage veh											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	751	736	368	0			782			782	0
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	751	736	368	0			782			782	0
tC, single (s)	7.5	6.5	7.0	4.1			4.1			6.6	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.4	2.2			2.2			4.0	3.3
p0 queue free %	100	100	82	100			100			91	100
cM capacity (veh/h)	281	349	618	1636			845			320	1091
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SE 1						
Volume Total	110	368	368	46	30						
Volume Left	0	0	0	0	0						
Volume Right	110	0	0	46	0						
cSH	618	1700	1700	1700	320						
Volume to Capacity	0.18	0.22	0.22	0.03	0.09						
Queue Length 95th (ft)	16	0	0	0	8						
Control Delay (s)	12.1	0.0	0.0	0.0	17.4						
Lane LOS	B				C						
Approach Delay (s)	12.1	0.0			17.4						
Approach LOS	B				C						
Intersection Summary											
Average Delay			2.0								
Intersection Capacity Utilization			31.1%		ICU Level of Service				A		
Analysis Period (min)			15								



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	0	0	0	0	761
Future Volume (vph)	72	0	0	0	0	761
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			-3%
Satd. Flow (prot)	1646	0	0	0	0	3250
Flt Permitted	0.950					
Satd. Flow (perm)	1646	0	0	0	0	3250
Link Speed (mph)	35		60			60
Link Distance (ft)	167		1402			1185
Travel Time (s)	3.3		15.9			13.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	0%	0%	0%	0%	9%
Adj. Flow (vph)	80	0	0	0	0	846
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	0	0	0	846
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		11			16
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	46.7%
	ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵					↑↑
Traffic Vol, veh/h	72	0	0	0	0	761
Future Vol, veh/h	72	0	0	0	0	761
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	-3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	0	0	0	0	9
Mvmt Flow	80	0	0	0	0	846

Major/Minor	Minor1	Major2	
Conflicting Flow All	423	-	-
Stage 1	0	-	-
Stage 2	423	-	-
Critical Hdwy	6.92	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	5.92	-	-
Follow-up Hdwy	3.56	-	-
Pot Cap-1 Maneuver	549	0	0
Stage 1	-	0	-
Stage 2	617	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	549	-	-
Mov Cap-2 Maneuver	549	-	-
Stage 1	-	-	-
Stage 2	617	-	-

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

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	549	-
HCM Lane V/C Ratio	0.146	-
HCM Control Delay (s)	12.7	-
HCM Lane LOS	B	-
HCM 95th %tile Q(veh)	0.5	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	52	0	0	670	0	0
Future Volume (vph)	52	0	0	670	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1711	0	0	3008	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1711	0	0	3008	0	0
Link Speed (mph)	35			60	60	
Link Distance (ft)	107			723	1498	
Travel Time (s)	2.1			8.2	17.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	16%	0%	0%
Adj. Flow (vph)	58	0	0	744	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	0	0	744	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.5%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↵			↑↑		
Traffic Vol, veh/h	52	0	0	670	0	0
Future Vol, veh/h	52	0	0	670	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	16	0	0
Mvmt Flow	58	0	0	744	0	0

Major/Minor	Minor2	Major1	
Conflicting Flow All	372	-	0
Stage 1	0	-	-
Stage 2	372	-	-
Critical Hdwy	6.84	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	-	-
Pot Cap-1 Maneuver	602	0	-
Stage 1	-	0	-
Stage 2	667	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	602	-	-
Mov Cap-2 Maneuver	602	-	-
Stage 1	-	-	-
Stage 2	667	-	-

Approach	EB	NB
HCM Control Delay, s	11.6	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBT	EBLn1
Capacity (veh/h)	-	602
HCM Lane V/C Ratio	-	0.096
HCM Control Delay (s)	-	11.6
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.3

2025 No Build Conditions PM Peak Hour  
2: Old US 421 & NC 902

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	42	100	29	7	88	7	14	16	5	13	22	23
Future Volume (vph)	42	100	29	7	88	7	14	16	5	13	22	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Satd. Flow (prot)	0	1673	0	0	1684	0	0	1719	0	0	1578	0
Flt Permitted		0.988			0.997			0.980			0.989	
Satd. Flow (perm)	0	1673	0	0	1684	0	0	1719	0	0	1578	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1400			842			1770			1655	
Travel Time (s)		17.4			10.4			21.9			20.5	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	5%	4%	14%	25%	7%	0%	0%	6%	0%	15%	0%	14%
Adj. Flow (vph)	84	200	58	14	176	14	28	32	10	26	44	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	0	0	204	0	0	70	0	0	116	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	26.3%
ICU Level of Service	A
Analysis Period (min)	15



Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	42	100	29	7	88	7	14	16	5	13	22	23
Future Vol, veh/h	42	100	29	7	88	7	14	16	5	13	22	23
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	5	4	14	25	7	0	0	6	0	15	0	14
Mvmt Flow	84	200	58	14	176	14	28	32	10	26	44	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	11.5	10.4	9.1	9.6
HCM LOS	B	B	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	40%	25%	7%	22%
Vol Thru, %	46%	58%	86%	38%
Vol Right, %	14%	17%	7%	40%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	171	102	58
LT Vol	14	42	7	13
Through Vol	16	100	88	22
RT Vol	5	29	7	23
Lane Flow Rate	70	342	204	116
Geometry Grp	1	1	1	1
Degree of Util (X)	0.105	0.445	0.294	0.173
Departure Headway (Hd)	5.379	4.687	5.193	5.368
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	659	763	687	661
Service Time	3.474	2.751	3.266	3.455
HCM Lane V/C Ratio	0.106	0.448	0.297	0.175
HCM Control Delay	9.1	11.5	10.4	9.6
HCM Lane LOS	A	B	B	A
HCM 95th-tile Q	0.4	2.3	1.2	0.6

2025 No Build Conditions PM Peak Hour  
 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Proposed Quarry  
 Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	6	61	10	31	108	11	9	15	12	6	18	10
Future Volume (vph)	6	61	10	31	108	11	9	15	12	6	18	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		2%			-2%			-1%			0%	
Satd. Flow (prot)	0	1633	0	0	1698	0	0	1568	0	0	1702	0
Flt Permitted		0.996			0.990			0.988			0.991	
Satd. Flow (perm)	0	1633	0	0	1698	0	0	1568	0	0	1702	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2123			2106			1669			1852	
Travel Time (s)		26.3			26.1			20.7			23.0	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	33%	8%	0%	10%	6%	9%	11%	20%	0%	15%	0%	0%
Adj. Flow (vph)	12	122	20	62	216	22	18	30	24	12	36	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	154	0	0	300	0	0	72	0	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.7%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	61	10	31	108	11	9	15	12	6	18	10
Future Vol, veh/h	6	61	10	31	108	11	9	15	12	6	18	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	2	-	-	-2	-	-	-1	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	33	8	0	10	6	9	11	20	0	15	0	0
Mvmt Flow	12	122	20	62	216	22	18	30	24	12	36	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	238	0	0	142	0	0	535	518	132	534	517	227
Stage 1	-	-	-	-	-	-	156	156	-	351	351	-
Stage 2	-	-	-	-	-	-	379	362	-	183	166	-
Critical Hdwy	4.43	-	-	4.2	-	-	7.01	6.5	6.1	7.25	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.01	5.5	-	6.25	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.01	5.5	-	6.25	5.5	-
Follow-up Hdwy	2.497	-	-	2.29	-	-	3.599	4.18	3.3	3.635	4	3.3
Pot Cap-1 Maneuver	1167	-	-	1393	-	-	456	450	926	437	465	817
Stage 1	-	-	-	-	-	-	833	742	-	639	636	-
Stage 2	-	-	-	-	-	-	638	607	-	789	765	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1167	-	-	1393	-	-	398	423	926	384	437	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	398	423	-	384	437	-
Stage 1	-	-	-	-	-	-	824	734	-	632	604	-
Stage 2	-	-	-	-	-	-	555	576	-	729	757	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			1.6			13.3			13.5		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	507	1167	-	-	1393	-	-	492
HCM Lane V/C Ratio	0.142	0.01	-	-	0.045	-	-	0.138
HCM Control Delay (s)	13.3	8.1	0	-	7.7	0	-	13.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0	-	-	0.1	-	-	0.5



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	10	20	68	68	5
Future Volume (vph)	16	10	20	68	68	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			0%	0%	
Satd. Flow (prot)	1449	0	0	1775	1769	0
Flt Permitted	0.970			0.989		
Satd. Flow (perm)	1449	0	0	1775	1769	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	685			1304	773	
Travel Time (s)	13.3			25.4	15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	0%	0%	3%	3%	0%
Adj. Flow (vph)	18	11	22	76	76	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	0	0	98	82	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	21.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	16	10	20	68	68	5
Future Vol, veh/h	16	10	20	68	68	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	25	0	0	3	3	0
Mvmt Flow	18	11	22	76	76	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	199	79	82	0	0
Stage 1	79	-	-	-	-
Stage 2	120	-	-	-	-
Critical Hdwy	7.05	6.4	4.1	-	-
Critical Hdwy Stg 1	6.05	-	-	-	-
Critical Hdwy Stg 2	6.05	-	-	-	-
Follow-up Hdwy	3.725	3.3	2.2	-	-
Pot Cap-1 Maneuver	724	983	1528	-	-
Stage 1	881	-	-	-	-
Stage 2	840	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	713	983	1528	-	-
Mov Cap-2 Maneuver	713	-	-	-	-
Stage 1	868	-	-	-	-
Stage 2	840	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	1.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1528	-	797	-	-
HCM Lane V/C Ratio	0.015	-	0.036	-	-
HCM Control Delay (s)	7.4	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

2025 No Build Conditions PM Peak Hour  
6: Main St & Pittsboro-Goldston Rd

Proposed Quarry  
Goldston, NC



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	69	14	67	42	12	66
Future Volume (vph)	69	14	67	42	12	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	12	12	15
Satd. Flow (prot)	1739	0	1593	0	0	2015
Flt Permitted	0.960					0.992
Satd. Flow (perm)	1739	0	1593	0	0	2015
Link Speed (mph)	35		20			35
Link Distance (ft)	1790		403			1304
Travel Time (s)	34.9		13.7			25.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	0%	5%	10%	8%	2%
Parking (#/hr)			8			
Adj. Flow (vph)	77	16	74	47	13	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	93	0	121	0	0	86
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.07	1.00	1.00	0.88
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.1%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	69	14	67	42	12	66
Future Vol, veh/h	69	14	67	42	12	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	0	5	10	8	2
Mvmt Flow	77	16	74	47	13	73

















Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	197	98	0	0	121
Stage 1	98	-	-	-	-
Stage 2	99	-	-	-	-
Critical Hdwy	6.43	6.2	-	-	4.18
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	2.272
Pot Cap-1 Maneuver	789	963	-	-	1430
Stage 1	923	-	-	-	-
Stage 2	922	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	782	963	-	-	1430
Mov Cap-2 Maneuver	782	-	-	-	-
Stage 1	923	-	-	-	-
Stage 2	914	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	808	1430
HCM Lane V/C Ratio	-	-	0.114	0.009
HCM Control Delay (s)	-	-	10	7.5
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

2025 No Build Conditions PM Peak Hour  
7: Main St & Colonial Ave./Lancaster Dr

Proposed Quarry  
Goldston, NC

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	4	22	4	4	4	32	76	4	4	87	52
Future Volume (vph)	28	4	22	4	4	4	32	76	4	4	87	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	15	11	11	15	11
Satd. Flow (prot)	0	1546	0	0	1726	0	0	1646	0	0	1613	0
Flt Permitted		0.974			0.984			0.986			0.999	
Satd. Flow (perm)	0	1546	0	0	1726	0	0	1646	0	0	1613	0
Link Speed (mph)		35			20			20			20	
Link Distance (ft)		1448			341			475			336	
Travel Time (s)		28.2			11.6			16.2			11.5	
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
Heavy Vehicles (%)	7%	0%	14%	0%	0%	0%	0%	7%	0%	0%	2%	6%
Parking (#/hr)								12			12	
Adj. Flow (vph)	31	4	24	4	4	4	36	84	4	4	97	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	59	0	0	12	0	0	124	0	0	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.11	1.04	1.04	1.11	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Pretimed											
Intersection Capacity Utilization	29.0%						ICU Level of Service A					
Analysis Period (min)	15											



Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	4	22	4	4	4	32	76	4	4	87	52
Future Vol, veh/h	28	4	22	4	4	4	32	76	4	4	87	52
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
Heavy Vehicles, %	7	0	14	0	0	0	0	7	0	0	2	6
Mvmt Flow	31	4	24	4	4	4	36	84	4	4	97	58
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.5	8	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	29%	52%	33%	3%
Vol Thru, %	68%	7%	33%	61%
Vol Right, %	4%	41%	33%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	112	54	12	143
LT Vol	32	28	4	4
Through Vol	76	4	4	87
RT Vol	4	22	4	52
Lane Flow Rate	124	60	13	159
Geometry Grp	1	1	1	1
Degree of Util (X)	0.145	0.075	0.016	0.173
Departure Headway (Hd)	4.184	4.5	4.444	3.91
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	846	801	810	904
Service Time	2.264	2.5	2.446	1.991
HCM Lane V/C Ratio	0.147	0.075	0.016	0.176
HCM Control Delay	8	7.9	7.5	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.2	0	0.6

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	3:05	3:05	3:05	3:05	3:05	3:05	3:05
End Time	3:45	3:45	3:45	3:45	3:45	3:45	3:45
Total Time (min)	40	40	40	40	40	40	40
Time Recorded (min)	30	30	30	30	30	30	30
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1518	1566	1549	1485	1533	1553	1496
Vehs Exited	1556	1558	1546	1496	1525	1537	1497
Starting Vehs	115	96	84	87	104	92	98
Ending Vehs	77	104	87	76	112	108	97
Travel Distance (mi)	1983	2117	2040	1964	2022	2096	2023
Travel Time (hr)	47.0	50.2	48.1	46.6	47.7	48.8	47.5
Total Delay (hr)	4.2	4.5	4.2	4.2	4.4	4.5	4.4
Total Stops	1095	1134	1080	1070	1117	1110	1093
Fuel Used (gal)	69.6	73.9	71.3	68.9	70.9	72.7	70.9

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	3:05	3:05	3:05	3:05
End Time	3:45	3:45	3:45	3:45
Total Time (min)	40	40	40	40
Time Recorded (min)	30	30	30	30
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	1541	1538	1565	1532
Vehs Exited	1552	1534	1565	1538
Starting Vehs	97	91	79	78
Ending Vehs	86	95	79	77
Travel Distance (mi)	2038	2042	2065	2039
Travel Time (hr)	47.8	48.3	48.8	48.1
Total Delay (hr)	4.0	4.3	4.3	4.3
Total Stops	1077	1110	1096	1099
Fuel Used (gal)	71.1	71.9	72.4	71.4

Interval #0 Information Seeding

Start Time	3:05
End Time	3:15
Total Time (min)	10
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

**Interval #1 Information Recording**

Start Time	3:15
End Time	3:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1518	1566	1549	1485	1533	1553	1496
Vehs Exited	1556	1558	1546	1496	1525	1537	1497
Starting Vehs	115	96	84	87	104	92	98
Ending Vehs	77	104	87	76	112	108	97
Travel Distance (mi)	1983	2117	2040	1964	2022	2096	2023
Travel Time (hr)	47.0	50.2	48.1	46.6	47.7	48.8	47.5
Total Delay (hr)	4.2	4.5	4.2	4.2	4.4	4.5	4.4
Total Stops	1095	1134	1080	1070	1117	1110	1093
Fuel Used (gal)	69.6	73.9	71.3	68.9	70.9	72.7	70.9

**Interval #1 Information Recording**

Start Time	3:15
End Time	3:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1541	1538	1565	1532
Vehs Exited	1552	1534	1565	1538
Starting Vehs	97	91	79	78
Ending Vehs	86	95	79	77
Travel Distance (mi)	2038	2042	2065	2039
Travel Time (hr)	47.8	48.3	48.8	48.1
Total Delay (hr)	4.0	4.3	4.3	4.3
Total Stops	1077	1110	1096	1099
Fuel Used (gal)	71.1	71.9	72.4	71.4

Intersection: 2: Old US 421 & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	95	86	53	63
Average Queue (ft)	50	47	26	35
95th Queue (ft)	84	77	48	57
Link Distance (ft)	1331	782	1738	1623
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	19	52	61	48
Average Queue (ft)	2	8	25	23
95th Queue (ft)	15	37	55	43
Link Distance (ft)	2090	2043	1608	1816
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Main St/Main St. & Chatham St

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	45	18
Average Queue (ft)	15	2
95th Queue (ft)	38	14
Link Distance (ft)	606	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Main St & Pittsboro-Goldston Rd

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	60	21
Average Queue (ft)	32	2
95th Queue (ft)	53	13
Link Distance (ft)	1760	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Main St & Colonial Ave./Lancaster Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	48	25	71	56
Average Queue (ft)	22	7	41	38
95th Queue (ft)	42	26	67	58
Link Distance (ft)	1378	308	417	259
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2002: NC 902 WB U-Turn & US 421 SB

Movement	WB
Directions Served	L
Maximum Queue (ft)	78
Average Queue (ft)	37
95th Queue (ft)	71
Link Distance (ft)	128
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2004: US 421 SB & NC 902

Movement	EB	NW
Directions Served	>	L
Maximum Queue (ft)	52	37
Average Queue (ft)	20	12
95th Queue (ft)	44	37
Link Distance (ft)	1194	339
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3002: US 421 NB & NC 902 EB U-Turn

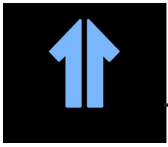
Movement	EB
Directions Served	L
Maximum Queue (ft)	53
Average Queue (ft)	27
95th Queue (ft)	54
Link Distance (ft)	66
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3004: US 421 NB & NC 902

Movement	WB	SE
Directions Served	>	L
Maximum Queue (ft)	57	35
Average Queue (ft)	26	15
95th Queue (ft)	53	41
Link Distance (ft)	924	304
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

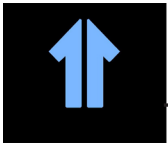


## 2025 BUILDOUT CONDITIONS

- Background Growth
- US 421 Conversion to RCUT intersections







## AM PEAK HOUR

2025 Buildout Conditions AM Peak Hour  
 2004: US 421 SB & NC 902

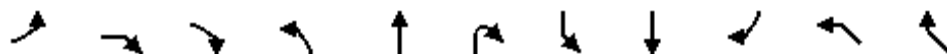
Proposed Quarry  
 Goldston, NC


















Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (vph)	0	0	182	0	0	0	0	532	119	25	0
Future Volume (vph)	0	0	182	0	0	0	0	532	119	25	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	11	11	12	12	11	11
Grade (%)	3%				-3%			3%		-3%	
Storage Length (ft)	0	0		0		0	0		100	0	0
Storage Lanes	0	1		0		0	0		1	1	0
Taper Length (ft)	25			300			225			25	
Satd. Flow (prot)	0	0	1223	0	0	0	0	2939	1178	1417	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1223	0	0	0	0	2939	1178	1417	0
Link Speed (mph)	55				60			60		35	
Link Distance (ft)	1288				1872			285		392	
Travel Time (s)	16.0				21.3			3.2		7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	28%	0%	0%	0%	0%	21%	35%	25%	0%
Adj. Flow (vph)	0	0	202	0	0	0	0	591	132	28	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	202	0	0	0	0	591	132	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0				11			11		11	
Link Offset(ft)	0				0			0		0	
Crosswalk Width(ft)	16				16			16		16	
Two way Left Turn Lane											
Headway Factor	1.07	1.07	1.07	0.98	0.98	1.02	1.07	1.02	1.02	1.02	1.02
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop				Free			Free		Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.6%
ICU Level of Service	A
Analysis Period (min)	15


















Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (veh/h)	0	0	182	0	0	0	0	532	119	25	0
Future Volume (Veh/h)	0	0	182	0	0	0	0	532	119	25	0
Sign Control	Stop			Free			Free			Yield	
Grade	3%			-3%			3%			-3%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	202	0	0	0	0	591	132	28	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type											
Median storage veh											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	605	591	296	723			0			723	0
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	605	591	296	723			0			723	0
tC, single (s)	7.5	6.5	7.5	4.1			4.1			7.0	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.6	2.2			2.2			4.2	3.3
p0 queue free %	100	100	68	100			100			91	100
cM capacity (veh/h)	359	422	629	889			1636			309	1091
Direction, Lane #											
Volume Total	202	296	296	132	28						
Volume Left	0	0	0	0	0						
Volume Right	202	0	0	132	0						
cSH	629	1700	1700	1700	309						
Volume to Capacity	0.32	0.17	0.17	0.08	0.09						
Queue Length 95th (ft)	35	0	0	0	7						
Control Delay (s)	13.4	0.0	0.0	0.0	17.8						
Lane LOS	B			C			C			C	
Approach Delay (s)	13.4	0.0			17.8						
Approach LOS	B			C			C			C	
Intersection Summary											
Average Delay			3.4								
Intersection Capacity Utilization			32.6%		ICU Level of Service				A		
Analysis Period (min)			15								

											
Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	0	0	70	0	593	94	0	0	0	20	0
Future Volume (vph)	0	0	70	0	593	94	0	0	0	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	2%				-3%		0%			3%	
Storage Length (ft)	0	0		0		200	0		0	0	0
Storage Lanes	0	1		0		1	0		0	1	0
Taper Length (ft)	25			25			25			25	
Satd. Flow (prot)	0	0	1542	0	2856	1554	0	0	0	1719	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1542	0	2856	1554	0	0	0	1719	0
Link Speed (mph)	55				60		35			35	
Link Distance (ft)	985				335		1685			356	
Travel Time (s)	12.2				3.8		32.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	2%	0%	24%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	78	0	659	104	0	0	0	22	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	78	0	659	104	0	0	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0				11		11			11	
Link Offset(ft)	0				0		0			0	
Crosswalk Width(ft)	16				16		16			16	
Two way Left Turn Lane											
Headway Factor	1.06	1.06	1.06	1.02	1.02	1.02	1.04	1.04	1.04	1.07	1.07
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop				Free		Free			Yield	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.4%
Analysis Period (min)	15
	ICU Level of Service A

											
Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (veh/h)	0	0	70	0	593	94	0	0	0	20	0
Future Volume (Veh/h)	0	0	70	0	593	94	0	0	0	20	0
Sign Control	Stop				Free		Free		Yield		
Grade	2%				-3%		0%		3%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	78	0	659	104	0	0	0	22	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type											
Median storage veh											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	670	659	330	0			763			763	0
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	670	659	330	0			763			763	0
tC, single (s)	7.5	6.5	6.9	4.1			4.1			6.5	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	2.2			2.2			4.0	3.3
p0 queue free %	100	100	88	100			100			93	100
cM capacity (veh/h)	329	386	666	1636			859			336	1091
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SE 1						
Volume Total	78	330	330	104	22						
Volume Left	0	0	0	0	0						
Volume Right	78	0	0	104	0						
cSH	666	1700	1700	1700	336						
Volume to Capacity	0.12	0.19	0.19	0.06	0.07						
Queue Length 95th (ft)	10	0	0	0	5						
Control Delay (s)	11.1	0.0	0.0	0.0	16.5						
Lane LOS	B				C						
Approach Delay (s)	11.1	0.0			16.5						
Approach LOS	B				C						
Intersection Summary											
Average Delay			1.4								
Intersection Capacity Utilization			27.4%		ICU Level of Service				A		
Analysis Period (min)			15								



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	55	0	0	0	0	616
Future Volume (vph)	55	0	0	0	0	616
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			-3%
Satd. Flow (prot)	1711	0	0	0	0	2834
Flt Permitted	0.950					
Satd. Flow (perm)	1711	0	0	0	0	2834
Link Speed (mph)	35		60			60
Link Distance (ft)	167		1402			1185
Travel Time (s)	3.3		15.9			13.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	0%	0%	25%
Adj. Flow (vph)	61	0	0	0	0	684
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	0	0	0	684
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		11			16
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.5%
	ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵					↑↑
Traffic Vol, veh/h	55	0	0	0	0	616
Future Vol, veh/h	55	0	0	0	0	616
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	-3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	0	0	25
Mvmt Flow	61	0	0	0	0	684

Major/Minor	Minor1	Major2	
Conflicting Flow All	342	-	-
Stage 1	0	-	-
Stage 2	342	-	-
Critical Hdwy	6.84	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	-	-
Pot Cap-1 Maneuver	628	0	0
Stage 1	-	0	-
Stage 2	691	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	628	-	-
Mov Cap-2 Maneuver	628	-	-
Stage 1	-	-	-
Stage 2	691	-	-

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

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	628	-
HCM Lane V/C Ratio	0.097	-
HCM Control Delay (s)	11.4	-
HCM Lane LOS	B	-
HCM 95th %tile Q(veh)	0.3	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	160	0	0	552	0	0
Future Volume (vph)	160	0	0	552	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1342	0	0	2932	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1342	0	0	2932	0	0
Link Speed (mph)	35			60	60	
Link Distance (ft)	107			723	1498	
Travel Time (s)	2.1			8.2	17.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	30%	0%	0%	19%	0%	0%
Adj. Flow (vph)	178	0	0	613	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	0	0	613	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.8%
Analysis Period (min)	15
	ICU Level of Service A



Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↑↑		
Traffic Vol, veh/h	160	0	0	552	0	0
Future Vol, veh/h	160	0	0	552	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	30	0	0	19	0	0
Mvmt Flow	178	0	0	613	0	0

Major/Minor	Minor2	Major1	
Conflicting Flow All	307	-	0
Stage 1	0	-	-
Stage 2	307	-	-
Critical Hdwy	7.4	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	6.4	-	-
Follow-up Hdwy	3.8	-	-
Pot Cap-1 Maneuver	590	0	-
Stage 1	-	0	-
Stage 2	643	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	590	-	-
Mov Cap-2 Maneuver	590	-	-
Stage 1	-	-	-
Stage 2	643	-	-

Approach	EB	NB
HCM Control Delay, s	13.7	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBT	EBLn1
Capacity (veh/h)	-	590
HCM Lane V/C Ratio	-	0.301
HCM Control Delay (s)	-	13.7
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	1.3

2025 Buildout Conditions AM Peak Hour  
2: Old US 421 & NC 902

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	29	197	18	4	156	8	54	14	5	13	13	48
Future Volume (vph)	29	197	18	4	156	8	54	14	5	13	13	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Satd. Flow (prot)	0	1518	0	0	1420	0	0	1682	0	0	1615	0
Flt Permitted		0.994			0.999			0.964			0.991	
Satd. Flow (perm)	0	1518	0	0	1420	0	0	1682	0	0	1615	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1400			842			1770			1655	
Travel Time (s)		17.4			10.4			21.9			20.5	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	4%	23%	0%	25%	30%	0%	4%	7%	0%	8%	8%	0%
Adj. Flow (vph)	58	394	36	8	312	16	108	28	10	26	26	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	488	0	0	336	0	0	146	0	0	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.7%
ICU Level of Service	A
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	18.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	197	18	4	156	8	54	14	5	13	13	48
Future Vol, veh/h	29	197	18	4	156	8	54	14	5	13	13	48
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	4	23	0	25	30	0	4	7	0	8	8	0
Mvmt Flow	58	394	36	8	312	16	108	28	10	26	26	96
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	23.3	17.2	12.5	11.8
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	74%	12%	2%	18%
Vol Thru, %	19%	81%	93%	18%
Vol Right, %	7%	7%	5%	65%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	73	244	168	74
LT Vol	54	29	4	13
Through Vol	14	197	156	13
RT Vol	5	18	8	48
Lane Flow Rate	146	488	336	148
Geometry Grp	1	1	1	1
Degree of Util (X)	0.277	0.747	0.576	0.265
Departure Headway (Hd)	6.834	5.616	6.171	6.452
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	527	649	588	558
Service Time	4.858	3.616	4.171	4.477
HCM Lane V/C Ratio	0.277	0.752	0.571	0.265
HCM Control Delay	12.5	23.3	17.2	11.8
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	1.1	6.7	3.6	1.1

2025 Buildout Conditions AM Peak Hour  
 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Proposed Quarry  
 Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	7	159	5	60	49	15	4	23	74	10	7	4
Future Volume (vph)	7	159	5	60	49	15	4	23	74	10	7	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		2%			-2%			-1%			0%	
Satd. Flow (prot)	0	1688	0	0	1293	0	0	1186	0	0	1670	0
Flt Permitted		0.998			0.976			0.998			0.977	
Satd. Flow (perm)	0	1688	0	0	1293	0	0	1186	0	0	1670	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2123			2106			1669			1852	
Travel Time (s)		26.3			26.1			20.7			23.0	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	14%	7%	0%	65%	14%	7%	0%	5%	53%	0%	14%	0%
Adj. Flow (vph)	14	318	10	120	98	30	8	46	148	20	14	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	0	0	248	0	0	202	0	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.9%
Analysis Period (min)	15
	ICU Level of Service A

Intersection												
Int Delay, s/veh	6.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	159	5	60	49	15	4	23	74	10	7	4
Future Vol, veh/h	7	159	5	60	49	15	4	23	74	10	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	2	-	-	-2	-	-	-1	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	14	7	0	65	14	7	0	5	53	0	14	0
Mvmt Flow	14	318	10	120	98	30	8	46	148	20	14	8

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	128	0	0	328	0	0	715	719	323	801	709	113
Stage 1	-	-	-	-	-	-	351	351	-	353	353	-
Stage 2	-	-	-	-	-	-	364	368	-	448	356	-
Critical Hdwy	4.24	-	-	4.75	-	-	6.9	6.35	6.63	7.1	6.64	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.35	-	6.1	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.35	-	6.1	5.64	-
Follow-up Hdwy	2.326	-	-	2.785	-	-	3.5	4.045	3.777	3.5	4.126	3.3
Pot Cap-1 Maneuver	1387	-	-	949	-	-	363	365	620	305	345	945
Stage 1	-	-	-	-	-	-	683	639	-	668	610	-
Stage 2	-	-	-	-	-	-	673	629	-	594	608	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1387	-	-	949	-	-	308	311	620	183	294	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	308	311	-	183	294	-
Stage 1	-	-	-	-	-	-	675	631	-	660	526	-
Stage 2	-	-	-	-	-	-	561	543	-	414	601	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.3		4.5		17.4		22	
HCM LOS					C		C	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	490	1387	-	-	949	-	-	254
HCM Lane V/C Ratio	0.412	0.01	-	-	0.126	-	-	0.165
HCM Control Delay (s)	17.4	7.6	0	-	9.3	0	-	22
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	2	0	-	-	0.4	-	-	0.6

2025 Buildout Conditions AM Peak Hour  
 4: Bonlee-Carbonton Rd & Quarry Site Drive

Proposed Quarry  
 Goldston, NC



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	56	59	8	72	22
Future Volume (vph)	6	56	59	8	72	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	829	0	1627	0	0	1112
Flt Permitted	0.995					0.963
Satd. Flow (perm)	829	0	1627	0	0	1112
Link Speed (mph)	35		55			55
Link Distance (ft)	1022		312			1147
Travel Time (s)	19.9		3.9			14.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	83%	95%	4%	63%	74%	9%
Adj. Flow (vph)	7	62	66	9	80	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	75	0	0	104
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	5.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	56	59	8	72	22
Future Vol, veh/h	6	56	59	8	72	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	83	95	4	63	74	9
Mvmt Flow	7	62	66	9	80	24

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	255	71	0	0	75	0
Stage 1	71	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Critical Hdwy	7.23	7.15	-	-	4.84	-
Critical Hdwy Stg 1	6.23	-	-	-	-	-
Critical Hdwy Stg 2	6.23	-	-	-	-	-
Follow-up Hdwy	4.247	4.155	-	-	2.866	-
Pot Cap-1 Maneuver	588	784	-	-	1170	-
Stage 1	781	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	547	784	-	-	1170	-
Mov Cap-2 Maneuver	547	-	-	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	639	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	6.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	752	1170
HCM Lane V/C Ratio	-	-	0.092	0.068
HCM Control Delay (s)	-	-	10.3	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	26	27	71	55	8
Future Volume (vph)	16	26	27	71	55	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			0%	0%	
Satd. Flow (prot)	1185	0	0	1540	1623	0
Flt Permitted	0.981			0.986		
Satd. Flow (perm)	1185	0	0	1540	1623	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	685			1304	773	
Travel Time (s)	13.3			25.4	15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	58%	56%	3%	11%	13%
Adj. Flow (vph)	18	29	30	79	61	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	109	70	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	21.9%
Analysis Period (min)	15
	ICU Level of Service A



Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	T			T		T
Traffic Vol, veh/h	16	26	27	71	55	8
Future Vol, veh/h	16	26	27	71	55	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	58	56	3	11	13
Mvmt Flow	18	29	30	79	61	9

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	205	66	70	0	0
Stage 1	66	-	-	-	-
Stage 2	139	-	-	-	-
Critical Hdwy	6.86	6.98	4.66	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-
Follow-up Hdwy	3.554	3.822	2.704	-	-
Pot Cap-1 Maneuver	757	858	1248	-	-
Stage 1	940	-	-	-	-
Stage 2	865	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	738	858	1248	-	-
Mov Cap-2 Maneuver	738	-	-	-	-
Stage 1	917	-	-	-	-
Stage 2	865	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1248	-	808	-	-
HCM Lane V/C Ratio	0.024	-	0.058	-	-
HCM Control Delay (s)	8	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	50	48	82	37	44
Future Volume (vph)	48	50	48	82	37	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	12	12	15
Satd. Flow (prot)	1396	0	1581	0	0	1587
Flt Permitted	0.976					0.978
Satd. Flow (perm)	1396	0	1581	0	0	1587
Link Speed (mph)	35		20			35
Link Distance (ft)	1790		403			1304
Travel Time (s)	34.9		13.7			25.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	16%	31%	4%	4%	50%	11%
Parking (#/hr)			8			
Adj. Flow (vph)	53	56	53	91	41	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	0	144	0	0	90
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.07	1.00	1.00	0.88
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	48	50	48	82	37	44
Future Vol, veh/h	48	50	48	82	37	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	31	4	4	50	11
Mvmt Flow	53	56	53	91	41	49

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	230	99	0	0	144
Stage 1	99	-	-	-	-
Stage 2	131	-	-	-	-
Critical Hdwy	6.56	6.51	-	-	4.6
Critical Hdwy Stg 1	5.56	-	-	-	-
Critical Hdwy Stg 2	5.56	-	-	-	-
Follow-up Hdwy	3.644	3.579	-	-	2.65
Pot Cap-1 Maneuver	728	883	-	-	1191
Stage 1	891	-	-	-	-
Stage 2	862	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	703	883	-	-	1191
Mov Cap-2 Maneuver	703	-	-	-	-
Stage 1	891	-	-	-	-
Stage 2	832	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	3.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	785	1191
HCM Lane V/C Ratio	-	-	0.139	0.035
HCM Control Delay (s)	-	-	10.3	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

2025 Buildout Conditions AM Peak Hour  
7: Main St & Colonial Ave./Lancaster Dr

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	69	3	33	4	4	4	27	56	4	1	48	45
Future Volume (vph)	69	3	33	4	4	4	27	56	4	1	48	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	15	11	11	15	11
Satd. Flow (prot)	0	1493	0	0	1726	0	0	1384	0	0	1424	0
Flt Permitted		0.968			0.984			0.985				
Satd. Flow (perm)	0	1493	0	0	1726	0	0	1384	0	0	1424	0
Link Speed (mph)		35			20			20			20	
Link Distance (ft)		1448			341			475			336	
Travel Time (s)		28.2			11.6			16.2			11.5	
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
Heavy Vehicles (%)	3%	0%	38%	0%	0%	0%	65%	6%	0%	0%	13%	18%
Parking (#/hr)								12			12	
Adj. Flow (vph)	77	3	37	4	4	4	30	62	4	1	53	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	12	0	0	96	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.11	1.04	1.04	1.11	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	29.2%
Analysis Period (min)	15
	ICU Level of Service A

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	69	3	33	4	4	4	27	56	4	1	48	45
Future Vol, veh/h	69	3	33	4	4	4	27	56	4	1	48	45
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
Heavy Vehicles, %	3	0	38	0	0	0	65	6	0	0	13	18
Mvmt Flow	77	3	37	4	4	4	30	62	4	1	53	50
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	7.5	9.4	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	66%	33%	1%
Vol Thru, %	64%	3%	33%	51%
Vol Right, %	5%	31%	33%	48%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	105	12	94
LT Vol	27	69	4	1
Through Vol	56	3	4	48
RT Vol	4	33	4	45
Lane Flow Rate	97	117	13	104
Geometry Grp	1	1	1	1
Degree of Util (X)	0.147	0.143	0.016	0.117
Departure Headway (Hd)	5.46	4.404	4.393	4.044
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	661	817	817	889
Service Time	3.46	2.415	2.409	2.057
HCM Lane V/C Ratio	0.147	0.143	0.016	0.117
HCM Control Delay	9.4	8.2	7.5	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.5	0	0.4

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	7:05	7:05	7:05	7:05	7:05	7:05	7:05
End Time	7:45	7:45	7:45	7:45	7:45	7:45	7:45
Total Time (min)	40	40	40	40	40	40	40
Time Recorded (min)	30	30	30	30	30	30	30
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1518	1520	1485	1529	1487	1563	1575
Vehs Exited	1491	1517	1493	1524	1489	1588	1572
Starting Vehs	120	124	131	113	129	137	129
Ending Vehs	147	127	123	118	127	112	132
Travel Distance (mi)	2529	2458	2453	2403	2422	2466	2557
Travel Time (hr)	62.9	60.6	61.5	60.4	60.8	60.5	63.1
Total Delay (hr)	7.9	7.3	7.9	8.2	7.8	7.3	7.5
Total Stops	1526	1480	1494	1465	1502	1466	1554
Fuel Used (gal)	91.7	88.6	88.5	87.7	87.3	88.4	92.8

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	7:05	7:05	7:05	7:05
End Time	7:45	7:45	7:45	7:45
Total Time (min)	40	40	40	40
Time Recorded (min)	30	30	30	30
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	1549	1571	1532	1532
Vehs Exited	1573	1600	1559	1542
Starting Vehs	138	143	144	113
Ending Vehs	114	114	117	102
Travel Distance (mi)	2504	2452	2457	2470
Travel Time (hr)	62.1	61.3	60.6	61.4
Total Delay (hr)	8.1	7.8	7.5	7.7
Total Stops	1584	1545	1512	1511
Fuel Used (gal)	91.1	88.4	88.9	89.3

Interval #0 Information Seeding

Start Time	7:05
End Time	7:15
Total Time (min)	10
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:15
End Time	7:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1518	1520	1485	1529	1487	1563	1575
Vehs Exited	1491	1517	1493	1524	1489	1588	1572
Starting Vehs	120	124	131	113	129	137	129
Ending Vehs	147	127	123	118	127	112	132
Travel Distance (mi)	2529	2458	2453	2403	2422	2466	2557
Travel Time (hr)	62.9	60.6	61.5	60.4	60.8	60.5	63.1
Total Delay (hr)	7.9	7.3	7.9	8.2	7.8	7.3	7.5
Total Stops	1526	1480	1494	1465	1502	1466	1554
Fuel Used (gal)	91.7	88.6	88.5	87.7	87.3	88.4	92.8

Interval #1 Information Recording

Start Time	7:15
End Time	7:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1549	1571	1532	1532
Vehs Exited	1573	1600	1559	1542
Starting Vehs	138	143	144	113
Ending Vehs	114	114	117	102
Travel Distance (mi)	2504	2452	2457	2470
Travel Time (hr)	62.1	61.3	60.6	61.4
Total Delay (hr)	8.1	7.8	7.5	7.7
Total Stops	1584	1545	1512	1511
Fuel Used (gal)	91.1	88.4	88.9	89.3

Intersection: 2: Old US 421 & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	218	164	73	76
Average Queue (ft)	115	88	40	39
95th Queue (ft)	198	146	67	71
Link Distance (ft)	1331	782	1738	1623
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	16	121	145	48
Average Queue (ft)	1	47	75	18
95th Queue (ft)	14	110	132	40
Link Distance (ft)	2090	2043	1608	1816
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Bonlee-Carbonton Rd & Quarry Site Drive

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	94	50
Average Queue (ft)	52	6
95th Queue (ft)	90	32
Link Distance (ft)	992	1098
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		



Intersection: 5: Main St/Main St. & Chatham St

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	76	15
Average Queue (ft)	27	2
95th Queue (ft)	66	16
Link Distance (ft)	606	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Main St & Pittsboro-Goldston Rd

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	86	69
Average Queue (ft)	46	10
95th Queue (ft)	79	48
Link Distance (ft)	1760	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Main St & Colonial Ave./Lancaster Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	59	28	94	73
Average Queue (ft)	31	9	48	39
95th Queue (ft)	54	30	85	66
Link Distance (ft)	1378	308	417	259
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 1400: NC 902 & Chatham High School

Movement	EB	NB	SB
Directions Served	LR	LT	TR
Maximum Queue (ft)	62	124	18
Average Queue (ft)	33	40	3
95th Queue (ft)	60	101	15
Link Distance (ft)	534	684	1331
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 2002: NC 902 WB U-Turn & US 421 SB

Movement	WB
Directions Served	L
Maximum Queue (ft)	44
Average Queue (ft)	30
95th Queue (ft)	48
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2004: US 421 SB & NC 902

Movement	EB	SB	NW
Directions Served	>	R	L
Maximum Queue (ft)	132	4	72
Average Queue (ft)	64	0	21
95th Queue (ft)	112	4	60
Link Distance (ft)	1194		339
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3002: US 421 NB & NC 902 EB U-Turn

Movement	EB	NB
Directions Served	L	T
Maximum Queue (ft)	79	3
Average Queue (ft)	63	0
95th Queue (ft)	88	4
Link Distance (ft)	66	701
Upstream Blk Time (%)	9	
Queuing Penalty (veh)	16	
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

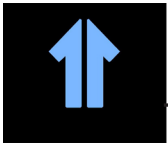
Intersection: 3004: US 421 NB & NC 902

Movement	WB	SE
Directions Served	>	L
Maximum Queue (ft)	40	35
Average Queue (ft)	17	13
95th Queue (ft)	34	39
Link Distance (ft)	924	304
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 16





## PM PEAK HOUR



















Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (vph)	0	0	110	0	0	0	0	731	136	19	0
Future Volume (vph)	0	0	110	0	0	0	0	731	136	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	11	11	12	12	11	11
Grade (%)	3%				-3%			3%		-3%	
Storage Length (ft)	0	0		0		0	0		100	0	0
Storage Lanes	0	1		0		0	0		1	1	0
Taper Length (ft)	25			300			225			25	
Satd. Flow (prot)	0	0	1142	0	0	0	0	3203	1196	1671	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1142	0	0	0	0	3203	1196	1671	0
Link Speed (mph)	55				60			60		35	
Link Distance (ft)	1288				1872			285		392	
Travel Time (s)	16.0				21.3			3.2		7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	37%	0%	0%	0%	0%	11%	33%	6%	0%
Adj. Flow (vph)	0	0	122	0	0	0	0	812	151	21	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	122	0	0	0	0	812	151	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0				11			11		11	
Link Offset(ft)	0				0			0		0	
Crosswalk Width(ft)	16				16			16		16	
Two way Left Turn Lane											
Headway Factor	1.07	1.07	1.07	0.98	0.98	1.02	1.07	1.02	1.02	1.02	1.02
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop				Free			Free		Yield	
















**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.7%
Analysis Period (min)	15
	ICU Level of Service A

2025 Buildout Conditions PM Peak Hour  
2004: US 421 SB & NC 902

Proposed Quarry  
Goldston, NC

											
Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations								 			
Traffic Volume (veh/h)	0	0	110	0	0	0	0	731	136	19	0
Future Volume (Veh/h)	0	0	110	0	0	0	0	731	136	19	0
Sign Control	Stop				Free			Free		Yield	
Grade	3%				-3%			3%		-3%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	122	0	0	0	0	812	151	21	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type						None			None		
Median storage (veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	822	812	406	963			0			963	0
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	822	812	406	963			0			963	0
tC, single (s)	7.5	6.5	7.6	4.1			4.1			6.6	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.7	2.2			2.2			4.1	3.3
p0 queue free %	100	100	76	100			100			92	100
cM capacity (veh/h)	251	315	506	723			1636			248	1091
Direction, Lane #											
	EB 1	SB 1	SB 2	SB 3	NW 1						
Volume Total	122	406	406	151	21						
Volume Left	0	0	0	0	0						
Volume Right	122	0	0	151	0						
cSH	506	1700	1700	1700	248						
Volume to Capacity	0.24	0.24	0.24	0.09	0.08						
Queue Length 95th (ft)	23	0	0	0	7						
Control Delay (s)	14.4	0.0	0.0	0.0	20.9						
Lane LOS	B				C						
Approach Delay (s)	14.4	0.0			20.9						
Approach LOS	B				C						
Intersection Summary											
Average Delay			2.0								
Intersection Capacity Utilization			33.7%		ICU Level of Service				A		
Analysis Period (min)			15								

											
Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	0	0	99	0	730	41	0	0	0	27	0
Future Volume (vph)	0	0	99	0	730	41	0	0	0	27	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	2%				-3%		0%			3%	
Storage Length (ft)	0	0		0		200	0		0	0	0
Storage Lanes	0	1		0		1	0		0	1	0
Taper Length (ft)	25			25		25			25		
Satd. Flow (prot)	0	0	1484	0	2903	1509	0	0	0	1653	0
Flt Permitted											0.950
Satd. Flow (perm)	0	0	1484	0	2903	1509	0	0	0	1653	0
Link Speed (mph)	55				60		35			35	
Link Distance (ft)	985				335		1685			356	
Travel Time (s)	12.2				3.8		32.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	6%	0%	22%	5%	0%	0%	0%	4%	0%
Adj. Flow (vph)	0	0	110	0	811	46	0	0	0	30	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	110	0	811	46	0	0	0	30	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0				11		11			11	
Link Offset(ft)	0				0		0			0	
Crosswalk Width(ft)	16				16		16			16	
Two way Left Turn Lane											
Headway Factor	1.06	1.06	1.06	1.02	1.02	1.02	1.04	1.04	1.04	1.07	1.07
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop				Free		Free			Yield	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.0%
Analysis Period (min)	15
	ICU Level of Service A



Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER	
Lane Configurations												
Traffic Volume (veh/h)	0	0	99	0	730	41	0	0	0	27	0	
Future Volume (Veh/h)	0	0	99	0	730	41	0	0	0	27	0	
Sign Control	Stop				Free		Free		Yield			
Grade	2%				-3%		0%		3%			
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	0	0	110	0	811	46	0	0	0	30	0	
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	826	811	406	0			857			857	0	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	826	811	406	0			857			857	0	
tC, single (s)	7.5	6.5	7.0	4.1			4.1			6.6	6.9	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	2.2			2.2			4.0	3.3	
p0 queue free %	100	100	81	100			100			90	100	
cM capacity (veh/h)	246	315	584	1636			792			289	1091	
Direction, Lane #												
	WB 1	NB 1	NB 2	NB 3	SE 1							
Volume Total	110	406	406	46	30							
Volume Left	0	0	0	0	0							
Volume Right	110	0	0	46	0							
cSH	584	1700	1700	1700	289							
Volume to Capacity	0.19	0.24	0.24	0.03	0.10							
Queue Length 95th (ft)	17	0	0	0	9							
Control Delay (s)	12.6	0.0	0.0	0.0	18.9							
Lane LOS	B				C							
Approach Delay (s)	12.6	0.0			18.9							
Approach LOS	B				C							
Intersection Summary												
Average Delay			2.0									
Intersection Capacity Utilization			33.0%		ICU Level of Service				A			
Analysis Period (min)			15									



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	0	0	0	0	822
Future Volume (vph)	72	0	0	0	0	822
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			-3%
Satd. Flow (prot)	1646	0	0	0	0	3080
Flt Permitted	0.950					
Satd. Flow (perm)	1646	0	0	0	0	3080
Link Speed (mph)	35		60			60
Link Distance (ft)	167		1402			1185
Travel Time (s)	3.3		15.9			13.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	0%	0%	0%	0%	15%
Adj. Flow (vph)	80	0	0	0	0	913
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	0	0	0	913
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		11			16
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.3%
	ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↵					↑↑
Traffic Vol, veh/h	72	0	0	0	0	822
Future Vol, veh/h	72	0	0	0	0	822
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	-3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	0	0	0	0	15
Mvmt Flow	80	0	0	0	0	913

Major/Minor	Minor1	Major2	
Conflicting Flow All	457	-	-
Stage 1	0	-	-
Stage 2	457	-	-
Critical Hdwy	6.92	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	5.92	-	-
Follow-up Hdwy	3.56	-	-
Pot Cap-1 Maneuver	522	0	0
Stage 1	-	0	-
Stage 2	593	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	522	-	-
Mov Cap-2 Maneuver	522	-	-
Stage 1	-	-	-
Stage 2	593	-	-

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

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	522	-
HCM Lane V/C Ratio	0.153	-
HCM Control Delay (s)	13.1	-
HCM Lane LOS	B	-
HCM 95th %tile Q(veh)	0.5	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	101	0	0	689	0	0
Future Volume (vph)	101	0	0	689	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1255	0	0	2957	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1255	0	0	2957	0	0
Link Speed (mph)	35			60	60	
Link Distance (ft)	107			723	1498	
Travel Time (s)	2.1			8.2	17.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	39%	0%	0%	18%	0%	0%
Adj. Flow (vph)	112	0	0	766	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	0	0	766	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↑↑		
Traffic Vol, veh/h	101	0	0	689	0	0
Future Vol, veh/h	101	0	0	689	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	39	0	0	18	0	0
Mvmt Flow	112	0	0	766	0	0

Major/Minor	Minor2	Major1	
Conflicting Flow All	383	-	0
Stage 1	0	-	-
Stage 2	383	-	-
Critical Hdwy	7.58	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	6.58	-	-
Follow-up Hdwy	3.89	-	-
Pot Cap-1 Maneuver	505	0	-
Stage 1	-	0	-
Stage 2	561	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	505	-	-
Mov Cap-2 Maneuver	505	-	-
Stage 1	-	-	-
Stage 2	561	-	-

Approach	EB	NB
HCM Control Delay, s	14.2	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBT	EBLn1
Capacity (veh/h)	-	505
HCM Lane V/C Ratio	-	0.222
HCM Control Delay (s)	-	14.2
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.8

2025 Buildout Conditions PM Peak Hour  
2: Old US 421 & NC 902

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	42	149	29	7	132	7	14	16	5	13	22	23
Future Volume (vph)	42	149	29	7	132	7	14	16	5	13	22	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Satd. Flow (prot)	0	1460	0	0	1386	0	0	1719	0	0	1578	0
Flt Permitted		0.991			0.998			0.980			0.989	
Satd. Flow (perm)	0	1460	0	0	1386	0	0	1719	0	0	1578	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1400			842			1770			1655	
Travel Time (s)		17.4			10.4			21.9			20.5	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	5%	29%	14%	14%	34%	0%	0%	6%	0%	15%	0%	14%
Adj. Flow (vph)	84	298	58	14	264	14	28	32	10	26	44	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	440	0	0	292	0	0	70	0	0	116	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.3%
ICU Level of Service	A
Analysis Period (min)	15

Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	42	149	29	7	132	7	14	16	5	13	22	23
Future Vol, veh/h	42	149	29	7	132	7	14	16	5	13	22	23
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	5	29	14	14	34	0	0	6	0	15	0	14
Mvmt Flow	84	298	58	14	264	14	28	32	10	26	44	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.3	12.2	9.8	10.4
HCM LOS	C	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	40%	19%	5%	22%
Vol Thru, %	46%	68%	90%	38%
Vol Right, %	14%	13%	5%	40%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	220	146	58
LT Vol	14	42	7	13
Through Vol	16	149	132	22
RT Vol	5	29	7	23
Lane Flow Rate	70	440	292	116
Geometry Grp	1	1	1	1
Degree of Util (X)	0.116	0.606	0.428	0.192
Departure Headway (Hd)	5.989	4.956	5.277	5.946
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	598	735	683	603
Service Time	4.036	2.956	3.309	3.988
HCM Lane V/C Ratio	0.117	0.599	0.428	0.192
HCM Control Delay	9.8	15.3	12.2	10.4
HCM Lane LOS	A	C	B	B
HCM 95th-tile Q	0.4	4.1	2.1	0.7

2025 Buildout Conditions PM Peak Hour  
 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Proposed Quarry  
 Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	6	61	10	75	108	11	9	15	61	6	18	10
Future Volume (vph)	6	61	10	75	108	11	9	15	61	6	18	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		2%			-2%			-1%			0%	
Satd. Flow (prot)	0	1633	0	0	1449	0	0	1112	0	0	1627	0
Flt Permitted		0.996			0.981			0.995			0.991	
Satd. Flow (perm)	0	1633	0	0	1449	0	0	1112	0	0	1627	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2123			2106			1669			1852	
Travel Time (s)		26.3			26.1			20.7			23.0	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	33%	8%	0%	55%	5%	9%	11%	20%	62%	0%	14%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	15	0	0
Adj. Flow (vph)	12	122	20	150	216	22	18	30	122	12	36	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	154	0	0	388	0	0	170	0	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	29.8%
ICU Level of Service	A
Analysis Period (min)	15



Intersection												
Int Delay, s/veh	6.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	61	10	75	108	11	9	15	61	6	18	10
Future Vol, veh/h	6	61	10	75	108	11	9	15	61	6	18	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	2	-	-	-2	-	-	-1	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	33	8	0	55	5	9	11	20	62	0	14	0
Mvmt Flow	12	122	20	150	216	22	18	30	122	12	36	20

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	238	0	0	142	0	0	711	694	132	759	693	227
Stage 1	-	-	-	-	-	-	156	156	-	527	527	-
Stage 2	-	-	-	-	-	-	555	538	-	232	166	-
Critical Hdwy	4.43	-	-	4.65	-	-	7.01	6.5	6.72	7.1	6.64	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.01	5.5	-	6.1	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.01	5.5	-	6.1	5.64	-
Follow-up Hdwy	2.497	-	-	2.695	-	-	3.599	4.18	3.858	3.5	4.126	3.3
Pot Cap-1 Maneuver	1167	-	-	1172	-	-	350	358	782	326	352	817
Stage 1	-	-	-	-	-	-	833	742	-	538	509	-
Stage 2	-	-	-	-	-	-	516	509	-	775	739	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1167	-	-	1172	-	-	273	302	782	224	297	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	273	302	-	224	297	-
Stage 1	-	-	-	-	-	-	824	734	-	532	434	-
Stage 2	-	-	-	-	-	-	393	434	-	620	731	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	3.3	15	18.2
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	529	1167	-	-	1172	-	-	341
HCM Lane V/C Ratio	0.321	0.01	-	-	0.128	-	-	0.199
HCM Control Delay (s)	15	8.1	0	-	8.5	0	-	18.2
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.4	0	-	-	0.4	-	-	0.7

2025 Buildout Conditions PM Peak Hour  
 4: Bonlee-Carbonton Rd & Quarry Site Drive

Proposed Quarry  
 Goldston, NC



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	8	68	35	7	60	61
Future Volume (vph)	8	68	35	7	60	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	911	0	1470	0	0	1226
Flt Permitted	0.995					0.976
Satd. Flow (perm)	911	0	1470	0	0	1226
Link Speed (mph)	35		55			55
Link Distance (ft)	1022		312			1147
Travel Time (s)	19.9		3.9			14.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	63%	78%	12%	71%	88%	5%
Adj. Flow (vph)	9	76	39	8	67	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	47	0	0	135
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.5%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	5.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	68	35	7	60	61
Future Vol, veh/h	8	68	35	7	60	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	63	78	12	71	88	5
Mvmt Flow	9	76	39	8	67	68

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	245	43	0	0	47
Stage 1	43	-	-	-	-
Stage 2	202	-	-	-	-
Critical Hdwy	7.03	6.98	-	-	4.98
Critical Hdwy Stg 1	6.03	-	-	-	-
Critical Hdwy Stg 2	6.03	-	-	-	-
Follow-up Hdwy	4.067	4.002	-	-	2.992
Pot Cap-1 Maneuver	628	848	-	-	1150
Stage 1	844	-	-	-	-
Stage 2	706	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	590	848	-	-	1150
Mov Cap-2 Maneuver	590	-	-	-	-
Stage 1	844	-	-	-	-
Stage 2	663	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	4.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	811	1150
HCM Lane V/C Ratio	-	-	0.104	0.058
HCM Control Delay (s)	-	-	10	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	29	37	68	68	5
Future Volume (vph)	16	29	37	68	68	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			0%	0%	
Satd. Flow (prot)	1147	0	0	1548	1769	0
Flt Permitted	0.982			0.983		
Satd. Flow (perm)	1147	0	0	1548	1769	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	685			1304	773	
Travel Time (s)	13.3			25.4	15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	52%	42%	3%	3%	0%
Adj. Flow (vph)	18	32	41	76	76	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	117	82	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	22.3%
	ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	16	29	37	68	68	5
Future Vol, veh/h	16	29	37	68	68	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	25	52	42	3	3	0
Mvmt Flow	18	32	41	76	76	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	237	79	82	0	0
Stage 1	79	-	-	-	-
Stage 2	158	-	-	-	-
Critical Hdwy	7.05	6.92	4.52	-	-
Critical Hdwy Stg 1	6.05	-	-	-	-
Critical Hdwy Stg 2	6.05	-	-	-	-
Follow-up Hdwy	3.725	3.768	2.578	-	-
Pot Cap-1 Maneuver	685	855	1297	-	-
Stage 1	881	-	-	-	-
Stage 2	803	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	662	855	1297	-	-
Mov Cap-2 Maneuver	662	-	-	-	-
Stage 1	852	-	-	-	-
Stage 2	803	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	2.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1297	-	775	-	-
HCM Lane V/C Ratio	0.032	-	0.065	-	-
HCM Control Delay (s)	7.9	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

2025 Buildout Conditions PM Peak Hour  
6: Main St & Pittsboro-Goldston Rd

Proposed Quarry  
Goldston, NC



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	69	31	67	42	31	66
Future Volume (vph)	69	31	67	42	31	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	12	12	15
Satd. Flow (prot)	1507	0	1297	0	0	1745
Flt Permitted	0.966					0.984
Satd. Flow (perm)	1507	0	1297	0	0	1745
Link Speed (mph)	35		20			35
Link Distance (ft)	1790		403			1304
Travel Time (s)	34.9		13.7			25.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	48%	45%	10%	52%	2%
Parking (#/hr)			8			
Adj. Flow (vph)	77	34	74	47	34	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	0	121	0	0	107
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.07	1.00	1.00	0.88
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.2%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	4.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	69	31	67	42	31	66
Future Vol, veh/h	69	31	67	42	31	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	48	45	10	52	2
Mvmt Flow	77	34	74	47	34	73

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	239	98	0	0	121
Stage 1	98	-	-	-	-
Stage 2	141	-	-	-	-
Critical Hdwy	6.43	6.68	-	-	4.62
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.732	-	-	2.668
Pot Cap-1 Maneuver	747	846	-	-	1208
Stage 1	923	-	-	-	-
Stage 2	883	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	725	846	-	-	1208
Mov Cap-2 Maneuver	725	-	-	-	-
Stage 1	923	-	-	-	-
Stage 2	857	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	2.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	759	1208
HCM Lane V/C Ratio	-	-	0.146	0.029
HCM Control Delay (s)	-	-	10.6	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

2025 Buildout Conditions PM Peak Hour  
7: Main St & Colonial Ave./Lancaster Dr

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	28	4	30	4	4	4	39	76	4	4	87	52
Future Volume (vph)	28	4	30	4	4	4	39	76	4	4	87	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	15	11	11	15	11
Satd. Flow (prot)	0	1437	0	0	1726	0	0	1582	0	0	1613	0
Flt Permitted		0.978			0.984			0.984			0.999	
Satd. Flow (perm)	0	1437	0	0	1726	0	0	1582	0	0	1613	0
Link Speed (mph)		35			20			20			20	
Link Distance (ft)		1448			341			475			336	
Travel Time (s)		28.2			11.6			16.2			11.5	
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
Heavy Vehicles (%)	7%	0%	28%	0%	0%	0%	13%	7%	0%	0%	2%	6%
Parking (#/hr)								12			12	
Adj. Flow (vph)	31	4	33	4	4	4	43	84	4	4	97	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	12	0	0	131	0	0	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.11	1.04	1.04	1.11	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	29.8%
ICU Level of Service	A
Analysis Period (min)	15



Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	4	30	4	4	4	39	76	4	4	87	52
Future Vol, veh/h	28	4	30	4	4	4	39	76	4	4	87	52
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
Heavy Vehicles, %	7	0	28	0	0	0	13	7	0	0	2	6
Mvmt Flow	31	4	33	4	4	4	43	84	4	4	97	58
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.6	8.4	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	45%	33%	3%
Vol Thru, %	64%	6%	33%	61%
Vol Right, %	3%	48%	33%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	62	12	143
LT Vol	39	28	4	4
Through Vol	76	4	4	87
RT Vol	4	30	4	52
Lane Flow Rate	132	69	13	159
Geometry Grp	1	1	1	1
Degree of Util (X)	0.163	0.086	0.017	0.174
Departure Headway (Hd)	4.432	4.476	4.49	3.932
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	799	805	801	896
Service Time	2.521	2.477	2.493	2.031
HCM Lane V/C Ratio	0.165	0.086	0.016	0.177
HCM Control Delay	8.4	7.9	7.6	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.3	0.1	0.6

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	3:05	3:05	3:05	3:05	3:05	3:05	3:05
End Time	3:45	3:45	3:45	3:45	3:45	3:45	3:45
Total Time (min)	40	40	40	40	40	40	40
Time Recorded (min)	30	30	30	30	30	30	30
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1760	1855	1780	1782	1791	1807	1790
Vehs Exited	1761	1864	1755	1808	1816	1820	1811
Starting Vehs	131	114	115	135	133	129	135
Ending Vehs	130	105	140	109	108	116	114
Travel Distance (mi)	2556	2631	2580	2600	2616	2533	2547
Travel Time (hr)	62.7	64.4	63.0	62.0	64.2	60.8	61.7
Total Delay (hr)	7.0	7.9	7.5	6.3	7.7	6.5	6.8
Total Stops	1470	1443	1415	1389	1500	1365	1417
Fuel Used (gal)	92.1	95.2	94.0	92.9	95.2	92.0	91.7

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	3:05	3:05	3:05	3:05
End Time	3:45	3:45	3:45	3:45
Total Time (min)	40	40	40	40
Time Recorded (min)	30	30	30	30
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	1786	1818	1824	1791
Vehs Exited	1806	1806	1853	1811
Starting Vehs	131	127	159	116
Ending Vehs	111	139	130	100
Travel Distance (mi)	2501	2648	2642	2585
Travel Time (hr)	61.1	64.2	64.0	62.8
Total Delay (hr)	6.8	7.3	7.7	7.1
Total Stops	1442	1475	1448	1436
Fuel Used (gal)	90.3	95.5	95.2	93.4

Interval #0 Information Seeding

Start Time	3:05
End Time	3:15
Total Time (min)	10
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	3:15
End Time	3:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1760	1855	1780	1782	1791	1807	1790
Vehs Exited	1761	1864	1755	1808	1816	1820	1811
Starting Vehs	131	114	115	135	133	129	135
Ending Vehs	130	105	140	109	108	116	114
Travel Distance (mi)	2556	2631	2580	2600	2616	2533	2547
Travel Time (hr)	62.7	64.4	63.0	62.0	64.2	60.8	61.7
Total Delay (hr)	7.0	7.9	7.5	6.3	7.7	6.5	6.8
Total Stops	1470	1443	1415	1389	1500	1365	1417
Fuel Used (gal)	92.1	95.2	94.0	92.9	95.2	92.0	91.7

Interval #1 Information Recording

Start Time	3:15
End Time	3:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1786	1818	1824	1791
Vehs Exited	1806	1806	1853	1811
Starting Vehs	131	127	159	116
Ending Vehs	111	139	130	100
Travel Distance (mi)	2501	2648	2642	2585
Travel Time (hr)	61.1	64.2	64.0	62.8
Total Delay (hr)	6.8	7.3	7.7	7.1
Total Stops	1442	1475	1448	1436
Fuel Used (gal)	90.3	95.5	95.2	93.4

Intersection: 2: Old US 421 & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	156	132	50	71
Average Queue (ft)	88	74	27	37
95th Queue (ft)	143	123	45	61
Link Distance (ft)	1331	782	1738	1623
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	32	110	109	64
Average Queue (ft)	4	33	61	28
95th Queue (ft)	21	92	103	53
Link Distance (ft)	2090	2043	1608	1816
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 4: Bonlee-Carbonton Rd & Quarry Site Drive

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	91	31
Average Queue (ft)	53	4
95th Queue (ft)	87	25
Link Distance (ft)	992	1098
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Main St/Main St. & Chatham St

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	81	27
Average Queue (ft)	31	2
95th Queue (ft)	69	19
Link Distance (ft)	606	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Main St & Pittsboro-Goldston Rd

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	82	63
Average Queue (ft)	46	9
95th Queue (ft)	77	46
Link Distance (ft)	1760	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Main St & Colonial Ave./Lancaster Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	55	28	87	69
Average Queue (ft)	24	9	45	44
95th Queue (ft)	47	31	78	68
Link Distance (ft)	1378	308	417	259
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 1400: NC 902 & Chatham High School

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	142	18
Average Queue (ft)	72	2
95th Queue (ft)	126	14
Link Distance (ft)	534	684
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 2002: NC 902 WB U-Turn & US 421 SB

Movement	WB
Directions Served	L
Maximum Queue (ft)	79
Average Queue (ft)	39
95th Queue (ft)	71
Link Distance (ft)	128
Upstream Blk Time (%)	0
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2004: US 421 SB & NC 902

Movement	EB	SB	NW
Directions Served	>	R	L
Maximum Queue (ft)	98	2	47
Average Queue (ft)	49	0	15
95th Queue (ft)	87	3	44
Link Distance (ft)	1194		339
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3002: US 421 NB & NC 902 EB U-Turn

Movement	EB
Directions Served	L
Maximum Queue (ft)	78
Average Queue (ft)	58
95th Queue (ft)	86
Link Distance (ft)	66
Upstream Blk Time (%)	7
Queuing Penalty (veh)	8
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 3004: US 421 NB & NC 902

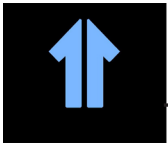
Movement	WB	NB	NB	SE
Directions Served	>	T	R	L
Maximum Queue (ft)	63	4	2	42
Average Queue (ft)	27	0	0	17
95th Queue (ft)	54	8	3	44
Link Distance (ft)	924	271		304
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			200	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 8
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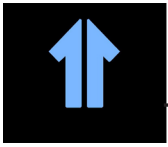




## 2025 BUILDOUT CONDITIONS

- Background Growth
- US 421 Conversion to RCUT intersections
- Proposed Improvements





## AM PEAK HOUR


















Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (vph)	0	0	182	0	0	0	0	532	119	25	0
Future Volume (vph)	0	0	182	0	0	0	0	532	119	25	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	11	11	12	12	11	11
Grade (%)	3%			-3%			3%			-3%	
Storage Length (ft)	0	0		0		0	0		100	0	0
Storage Lanes	0	1		0		0	0		1	1	0
Taper Length (ft)	25			300			225			25	
Satd. Flow (prot)	0	0	1223	0	0	0	0	2939	1178	1417	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1223	0	0	0	0	2939	1178	1417	0
Link Speed (mph)	55			60			60			35	
Link Distance (ft)	1288			1872			285			392	
Travel Time (s)	16.0			21.3			3.2			7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	28%	0%	0%	0%	0%	21%	35%	25%	0%
Adj. Flow (vph)	0	0	202	0	0	0	0	591	132	28	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	202	0	0	0	0	591	132	28	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0			11			11			11	
Link Offset(ft)	0			0			0			0	
Crosswalk Width(ft)	16			16			16			16	
Two way Left Turn Lane											
Headway Factor	1.07	1.07	1.07	0.98	0.98	1.02	1.07	1.02	1.02	1.02	1.02
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop			Free			Free			Yield	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	32.6%
ICU Level of Service	A
Analysis Period (min)	15



















Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (veh/h)	0	0	182	0	0	0	0	532	119	25	0
Future Volume (Veh/h)	0	0	182	0	0	0	0	532	119	25	0
Sign Control	Stop			Free			Free			Yield	
Grade	3%			-3%			3%			-3%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	202	0	0	0	0	591	132	28	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type											
Median storage veh											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	605	591	296	723			0			723	0
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	605	591	296	723			0			723	0
tC, single (s)	7.5	6.5	7.5	4.1			4.1			7.0	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.6	2.2			2.2			4.2	3.3
p0 queue free %	100	100	68	100			100			91	100
cM capacity (veh/h)	359	422	629	889			1636			309	1091
Direction, Lane #											
	EB 1	SB 1	SB 2	SB 3	NW 1						
Volume Total	202	296	296	132	28						
Volume Left	0	0	0	0	0						
Volume Right	202	0	0	132	0						
cSH	629	1700	1700	1700	309						
Volume to Capacity	0.32	0.17	0.17	0.08	0.09						
Queue Length 95th (ft)	35	0	0	0	7						
Control Delay (s)	13.4	0.0	0.0	0.0	17.8						
Lane LOS	B			C							
Approach Delay (s)	13.4	0.0			17.8						
Approach LOS	B			C							
Intersection Summary											
Average Delay			3.4								
Intersection Capacity Utilization			32.6%		ICU Level of Service				A		
Analysis Period (min)			15								

											
Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	0	0	70	0	593	94	0	0	0	20	0
Future Volume (vph)	0	0	70	0	593	94	0	0	0	20	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)	2%				-3%		0%			3%	
Storage Length (ft)	0	0		0		200	0		0	0	0
Storage Lanes	0	1		0		1	0		0	1	0
Taper Length (ft)	25			25			25			25	
Satd. Flow (prot)	0	0	1542	0	2856	1554	0	0	0	1719	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1542	0	2856	1554	0	0	0	1719	0
Link Speed (mph)	55				60		35			35	
Link Distance (ft)	985				335		1685			356	
Travel Time (s)	12.2				3.8		32.8			6.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	2%	0%	24%	2%	0%	0%	0%	0%	0%
Adj. Flow (vph)	0	0	78	0	659	104	0	0	0	22	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	78	0	659	104	0	0	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0				11		11			11	
Link Offset(ft)	0				0		0			0	
Crosswalk Width(ft)	16				16		16			16	
Two way Left Turn Lane											
Headway Factor	1.06	1.06	1.06	1.02	1.02	1.02	1.04	1.04	1.04	1.07	1.07
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop				Free		Free			Yield	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.4%
Analysis Period (min)	15
	ICU Level of Service A

												
Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER	
Lane Configurations												
Traffic Volume (veh/h)	0	0	70	0	593	94	0	0	0	20	0	
Future Volume (Veh/h)	0	0	70	0	593	94	0	0	0	20	0	
Sign Control	Stop				Free		Free			Yield		
Grade	2%				-3%		0%			3%		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Hourly flow rate (vph)	0	0	78	0	659	104	0	0	0	22	0	
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type												
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	670	659	330	0			763			763	0	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	670	659	330	0			763			763	0	
tC, single (s)	7.5	6.5	6.9	4.1			4.1			6.5	6.9	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	2.2			2.2			4.0	3.3	
p0 queue free %	100	100	88	100			100			93	100	
cM capacity (veh/h)	329	386	666	1636			859			336	1091	
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SE 1							
Volume Total	78	330	330	104	22							
Volume Left	0	0	0	0	0							
Volume Right	78	0	0	104	0							
cSH	666	1700	1700	1700	336							
Volume to Capacity	0.12	0.19	0.19	0.06	0.07							
Queue Length 95th (ft)	10	0	0	0	5							
Control Delay (s)	11.1	0.0	0.0	0.0	16.5							
Lane LOS	B				C							
Approach Delay (s)	11.1	0.0			16.5							
Approach LOS	B				C							
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			27.4%		ICU Level of Service				A			
Analysis Period (min)			15									



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	55	0	0	0	0	616
Future Volume (vph)	55	0	0	0	0	616
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			-3%
Satd. Flow (prot)	1711	0	0	0	0	2834
Flt Permitted	0.950					
Satd. Flow (perm)	1711	0	0	0	0	2834
Link Speed (mph)	35		60			60
Link Distance (ft)	167		1402			1185
Travel Time (s)	3.3		15.9			13.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	0%	0%	0%	0%	25%
Adj. Flow (vph)	61	0	0	0	0	684
Shared Lane Traffic (%)						
Lane Group Flow (vph)	61	0	0	0	0	684
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		11			16
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	40.5%
	ICU Level of Service A
Analysis Period (min)	15



Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↘					↗↗
Traffic Vol, veh/h	55	0	0	0	0	616
Future Vol, veh/h	55	0	0	0	0	616
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	-3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	0	0	0	0	25
Mvmt Flow	61	0	0	0	0	684

Major/Minor	Minor1	Major2	
Conflicting Flow All	342	-	-
Stage 1	0	-	-
Stage 2	342	-	-
Critical Hdwy	6.84	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	5.84	-	-
Follow-up Hdwy	3.52	-	-
Pot Cap-1 Maneuver	628	0	0
Stage 1	-	0	-
Stage 2	691	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	628	-	-
Mov Cap-2 Maneuver	628	-	-
Stage 1	-	-	-
Stage 2	691	-	-

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

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	628	-
HCM Lane V/C Ratio	0.097	-
HCM Control Delay (s)	11.4	-
HCM Lane LOS	B	-
HCM 95th %tile Q(veh)	0.3	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	160	0	0	552	0	0
Future Volume (vph)	160	0	0	552	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1342	0	0	2932	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1342	0	0	2932	0	0
Link Speed (mph)	35			60	60	
Link Distance (ft)	107			723	1498	
Travel Time (s)	2.1			8.2	17.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	30%	0%	0%	19%	0%	0%
Adj. Flow (vph)	178	0	0	613	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	178	0	0	613	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	30.8%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↑↑		
Traffic Vol, veh/h	160	0	0	552	0	0
Future Vol, veh/h	160	0	0	552	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	30	0	0	19	0	0
Mvmt Flow	178	0	0	613	0	0

Major/Minor	Minor2	Major1	
Conflicting Flow All	307	-	0
Stage 1	0	-	-
Stage 2	307	-	-
Critical Hdwy	7.4	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	6.4	-	-
Follow-up Hdwy	3.8	-	-
Pot Cap-1 Maneuver	590	0	-
Stage 1	-	0	-
Stage 2	643	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	590	-	-
Mov Cap-2 Maneuver	590	-	-
Stage 1	-	-	-
Stage 2	643	-	-

Approach	EB	NB
HCM Control Delay, s	13.7	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBT EBLn1
Capacity (veh/h)	- 590
HCM Lane V/C Ratio	- 0.301
HCM Control Delay (s)	- 13.7
HCM Lane LOS	- B
HCM 95th %tile Q(veh)	- 1.3

2025 Buildout Conditions AM Peak Hour  
2: Old US 421 & NC 902

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	29	197	18	4	156	8	54	14	5	13	13	48
Future Volume (vph)	29	197	18	4	156	8	54	14	5	13	13	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Satd. Flow (prot)	0	1518	0	0	1420	0	0	1682	0	0	1615	0
Flt Permitted		0.994			0.999			0.964			0.991	
Satd. Flow (perm)	0	1518	0	0	1420	0	0	1682	0	0	1615	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1400			842			1770			1655	
Travel Time (s)		17.4			10.4			21.9			20.5	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	4%	23%	0%	25%	30%	0%	4%	7%	0%	8%	8%	0%
Adj. Flow (vph)	58	394	36	8	312	16	108	28	10	26	26	96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	488	0	0	336	0	0	146	0	0	148	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 42.7% ICU Level of Service A

Analysis Period (min) 15

Intersection	
Intersection Delay, s/veh	18.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	29	197	18	4	156	8	54	14	5	13	13	48
Future Vol, veh/h	29	197	18	4	156	8	54	14	5	13	13	48
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	4	23	0	25	30	0	4	7	0	8	8	0
Mvmt Flow	58	394	36	8	312	16	108	28	10	26	26	96
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	23.3	17.2	12.5	11.8
HCM LOS	C	C	B	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	74%	12%	2%	18%
Vol Thru, %	19%	81%	93%	18%
Vol Right, %	7%	7%	5%	65%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	73	244	168	74
LT Vol	54	29	4	13
Through Vol	14	197	156	13
RT Vol	5	18	8	48
Lane Flow Rate	146	488	336	148
Geometry Grp	1	1	1	1
Degree of Util (X)	0.277	0.747	0.576	0.265
Departure Headway (Hd)	6.834	5.616	6.171	6.452
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	527	649	588	558
Service Time	4.858	3.616	4.171	4.477
HCM Lane V/C Ratio	0.277	0.752	0.571	0.265
HCM Control Delay	12.5	23.3	17.2	11.8
HCM Lane LOS	B	C	C	B
HCM 95th-tile Q	1.1	6.7	3.6	1.1

2025 Buildout Conditions AM Peak Hour  
 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Proposed Quarry  
 Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	159	5	60	49	15	4	23	74	10	7	4
Future Volume (vph)	7	159	5	60	49	15	4	23	74	10	7	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		2%			-2%			-1%			0%	
Storage Length (ft)	50		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			25			25		
Satd. Flow (prot)	1515	1694	0	1068	1593	0	0	1186	0	0	1670	0
Flt Permitted	0.950			0.950				0.998			0.977	
Satd. Flow (perm)	1515	1694	0	1068	1593	0	0	1186	0	0	1670	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2123			2106			1669			1852	
Travel Time (s)		26.3			26.1			20.7			23.0	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	14%	7%	0%	65%	14%	7%	0%	5%	53%	0%	14%	0%
Adj. Flow (vph)	14	318	10	120	98	30	8	46	148	20	14	8
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	328	0	120	128	0	0	202	0	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	6.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	7	159	5	60	49	15	4	23	74	10	7	4
Future Vol, veh/h	7	159	5	60	49	15	4	23	74	10	7	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	2	-	-	-2	-	-	-1	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	14	7	0	65	14	7	0	5	53	0	14	0
Mvmt Flow	14	318	10	120	98	30	8	46	148	20	14	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	128	0	0	328	0	0	715	719	323	801	709	113
Stage 1	-	-	-	-	-	-	351	351	-	353	353	-
Stage 2	-	-	-	-	-	-	364	368	-	448	356	-
Critical Hdwy	4.24	-	-	4.75	-	-	6.9	6.35	6.63	7.1	6.64	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.9	5.35	-	6.1	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.9	5.35	-	6.1	5.64	-
Follow-up Hdwy	2.326	-	-	2.785	-	-	3.5	4.045	3.777	3.5	4.126	3.3
Pot Cap-1 Maneuver	1387	-	-	949	-	-	363	365	620	305	345	945
Stage 1	-	-	-	-	-	-	683	639	-	668	610	-
Stage 2	-	-	-	-	-	-	673	629	-	594	608	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1387	-	-	949	-	-	311	316	620	185	298	945
Mov Cap-2 Maneuver	-	-	-	-	-	-	311	316	-	185	298	-
Stage 1	-	-	-	-	-	-	676	633	-	661	533	-
Stage 2	-	-	-	-	-	-	568	550	-	415	602	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			4.5			17.3			21.7		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	493	1387	-	-	949	-	-	257
HCM Lane V/C Ratio	0.41	0.01	-	-	0.126	-	-	0.163
HCM Control Delay (s)	17.3	7.6	-	-	9.3	-	-	21.7
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	2	0	-	-	0.4	-	-	0.6

2025 Buildout Conditions AM Peak Hour  
 4: Bonlee-Carbonton Rd & Quarry Site Drive

Proposed Quarry  
 Goldston, NC



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	56	59	8	72	22
Future Volume (vph)	6	56	59	8	72	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				100	
Satd. Flow (prot)	829	0	1627	0	1003	1685
Flt Permitted	0.995				0.950	
Satd. Flow (perm)	829	0	1627	0	1003	1685
Link Speed (mph)	35		55			55
Link Distance (ft)	1022		312			1147
Travel Time (s)	19.9		3.9			14.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	83%	95%	4%	63%	74%	9%
Adj. Flow (vph)	7	62	66	9	80	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	69	0	75	0	80	24
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		11			11
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.1%
Analysis Period (min)	15
	ICU Level of Service A



Intersection						
Int Delay, s/veh	5.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	56	59	8	72	22
Future Vol, veh/h	6	56	59	8	72	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	83	95	4	63	74	9
Mvmt Flow	7	62	66	9	80	24

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	255	71	0	0	75	0
Stage 1	71	-	-	-	-	-
Stage 2	184	-	-	-	-	-
Critical Hdwy	7.23	7.15	-	-	4.84	-
Critical Hdwy Stg 1	6.23	-	-	-	-	-
Critical Hdwy Stg 2	6.23	-	-	-	-	-
Follow-up Hdwy	4.247	4.155	-	-	2.866	-
Pot Cap-1 Maneuver	588	784	-	-	1170	-
Stage 1	781	-	-	-	-	-
Stage 2	686	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	548	784	-	-	1170	-
Mov Cap-2 Maneuver	548	-	-	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	639	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	6.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	753	1170
HCM Lane V/C Ratio	-	-	0.091	0.068
HCM Control Delay (s)	-	-	10.3	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	26	27	71	55	8
Future Volume (vph)	16	26	27	71	55	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			0%	0%	
Satd. Flow (prot)	1185	0	0	1540	1623	0
Flt Permitted	0.981			0.986		
Satd. Flow (perm)	1185	0	0	1540	1623	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	685			1304	773	
Travel Time (s)	13.3			25.4	15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	58%	56%	3%	11%	13%
Adj. Flow (vph)	18	29	30	79	61	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	47	0	0	109	70	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	21.9%
ICU Level of Service	A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			W	W	
Traffic Vol, veh/h	16	26	27	71	55	8
Future Vol, veh/h	16	26	27	71	55	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	58	56	3	11	13
Mvmt Flow	18	29	30	79	61	9

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	205	66	70	0	0
Stage 1	66	-	-	-	-
Stage 2	139	-	-	-	-
Critical Hdwy	6.86	6.98	4.66	-	-
Critical Hdwy Stg 1	5.86	-	-	-	-
Critical Hdwy Stg 2	5.86	-	-	-	-
Follow-up Hdwy	3.554	3.822	2.704	-	-
Pot Cap-1 Maneuver	757	858	1248	-	-
Stage 1	940	-	-	-	-
Stage 2	865	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	738	858	1248	-	-
Mov Cap-2 Maneuver	738	-	-	-	-
Stage 1	917	-	-	-	-
Stage 2	865	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1248	-	808	-	-
HCM Lane V/C Ratio	0.024	-	0.058	-	-
HCM Control Delay (s)	8	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

2025 Buildout Conditions AM Peak Hour  
6: Main St & Pittsboro-Goldston Rd

Proposed Quarry  
Goldston, NC



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	48	50	48	82	37	44
Future Volume (vph)	48	50	48	82	37	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	12	12	15
Satd. Flow (prot)	1396	0	1581	0	0	1587
Flt Permitted	0.976					0.978
Satd. Flow (perm)	1396	0	1581	0	0	1587
Link Speed (mph)	35		20			35
Link Distance (ft)	1790		403			1304
Travel Time (s)	34.9		13.7			25.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	16%	31%	4%	4%	50%	11%
Parking (#/hr)			8			
Adj. Flow (vph)	53	56	53	91	41	49
Shared Lane Traffic (%)						
Lane Group Flow (vph)	109	0	144	0	0	90
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.07	1.00	1.00	0.88
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	27.6%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	4.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	48	50	48	82	37	44
Future Vol, veh/h	48	50	48	82	37	44
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	16	31	4	4	50	11
Mvmt Flow	53	56	53	91	41	49

















Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	230	99	0	0	144
Stage 1	99	-	-	-	-
Stage 2	131	-	-	-	-
Critical Hdwy	6.56	6.51	-	-	4.6
Critical Hdwy Stg 1	5.56	-	-	-	-
Critical Hdwy Stg 2	5.56	-	-	-	-
Follow-up Hdwy	3.644	3.579	-	-	2.65
Pot Cap-1 Maneuver	728	883	-	-	1191
Stage 1	891	-	-	-	-
Stage 2	862	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	703	883	-	-	1191
Mov Cap-2 Maneuver	703	-	-	-	-
Stage 1	891	-	-	-	-
Stage 2	832	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	3.7
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	785	1191
HCM Lane V/C Ratio	-	-	0.139	0.035
HCM Control Delay (s)	-	-	10.3	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

2025 Buildout Conditions AM Peak Hour  
7: Main St & Colonial Ave./Lancaster Dr

Proposed Quarry  
Goldston, NC

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	69	3	33	4	4	4	27	56	4	1	48	45
Future Volume (vph)	69	3	33	4	4	4	27	56	4	1	48	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	15	11	11	15	11
Satd. Flow (prot)	0	1493	0	0	1726	0	0	1384	0	0	1424	0
Flt Permitted		0.968			0.984			0.985				
Satd. Flow (perm)	0	1493	0	0	1726	0	0	1384	0	0	1424	0
Link Speed (mph)		35			20			20			20	
Link Distance (ft)		1448			341			475			336	
Travel Time (s)		28.2			11.6			16.2			11.5	
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
Heavy Vehicles (%)	3%	0%	38%	0%	0%	0%	65%	6%	0%	0%	13%	18%
Parking (#/hr)								12			12	
Adj. Flow (vph)	77	3	37	4	4	4	30	62	4	1	53	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	117	0	0	12	0	0	96	0	0	104	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.11	1.04	1.04	1.11	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Pretimed											
Intersection Capacity Utilization	29.2%					ICU Level of Service A						
Analysis Period (min)	15											

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	69	3	33	4	4	4	27	56	4	1	48	45
Future Vol, veh/h	69	3	33	4	4	4	27	56	4	1	48	45
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
Heavy Vehicles, %	3	0	38	0	0	0	65	6	0	0	13	18
Mvmt Flow	77	3	37	4	4	4	30	62	4	1	53	50
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	7.5	9.4	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	31%	66%	33%	1%
Vol Thru, %	64%	3%	33%	51%
Vol Right, %	5%	31%	33%	48%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	87	105	12	94
LT Vol	27	69	4	1
Through Vol	56	3	4	48
RT Vol	4	33	4	45
Lane Flow Rate	97	117	13	104
Geometry Grp	1	1	1	1
Degree of Util (X)	0.147	0.143	0.016	0.117
Departure Headway (Hd)	5.46	4.404	4.393	4.044
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	661	817	817	889
Service Time	3.46	2.415	2.409	2.057
HCM Lane V/C Ratio	0.147	0.143	0.016	0.117
HCM Control Delay	9.4	8.2	7.5	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.5	0	0.4

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	7:05	7:05	7:05	7:05	7:05	7:05	7:05
End Time	7:45	7:45	7:45	7:45	7:45	7:45	7:45
Total Time (min)	40	40	40	40	40	40	40
Time Recorded (min)	30	30	30	30	30	30	30
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1524	1489	1510	1524	1536	1523	1496
Vehs Exited	1518	1492	1519	1504	1563	1500	1514
Starting Vehs	126	111	138	124	132	112	138
Ending Vehs	132	108	129	144	105	135	120
Travel Distance (mi)	2427	2355	2470	2486	2470	2523	2409
Travel Time (hr)	59.8	58.4	61.5	62.0	61.4	63.1	59.8
Total Delay (hr)	7.6	7.0	7.6	7.6	7.5	8.2	7.0
Total Stops	1455	1453	1558	1549	1502	1573	1505
Fuel Used (gal)	87.2	84.2	89.5	89.8	89.4	91.7	86.8

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	7:05	7:05	7:05	7:05
End Time	7:45	7:45	7:45	7:45
Total Time (min)	40	40	40	40
Time Recorded (min)	30	30	30	30
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	1551	1550	1570	1525
Vehs Exited	1578	1554	1564	1535
Starting Vehs	147	119	140	108
Ending Vehs	120	115	146	104
Travel Distance (mi)	2506	2455	2514	2462
Travel Time (hr)	62.6	61.3	62.7	61.3
Total Delay (hr)	8.1	8.2	8.0	7.7
Total Stops	1573	1522	1554	1522
Fuel Used (gal)	91.7	87.8	91.0	88.9

Interval #0 Information Seeding

Start Time	7:05
End Time	7:15
Total Time (min)	10
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	



Interval #1 Information Recording

Start Time	7:15
End Time	7:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1524	1489	1510	1524	1536	1523	1496
Vehs Exited	1518	1492	1519	1504	1563	1500	1514
Starting Vehs	126	111	138	124	132	112	138
Ending Vehs	132	108	129	144	105	135	120
Travel Distance (mi)	2427	2355	2470	2486	2470	2523	2409
Travel Time (hr)	59.8	58.4	61.5	62.0	61.4	63.1	59.8
Total Delay (hr)	7.6	7.0	7.6	7.6	7.5	8.2	7.0
Total Stops	1455	1453	1558	1549	1502	1573	1505
Fuel Used (gal)	87.2	84.2	89.5	89.8	89.4	91.7	86.8

Interval #1 Information Recording

Start Time	7:15
End Time	7:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1551	1550	1570	1525
Vehs Exited	1578	1554	1564	1535
Starting Vehs	147	119	140	108
Ending Vehs	120	115	146	104
Travel Distance (mi)	2506	2455	2514	2462
Travel Time (hr)	62.6	61.3	62.7	61.3
Total Delay (hr)	8.1	8.2	8.0	7.7
Total Stops	1573	1522	1554	1522
Fuel Used (gal)	91.7	87.8	91.0	88.9

Intersection: 2: Old US 421 & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	232	167	74	70
Average Queue (ft)	121	89	38	40
95th Queue (ft)	213	150	65	65
Link Distance (ft)	1331	782	1738	1623
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	13	7	88	14	139	60
Average Queue (ft)	1	1	35	1	70	21
95th Queue (ft)	11	8	83	18	132	48
Link Distance (ft)		2089		2042	1602	1811
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	50		100			
Storage Blk Time (%)	0	0	0	0		
Queuing Penalty (veh)	0	0	1	0		

Intersection: 4: Bonlee-Carbonton Rd & Quarry Site Drive

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	85	57
Average Queue (ft)	50	8
95th Queue (ft)	86	42
Link Distance (ft)	987	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		0
Queuing Penalty (veh)		0

Intersection: 5: Main St/Main St. & Chatham St

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	70	24
Average Queue (ft)	25	2
95th Queue (ft)	61	22
Link Distance (ft)	606	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Main St & Pittsboro-Goldston Rd

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	81	60
Average Queue (ft)	48	10
95th Queue (ft)	77	45
Link Distance (ft)	1760	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Main St & Colonial Ave./Lancaster Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	55	33	83	71
Average Queue (ft)	30	10	44	39
95th Queue (ft)	51	33	78	69
Link Distance (ft)	1378	308	417	259
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2002: NC 902 WB U-Turn & US 421 SB

Movement	WB
Directions Served	L
Maximum Queue (ft)	54
Average Queue (ft)	30
95th Queue (ft)	52
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2004: US 421 SB & NC 902

Movement	EB	SB	NW
Directions Served	>	R	L
Maximum Queue (ft)	126	3	67
Average Queue (ft)	60	0	22
95th Queue (ft)	110	5	61
Link Distance (ft)	1194		339
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		100	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3002: US 421 NB & NC 902 EB U-Turn

Movement	EB
Directions Served	L
Maximum Queue (ft)	79
Average Queue (ft)	63
95th Queue (ft)	85
Link Distance (ft)	66
Upstream Blk Time (%)	7
Queuing Penalty (veh)	13
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

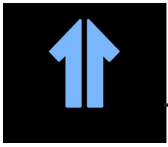
Intersection: 3004: US 421 NB & NC 902

Movement	WB	NB	SE
Directions Served	>	R	L
Maximum Queue (ft)	44	2	37
Average Queue (ft)	18	0	14
95th Queue (ft)	34	3	40
Link Distance (ft)	924		304
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		200	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 14





## PM PEAK HOUR



Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (vph)	0	0	110	0	0	0	0	731	136	19	0
Future Volume (vph)	0	0	110	0	0	0	0	731	136	19	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	11	11	12	12	11	11
Grade (%)	3%				-3%			3%		-3%	
Storage Length (ft)	0	0		0		0	0		100	0	0
Storage Lanes	0	1		0		0	0		1	1	0
Taper Length (ft)	25			300			225			25	
Satd. Flow (prot)	0	0	1142	0	0	0	0	3203	1196	1671	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1142	0	0	0	0	3203	1196	1671	0
Link Speed (mph)	55				60			60		35	
Link Distance (ft)	1288				1872			285		392	
Travel Time (s)	16.0				21.3			3.2		7.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	0%	0%	37%	0%	0%	0%	0%	11%	33%	6%	0%
Adj. Flow (vph)	0	0	122	0	0	0	0	812	151	21	0
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	122	0	0	0	0	812	151	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right
Median Width(ft)	0				11			11		11	
Link Offset(ft)	0				0			0		0	
Crosswalk Width(ft)	16				16			16		16	
Two way Left Turn Lane											
Headway Factor	1.07	1.07	1.07	0.98	0.98	1.02	1.07	1.02	1.02	1.02	1.02
Turning Speed (mph)	15	9	9	15		9	15		9	15	9
Sign Control	Stop				Free			Free		Yield	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.7%
ICU Level of Service	A
Analysis Period (min)	15



















2025 Buildout Conditions PM Peak Hour  
 2004: US 421 SB & NC 902

Proposed Quarry  
 Goldston, NC


















Movement	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations			↗					↕	↗	↖	
Traffic Volume (veh/h)	0	0	110	0	0	0	0	731	136	19	0
Future Volume (Veh/h)	0	0	110	0	0	0	0	731	136	19	0
Sign Control	Stop			Free			Free			Yield	
Grade	3%			-3%			3%			-3%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	122	0	0	0	0	812	151	21	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type											
Median storage veh											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	822	812	406	963			0			963	0
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	822	812	406	963			0			963	0
tC, single (s)	7.5	6.5	7.6	4.1			4.1			6.6	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.7	2.2			2.2			4.1	3.3
p0 queue free %	100	100	76	100			100			92	100
cM capacity (veh/h)	251	315	506	723			1636			248	1091
Direction, Lane #											
Volume Total	122	406	406	151	21						
Volume Left	0	0	0	0	0						
Volume Right	122	0	0	151	0						
cSH	506	1700	1700	1700	248						
Volume to Capacity	0.24	0.24	0.24	0.09	0.08						
Queue Length 95th (ft)	23	0	0	0	7						
Control Delay (s)	14.4	0.0	0.0	0.0	20.9						
Lane LOS	B			C			C			C	
Approach Delay (s)	14.4	0.0			20.9						
Approach LOS	B			C			C			C	
Intersection Summary											
Average Delay			2.0								
Intersection Capacity Utilization			33.7%		ICU Level of Service				A		
Analysis Period (min)			15								

												
Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER	
Lane Configurations												
Traffic Volume (vph)	0	0	99	0	730	41	0	0	0	27	0	
Future Volume (vph)	0	0	99	0	730	41	0	0	0	27	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)	2%				-3%		0%			3%		
Storage Length (ft)	0	0		0		200	0		0	0	0	
Storage Lanes	0	1		0		1	0		0	1	0	
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	0	1484	0	2903	1509	0	0	0	1653	0	
Flt Permitted										0.950		
Satd. Flow (perm)	0	0	1484	0	2903	1509	0	0	0	1653	0	
Link Speed (mph)	55				60		35			35		
Link Distance (ft)	985				335		1685			356		
Travel Time (s)	12.2				3.8		32.8			6.9		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	
Heavy Vehicles (%)	0%	0%	6%	0%	22%	5%	0%	0%	0%	4%	0%	
Adj. Flow (vph)	0	0	110	0	811	46	0	0	0	30	0	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	110	0	811	46	0	0	0	30	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Right	Right	Left	Left	Right	Left	Left	Right	Left	Right	
Median Width(ft)	0				11		11			11		
Link Offset(ft)	0				0		0			0		
Crosswalk Width(ft)	16				16		16			16		
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.02	1.02	1.02	1.04	1.04	1.04	1.07	1.07	
Turning Speed (mph)	15	9	9	15		9	15		9	15	9	
Sign Control	Stop				Free		Free			Yield		

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	33.0%
Analysis Period (min)	15
	ICU Level of Service A

											
Movement	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (veh/h)	0	0	99	0	730	41	0	0	0	27	0
Future Volume (Veh/h)	0	0	99	0	730	41	0	0	0	27	0
Sign Control	Stop				Free			Free		Yield	
Grade	2%				-3%			0%		3%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	110	0	811	46	0	0	0	30	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type	None					None					
Median storage veh											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	826	811	406	0			857			857	0
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	826	811	406	0			857			857	0
tC, single (s)	7.5	6.5	7.0	4.1			4.1			6.6	6.9
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.4	2.2			2.2			4.0	3.3
p0 queue free %	100	100	81	100			100			90	100
cM capacity (veh/h)	246	315	584	1636			792			289	1091
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	SE 1						
Volume Total	110	406	406	46	30						
Volume Left	0	0	0	0	0						
Volume Right	110	0	0	46	0						
cSH	584	1700	1700	1700	289						
Volume to Capacity	0.19	0.24	0.24	0.03	0.10						
Queue Length 95th (ft)	17	0	0	0	9						
Control Delay (s)	12.6	0.0	0.0	0.0	18.9						
Lane LOS	B				C						
Approach Delay (s)	12.6	0.0			18.9						
Approach LOS	B				C						
Intersection Summary											
Average Delay			2.0								
Intersection Capacity Utilization			33.0%			ICU Level of Service			A		
Analysis Period (min)	15										



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	72	0	0	0	0	822
Future Volume (vph)	72	0	0	0	0	822
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	0%		0%			-3%
Satd. Flow (prot)	1646	0	0	0	0	3080
Flt Permitted	0.950					
Satd. Flow (perm)	1646	0	0	0	0	3080
Link Speed (mph)	35		60			60
Link Distance (ft)	167		1402			1185
Travel Time (s)	3.3		15.9			13.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	6%	0%	0%	0%	0%	15%
Adj. Flow (vph)	80	0	0	0	0	913
Shared Lane Traffic (%)						
Lane Group Flow (vph)	80	0	0	0	0	913
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		11			16
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.02	1.02
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	50.3%
	ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔					↕↕
Traffic Vol, veh/h	72	0	0	0	0	822
Future Vol, veh/h	72	0	0	0	0	822
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	-3
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	6	0	0	0	0	15
Mvmt Flow	80	0	0	0	0	913

Major/Minor	Minor1	Major2	
Conflicting Flow All	457	-	-
Stage 1	0	-	-
Stage 2	457	-	-
Critical Hdwy	6.92	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	5.92	-	-
Follow-up Hdwy	3.56	-	-
Pot Cap-1 Maneuver	522	0	0
Stage 1	-	0	-
Stage 2	593	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	522	-	-
Mov Cap-2 Maneuver	522	-	-
Stage 1	-	-	-
Stage 2	593	-	-

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

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	522	-
HCM Lane V/C Ratio	0.153	-
HCM Control Delay (s)	13.1	-
HCM Lane LOS	B	-
HCM 95th %tile Q(veh)	0.5	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	101	0	0	689	0	0
Future Volume (vph)	101	0	0	689	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Satd. Flow (prot)	1255	0	0	2957	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1255	0	0	2957	0	0
Link Speed (mph)	35			60	60	
Link Distance (ft)	107			723	1498	
Travel Time (s)	2.1			8.2	17.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	39%	0%	0%	18%	0%	0%
Adj. Flow (vph)	112	0	0	766	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	112	0	0	766	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			11	11	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	31.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘			↑↑		
Traffic Vol, veh/h	101	0	0	689	0	0
Future Vol, veh/h	101	0	0	689	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	39	0	0	18	0	0
Mvmt Flow	112	0	0	766	0	0

Major/Minor	Minor2	Major1	
Conflicting Flow All	383	-	0
Stage 1	0	-	-
Stage 2	383	-	-
Critical Hdwy	7.58	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	6.58	-	-
Follow-up Hdwy	3.89	-	-
Pot Cap-1 Maneuver	505	0	-
Stage 1	-	0	-
Stage 2	561	0	-
Platoon blocked, %			-
Mov Cap-1 Maneuver	505	-	-
Mov Cap-2 Maneuver	505	-	-
Stage 1	-	-	-
Stage 2	561	-	-

Approach	EB	NB
HCM Control Delay, s	14.2	0
HCM LOS	B	

Minor Lane/Major Mvmt	NBT	EBLn1
Capacity (veh/h)	-	505
HCM Lane V/C Ratio	-	0.222
HCM Control Delay (s)	-	14.2
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.8

2025 Buildout Conditions PM Peak Hour  
2: Old US 421 & NC 902

Proposed Quarry  
Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (vph)	42	149	29	7	132	7	14	16	5	13	22	23
Future Volume (vph)	42	149	29	7	132	7	14	16	5	13	22	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Satd. Flow (prot)	0	1460	0	0	1386	0	0	1719	0	0	1578	0
Flt Permitted		0.991			0.998			0.980			0.989	
Satd. Flow (perm)	0	1460	0	0	1386	0	0	1719	0	0	1578	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		1400			842			1770			1655	
Travel Time (s)		17.4			10.4			21.9			20.5	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	5%	29%	14%	14%	34%	0%	0%	6%	0%	15%	0%	14%
Adj. Flow (vph)	84	298	58	14	264	14	28	32	10	26	44	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	440	0	0	292	0	0	70	0	0	116	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 33.3% ICU Level of Service A

Analysis Period (min) 15



Intersection	
Intersection Delay, s/veh	13.3
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	42	149	29	7	132	7	14	16	5	13	22	23
Future Vol, veh/h	42	149	29	7	132	7	14	16	5	13	22	23
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles, %	5	29	14	14	34	0	0	6	0	15	0	14
Mvmt Flow	84	298	58	14	264	14	28	32	10	26	44	46
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	15.3	12.2	9.8	10.4
HCM LOS	C	B	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	40%	19%	5%	22%
Vol Thru, %	46%	68%	90%	38%
Vol Right, %	14%	13%	5%	40%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	35	220	146	58
LT Vol	14	42	7	13
Through Vol	16	149	132	22
RT Vol	5	29	7	23
Lane Flow Rate	70	440	292	116
Geometry Grp	1	1	1	1
Degree of Util (X)	0.116	0.606	0.428	0.192
Departure Headway (Hd)	5.989	4.956	5.277	5.946
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	598	735	683	603
Service Time	4.036	2.956	3.309	3.988
HCM Lane V/C Ratio	0.117	0.599	0.428	0.192
HCM Control Delay	9.8	15.3	12.2	10.4
HCM Lane LOS	A	C	B	B
HCM 95th-tile Q	0.4	4.1	2.1	0.7

2025 Buildout Conditions PM Peak Hour  
 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Proposed Quarry  
 Goldston, NC



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	61	10	75	108	11	9	15	61	6	18	10
Future Volume (vph)	6	61	10	75	108	11	9	15	61	6	18	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	11	11	11	11	11
Grade (%)		2%			-2%			-1%				0%
Storage Length (ft)	50		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			25			25		
Satd. Flow (prot)	1299	1666	0	1137	1736	0	0	1112	0	0	1627	0
Flt Permitted	0.950			0.950				0.995			0.991	
Satd. Flow (perm)	1299	1666	0	1137	1736	0	0	1112	0	0	1627	0
Link Speed (mph)		55			55			55			55	
Link Distance (ft)		2123			2106			1669			1852	
Travel Time (s)		26.3			26.1			20.7			23.0	
Peak Hour Factor	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Heavy Vehicles (%)	33%	8%	0%	55%	5%	9%	11%	20%	62%	0%	14%	0%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	15	0	0
Adj. Flow (vph)	12	122	20	150	216	22	18	30	122	12	36	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	12	142	0	150	238	0	0	170	0	0	68	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		11			11			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.06	1.06	1.06	1.03	1.03	1.03	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	23.4%
ICU Level of Service	A
Analysis Period (min)	15

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	61	10	75	108	11	9	15	61	6	18	10
Future Vol, veh/h	6	61	10	75	108	11	9	15	61	6	18	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	2	-	-	-2	-	-	-1	-	-	0	-
Peak Hour Factor	50	50	50	50	50	50	50	50	50	50	50	50
Heavy Vehicles, %	33	8	0	55	5	9	11	20	62	0	14	0
Mvmt Flow	12	122	20	150	216	22	18	30	122	12	36	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	238	0	0	142	0	0	711	694	132	759	693	227
Stage 1	-	-	-	-	-	-	156	156	-	527	527	-
Stage 2	-	-	-	-	-	-	555	538	-	232	166	-
Critical Hdwy	4.43	-	-	4.65	-	-	7.01	6.5	6.72	7.1	6.64	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.01	5.5	-	6.1	5.64	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.01	5.5	-	6.1	5.64	-
Follow-up Hdwy	2.497	-	-	2.695	-	-	3.599	4.18	3.858	3.5	4.126	3.3
Pot Cap-1 Maneuver	1167	-	-	1172	-	-	350	358	782	326	352	817
Stage 1	-	-	-	-	-	-	833	742	-	538	509	-
Stage 2	-	-	-	-	-	-	516	509	-	775	739	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1167	-	-	1172	-	-	279	309	782	228	304	817
Mov Cap-2 Maneuver	-	-	-	-	-	-	279	309	-	228	304	-
Stage 1	-	-	-	-	-	-	825	735	-	533	444	-
Stage 2	-	-	-	-	-	-	403	444	-	621	732	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			3.3			14.8			17.8		
HCM LOS							B			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	535	1167	-	-	1172	-	-	348
HCM Lane V/C Ratio	0.318	0.01	-	-	0.128	-	-	0.195
HCM Control Delay (s)	14.8	8.1	-	-	8.5	-	-	17.8
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	1.4	0	-	-	0.4	-	-	0.7

2025 Buildout Conditions PM Peak Hour  
 4: Bonlee-Carbonton Rd & Quarry Site Drive

Proposed Quarry  
 Goldston, NC



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	8	68	35	7	60	61
Future Volume (vph)	8	68	35	7	60	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				100	
Satd. Flow (prot)	911	0	1470	0	928	1749
Flt Permitted	0.995				0.950	
Satd. Flow (perm)	911	0	1470	0	928	1749
Link Speed (mph)	35		55			55
Link Distance (ft)	1022		312			1147
Travel Time (s)	19.9		3.9			14.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	63%	78%	12%	71%	88%	5%
Adj. Flow (vph)	9	76	39	8	67	68
Shared Lane Traffic (%)						
Lane Group Flow (vph)	85	0	47	0	67	68
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	11		11			11
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.3%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	5.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	68	35	7	60	61
Future Vol, veh/h	8	68	35	7	60	61
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	63	78	12	71	88	5
Mvmt Flow	9	76	39	8	67	68

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	245	43	0	0	47
Stage 1	43	-	-	-	-
Stage 2	202	-	-	-	-
Critical Hdwy	7.03	6.98	-	-	4.98
Critical Hdwy Stg 1	6.03	-	-	-	-
Critical Hdwy Stg 2	6.03	-	-	-	-
Follow-up Hdwy	4.067	4.002	-	-	2.992
Pot Cap-1 Maneuver	628	848	-	-	1150
Stage 1	844	-	-	-	-
Stage 2	706	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	592	848	-	-	1150
Mov Cap-2 Maneuver	592	-	-	-	-
Stage 1	844	-	-	-	-
Stage 2	665	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	4.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	811	1150
HCM Lane V/C Ratio	-	-	0.104	0.058
HCM Control Delay (s)	-	-	10	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.3	0.2



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	29	37	68	68	5
Future Volume (vph)	16	29	37	68	68	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Grade (%)	2%			0%	0%	
Satd. Flow (prot)	1147	0	0	1548	1769	0
Flt Permitted	0.982			0.983		
Satd. Flow (perm)	1147	0	0	1548	1769	0
Link Speed (mph)	35			35	35	
Link Distance (ft)	685			1304	773	
Travel Time (s)	13.3			25.4	15.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	25%	52%	42%	3%	3%	0%
Adj. Flow (vph)	18	32	41	76	76	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	50	0	0	117	82	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	11			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.06	1.06	1.04	1.04	1.04	1.04
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Pretimed
Intersection Capacity Utilization	22.3%
	ICU Level of Service A
Analysis Period (min)	15

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	29	37	68	68	5
Future Vol, veh/h	16	29	37	68	68	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	2	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	25	52	42	3	3	0
Mvmt Flow	18	32	41	76	76	6

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	237	79	82	0	0
Stage 1	79	-	-	-	-
Stage 2	158	-	-	-	-
Critical Hdwy	7.05	6.92	4.52	-	-
Critical Hdwy Stg 1	6.05	-	-	-	-
Critical Hdwy Stg 2	6.05	-	-	-	-
Follow-up Hdwy	3.725	3.768	2.578	-	-
Pot Cap-1 Maneuver	685	855	1297	-	-
Stage 1	881	-	-	-	-
Stage 2	803	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	662	855	1297	-	-
Mov Cap-2 Maneuver	662	-	-	-	-
Stage 1	852	-	-	-	-
Stage 2	803	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	2.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1297	-	775	-	-
HCM Lane V/C Ratio	0.032	-	0.065	-	-
HCM Control Delay (s)	7.9	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

2025 Buildout Conditions PM Peak Hour  
6: Main St & Pittsboro-Goldston Rd

Proposed Quarry  
Goldston, NC



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	69	31	67	42	31	66
Future Volume (vph)	69	31	67	42	31	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	15	12	12	15
Satd. Flow (prot)	1507	0	1297	0	0	1745
Flt Permitted	0.966					0.984
Satd. Flow (perm)	1507	0	1297	0	0	1745
Link Speed (mph)	35		20			35
Link Distance (ft)	1790		403			1304
Travel Time (s)	34.9		13.7			25.4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	3%	48%	45%	10%	52%	2%
Parking (#/hr)			8			
Adj. Flow (vph)	77	34	74	47	34	73
Shared Lane Traffic (%)						
Lane Group Flow (vph)	111	0	121	0	0	107
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.07	1.00	1.00	0.88
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	24.2%
Analysis Period (min)	15
	ICU Level of Service A



Intersection						
Int Delay, s/veh	4.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	69	31	67	42	31	66
Future Vol, veh/h	69	31	67	42	31	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	3	48	45	10	52	2
Mvmt Flow	77	34	74	47	34	73

















Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	239	98	0	0	121
Stage 1	98	-	-	-	-
Stage 2	141	-	-	-	-
Critical Hdwy	6.43	6.68	-	-	4.62
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.732	-	-	2.668
Pot Cap-1 Maneuver	747	846	-	-	1208
Stage 1	923	-	-	-	-
Stage 2	883	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	725	846	-	-	1208
Mov Cap-2 Maneuver	725	-	-	-	-
Stage 1	923	-	-	-	-
Stage 2	857	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	2.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	759	1208
HCM Lane V/C Ratio	-	-	0.146	0.029
HCM Control Delay (s)	-	-	10.6	8.1
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0.1

2025 Buildout Conditions PM Peak Hour  
7: Main St & Colonial Ave./Lancaster Dr

Proposed Quarry  
Goldston, NC

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	4	30	4	4	4	39	76	4	4	87	52
Future Volume (vph)	28	4	30	4	4	4	39	76	4	4	87	52
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	11	11	11	15	11	11	15	11
Satd. Flow (prot)	0	1437	0	0	1726	0	0	1582	0	0	1613	0
Flt Permitted		0.978			0.984			0.984			0.999	
Satd. Flow (perm)	0	1437	0	0	1726	0	0	1582	0	0	1613	0
Link Speed (mph)		35			20			20			20	
Link Distance (ft)		1448			341			475			336	
Travel Time (s)		28.2			11.6			16.2			11.5	
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
Heavy Vehicles (%)	7%	0%	28%	0%	0%	0%	13%	7%	0%	0%	2%	6%
Parking (#/hr)								12			12	
Adj. Flow (vph)	31	4	33	4	4	4	43	84	4	4	97	58
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	68	0	0	12	0	0	131	0	0	159	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.04	1.04	1.04	1.04	1.04	1.04	1.04	1.11	1.04	1.04	1.11	1.04
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	
<b>Intersection Summary</b>												
Area Type:	Other											
Control Type:	Pretimed											
Intersection Capacity Utilization	29.8%											
Analysis Period (min)	15											
	ICU Level of Service A											

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	28	4	30	4	4	4	39	76	4	4	87	52
Future Vol, veh/h	28	4	30	4	4	4	39	76	4	4	87	52
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
Heavy Vehicles, %	7	0	28	0	0	0	13	7	0	0	2	6
Mvmt Flow	31	4	33	4	4	4	43	84	4	4	97	58
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	7.6	8.4	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	33%	45%	33%	3%
Vol Thru, %	64%	6%	33%	61%
Vol Right, %	3%	48%	33%	36%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	119	62	12	143
LT Vol	39	28	4	4
Through Vol	76	4	4	87
RT Vol	4	30	4	52
Lane Flow Rate	132	69	13	159
Geometry Grp	1	1	1	1
Degree of Util (X)	0.163	0.086	0.017	0.174
Departure Headway (Hd)	4.432	4.476	4.49	3.932
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	799	805	801	896
Service Time	2.521	2.477	2.493	2.031
HCM Lane V/C Ratio	0.165	0.086	0.016	0.177
HCM Control Delay	8.4	7.9	7.6	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.6	0.3	0.1	0.6

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	3:05	3:05	3:05	3:05	3:05	3:05	3:05
End Time	3:45	3:45	3:45	3:45	3:45	3:45	3:45
Total Time (min)	40	40	40	40	40	40	40
Time Recorded (min)	30	30	30	30	30	30	30
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	1812	1783	1745	1760	1746	1766	1805
Vehs Exited	1803	1816	1752	1765	1747	1791	1801
Starting Vehs	132	141	132	124	116	129	123
Ending Vehs	141	108	125	119	115	104	127
Travel Distance (mi)	2595	2593	2553	2528	2496	2543	2633
Travel Time (hr)	62.6	62.5	61.6	60.9	61.0	62.3	64.3
Total Delay (hr)	6.9	6.8	6.9	6.6	6.7	7.4	7.3
Total Stops	1448	1414	1407	1366	1422	1399	1473
Fuel Used (gal)	92.7	93.6	91.8	91.5	90.0	91.7	95.3

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	3:05	3:05	3:05	3:05
End Time	3:45	3:45	3:45	3:45
Total Time (min)	40	40	40	40
Time Recorded (min)	30	30	30	30
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	1855	1745	1723	1773
Vehs Exited	1843	1739	1727	1781
Starting Vehs	121	116	129	111
Ending Vehs	133	122	125	107
Travel Distance (mi)	2627	2449	2456	2547
Travel Time (hr)	64.2	59.7	58.9	61.8
Total Delay (hr)	7.5	6.7	6.1	6.9
Total Stops	1513	1402	1368	1417
Fuel Used (gal)	95.4	88.8	88.6	91.9

Interval #0 Information Seeding

Start Time	3:05
End Time	3:15
Total Time (min)	10
Volumes adjusted by PHF, Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	3:15
End Time	3:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	1812	1783	1745	1760	1746	1766	1805
Vehs Exited	1803	1816	1752	1765	1747	1791	1801
Starting Vehs	132	141	132	124	116	129	123
Ending Vehs	141	108	125	119	115	104	127
Travel Distance (mi)	2595	2593	2553	2528	2496	2543	2633
Travel Time (hr)	62.6	62.5	61.6	60.9	61.0	62.3	64.3
Total Delay (hr)	6.9	6.8	6.9	6.6	6.7	7.4	7.3
Total Stops	1448	1414	1407	1366	1422	1399	1473
Fuel Used (gal)	92.7	93.6	91.8	91.5	90.0	91.7	95.3

Interval #1 Information Recording

Start Time	3:15
End Time	3:45
Total Time (min)	30

Volumes adjusted by PHF, Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	1855	1745	1723	1773
Vehs Exited	1843	1739	1727	1781
Starting Vehs	121	116	129	111
Ending Vehs	133	122	125	107
Travel Distance (mi)	2627	2449	2456	2547
Travel Time (hr)	64.2	59.7	58.9	61.8
Total Delay (hr)	7.5	6.7	6.1	6.9
Total Stops	1513	1402	1368	1417
Fuel Used (gal)	95.4	88.8	88.6	91.9

Intersection: 2: Old US 421 & NC 902

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	165	146	52	75
Average Queue (ft)	87	77	29	39
95th Queue (ft)	144	129	47	69
Link Distance (ft)	1331	782	1738	1623
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Bonlee-Carbonton Rd/Bonlee School Rd & NC 902

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	25	6	68	2	128	62
Average Queue (ft)	2	0	23	0	61	25
95th Queue (ft)	18	5	63	3	109	52
Link Distance (ft)		2089		2042	1602	1811
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	50		100			
Storage Blk Time (%)	0		0			
Queuing Penalty (veh)	0		0			

Intersection: 4: Bonlee-Carbonton Rd & Quarry Site Drive

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	92	34
Average Queue (ft)	54	4
95th Queue (ft)	85	27
Link Distance (ft)	987	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		100
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 5: Main St/Main St. & Chatham St

Movement	EB	NB
Directions Served	LR	LT
Maximum Queue (ft)	69	41
Average Queue (ft)	29	6
95th Queue (ft)	65	34
Link Distance (ft)	606	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 6: Main St & Pittsboro-Goldston Rd

Movement	WB	SB
Directions Served	LR	LT
Maximum Queue (ft)	78	47
Average Queue (ft)	43	7
95th Queue (ft)	73	36
Link Distance (ft)	1760	1262
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 7: Main St & Colonial Ave./Lancaster Dr

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	58	28	73	68
Average Queue (ft)	24	9	43	40
95th Queue (ft)	49	30	74	63
Link Distance (ft)	1378	308	417	259
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2002: NC 902 WB U-Turn & US 421 SB

Movement	WB
Directions Served	L
Maximum Queue (ft)	72
Average Queue (ft)	36
95th Queue (ft)	65
Link Distance (ft)	128
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 2004: US 421 SB & NC 902

Movement	EB	SB	SB	NW
Directions Served	>	T	R	L
Maximum Queue (ft)	121	5	18	51
Average Queue (ft)	53	0	1	16
95th Queue (ft)	102	8	16	47
Link Distance (ft)	1194	214		339
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			100	
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3002: US 421 NB & NC 902 EB U-Turn

Movement	EB
Directions Served	L
Maximum Queue (ft)	79
Average Queue (ft)	56
95th Queue (ft)	87
Link Distance (ft)	66
Upstream Blk Time (%)	8
Queuing Penalty (veh)	9
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	



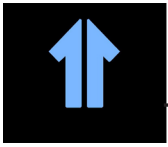
Intersection: 3004: US 421 NB & NC 902

Movement	WB	SE
Directions Served	>	L
Maximum Queue (ft)	60	48
Average Queue (ft)	27	19
95th Queue (ft)	54	49
Link Distance (ft)	924	304
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 9





# APPENDIX F

## Signal Plan

-US 421 at NC 902 (08-0888)





