



TRAFFIC IMPACT ANALYSIS

FOR

1101 AVERETTE ROAD

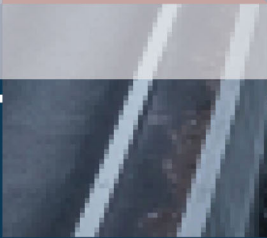
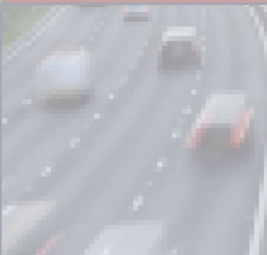
LOCATED

IN

ROLESVILLE, NC

Prepared For:

Lock7 Development
1101 Connecticut Avenue NW, Suite 450
Washington, DC



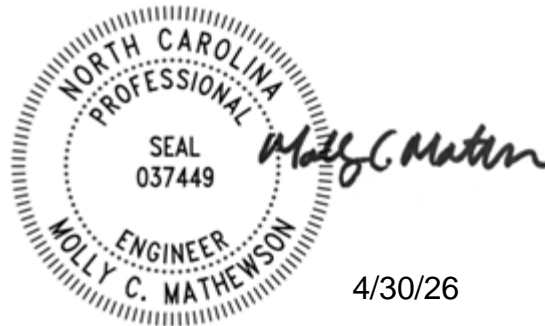
APRIL 2026

DRMP Project No. 26140

Prepared By: CDS

Reviewed By: MM

**TRAFFIC IMPACT
ANALYSIS
FOR
1101 AVERETTE ROAD
LOCATED IN
ROLESVILLE, NC**



Prepared For:

Lock7 Development
1101 Connecticut Avenue NW, Suite 450
Washington, DC

Prepared By:

DRMP, Inc.
License #F-1524

TRAFFIC IMPACT ANALYSIS 1101 AVERETTE ROAD

Rolesville, North Carolina

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed mixed-use development in accordance with the Rolesville (Town) Land Development Ordinance (LDO) and North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. The proposed mixed-use development is to be located at 1101 Averette Road in Rolesville, North Carolina. The proposed development, anticipated to be completed in 2029, is assumed to consist of 76 townhomes and 5,000 square feet (s.f.) of strip retail space. Access to the parcel is proposed via one (1) full-movement driveway along Averette Road.

2. Existing Traffic Conditions

The study area for the TIA was determined through coordination with the Town and consists of the following existing intersections:

- Wait Avenue and Averette Road
- Averette Road and Jones Dairy Road

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed above, in May of 2025 and April of 2026 during the typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods. Traffic counts were already collected at the intersection of Wait Avenue and Averette Road in May of 2025. The annual approved growth rate will be applied to these traffic counts in order to grow them to the 2026 existing condition. 24-hour tube counts were also collected along Averette Road at the approximate location of the proposed access.

3. Future Traffic Conditions

Through coordination with the Town, it was determined that an annual growth rate of 1% would be used to generate 2029 projected weekday AM and PM peak hour traffic volumes.

No adjacent developments or future STIP projects were noted to be included in the future analysis of the study area.

4. Site Trip Generation

Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE Trip Generation Manual, 12th Edition. Table E-1 provides a summary of the trip generation potential for the site.

Table E-1: Site Trip Generation

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Townhomes (215)	76 DU	500	7	23	20	15
Strip Retail (822)	5 KSF	272	11	9	16	15
Total Trips		772	18	32	36	30

To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2029 no-build traffic volumes to determine the 2029 build traffic volumes.

5. Capacity Analysis Summary

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2026 Existing Traffic Conditions
- 2029 No-Build Traffic Conditions
- 2029 Build Traffic Conditions

Refer to Section 7 of the TIA for a summary of the capacity analysis performed at each study intersection.

6. Recommendations

Based on the findings of this study, specific geometric and traffic control improvements have been identified at study intersections. The modifications and improvements are summarized below and are illustrated in Figure E-1.

Improvements by Rosedale Development

Wait Avenue and Averette Road

- Extend eastbound left turn lane to provide 250 feet of storage plus appropriate deceleration and taper.

Improvements by Others

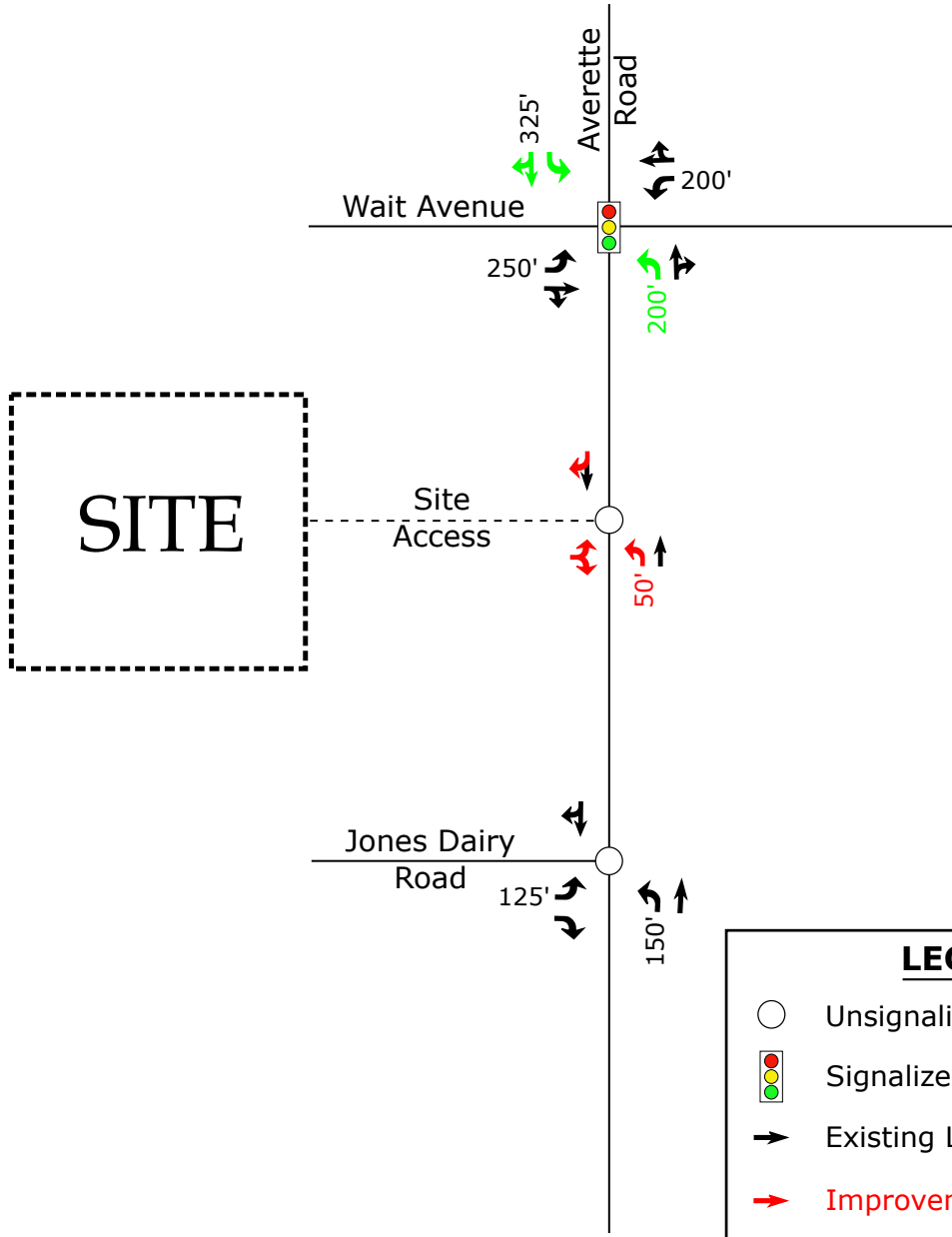
Wait Avenue and Averette Road

- Construct northbound left turn lane with 200 feet of storage plus appropriate deceleration and taper
- Restripe southbound approach to an exclusive left turn lane and a shared through-right lane.
- These improvements based on signal plan found in NCDOT database but not constructed in the field






Recommended Improvements by Developer

Averette Road and Site Access

- Construct Site Access with one ingress and one egress lane.
- Construct ingress left turn lane with 50 feet of storage plus appropriate deceleration and taper.
- Provide stop control for Site Access.



LEGEND

-  Unsignalized Intersection
-  Signalized Intersection
-  Existing Lane
-  Improvement by Developer
-  Improvement by Others
- x' Storage (In Feet)


	1101 Averette Road Rolesville, NC	Recommended Lane Configurations	
			Scale: Not to Scale Figure E-1

TABLE OF CONTENTS

1. INTRODUCTION	1
1.1. Site Location and Study Area	1
1.2. Proposed Land Use and Site Access	2
1.3. Adjacent Land Uses	2
1.4. Existing Roadways	2
2. 2026 EXISTING PEAK HOUR CONDITIONS	6
2.1. 2026 Existing Peak Hour Traffic Volumes	6
2.2. Analysis of Existing Peak Hour Traffic Conditions	6
3. 2029 NO-BUILD PEAK HOUR CONDITIONS.....	8
3.1. Ambient Traffic Growth	8
3.2. Adjacent Development Traffic	8
3.3. Future Roadway Improvements.....	10
3.4. 2029 No-Build Peak Hour Traffic Volumes	10
3.5. Analysis of No-Build Peak Hour Traffic Conditions	10
4. SITE TRIP GENERATION AND DISTRIBUTION	14
4.1. Trip Generation.....	14
4.2. Site Trip Distribution and Assignment	14
5. 2029 BUILD TRAFFIC CONDITIONS.....	19
5.1. 2029 Build Peak Hour Traffic Volumes	19
5.2. Analysis of Build Peak Hour Traffic Conditions	19
6. TRAFFIC ANALYSIS PROCEDURE	21
6.1. Adjustments to Analysis Guidelines.....	22
7. CAPACITY ANALYSIS.....	23
7.1. Wait Avenue and Averette Road	24
7.2. Averette Road and Jones Dairy Road.....	26
7.3. Averette Road and Site Access.....	27
8. CONCLUSIONS	28
9. RECOMMENDATIONS.....	29

LIST OF FIGURES

Figure 1 – Site Location Map	3
Figure 2 – Preliminary Site Plan	4
Figure 3 – Existing Lane Configurations	5
Figure 4 – 2026 Existing Peak Hour Traffic	7
Figure 5 – 2029 Projected Peak Hour Traffic	11

Figure 6 – Adjacent Development Trips.....	12
Figure 7 – 2029 No-Build Peak Hour Traffic	13
Figure 8 – Site Trip Distribution	15
Figure 9a – Residential Site Trip Assignment	16
Figure 9b – Retail Site Trip Assignment.....	17
Figure 10 – Total Site Trip Assignment	18
Figure 11 – 2029 Build Peak Hour Traffic	20
Figure 12 – Recommended Lane Configurations	30

LIST OF TABLES

Table 1: Existing Roadway Inventory.....	2
Table 2: Adjacent Development Information.....	9
Table 3: Trip Generation Summary	14
Table 4: Highway Capacity Manual – Levels-of-Service and Delay.....	21
Table 5: Analysis Summary of Wait Avenue and Averette Road	24
Table 6: Analysis Summary of Averette Road and Jones Dairy Road.....	26
Table 7: Analysis Summary of Averette Road and Site Access	27

TECHNICAL APPENDIX

Appendix A:	Scoping Documentation
Appendix B:	Traffic Counts
Appendix C:	Signal Plans
Appendix D:	Adjacent Development Information
Appendix E:	Capacity Calculations – Wait Avenue and Averette Road
Appendix F:	Capacity Calculations – Averette Road and Jones Dairy Road
Appendix G:	Capacity Calculations – Averette Road and Site Access
Appendix H:	SimTraffic Queueing Analysis
Appendix I:	Turn Lane Warrants

TRAFFIC IMPACT ANALYSIS

1101 Averette Road Rolesville, North Carolina

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed mixed-use development to be located at 1101 Averette Road in Rolesville, North Carolina. The purpose of this study is to determine the potential impacts to the surrounding transportation system created by traffic generated by the proposed development, as well as recommend improvements to mitigate the impacts.

The proposed development, anticipated to be completed in 2029, is assumed to consist of the following uses:

- 76 townhomes (LUC 215)
- 5,000 s.f. of strip retail space (LUC 822)

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2026 Existing Traffic Conditions
- 2029 No-Build Traffic Conditions
- 2029 Build Traffic Conditions

1.1. Site Location and Study Area

The development is proposed to be located at 1101 Averette Road in Rolesville, North Carolina. Refer to Figure 1 for the site location map.

The study area for the TIA was determined through coordination with the Town of Rolesville (Town) and consists of the following existing intersections:

- Wait Avenue and Averette Road
- Averette Road and Jones Dairy Road

1.2. Proposed Land Use and Site Access

The proposed development, anticipated to be completed in 2029, is assumed to consist of the following uses:

- 76 townhomes (LUC 215)
- 5,000 s.f. of strip retail space (LUC 822)

Access to the parcel is proposed via one (1) full-movement driveway along Averette Road. Refer to Figure 2 for a copy of the preliminary site plan.

1.3. Adjacent Land Uses

The proposed development is located in an area consisting primarily of residential development and undeveloped land.

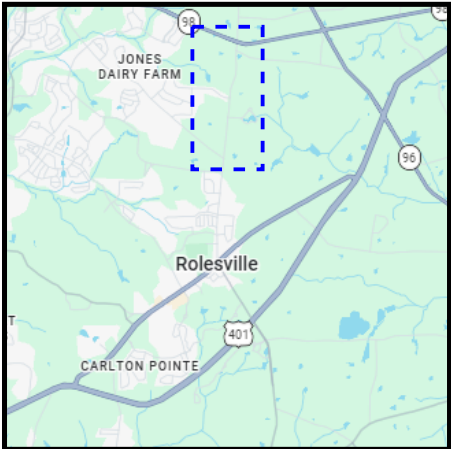
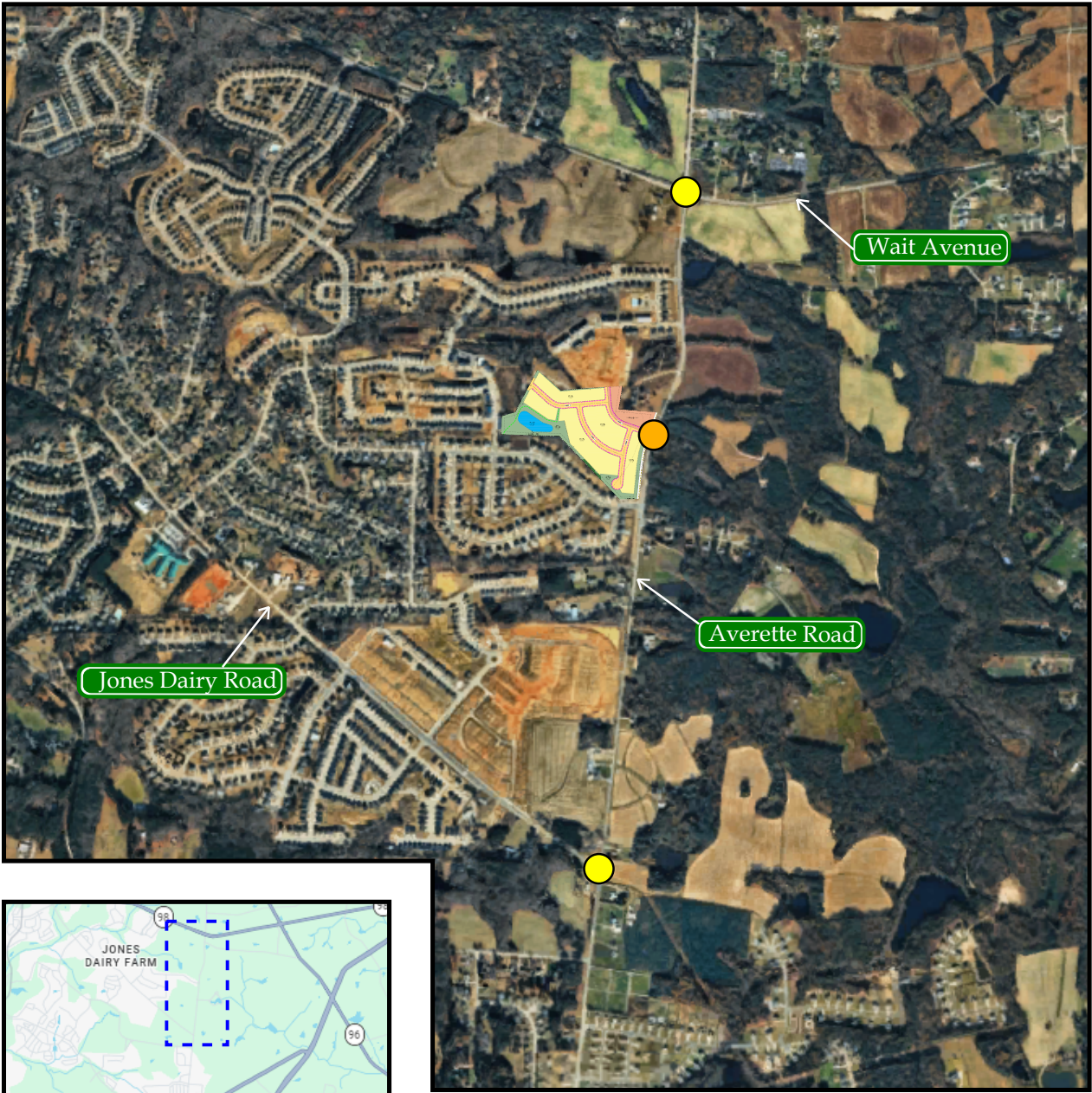
1.4. Existing Roadways

Existing lane configurations (number of traffic lanes on each intersection approach), speed limits, storage capacities, and other intersection and roadway information within the study area are shown in Figure 3. Table 1 provides a summary of this information, as well.

Table 1: Existing Roadway Inventory

Road Name	Route Number	Typical Cross Section	Speed Limit	2023 AADT (vpd)
Wait Avenue	NC-98	2-lane undivided	45 mph	13,000
Averette Road	SR 1945	2-lane undivided	45/50 mph	3,600*
Jones Dairy Road	SR 2053	2-lane undivided	45 mph	4,800*

*AADT based on historical data from 2021; no data provided by NCDOT for 2023



LEGEND

- Study Intersection
- Proposed Site Access
- Study Area



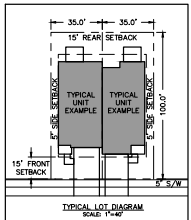
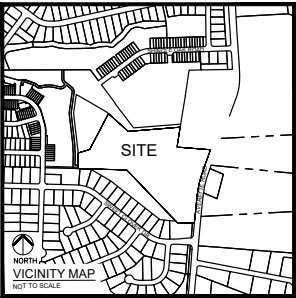
1101 Averette Road
Rolesville, NC

Site Location Map

Scale: Not to Scale Figure 1



PROGRESS
25 MAR 2026



SITE DATA SUMMARY

PROJECT NAME:	AVERETTE ROAD SUBDIVISION
PROJECT PIN:	1860-02-9417
SITE ADDRESS:	1101 AVERETTE ROAD
EXISTING SITE ACREAGE:	16.50 ACRES
R/W DEDICATION (AREA):	0.45 ACRES
COMMERCIAL ACREAGE:	1.63 ACRES
RESIDENTIAL ACREAGE:	14.87 ACRES
ADJACENT ZONING:	RES-CZ
EXISTING ZONING:	RM-CZ
PROPOSED ZONING:	RM-CZ, GC-CZ
CURRENT USE:	VACANT
PROPOSED USE:	DWELLING, SINGLE FAMILY, ATTACHED, COMMERCIAL
RH DEVELOPMENT STANDARDS (LDO 3.1.3.8):	
BUILDING HEIGHT (MAX.):	35'
DENSITY (MAX UNITS PER AC, ATTACHED):	8/AC @ P165 = 149 UNITS
NUMBER OF UNITS PROPOSED:	76 UNITS
COVERAGE AREA MIN.:	2,000 SF
MIN LOT WIDTH REQUIRED:	20'
MIN LOT WIDTH PROPOSED:	35'
MIN LOT DEPTH PROPOSED:	100'
ATTACHED BLDG SETBACKS:	
FRONT:	15'
SIDE:	0' INTERNAL, 10' END UNIT, MINIMUM 10' BETWEEN STRUCTURES OF 3 UNITS OR LESS
REAR:	15'
CORNER:	15'
GC DEVELOPMENT STANDARDS (LDO 3.2.1.8):	
BUILDING HEIGHT (MAX.):	35'
MIN LOT WIDTH REQUIRED:	100'
MIN LOT AREA REQUIRED:	20,000 SF
COMMERCIAL BLDG SETBACKS:	
FRONT:	20'
SIDE:	15'
REAR:	35'
CORNER:	35'
TOTAL OPEN SPACE REQUIRED:	15% OF DEVELOPMENT SIZE: 108,165.00 AC = 2.41 AC
ACTIVE OPEN SPACE REQUIRED:	50% OF OPEN SPACE: 508,241 AC = 1.20 AC
PASSIVE OPEN SPACE REQUIRED:	50% OF OPEN SPACE: 508,241 AC = 1.20 AC
OPEN SPACE PROVIDED:	125,302 SF, 2.88 AC
WATERSHED:	LITTLE RIVER

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 Raleigh, NC 27605
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 Fax: 919.832.2525
 E-Mail: info@thesitegroup.net

EXHIBIT FOR
**AVERETTE ROAD
 SUBDIVISION**
 1101 AVERETTE ROAD
 ROLESVILLE, NORTH CAROLINA

Drawn By: LLF
 Checked By: BDM

DATE: 26 FEB 2026
 REVISED: 03 MAR 2026

CLIENT: LOCK 7 DEVELOPMENT, LLC
 C/O: DAVID SOMMAN, PRINCIPAL
 2201 WISCONSIN AVE, NW#200
 WASHINGTON, DC 20007
 PHONE: (202) 922-8540
 E-MAIL: ssv@lock7.com

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**REZ-26-001
 ZONING EXHIBIT**

SCALE: 1" = 60' (DRAWING SCALED FOR 24x36 INCH PLOT)



[NOT FOR CONSTRUCTION]

ZONING EXHIBIT

ZONING EXHIBIT

Job Code: L7ARS

Dwg No. EX 1.0

ELIZABETH SPRINGS
 PROPERTY OWNERS
 ASSOCIATION INC.
 PIN: 1860037020
 B.M. 2025 P.C. 01134
 D.B. 019949 P.G. 02117

JONES, DOUGLAS BRANCH
 PIN: 1860124888
 D.B. 2280 P.G. 81
 0.45 ACRES

LINE LEGEND

---	PROPERTY BOUNDARY
---	ADJACENT BOUNDARY
---	EXISTING R/W
---	FUTURE R/W
---	POND/CREEK
---	EXISTING SANITARY SEWER
---	EXISTING WATER LINE
---	EXISTING STORMWATER
---	EXISTING GAS LINE
---	EXISTING OVERHEAD UTILITY
---	EXISTING COMMUNICATION
---	EXISTING UNDERGROUND ELECTRIC
---	EXISTING TOPO MAJOR
---	EXISTING TOPO MINOR
---	PROPOSED TOPO MAJOR
---	PROPOSED TOPO MINOR
---	EXISTING PUBLIC GREENWAY
---	5' SIDEWALK ALONG BOTH SIDES OF PROPOSED INTERNAL STREETS
---	PROPOSED NEIGHBORHOOD TRAIL
---	SIDEPATH
---	BIKE LANE
---	WETLAND
---	SCM
---	OPEN SPACE
---	RESIDENTIAL LOTS
---	OTHER RESIDENTIAL AREA
---	COMMERCIAL

OPEN SPACE #2
 PERRY FARMS HOMEOWNERS
 ASSOCIATION INC.
 PIN: 1860027139
 D.B. 17125 P.G. 223
 B.M. 2017 P.G. 228
 0.96 ACRES

OPEN SPACE #3
 PERRY FARMS HOMEOWNERS
 ASSOCIATION INC.
 PIN: 1860027139
 D.B. 17125 P.G. 223
 B.M. 2017 P.G. 228
 2.63 ACRES

OPEN SPACE #4
 PERRY FARMS HOMEOWNERS
 ASSOCIATION INC.
 PIN: 1860117990
 D.B. 17628 P.G. 727
 B.M. 2017 P.G. 2286
 0.68 ACRES

OPEN SPACE
 BILL CLARK HOMES
 OF RALEIGH LLC
 PIN: 1860113520
 D.B. 1627 P.G. 1802
 B.M. 2017 P.G. 2286
 0.06 ACRES

OPEN SPACE
 SCM
 23,027 SF
 0.67 AC

LOT AREA
 81,886 SF
 1.88 AC

LOT AREA
 156,889 SF
 3.60 AC

LOT AREA
 58,474 SF
 1.35 AC

SMALL OPEN SPACE
 13,967 SF
 0.30 AC

LOT AREA
 64,624 SF
 1.48 AC

COMMERICAL AREA (GC-CZ)
 1.63 AC

PROPOSED NEIGHBORHOOD TRAIL (GRAVEL)

TEMPORARY TURN-AROUND

10' PERIMETER BUFFER

25' PERIMETER BUFFER

STREET A

STREET C

STREET B

PROPOSED SIDEWALK

30' STREETSCAPE BUFFER

25' R/W DEDICATION

AVERETTE RD
 CITY PUBLIC

25' PERIMETER BUFFER

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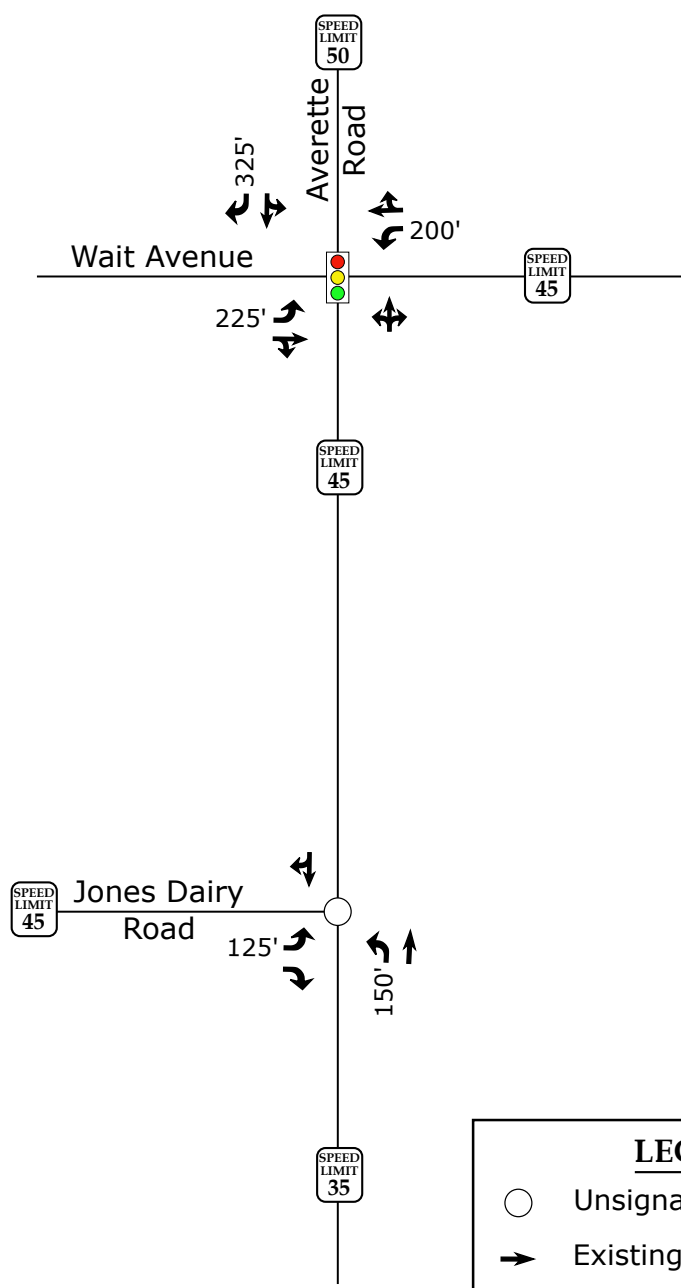
25' PERIMETER BUFFER

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LEGEND

- Unsignalized Intersection
- ➔ Existing Lane
- x' Storage (In Feet)
- Posted Speed Limit

	1101 Averette Road Rolesville, NC	2026 Existing Lane Configurations	
		Scale: Not to Scale	Figure 3

2. 2026 EXISTING PEAK HOUR CONDITIONS

2.1. 2026 Existing Peak Hour Traffic Volumes

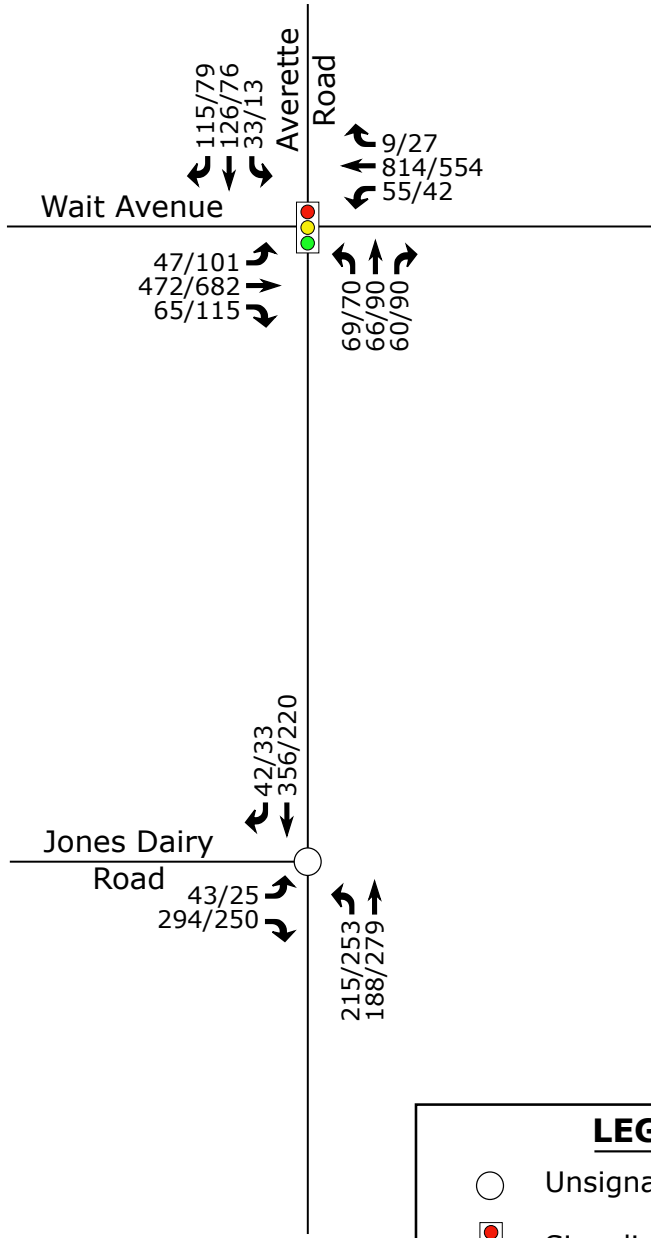
Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below in May of 2025 and April of 2026 during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods:

- Wait Avenue and Averette Road
- Averette Road and Jones Dairy Road



Traffic counts were already collected at the intersection of Wait Avenue and Averette Road in May of 2025. The annual approved growth rate will be applied to these traffic counts in order to grow them to the 2026 existing condition. 24-hour tube counts were also collected along Averette Road at the approximate location of the proposed access. Refer to Figure 4 for 2026 existing weekday AM and PM peak hour traffic volumes. A copy of the count data is located in Appendix B of this report.


2.2. Analysis of Existing Peak Hour Traffic Conditions

The 2026 existing weekday AM and PM peak hour traffic volumes were analyzed to determine the current levels of service at the study intersections under existing roadway conditions. Signal information was obtained from NCDOT and is included in Appendix C. The results of the analysis are presented in Section 7 of this report.



LEGEND

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

	1101 Averette Road Rolesville, NC	2026 Existing Peak Hour Traffic	
		Scale: Not to Scale	Figure 4

3. 2029 NO-BUILD PEAK HOUR CONDITIONS

In order to account for growth of traffic and subsequent traffic conditions at a future year, no-build traffic projections are needed. No-build traffic is the component of traffic due to the growth of the community and surrounding area that is anticipated to occur regardless of whether or not the proposed development is constructed. No-build traffic is comprised of existing traffic growth within the study area and additional traffic created as a result of adjacent approved developments.

3.1. Ambient Traffic Growth

Through coordination with the Town, it was determined that an annual growth rate of 2.5% would be used to generate 2029 projected weekday AM and PM peak hour traffic volumes. Refer to Figure 5 showing the 2029 projected peak hour traffic volumes.

3.2. Adjacent Development Traffic

Through coordination with the Town, the following adjacent developments were identified to be included as an approved adjacent development in this study:

- Jones Dairy Residential (Prestleigh)
- Marquis Homes
- Rosedale

Table 2, on the following page, provides a summary of the adjacent developments.

Table 2: Adjacent Development Information

Development Name	Location	Build-Out Year	Land Use / Intensity	TIA Performed
Prestleigh	North of Jones Dairy Road, west of Averette Road	Prior to completion of proposed development	250 townhomes and 600 single-family homes*	October 2018 by RKA
Marquis Homes	East of Averette Road, across from proposed development	Prior to completion of the proposed development	31 single-family homes	N/A <i>Trips generated and applied to roadway network</i>
Rosedale	North of Wait Avenue, east of Averette Road	Prior to completion of the proposed development	677 single-family homes, 288 townhomes**	September 2018 by RKA

*Prestleigh is one of three residential developments captured in the TIA for the overall site; not all units shown constructed with Prestleigh development.

**Rosedale development assumed to be 50% constructed; site trips divided in half at study intersections.

The Prestleigh development is currently under construction of strictly residential development. The TIA that captures the site also includes other residential development surrounding the Prestleigh neighborhood. Through scoping with the Town, it was noted that roughly 50% of the development was currently builtout. To accurately generate trips for the remaining homes to be constructed, the entering and exiting trips at the access points in the approved TIA were split in half and applied to the roadway network. Roadway improvements for the development were taken into account under all future conditions.

Marquis Homes is expected to construct 31 single-family homes east of Averette Road, adjacent to the proposed development. No TIA was performed for the site so trips were generated using the 12th Edition of the *ITE Trip Generation Manual* and distributed across the study area based on the proposed site’s approved distributions.

The Rosedale residential development is currently being constructed. During scoping with the Town, it was noted that the development is approximately 50% constructed. Half the site trips shown in the TIA were applied to the study area under all future conditions.

A signal plan at the intersection of Wait Avenue and Averette Road has been approved that includes the roadway improvements associated with these developments. This signal plan was utilized for modeling future conditions instead of modeling based on the capacity analysis guidelines.

A summary of all adjacent development trips is shown in Figure 6. More details for each adjacent development can be found in Appendix D.

3.3. Future Roadway Improvements

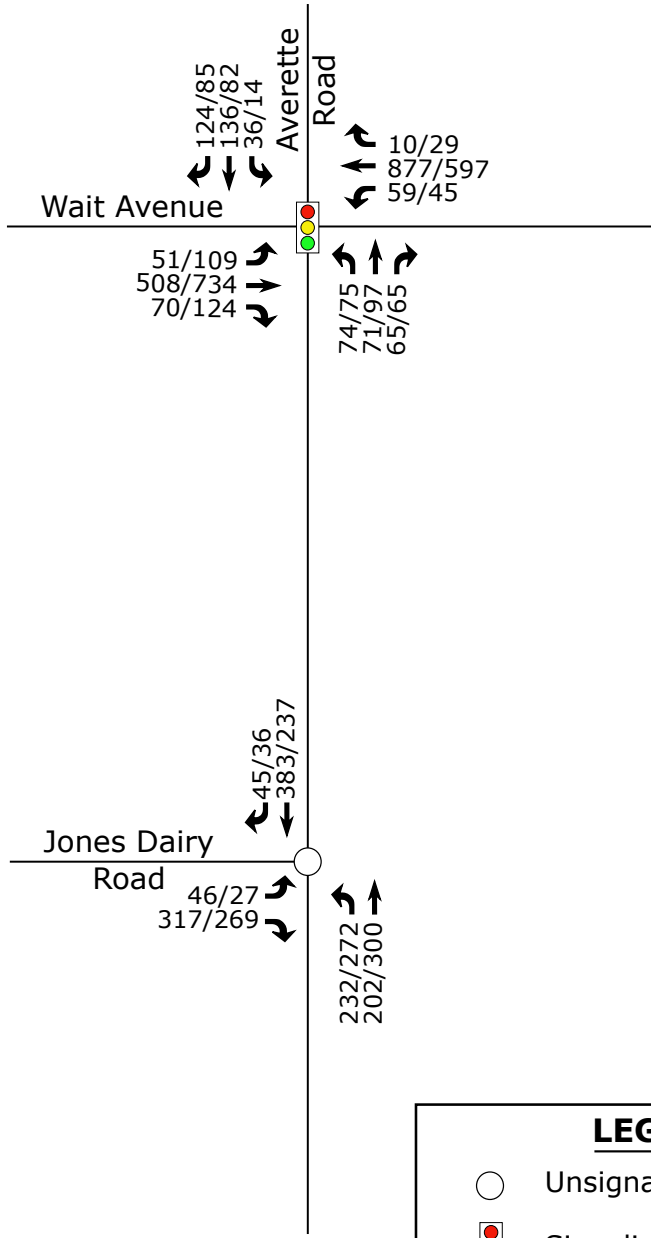
Based on coordination with the Town, it was determined there were no public future roadway improvements to consider with this study.

3.4. 2029 No-Build Peak Hour Traffic Volumes

The 2029 no-build traffic volumes were determined by projecting the 2026 existing peak hour traffic to the year 2029. Refer to Figure 7 for an illustration of the 2029 no-build peak hour traffic volumes at the study intersections.


3.5. Analysis of No-Build Peak Hour Traffic Conditions

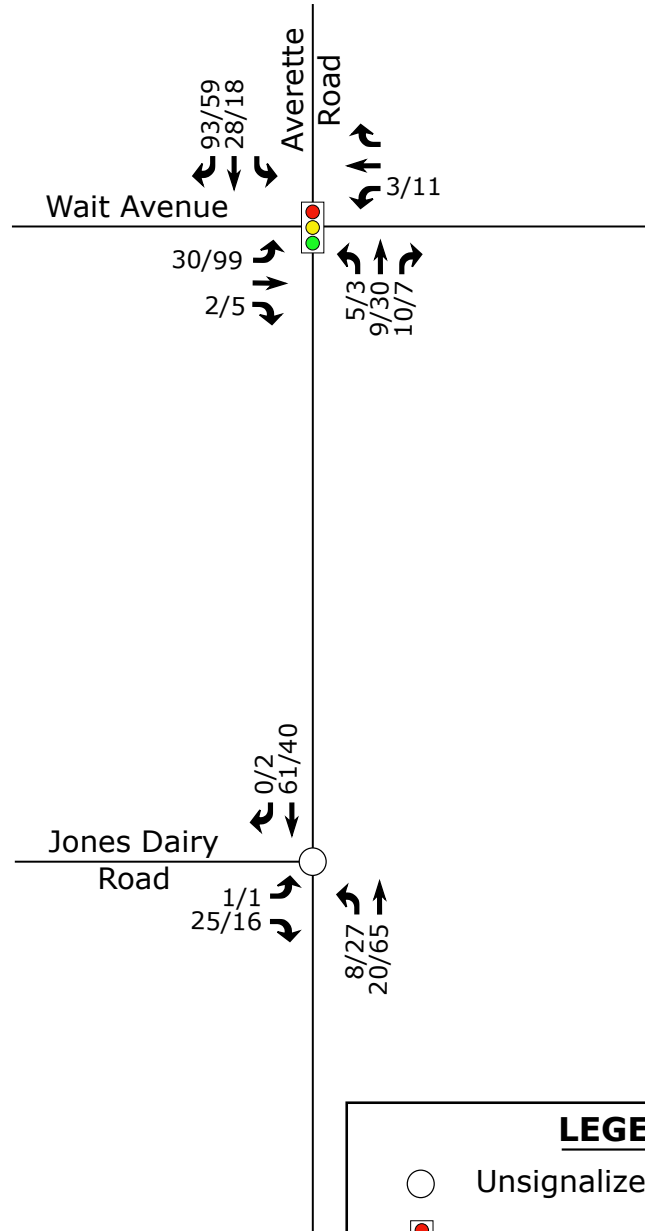
The 2029 no-build AM and PM peak hour traffic volumes at the study intersections were analyzed with future geometric roadway conditions and traffic control. The analysis results are presented in Section 7 of this report.



LEGEND

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

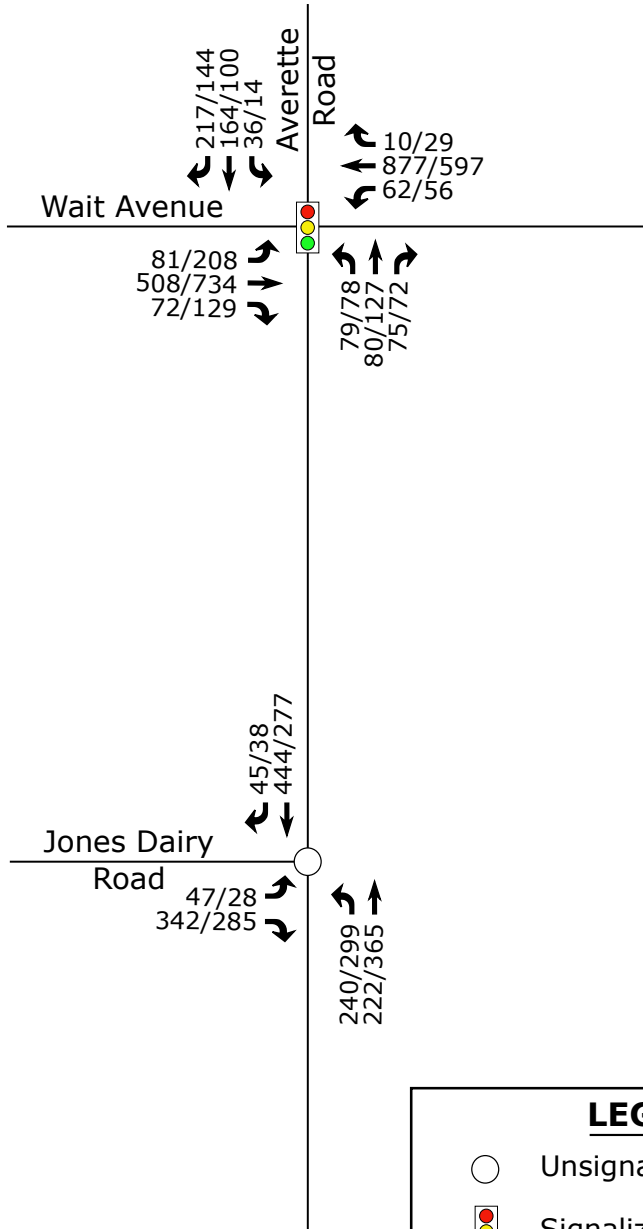
	1101 Averette Road Rolesville, NC	2029 Projected Peak Hour Traffic	
		Scale: Not to Scale	Figure 5





LEGEND


- Unsignalized Intersection
- ◫ Signalized Intersection
- X / Y → Weekday AM / PM Peak Hour Adjacent Development Trips

	1101 Averette Road Rolesville, NC	Peak Hour Adjacent Development Trips	
			Scale: Not to Scale



LEGEND

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

	1101 Averette Road Rolesville, NC	2029 No-Build Peak Hour Traffic	
		Scale: Not to Scale	Figure 7

4. SITE TRIP GENERATION AND DISTRIBUTION

4.1. Trip Generation

Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 12th Edition. Table 3 provides a summary of the trip generation potential for the site.

Table 3: Trip Generation Summary

Land Use (ITE Code)	Intensity	Daily Traffic (vpd)	Weekday AM Peak Hour Trips (vph)		Weekday PM Peak Hour Trips (vph)	
			Enter	Exit	Enter	Exit
Townhomes (215)	76 DU	500	7	23	20	15
Strip Retail (822)	5 KSF	272	11	9	16	15
Total Trips		772	18	32	36	30

It is estimated that the proposed development will generate approximately 772 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 50 trips (18 entering and 32 exiting) will occur during the weekday AM peak hour and 66 trips (36 entering and 30 exiting) will occur during the weekday PM peak hour.

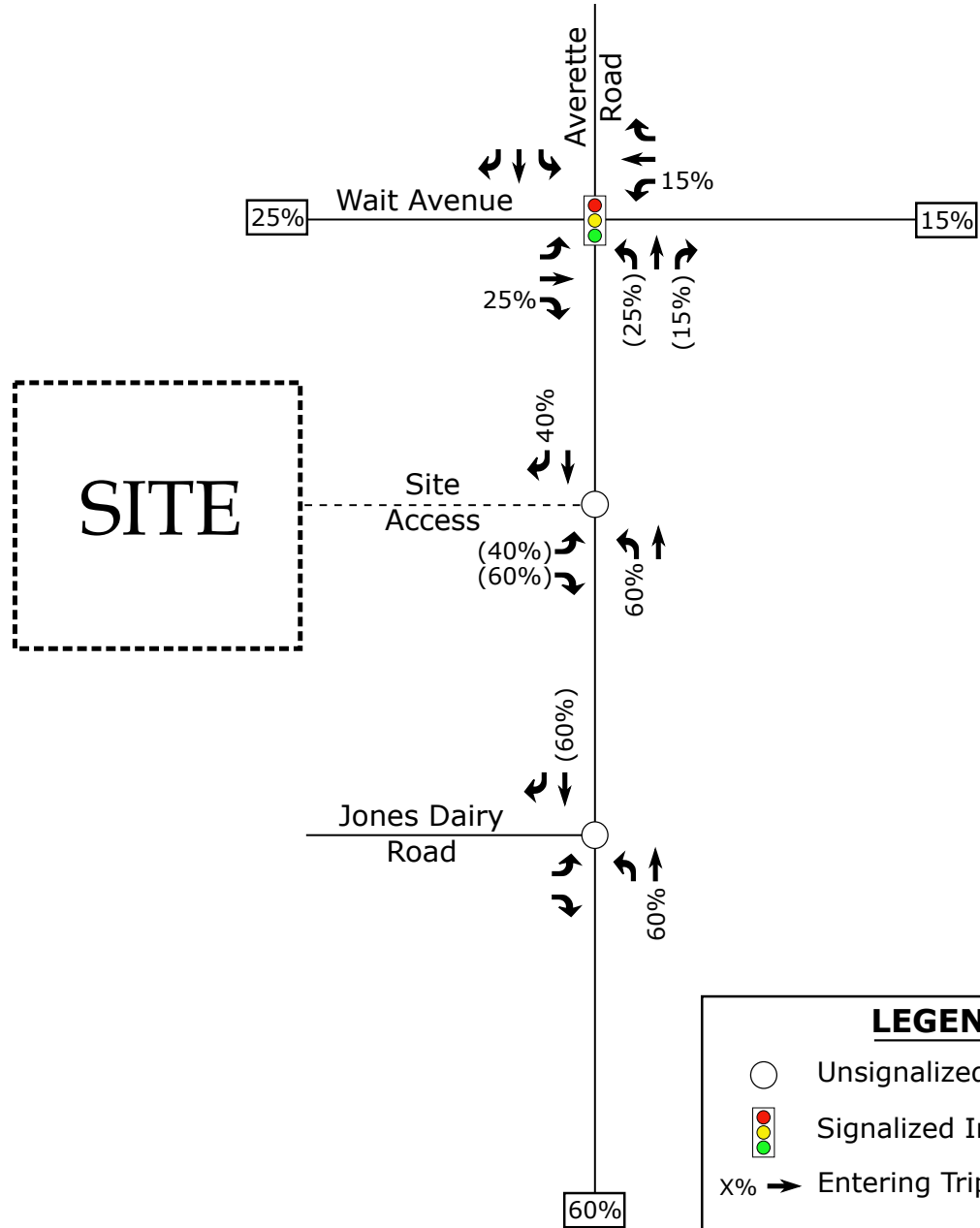
4.2. Site Trip Distribution and Assignment

Trip distribution percentages used in assigning site traffic for this development were estimated based on a combination of existing traffic patterns, population centers adjacent to the study area, and engineering judgment.

It is estimated that the site trips will be regionally distributed as follows:

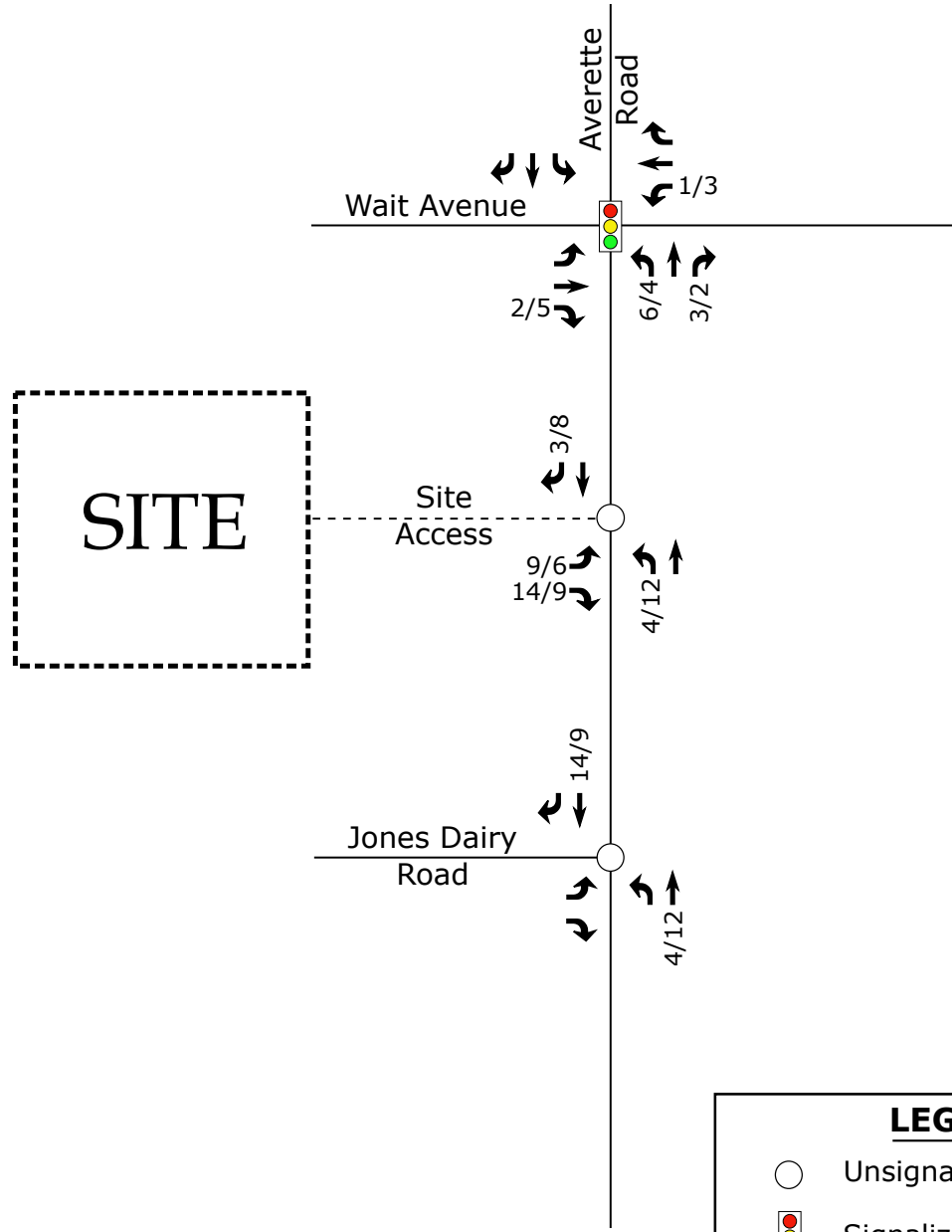
- 60% to/from the south via Averette Road
- 25% to/from the west via Wait Avenue
- 15% to/from the east via Wait Avenue

The site trip distribution is shown in Figure 8, and the residential and retail site trip assignments are shown in Figures 9a and 9b, respectively. A total site trip assignment figure can be found in Figure 10.




LEGEND

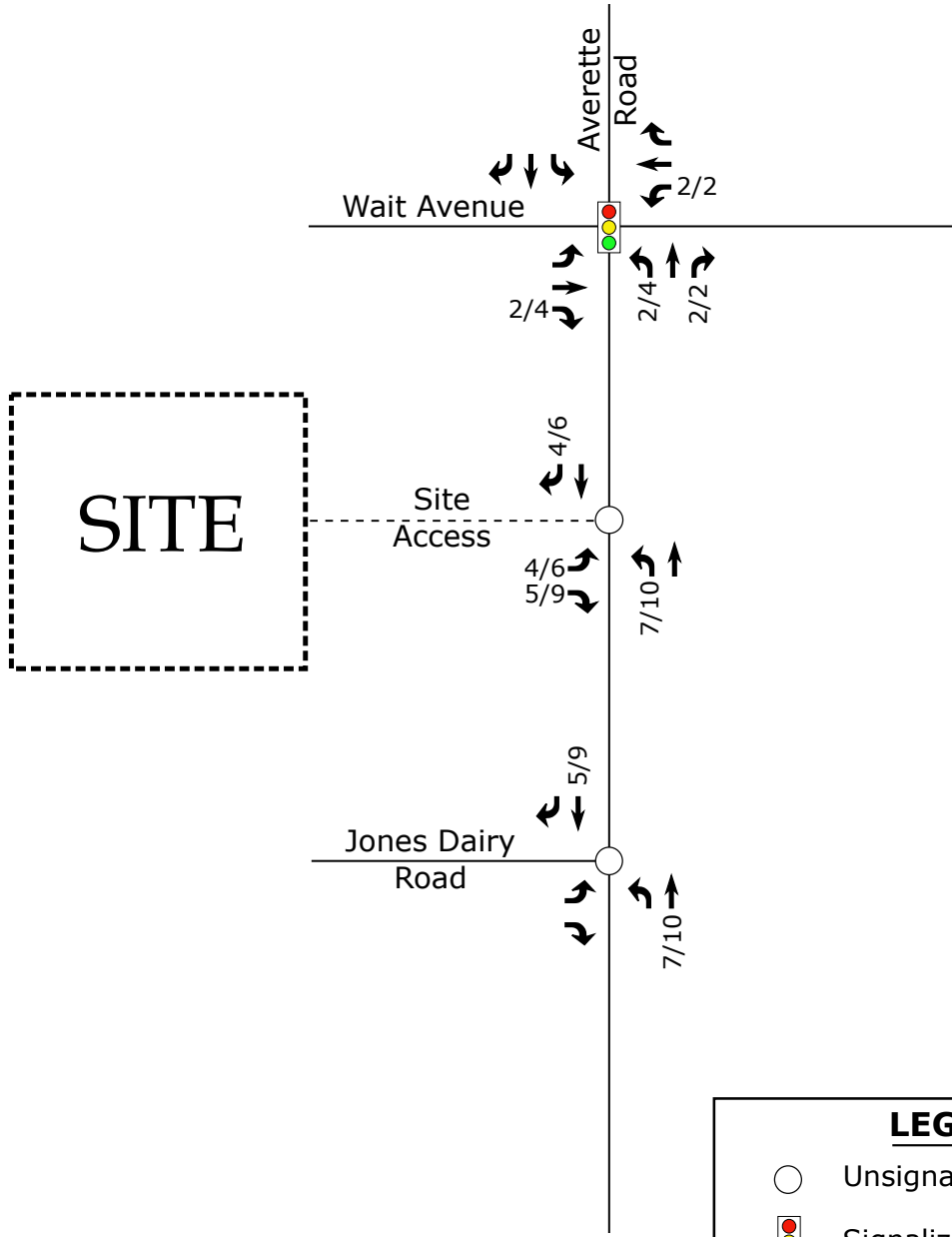
- Unsignalized Intersection
- ⬆️⬆️⬆️ Signalized Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- XX% Regional Trip Distribution



LEGEND

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

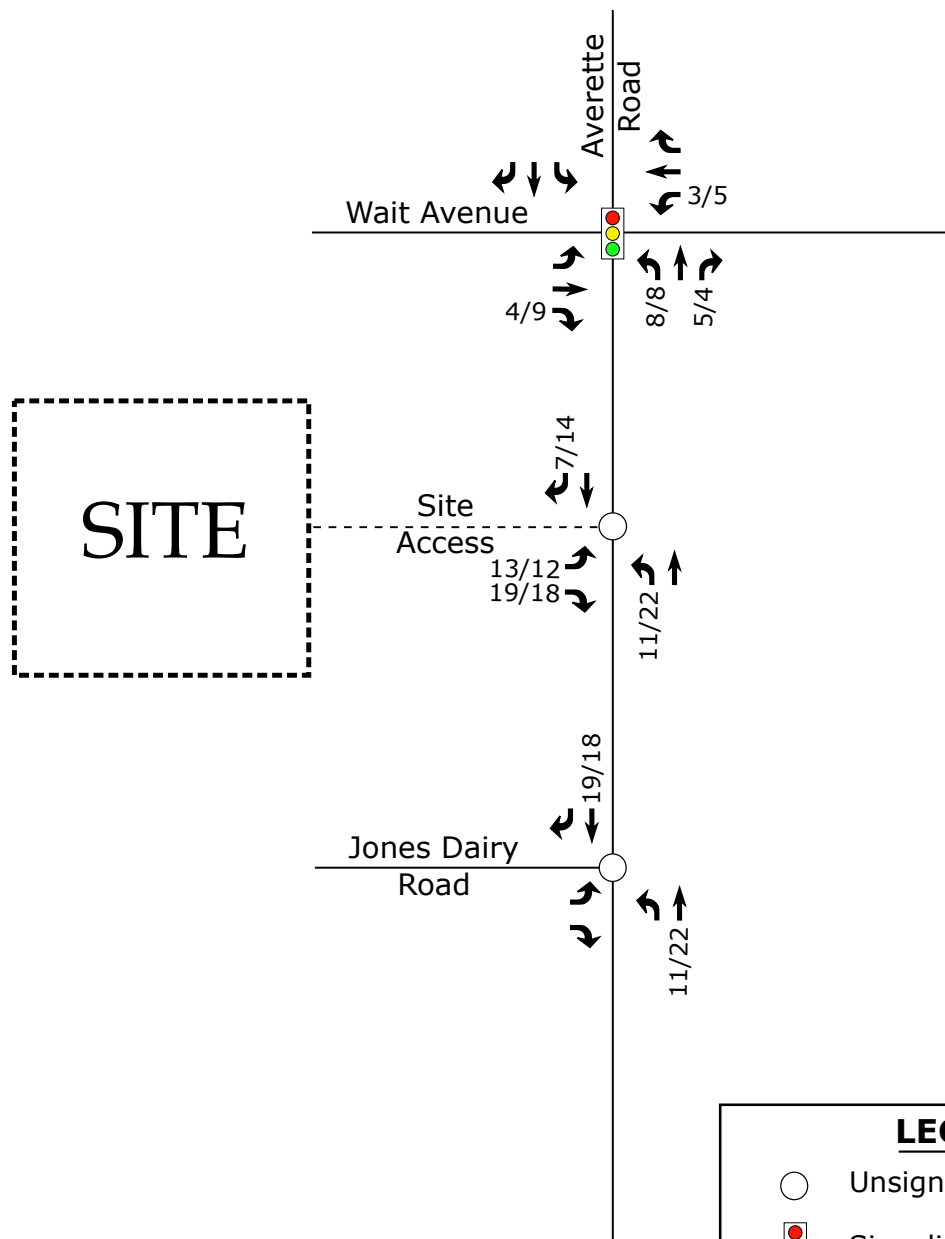
	1101 Averette Road Rolesville, NC	Residential Site Trip Assignment	
		Scale: Not to Scale	Figure 9a






LEGEND


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

	1101 Averette Road Rolesville, NC	Retail Site Trip Assignment	
		Scale: Not to Scale	Figure 9b



LEGEND

-  Unsignalized Intersection
-  Signalized Intersection
- X / Y  Weekday AM / PM Peak Hour Site Trips

	1101 Averette Road Rolesville, NC	Total Site Trip Assignment	
		Scale: Not to Scale	Figure 10

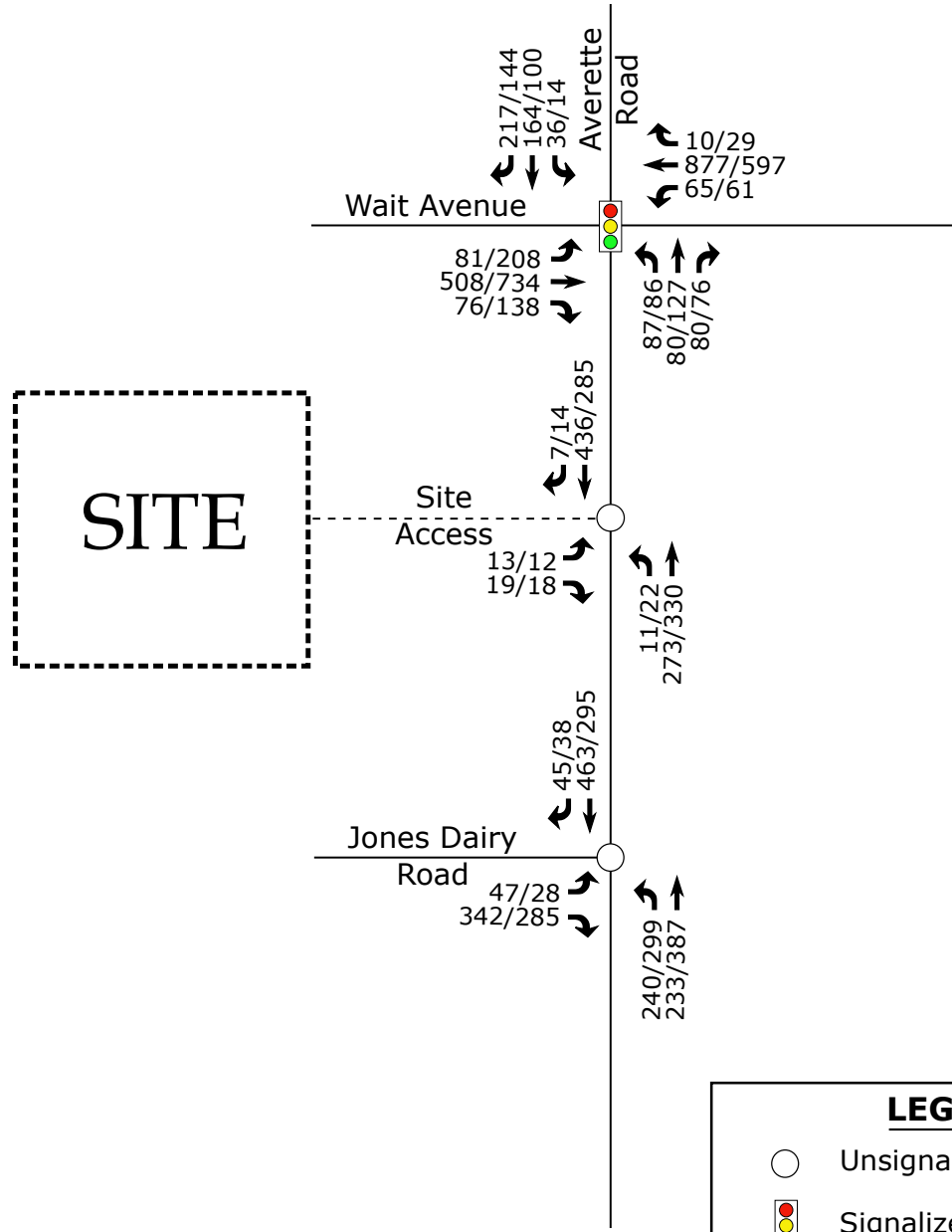
5. 2029 BUILD TRAFFIC CONDITIONS

5.1. 2029 Build Peak Hour Traffic Volumes

To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2029 no-build traffic volumes to determine the 2029 build traffic volumes. Refer to Figure 11 for an illustration of the 2029 build peak hour traffic volumes with the proposed site fully developed.

5.2. Analysis of Build Peak Hour Traffic Conditions

Study intersections were analyzed with the 2029 build traffic volumes using the same methodology previously discussed for existing and no-build traffic conditions. Intersections were analyzed with improvements necessary to accommodate future traffic volumes. The results of the capacity analysis for each intersection are presented in Section 7 of this report.



LEGEND

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

	1101 Averette Road Rolesville, NC	2029 Build Peak Hour Traffic	
		Scale: Not to Scale	Figure 11

6. TRAFFIC ANALYSIS PROCEDURE

Study intersections were analyzed using the methodology outlined in the *Highway Capacity Manual* (HCM), 6th Edition published by the Transportation Research Board. Capacity and level of service are the design criteria for this traffic study. A computer software package, Synchro (Version 11.1), was used to complete the analyses for the study area intersections. Please note that the unsignalized capacity analysis does not provide an overall level of service for an intersection; only delay for an approach with a conflicting movement.

The HCM defines capacity as “the maximum hourly rate at which persons or vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions.” Level of service (LOS) is a term used to represent different driving conditions and is defined as a “qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers.” Level of service varies from Level “A” representing free flow, to Level “F” where breakdown conditions are evident. Refer to Table 4 for HCM levels of service and related average control delay per vehicle for both signalized and unsignalized intersections. Control delay as defined by the HCM includes “initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay”. An average control delay of 50 seconds at a signalized intersection results in LOS “D” operation at the intersection.

Table 4: Highway Capacity Manual – Levels-of-Service and Delay

UNSIGNALIZED INTERSECTION		SIGNALIZED INTERSECTION	
LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)	LEVEL OF SERVICE	AVERAGE CONTROL DELAY PER VEHICLE (SECONDS)
A	0-10	A	0-10
B	10-15	B	10-20
C	15-25	C	20-35
D	25-35	D	35-55
E	35-50	E	55-80
F	>50	F	>80

6.1. Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to the NCDOT Congestion Management Guidelines, with exception of the future signal located at the intersection of Wait Avenue and Averette Road.

7. CAPACITY ANALYSIS

The following study intersections were analyzed under all traffic conditions:

- Wait Avenue and Averette Road
- Averette Road and Jones Dairy Road

The proposed site driveway was analyzed under 2029 build traffic conditions. Refer to Tables 5-7 for a summary of capacity analysis results. Refer to Appendices E-H for the Synchro capacity analysis reports and SimTraffic queueing reports.

7.1. Wait Avenue and Averette Road

Refer to the table below for a summary of the capacity analysis of the subject intersection during the analysis scenarios.

Table 5: Analysis Summary of Wait Avenue and Averette Road

ANALYSIS SCENARIO	APPROACH	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2026 Existing	EB	1 LT, 1 TH-RT	B (10)	B (18)	B (17)	B (18)
	WB	1 LT, 1 TH-RT	B (18)		B (10)	
	NB	1 LT-TH-RT	C (32)		C (34)	
	SB	1 LT-TH, 1 RT	C (25)		C (24)	
2029 No-Build	EB	1 LT, 1 TH-RT	B (14)	C (33)	B (19)	C (20)
	WB	1 LT, 1 TH-RT	B (18)		B (10)	
	NB	<u>1 LT</u> , 1 TH-RT	D (46)		C (35)	
	SB	<u>1 LT</u> , <u>1 TH-RT</u>	F (89)		D (39)	
2029 Build	EB	1 LT, 1 TH-RT	B (14)	C (33)	B (19)	C (21)
	WB	1 LT, 1 TH-RT	B (18)		B (10)	
	NB	<u>1 LT</u> , 1 TH-RT	D (52)		D (37)	
	SB	<u>1 LT</u> , <u>1 TH-RT</u>	F (89)		D (40)	

Lane improvements by others underlined based on TIA approvals and approved signal plans.

Capacity analysis of all traffic conditions indicates the intersection is expected to operate at LOS C or better during the AM and PM peak hours. Under existing conditions, all approaches are expected to operate at LOS C or better during the AM and PM peak hours. With the adjacent development traffic and regional growth added under future conditions, the southbound approach is expected to degrade to LOS F during the AM peak hour. It should be noted that under build conditions, the southbound approach delay is not expected to increase when compared to no-build conditions.

Significant queueing is expected along the northbound and southbound approaches under no-build conditions. These queueing issues are expected to persist under build conditions. The queue spillback is a result of the northbound and southbound left turn movements operating as permitted only with minimal gaps in traffic. These left turn queues are expected to spillback and block the shared through-right lanes along the northbound and southbound approaches.

Due to acceptable levels of service at the intersection and minimal impacts by the proposed development, no improvements are recommended by the developer at the intersection.

7.2. Averette Road and Jones Dairy Road

Refer to the table below for a summary of the capacity analysis of the subject intersection during the analysis scenarios.

Table 6: Analysis Summary of Averette Road and Jones Dairy Road

ANALYSIS SCENARIO	A P P R O A C H	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2026 Existing	EB NB SB	1 LT, 1 RT 1 LT, 1 TH 1 TH-RT	C (19) ² A (9) ¹ --	N/A	B (14) ² A (9) ¹ --	N/A
2029 No-Build	EB NB SB	1 LT, 1 RT 1 LT, 1 TH 1 TH-RT	D (27) ² A (10) ¹ --	N/A	C (17) ² A (9) ¹ --	N/A
2029 Build	EB NB SB	1 LT, 1 RT 1 LT, 1 TH 1 TH-RT	D (29) ² A (10) ¹ --	N/A	C (18) ² A (9) ¹ --	N/A

1. Level of service for major-street left-turn movement.
2. Level of service for minor-street approach.

Capacity analysis of all traffic conditions indicates the major-street left turn movement is expected to operate at LOS A during the AM and PM peak hours. The minor-street approach is expected to operate at LOS D or better during the AM and PM peak hours. No significant queuing is expected at the intersection.

Due to acceptable operations, no improvements are recommended by the developer.

7.3. Averette Road and Site Access

Refer to the table below for a summary of the capacity analysis of the subject intersection during the analysis scenarios.

Table 7: Analysis Summary of Averette Road and Site Access

ANALYSIS SCENARIO	A P P R O A C H	LANE CONFIGURATIONS	WEEKDAY AM PEAK HOUR LEVEL OF SERVICE		WEEKDAY PM PEAK HOUR LEVEL OF SERVICE	
			Approach	Overall (seconds)	Approach	Overall (seconds)
2029 Build	EB NB SB	1 LT-RT 1 LT , 1 TH 1 TH-RT	B (14) ² A (8) ¹ --	N/A	B (12) ² A (8) ¹ --	N/A

Improvements to lane configurations are shown in bold.

1. Level of service for major-street left-turn movement.
2. Level of service for minor-street approach.

Capacity analysis of build traffic conditions indicates the major-street left turn movement is expected to operate at LOS A during the AM and PM peak hours. The minor-street approach is expected to operate at LOS B during the AM and PM peak hours. No significant queuing is expected at the intersection.

Turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*. Neither a right nor a left turn lane are expected to be warranted at the intersection. Through coordination with NCDOT, a left turn lane into the site is recommended to be constructed by the developer. Turn lane warrants can be found in Appendix I.

Due to acceptable operations, no additional improvements are recommended.

8. CONCLUSIONS

This Traffic Impact Analysis was conducted to determine the potential traffic impacts of the proposed mixed-use development to be located at 1101 Averette Road in Rolesville, North Carolina. The proposed development, anticipated to be completed in 2029, is assumed to consist of the following uses:

- 76 townhomes (LUC 215)
- 5,000 s.f. of strip retail space (LUC 822)

Access is proposed via one (1) full-movement driveway along Averette Road.

The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2026 Existing Traffic Conditions
- 2029 No-Build Traffic Conditions
- 2029 Build Traffic Conditions

Trip Generation

It is estimated that the proposed development will generate approximately 772 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 50 trips (18 entering and 32 exiting) will occur during the weekday AM peak hour and 66 trips (36 entering and 30 exiting) will occur during the weekday PM peak hour.

Adjustments to Analysis Guidelines

Capacity analysis at all study intersections was completed according to NCDOT Congestion Management Guidelines. Refer to section 6.1 of this report for a detailed description of any adjustments to these guidelines made throughout the analysis.

9. RECOMMENDATIONS

Based on the findings of this study, specific geometric improvements have been identified to accommodate future traffic conditions. See a more detailed description of the recommended modifications and improvements below. Refer to Figure 12 for an illustration of the recommended lane configuration for the proposed development.

Improvements by Rosedale Development

Wait Avenue and Averette Road

- Extend eastbound left turn lane to provide 250 feet of storage plus appropriate deceleration and taper.

Improvements by Others

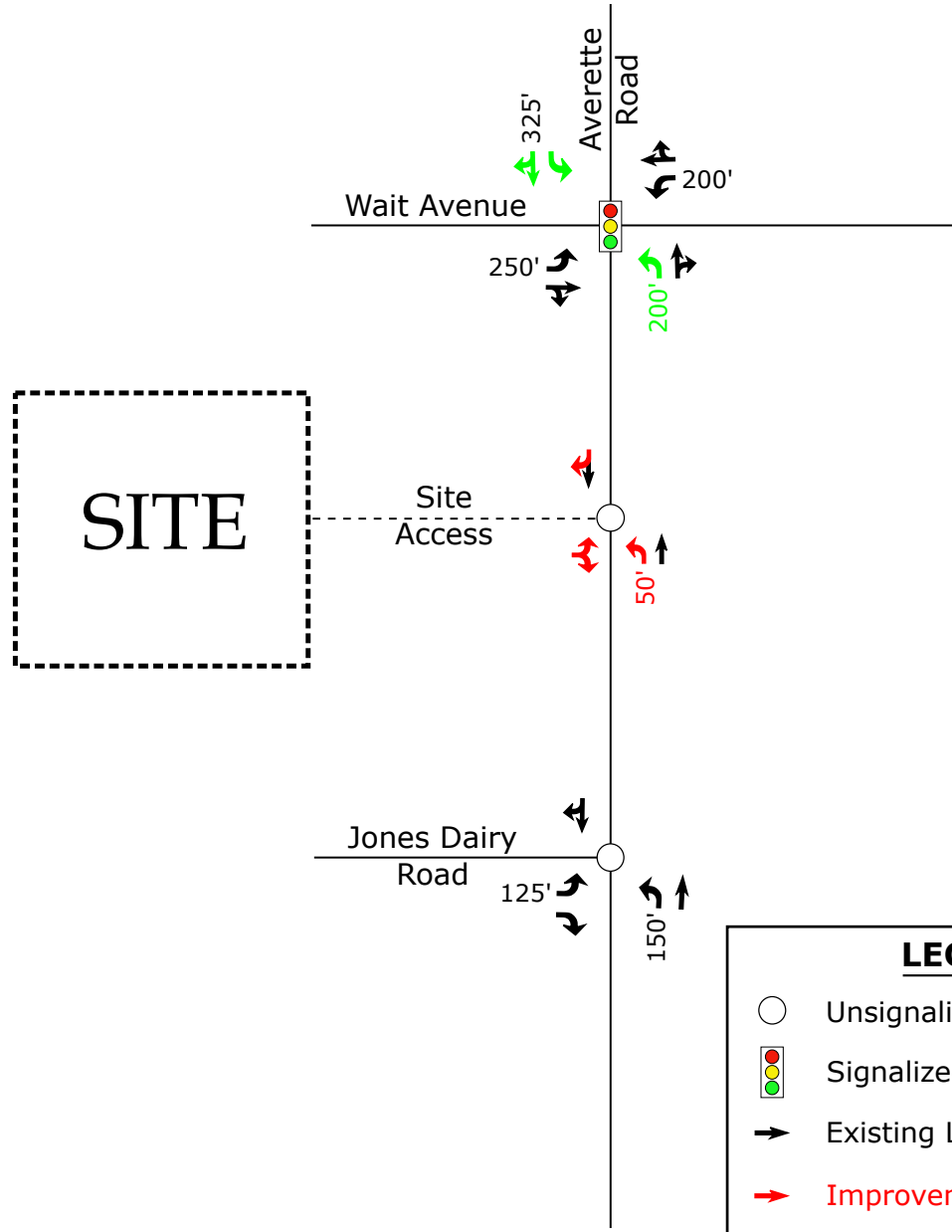
Wait Avenue and Averette Road

- Construct northbound left turn lane with 200 feet of storage plus appropriate deceleration and taper
- Restripe southbound approach to an exclusive left turn lane and a shared through-right lane.
- These improvements based on signal plan found in NCDOT database but not constructed in the field






Recommended Improvements by Developer


Averette Road and Site Access

- Construct Site Access with one ingress and one egress lane.
- Construct ingress left turn lane with 50 feet of storage plus appropriate deceleration and taper.
- Provide stop control for Site Access.



LEGEND

-  Unsignalized Intersection
-  Signalized Intersection
-  Existing Lane
-  Improvement by Developer
-  Improvement by Others
- x' Storage (In Feet)

	1101 Averette Road Rolesville, NC	Recommended Lane Configurations	
			Scale: Not to Scale Figure 12