DRMP

TRAFFIC IMPACT ANALYSIS

FOR

WAIT AVENUE MIXED-USE

LOCATED

IN

ROLESVILLE, NC

Prepared For:

TOWN OF ROLESVILLE
P.O. BOX 250
502 SOUTHTOWN CIRCLE
ROLESVILLE, NC 27571

August 2025

DRMP Project No. 2500158

Prepared By: LK

Reviewed By: CC

DRMP

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DRMP, Inc.

License #F-1524

TRAFFIC IMPACT ANALYSIS
WAIT AVENUE MIXED-USE
Rolesville, North Carolina

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed Wait Avenue Mixed-Use development in accordance with the Rolesville (Town) Unified Development Ordinance (UDO) and North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. The proposed Wait Avenue Mixed-Use development to be located Rolesville, North Carolina. The proposed development, anticipated to be completed in 2031, is assumed to consist of the following land uses:

- 300 DU Single-Family Detached Housing
- 107,049 SF Mini-Warehouse
- 51,000 SF Supermarket
- 23,700 SF Strip Retail Plaza
- 2,500 SF Coffee/Donut Shop with Drive-Through Window
- 2,400 SF Drive-in Bank
- 2 Fast Casual Restaurants at 2,500 SF each
- 5,000 SF Convenience Store/Gas Station w/12 fueling positions

Site access is proposed via four driveways along Wait Avenue (NC 98), one full movement driveway along Averette Road, and one site access is proposed via the existing Austin Ridge Parkway.

2. Existing Traffic Conditions

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

- Wait Avenue and Averette Road (Signalized)
- Wait Avenue and Austin View Road (Unsignalized)
- Wait Avenue and Carrie May Lane (Unsignalized)
- Averette Road and Old Pearce Road (Unsignalized)
- Averette Road and Kavanaugh Road (Unsignalized)

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersection listed above, in May of 2025 by DRMP during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods. Traffic volumes were balanced between study intersections, where appropriate.

3. Future Traffic Conditions

Through coordination with the NCDOT and the Town, it was determined that an annual growth rate of 2.5% would be used to generate 2031 projected weekday AM and PM peak hour traffic volumes. Based on coordination with NCDOT and the Town, it was determined there were no adjacent developments to consider with this study.

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, 11.1th 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	Total	Enter	Exit	Total
Mini-Warehouse (151)	107,049 SF	155	6	4	10	8	8	16
Single-Family Detached Housing (210)	300 DU	2,772	51	151	202	176	103	279
Shopping Plaza with Supermarket (821)	84,600 SF	7,924	185	114	299	369	399	768
Convenience Store/Gas Station	12 Fueling Positions (5,000 sq. ft.)	3,502	141	142	283	136	137	273
Total Trips		**14,353**	**383**	**411**	**794**	**689**	**647**	**1,336**
Internal Capture (7% AM & 10% PM)			-28	-28	-56	-69	-65	-134
Total External Trips			**355**	**383**	**738**	**620**	**582**	**1,202**
Pass-By Trips			-143	-143	-286	-220	-220	-440
Primary Trips			**212**	**240**	**452**	**400**	**362**	**762**

To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2031 no-build traffic volumes to determine the 2031 build traffic volumes. The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2025 Existing Traffic Conditions
- 2031 No-Build Traffic Conditions
- 2031 Build Traffic Conditions Scenario 1 (without Median)
- 2031 Build Traffic Conditions Scenario 2 (with Median)

5. Capacity Analysis Summary

The analysis considered weekday AM and PM peak hour traffic for 2025 existing, 2032 no-build, and 2032 build conditions. Refer to Section 7 of the TIA for the capacity analysis summary 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 improvements are summarized below and are illustrated in Figure E-1.

Wait Avenue and Averette Road

- Construct a westbound right-turn lane on Wait Avenue with 100 feet of storage and appropriate taper.
- Construct a northbound left-turn Lane on Averette Road with 300 feet of storage and appropriate taper.

Wait Avenue and Carrie May Lane/Access B

- Construct Site Access B (northbound approach) with one ingress and one egress lane.
- Construct an eastbound Wait Avenue right turn lane with 50 feet of storage and appropriate taper length.
- Construct a westbound Wait Avenue left turn lane with 125 feet of storage and appropriate taper length. (Under Scenario-1).
- Construct a westbound Wait Avenue left turn lane with 350 feet of storage and appropriate taper length. (Under Scenario-2)

- Install a traffic Signal.

Averette Road and Old Pearce Road/Access E

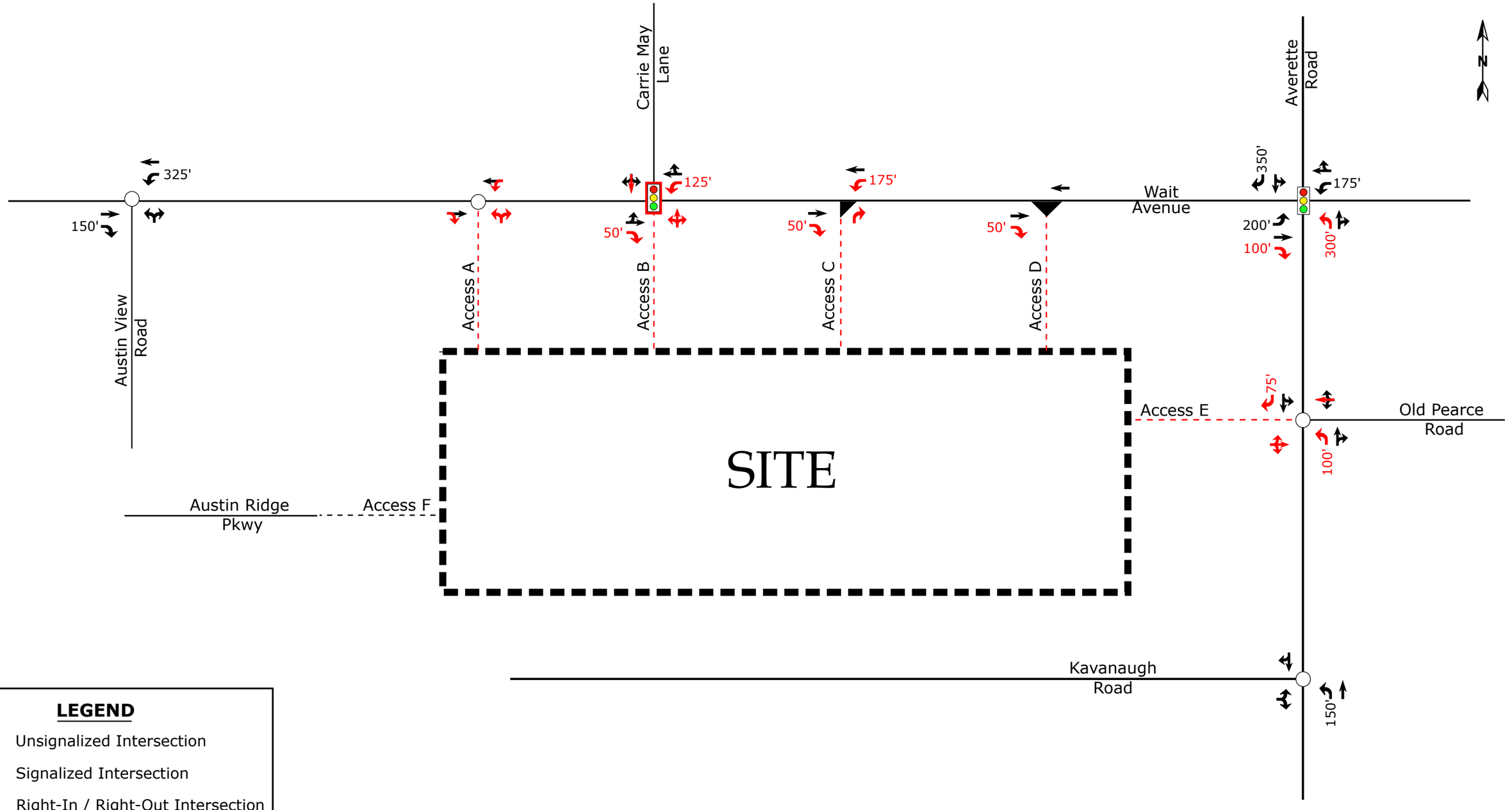
- Construct Site Access E (westbound approach) as a with one ingress and one egress lane.
- Construct a northbound Averette Road left turn lane with 100 feet of storage and appropriate taper length.
- Construct a southbound Averette Road right turn lane with 75 feet of storage and appropriate taper length.
- Provide stop control for the westbound approach.

Wait Avenue and Access C

- Construct an eastbound Wait Avenue right turn lane with 50 feet of storage and appropriate taper length.
- Construct a westbound Wait Avenue left turn lane with 175 feet of storage and appropriate taper length (Under Scenario-1).

Wait Avenue and Access D

- Construct an eastbound Wait Avenue right turn lane with 50 feet of storage and appropriate taper length.

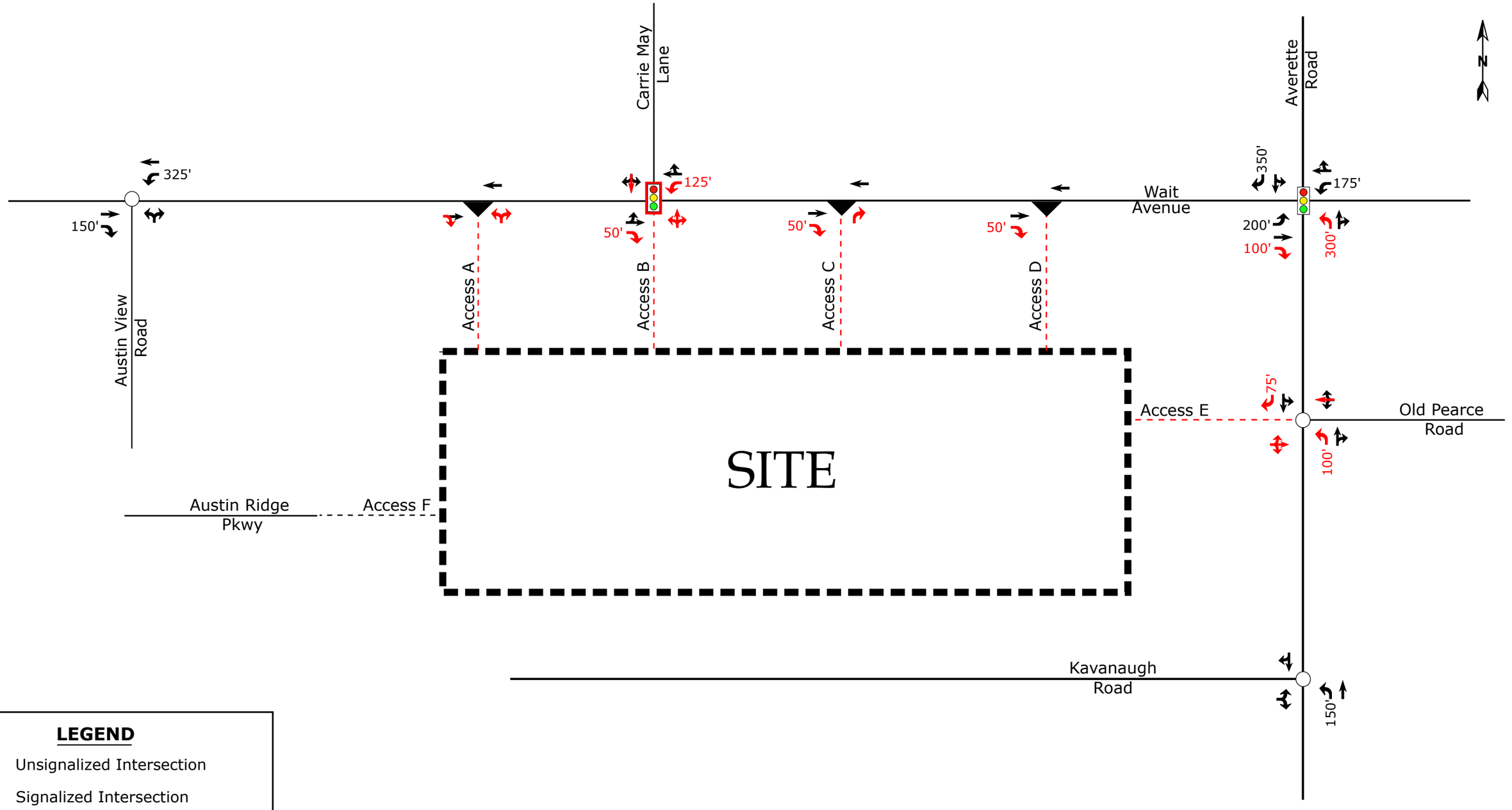


LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In / Right-Out Intersection
- Left-Over Intersection
- Existing Lane
- Improvement by Developer
- X' Storage (In Feet)

Note: Under Scenario 1, Access A will be considered a full-movement driveway.

DRMP	Wait Avenue Mixed-Use Rolesville, NC	Recommended Lane Configurations Scenario-1 Scale: Not to Scale | Figure E-1



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In / Right-Out Intersection
- Existing Lane
- Improvement by Developer
- X' Storage (In Feet)

Note: In Scenario 2, Access A will be analyzed as a right-in/right-out access point

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Wait Avenue Mixed-Use
Rolesville, NC

Recommended Lane Configurations Scenario-2

Scale: Not to Scale | Figure E-2

TABLE OF CONTENTS

LIST OF FIGURES

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LIST OF TABLES

TECHNICAL APPENDIX

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TRAFFIC IMPACT ANALYSIS

WAIT AVENUE MIXED-USE

Rolesville, North Carolina

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Wait Avenue Mixed-Use development to be located 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 2031, is assumed to consist of the following uses:

- 300 DU Single-Family Detached Housing
- 107,049 SF Mini-Warehouse
- 51,000 SF Supermarket
- 23,700 SF Strip Retail Plaza
- 2,500 SF Coffee/Donut Shop with Drive-Through Window
- 2,400 SF Drive-in Bank
- 2 Fast Casual Restaurants at 2,500 SF each
- 5,000 SF Convenience Store/Gas Station w/12 fueling positions

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

- 2025 Existing Traffic Conditions
- 2031 No-Build Traffic Conditions
- 2031 Build Traffic Conditions Scenario 1 (without Median)
- 2031 Build Traffic Conditions Scenario 2 (with Median)

1.1. Site Location and Study Area

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

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

- Wait Avenue and Averette Road (Signalized)
- Wait Avenue and Austin View Road (Unsignalized)
- Wait Avenue and Carrie May Lane (Unsignalized)
- Averette Road and Old Pearce Road (Unsignalized)
- Averette Road and Kavanaugh Road (Unsignalized)

1.2. Proposed Land Use and Site Access

The proposed development, anticipated to be completed in 2031, is assumed to consist of the following uses:

- 300 Single-Family Detached Housing
- 107,049 SF Mini-Warehouse
- 51,000 SF Supermarket
- 23,700 SF Strip Retail Plaza
- 2,500 SF Coffee/Donut Shop with Drive-Through Window
- 2,400 SF Drive-in Bank
- 2 Fast Casual Restaurants at 2,500 SF
- 5,000 SF Convenience Store/Gas Station

Site access is proposed via four driveways along Wait Avenue (NC 98), one full movement driveway along Averette Road, and one site access is proposed via the existing Austin Ridge Parkway. 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 undeveloped land, and residential development.

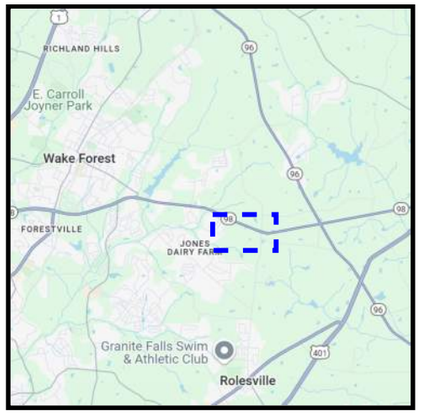
1.4. Existing Roadways

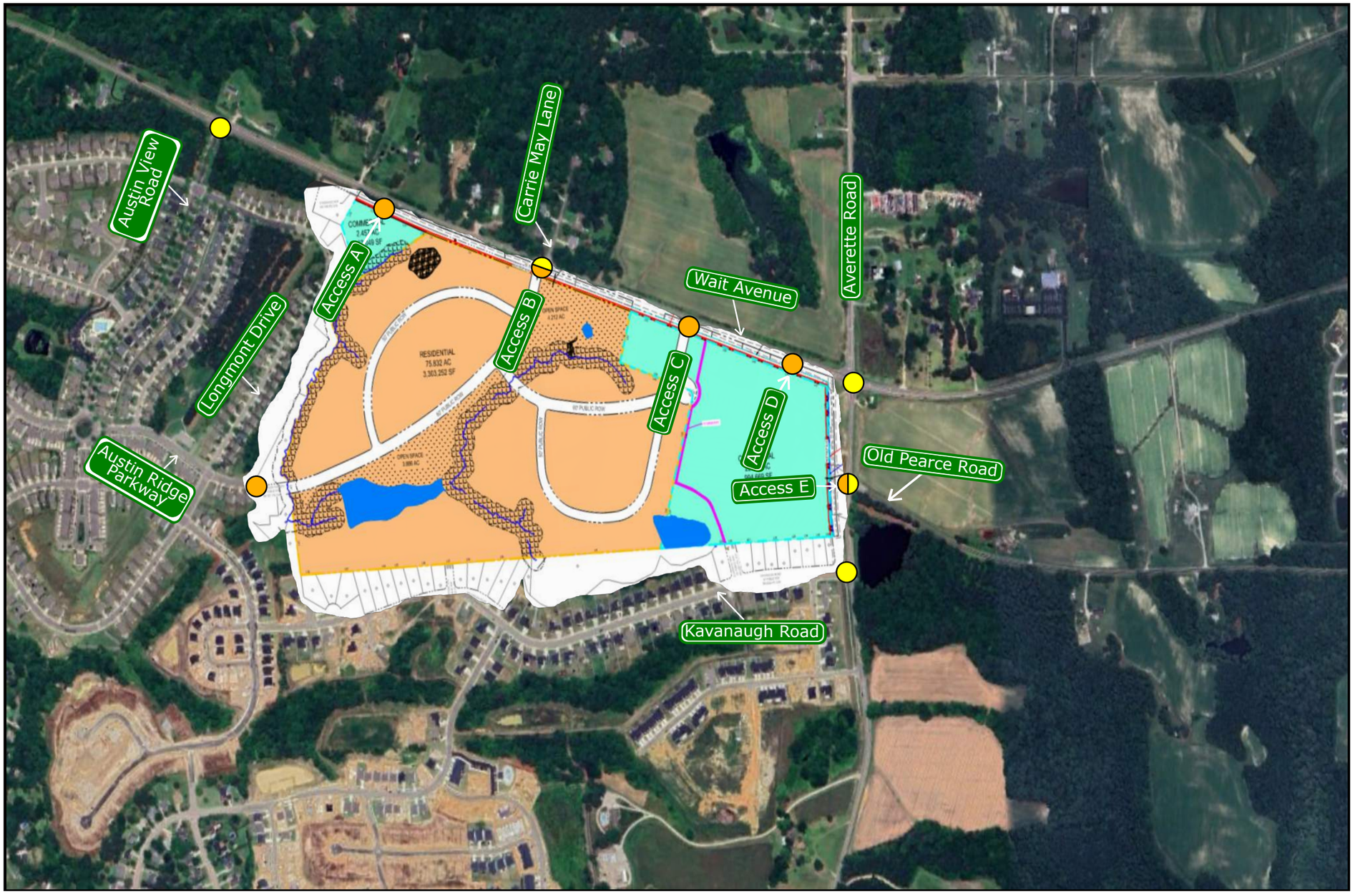
Existing lane configurations (number of traffic lanes on each intersection approach), speed limits, storage capacities, and other intersection and roadway information within the study area are shown in Figure 3. Table 1 provides a summary of this information, as well.

Table 1: Existing Roadway Inventory

Road Name	Route Number	Typical Cross Section	Speed Limit	AADT (vpd)
Averette Road	SR 1945	2-lane undivided	45 mph	3,600*
Wait Avenue	NC 98	2-lane undivided	45 mph	19,500**

* ADT based on the traffic counts from 2021
**ADT based on the traffic counts from 2023 and assuming the weekday PM peak hour volume is 10% of the average daily traffic.





LEGEND

- Study Intersection
- Proposed Site Access
- Study Area

N

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Site Location Map

Scale: Not to Scale | Figure 1

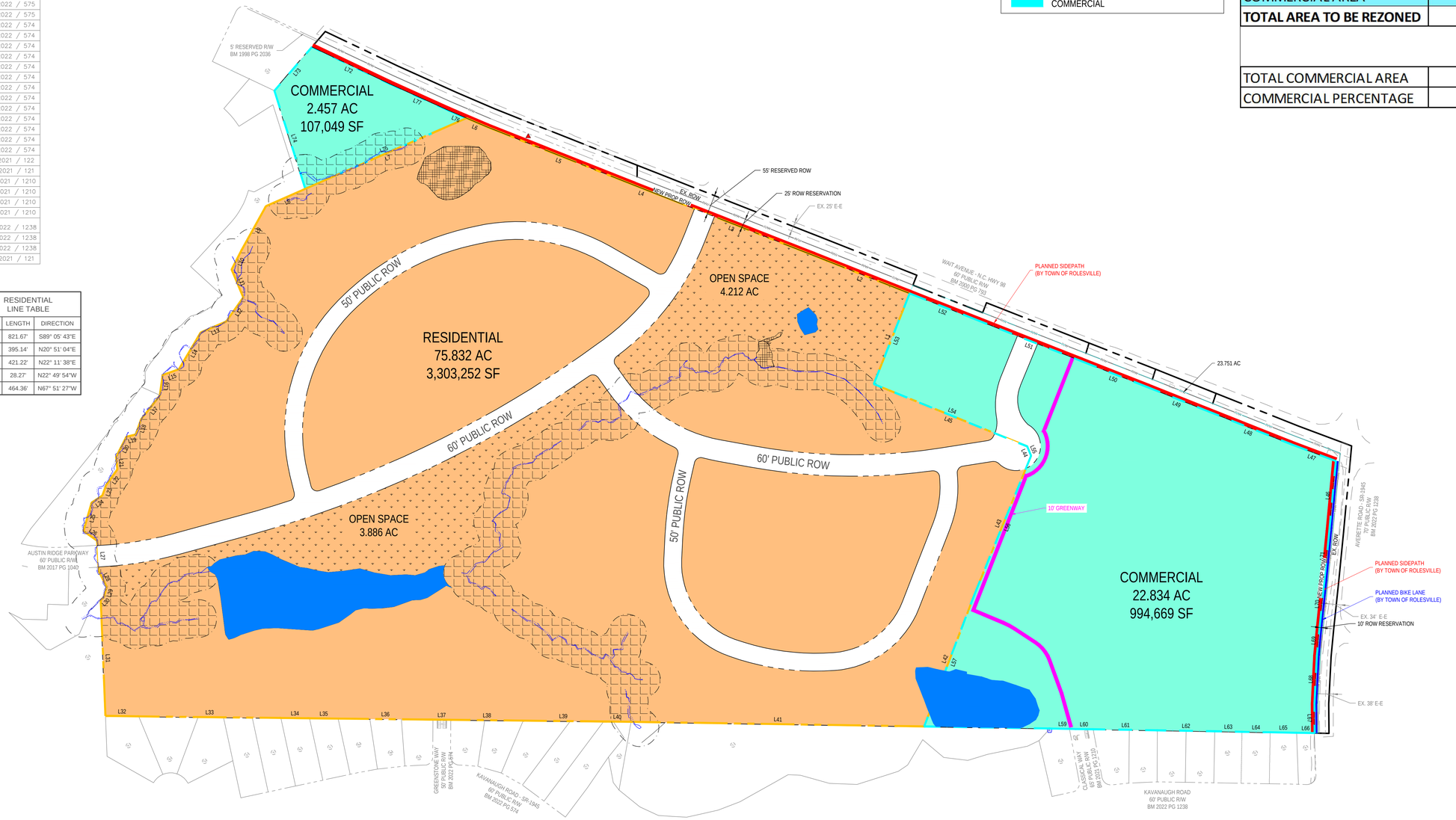
ADJOINING PARCEL INFORMATION

ID	PIN	OWNER(S)	DB / PG	BM / PG
AA	1850867237	WAKE ELECTRIC MEMBERSHIP CORP	8182 / 2604	1998 / 2036
AB	1850856710	VILLAGES OF AUSTIN CREEK HOMEOWNERS	17277 / 2713	2010 / 527
AC	1850852022	VILLAGES OF AUSTIN CREEK HOMEOWNERS	17277 / 2713	2010 / 527
AD	1850841696	VILLAGES OF AUSTIN CREEK HOMEOWNERS	17277 / 2713	2017 / 1040
AE	1850841551	LENNAR CAROLINAS LLC	15377 / 2089	2023 / 2306
AF	1850843268	MUNOZ, WELLMAN FRANKLIN; MUNOZ, KRISTEN BRAUN	19407 / 1343	2022 / 575
AG	1850844370	TRIPP, MICHELE L	19344 / 1384	2022 / 575
AH	1850845277	BRATLEE-WHITAKER, EMILY; WHITAKER, TYLER	19328 / 555	2022 / 575
AI	1850846285	BIZIEFF, MICHAEL P; BIZIEFF, VESAL	19508 / 2570	2022 / 574
AJ	1850847266	BURGOA, CHRISTOPHER	19481 / 1310	2022 / 574
AK	1850848247	GIBBS, MICHAEL & STEFANI	19509 / 1828	2022 / 574
AL	1850849227	DEMIAN, JILL & BEVERLY LAVERY	19418 / 975	2022 / 574
AM	1850940208	HOISETH, BRUCE CAVERLY & MARYELLEN	19366 / 1724	2022 / 574
AN	1850940289	MCNEAL, BERLONDRIKA JERTORIA	19342 / 1506	2022 / 574
AO	1850941279	FAYAD, AKRAM & RANIA	19368 / 2463	2022 / 574
AP	1850943209	JENSEN, KENT & LINDA	19616 / 1836	2022 / 574
AQ	1850943299	MILLER, THOMAS W & BARBARA M	19470 / 962	2022 / 574
AR	1850944298	WINFREE, CRYSTAL ROSE & ANDREW CLAY	19425 / 429	2022 / 574
AS	1850945275	ORTALS, EDWARD J & EILEEN	19328 / 1625	2022 / 574
AT	1850946232	BAVISOTTO, DANIELLE M & ERIC N	19699 / 2162	2022 / 574
AU	1850947236	EXPERIENCEONE HOMES LLC	17509 / 1101	2022 / 574
AV	1860041295	EXPERIENCEONE HOMES LLC	17509 / 1101	2021 / 122
AW	1860049264	GIVENS, MICHAEL R & JODY L	19557 / 1264	2021 / 121
AX	1860141226	BOORADY, ANDRE J; ORTALS, MEREDITH B	19159 / 911	2021 / 1210
AY	1860142205	PETWAY, MARCUS M & KENA G	19204 / 1027	2021 / 1210
AZ	1860142285	AUTRY, BETSY SMITH & DAVID EARL	19197 / 530	2021 / 1210
BA	1860143265	RODICO, PAMELA & JOHN RAINIER	19198 / 2595	2021 / 1210
BB	1860144245	BARTLETT, BRIANNE; BARTLETT, SALLY & DOUGLAS	19413 / 2008	2022 / 1238
BC	1860145225	EXPERIENCEONE HOMES LLC	17509 / 1101	2022 / 1238
BD	1860145294	THIGPEN, APRIL LINDSAY	19736 / 2558	2022 / 1238
BE	1860146265	EXPERIENCEONE HOMES LLC	17509 / 1101	2021 / 121

LEGEND:
- RESIDENTIAL SINGLE FAMILY
- OPEN SPACE
- EXISTING WETLANDS UNDISTURBED
- EXISTING ENVIRONMENTAL UNDISTURBED
- COMMERCIAL

NC RE-ZONED AREAS POST R/W RESERVATION

RESIDENTIAL AREA	75.832	AC
COMMERCIAL AREA	2.457	AC
COMMERCIAL AREA	22.834	AC
TOTAL AREA TO BE REZONED	**101.123**	**AC**
TOTAL COMMERCIAL AREA	25.291	AC
COMMERCIAL PERCENTAGE	25.01%	



RESIDENTIAL LINE TABLE

LINE #	LENGTH	DIRECTION
L1	273.29'	N21° 35' 45"E
L2	288.95'	N68° 25' 12"W
L3	485.08'	N68° 36' 29"W
L4	56.53'	N68° 30' 35"W
L5	442.49'	N68° 23' 19"W
L6	62.94'	N66° 45' 05"W
L7	493.27'	S66° 17' 31"W
L8	120.37'	S66° 17' 31"W
L9	139.83'	S29° 02' 26"W
L10	62.39'	S27° 04' 26"W
L11	85.05'	S22° 30' 36"E
L12	82.65'	S35° 17' 49"W
L13	77.79'	S66° 41' 13"W
L14	119.64'	S30° 41' 32"W
L15	48.52'	S70° 24' 48"W
L16	58.77'	S07° 59' 45"W
L17	84.46'	S38° 16' 44"W
L18	44.78'	S19° 10' 58"W
L19	26.68'	S76° 49' 28"W
L20	63.59'	S27° 16' 11"W

RESIDENTIAL LINE TABLE

LINE #	LENGTH	DIRECTION
L21	35.70'	S05° 25' 37"E
L22	53.96'	S35° 40' 08"W
L23	31.53'	S20° 09' 38"W
L24	35.88'	S56° 19' 27"W
L25	82.48'	S15° 56' 39"W
L26	47.18'	S54° 15' 58"E
L27	86.56'	S03° 11' 49"E
L28	47.68'	S27° 21' 06"E
L29	29.73'	S15° 39' 43"W
L30	12.33'	S44° 18' 30"W
L31	325.02'	S02° 18' 54"E
L32	92.70'	S89° 08' 31"E
L33	398.59'	S89° 22' 03"E
L34	80.37'	S89° 22' 03"E
L35	80.29'	S89° 22' 03"E
L36	265.88'	S89° 22' 03"E
L37	50.09'	S89° 29' 05"E
L38	202.94'	S89° 21' 30"E
L39	225.20'	S89° 21' 30"E
L40	77.18'	S89° 21' 30"E

RESIDENTIAL LINE TABLE

LINE #	LENGTH	DIRECTION
L41	821.67'	S89° 05' 43"E
L42	395.14'	N20° 51' 04"E
L43	421.22'	N22° 11' 38"E
L44	28.27'	N22° 49' 54"W
L45	464.36'	N67° 51' 27"W

COMMERCIAL LINE TABLE

LINE #	LENGTH	DIRECTION
L46	196.54'	N05° 20' 11"E
L47	133.48'	N69° 23' 18"W
L48	248.70'	N68° 22' 23"W
L49	182.39'	N68° 12' 44"W
L50	200.40'	N68° 31' 07"W
L51	308.80'	N68° 30' 12"W
L52	210.04'	N68° 26' 44"W
L53	273.29'	S21° 35' 45"W
L54	464.36'	S67° 51' 27"E
L55	28.27'	S22° 49' 54"E
L56	421.22'	S22° 11' 38"W
L57	395.14'	S20° 51' 04"W
L58	353.08'	S89° 03' 29"E
L59	69.22'	S88° 46' 48"E
L60	51.37'	S89° 20' 02"E
L61	180.15'	S89° 03' 25"E
L62	160.72'	S89° 04' 00"E
L63	76.42'	S88° 46' 32"E
L64	79.04'	S89° 02' 22"E
L65	74.04'	S88° 59' 25"E

COMMERCIAL LINE TABLE

LINE #	LENGTH	DIRECTION
L66	50.72'	S88° 59' 26"E
L67	82.97'	N00° 26' 49"W
L68	135.31'	N02° 54' 54"E
L69	80.91'	N05° 27' 34"E
L70	124.62'	N05° 58' 10"E
L71	145.41'	N05° 35' 13"E
L72	241.40'	N64° 34' 13"W
L73	161.80'	S40° 39' 22"W
L74	288.49'	S17° 27' 54"E
L75	493.27'	N66° 17' 31"E
L76	53.36'	N66° 45' 05"W
L77	181.90'	N65° 41' 26"W

REV #	DATE	DESCRIPTION
1	01.31.2025	TOR REZ COMMENTS 1: 01.06.2025

N

NAD 83 / NSRS 2011

SCALE 1"=150'

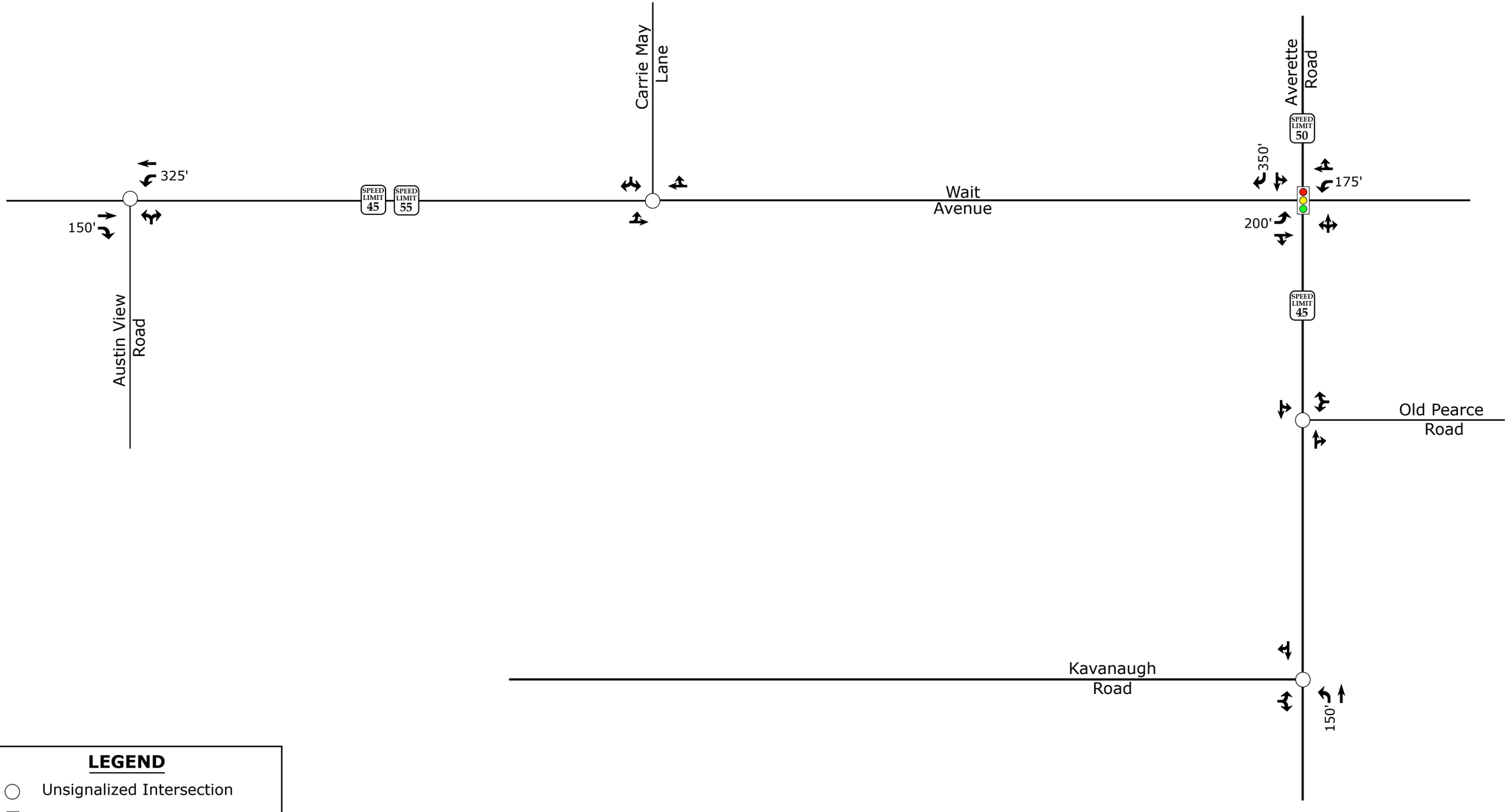
0 150' 300'

THALES/WAIT AVENUE REZONING EXHIBIT
REZ-24-05

WAKE COUNTY

BCSC
BATEMAN CIVIL SURVEY COMPANY

P:\2024 Projects\240831 Wait_Averette_Thales E\ENGINSheets\P240831_C200_SITE.dwg



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Existing Lane
- X' Storage (In Feet)
- SPEED LIMIT XX Posted Speed Limit

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Wait Avenue Mixed-Use
Rolesville, NC

2025 Existing Lane Configurations

Scale: Not to Scale

Figure 3

2. 2025 EXISTING PEAK HOUR CONDITIONS

2.1. 2025 Existing Peak Hour Traffic Volumes

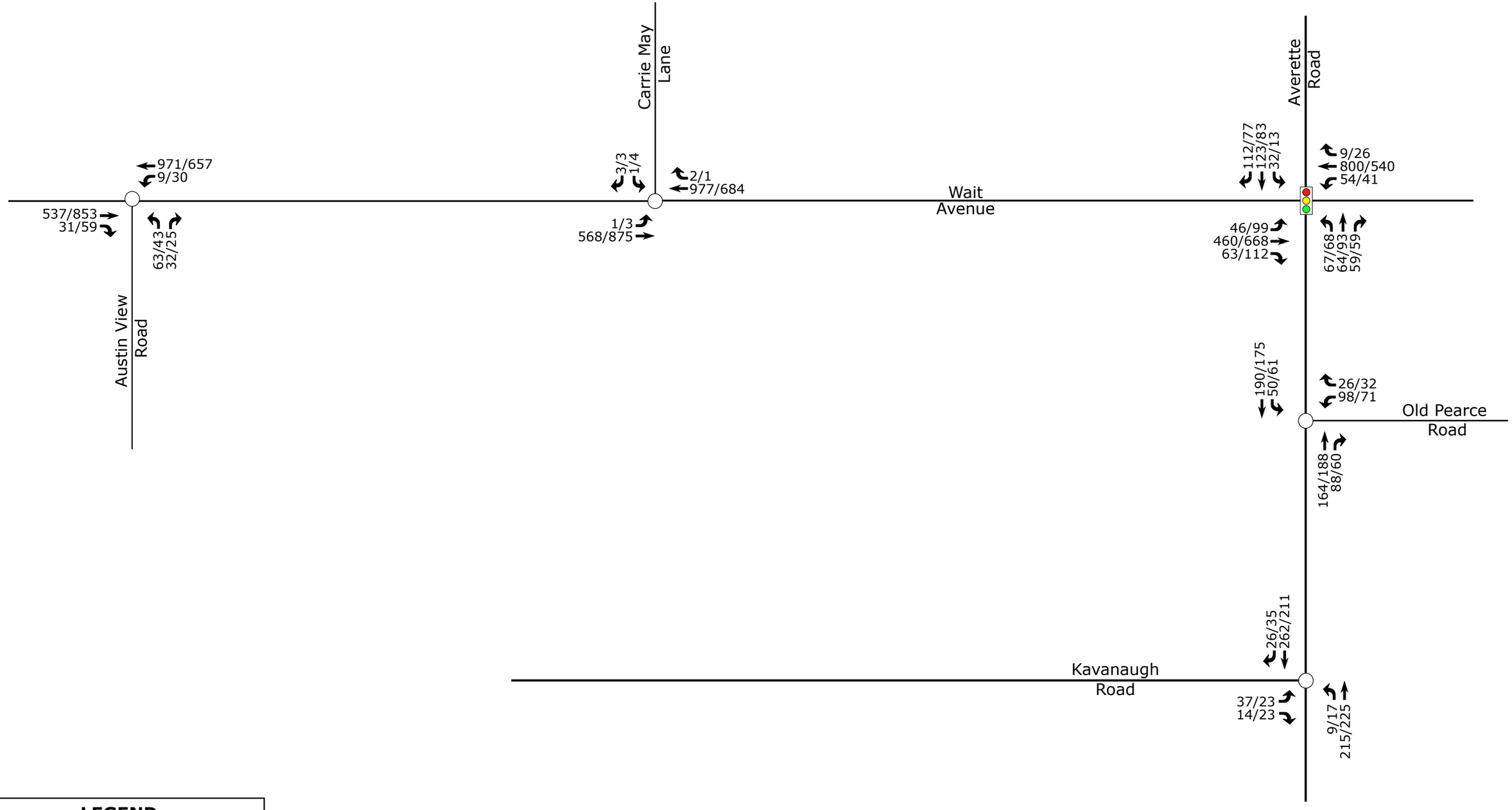
Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below, in May of 2025 by DRMP during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods while schools were in session:

- Wait Avenue and Austin View Road (Signalized)
- Wait Avenue and Averette Road (Unsignalized)
- Averette Road and Old Pearce Road (Unsignalized)
- Averette Road and Kavanaugh Road (Unsignalized)
- Wait Avenue and Carrie May Lane (Unsignalized)

Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate. Refer to Figure 4 for 2023 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 2025 Existing Peak Hour Traffic Conditions

The 2025 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

Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

DRMP	Wait Avenue Mixed-Use Rolesville, NC	2025 Existing Peak Hour Traffic
		Scale: Not to Scale | Figure 4

3. 2031 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 NCDOT and the Town, it was determined that an annual growth rate of 2.5% would be used to generate 2031 No-Build weekday AM and PM peak hour traffic volumes. Refer to Figure 5 for 2031 No-Build peak hour traffic.

3.2. Adjacent Development Traffic

Through coordination with the NCDOT and the Town, it was determined there were no adjacent developments to consider with this study.

3.3. Future Roadway Improvements

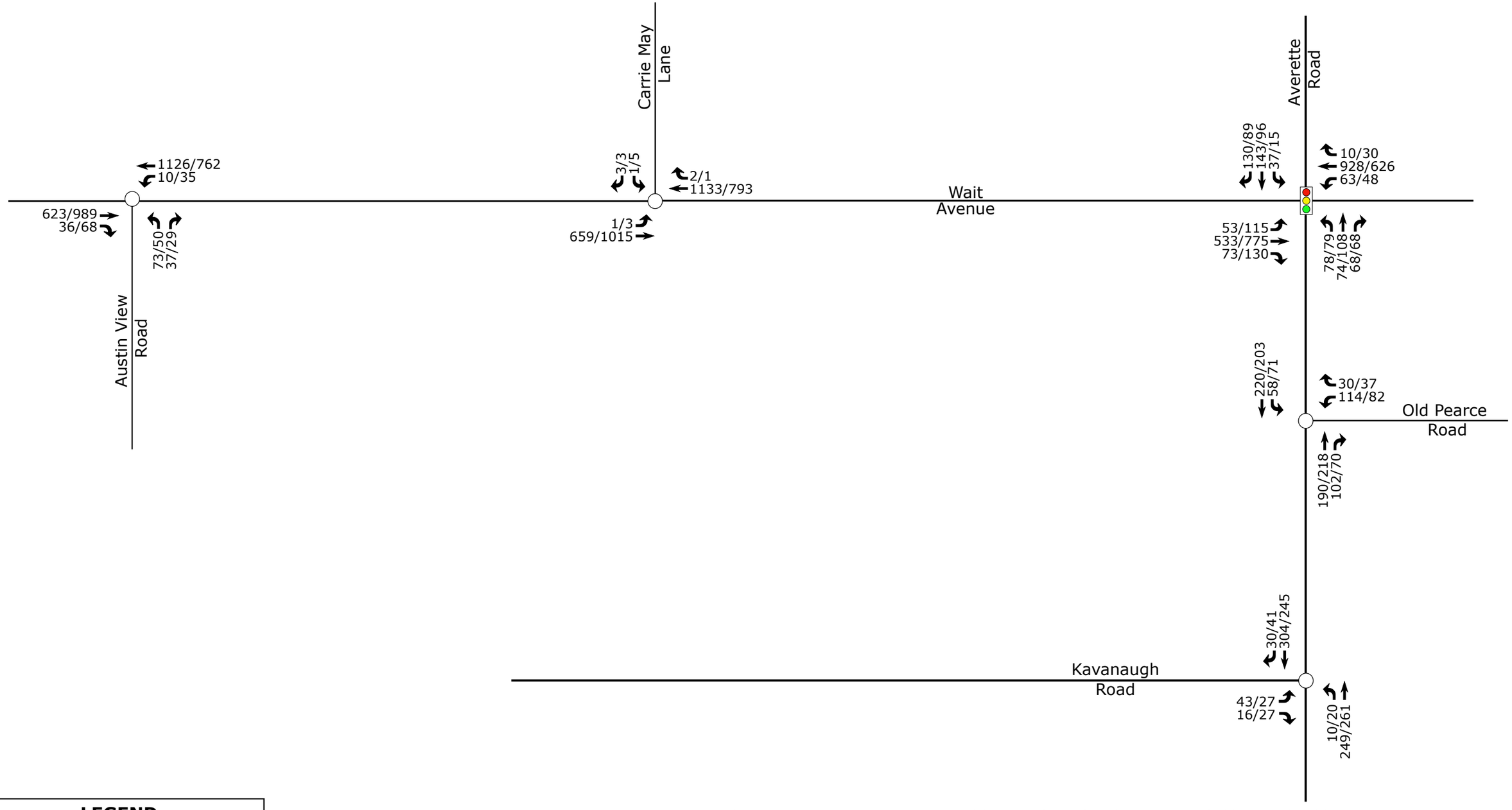
Based on coordination with the NCDOT and the Town, it was determined there were no future roadway improvements to consider with this study.

3.4. 2031 No-Build Peak Hour Traffic Volumes

The 2031 no-build traffic volumes were determined by projecting the 2025 existing peak hour traffic to the year 2031. Refer to Figure 5 for an illustration of the 2031 no-build peak hour traffic volumes at the study intersections.

3.5. Analysis of 2031 No-Build Peak Hour Traffic Conditions

The 2031 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

Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

2031 No-Build
Peak Hour Traffic

Scale: Not to Scale | Figure 5

4. SITE TRIP GENERATION AND DISTRIBUTION

4.1. Trip Generation

The proposed development is assumed to consist of 300 DU Single-family detached housing, a 107,049 s.f. mini-warehouse, a 51,000 s.f. supermarket, a 23,700 s.f. strip retail plaza, a 2,500 s.f. of coffee/donut shop with drive-through window, a 2,400 s.f. drive-in Bank, a 2 fast casual restaurants at 2,500 s.f. each and 5,000 s.f. convenience store/gas Station w/12 fueling positions. Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE *Trip Generation Manual*, 11.1 Edition. 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	Total	Enter	Exit	Total
Mini-Warehouse (151)	107,049 SF	155	6	4	10	8	8	16
Single-Family Detached Housing (210)	300 DU	2,772	51	151	202	176	103	279
Shopping Plaza with Supermarket (821)	84,600 SF	7,924	185	114	299	369	399	768
Convenience Store/Gas Station	12 Fueling Positions (5,000 sq. ft.)	3,502	141	142	283	136	137	273
Total Trips		**14,353**	**383**	**411**	**794**	**689**	**647**	**1,336**
Internal Capture (7% AM & 10% PM)			-28	-28	-56	-69	-65	-134
Total External Trips			**355**	**383**	**738**	**620**	**582**	**1,202**
Pass-By Trips			-143	-143	-286	-220	-220	-440
Primary Trips			**212**	**240**	**452**	**400**	**362**	**762**

It is estimated that the proposed development will generate approximately 14,353 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 794 trips (383 entering and 411 exiting) will occur during the weekday AM peak hour and 1,336 trips (689 entering and 647 exiting) will occur during the weekday PM peak hour.

Internal capture of trips between the residential and retail uses was considered in this study. Internal capture is the consideration for trips that will be made within the site between different land uses, so the vehicle technically never leaves the internal site but can still be considered as a trip to that specific land use. Internal capture typically only considers trips between residential, office, and retail/restaurant land uses. Based on NCHRP Report 684 methodology, a weekday AM peak hour internal capture rate of 7% and a weekday PM peak hour internal capture rate of 10% was applied to the total trips. The internal capture reductions are expected to account for approximately 56 trips (28 entering and 28 exiting) during the weekday AM peak hour and 134 trips (69 entering and 65 exiting) during the weekday PM peak hour.

Pass-by trips were also taken into consideration in this study. Pass-by trips are made by the traffic already using the adjacent roadway, entering the site as an intermediate stop on their way to another destination. Pass-by percentages are applied to site trips after adjustments for internal capture. Pass-by trips are expected to account for approximately 286 trips (143 entering and 143 exiting) during the weekday AM peak hour and approximately 440 trips (220 entering and 220 exiting) during the weekday PM peak hour. It should be noted that the pass-by trips were balanced, as it is likely that these trips would enter and exit at the same hour.

The total primary site trips are the calculated site trips after the reduction for internal capture and pass-by trips. Primary site trips are expected to generate approximately 452 trips (212 entering and 240 exiting) during the weekday AM peak hour and 762 trips (400 entering and 362 exiting) 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 residential site trips will be regionally distributed as follows:

- 35% to/from the north via Averette Road
- 35% to/from the east via Wait Avenue
- 30% to/from the west via Wait Avenue

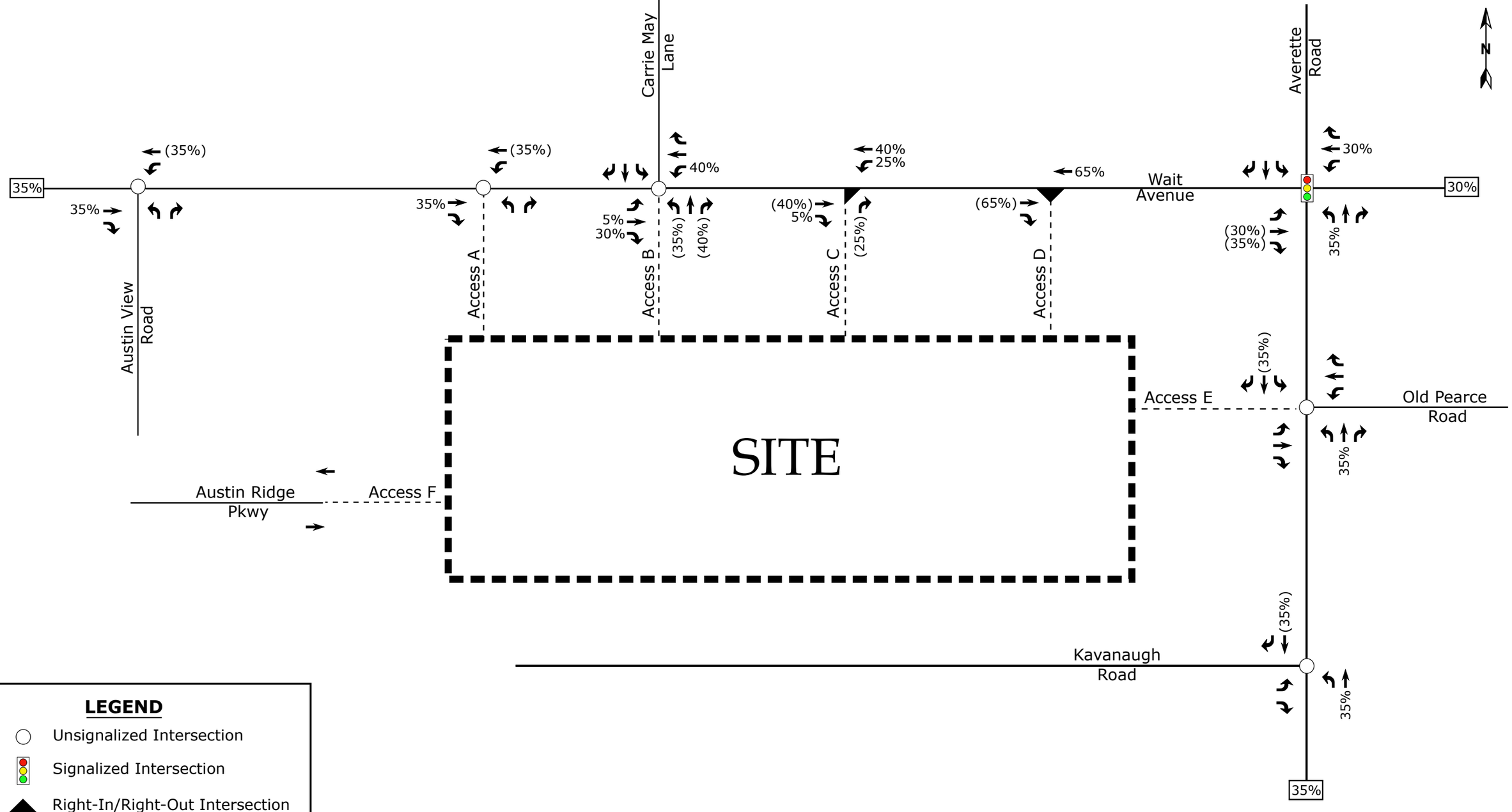
It is estimated that the primary commercial site trips will be regionally distributed as follows:

- 40% to/from the north via Averette Road
- 10% to/from the south via Averette Road
- 5% to/from the west via Old Pearce Road
- 35% to/from the east via Wait Avenue
- 5% to/from the west via Wait Avenue

The residential site trip distribution is shown in Figures 6a and 7a for Scenarios 1 and 2, and the primary commercial site trip distribution is shown in Figures 8a and 9a for Scenarios 1 and 2. Refer to Figures 6b and 7b for the residential site trip assignment, and Figures 8b and 9b for the primary commercial site trip assignment for Scenarios 1 and 2.

The pass-by site trips were distributed based on existing traffic patterns, with consideration given to the proposed driveway access and site layout. Refer to Figure 10a and 10b for the pass-by site trip distribution. Pass-by site trips are shown in Figure 11a and 11b.

The total site trips were determined by adding the primary site trips and the pass-by site trips. Refer to Figure 12a and 12b for the total peak hour site trips for Scenario 1 and Scenario 2 at the study intersections.

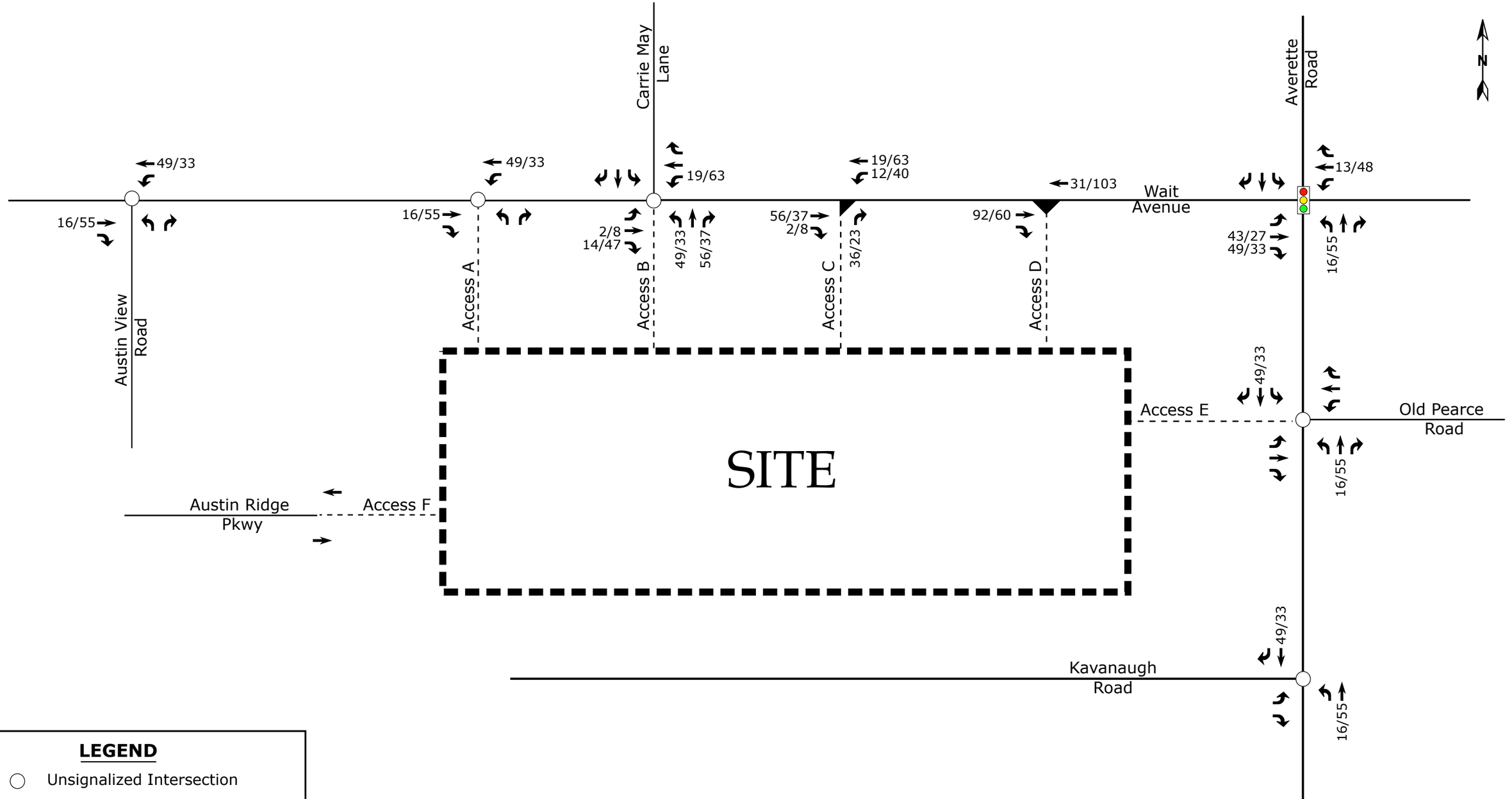


LEGEND

- ○ Unsignalized Intersection
- Signalized Intersection
- ▲ Right-In/Right-Out Intersection
- ◢ Left-Over Intersection
- X% → Entering Trip Distribution
- (Y%) → Exiting Trip Distribution
- [XX%] Regional Trip Distribution

Note: Under Scenario 1, Access A will be considered a full-movement driveway.

DRMP	Wait Avenue Mixed-Use Rolesville, NC	Residential Site Trip Distribution Scenario-1
		Scale: Not to Scale / Figure 6a



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- Left-Over Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

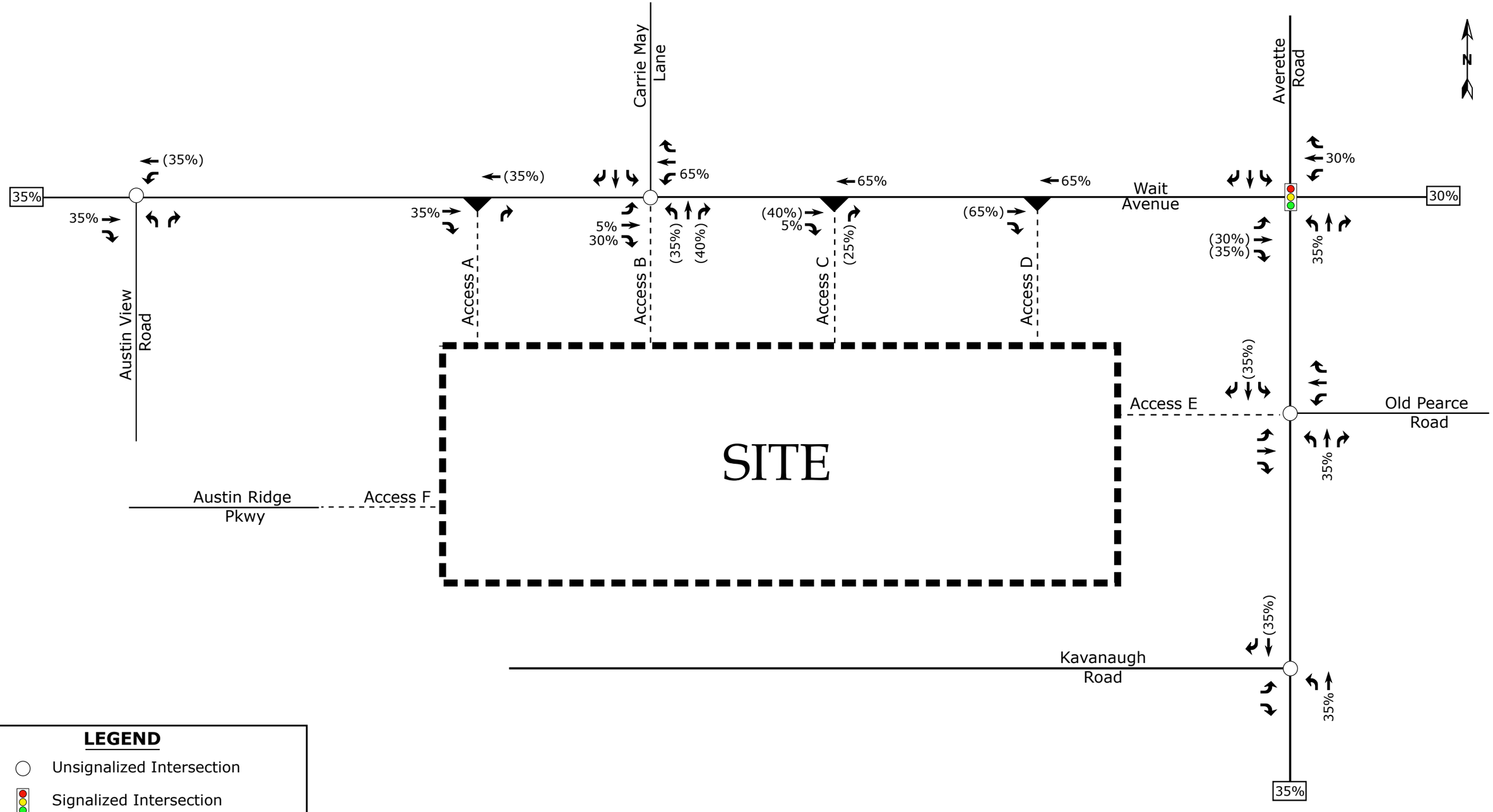
Note: Under Scenario 1, Access A will be considered a full-movement driveway.

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Residential Site
Trip Assignment
Scenario-1

Scale: Not to Scale | Figure 6b



LEGEND

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

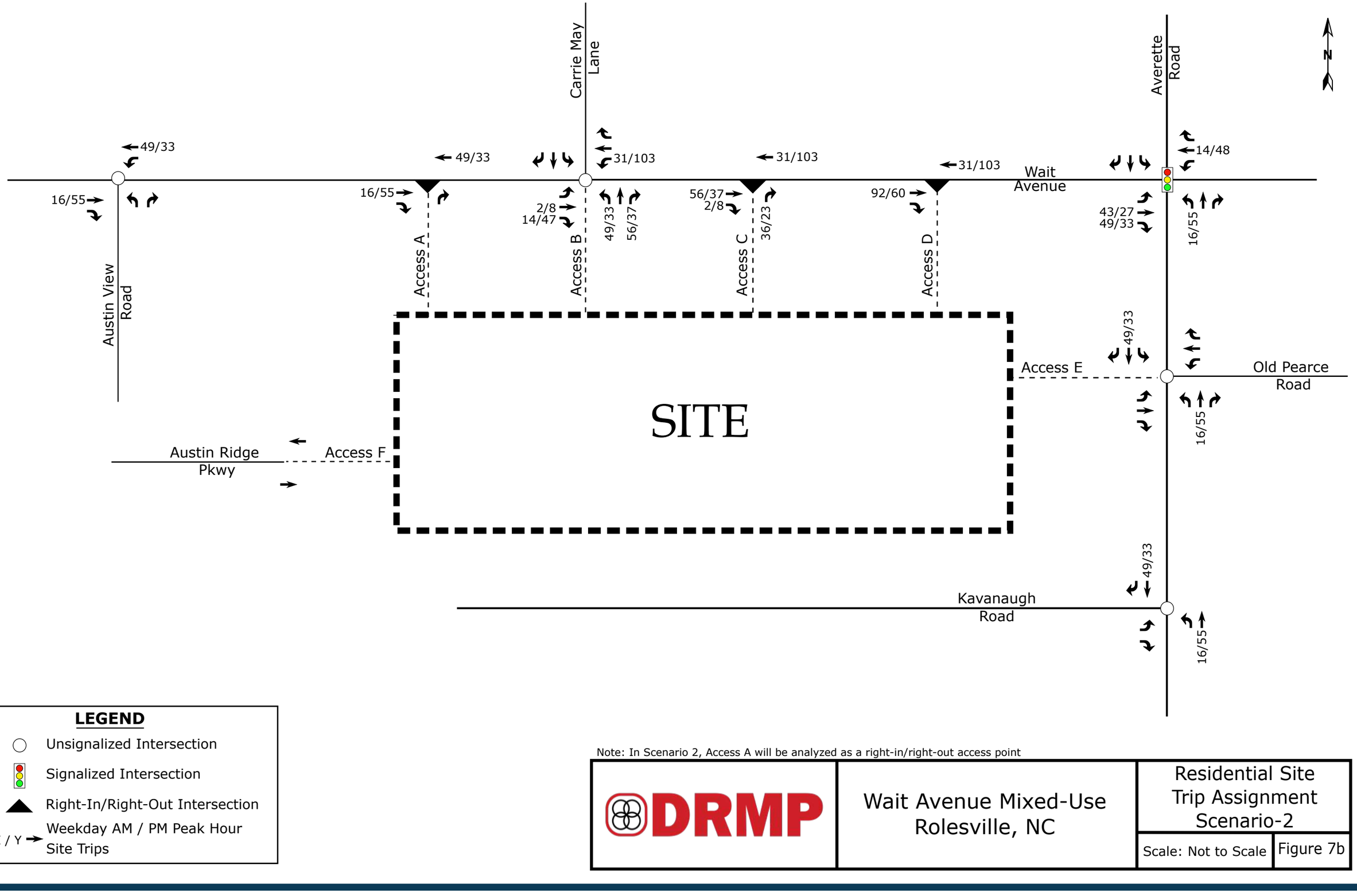
Note: In Scenario 2, Access A will be analyzed as a right-in/right-out access point

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Residential Site
Trip Distribution
Scenario-2

Scale: Not to Scale | Figure 7a

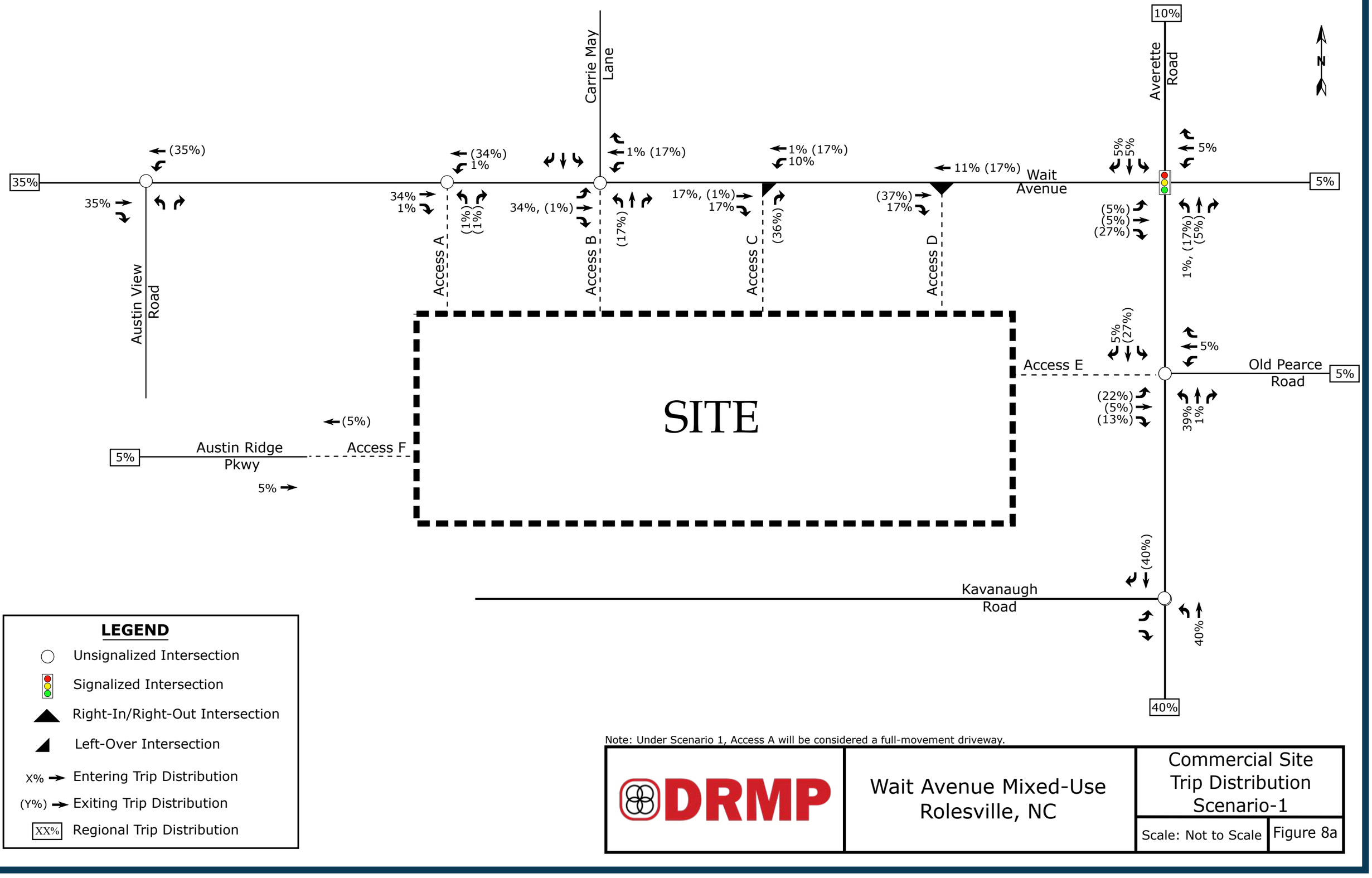


LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

Note: In Scenario 2, Access A will be analyzed as a right-in/right-out access point

DRMP	Wait Avenue Mixed-Use Rolesville, NC	Residential Site Trip Assignment Scenario-2 Scale: Not to Scale | Figure 7b



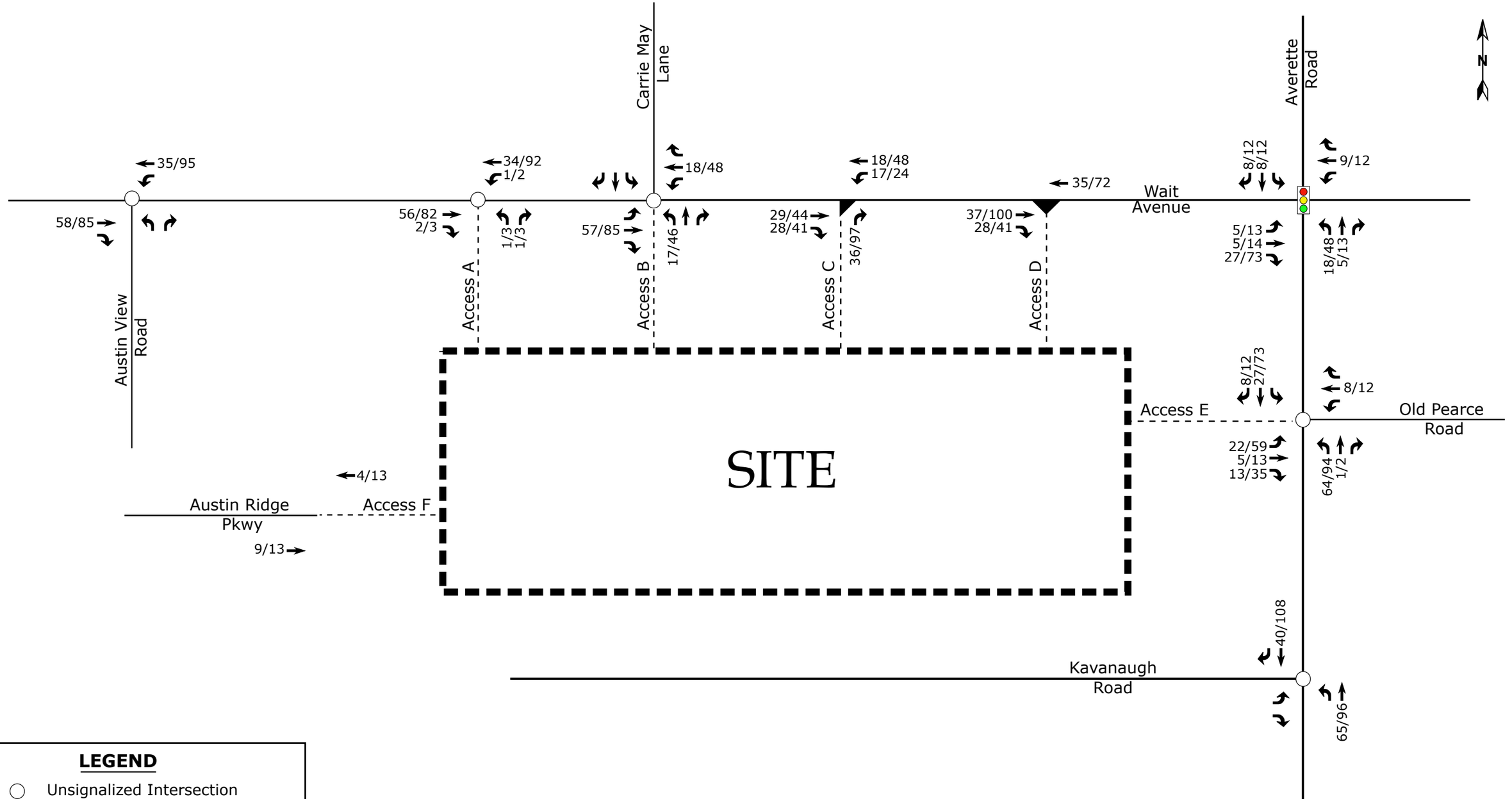
Note: Under Scenario 1, Access A will be considered a full-movement driveway.

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Commercial Site
Trip Distribution
Scenario-1

Scale: Not to Scale | Figure 8a



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- Left-Over Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

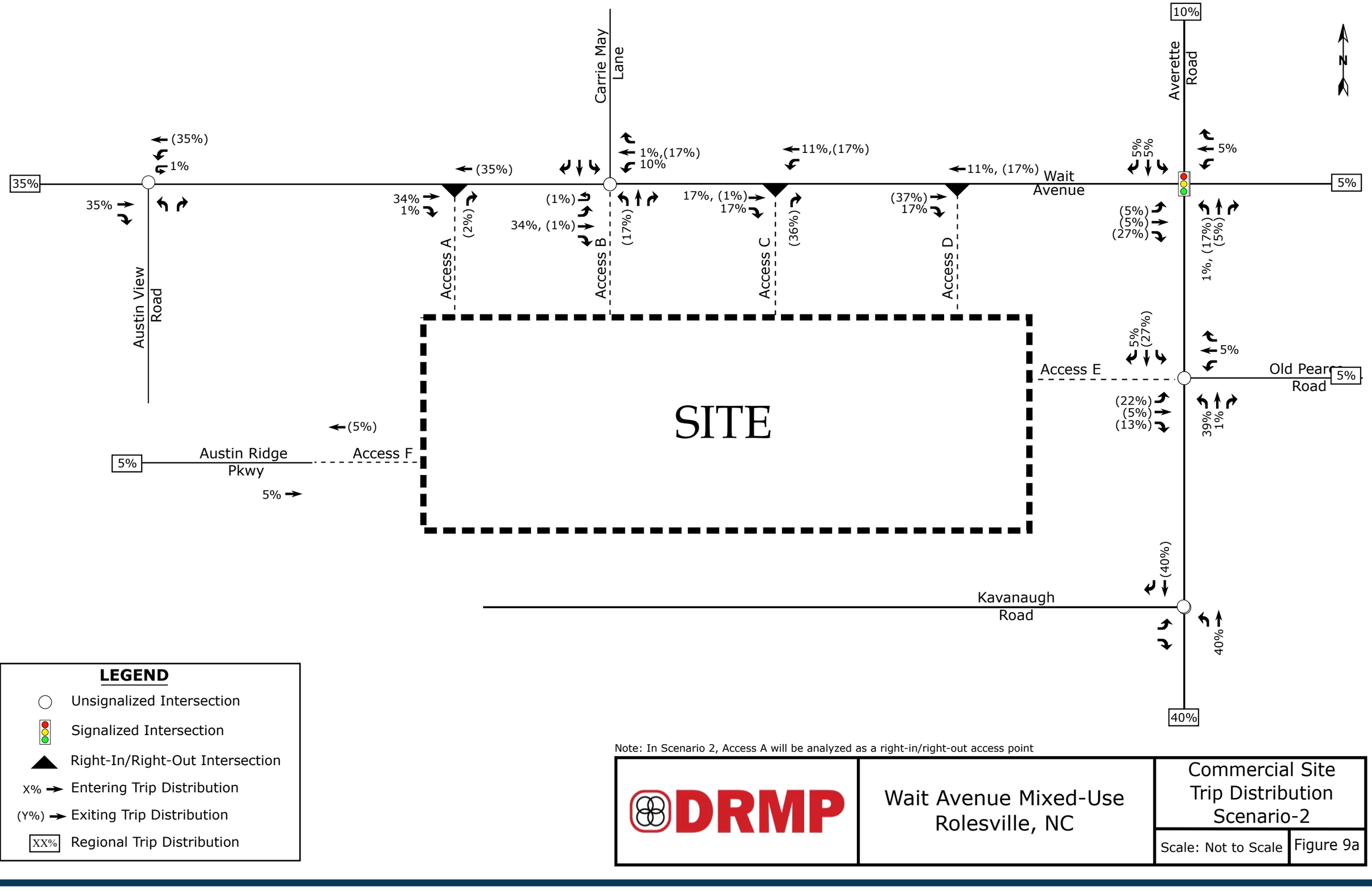
Note: Under Scenario 1, Access A will be considered a full-movement driveway.

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Commercial Site
Trip Assignment
Scenario-1

Scale: Not to Scale | Figure 8b



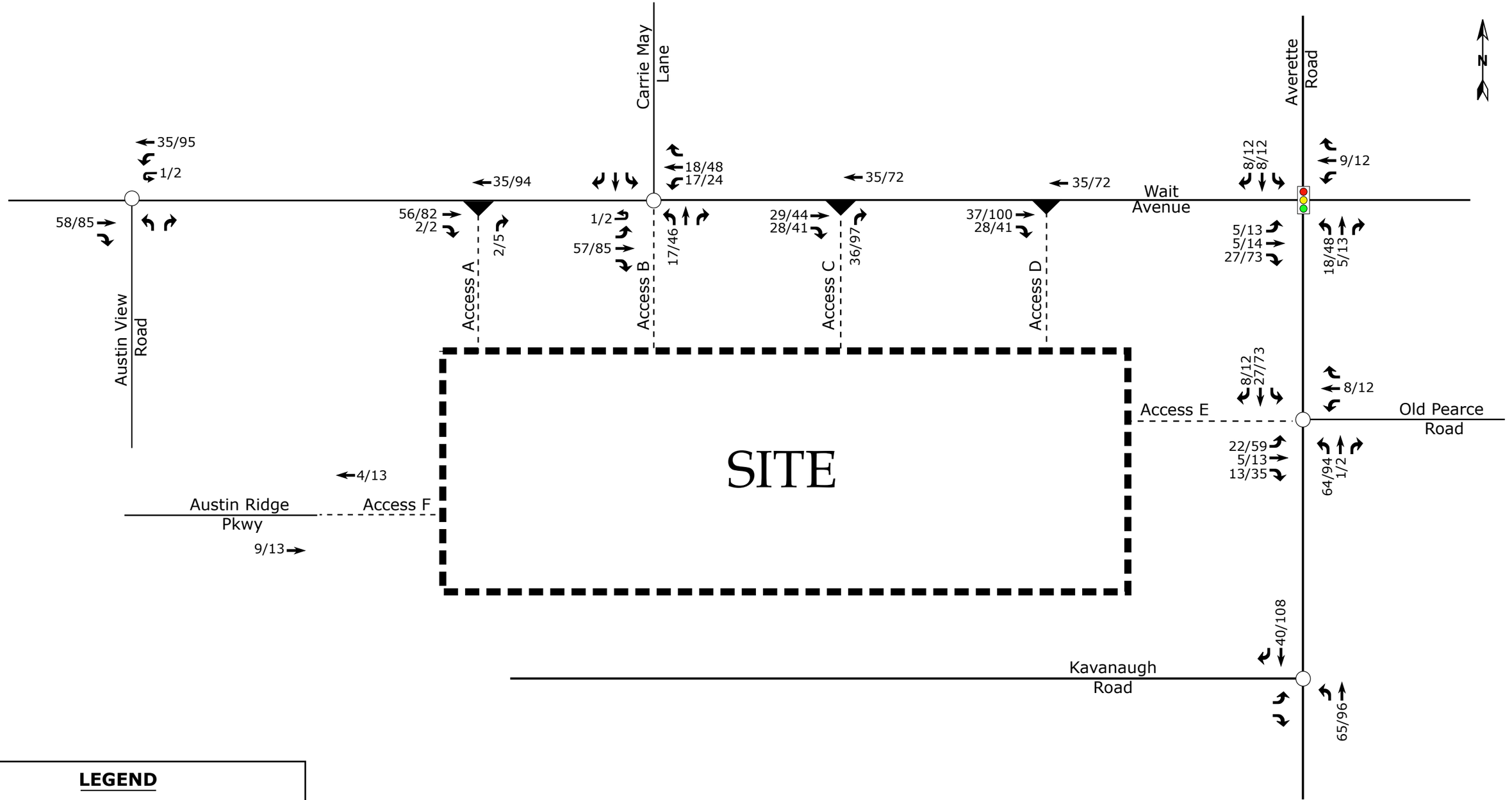
Note: In Scenario 2, Access A will be analyzed as a right-in/right-out access point

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Commercial Site
Trip Distribution
Scenario-2

Scale: Not to Scale | Figure 9a

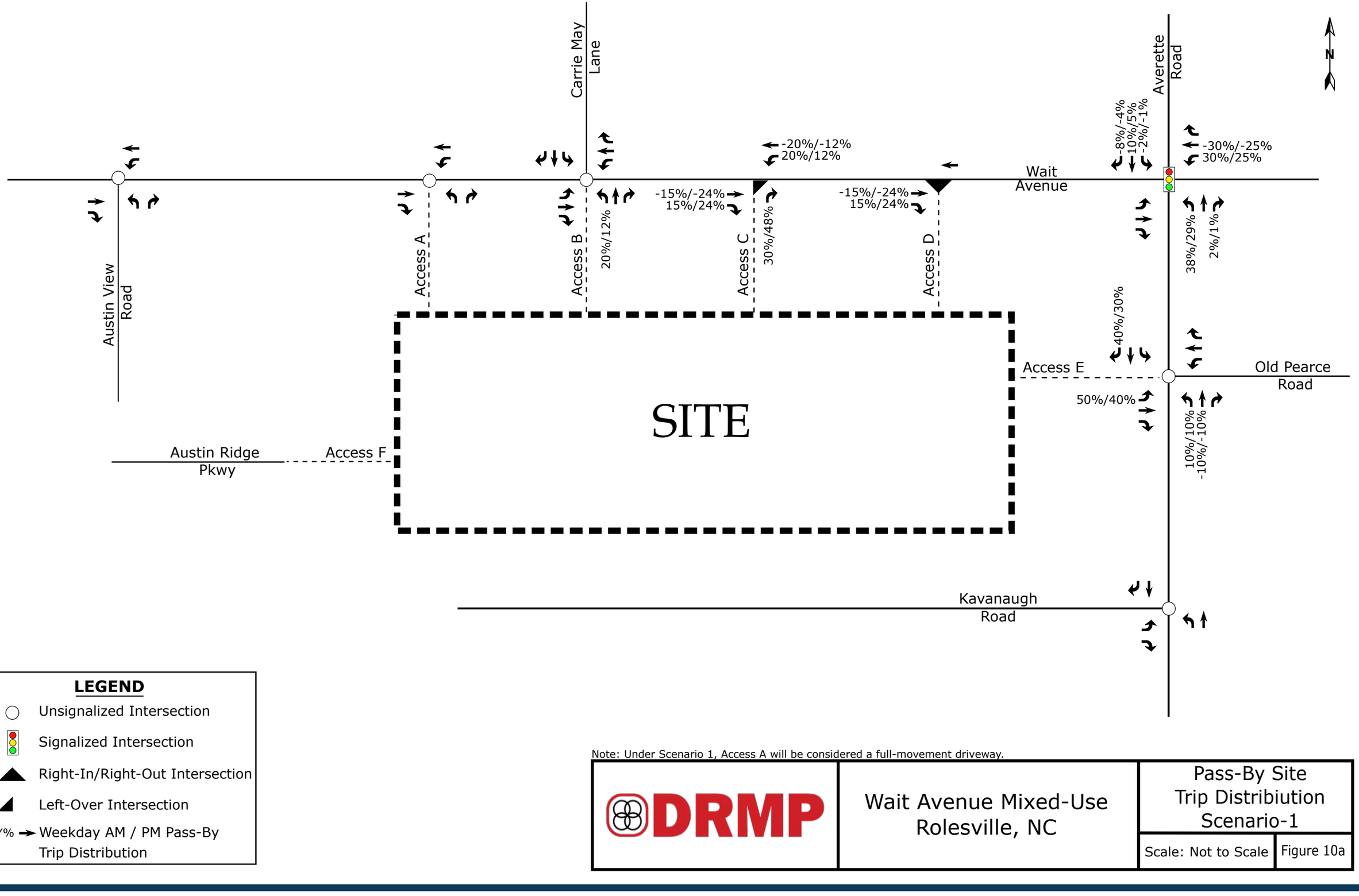


LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

Note: In Scenario 2, Access A will be analyzed as a right-in/right-out access point

DRMP	Wait Avenue Mixed-Use Rolesville, NC	Commercial Site Trip Assignment Scenario-2 Scale: Not to Scale | Figure 9b



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- Left-Over Intersection
- X% / Y% → Weekday AM / PM Pass-By Trip Distribution

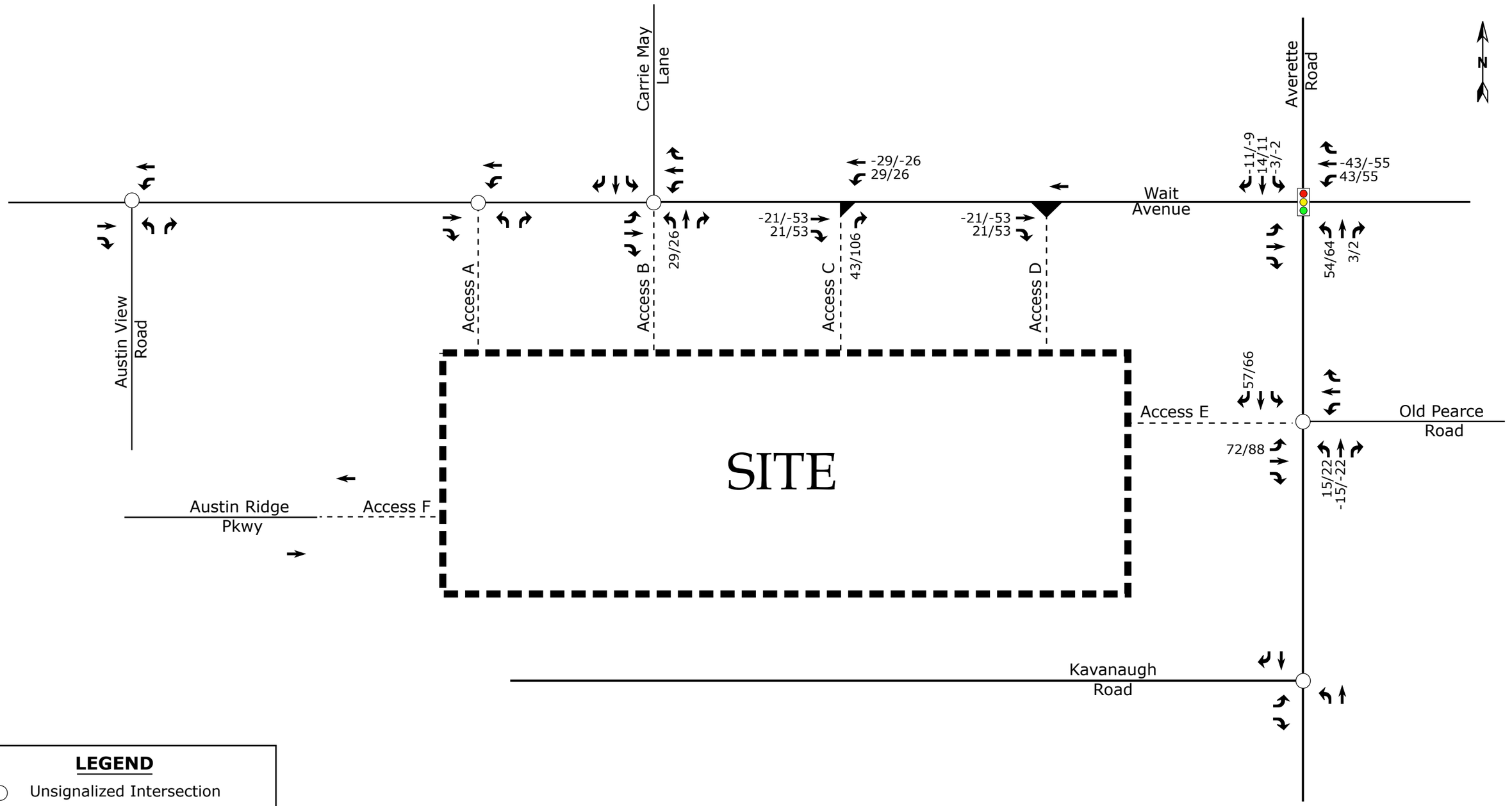
Note: Under Scenario 1, Access A will be considered a full-movement driveway.

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Pass-By Site
Trip Distribiution
Scenario-1

Scale: Not to Scale | Figure 10a



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Left-Over Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Pass-by Trips

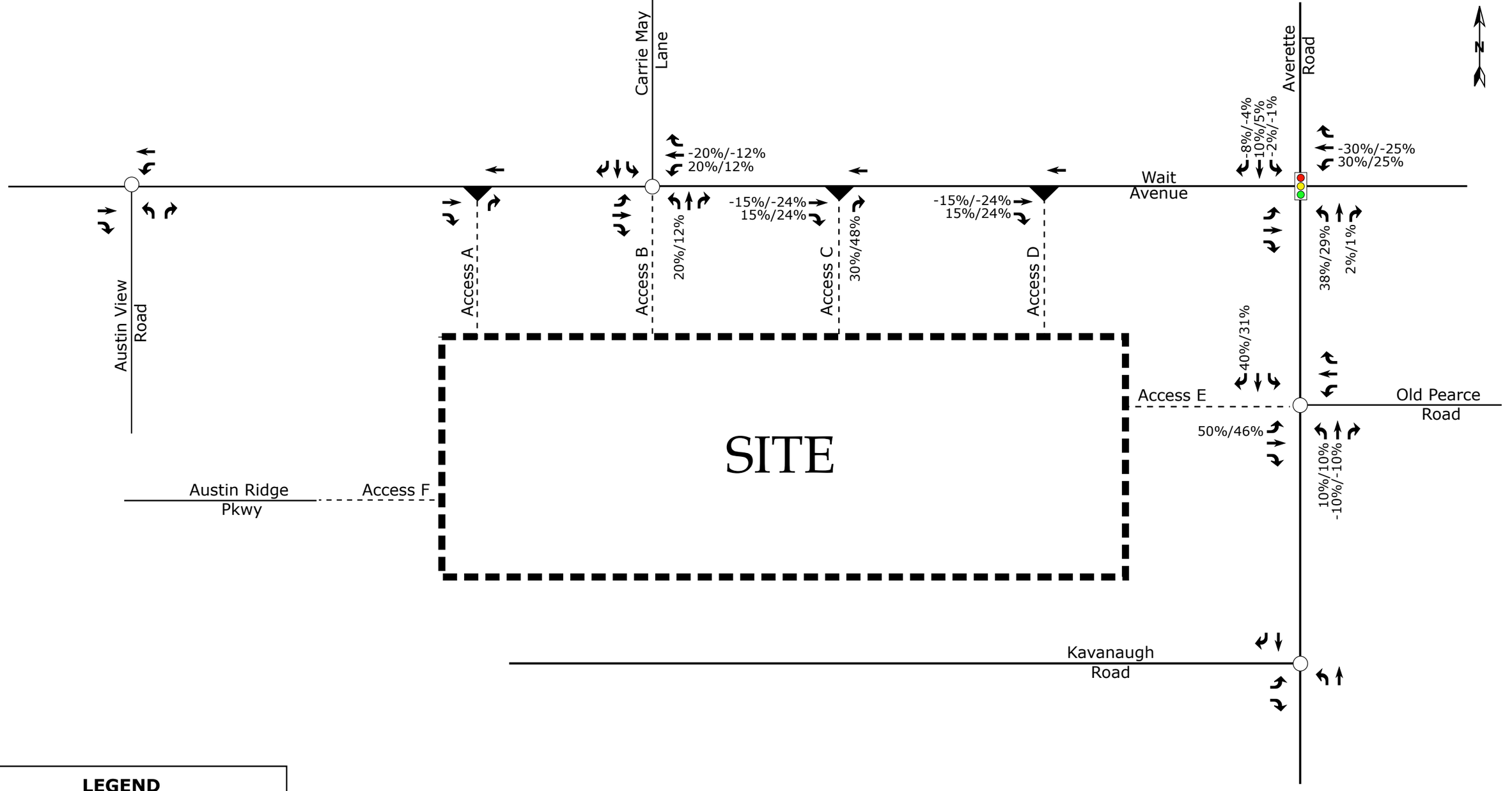
Note: Under Scenario 1, Access A will be considered a full-movement driveway.

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Pass-By Site
Trip Assignment
Scenario-1

Scale: Not to Scale | Figure 10b



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X% / Y% → Weekday AM / PM Pass-By Trip Distribution

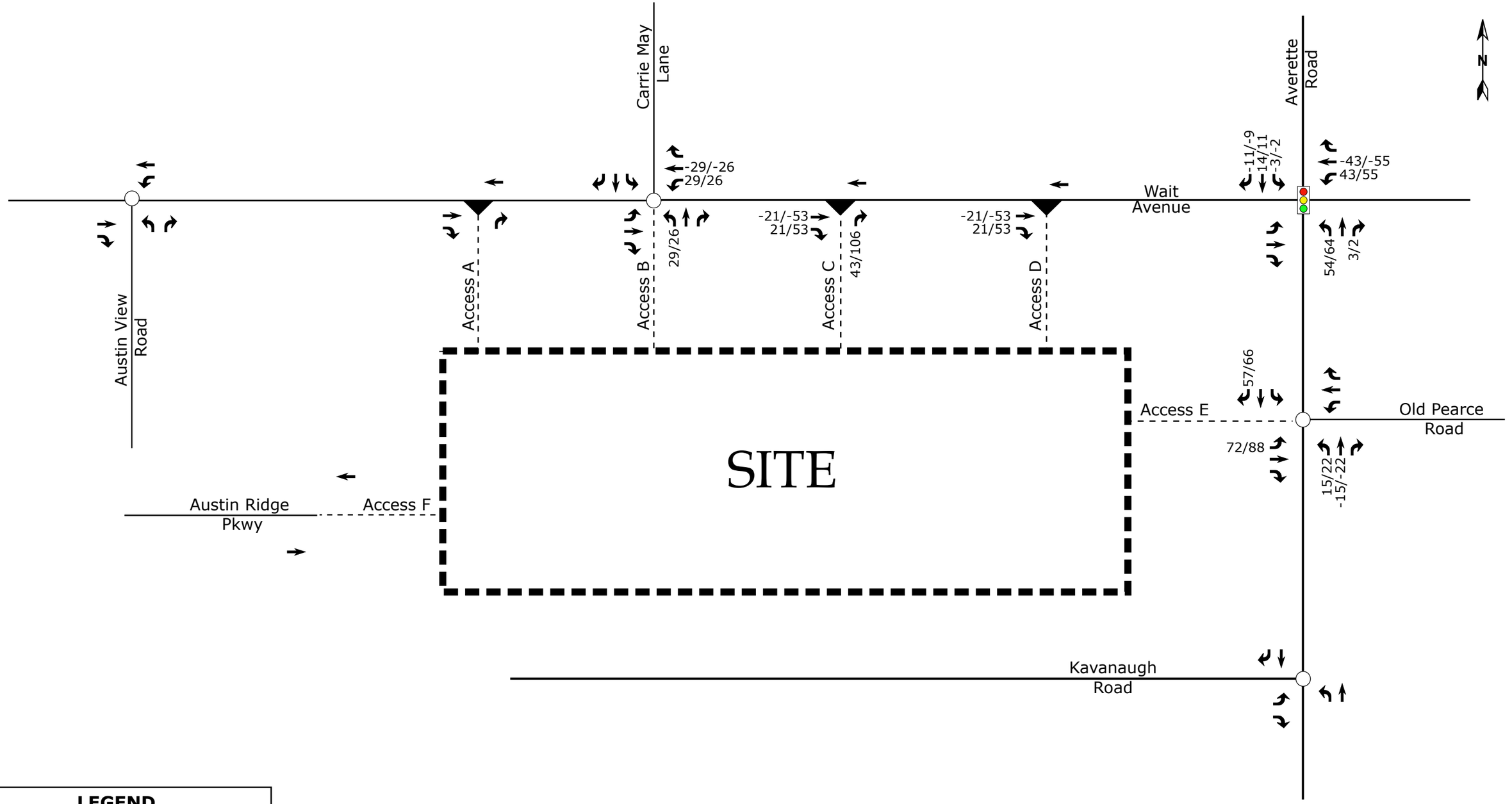
Note: Under Scenario 2, Access A will be considered a full-movement driveway.

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Pass-By Site
Trip Distribiution
Scenario-2

Scale: Not to Scale | Figure 11a



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Pass-by Trips

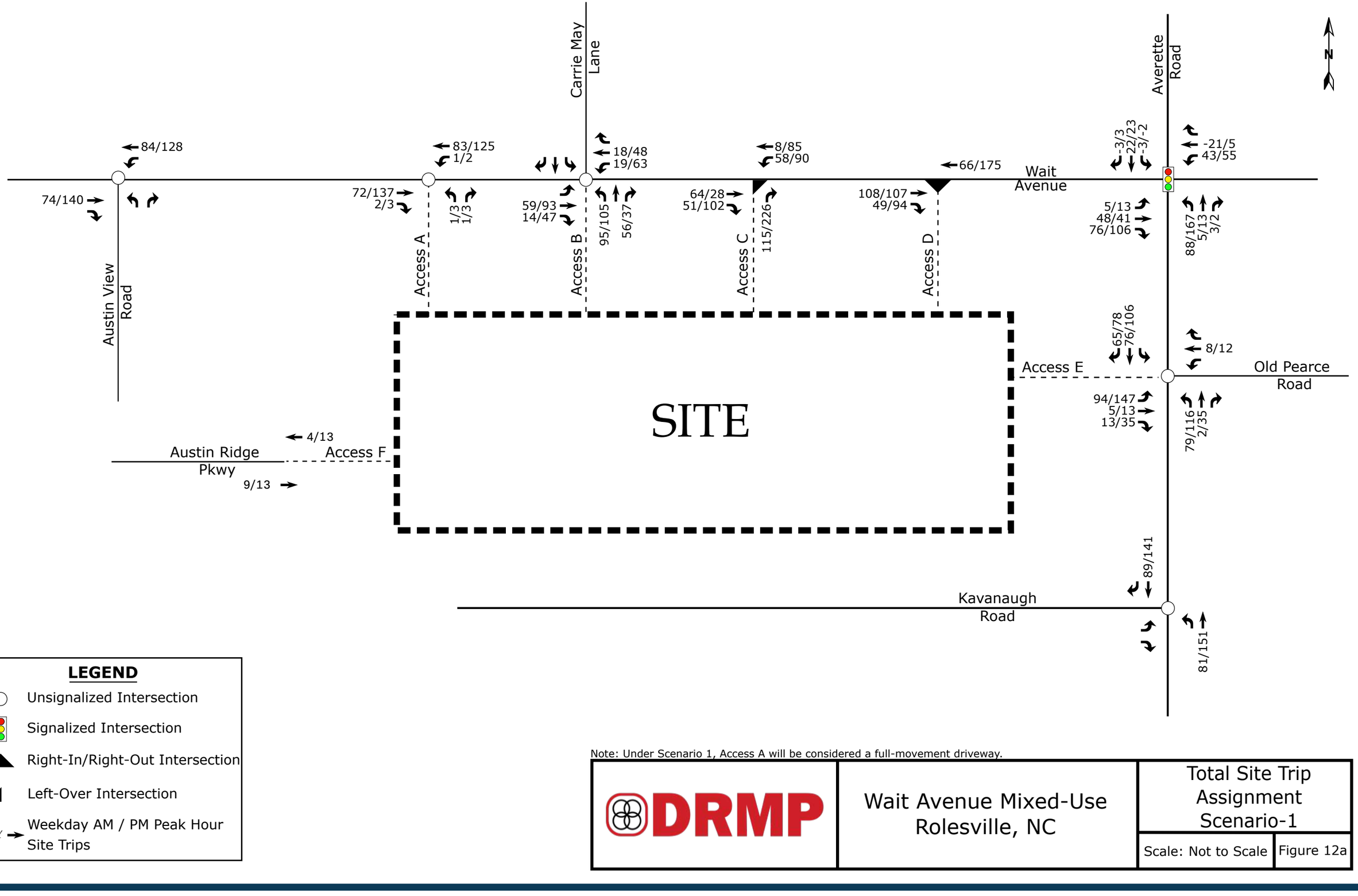
Note: Under Scenario 2, Access A will be considered a full-movement driveway.

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Pass-By Site
Trip Assignment
Scenario-2

Scale: Not to Scale | Figure 11b



LEGEND

- ○ Unsignalized Intersection
- Signalized Intersection
- ▲ Right-In/Right-Out Intersection
- ◢ Left-Over Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

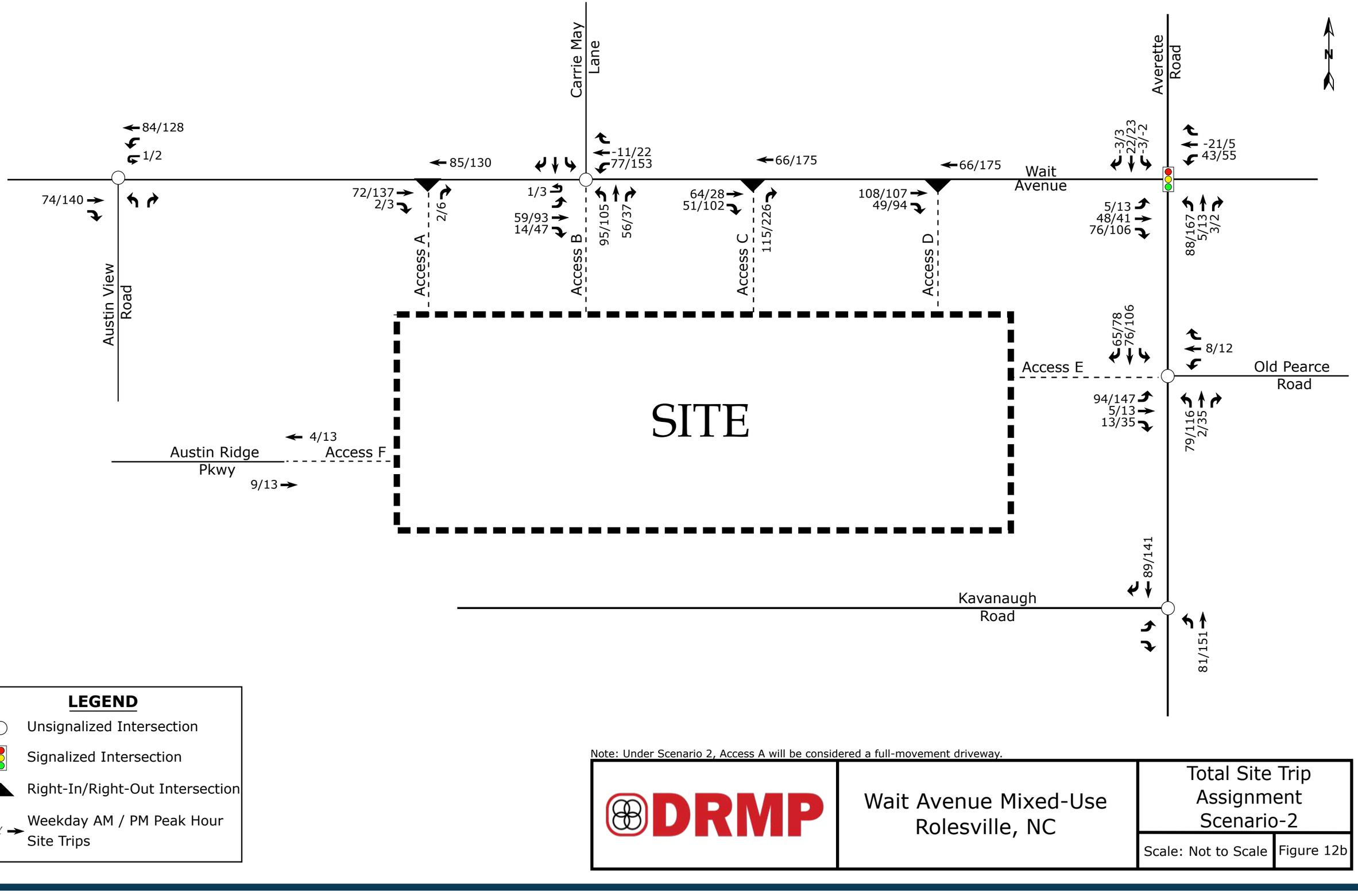
Note: Under Scenario 1, Access A will be considered a full-movement driveway.

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Total Site Trip Assignment Scenario-1

Scale: Not to Scale | Figure 12a



LEGEND

- ○ Unsignalized Intersection
- Signalized Intersection
- ▲ Right-In/Right-Out Intersection
- X / Y → Weekday AM / PM Peak Hour Site Trips

Note: Under Scenario 2, Access A will be considered a full-movement driveway.

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Total Site Trip Assignment Scenario-2

Scale: Not to Scale | Figure 12b

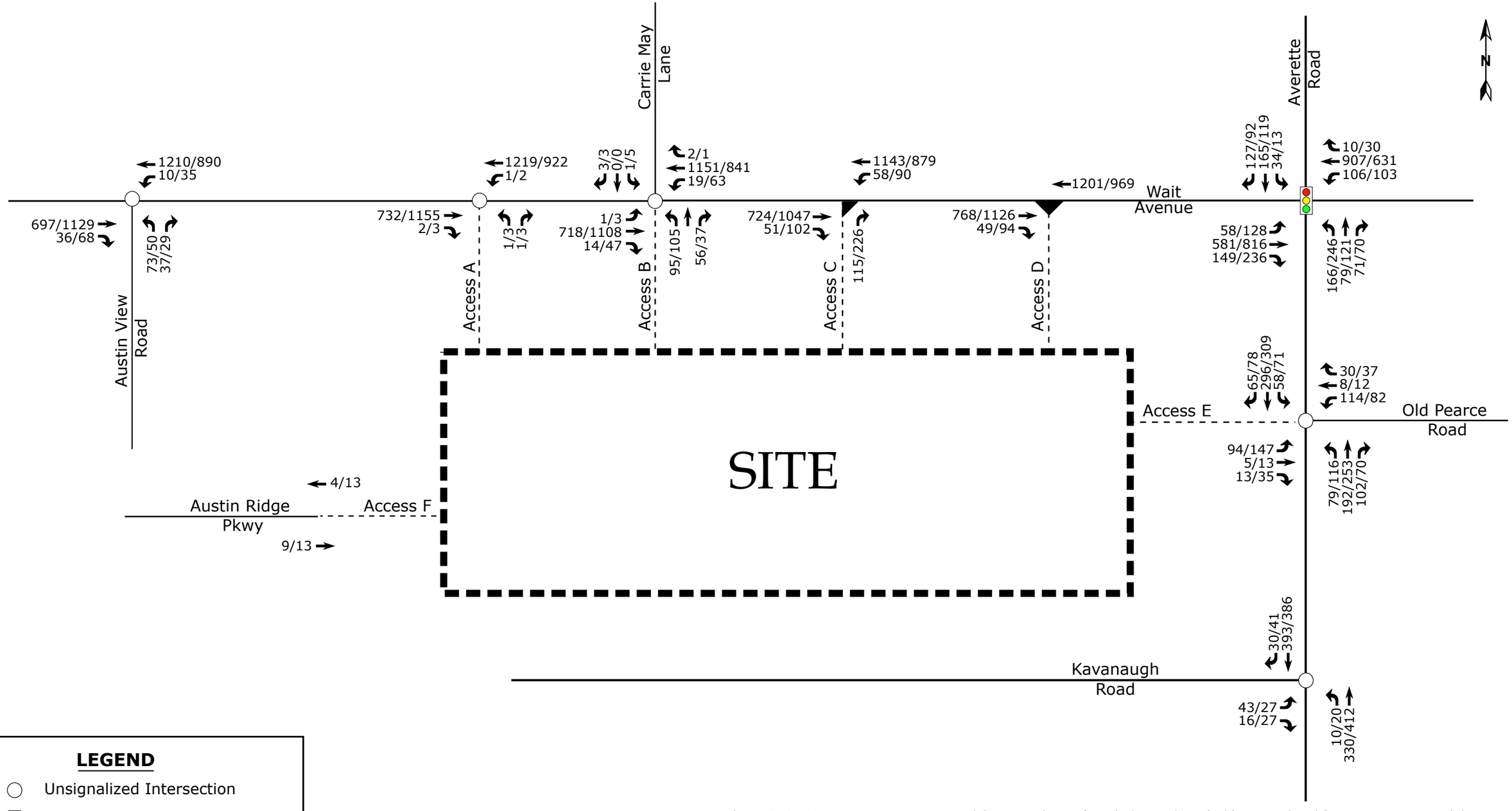
5. 2031 BUILD TRAFFIC CONDITIONS

5.1. 2031 Build Peak Hour Traffic Volumes

To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2031 no-build traffic volumes to determine the 2031 build traffic volumes. Refer to Figure 13a and 13b for an illustration of the 2031 build peak hour traffic volumes with the proposed site fully developed for Scenarios 1 and 2.

5.2. Analysis of 2031 Build Peak Hour Traffic Conditions

Study intersections were analyzed with the 2031 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.

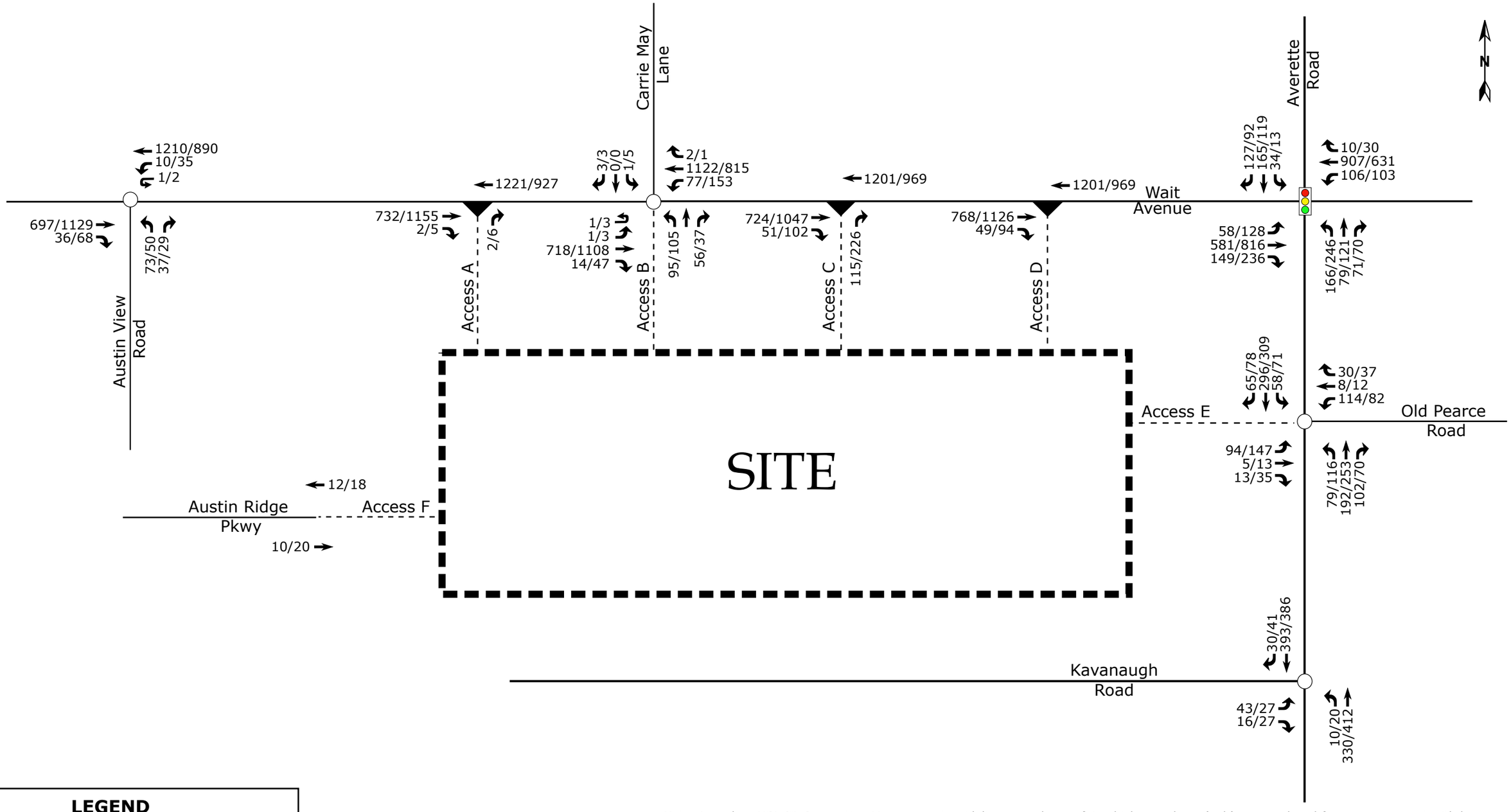


LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In/Right-Out Intersection
- Left-Over Intersection
- X / Y → Weekday AM / PM Peak Hour Traffic

Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

DRMP	Wait Avenue Mixed-Use Rolesville, NC	2031 Build Peak Hour Traffic Scenario-1
		Scale: Not to Scale / Figure 13a



LEGEND

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

Note: Based on NCDOT Congestion Management guidelines, a volume of 4 vehicles per hour (vph) was analyzed for any movement with less than 4 vph.

DRMP	Wait Avenue Mixed-Use Rolesville, NC	2031 Build Peak Hour Traffic Scenario-2
		Scale: Not to Scale / Figure 13b

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.

7. CAPACITY ANALYSIS

The following study intersections were analyzed under 2025 existing, 2031 no-build, and 2031 build traffic conditions:

- Wait Avenue and Averette Road
- Wait Avenue and Carrie May Lane / Site Access B
- Wait Avenue and Austin View Road
- Averette Road and Old Pearce Road / Site Access E
- Averette Road and Kavanaugh Road
- Wait Avenue and Site Access A
- Wait Avenue and Site Access C
- Wait Avenue and Site Access D

All proposed site driveways were analyzed under 2031 build traffic conditions. Refer to Tables 5-12 for a summary of capacity analysis results. Refer to Appendices F-J 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)
2025 Existing	EB WB NB SB	LT, TH-RT 1 LT, TH-RT 1 LT-TH-RT 1 LT-TH, 1 RT	A (10) B (17) C (31) C (25)	B (17)	B (16) B (10) C (33) C (23)	B (17)
2031 No-Build	EB WB NB SB	LT, TH-RT 1 LT, TH-RT 1 LT-TH-RT 1 LT-TH, 1 RT	C (22) D (45) F (94) D (43)	D (43)	D (39) C (24) F (82) C (34)	D (39)
2031 Build	EB WB NB SB	LT, TH-RT 1 LT, TH-RT 1 LT-TH-RT 1 LT-TH, 1 RT	D (47) D (71) F (119) D (40)	E (66)	F (135) E (58) F (195) D (41)	F (114)
2031 Build Improved	EB WB NB SB	LT, TH-RT 1 LT, 1 TH, **1 RT** **1 LT**, 1 TH-RT 1 LT-TH, 1 RT	C (27) D (48) E (62) C (29)	D (40)	D (48) D (47) E (79) E (64)	D (54)

Improvements by developer shown in bold.

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

Capacity analysis indicates that the intersection is expected to operate at an overall Level of Service LOS D or better during the weekday AM and PM peak under existing and 2031-no-build conditions, at 2031 build condition the intersection is expected to operate at E during AM peak hour and LOS F during PM peak hour, showing a degradation from LOS D under no-build conditions. This decline in LOS during both the AM and PM peak hours, along with observed queuing on multiple approaches, warrants mitigation.

To address the increased delay and restore operations to no-build conditions, the following improvement is recommended under 2031 full build conditions:

- Construct a westbound right-turn lane on Wait Avenue with 100 feet of storage and appropriate taper.

- Construct a northbound left-turn Lane on Averette Road with 300 feet of storage and appropriate taper.

7.2. Wait Avenue and Carrie May Lane/Access B

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 Wait Avenue and Carrie May Lane/ Access B

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)
2025 Existing	EB WB SB	1 LT-TH 1 TH-RT 1 LT-RT	B (11)[1] -- D (32)[2]	N/A	A (9)[1] -- D (30)[2]	N/A
2031 No-Build	EB WB SB	1 LT-TH 1 TH-RT 1 LT-RT	B (12)[1] -- E (45)[2]	N/A	A (10)[1] -- E (45)[2]	N/A
2031 Build Scenario-1	EB WB **NB** SB	1 LT-TH, **1 RT** **1 LT**, 1 TH-RT **1 LT-TH-RT** 1 LT-**TH**-RT	B (12)[1] A (10)[1] F (1341)[2] F (123)[2]	N/A	A (10)[1] B (13)[1] F (2656)[2] F (241)[2]	N/A
2031 Build Improved Scenario-1 **(Signalized)**	EB WB **NB** SB	1 LT-TH, **1 RT** **1 LT**, 1 TH-RT **1 LT-TH-RT** 1 LT-**TH**-RT	B (17) C (30) E (55) C (32)	C (27)	D (44) B (12) F (81) D (42)	C (33)
2031 Build Scenario-2	EB WB **NB** SB	1 LT-TH, **1 RT** **1 LT**, 1 TH-RT **1 LT-TH-RT** 1 LT-**TH**-RT	B (12)[1] A (10)[1] F (1863)[2] F (149)[2]	N/A	A (10)[1] B (15)[1] F (4579)[2] F (511)[2]	N/A
2031 Build Improved Scenario-2 **(Signalized)**	EB WB **NB** SB	1 LT-TH, **1 RT** **1 LT**, 1 TH-RT **1 LT-TH-RT** 1 LT-**TH**-RT	A (10) C (24) D (44) C (27)	C (21)	B (14) C (21) F (88) D (39)	C (22)

Improvements by developer shown in bold.

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

Capacity analysis indicates that the major street left-turn movements are expected to operate at LOS D or better during the weekday AM and PM peak hours under all traffic conditions. The minor-street approach is expected to operate at LOS F or better during the weekday AM and PM peak hours. Due to poor operations on the minor-street approach during the weekday AM and PM peak hours, a traffic signal was considered. 2031 build volumes were analyzed utilizing the criteria contained in the *Manual on Uniform Traffic*

Control Devices (MUTCD). It should be noted that a traffic signal is expected to be warranted during both weekday peak hours under 2031 build traffic conditions. warrant analysis was conducted at this intersection. Based on the signal warrant analysis results, this intersection warrants signalization.

With signalization, the intersection is expected to operate at an overall LOS C during the weekday AM and PM peak hours under 2030 build – improved traffic conditions. No queuing issues were identified under 2030 Build Improved traffic conditions.

Along with signalizing the intersection, left turn and right turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*. The following improvements are recommended to be constructed by the developer:

- Construct an eastbound Wait Avenue right turn lane with 50 feet of storage and appropriate taper length.
- Construct a westbound Wait Avenue left turn lane with 125 feet of storage and appropriate taper length. (Under Scenario-1).
- Construct a westbound Wait Avenue left turn lane with 350 feet of storage and appropriate taper length. (Under Scenario-2)
- Install a traffic Signal.

7.3. Wait Avenue and Austin View Blvd

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 Wait Avenue and Austin View Blvd

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)
2025 Existing	EB WB NB	1 TH, 1 RT 1 LT, 1 TH 1 LT-RT	-- A (9)[1] F (87)[2]	N/A	-- A (9)[1] F (87)[2]	N/A
2031 No-Build	EB WB NB	1 TH, 1 RT 1 LT, 1 TH 1 LT-RT	-- A (9)[1] F (270)[2]	N/A	-- B (12)[1] F (200)[2]	N/A
2031 Build	EB WB NB	1 TH, 1 RT 1 LT, 1 TH 1 LT-RT	-- A (10)[1] F (429)[2]	N/A	-- B (13)[1] F (474)[2]	N/A

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

Capacity analysis indicates that the major-street left-turn movements are expected to operate at LOS A during the weekday AM and PM peak hours under all traffic conditions. The minor-street approach is expected to operate at LOS F or better during the weekday AM and PM peak hours. Poor levels of service and higher delays are not uncommon for an unsignalized minor-street approach during the weekday peak hours when mainline volumes are heaviest. Due to the minimal impacts caused by the proposed development, no improvements are recommended by the developer. A signal warrant analysis was conducted based on Warrants 1, 2, and 3 in the Manual on Uniform Traffic Control Devices (MUTCD); however, none of the warrants were satisfied.

The Austin Creek development has several road connections and is expected to also connect to the proposed development. Should vehicles experience significant delay at this intersection, there are alternative routes available, including a new signal via the proposed development.

7.4. Averette Road and Old Pearce Road / Access E

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

Table 8: Analysis Summary of Averette Road and Old Pearce Road / Access E

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)
2025 Existing	WB NB SB	1 LT-RT 1 TH-RT 1 LT-TH	B (15)[2] -- A (8)[1]	N/A	B (14)[2] -- A (8)[1]	N/A
2031 No-Build	WB NB SB	1 LT-RT 1 TH-RT 1 LT-TH	C (17)[2] -- A (8)[1]	N/A	C (16)[2] -- A (8)[1]	N/A
2031 Build	**EB** WB NB SB	**1 LT-TH-RT** 1 LT-**TH**-RT **1 LT**, 1 TH-RT 1 LT-TH, **1 RT**	E (39)[1] E (48)[1] A (8)[2] A (8)[2]	N/A	F (221)[1] F (82)[1] A (9)[2] A (8)[2]	N/A

Improvements by developer shown in bold.

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

Capacity analysis indicates that the major-street left-turn movements are expected to operate at LOS A during the weekday AM and PM peak hours under all traffic conditions. The minor-street approach is expected to operate at LOS F or better during the weekday AM and PM peak hours. Poor levels of service and higher delays are not uncommon for an unsignalized minor-street approach during the weekday peak hours when mainline volumes are heaviest. Due to the minimal impacts caused by the proposed development, no improvements are recommended by the developer.

Although minor-street queues were observed to spill back due to heavy volumes on the major-street. The improvements recommended at Wait Avenue and Averette Road are expected mitigated this issue. As a result, no queuing issues were identified under the 2031 build – improved conditions

Left turn and right turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*. The following improvements are recommended to be constructed by the developer:

- Construct a northbound Averette Road left turn lane with 100 feet of storage and appropriate taper length.
- Construct a southbound Averette Road right turn lane with 75 feet of storage and appropriate taper length.

7.5. Averette Road and Kavanaugh Road

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

Table 9: Analysis Summary of Averette Road and Kavanaugh 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)
2025 Existing	EB NB SB	1 LT-RT 1 LT, TH 1 TH-RT	B (13)[2] A (8)[1] --	N/A	B (12)[2] A (8)[1] --	N/A
2031 No-Build	EB NB SB	1 LT-RT 1 LT, TH 1 TH-RT	B (14)[2] A (8)[1] --	N/A	B (12)[2] A (8)[1] --	N/A
2031 Build	EB NB SB	1 LT-RT 1 LT, TH 1 TH-RT	C (17)[2] A (8)[1] --	N/A	C (16)[2] A (8)[1] --	N/A

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

Capacity analysis indicates that the major street left turn movements and minor street approaches are expected to operate at LOS C or better during the weekday AM and PM peak hours under all traffic conditions. No queuing issues were identified. No improvements are recommended by the developer. No queuing issues were identified. No improvements are recommended by the developer.

7.6. Wait Avenue and Access A

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

Table 10: Analysis Summary of Wait Avenue and Access A

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)
2031 Build Scenario-1 (Full Movement)	EB WB NB	1 TH-RT 1 LT-TH 1 RT-LT	-- A (10)[1] F (51)[2]	N/A	-- B (12)[1] F (66)[2]	N/A
2031 Build Scenario-2 (RIRO)	EB WB NB	1 TH-RT 1 TH 1 RT	-- -- B (15)[2]	N/A	-- -- C (23)[2]	N/A

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

Capacity analysis indicates that the major-street left-turn movements are expected to operate at LOS A during weekday AM and LOS B PM peak hour under 2031 build (Scenario-1). Poor levels of service and higher delays are not uncommon for an unsignalized minor-street approach during the weekday peak hours when mainline volumes are heaviest. Due to the minimal impacts caused by the proposed development, no improvements are recommended by the developer.

Under the 2031 build (Scenario-2) and minor street approach is expected to operate at LOS B during the weekday AM and LOS C PM peak hours under 2031 build (Scenario-2). No queuing issues were identified. No improvements are recommended by the developer.

Left turn and right turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*. No turn lanes are warranted at Access A under full buildout of the development.

7.7. Wait Avenue and Access C

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

Table 11: Analysis Summary of Wait Avenue and Access C

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)
2031 Build Scenario-1 (left-over)	EB WB NB	1 TH, 1 RT 1 LT, 1 TH 1 RT	-- B (10)[1] C (19)[2]	N/A	-- B (13)[1] F (220)[2]	N/A
2031 Build Scenario-2 (RIRO)	EB WB NB	1 TH, 1 RT 1 TH 1 RT	-- -- C (24)[2]	N/A	-- -- F (202)[2]	N/A

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

Capacity analysis indicates that under Scenario-1 the major-street left-turn movements are expected to operate at LOS B during the weekday AM and PM peak hour. The minor-street approach is expected to operate at LOS F or better during the weekday AM and PM peak hours. Poor levels of service and higher delays are not uncommon for an unsignalized minor-street approach during the weekday peak hours when mainline volumes are heaviest.

Left turn and right turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*. The following improvements are recommended to be constructed by the developer:

- Construct an eastbound Wait Avenue right turn lane with 50 feet of storage and appropriate taper length.
- Construct a westbound Wait Avenue left turn lane with 175 feet of storage and appropriate taper length (Under Scenario-1).

Gaps in the roadway network along Wait Avenue are expected due to the proposed traffic signal. Should vehicles at this intersection experience significant delay exiting, there are several alternative routes via the connectivity provided by the site.

7.8. Wait Avenue and Access D

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

Table 12: Analysis Summary of Wait Avenue and Access D

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)
2031 Build	EB WB	1 TH, 1 RT 1 TH	-- --	C	-- --	B

Capacity analysis indicates that Overall intersection is expected to operate at LOS C during the weekday AM and LOS B PM peak hours under all traffic conditions. No queuing issues were identified. Right turn lanes were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*. The following improvements are recommended to be constructed by the developer:

- Construct an eastbound Wait Avenue right turn lane with 50 feet of storage and appropriate taper length.

8. CONCLUSIONS

This Traffic Impact Analysis was conducted to determine the potential traffic impacts of the Wait Avenue Mixed-Use development to be located in Rolesville, North Carolina. The proposed development, anticipated to be completed in 2031, is assumed to consist of the following land uses:

- 300 DU Single-Family Detached Housing
- 107,049 SF Mini-Warehouse
- 51,000 SF Supermarket
- 23,700 SF Strip Retail Plaza
- 2,500 SF Coffee/Donut Shop with Drive-Through Window
- 2,400 SF Drive-in Bank
- 2 Fast Casual Restaurants at 2,500 SF each
- 5,000 SF Convenience Store/Gas Station w/12 fueling positions

Site access is proposed via four driveways along Wait Avenue (NC 98), one full-movement driveway along Averette Road, and one site access is proposed via the existing Austin Ridge Parkway.

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

- 2025 Existing Traffic Conditions
- 2031 No-Build Traffic Conditions
- 2031 Build Traffic Conditions Scenario 1 (without Median)
- 2031 Build Traffic Conditions Scenario 2 (with Median)

Trip Generation

Primary site trips are expected to generate approximately 452 trips (212 entering and 240 exiting) during the weekday AM peak hour and 762 trips (400 entering and 362 exiting) 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 and are recommended to accommodate future traffic conditions. See a more detailed description of the recommended improvements below. Refer to Figure 14a and 14b for an illustration of the recommended lane configuration for the proposed development.

Wait Avenue and Averette Road

- Construct a westbound right-turn lane on Wait Avenue with 100 feet of storage and appropriate taper.
- Construct a northbound left-turn Lane on Averette Road with 300 feet of storage and appropriate taper.

Wait Avenue and Carrie May Lane/Access B

- Construct Site Access B (northbound approach) with one ingress and one egress lane.
- Construct an eastbound Wait Avenue right turn lane with 50 feet of storage and appropriate taper length.
- Construct a westbound Wait Avenue left turn lane with 125 feet of storage and appropriate taper length. (Under Scenario-1).
- Construct a westbound Wait Avenue left turn lane with 350 feet of storage and appropriate taper length. (Under Scenario-2)
- Install a traffic Signal.

Averette Road and Old Pearce Road/Access E

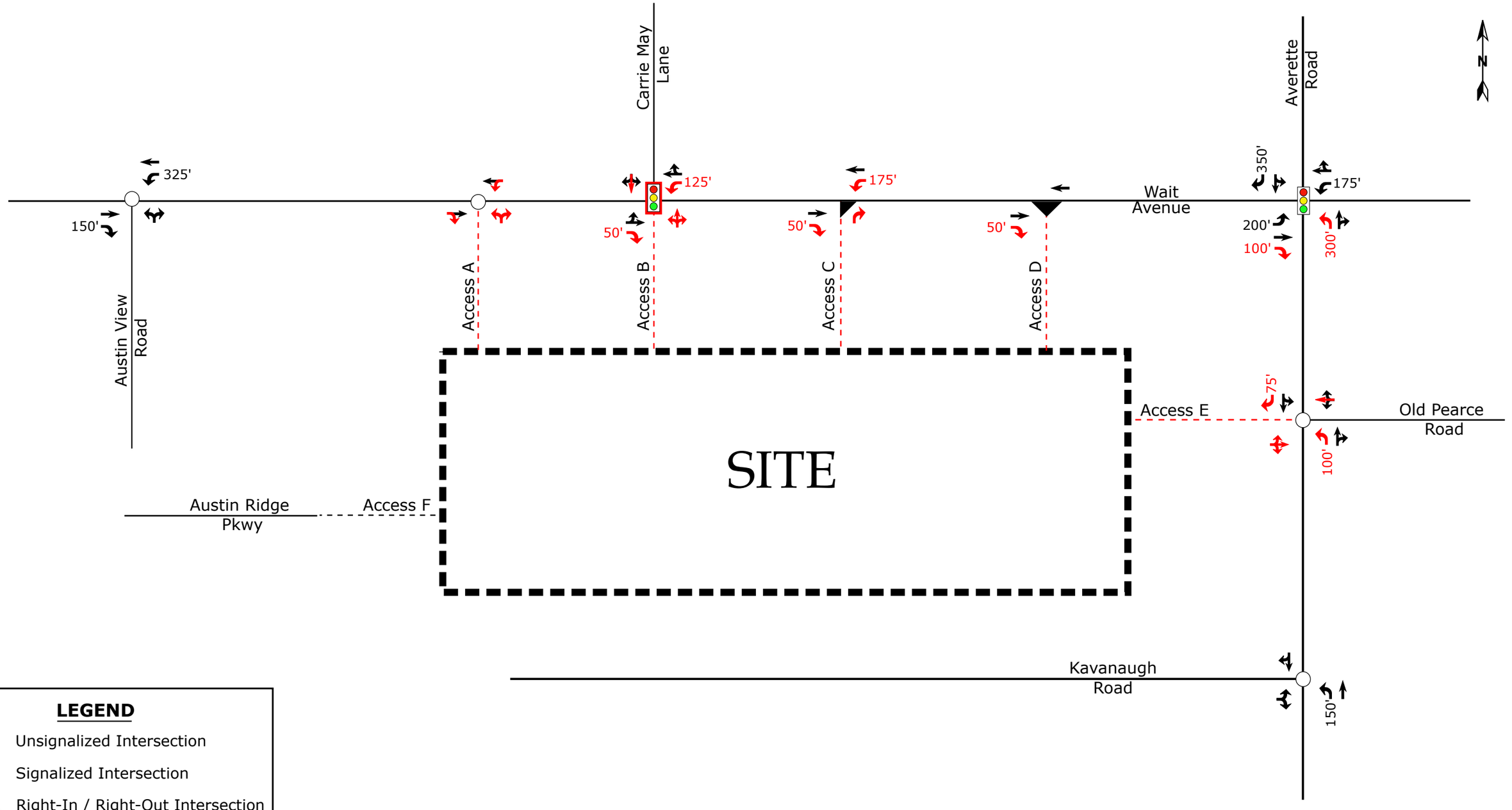
- Construct Site Access E (westbound approach) as a with one ingress and one egress lane.
- Construct a northbound Averette Road Left turn lane with 100 feet of storage and appropriate taper length.
- Construct a southbound Averette Road left turn lane with 125 feet of storage and appropriate taper length.
- Provide stop control for the westbound approach.

Wait Avenue and Access C

- Construct an eastbound Wait Avenue right turn lane with 50 feet of storage and appropriate taper length.
- Construct a westbound Wait Avenue left turn lane with 175 feet of storage and appropriate taper length. (Under Scenario-1).

Wait Avenue and Access D

- Construct an eastbound Wait Avenue right turn lane with 50 feet of storage and appropriate taper length.

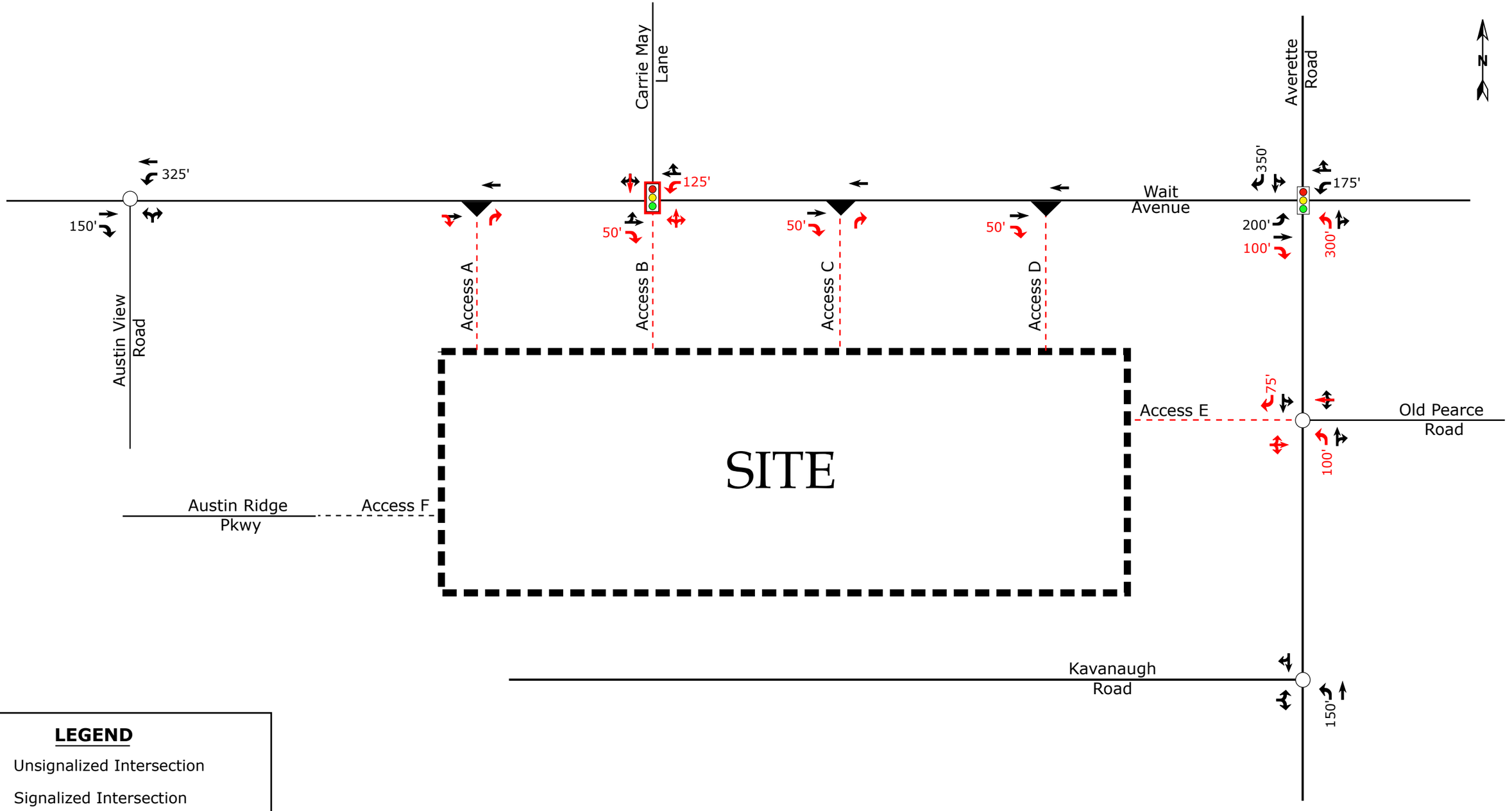


LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In / Right-Out Intersection
- Left-Over Intersection
- Existing Lane
- Improvement by Developer
- X' Storage (In Feet)

Note: Under Scenario 1, Access A will be considered a full-movement driveway.

DRMP	Wait Avenue Mixed-Use Rolesville, NC	Recommended Lane Configurations Scenario-1 Scale: Not to Scale | Figure 14a



LEGEND

- Unsignalized Intersection
- Signalized Intersection
- Right-In / Right-Out Intersection
- Existing Lane
- Improvement by Developer
- X' Storage (In Feet)

Note: In Scenario 2, Access A will be analyzed as a right-in/right-out access point

DRMP

Wait Avenue Mixed-Use
Rolesville, NC

Recommended Lane Configurations Scenario-2

Scale: Not to Scale | Figure 14b