DRMP

TRAFFIC IMPACT ANALYSIS

FOR

KNIGHTDALE ASSEMBLAGE

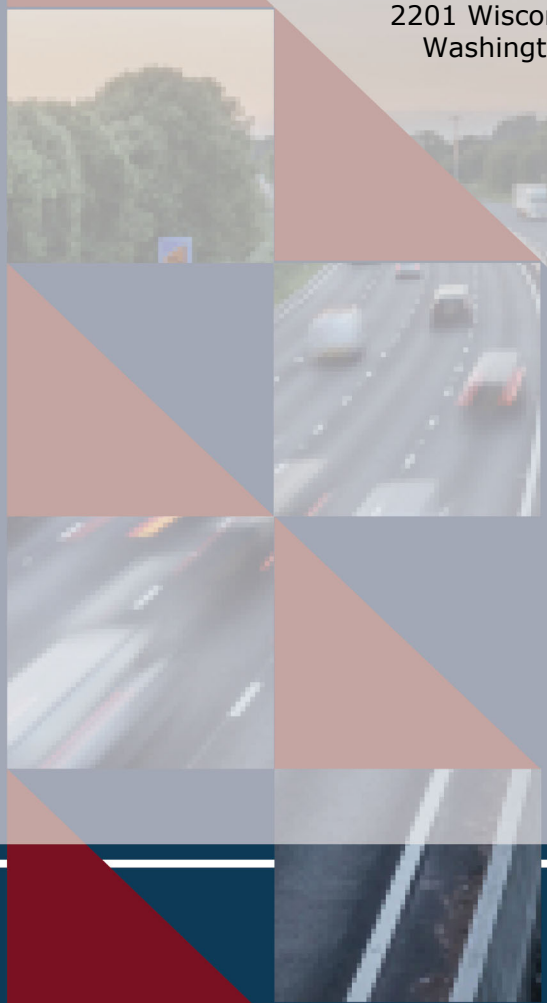
LOCATED

IN

KNIGHTDALE, NC

Prepared For:

Lock7 Development
2201 Wisconsin Avenue NW
Washington, DC 20007



DECEMBER 2025

DRMP Project No. 25422

Prepared By: CDS

Reviewed By: CC

DRMP

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FOR

KNIGHTDALE ASSEMBLAGE

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12/18/2025

Prepared For:

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2201 Wisconsin Avenue NW

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Prepared By:

DRMP, Inc.

License #F-1524

TRAFFIC IMPACT ANALYSIS
KNIGHTDALE ASSEMBLAGE

Knightdale, North Carolina

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed Knightdale Assemblage development in accordance with the Knightdale (Town) Unified Development Ordinance (UDO). The proposed development is to be located north of Old Faison Road, west of Woodfield Lane in Knightdale, North Carolina. The proposed development, anticipated to be completed in 2029, is assumed to consist of the following land uses listed below:

- 59 single-family detached homes
- 67 townhomes
- 66 single-family row houses (trips generated as townhomes)
- Up to 15,000 square feet (s.f.) of strip retail space

It should be noted that the attached site plan shows one less single-family detached unit compared to what was analyzed in the TIA. Additionally, during scoping 7,500 s.f. of strip retail space was approved; however, to prevent comments about the minimum commercial square footage during council meetings, 15,000 s.f. of strip retail was analyzed.

Access is proposed via one full movement driveway along Old Faison Road. Through coordination with the Town during scoping, funding has been approved for a bridge that would connect Widewaters Parkway to the proposed development, providing an additional access to the site via BUS US-64. Interconnectivity to Woodfield Lane is also proposed by the development. A traffic assessment letter was previously performed and approved by the Town to determine if the site access proximity to Woodfield Lane would create any capacity analysis issues. It was determined that the existing traffic associated with Woodfield Lane was negligible, and any decisions on the Woodfield Lane connection to Old Faison Road would be made from a fire code and safety standpoint after neighborhood and Town Council approval. For the purposes of this analysis, the connection of Woodfield Lane to Old Faison Road is removed in order to provide the most conservative analysis.

Interconnectivity to Alysheba Drive is also proposed, however, no significant amounts of traffic are expected to utilize the connection due to both developments having more direct connections to Old Faison 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:

- Hodge Road and Old Faison Road/I-87 Westbound Ramps
- Hodge Road and I-87 Eastbound Ramps
- BUS US-64 and Widewaters Parkway/Shopping Center Access
- Bethlehem Road and Old Faison Road

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed above, in May 2024 during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods. Traffic counts at the intersection of BUS US-64 and Widewaters Parkway were taken from the Widewaters study in 2022. Traffic counts were forecasted to 2025 using the Town's standard 3% growth rate.

3. Future Traffic Conditions

Based on the Town's UDO, a build +1 and build +10 analysis are required for all developments. Through coordination with the Town, it was determined that an annual growth rate of 3% would be used to generate 2030 (+1) projected weekday AM and PM peak hour traffic volumes. For the 2039 (+10) analysis, traffic for years beyond 2030 was grown at a 1% annual growth rate. The following adjacent developments were identified to be included as an approved adjacent development in this study:

- Creekview Crossing (ZMA-5-21)
- Lyndon Oaks (ZMA-2-23)
- Riverview Commons (ZMA-10-21)
- Silverstone (S-8-16)
- Stoneriver (S-6-16/ZMA-1-16)

Additionally, based on coordination with the NCDOT and the Town, it was determined that the roadway improvements associated with the NCDOT State Transportation Improvement Program (STIP) R-5705AK should be considered in 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
Single-Family Detached (210)	59 DU	622	12	34	46	38	23	61
Townhomes (215)	133 DU	964	16	47	63	45	31	76
Strip Retail (822)	15 KSF	818	21	14	35	49	50	99
Total Trips		**2,404**	**49**	**95**	**144**	**132**	**104**	**236**
Internal Capture AM: (4% entering, 2% exiting) PM: (1% entering, 2% exiting)			*-2*	*-2*	*-4*	*0*	*-2*	*-2*
Primary Trips			**47**	**93**	**140**	**132**	**102**	**234**

To estimate traffic conditions with the site fully built-out, the total site trips were added to the 2030 (+1) and 2039 (+10) no-build traffic volumes to determine the 2030 build and 2039 future traffic volumes. Under build conditions, site accesses must also be analyzed as a roundabout intersection which is shown in the build alternative scenario. The study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2025 Existing Traffic Conditions
- 2030 (+1) No-Build Traffic Conditions
- 2030 (+1) Build Traffic Conditions
- 2030 (+1) Build Traffic Conditions – Alternative
- 2039 (+10) No-Build Traffic Conditions
- 2039 (+10) Future Traffic Conditions

Under build and future conditions, rerouting of existing traffic patterns is expected to occur with the development's connection to Widewaters Parkway. More details on assumptions can be found in Section 4 of the report.

5. Capacity Analysis Summary

The analysis considered weekday AM and PM peak hour traffic for 2025 existing, 2030 (+1) no-build, 2030 (+1) build conditions, 2039 (+10) future no-build conditions, and 2039 (+10) future 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 Figures E-1 and E-2.

Improvements by NCDOT STIP R-5705AK

STIP R-5705AK is expected to construct a westbound right turn lane with 100 feet of storage at the intersection of Hodge Road and Old Faison Road.

Improvements by Lyndon Oaks (2030)

Bethlehem Road and Old Faison Road

- Construct an exclusive southbound right turn lane with 250’ of full width storage plus appropriate deceleration and taper.
- Construct an exclusive northbound left turn lane with 175’ of full width storage plus appropriate deceleration and taper.
- Construct an exclusive eastbound left turn lane with 250’ of full width storage plus appropriate deceleration and taper.
- Install a traffic signal.

Improvements by Silverstone/Stoneriver

Hodge Road and I-87 Eastbound Ramps

- Construct a second exclusive eastbound right turn lane with 150’ of full-width storage plus appropriate deceleration and taper.
- Widen southbound Hodge Road south of I-87 Eastbound Ramps.
- Restripe southbound right turn lane to be shared through-right turn lane.

Hodge Road and Old Faison Road/I-87 Westbound Ramps

- Construct westbound left turn lane to provide 125’ of full width storage plus appropriate deceleration and taper.
- Construct an exclusive northbound right turn lane with 200’ of full-width storage plus appropriate deceleration and taper.

Improvements by Lyndon Oaks (2032)

Hodge Road and Old Faison Road/I-87 Westbound Ramps

- Extend the westbound left turn lane to provide 175’ of full width storage plus appropriate deceleration and taper.
- Extend the eastbound shared left-through lane to provide 275’ of full width storage plus appropriate deceleration and taper.
- Extend the southbound left turn lane to provide 275’ of full width storage plus appropriate deceleration and taper.
- Maximize the storage of the northbound right turn lane with appropriate deceleration and taper.

Recommended Improvements by Developer (Alternative 1)

Old Faison Road and Site Access

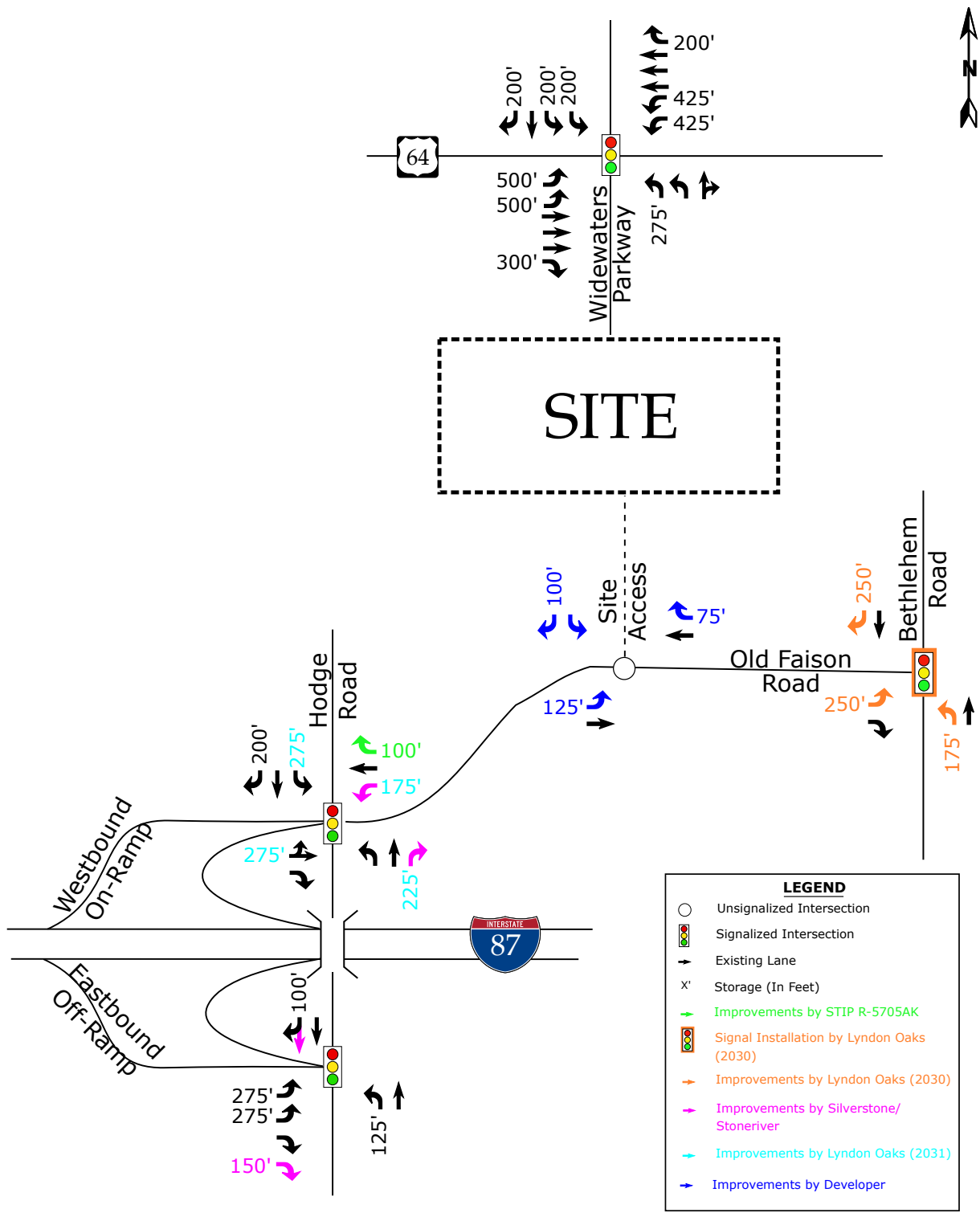
- Construct Site Access with one ingress lane and two egress lanes striped as an exclusive left turn lane and an exclusive right turn lane.
- Provide 100’ of full width storage egress right turn plus appropriate deceleration and taper.
- Construct an ingress right turn lane with 75’ of full-width storage plus appropriate deceleration and taper.
- Construct an ingress left turn lane with 125’ of full-width storage plus appropriate deceleration and taper.
- Provide stop control for Site Access.

Recommended Improvements by Developer (Alternative 2) – *Town Recommended Improvements*

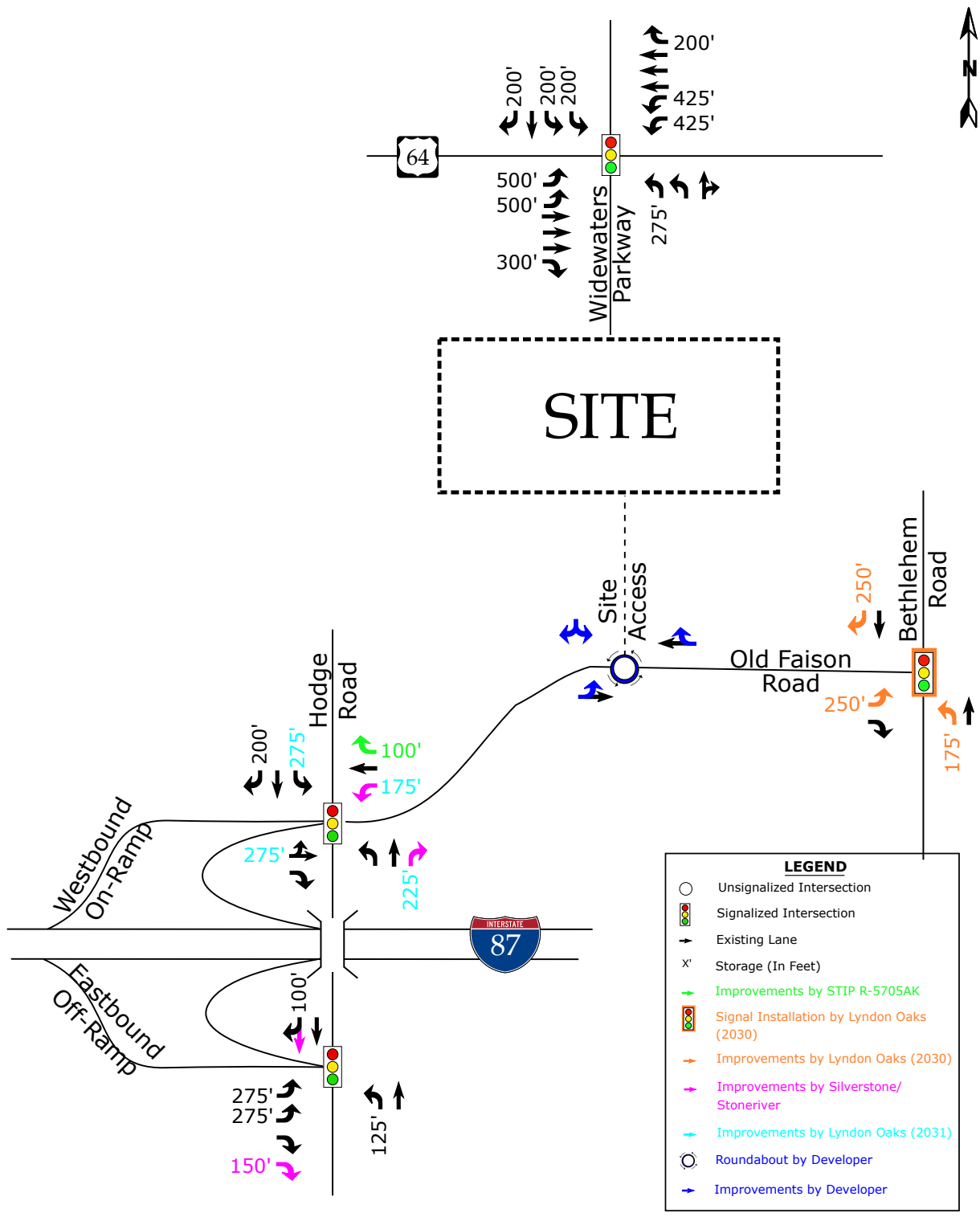
Old Faison Road and Site Access

- Construct a single-circulating lane roundabout.

x



DRMP	Knightdale Assemblage Knightdale, NC	Recommended Lane Configurations (Alternative 1)	
		Scale: Not to Scale	Figure E-1



DRMP	Knightdale Assemblage Knightdale, NC	Recommended Lane Configurations (Alternative 2)	
		Scale: Not to Scale	Figure E-2

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DRMP

TRAFFIC IMPACT ANALYSIS

KNIGHTDALE ASSEMBLAGE

Knightdale, North Carolina

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Knightdale Assemblage development to be located north of Old Faison Road, west of Woodfield Lane in Knightdale, 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:

- 59 single-family detached homes
- 67 townhomes
- 66 single-family row houses (trips generated as townhomes)
- Up to 15,000 square feet (s.f.) of strip retail space

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

- 2025 Existing Traffic Conditions
- 2030 (+1) No-Build Traffic Conditions
- 2030 (+1) Build Traffic Conditions
- 2030 (+1) Build Traffic Conditions – Alternative
- 2039 (+10) No-Build Traffic Conditions
- 2039 (+10) Future Traffic Conditions

The Town of Knightdale (Town) Unified Development Ordinance (UDO) requires a build +1 analysis as well as a future (+10) analysis for all proposed developments. Additionally, proposed site accesses should also be analyzed as roundabout intersections. This analysis is shown in the build alternative scenario.

1.1. Site Location and Study Area

The development is proposed to be located north of Old Faison Road, west of Woodfield Lane in Knightdale, North Carolina. Refer to Figure 1 for the site location map.

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

- Hodge Road and Old Faison Road/I-87 Westbound Ramps
- Hodge Road and I-87 Eastbound Ramps
- BUS US-64 and Widewaters Parkway/Shopping Center Access
- Bethlehem Road and Old Faison 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:

- 59 single-family detached homes
- 67 townhomes
- 66 single-family row houses (trips generated as townhomes)
- Up to 15,000 square feet (s.f.) of strip retail space

It should be noted that the attached site plan shows one less single-family detached unit compared to what was analyzed in the TIA. Additionally, during scoping 7,500 s.f. of strip retail space was approved; however, to prevent comments about the minimum commercial square footage during council meetings, 15,000 s.f. of strip retail was analyzed.

Access is proposed via one full movement driveway along Old Faison Road. Through coordination with the Town during scoping, funding has been approved for a bridge that would connect Widewaters Parkway to the proposed development, providing an additional access to the site via BUS US-64. Interconnectivity to Woodfield Lane is also proposed by the development. A traffic assessment letter was previously performed and approved by the Town to determine if the site access proximity to Woodfield Lane would create any capacity analysis issues. It was determined that the existing traffic associated with Woodfield Lane was negligible, and any decisions on the Woodfield Lane connection to Old Faison Road would be made from a fire code and safety standpoint after neighborhood

and Town Council approval. For the purposes of this analysis, the connection of Woodfield Lane to Old Faison Road is removed in order to provide the most conservative analysis.

Interconnectivity to Alysheba Drive is also proposed, however, no significant amounts of traffic are expected to utilize the connection due to both developments having more direct connections to Old Faison 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.

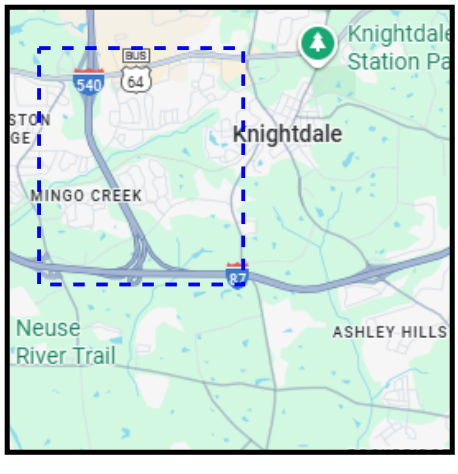
1.4. Existing Roadways

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)
Old Faison Road	SR 2515	2-lane undivided	45 mph	6,200
Hodge Road	SR 2516	2-lane undivided	45 mph	17,000
BUS US-64	US-64 BUS	6-lane divided	45 mph	40,500
Widewaters Parkway	N/A	2-lane undivided	25/35 mph	8,220*
Bethlehem Road	SR 5270	2-lane undivided	45 mph	6,600

*ADT based on the traffic counts from 2022 and assuming the weekday PM peak hour volume is 10% of the average daily traffic; grown at 3% to get the 2023 AADT



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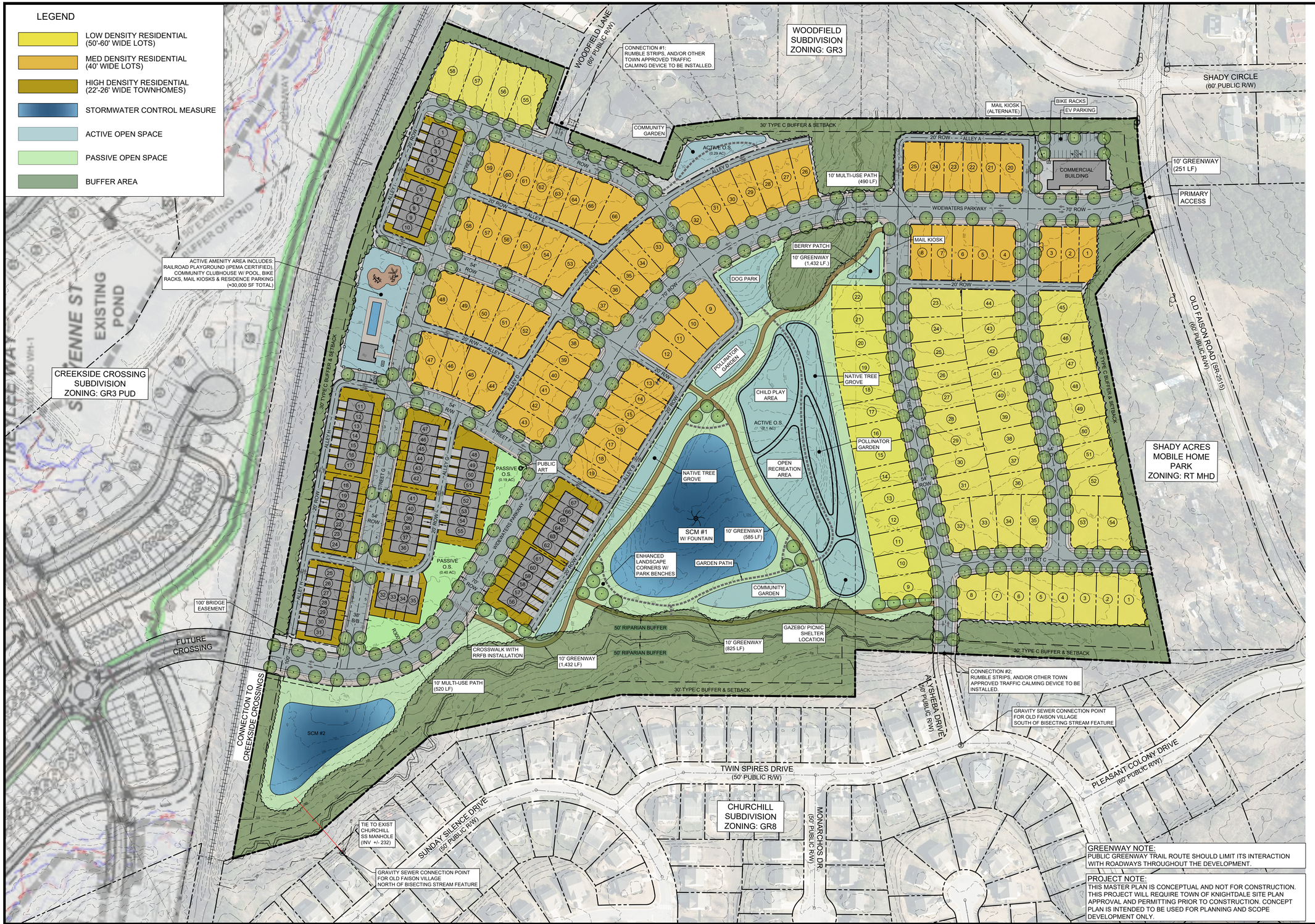
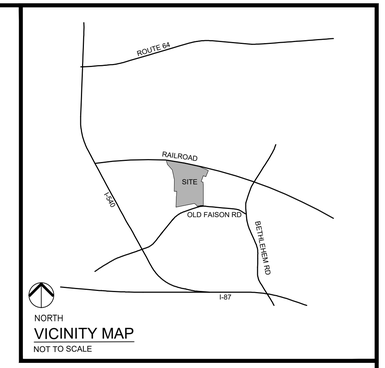
LEGEND

- Study Intersection
- Proposed Site Access
- Study Area

DRMP	Knightdale Assemblage Knightdale, NC	Site Location Map	
		Scale: Not to Scale	Figure 1





SITE DATA SUMMARY

PROJECT NAME:	FAISON RESERVE
PROPERTY OWNER:	MARLOWE & MOYE LLC PO BOX 20667 RALEIGH, NC 27619 PHONE: (919) 844-7888
PARCEL #:	0031642
PIN(S):	1743-89-5866, 1743-88-6921
SITE ADDRESS:	4402 OLD FAISON ROAD
JURISDICTION:	KNIGHTDALE
EXISTING ZONING:	RT
PROPOSED ZONING:	UR12 PUD
OVERLAY DISTRICT:	N/A
WATERSHED:	NEUSE RIVER
GROSS LOT ACREAGE:	2,518,207 SF./57.81 AC.
RIGHT OF WAY DEDICATION:	534,715 SF./12.27 AC.
NET LOT ACREAGE:	1,983,722 SF./45.54 AC.
WIDEWATERS PARKWAY LENGTH:	2,470 LF.
GREENWAY (PUBLIC & PRIVATE):	3,500 LF.
PUBLIC SIDEWALKS (5' WIDE):	5,000+ LF.
SANITARY SEWER LINES & MANHOLES:	±6,700 LF. SS, 36 MANHOLES MIN.
CURRENT USE:	VACANT
PROPOSED USE:	TOWNHOMES, 40' SINGLE-FAMILY ROW HOUSES, 50'-60' SINGLE FAMILY HOMES, COMMERCIAL
CURRENT USE OF ADJACENT PARCELS:	SINGLE FAMILY RESIDENTIAL
BUILDING SETBACKS:	
TOWNHOMES:	
FRONT (MAX.):	25'
SIDE (MIN.)	10'
REAR (MIN.)	15'
SINGLE-FAMILY:	
FRONT (MIN.):	10'
CORNER SIDE (MIN.):	10'
SIDE (MIN.)	20% LOT WIDTH
REAR (MIN.)	25'
COMMERCIAL:	
FRONT (MIN.):	10'
FRONT (MAX.):	30'
SIDE (MIN.):	6'
BUILDING HEIGHT	
PROPOSED UNITS:	67 TOWNHOMES 66 SINGLE-FAMILY ROW HOUSES 58 SINGLE FAMILY HOMES NW CORNER LOCATED IN FLOOD ZONE
FLOOD ZONE:	ACCORDING TO FEMA MAP #3720174300K

WATER ALLOCATION POINT TABLE:

BASE POINTS:	
MAJOR SUBDIVISION	15 PTS
BONUS POINTS:	
FULL CROSS SECTION OF EX. OFF-SITE PUB. STREET	6 PTS
> 2,000 LF OF 10-FOOT-WIDE PATH	6 PTS
> 4,000 LF OF 5-FOOT-WIDE-PUBLIC SIDEWALK	8 PTS
STORMWATER - WETLAND	5 PTS
EXCLUSIVE USE OF NATIVE LANDSCAPE SPECIES	5 PTS
OUTDOOR DISPLAY OF PUBLIC ART	4 PTS
INSTALLATION OF WAYFINDING/TOWN SIGNAGE	3 PTS
LAP POOL (4 LANE MIN.)	3 PTS
CLUBHOUSE (BATH & CHANGING ROOM ONLY)	3 PTS
IPEMA CERTIFIED PLAYGROUND EQUIPMENT	4 PTS
TOTAL POINTS	62 PTS

THE SITE GROUP
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E Mail: BDM@thesitegroup.net

FAISON RESERVE

KNIGHTDALE, NC
4402 OLD FAISON ROAD

MASTER PLAN CONCEPT
PROGRESS 2025-10-09

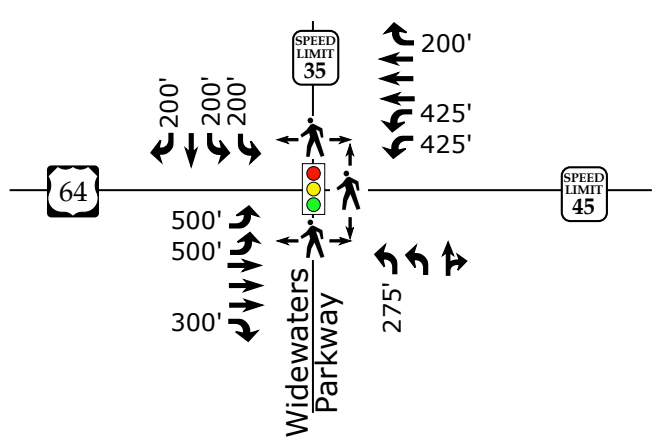
SCALE: 1" = 100'

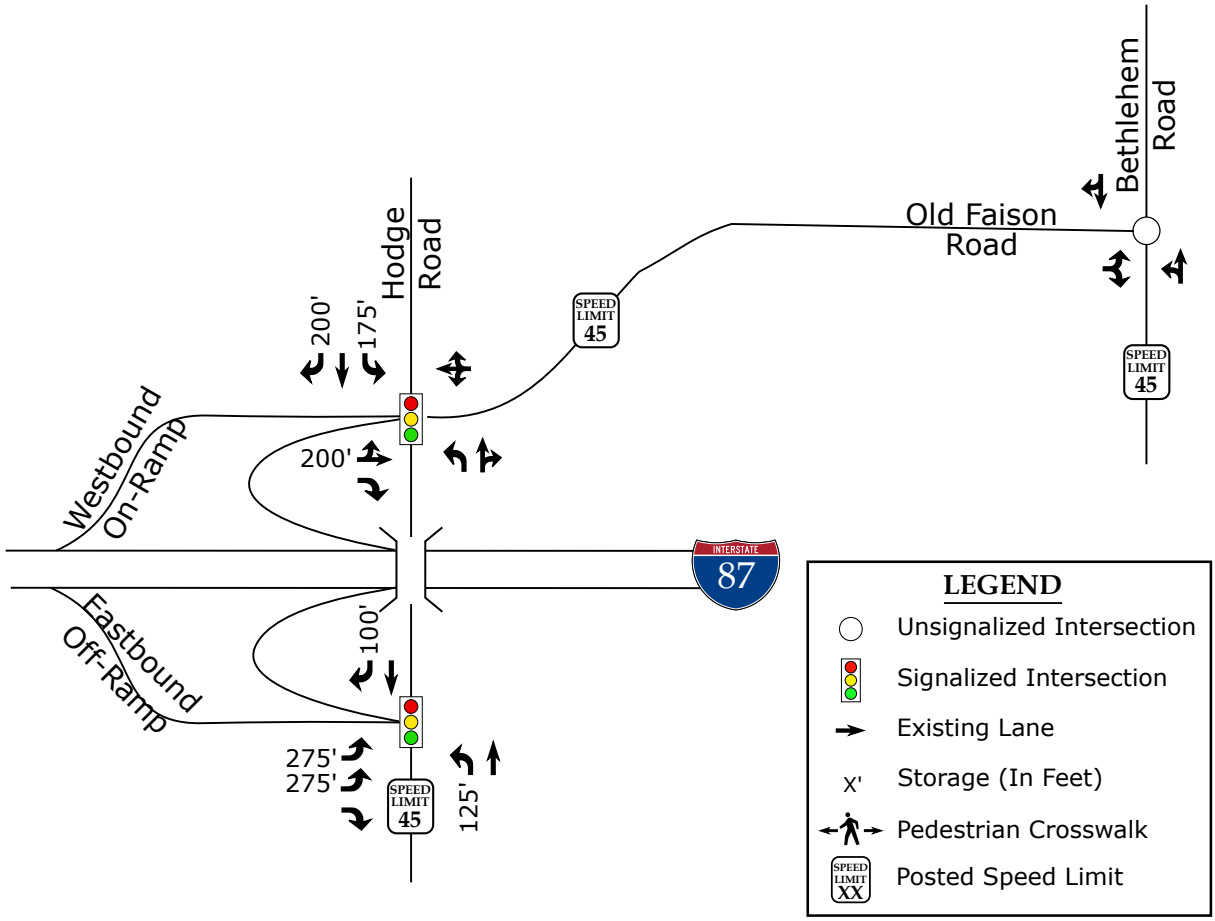
0 100 200 300 400

(DRAWING SCALED FOR 24x36 INCH PLOTS)

DATE: 08/27/2025
JOB CODE: L7OFRZ

DRAWING NUMBER
SK-1.0





LEGEND

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

DRMP	Knightdale Assemblage Knightdale, NC	Existing Lane Configurations	
		Scale: Not to Scale	Figure 3

2. 2025 EXISTING PEAK HOUR CONDITIONS

2.1. 2025 Existing Peak Hour Traffic Volumes

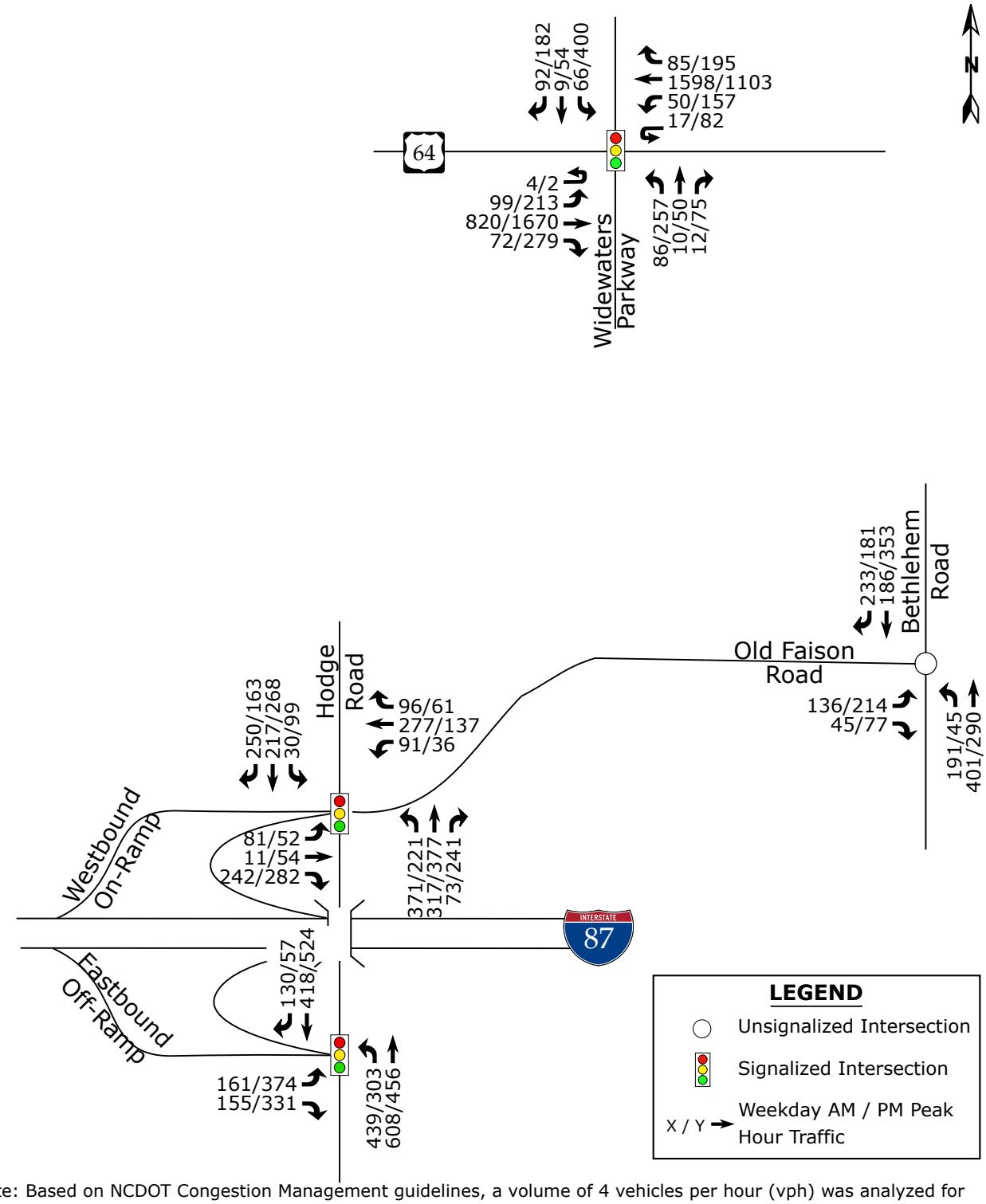
Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below, in May 2024 during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods. Traffic counts at the intersection of BUS US-64 and Widewaters Parkway were taken from the Widewaters study in 2022. Traffic counts were forecasted to 2025 using the Town's standard 3% growth rate:

- Hodge Road and Old Faison Road/I-87 Westbound Ramps
- Hodge Road and I-87 Eastbound Ramps
- BUS US-64 and Widewaters Parkway/Shopping Center Access
- Bethlehem Road and Old Faison Road

Refer to Figure 4 for 2025 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 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 the Town and is included in Appendix C. The results of the analysis are presented in Section 7 of this report.



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	Knightdale Assemblage Knightdale, NC	2025 Existing Peak Hour Traffic Scale: Not to Scale | Figure 4

3. 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 3% would be used to generate 2030 (+1) projected weekday AM and PM peak hour traffic volumes. For the 2039 (+10) analysis, traffic volumes for years beyond 2030 were grown at a 1% annual growth rate. Refer to Figures 5a and 5b for 2030 and 2039 projected peak hour traffic.

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:

- Creekview Crossing (ZMA-5-21)
- Lyndon Oaks (ZMA-2-23)
- Riverview Commons (ZMA-10-21)
- Silverstone (S-8-16)
- Stoneriver (S-6-16/ZMA-1-16)

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
Creekview Crossing (ZMA-5-21)	South of Laurens Way, west of St. Johns Street	2026	151 single-family detached, 68 townhomes, and 72 multifamily units	**April 2022** By Exult
Lyndon Oaks (ZMA-2-23)	West of Bethlehem Road, south of Old Faison Road	2032	308 single-family homes, 192 townhomes, 15,000 s.f. of commercial space	**November 2023** by DRMP
Riverview Commons (ZMA-10-21)	Northwest corner of Hodge Road and Poole Road	2023 (after counts were recorded)	364 multifamily units and 30 townhomes	**October 2021** by Davenport
Silverstone (S-8-16)	Northwest quadrant of Hodge Road and Kemp Drive	Prior to completion of proposed development	282 single-family homes and 108 townhomes	**October 2016** by RKA
Stoneriver (S-6-16/ZMA-1-16)	West of Hodge Road, south of US-64 Bypass interchange	Prior to completion of proposed development	286 single-family homes and 98 townhomes	**June 2016** by RKA

Some of the roadway improvements associated with the Lyndon Oaks development are assumed to be constructed prior to the build-out of the proposed development. Based on a phasing letter for the Lyndon Oaks development, turn lanes and a traffic signal at the intersection of Bethlehem Road and Old Faison Road are assumed to be constructed under all future analysis scenarios. Turn lanes and turn lane extensions at the intersection of Old Faison Road and Hodge Road are assumed to be constructed under the 2039 future conditions analysis.

With the Silverstone and Stoneriver developments, lane configuration improvements at the I-87 ramps along Hodge Road are assumed to be installed prior to the construction of the proposed development.

It should be noted that the adjacent developments were approved, during scoping, by the Town. A summary of all the adjacent development trips is shown in Figure 6. More detailed

adjacent development information, including site trip assignments, can be found in Appendix D.

3.3. Future Roadway Improvements

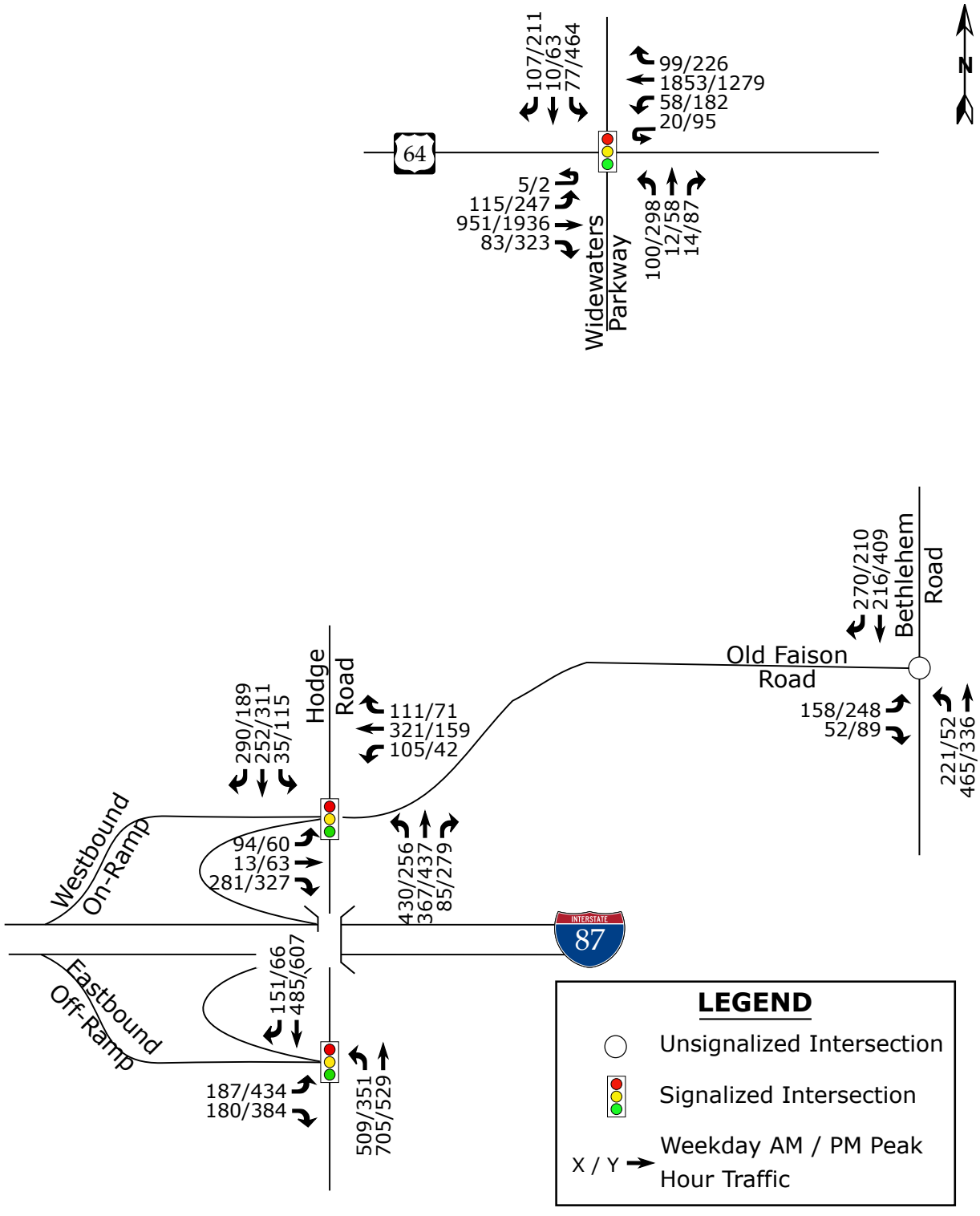
Based on coordination with the Town, it was determined that the roadway improvements associated with the NCDOT State Transportation Improvement Program (STIP) R-5705AK should be considered in this study. The STIP is expected to construct a westbound right turn lane at the intersection of Hodge Road and Old Faison Road.

3.4. No-Build Peak Hour Traffic Volumes

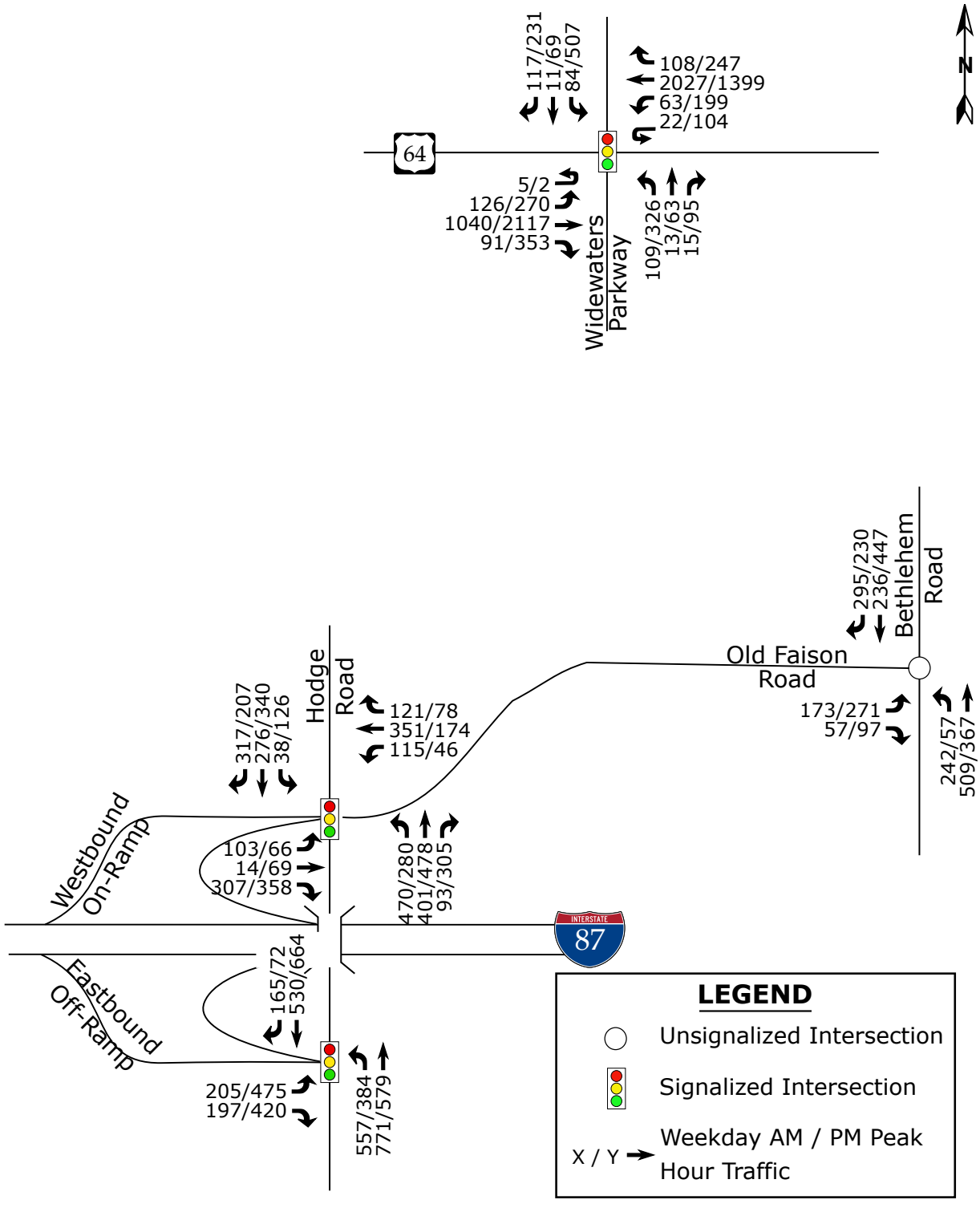
The no-build traffic volumes were determined by projecting the 2025 existing peak hour traffic to the respective year and adding the adjacent development trips. Refer to Figures 7a and 7b for an illustration of the 2030 and 2039 no-build peak hour traffic volumes at the study intersections.

3.5. Analysis of No-Build Peak Hour Traffic Conditions

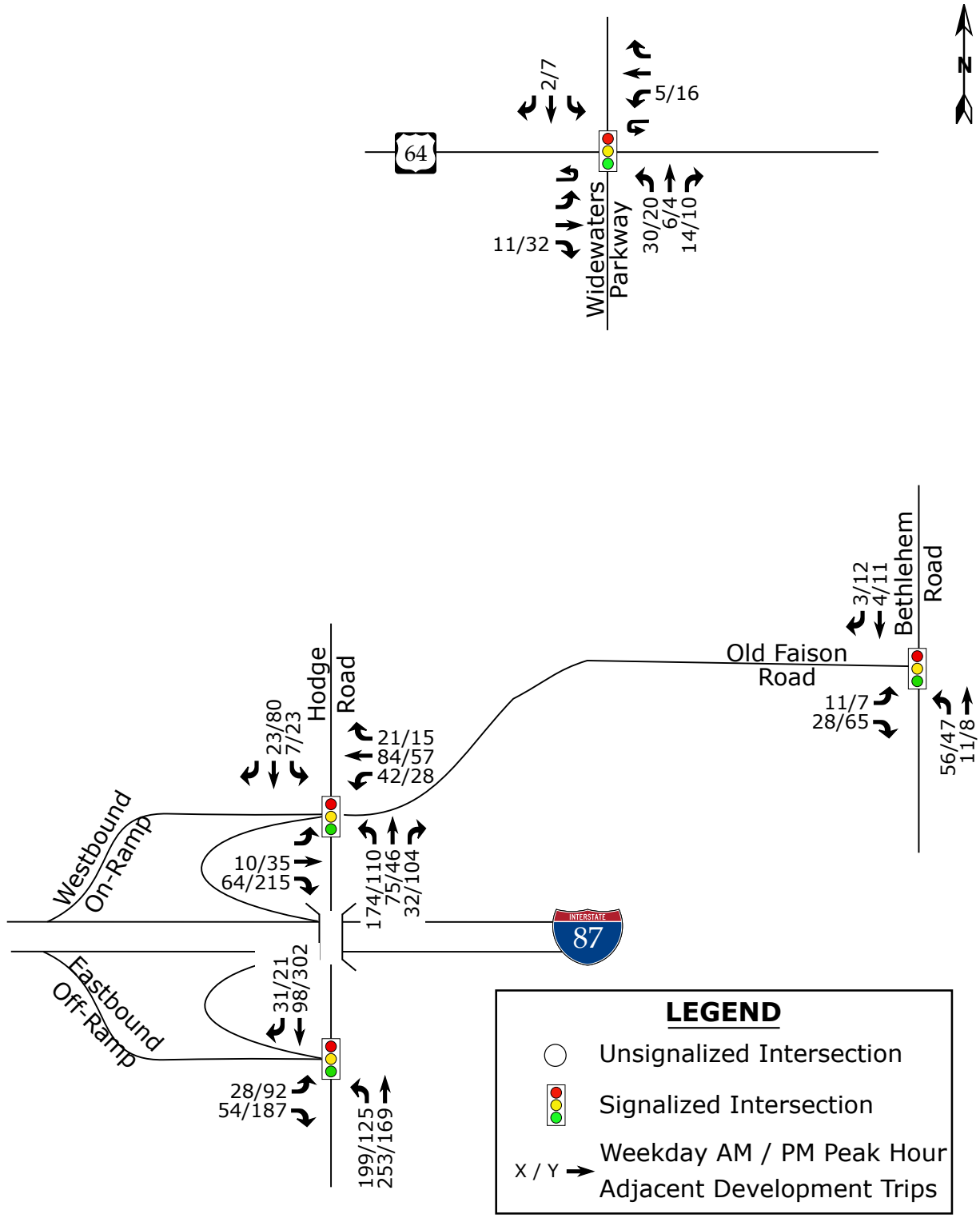
The no-build AM and PM peak hour traffic volumes at the study intersections were analyzed with future geometric roadway conditions and traffic control. The analysis results are presented in Section 7 of this report.



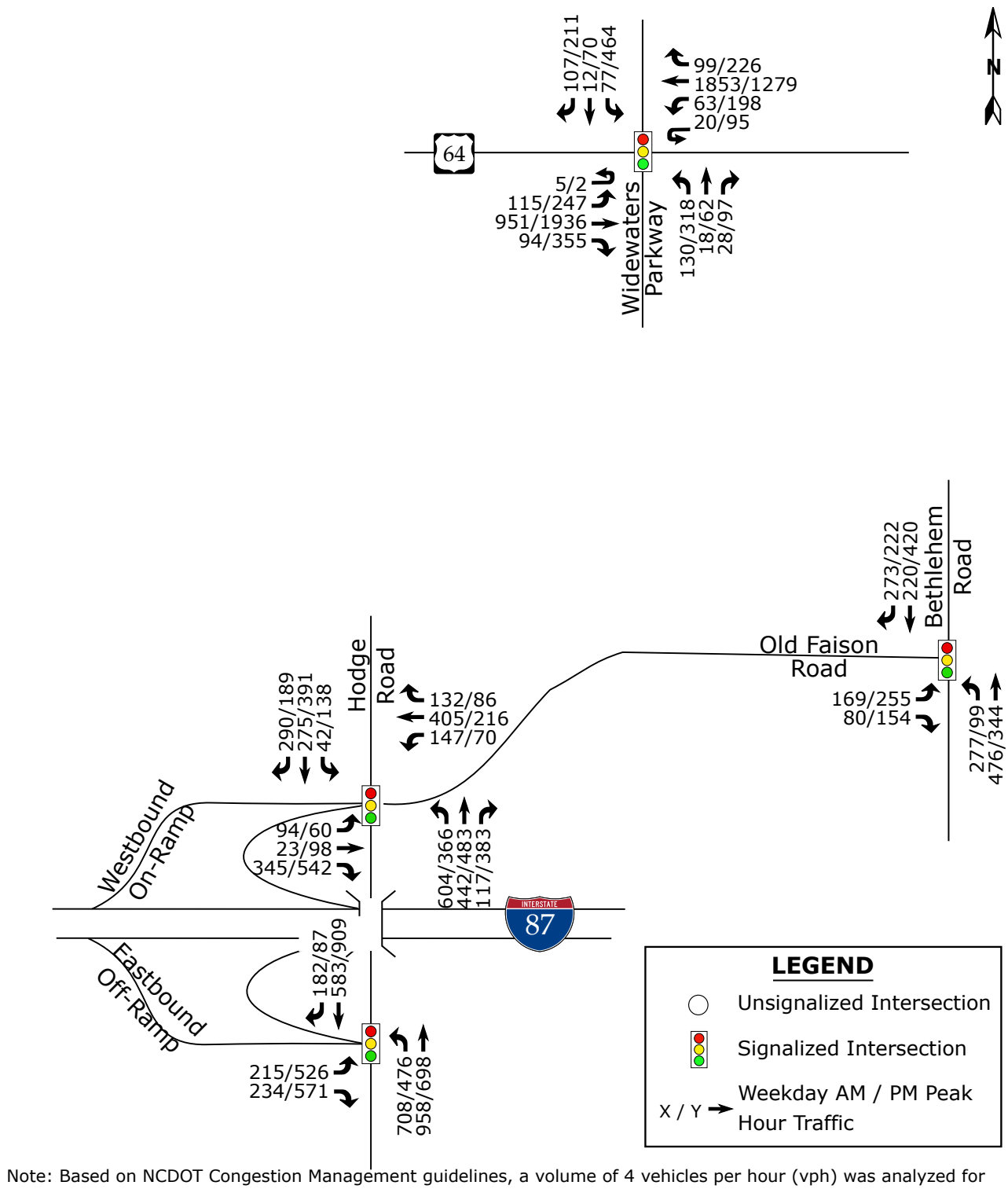
DRMP	Knightdale Assemblage Knightdale, NC	2030 Projected Peak Hour Traffic	
		Scale: Not to Scale	Figure 5a



DRMP	Knightdale Assemblage Knightdale, NC	2039 Projected Peak Hour Traffic	
		Scale: Not to Scale	Figure 5b

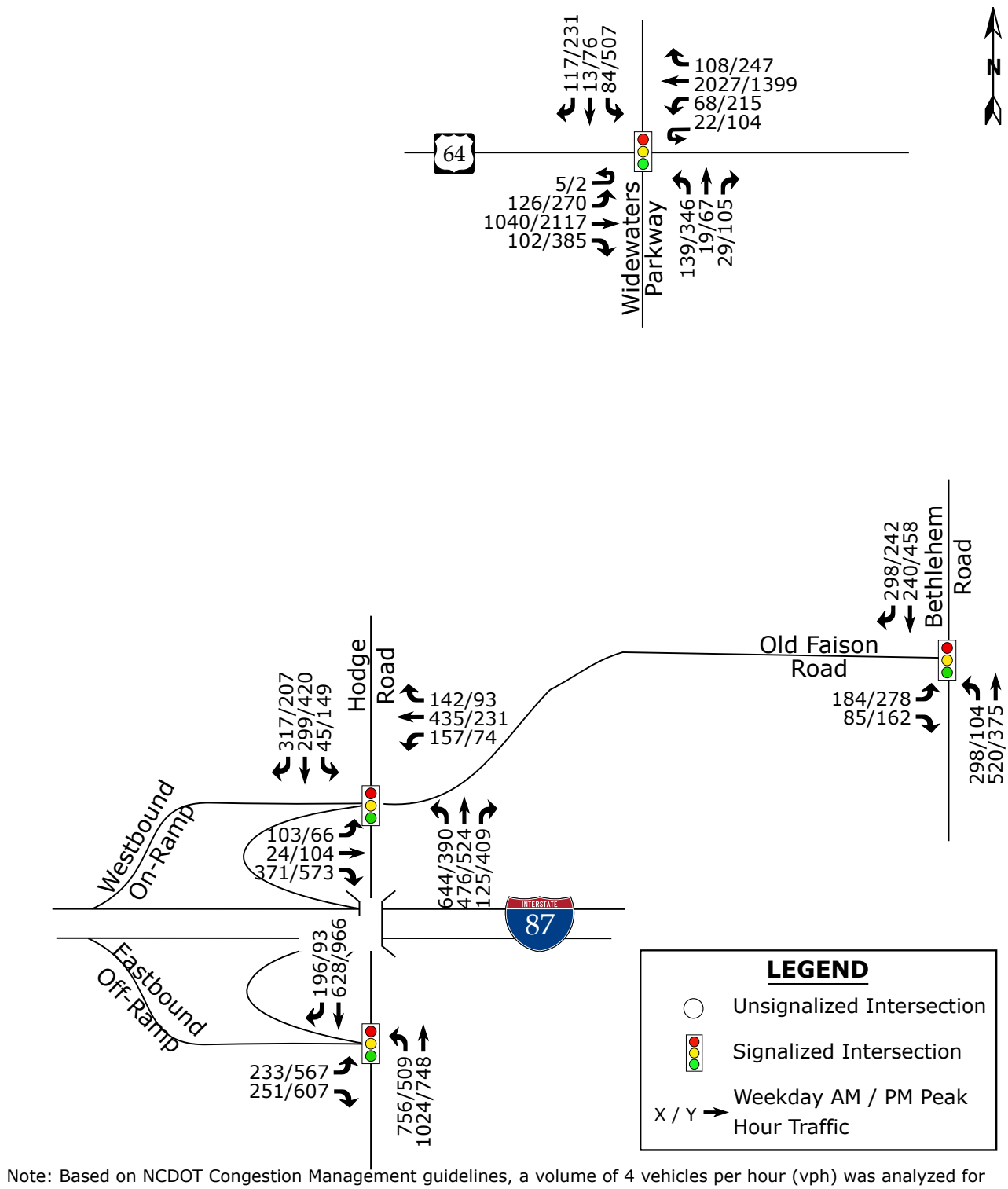


DRMP	Knightdale Assemblage Knightdale, NC	Peak Hour Adjacent Development Trips	
		Scale: Not to Scale	Figure 6



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	Knightdale Assemblage Knightdale, NC	2030 No-Build Peak Hour Traffic
		Scale: Not to Scale | Figure 7a



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	Knightdale Assemblage Knightdale, NC	2039 No-Build Peak Hour Traffic
		Scale: Not to Scale | Figure 7b

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*, 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
Single-Family Detached (210)	59 DU	622	12	34	46	38	23	61
Townhomes (215)	133 DU	964	16	47	63	45	31	76
Strip Retail (822)	15 KSF	818	21	14	35	49	50	99
Total Trips		**2,404**	**49**	**95**	**144**	**132**	**104**	**236**
Internal Capture AM: (4% entering, 2% exiting) PM: (1% entering, 2% exiting)			*-2*	*-2*	*-4*	*0*	*-2*	*-2*
Primary Trips			**47**	**93**	**140**	**132**	**102**	**234**

It is estimated that the proposed development will generate approximately 2,404 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 144 trips (49 entering and 95 exiting) will occur during the weekday AM peak hour and 236 trips (132 entering and 104 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, 4% of entering and 2% of exiting traffic is internally captured during the AM peak hour, and 1% of entering and 2% of exiting traffic is internally captured during the PM peak hour. The internal capture reductions are expected

to account for approximately 4 trips (2 entering and 2 exiting) during the weekday AM peak hour and 2 trips (0 entering and 2 exiting) during the weekday PM peak hour.

The total primary site trips are the calculated site trips after the reduction for internal capture. Primary site trips are expected to generate approximately 140 trips (47 entering and 93 exiting) during the weekday AM peak hour and 234 trips (132 entering and 102 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 site trips will be regionally distributed as follows:

- 30% to/from the west via BUS US-64
- 20% to/from the east via BUS US-64
- 20% to/from the west via I-87
- 10% to/from the east via I-87
- 10% to/from the south via Bethlehem Road
- 5% to/from the north via Bethlehem Road
- 5% to/from the south via Hodge Road

The site trip distribution is shown in Figure 8. The residential and retail site trips are shown in Figures 9a and 9b, respectively.

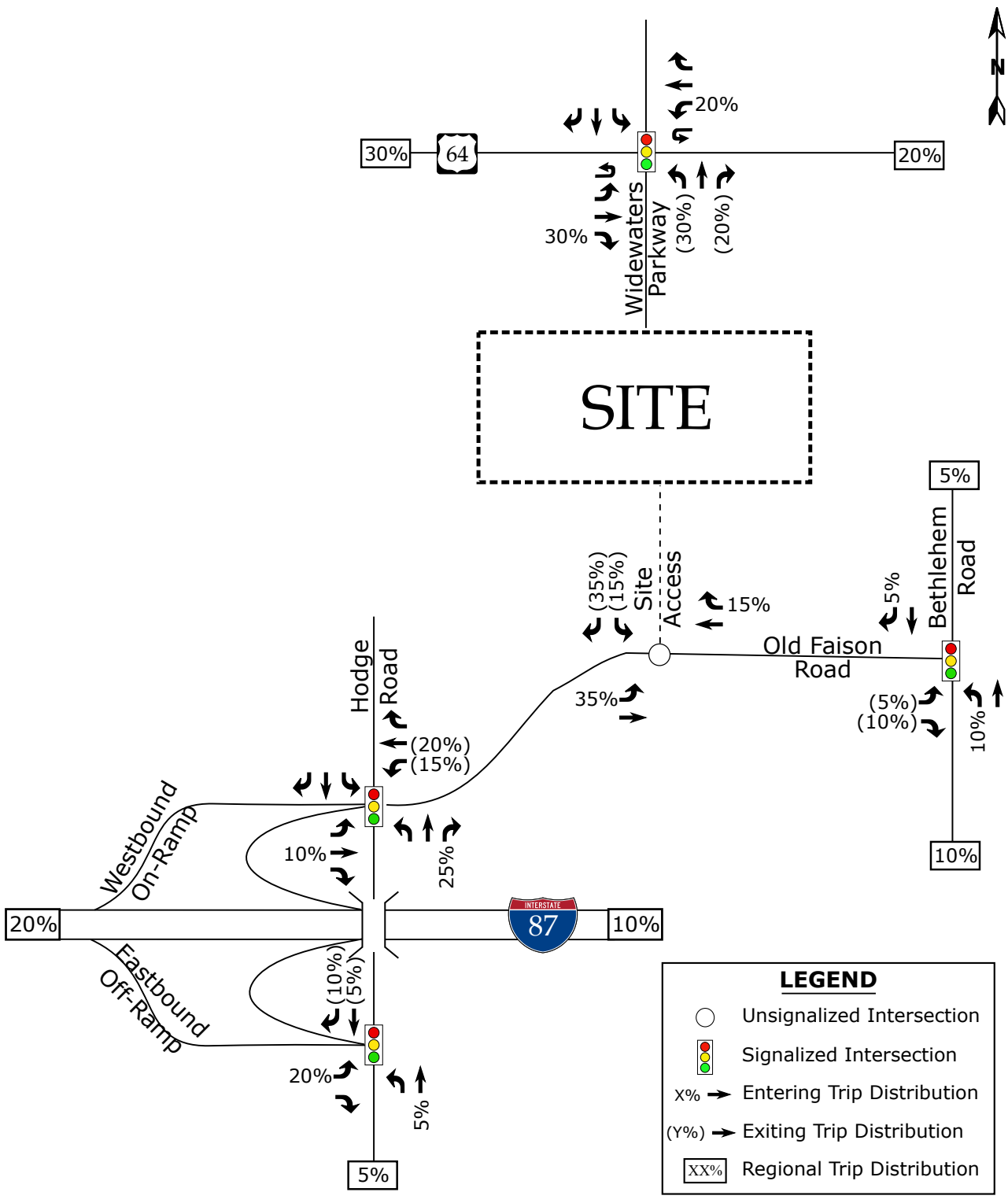
With the construction of the bridge connecting the proposed development to Widewaters Parkway, significant rerouting of traffic is expected as this connection would provide an additional alternative to get to/from major roadways in Knightdale for a lot of residential traffic.

For Lyndon Oaks site trips, 25% of the trips utilizing Hodge Road or Bethlehem Road to get to/from the north were assumed to use the new connection to get to/from BUS US-64.

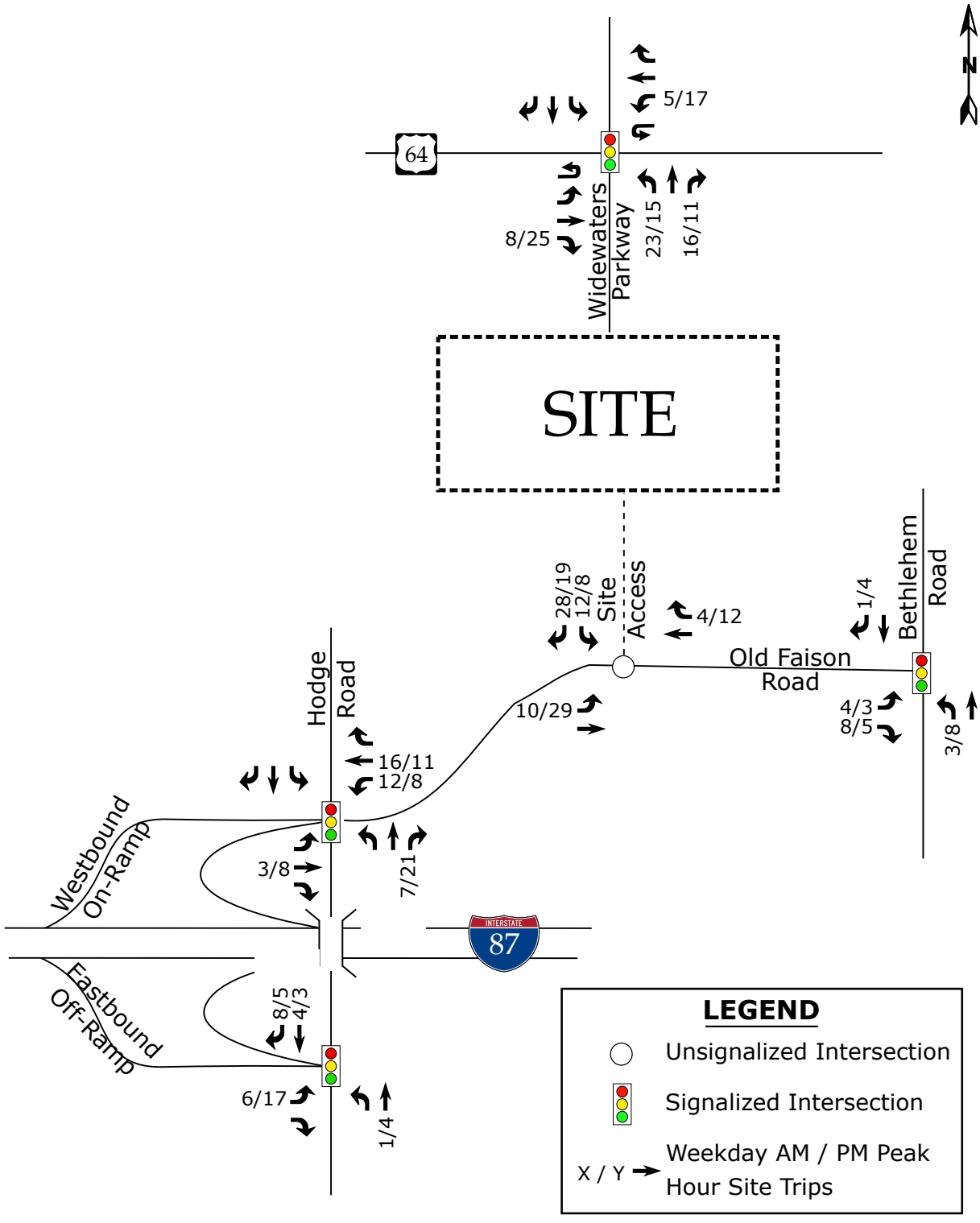
Additionally, 25% of the projected ingress and egress traffic along the southern leg of the intersection of BUS US-64 and Widewaters Parkway was assumed to be shifted to the intersection of Old Faison Road and the proposed Site Access. Similar methodology was used to reroute the adjacent development trips associated with Creekview Crossing.

Peak hour trip reroutes for 2030 build conditions and 2039 future conditions are shown in Figures 10a and 10b, respectively. Detailed reroutes can be found in Appendix E.

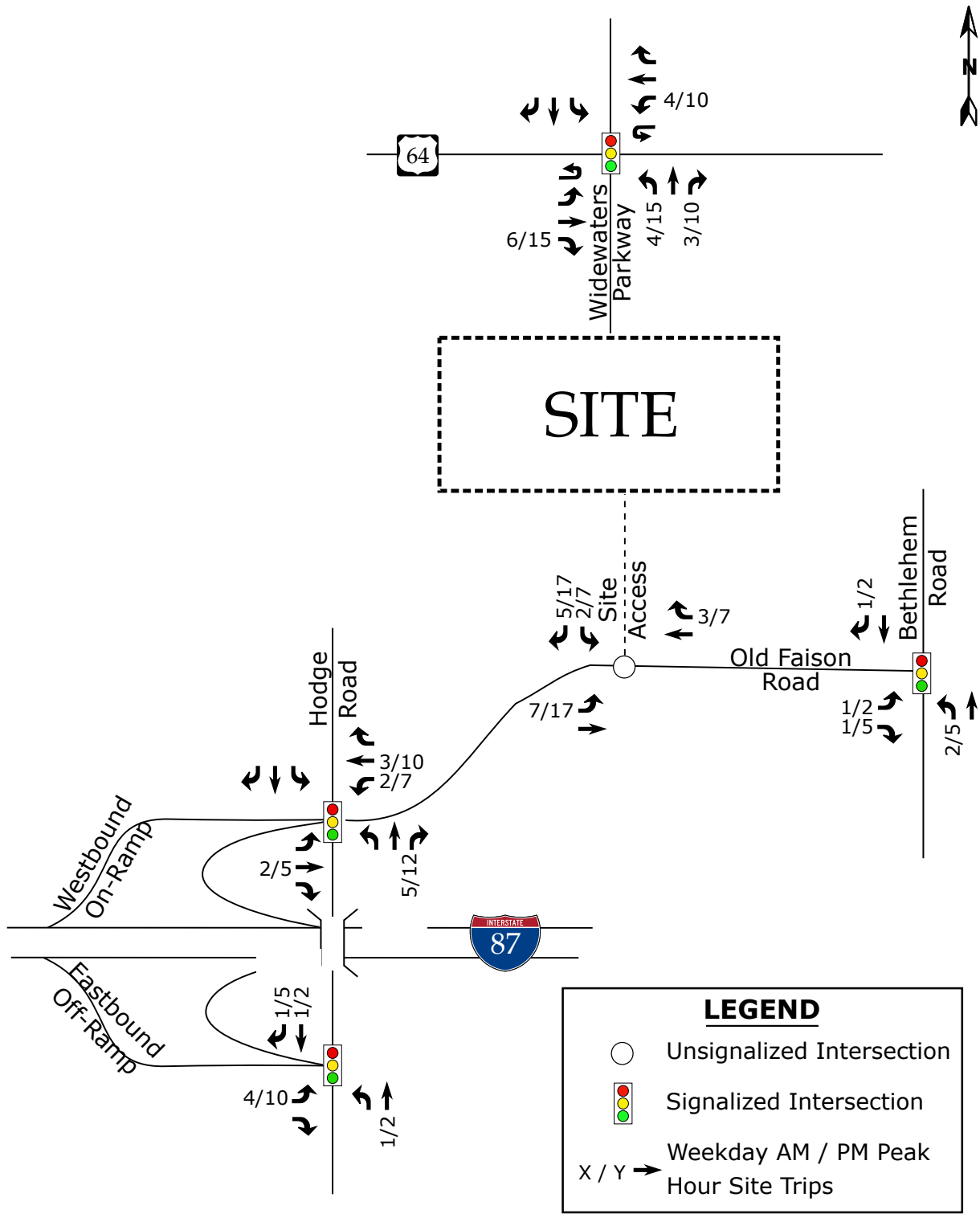
Total site trips generated by the proposed development are shown in Figure 11.



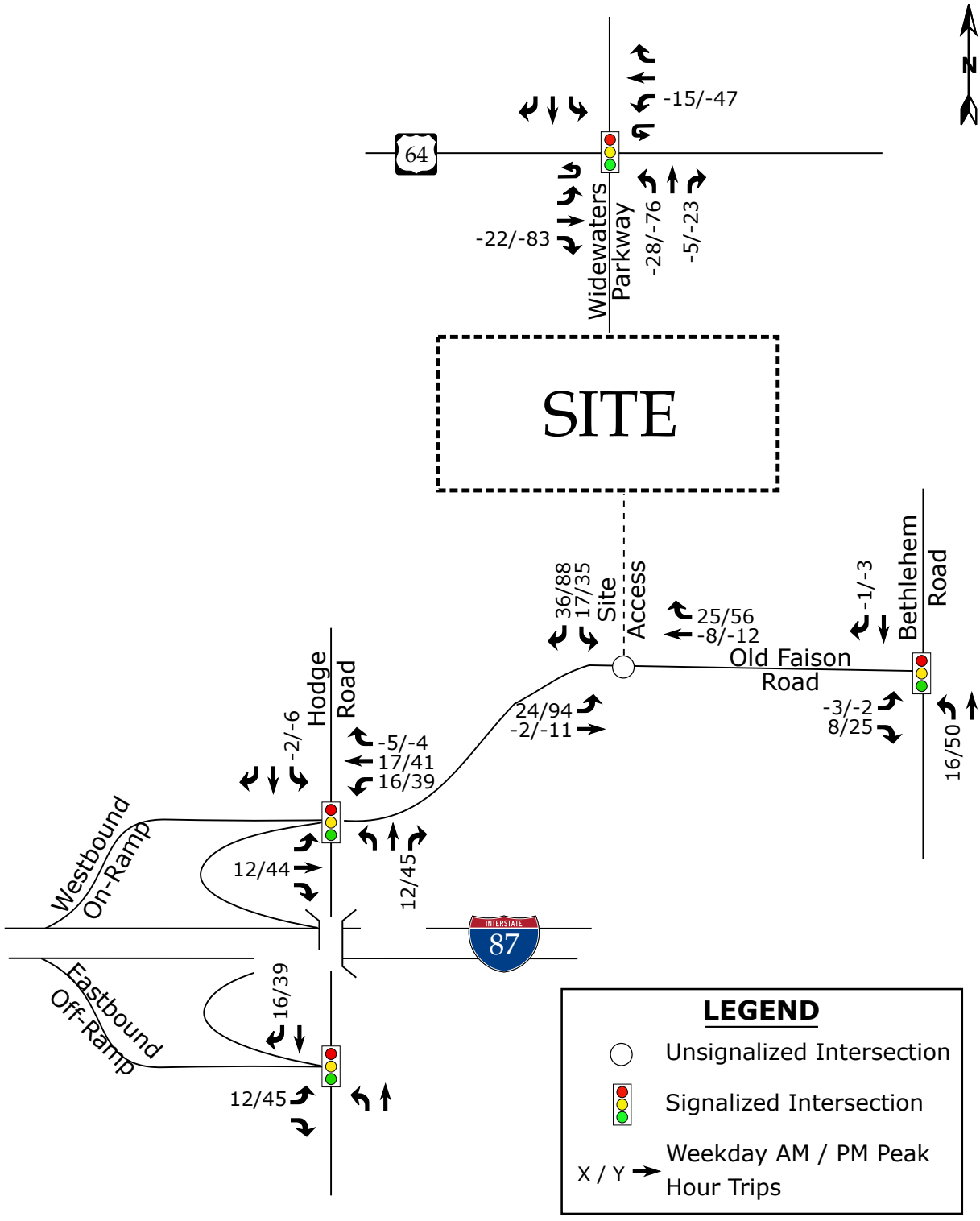
DRMP	Knightdale Assemblage Knightdale, NC	Site Trip Distribution	
		Scale: Not to Scale	Figure 8



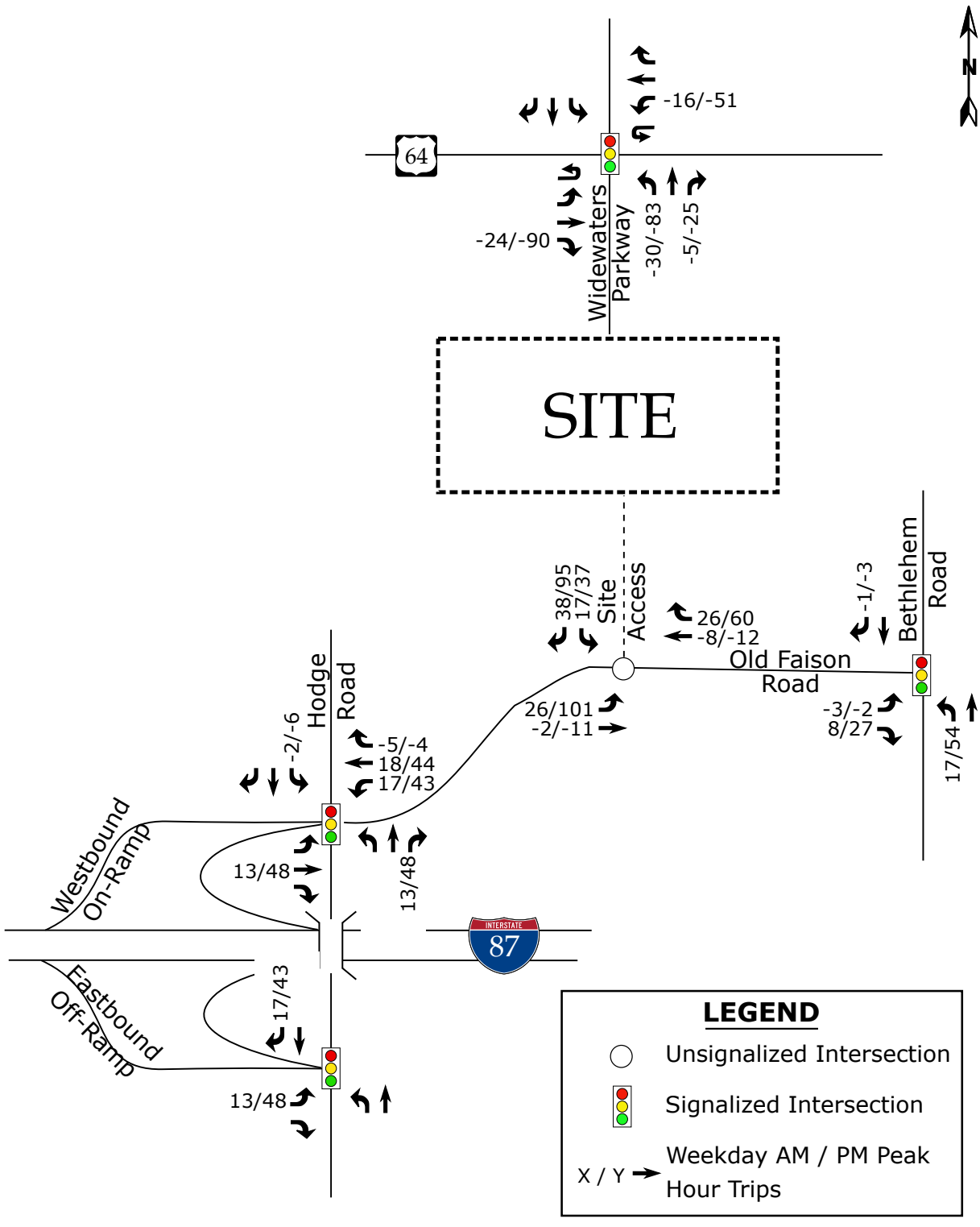
DRMP	Knightdale Assemblage Knightdale, NC	Residential Site Trip Assignment	
		Scale: Not to Scale	Figure 9a



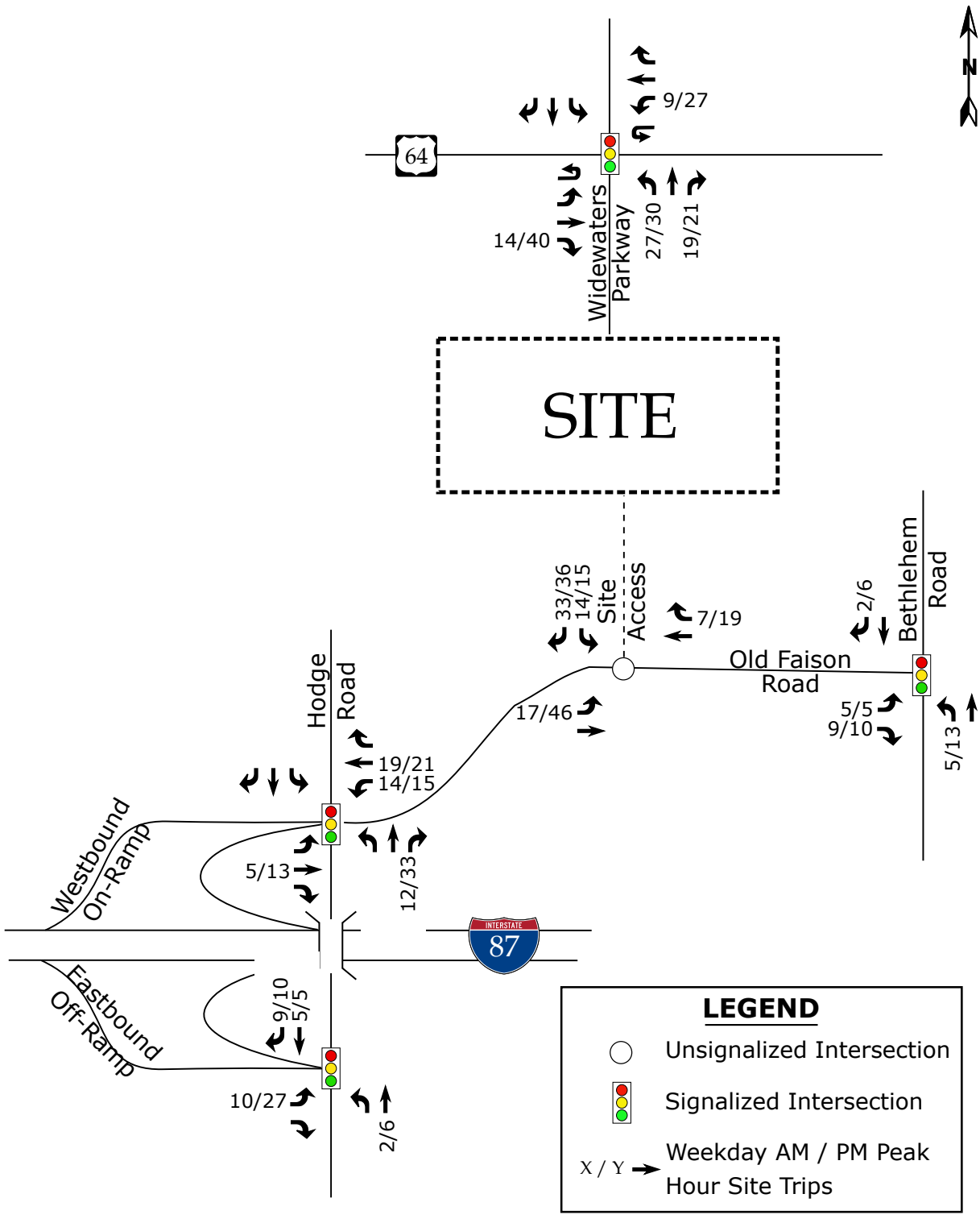
DRMP	Knightdale Assemblage Knightdale, NC	Retail Site Trip Assignment	
		Scale: Not to Scale	Figure 9b



DRMP	Knightdale Assemblage Knightdale, NC	Rerouted Trips (2030)
		Scale: Not to Scale | Figure 10a



DRMP	Knightdale Assemblage Knightdale, NC	Rerouted Trips (2039)
		Scale: Not to Scale | Figure 10b



DRMP	Knightdale Assemblage Knightdale, NC	Total Site Trip Assignment	
		Scale: Not to Scale	Figure 11

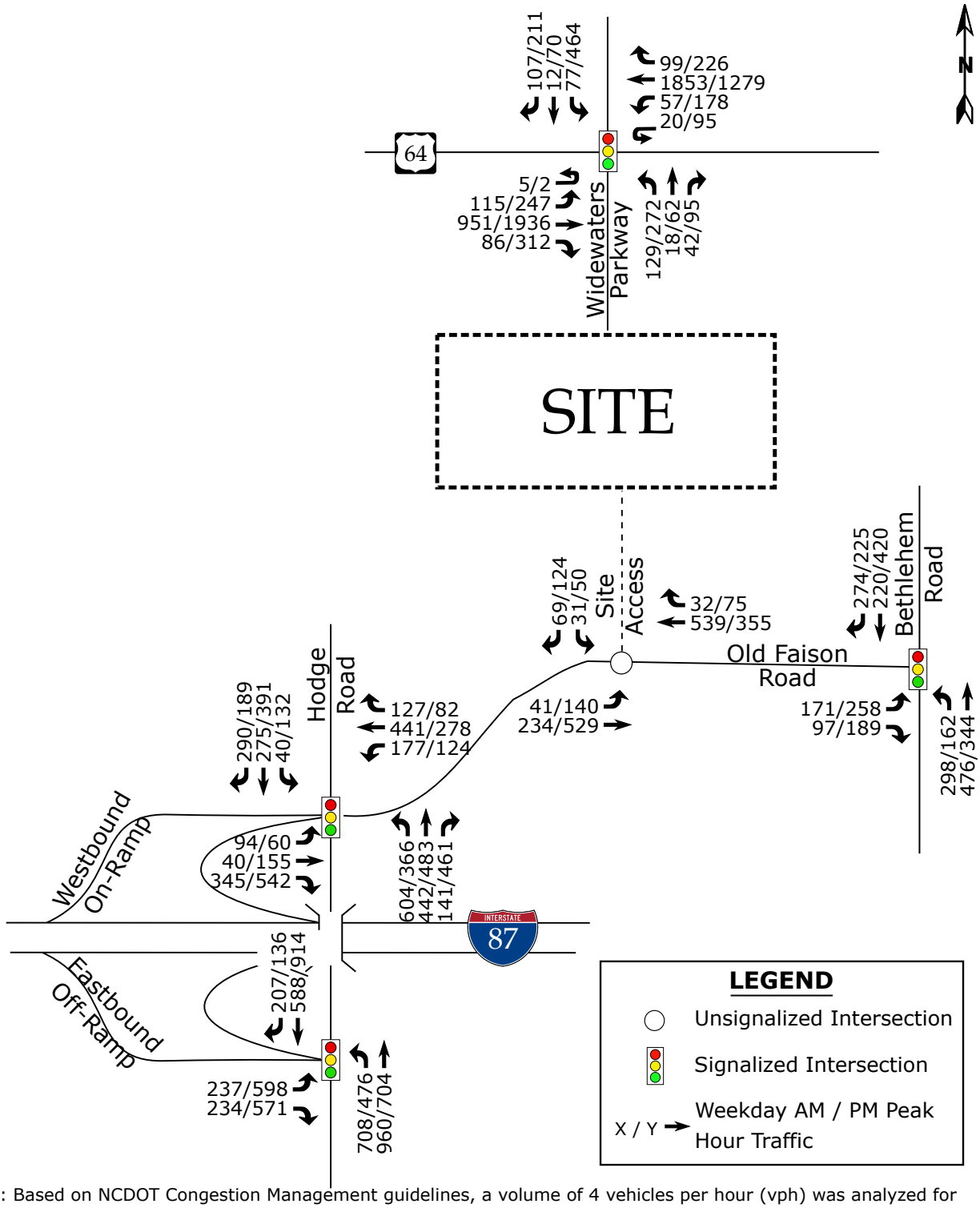
5. BUILD TRAFFIC CONDITIONS

5.1. Build Peak Hour Traffic Volumes

To estimate traffic conditions with the site fully built-out, the total site trips were added to the no-build traffic volumes to determine the build traffic volumes. Refer to Figures 12a and 12b for illustrations of the 2030 and 2039 build peak hour traffic volumes, respectively, with the proposed site fully developed.

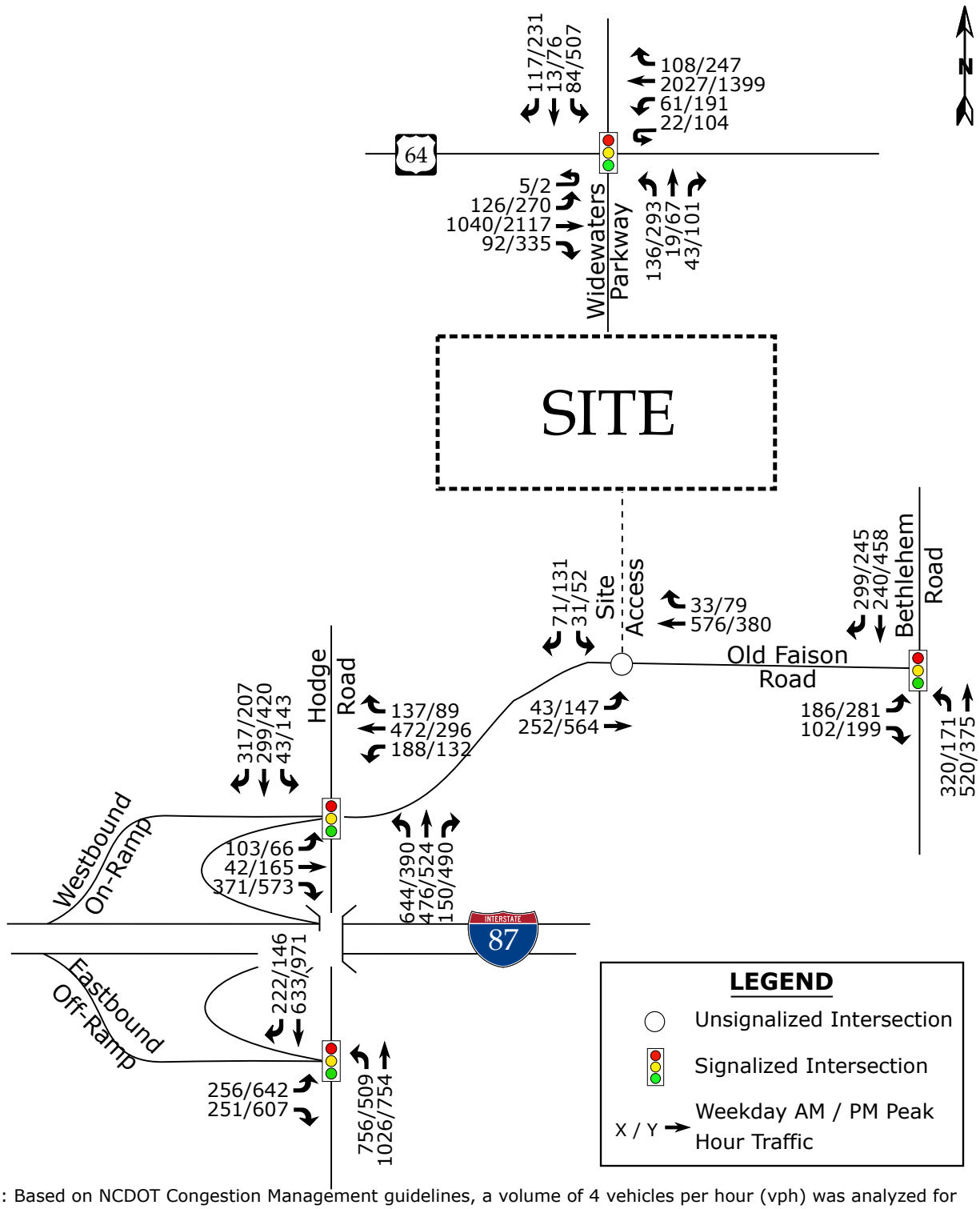
5.2. Analysis of Build Peak Hour Traffic Conditions

Study intersections were analyzed with the 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. It should be noted that per the Town UDO, the site access is also analyzed as a roundabout intersection to determine the best alternative for the intersection. The results of the capacity analysis for each intersection are presented in Section 7 of this report.



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	Knightdale Assemblage Knightdale, NC	2030 Build Peak Hour Traffic
		Scale: Not to Scale | Figure 12a



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	Knightdale Assemblage Knightdale, NC	2039 Build Peak Hour Traffic
		Scale: Not to Scale | Figure 12b

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. Computer software packages, Synchro (Version 11.1) and SIDRA (Version 9), were 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 AND ROUNDABOUT INTERSECTIONS		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 all traffic conditions:

- Hodge Road and Old Faison Road/I-87 Westbound Ramps
- Hodge Road and I-87 Eastbound Ramps
- BUS US-64 and Widewaters Parkway/Shopping Center Access
- Bethlehem Road and Old Faison Road

The proposed site driveway was analyzed under all build traffic conditions. Refer to Tables 5-9 for a summary of capacity analysis results. Refer to Appendices F-J for the Synchro capacity analysis reports and SimTraffic queueing reports.

7.1. Hodge Road and Old Faison Road/I-87 Westbound Ramps

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 Hodge Road and Old Faison Road/I-87 Westbound Ramps

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	1 LT-TH, 1 RT 1 LT-TH-RT 1 LT, 1 TH-RT 1 LT, 1 TH, 1 RT	A (10) C (32) C (27) B (20)	C (24)	B (17) C (27) C (22) B (13)	B (19)
2030 No-Build	EB WB NB SB	1 LT-TH, 1 RT 1 LT, 1 TH, 1 RT 1 LT, 1 TH, 1 RT 1 LT, 1 TH, 1 RT	C (26) D (37) D (50) D (37)	D (40)	D (41) D (41) C (24) C (31)	C (32)
2030 Build	EB WB NB SB	1 LT-TH, 1 RT 1 LT, 1 TH, 1 RT 1 LT, 1 TH, 1 RT 1 LT, 1 TH, 1 RT	C (28) D (37) D (49) D (48)	D (43)	C (32) D (39) C (27) D (36)	C (32)
2030 Build – Timing Improvements	EB WB NB SB	1 LT-TH, 1 RT 1 LT, 1 TH, 1 RT 1 LT, 1 TH, 1 RT 1 LT, 1 TH, 1 RT	C (31) C (33) D (55) D (52)	D (45)	D (53) C (30) C (24) D (39)	C (35)
2039 No-Build	EB WB NB SB	1 LT-TH, 1 RT 1 LT, 1 TH, 1 RT 1 LT, 1 TH, 1 RT 1 LT, 1 TH, 1 RT	C (29) D (36) E (62) E (58)	D (50)	D (37) D (37) C (29) C (31)	C (32)
2039 Build	EB WB NB SB	1 LT-TH, 1 RT 1 LT, 1 TH, 1 RT 1 LT, 1 TH, 1 RT 1 LT, 1 TH, 1 RT	D (51) C (34) E (68) E (67)	E (57)	E (62) C (31) C (26) D (44)	D (39)

Improvements to lane configurations by adjacent development are shown underlined.

Capacity analysis of all traffic conditions indicates the signalized intersection is expected to operate at LOS D or better during the AM peak hour, with the exception of the AM peak hour for the +10 analysis. When comparing 2030 build to 2030 no-build conditions, no degradations from acceptable to unacceptable levels of service are expected for any

approaches. Significant queuing is expected along Old Faison Road under no-build conditions.

In order to alleviate queueing along Old Faison Road, phasing and timing modifications of the signalized intersection were analyzed in the "timing improvements" alternative. The westbound left turn movement was modified to operate with a permitted and a protected phase. A northbound right turn overlap was also paired with the new westbound left protected phase to improve operations. With these improvements, queueing along Old Faison Road is expected to be consistent with no-build conditions. These timing and phasing improvements are assumed as a part of routine signal maintenance and are not recommended to be constructed by the developer.

Due to acceptable levels of service under build conditions, no improvements are recommended by the developer.

7.2. Hodge Road and I-87 Eastbound Ramps

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 Hodge Road and I-87 Eastbound Ramps

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	2 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	C (22) A (8) B (13)	B (12)	B (20) A (10) B (17)	B (16)
2030 No-Build	EB NB SB	2 LT, 2 RT 1 LT, 1 TH 1 TH, 1 TH-RT	C (34) C (22) D (43)	C (29)	C (31) C (29) D (42)	C (34)
2030 Build	EB NB SB	2 LT, 2 RT 1 LT, 1 TH 1 TH, 1 TH-RT	D (39) C (22) D (45)	C (31)	D (44) C (30) D (50)	D (41)
2030 Build – Timing Improvements	EB NB SB	2 LT, 2 RT 1 LT, 1 TH 1 TH, 1 TH-RT	D (37) C (24) D (39)	C (30)	D (36) D (37) D (40)	D (38)
2039 No-Build	EB NB SB	2 LT, 2 RT 1 LT, 1 TH 1 TH, 1 TH-RT	D (37) C (26) D (49)	C (34)	D (36) D (35) D (51)	D (40)
2039 Build	EB NB SB	2 LT, 2 RT 1 LT, 1 TH 1 TH, 1 TH-RT	D (43) C (30) D (45)	D (36)	D (45) D (45) D (52)	D (47)

Improvements to lane configurations by adjacent development are shown underlined.

Capacity analysis of all traffic conditions indicates the signalized intersection is expected to operate at LOS D or better during the AM and PM peak hours. Significant queuing is expected at the intersection under no-build conditions due to adjacent development traffic and regional growth.

In order to alleviate queueing, signal timings and offsets were optimized in order to improve operations along the corridor. These improvements were assumed as a part of routine signal maintenance and are expected to help queueing at the intersection be consistent with no-build conditions. No improvements are recommended by the developer.

7.3. BUS US-64 and Widewaters Parkway/Shopping Center 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 BUS US-64 and Widewaters Parkway/Shopping Center Access

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	2 LT, 3 TH, 1 RT 2 LT, 3 TH, 1 RT 2 LT, 1 TH-RT 2 LT, 1 TH, 1 RT	C (30) D (36) D (50) D (41)	C (35)	C (33) D (36) E (72) E (61)	D (41)
2030 No-Build	EB WB NB SB	2 LT, 3 TH, 1 RT 2 LT, 3 TH, 1 RT 2 LT, 1 TH-RT 2 LT, 1 TH, 1 RT	D (43) E (59) D (55) D (40)	D (52)	D (39) D (41) F (85) E (66)	D (47)
2030 Build	EB WB NB SB	2 LT, 3 TH, 1 RT 2 LT, 3 TH, 1 RT 2 LT, 1 TH-RT 2 LT, 1 TH, 1 RT	D (42) E (59) E (58) D (40)	D (52)	D (39) D (40) F (84) E (66)	D (47)
2030 Build – Timing Improvements	EB WB NB SB	2 LT, 3 TH, 1 RT 2 LT, 3 TH, 1 RT 2 LT, 1 TH-RT 2 LT, 1 TH, 1 RT	D (39) D (46) D (54) D (42)	D (44)	D (39) D (40) F (84) E (66)	D (47)
2039 No-Build	EB WB NB SB	2 LT, 3 TH, 1 RT 2 LT, 3 TH, 1 RT 2 LT, 1 TH-RT 2 LT, 1 TH, 1 RT	D (45) E (65) D (53) D (42)	E (57)	D (48) D (45) F (90) E (76)	D (54)
2039 Build	EB WB NB SB	2 LT, 3 TH, 1 RT 2 LT, 3 TH, 1 RT 2 LT, 1 TH-RT 2 LT, 1 TH, 1 RT	D (44) E (67) D (55) D (42)	E (58)	D (48) D (42) F (87) E (75)	D (53)

Capacity analysis of all traffic conditions indicates the intersection is expected to operate at LOS D or better during the AM and PM peak hours, with the exception of the future (+10) analysis during the AM peak hour. Significant queuing is expected along the

southbound approach under no-build conditions. No site trips are forecasted to utilize the southbound leg of the intersection under build conditions.

It should be noted that coordinated signal timings were not able to be obtained for the study intersection. As an alternative, the intersection was modeled as shown on the signal plan for existing conditions. The cycle length was modified based on NCDOT's capacity analysis guidelines down to the minimum 120 seconds for a 4-phase signal during the AM peak hour. During the PM peak hour, a 150 second cycle length was utilized due to the close proximity of the I-540 Ramps along BUS US-64. Larger ramps similar to these typically run at higher cycle lengths due to the amount of traffic flowing through the intersections during typical peak hour periods. Max timings were then optimized for the AM and PM peak hours and maintained throughout the analysis, unless otherwise noted.

When comparing build to no-build conditions, the northbound approach is expected to degrade from LOS D to LOS E during the AM peak hour. In order to mitigate back to LOS D, signal timing changes are necessary. Similar to the previous intersection, these signal timing changes are assumed as a part of routine signal maintenance and are not recommended by the developer.

The intersection is expected to operate at acceptable levels of service under 2030 build conditions. When comparing build to no-build conditions, some approaches even experience a reduction in delay due to the rerouting of traffic associated with the development's connection to Widewaters Parkway.

Due to minimal impacts by the proposed development, no improvements are recommended by the developer.

7.4. Bethlehem Road and Old Faison Road

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 Bethlehem Road and Old Faison 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	F (137)[2] A (9)[1] --	N/A	F (83)[2] A (9)[1] --	N/A
2030 No-Build	EB NB SB	1 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	C (22) B (15) B (17)	B (17)	C (24) B (14) B (19)	B (19)
2030 Build	EB NB SB	1 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	C (21) B (16) B (18)	B (17)	C (23) B (19) B (19)	C (20)
2039 No-Build	EB NB SB	1 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	C (23) B (16) B (18)	B (18)	C (26) B (15) B (20)	B (20)
2039 Build	EB NB SB	1 LT, 1 RT 1 LT, 1 TH 1 TH, 1 RT	C (23) B (17) B (19)	B (19)	C (26) C (20) C (20)	C (22)

Improvements to lane configurations by adjacent development are shown underlined.

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

Capacity analysis of existing conditions indicates the major-street left-turn movement currently operates at LOS A during the AM and PM peak hours. The minor-street approach operates at LOS F during the AM and PM peak hours. With construction of turn lanes and a signal by the Lyndon Oaks development, the intersection is expected to operate at LOS C or better during the AM and PM peak hours under all future traffic conditions. No significant queuing is expected at the intersection.

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

7.5. Old Faison 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 9: Analysis Summary of Old Faison Road and Site Access

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)
2030 Build	EB WB **SB**	**1 LT**, 1 TH 1 TH, 1 **RT** **1 LT, 1 RT**	A (9)[1] -- C (16)[2]	N/A	A (9)[1] -- C (20)[2]	N/A
2030 Build Roundabout	EB WB SB	1 LT-TH 1 TH-RT 1 LT-RT	A (5)[3] A (8)[3] A (7)[3]	A (7)	A (10)[3] A (7)[3] A (6)[3]	A (8)
2039 Build	EB WB **SB**	**1 LT**, 1 TH 1 TH, 1 **RT** **1 LT, 1 RT**	A (9)[1] -- C (16)[2]	N/A	A (9)[1] -- C (23)[2]	N/A
2039 Build Roundabout	EB WB SB	1 LT-TH 1 TH-RT 1 LT-RT	A (5)[3] A (9)[3] A (7)[3]	A (7)	B (10)[3] A (8)[3] A (7)[3]	A (9)

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.
3. Level of service for roundabout 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 C 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*. An ingress left turn lane and ingress right turn lane are both recommended at the site access.

As requested during scoping and as stated in the UDO, roundabout analysis at the site access was performed under build +1 and build +10 conditions. As shown in Table 9, the

roundabout is expected to operate at LOS A during the AM and PM peak hours under all traffic conditions.

Although the roundabout would be expected to operate well, it is not recommended to be constructed by the developer due to right-of-way acquisition difficulty. A two-lane egress striped as a left and right turn lane with stop control is recommended to be constructed by the developer. It was noted that the decision on deviating from the UDO is not to be made at this time. In order to show both potential alternatives at the intersection, separate figures are shown in the recommendations section.

8. CONCLUSIONS

This Traffic Impact Analysis was conducted to determine the potential traffic impacts of the Knightdale Assemblage development to be located north of Old Faison Road, west of Woodfield Lane in Knightdale, North Carolina. The proposed development, anticipated to be completed in 2029, is assumed to consist of the following land uses:

- 59 single-family detached homes
- 67 townhomes
- 66 single-family row houses (trips generated as townhomes)
- Up to 15,000 square feet (s.f.) of strip retail space

It should be noted that the attached site plan shows one less single-family detached unit compared to what was analyzed in the TIA.

Access is proposed via one full movement driveway along Old Faison Road. Through coordination with the Town during scoping, funding has been approved for a bridge that would connect Widewaters Parkway to the proposed development, providing an additional access to the site via BUS US-64. Interconnectivity to Woodfield Lane is proposed by the development. Interconnectivity to Alysheba Drive is also proposed, however, no significant amounts of traffic are expected to utilize the connection due to both developments having more direct connections to Old Faison Road.

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

- 2025 Existing Traffic Conditions
- 2030 (+1) No-Build Traffic Conditions
- 2030 (+1) Build Traffic Conditions
- 2030 (+1) Build Traffic Conditions – Alternative
- 2039 (+10) No-Build Traffic Conditions
- 2039 (+10) Future Traffic Conditions

Trip Generation

It is estimated that the proposed development will generate approximately 2,404 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 144 trips (49 entering and 95 exiting) will occur during

the weekday AM peak hour and 236 trips (132 entering and 104 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 and are recommended to accommodate future traffic conditions. See a more detailed description of the recommended improvements below. Refer to Figures 13a and 13b for an illustration of the recommended lane configuration for the proposed development under both alternatives.

Improvements by NCDOT STIP R-5705AK

STIP R-5705AK is expected to construct a westbound right turn lane with 100 feet of storage at the intersection of Hodge Road and Old Faison Road.

Improvements by Lyndon Oaks (2030)

Bethlehem Road and Old Faison Road

- Construct an exclusive southbound right turn lane with 250’ of full width storage plus appropriate deceleration and taper.
- Construct an exclusive northbound left turn lane with 175’ of full width storage plus appropriate deceleration and taper.
- Construct an exclusive eastbound left turn lane with 250’ of full width storage plus appropriate deceleration and taper.
- Install a traffic signal.

Improvements by Silverstone/Stoneriver

Hodge Road and I-87 Eastbound Ramps

- Construct a second exclusive eastbound right turn lane with 150’ of full-width storage plus appropriate deceleration and taper.
- Widen southbound Hodge Road south of I-87 Eastbound Ramps.
- Restripe southbound right turn lane to be shared through-right turn lane.

Hodge Road and Old Faison Road/I-87 Westbound Ramps

- Construct westbound left turn lane to provide 125’ of full width storage plus appropriate deceleration and taper.
- Construct an exclusive northbound right turn lane with 200’ of full-width storage plus appropriate deceleration and taper.

Improvements by Lyndon Oaks (2032)

Hodge Road and Old Faison Road/I-87 Westbound Ramps

- Extend the westbound left turn lane to provide 175’ of full width storage plus appropriate deceleration and taper.
- Extend the eastbound shared left-through lane to provide 275’ of full width storage plus appropriate deceleration and taper.
- Extend the southbound left turn lane to provide 275’ of full width storage plus appropriate deceleration and taper.
- Maximize the storage of the northbound right turn lane with appropriate deceleration and taper.

Recommended Improvements by Developer (Alternative 1)

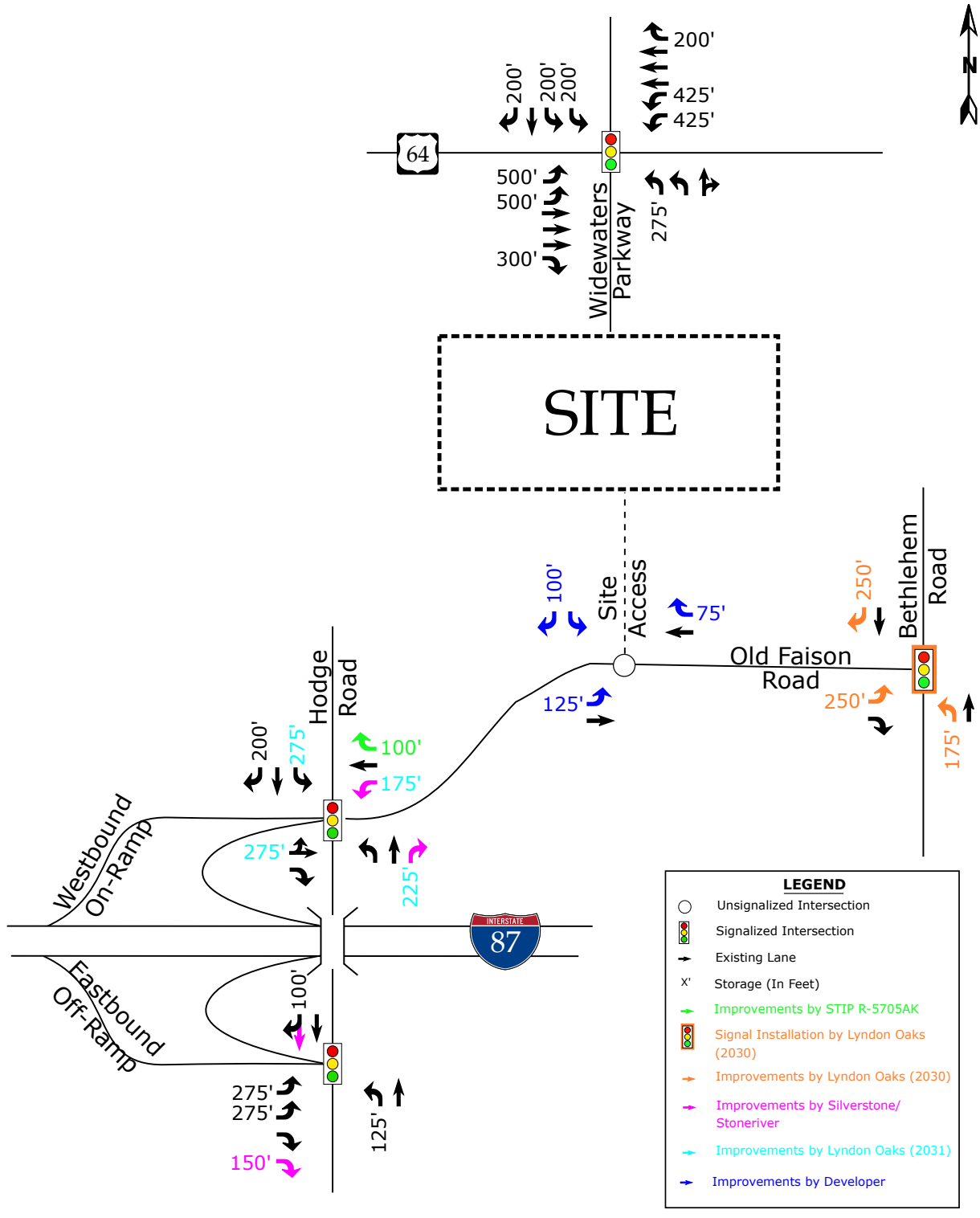
Old Faison Road and Site Access

- Construct Site Access with one ingress lane and two egress lanes striped as an exclusive left turn lane and an exclusive right turn lane.
- Provide 100’ of full width storage egress right turn plus appropriate deceleration and taper.
- Construct an ingress right turn lane with 75’ of full-width storage plus appropriate deceleration and taper.
- Construct an ingress left turn lane with 125’ of full-width storage plus appropriate deceleration and taper.
- Provide stop control for Site Access.

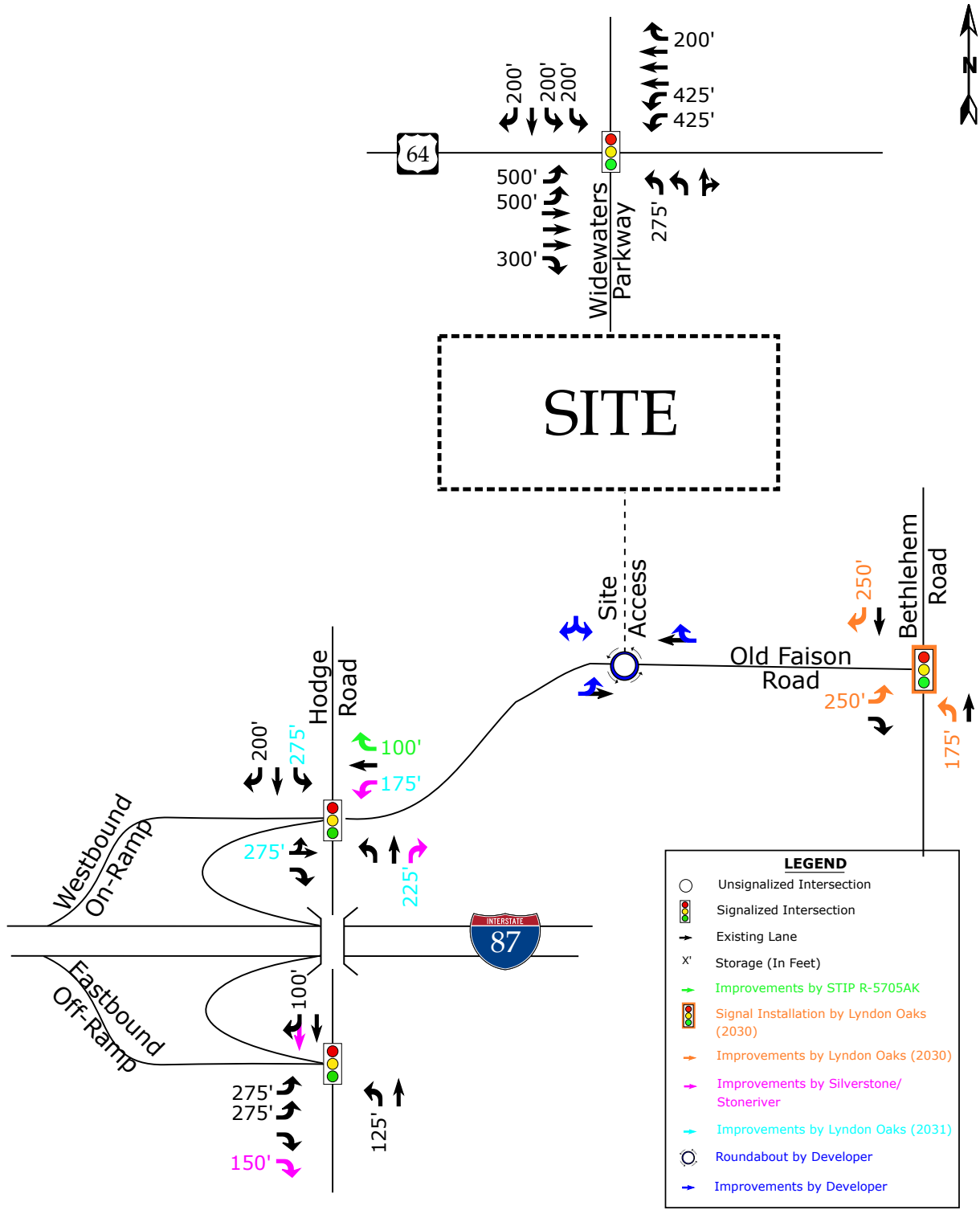
Recommended Improvements by Developer (Alternative 2) – *Town Recommended Improvements*

Old Faison Road and Site Access

- Construct a single-circulating lane roundabout.



DRMP	Knightdale Assemblage Knightdale, NC	Recommended Lane Configurations (Alternative 1)	
		Scale: Not to Scale	Figure 13a



DRMP	Knightdale Assemblage Knightdale, NC	Recommended Lane Configurations (Alternative 2)	
		Scale: Not to Scale	Figure 13b