TRAFFIC IMPACT ANALYSIS

LEO Haywood Cottages

Hendersonville, North Carolina

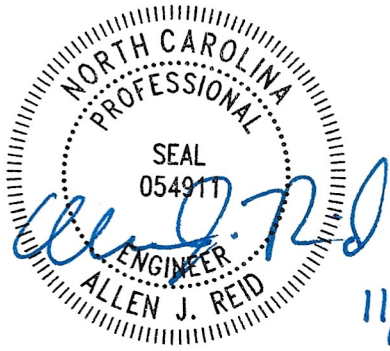
NOVEMBER 12, 2025

IMPACT DESIGNS, INC.
Prepared by: Allen J. Reid, PE

TRAFFIC IMPACT ANALYSIS

LEO Haywood Cottages

HENDERSONVILLE, NORTH CAROLINA



11/12/25

REPORT PREPARED FOR:
SeamonWhiteside
701 Easley Bridge Road, Suite 6060
Greenville, SC 29611

REPORT PREPARED BY
Impact Designs, Inc.
PO Box 3728
Mooresville, NC 28117
nick@impactdesignsinc.com

Table of Contents

Tables

Figures

Appendices

EXECUTIVE SUMMARY

A traffic impact study was conducted for the proposed LEO Haywood Cottages development in accordance with NCDOT guidelines. The proposed development is located on the south side of Haywood Road (NC 191), east of Blythe Street, in Hendersonville, North Carolina. The development is expected to consist of 180 single family attached homes and would be completed by the end of 2028. Access to the site is to be provided via a full movement access on Haywood Road.

The study was determined through coordination with NCDOT and the City of Hendersonville and consists of the following intersections:

- Asheville Highway (US 25 Business) and Haywood Road (NC 191)
- Haywood Road (NC 191) and Blythe Street
- Brevard Road/6th Avenue West (US 64) and Blythe Street
- Haywood Road (NC 191) and Ewbank Drive
- Haywood Road (NC 191) and Morris Lane
- Haywood Road (NC 191) and Ridgewood Boulevard / Whitmire Circle
- Haywood Road (NC 191) and Orleans Avenue
- Haywood Road (NC 191) and N. Justice Street
- Haywood Road (NC 191) and Site Access

For the purpose of this analysis, the study intersections listed above were analyzed under the following scenarios:

- Existing (2024) Conditions
- No-Build (2028) Conditions
- Build (2028) Conditions

Traffic operations during the AM and PM peak hours were modeled for each scenario. The results of each scenario were compared to determine impacts from background traffic growth and the proposed development.

Recommendations:

- Construct a westbound left turn lane on Haywood Road at the site access with at 100 feet of full width storage. Final design to be coordinated with NCDOT during permitting.
- Construct an eastbound right turn lane on Haywood Road at the site access with 75 feet of full width storage. Final design to be coordinated with NCDOT during permitting.

1. INTRODUCTION

The purpose of this report is to summarize the traffic impact analysis that was completed for the proposed LEO Haywood Cottages development in Hendersonville, North Carolina. The study was developed in accordance with NCDOT guidelines. The purpose of the study is to determine the potential impact to the surrounding transportation system caused by the traffic generated by the development. This report summarizes the procedures and findings of the traffic impact study.

1.1. Project Summary

The proposed development is located on the south side of Haywood Road, east of Blythe Street, in Hendersonville, North Carolina. The development is expected to consist of 180 single family attached units and would be completed by the end of 2028. This traffic impact study analyzes the effects of the additional traffic associated with the proposed development during the weekday AM (7:00 AM - 9:00 AM) and the weekday PM (4:00 PM - 6:00 PM) peak periods. The study area for the purpose of the analysis includes:

- Asheville Highway (US 25 Business) and Haywood Road (NC 191)
- Haywood Road (NC 191) and Blythe Street
- Brevard Road/6th Avenue West (US 64) and Blythe Street
- Haywood Road (NC 191) and Ewbank Drive
- Haywood Road (NC 191) and Morris Lane
- Haywood Road (NC 191) and Ridgewood Boulevard / Whitmire Circle
- Haywood Road (NC 191) and Orleans Avenue
- Haywood Road (NC 191) and N. Justice Street
- Haywood Road (NC 191) and Site Access

Refer to Figures 1 and 2 for the site location and the conceptual site plan.

For the purpose of this analysis, the study intersections listed above were analyzed under the following scenarios:

- Existing (2024) Conditions
- No-Build (2028) Conditions
- Build (2028) Conditions

Refer to Appendix A for a copy of the NCDOT TIA Scoping Checklist Scoping Form.

1.2. Existing Roadway Conditions

The primary roadways within the study area are Asheville Highway, Haywood Road, US 64 and Blythe Street. A summary of the existing characteristics is shown in Table 1.

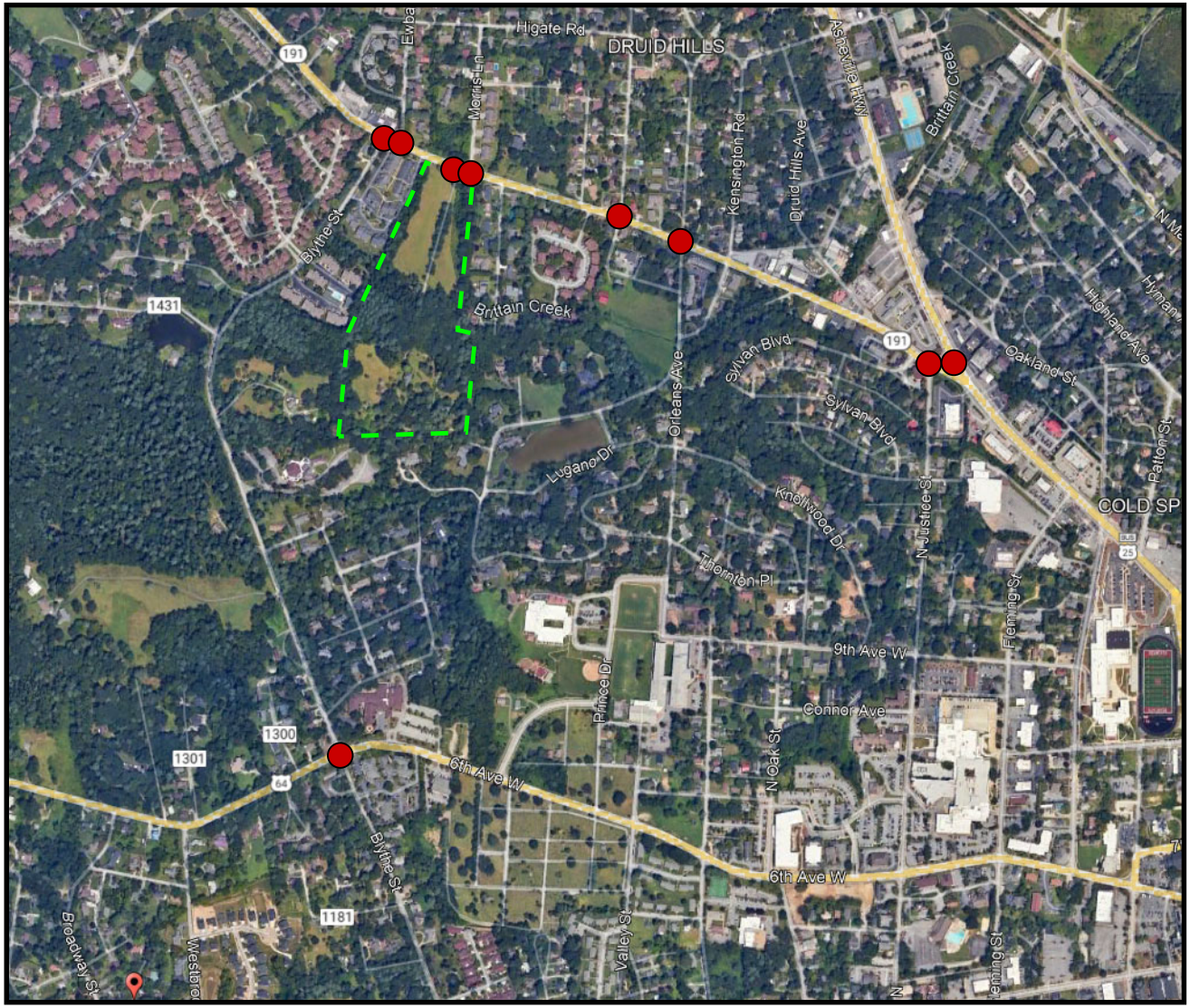
Table 1 – Study Area Summary

Facility Name	Route #	Typical Cross Section	Posted Speed Limit	Maintained By	AADT
Asheville Highway	US 25 Business	5-lane undivided	35 MPH	NCDOT	28,500 (2022)
Haywood Road	NC 191	2-lane undivided	35 MPH	NCDOT	11,000 (2022)
Brevard Road/ 6th Avenue West	US 64	2-/3-lane undivided	35 MPH	NCDOT	14,000 (2022)
Blythe Street	SR 2162	2-lane undivided	35 MPH	NCDOT	6,200 (2022)

Refer to Figure 3 for an illustration of the existing lane geometry and traffic control at the study intersections.

1.3. Driveway Location

Direct access to the site is to be provided via a full movement access on Haywood Road.



NORTH

LEGEND

- Proposed Site Location
- Study Intersections

IMPACT
Designs, Inc.

LEO Haywood Cottages
Hendersonville, NC

Site Location Map

Scale: Not to Scale	Figure	1

NOTES:

- PRIOR TO ISSUING A CERTIFICATE OF OCCUPANCY FOR PLANNED DEVELOPMENTS, DOCUMENTATION SHALL BE IN PLACE TO INFORM PROPERTY OWNERS OF THE STREAM BUFFER PRESENCE AND LOCATION ALONG WITH MANAGEMENT AND MAINTENANCE REQUIREMENTS. DOCUMENTATION SHALL BE IN A FORM THAT WILL RUN WITH THE PROPERTY SUCH AS INCLUSION IN COVENANTS, CONDITIONS AND RESTRICTION DOCUMENTS OR DEED REFERENCE.
- FOR PLANNED DEVELOPMENTS AND COMMERCIAL USES, PERMANENT BOUNDARY MARKERS, IN THE FORM OF SIGNAGE APPROVED BY THE PLANNING DEPARTMENT, SHALL BE INSTALLED ONCE THE LAND DISTURBING ACTIVITY OR DEVELOPMENT IS COMPLETE. CLEARLY VISIBLE STREAM BUFFER BOUNDARY MARKERS SHALL BE PLACED ALONG THE OUTSIDE EDGE OF THE STREAM BUFFER AND SPACED AT A MAXIMUM EVERY 100'.

LEGEND

	DESCRIPTION	HT. / SF
	Clubhouse Leasing	27'-0" 1,454 SF
	Clubhouse Fitness	27'-0" 1,456 SF
	Pool House	20'-0" 636 SF
	Maintenance	15'-6" 580 SF
	Garage: 3 Door	16'-6" 792 SF

	COTTAGE	HT. / SF
	1BR-2BR Duplex	19'-6" 708 SF
	2BR-2BR Duplex	19'-6" 1,044 SF
	1BR Stacked Duplex	27'-0" 634 SF
	2BR Row House Twin	31'-6" 1,102 SF

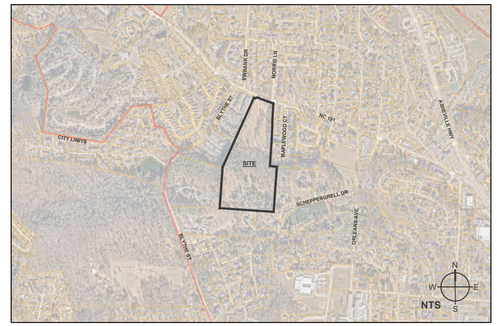
	DESCRIPTION	HT. / SF
	2BR Row House (16' wide) - 2 Pack	29'-6" 1,363 SF
	3BR Row House (16' wide) - 2 Pack	29'-6" 1,400 SF
	3BR Row House (16' wide) - 4 Pack	30'-0" 1,400 SF

Conditions Table

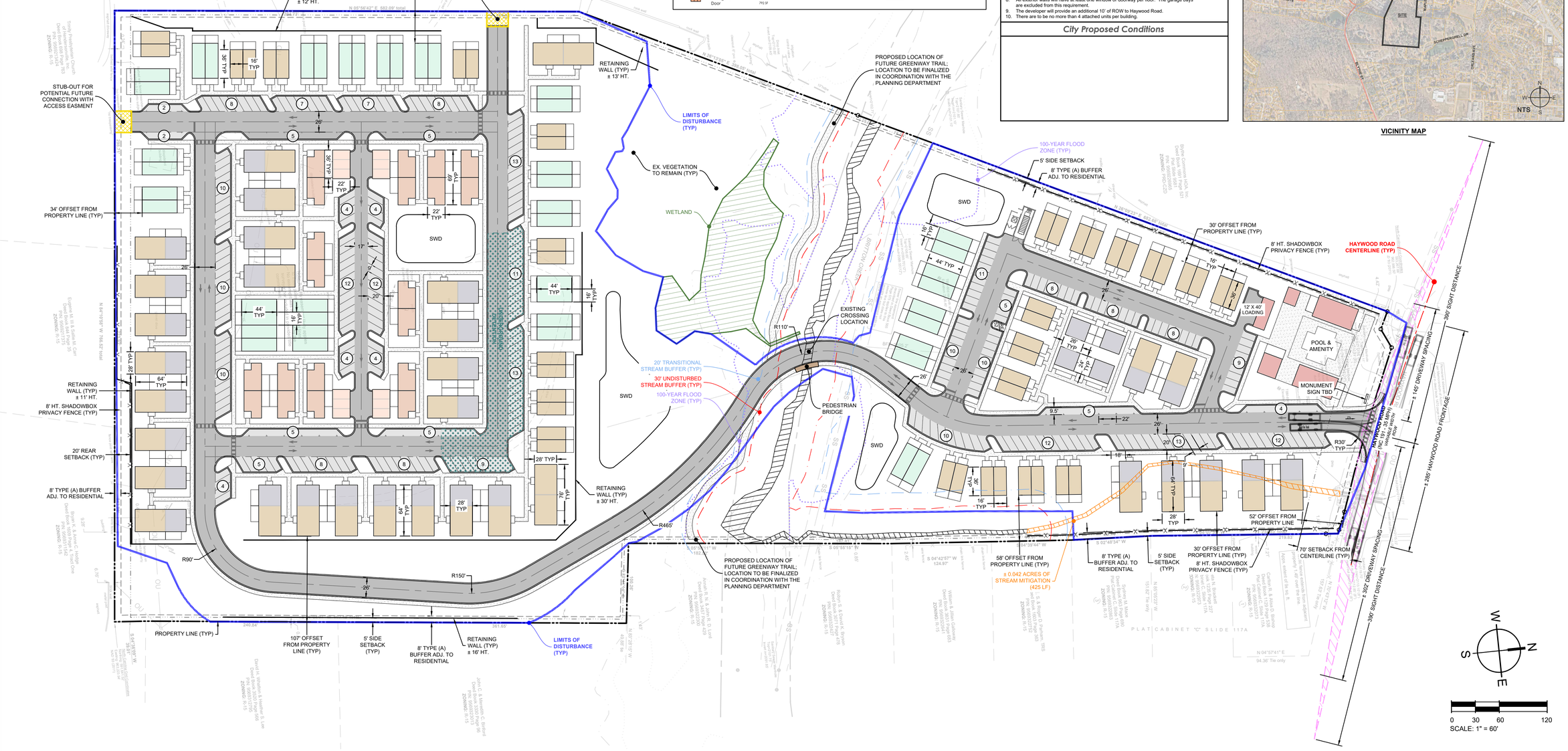
Developer Proposed Conditions

1. Minimum 25' building setback throughout the perimeter of the property.
2. Utilization of fiber cement siding, no vinyl siding will be permitted.
3. All units will include a private fenced backyard.
4. The clubhouse & pool amenities will be opened in conjunction with the first units.
5. The portion of the greenway trail that is planned along Britton Creek will be constructed, and the necessary pedestrian access easement will be provided.
6. The minimum heated square footage of each dwelling unit shall be 600 sf.
7. Amenities will include, but not limited to, Clubhouse with flex workspace, Fitness Center, Pool, dog park, & sidewalks providing connectivity throughout the community. All open space & amenities will be professionally managed and maintained.
8. All exterior walls will have at least one window or doorway per floor. The garage bays are excluded from this requirement.
9. The developer will provide an additional 10' of ROW to Haywood Road.
10. There are to be no more than 4 attached units per building.

City Proposed Conditions



VICINITY MAP



Project Information - August 19th, 2025	
Project Title	LEO Hendersonville
Developer	Advenir Azora Development, LLC
Property Owner	Justus, Jeffrey
Design Team	Architect | Nequette Architecture
	LA | Lorberbaum McNair & Associates
	Civil Engineer | SeamonWhiteside
Tax Map Number	9569229206 (Primary Corporate City Limits)
Existing Zoning	R-15
Proposed Zoning	PRD-CZD
Proposed Use	Residential Dwellings (2/3/4 Family)
Principle Structure Setbacks	Front: 40' | Reduced to 0' - Parking Situated to Rear & Screened From ROW | Front Facing Garages = 45' Min. SB Side: 5' Min. | Rear: 20' Min.
Buffers	Buffer: 8' Type (A) Adjacent to Residential
Building Height	35' Max. Height
Parking Required	1 Space / Dwelling Unit **OR** 1.5 / Dwelling Unit ≥ 3 Bedrooms
Parking Provided	**180** Dwelling Units (44 ≥ 3 Bedrooms) - 202 Spaces Req. Provided: 330 spaces (Includes Garage Spaces)

Site Coverage	
Total Project Area	± 21.25 AC
Buildings	± 3.6 AC | 17 % Site Coverage
Open Space	**Open Space**
	± 13.2 AC | 62 % Site Coverage
	Common Open Space
	± *2.1 AC Open Water / Wetland / Floodplain (50%)*
	± *0.3 AC Amenity*
	± *2.15 AC Unimproved Area (Natural Features)*
	Total: ± 3.1 AC (14.6 %) **N/I ± 0.4 AC ≥ 33% Slope**
Streets & Parking	± 3.75 AC | 17.6 % Site Coverage
Stormwater Detention	± 0.7 AC | 3.3 % Site Coverage

General Notes

1) All streets shall be built to public street standards - See Cross Section 5-14-4.4
2) Property owner responsible for perpetual maintenance of common open space.
3) Proposed project to be constructed & completed as one phase.
4) Any removed frontage sidewalks will be replaced with current standards.

Tax Map Number	Owner	Zoning Designation
9569226965	BLYTHE COMMONS HOA, INC	PRD-CZD
9569222593	BRITTON CREEK CONDOMINIUMS	R-15
9569220061	917 BLYTHE LLC	R-15
9569213424	TRINITY PRESBYTERIAN CHURCH OF HENDERSONVILLE	R-15
9569217375	CARR, EUGENE M III + CARR, SALLIE M	R-15
9569311542	HODGE, BRYAN K + HODGE, ANNE C	R-15
9569312795	WHATTON, DAVID HERBERT + LEE, HEATHER SANGEUN	R-15
9569323013	BINFORD, JOHN C. + BINFORD, MEREDITH C.	R-15
9569322300	LORD, ANNAH RUTH NESBITT + LORD, JOHN ROBERT DAVIS	R-15
9569322427	BRYSON, ROBYN S + BRYSON, DAVID K	R-15
9569322641	GALLOWAY, WILLIAM B. + GALLOWAY, JILLIAN C.	R-15
9569322752	ROGER DALE PARHAM & JUDITH ELAINE SMITH PARHAM REVOCABLE TRUST	R-15
9569322863	MACE, SYDNEY M	R-15
9569322973	BRACKETT, SERETA N	R-15
9569332073	BISHOP, CARLTON REID + BISHOP, ALISA DAWN	R-15

Preliminary Unit Mix	
Type	**Provided**
1 BR - Duplex (1 BR & 2 BR)	30
1 BR - Stacked Duplex (Lower)	4
1 BR - Stacked Duplex (Upper)	4
2 BR - Duplex (1 BR & 2 BR)	30
2 BR - Duplex (2 BR & 2 BR)	4
2 BR - Townhome (Twin)	20
2 BR - Townhome (Mini)	44
3 BR - Townhome (16' Wide)	44
	180 Units Total

SITE LEGEND

- HEAVY DUTY ASPHALT PAVEMENT
- STANDARD DUTY ASPHALT PAVEMENT
- NCDOT ASPHALT PAVEMENT
- CONCRETE - SIDEWALK
- PROPERTY LINE
- BUILDING SETBACK
- ADJACENT PARCEL BUFFER
- RETAINING WALL
- PARKING COUNT (12)

SEAMONWHITESIDE
MOUNT PLEASANT, SC 843.884.1667
GREENVILLE, SC 864.298.0534
SUMMERVILLE, SC 843.972.0710
SPARTANBURG, SC 864.272.1272
CHARLOTTE, NC 980.312.5450
RALEIGH, NC 980.312.5450
WWW.SEAMONWHITESIDE.COM

SOUTH CAROLINA
SEAMON, WHITESIDE, & ASSOCIATES, INC.
No. C00472
CERTIFICATE OF AUTHORIZATION

NOT FOR CONSTRUCTION

LEO LIVING HENDERSONVILLE

1741 HAYWOOD RD | TMS: 9569-22-9206
HENDERSONVILLE, NORTH CAROLINA

SD SET
(NOT FOR CONSTRUCTION)

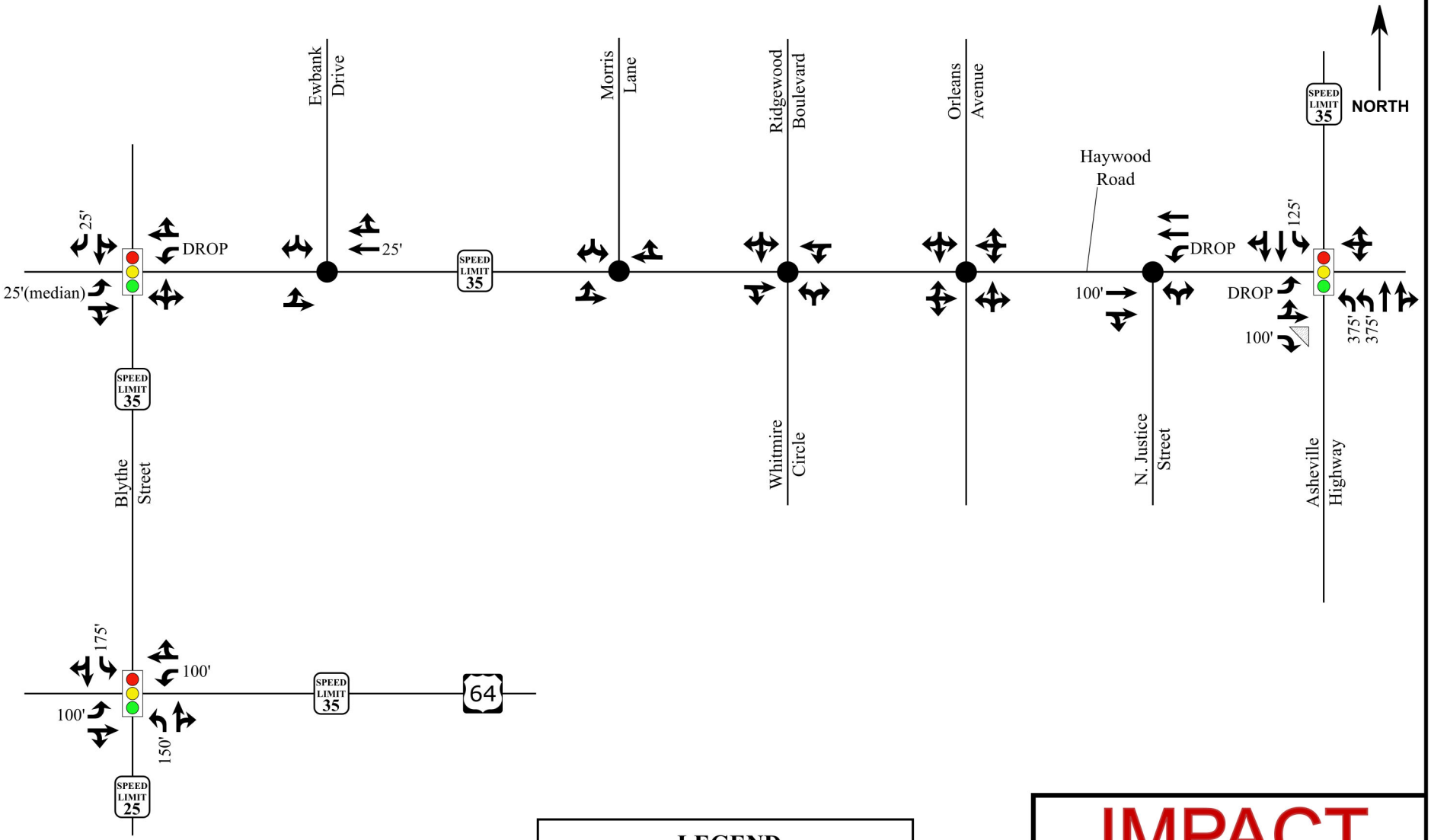
SW+ PROJECT: 11808
DATE: 7/4/2025
DRAWN BY: AC | NH
CHECKED BY: AD | DM

REVISION HISTORY

PRELIMINARY SITE PLAN

C5.0

PLOTTED:8/5/2025 2:10 PM, BY Alex Davis P:\ACAD\2-R\1808\CAD Files\CD\2025-08-12 C5.0 Site Plan ALT.dwg



IMPACT
Designs, Inc.

LEO Haywood Cottages
Hendersonville, NC

Existing Lane Configurations and Traffic Control

Scale: Not to Scale	Figure	3

2. TRAFFIC VOLUME DEVELOPMENT

2.1. Existing Traffic Volumes

Existing turning movement counts were conducted at the intersections during the weekday AM (7:00 AM to 9:00 AM) and weekday PM (4:00 PM to 6:00 PM) peak periods in December of 2024 and in September of 2025. To be conservative the Existing (2024) traffic volumes assumed all counts to be collected in 2024. The Existing (2024) traffic volumes are illustrated in Figure 4. Refer to Appendix B for a copy of the raw traffic count data.

2.2. Projected Traffic Volumes

Based on coordination with NCDOT, a 1% annual growth was applied to the 2024 counts to project traffic volumes for the future year (2028). This growth rate was applied to account for all background growth in the area without any adjacent and/or the proposed developments. Refer to Figure 5 for an illustration of the No-Build (2028) traffic volumes.

2.3. Proposed Development Traffic Volumes

As mentioned previously, the proposed development is expected to consist of 180 single family attached homes and would be completed by the end of 2028. The trip generation potential for the development was estimated utilizing methodology contained within the ITE's *Trip Generation Manual*, 11th Edition. Utilizing ITE equations for ITE Code 215 traffic volumes were generated for the weekday daily, the weekday AM peak hour, and the weekday PM peak hour. Refer to Table 2 for a summary of the trip generation potential of the proposed development.

Table 2 – Trip Generation

ITE Land Use (Code)	Density	Independent Variable	Daily Traffic	AM Peak		PM Peak	
				Enter	Exit	Enter	Exit
Single Family Attached Housing (ITE Code 215)	180	Dwelling Units	1,321	22	66	61	43

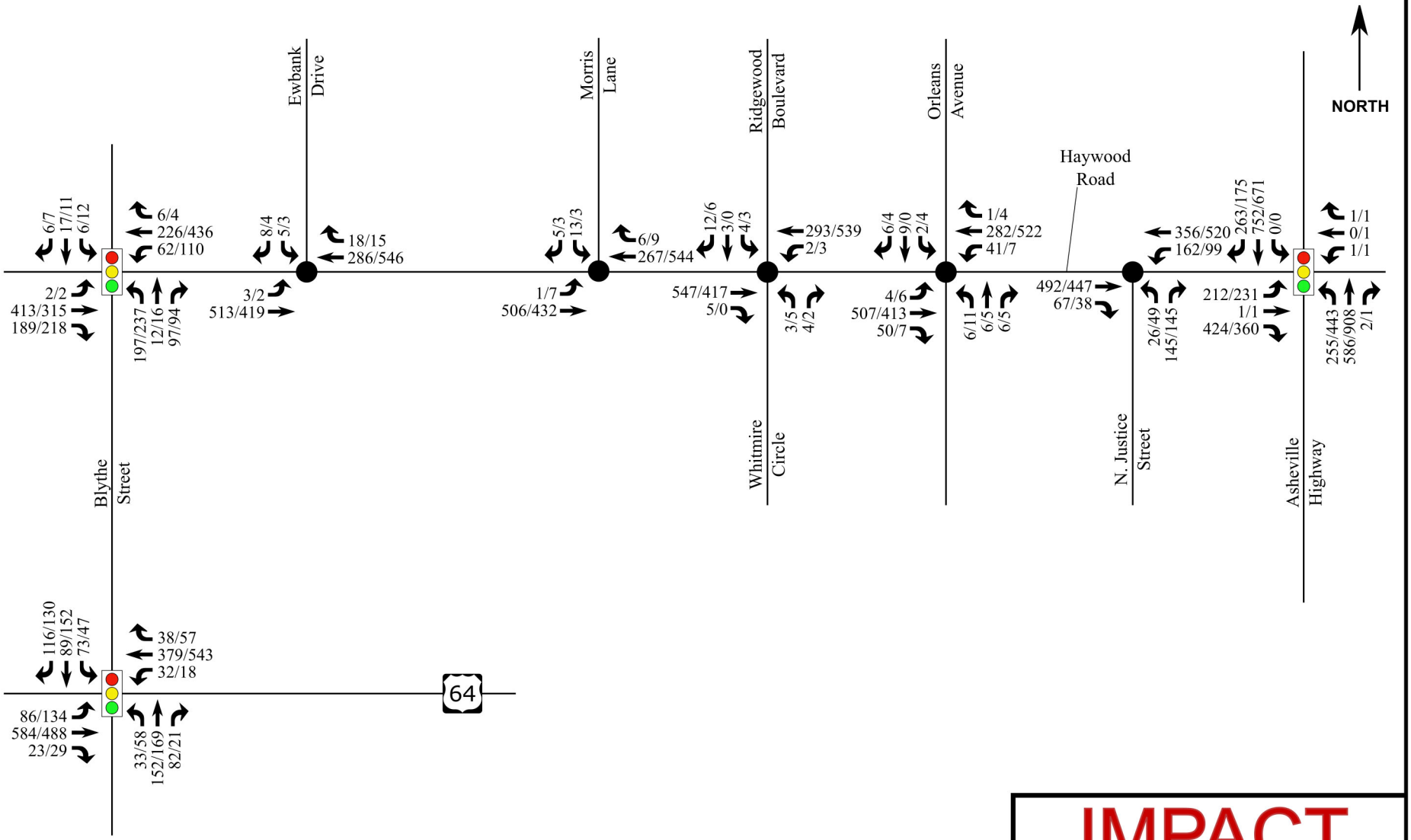
Site traffic associated with the proposed development was distributed and assigned to the roadway network based upon existing travel patterns and are summarized below:

- 20% to/from the north via Asheville Highway
- 25% to/from the south via Asheville Highway
- 10% to/from the west via Haywood Road
- 5% to/from the west via US 64
- 20% to & 30% from the east via US 64
- 5% to/from the south via Blythe Street
- 10% to the south via N. Justice Street

Refer to Figures 6 and 7 for illustrations of the site trip distributions and assignments.

2.4. Future Build Traffic Volumes

The site generated traffic volumes were added to the No-Build traffic volumes to determine the Build traffic volumes. The Build (2028) volumes are illustrated in Figure 8.



LEGEND

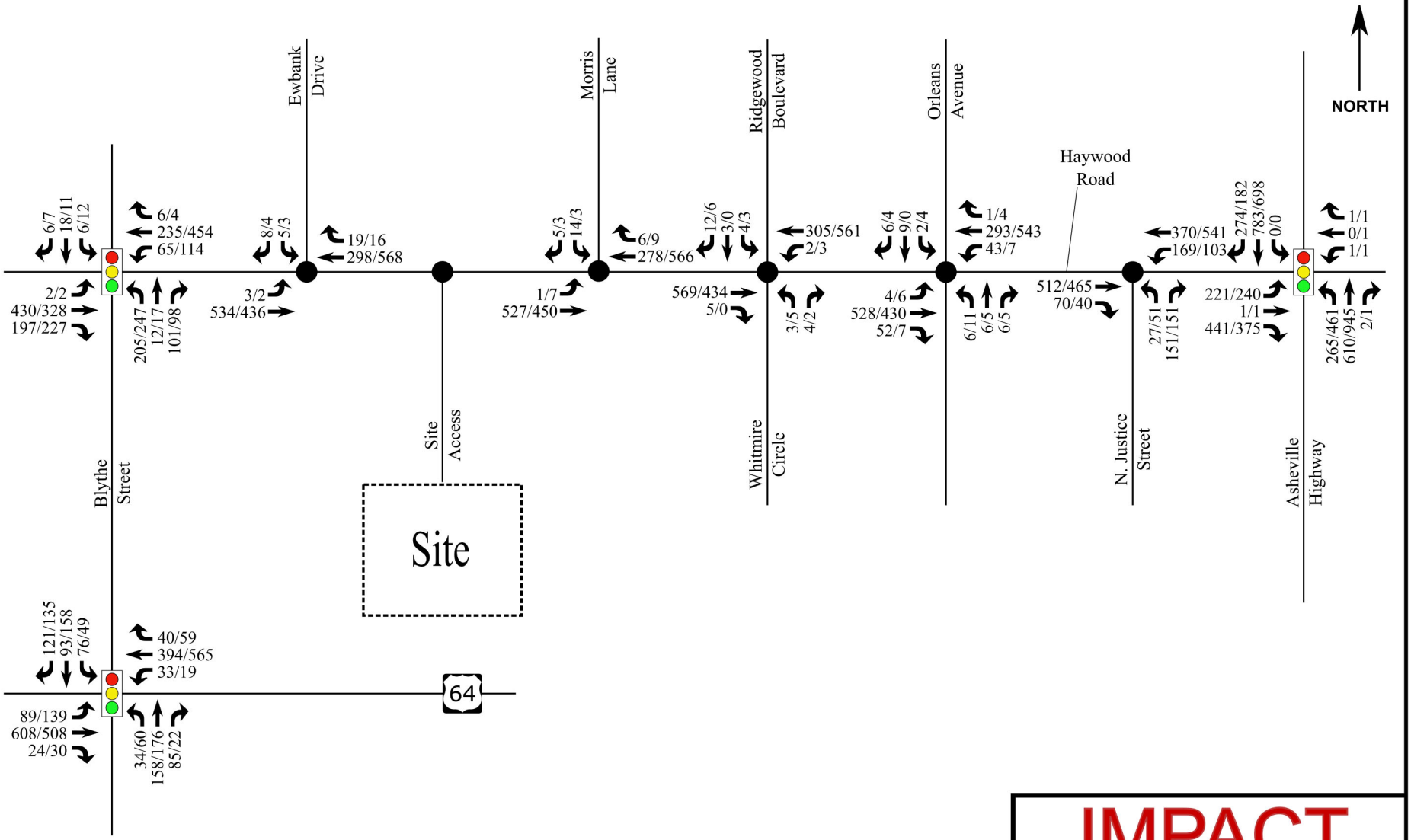
- Signalized Intersection
- Unsignalized Intersection
- X / Y → AM / PM Peak Hour Traffic

IMPACT
Designs, Inc.

LEO Haywood Cottages
Hendersonville, NC

Existing (2024)
Traffic Volumes

Scale: Not to Scale	Figure	4



LEGEND

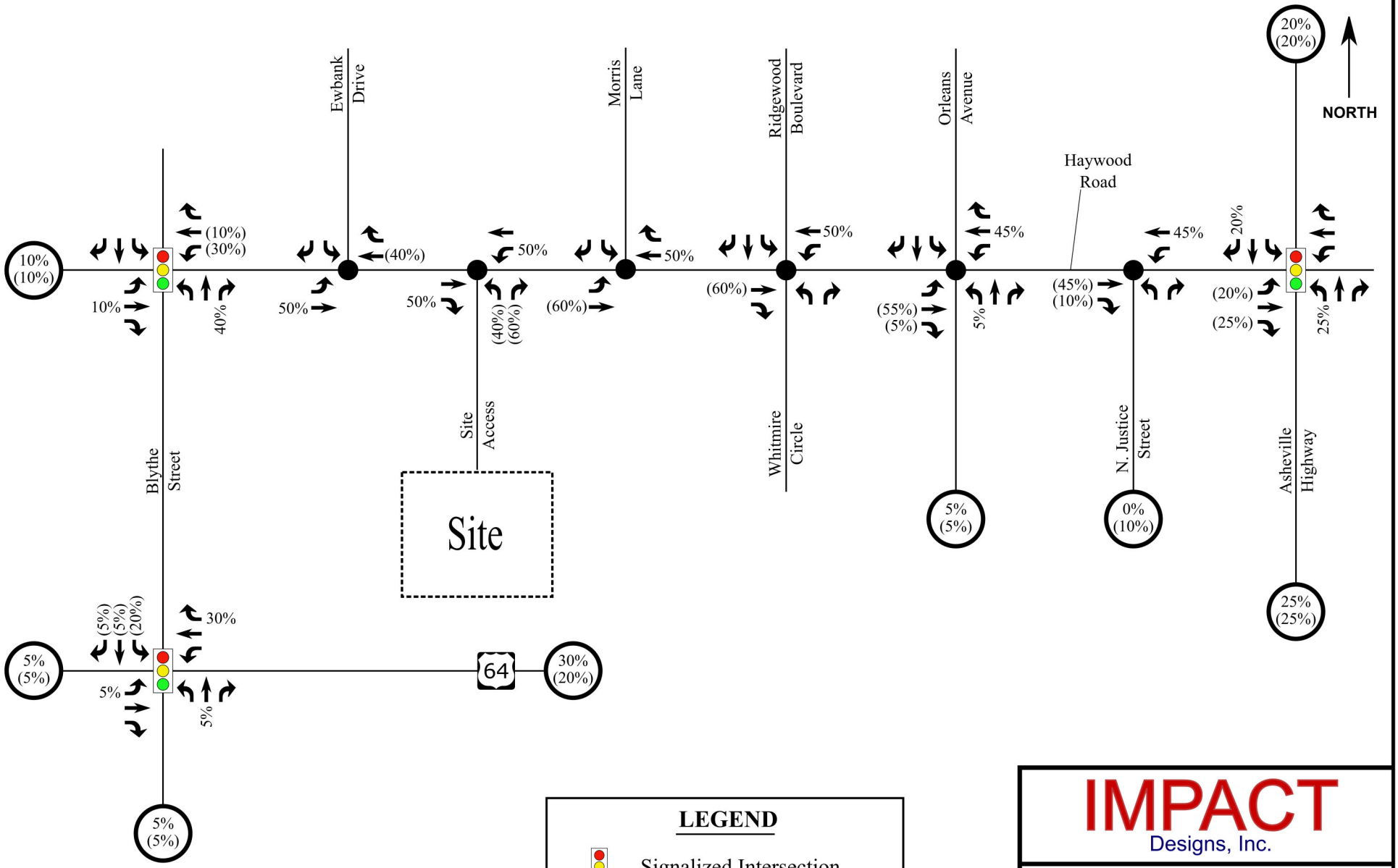
- Signalized Intersection
- Unsignalized Intersection
- X / Y → AM / PM Peak Hour Traffic

IMPACT Designs, Inc.

LEO Haywood Cottages
Hendersonville, NC

No-Build (2028)
Traffic Volumes

Scale: Not to Scale	Figure	5

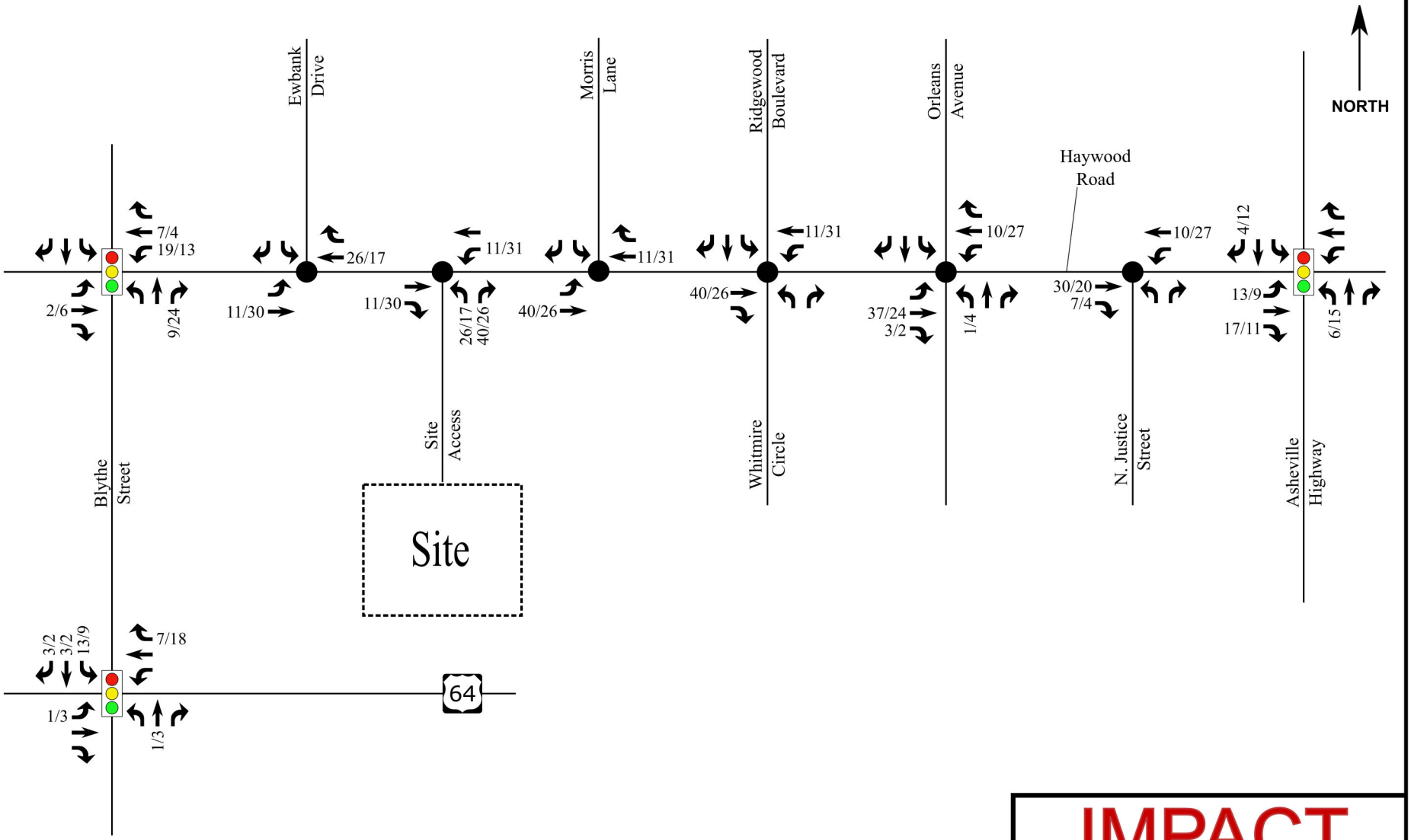


IMPACT Designs, Inc.

LEO Haywood Cottages
Hendersonville, NC

Site Trip Distribution

Scale: Not to Scale	Figure	6



LEGEND

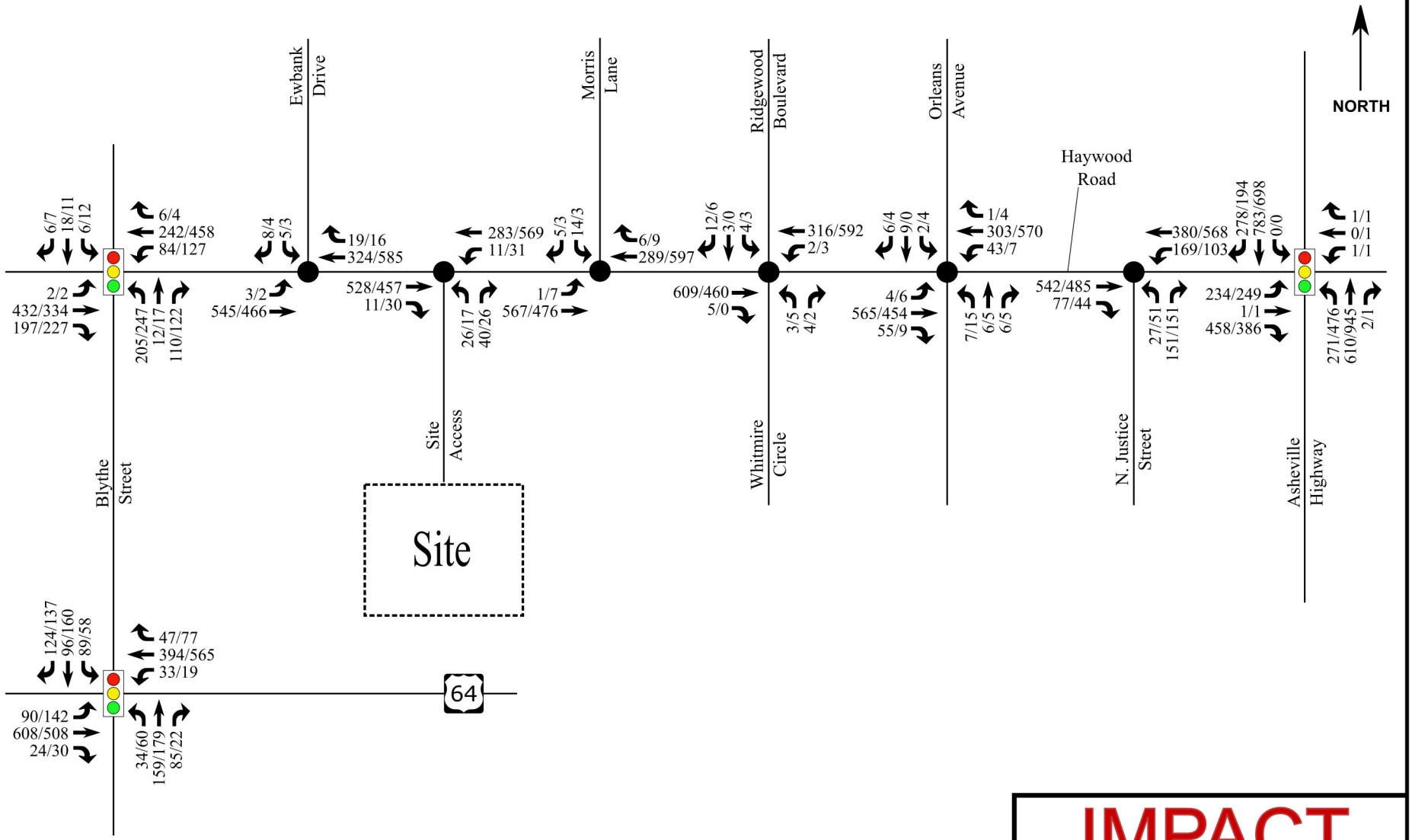
- Signalized Intersection
- Unsignalized Intersection
- X / Y → AM / PM Peak Hour Trips

IMPACT
Designs, Inc.

LEO Haywood Cottages
Hendersonville, NC

Trip Assignments

Scale: Not to Scale	Figure	7



LEGEND

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

IMPACT
Designs, Inc.

LEO Haywood Cottages
Hendersonville, NC

Build (2028)
Traffic Volumes

Scale: Not to Scale	Figure	8

3. TRAFFIC IMPACT ANALYSIS

3.1. Turn Lane Analysis

A turn lane analysis was conducted for the site access utilizing the Build (2028) volumes. Based on build-out volumes, both a left turn lane and a right turn lane are warranted on Haywood Road at the site access.

Based on the NCDOT nomograph, the left turn lane requires at least 50 feet of storage; however, NCDOT is requiring 100 feet of full width storage.

Similarly, the right turn lane requires at least 50 feet of storage per the NCDOT nomograph. Based on feedback from NCDOT, 75 feet of full width storage will be required.

With the proximity of adjacent streets, constructing these turn lanes could present some geometric challenges. Final design of the improvements should be coordinated with NCDOT during permitting. Refer to Appendix C for the turn lane warrant charts with the volumes graphed.

3.2. Intersection LOS Analysis

Using the existing, no-build, and build traffic volumes, intersection analyses were conducted for the study intersections under Existing (2024) conditions, No-Build (2028) conditions, and Build (2028) conditions. This analysis was conducted using the Transportation Research Board's *Highway Capacity Manual 6th Edition (HCM 6th Edition)* methodologies of the *Synchro*, Version 11 software.

Intersection level of service (LOS) grades range from LOS A to LOS F, which are directly related to the level of control delay at the intersection and characterize the operational conditions of the intersection traffic flow. LOS A operations typically represent ideal, free-flow conditions where vehicles experience little to no delays, and LOS F operations typically represent poor, forced-flow (bumper-to-bumper) conditions with high vehicular delays, and are generally considered undesirable. Table 3 summarizes the *HCM 6th Edition* control delay thresholds associated with each LOS grade for signalized and unsignalized intersections.

Table 3 – *HCM 6th Edition* LOS Criteria for Signalized & Unsignalized Intersections

Signalized Intersections		Unsignalized Intersections	
LOS	**Control Delay per Vehicle (seconds)**	**LOS**	**Control Delay per Vehicle (seconds)**
A	≤ 10	A	≤ 10
B	> 10 and ≤ 20	B	> 10 and ≤ 15
C	> 20 and ≤ 35	C	> 15 and ≤ 25
D	> 35 and ≤ 55	D	> 25 and ≤ 35
E	> 55 and ≤ 80	E	> 35 and ≤ 50
F	> 85	F	> 50

A PHF of 0.90 was applied and a heavy vehicle percentage of 2% was utilized for the purpose of this analysis. Additionally, a conservative approach was taken in which no right turns on red were permitted, although right turns on red are permitted on all intersections in the field.

3.3. Mitigation Requirements

NCDOT typically requires mitigation to be identified when developments are expected to impact the traffic operations as described below:

- Overall intersection or intersection approach delay increases by 25%.
- LOS degrades by at least one level.
- LOS is F.
- Synchro 95th or SimTraffic maximum queue results are greater than the existing turn lane storage length.

3.4. Capacity Analysis

The results of the capacity analysis for the study intersections are summarized below in Table 4. Refer to Appendix D for the detailed capacity analysis reports.

Table 4 – Intersection Capacity Analysis Results

Intersections	Approach	LOS (Delay in seconds per vehicle)					
		Existing (2024)		No-Build (2028)		Build (2028)	
		AM	PM	AM	PM	AM	PM
Asheville Highway & Haywood Road	EB	C (20.8)	C (24.7)	C (21.6)	C (24.4)	C (21.6)	C (24.7)
	WB	D (53.5)	D (53.5)	D (53.5)	D (53.5)	D (53.5)	D (53.5)
	NB	C (23.0)	C (23.7)	C (23.0)	C (24.5)	C (22.8)	C (24.7)
	SB	B (19.3)	C (23.6)	B (19.6)	C (24.4)	C (21.1)	C (25.4)
	Overall	C (21.1)	C (24.0)	C (21.4)	C (24.6)	C (21.9)	C (25.0)
Haywood Road & Blythe Street	EB	D (39.1)	D (43.5)	D (42.9)	D (47.0)	D (45.6)	D (53.5)
	WB	B (18.0)	C (28.2)	B (18.7)	C (31.0)	B (19.8)	C (32.0)
	NB	E (58.7)	E (63.9)	E (61.4)	E (69.8)	E (72.9)	E (70.2)
	SB	C (25.7)	C (23.5)	C (25.8)	C (23.6)	C (26.6)	C (24.6)
	Overall	D (38.6)	D (42.2)	D (41.3)	D (45.9)	D (45.5)	D (49.0)
US 64 & Blythe Street	EB	D (37.9)	D (42.6)	D (39.8)	D (44.3)	D (40.1)	D (46.7)
	WB	C (34.7)	D (46.1)	D (35.7)	D (47.4)	D (36.3)	D (54.7)
	NB	E (72.4)	F (81.7)	E (75.1)	F (90.9)	E (75.5)	F (93.4)
	SB	E (71.9)	E (74.4)	E (74.6)	F (86.4)	E (75.7)	E (78.7)
	Overall	D (48.1)	D (54.7)	D (50.0)	E (59.1)	D (50.8)	E (61.4)
Haywood Road & Ewbank Drive	EB	A (8.0)	A (8.8)	A (8.0)	A (8.9)	A (8.1)	A (8.9)
	WB	-	-	-	-	-	-
	SB	B (12.6)	C (16.0)	B (12.9)	C (16.6)	B (13.3)	C (17.4)
Haywood Road & Morris Lane	EB	A (7.9)	A (8.8)	A (7.9)	A (8.8)	A (7.9)	A (9.0)
	WB	-	-	-	-	-	-
	SB	C (15.0)	C (16.8)	C (15.7)	C (17.5)	C (16.4)	C (18.4)
Haywood Road & Ridgewood Boulevard / Whitemire Circle	EB	-	-	-	-	-	-
	WB	A (8.7)	A (8.3)	A (8.8)	A (8.4)	A (9.0)	A (8.4)
	NB	C (16.8)	C (18.7)	C (17.5)	C (19.6)	C (18.5)	C (21.1)
	SB	B (14.3)	C (18.8)	B (14.7)	C (19.7)	C (15.4)	C (21.0)
Haywood Road & Orleans Avenue	EB	A (7.9)	A (8.7)	A (7.9)	A (8.7)	A (8.0)	A (8.8)
	WB	A (8.9)	A (8.3)	A (9.0)	A (8.4)	A (9.2)	A (8.8)
	NB	C (19.9)	C (22.2)	C (20.9)	C (23.4)	C (22.9)	D (31.2)
	SB	C (19.3)	C (20.2)	C (20.3)	C (21.1)	C (21.6)	D (25.3)
Haywood Road & N. Justice Street	EB	-	-	-	-	-	-
	WB	A (9.6)	A (8.9)	A (9.8)	A (9.0)	B (10.0)	A (9.1)
	NB	C (18.5)	C (20.6)	C (20.2)	C (22.6)	C (21.6)	C (24.4)
Haywood Road & Site Access	EB	*Analyzed under Build conditions only.*				-	-
	WB					A (8.7)	A (8.6)
	NB					C (16.3)	C (18.4)

The capacity analysis indicates that the operations at the signalized intersections are expected to be similar under Build conditions as compared to No-Build conditions. All approaches are expected to maintain their levels of service with one exception. In the AM peak hour, the Asheville Highway southbound approach at Haywood Road is expected to drop from LOS B under No-Build conditions to LOS C under Build conditions. However, because the delay is expected to increase by only 8% and would still operate acceptably, mitigation is not recommended.

At the intersection of Haywood Road and Orleans Avenue, the side street approaches are expected to drop from LOS C to LOS D in the PM peak hour. The delay is still expected to be reasonable for an unsignalized intersection during the peak hour. Some of the additional delay could be mitigated by an additional lane on each side street approach, but such an improvement would adversely impact the residences on the corners and would thus not be considered reasonable in this case.

The site egress at Haywood Road is anticipated to operate at LOS C in both peak hours. It should be noted that the site access intersection was modeled with the warranted westbound left turn lane. No additional mitigation is recommended.

3.5. Queuing Analysis

A queuing analysis was also completed for all No-Build and Build Improved traffic. Reported in Table 5 are the SimTraffic maximum queue for each turn lane at study intersections. Additional storage is recommended where the site traffic introduced in the Build scenario extends the queue beyond the available storage. Refer to Appendix D for detailed Synchro capacity analysis reports and Appendix E for detailed SimTraffic reports.

Table 5 – Queuing Analysis

Intersections	Lane Group	Storage (feet)	Max Queue (feet)			
			AM Peak Hour		PM Peak Hour	
			No-Build	Build Improved	No-Build	Build Improved
Asheville Highway & Haywood Road	EB-L	200	165	210	243	201
	EB-LT	Full	280	391	332	287
	EB-R	100	145	150	142	147
	WB-LTR	Full	57	60	56	56
	NB-L	375	360	353	425	425
	NB-L	375	369	367	475	475
	SB-L	125	68	68	48	123
Haywood Road & Blythe Street	EB-L	25	73	110	93	91
	WB-L	100	124	146	193	217
	NB-LTR	Full	375	397	416	469
	SB-LT	Full	52	52	45	53
	SB-R	25	38	33	31	36
US 64 & Blythe Street	EB-L	100	200	200	255	263
	WB-L	100	184	187	185	187
	NB-L	150	249	214	250	250
	SB-L	175	248	274	275	275
Haywood Road & Ewbank Drive	EB-LT	Full	32	30	41	42
	SB-LR	Full	36	35	35	30
Haywood Road & Morris Lane	EB-LT	Full	6	23	49	55
	SB-LR	Full	42	43	33	34
Haywood Road & Ridgewood Boulevard/ Whitemire Circle	WB-LT	Full	35	21	30	22
	NB-LR	Full	32	31	32	36
	SB-LTR	Full	36	42	35	33
Haywood Road & Orleans Avenue	EB-LTR	Full	22	18	32	43
	WB-LTR	Full	82	113	42	36
	NB-LTR	Full	45	34	34	47
	SB-LTR	Full	43	40	32	36
Haywood Road & N. Justice Street	WB-L	Full	73	73	71	71
	NB-LR	Full	434	617	770	666
Haywood Road & Site Access	WB-[L]	[50]	-	31	-	40
	NB-[LR]	[Full]	-	84	-	59

The queuing analysis indicates that the addition of site traffic in the Build scenario does not create a new queuing issue. In the Build scenarios, the maximum observed queues at the signalized intersections are not expected to increase significantly over the No-Build condition. No mitigation is recommended based on the queuing analysis.

4. PEDESTRIAN LOS ANALYSIS

At the request of NCDOT, an additional analysis was performed at the study intersections to include a pedestrian level of service. A description of the pedestrian-related characteristics of each intersection is provided below, along with the pedestrian level of service, in Table 6. Detailed reports are provided in Appendix F.

Table 6 – Pedestrian LOS Analysis

Unsignalized Intersections										
Intersection	Sidewalk	Pedestrian Crossing Features	Total Peak Hour Pedestrians		Approach	Haywood Road Crossing Length (feet)*	Pedestrian Approach LOS (Delay [sec])			
							No-Build		Build	
			AM	PM			AM	PM	AM	PM
Haywood Road & Ewbank Drive	South side of Haywood Road	None	0	0	EB	36	F (75.64)	F (128.92)	F (84.92)	F (148.94)
					WB	36	F (75.64)	F (128.92)	F (84.92)	F (148.94)
Haywood Road & Morris Lane	South side of Haywood Road; NE quadrant of intersection	None	2	0	EB	NB: 27; BLD: 36	E (33.90)	F (58.63)	F (81.54)	F (159.34)
					WB	NB: 24; BLD: 36	D (26.20)	E (43.82)	F (81.54)	F (159.34)
Haywood Road & Ridgewood Boulevard/ Whitmire Cicle	South side of Haywood Road	Marked crosswalk across Whitmire Circle	3	4	EB	26	E (37.25)	F (50.56)	E (42.42)	F (58.22)
					WB	25	E (34.07)	F (45.94)	E (38.69)	F (52.74)
Haywood Road & Orleans Avenue	South side of Haywood Road	Faded marked crosswalk across NB approach	4	6	EB	29	E (41.84)	F (63.16)	F (47.60)	F (91.92)
					WB	28	E (38.50)	F (57.64)	E (43.69)	F (83.19)
Haywood Road & N. Justice Street	North side of Haywood Road; both SW and SE quadrants of intersection	Marked crosswalk across N. Justice Street	0	2	EB	48	C (18.89)	D (22.82)	D (20.28)	D (24.55)
					WB	73	F (1,382.28)	F (2,784.70)	F (1,730.75)	F (3,410.10)
Haywood Road & Site Access	SW and SE quadrants intersection	None	-	-	EB	24	-	-	B (6.19)	B (8.23)
					WB	36	-	-	F (70.81)	F (137.94)

Signalized Intersections										
Intersection	Sidewalk	Pedestrian Crossing Features	Total Peak Hour Pedestrians		Approach	Haywood Road Crossing Length (feet)*	Pedestrian Crosswalk LOS (Score)			
							No-Build		Build	
			AM	PM			AM	PM	AM	PM
Asheville Highway & Haywood Road	All four quadrants of intersection	Marked crosswalks and pedestrians signals for all four approaches	2	0	EB	61.9	C (2.63)	C (2.64)	C (2.64)	C (2.66)
					WB	35.6	B (1.75)	B (1.75)	B (1.75)	B (1.75)
					NB	72.3	C (2.92)	C (3.00)	C (2.92)	C (3.01)
					SB	73.4	C (2.80)	C (2.85)	C (2.80)	C (2.85)
Haywood Road & Blythe Street	South side of Haywood Road; east side of Blythe Street	Marked crosswalk across Blythe Street; ped signals on NB approach	1	1	EB	42.4	B (2.40)	B (2.48)	B (2.41)	B (2.49)
					WB	36.2	B (2.31)	B (2.38)	B (2.32)	B (2.40)
					NB	36.0	B (2.10)	B (2.18)	B (2.12)	B (2.20)
					SB	54.1	B (1.97)	B (1.97)	B (1.97)	B (1.97)
US 64 & Blythe Street	Both sides of US 64 to the east of Blythe Street	Marked crosswalk and ped signals on WB approach	0	3	EB	36.0	B (2.50)	C (2.57)	B (2.50)	C (2.57)
					WB	36.0	B (2.48)	B (2.48)	B (2.49)	B (2.49)
					NB	35.9	B (2.09)	B (2.10)	B (2.09)	B (2.10)
					SB	36.2	B (2.20)	B (2.26)	B (2.22)	B (2.28)

*From Synchro for purposes of LOS calculation. Not actual crossing distances.

The pedestrian analysis indicates that most approaches along Haywood Road are expected to be LOS E or F during the peak hours. The count data shows little pedestrian traffic in this corridor, but most of the pedestrian activity was focused at the Ridgewood Boulevard and the Orleans Avenue intersections. Based on conversations with NCDOT and the City of Hendersonville, project HS-2414F will install a rapid rectangular flashing beacon crossing at this intersection to allow pedestrians to access the Haywood Road sidewalk from Ridgewood Boulevard. That project is expected to be completed in 2025.

The signalized intersections receive better LOS grades. All approaches with sidewalk crossings currently have pedestrian signals, although few pedestrians were counted at these locations.

5. SUMMARY OF FINDINGS AND RECOMMENDATIONS

A traffic impact study was conducted for the proposed LEO Haywood Cottages development in accordance with NCDOT guidelines. The proposed development is located on the south side of Haywood Road (NC 191), east of Blythe Street, in Hendersonville, North Carolina. The development is expected to consist of 180 single family attached homes and would be completed by the end of 2028. Access to the site is to be provided via a full movement access on Haywood Road.

The study was determined through coordination with NCDOT and the City of Hendersonville and consists of the following intersections:

- Asheville Highway (US 25 Business) and Haywood Road (NC 191)
- Haywood Road (NC 191) and Blythe Street
- Brevard Road/6th Avenue West (US 64) and Blythe Street
- Haywood Road (NC 191) and Ewbank Drive
- Haywood Road (NC 191) and Morris Lane
- Haywood Road (NC 191) and Ridgewood Boulevard / Whitmire Circle
- Haywood Road (NC 191) and Orleans Avenue
- Haywood Road (NC 191) and N. Justice Street
- Haywood Road (NC 191) and Site Access

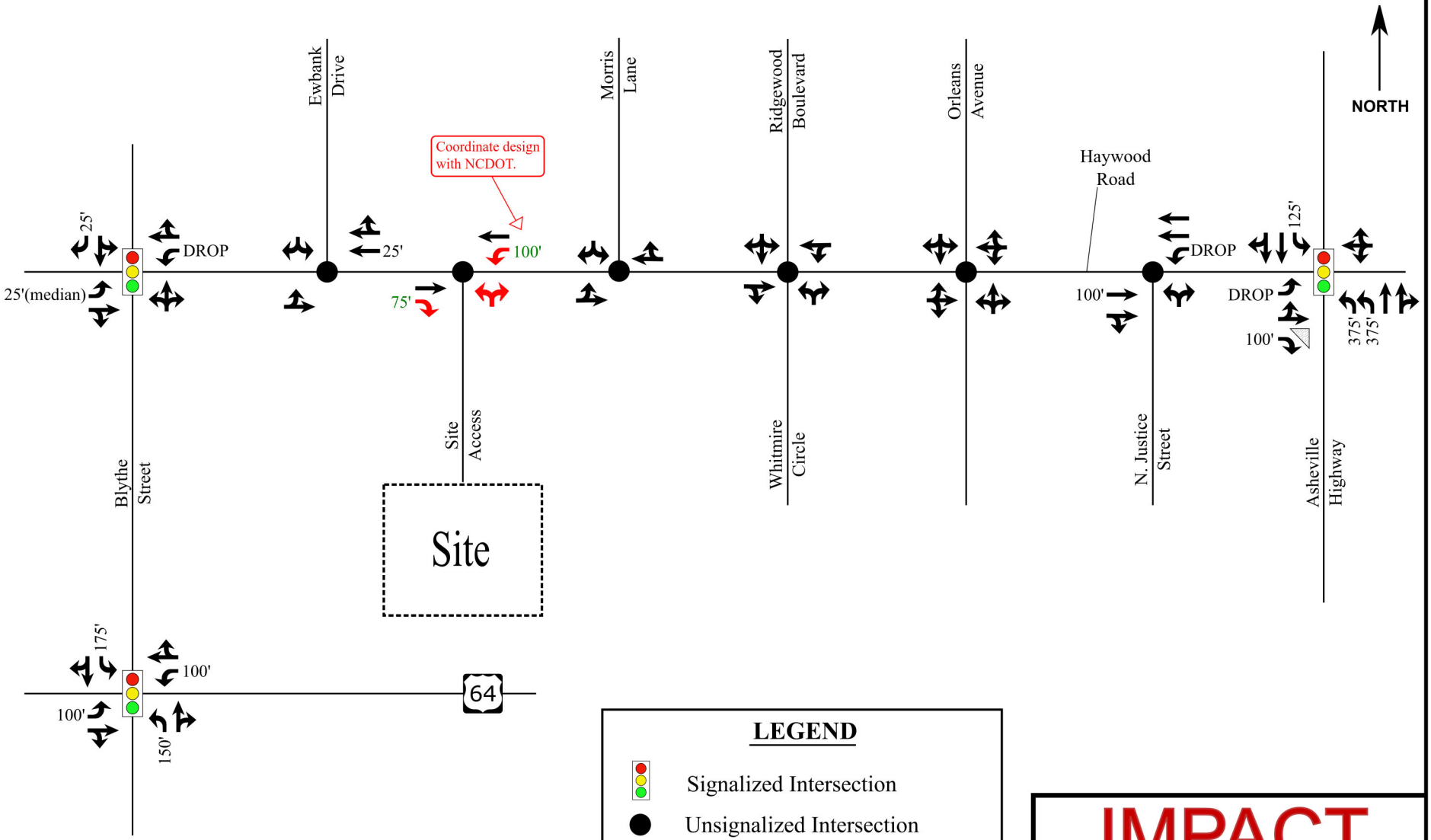
For the purpose of this analysis, the study intersections listed above were analyzed under the following scenarios:

- Existing (2024) Conditions
- No-Build (2028) Conditions
- Build (2028) Conditions

Traffic operations during the AM and PM peak hours were modeled for each scenario. The results of each scenario were compared to determine impacts from background traffic growth and the proposed development.

Recommendations:

- Construct a westbound left turn lane on Haywood Road at the site access with at 100 feet of full width storage. Final design to be coordinated with NCDOT during permitting.
- Construct an eastbound right turn lane on Haywood Road at the site access with 75 feet of full width storage. Final design to be coordinated with NCDOT during permitting.



LEGEND

- Signalized Intersection
- Unsignalized Intersection
- Existing Lane
- Recommended Improvement
- NCDOT Required Improvement
- X' Storage (feet)
- X' Recommended Storage (feet)
- X' NCDOT Required Storage (feet)

IMPACT
Designs, Inc.

LEO Haywood Cottages
Hendersonville, NC

Proposed Lane Configurations and Traffic Control

Scale: Not to Scale	Figure	9