DRMP

TRAFFIC IMPACT ANALYSIS

FOR

TERRAVITA

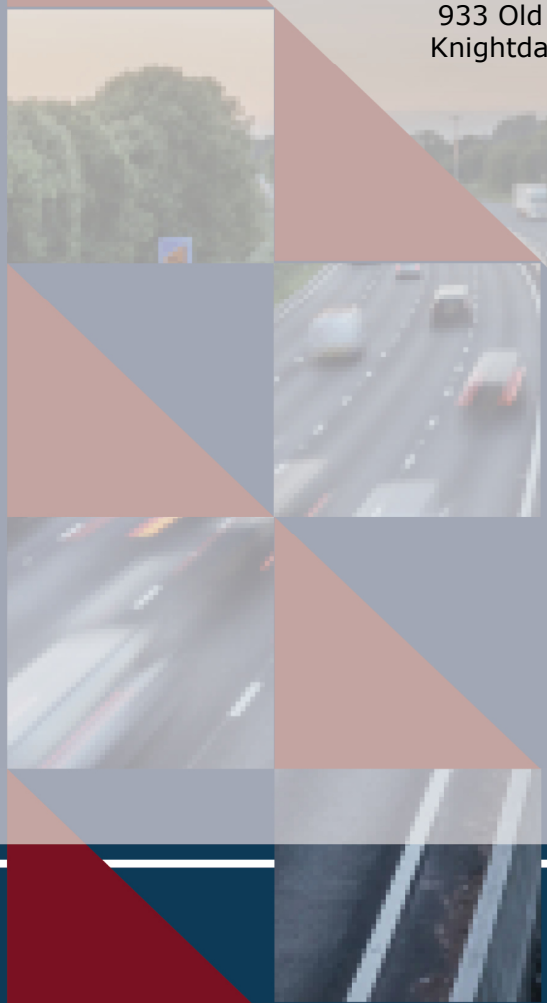
LOCATED

IN

KNIGHTDALE, NC

Prepared For:

Terravita Development, LLC
933 Old Knight Road
Knightdale, NC 27545



NOVEMBER 2024

DRMP Project No. 24682

Prepared By: CDS

Reviewed By: CTS

DRMP

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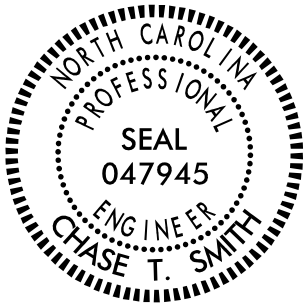


11/13/24

Prepared For:

Terravita Development, LLC

933 Old Knight Road

Knightdale, NC 27545

Prepared By:

DRMP, Inc.

License #F-1524

TRAFFIC IMPACT ANALYSIS
TERRAVITA

Knightdale, North Carolina

EXECUTIVE SUMMARY

1. Development Overview

A Traffic Impact Analysis (TIA) was conducted for the proposed Terravita development in accordance with the Knightdale (Town) Unified Development Ordinance (UDO) and North Carolina Department of Transportation (NCDOT) capacity analysis guidelines. The proposed Terravita development is to be located south of Buffaloe Road between Quiet Oaks Drive and Bobbitt Drive in Knightdale, North Carolina. The proposed development, anticipated to be completed in 2029, is assumed to consist of 170 single-family lots and 75 townhomes. Access to the parcel is proposed via one full movement driveway along Buffaloe Road and internal connections to Quiet Oaks Road, Bobbitt Drive, Proc Ridge Lane, and the Old Knight Road extension (a part of the Weldon Village adjacent development).

2. Existing Traffic Conditions

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

- Buffaloe Road and Lucas Road
- Buffaloe Road and Quiet Oaks Drive
- Buffaloe Road and Bobbitt Drive
- Buffaloe Road and Horton Road
- Horton Road and Horton Mill Drive
- Horton Road and Old Knight Road
- Horton Road and Lucas Road

Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersection listed above, in October of 2024 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 Town, it was determined that an annual growth rate of 3% would be used to generate 2030 (build-out+1) projected weekday AM and PM peak hour traffic volumes. Per the Town's UDO, a 3% growth rate was applied to the existing traffic counts to project to the year 2030. For the +10 future analysis required by the Town UDO, traffic was projected beyond 2030 using a 1% growth rate. The following adjacent developments were identified to be included as an approved adjacent development in this study:

- Haywood Glen
- Weldon Village
- Brio Development

Based on coordination with the Town, no roadway improvement projects are planned within the study area.

4. Site Trip Generation

Average weekday daily, AM peak hour, and PM peak hour trips for the proposed development were estimated using methodology contained within the ITE Trip Generation Manual, 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	Enter	Exit
Single Family Lots (210)	170 DU	1,644	30	91	103	61
Townhomes (215)	75 DU	522	8	25	24	17
Total Trips		2,166	38	116	127	78

5. Capacity Analysis Summary

The analysis considered weekday AM and PM peak hour traffic for 2024 existing, 2030 no-build, 2030 build, and 2039 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 Figure E-1.

Improvements by Weldon Village

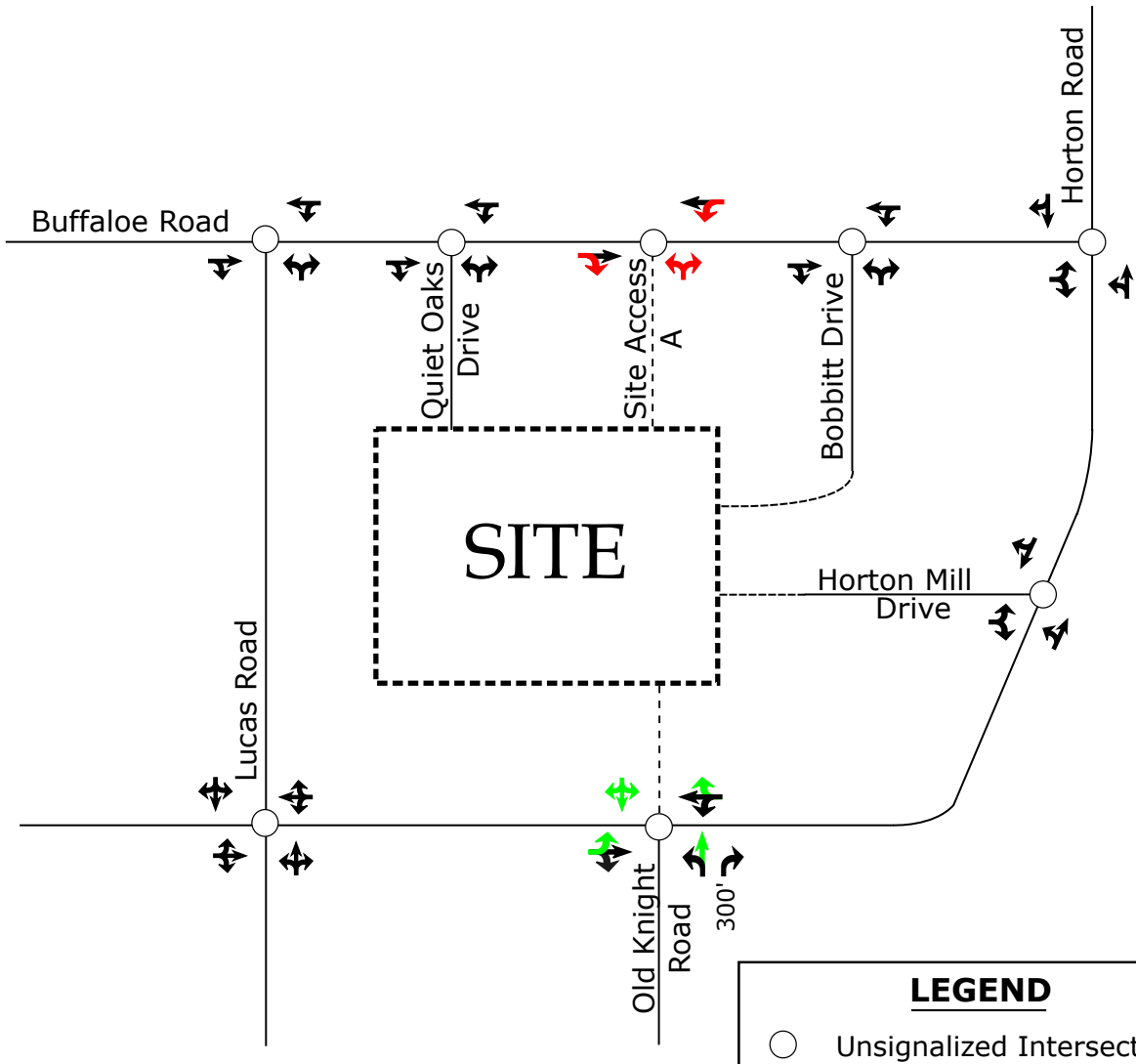
Horton Road and Old Knight Road

- Construct southbound approach (of Old Knight Road) with one ingress lane and one egress lane.
- Provide stop control for southbound approach.
- Construct eastbound left turn lane (on Horton Road) with 100’ of storage plus appropriate deceleration and taper.

Recommended Modifications by Developer

Buffaloe Road and Site Access

- Construct northbound approach (of the proposed site access) with one ingress lane and one egress lane. Provide stop-control for the northbound approach.



DRMP	Terravita Knightdale, NC	Recommended Lane Configurations	
		Scale: Not to Scale	Figure E-1

TABLE OF CONTENTS

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LIST OF FIGURES

LIST OF TABLES

DRMP

TECHNICAL APPENDIX

TRAFFIC IMPACT ANALYSIS

Terravita

Knightdale, North Carolina

1. INTRODUCTION

The contents of this report present the findings of the Traffic Impact Analysis (TIA) conducted for the proposed Terravita residential development to be located south of Buffaloe Road between Quiet Oaks Drive and Bobbitt Drive 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:

- 170 single-family homes
- 75 townhomes

Per the Town of Knightdale's Unified Development Ordinance (UDO), the study analyzes traffic conditions during the weekday AM and PM peak hours for the following scenarios:

- 2024 Existing Traffic Conditions
- 2030 (build year+1) No-Build Traffic Conditions
- 2030 (build year+1) Build Traffic Conditions
- 2039 (build year+10) Future Traffic Conditions

1.1. Site Location and Study Area

Refer to Figure 1 for the site location map.

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

- Buffaloe Road and Lucas Road
- Buffaloe Road and Quiet Oaks Drive
- Buffaloe Road and Bobbitt Drive
- Buffaloe Road and Horton Road

- Horton Road and Horton Mill Drive
- Horton Road and Old Knight Road
- Horton Road and Lucas Road

1.2. Proposed Land Use and Site Access

The proposed development is assumed to consist of the following uses:

- 170 single-family homes
- 75 townhomes

Access is proposed via one (1) new full movement driveway along Buffaloe Road and internal connections to Quiet Oaks Road, Bobbitt Drive, Proc Ridge Lane, and the Old Knight Road extension (a part of the Weldon Village adjacent development). 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.

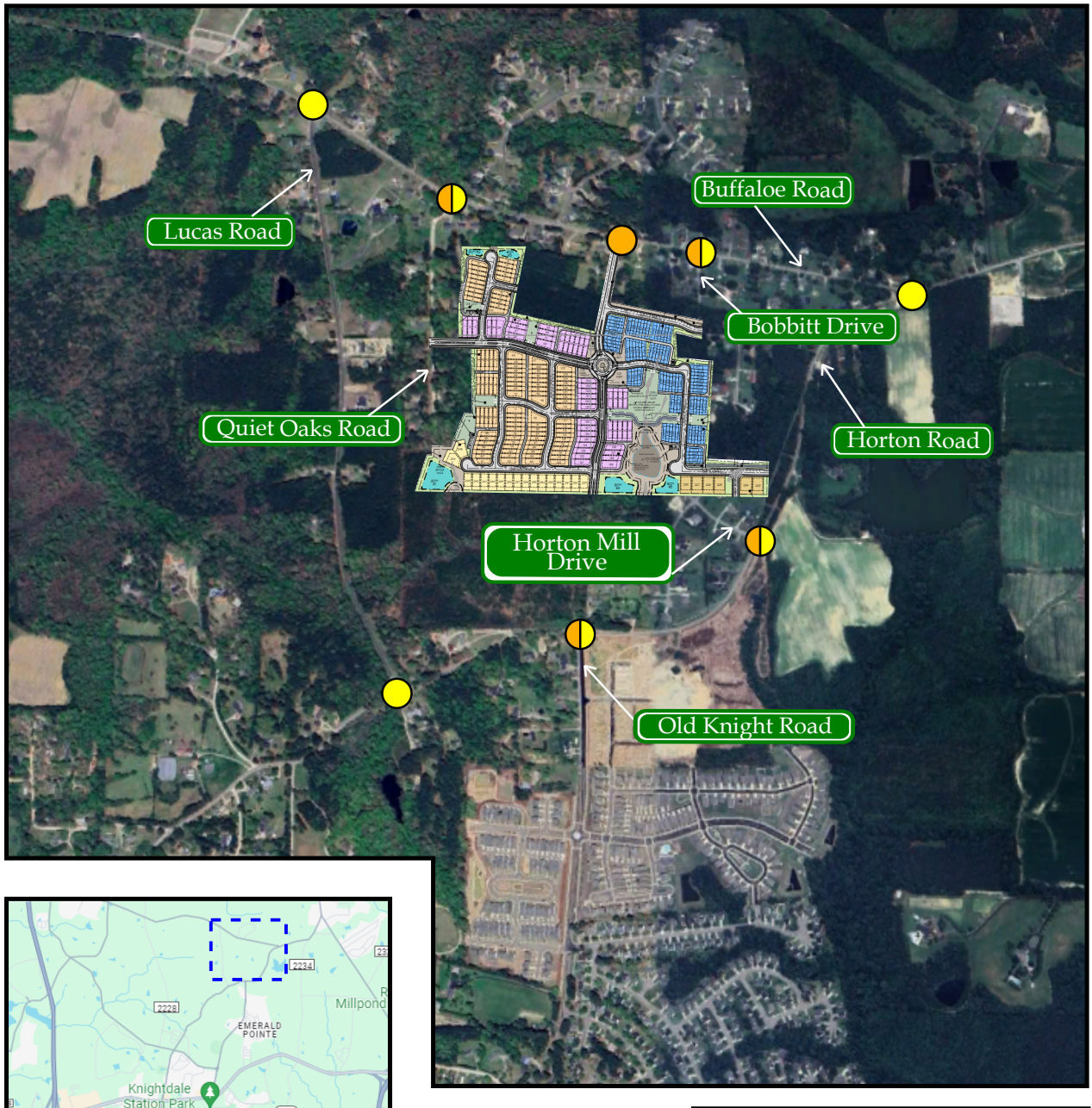
1.4. Existing Roadways

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)
Buffaloe Road	SR 2215	2-lane undivided	45 mph	3,900
Lucas Road	SR 2260	2-lane undivided	45 mph	1,200
Bobbitt Drive	N/A	2-lane undivided	Not Posted (25 mph assumed)	*
Horton Road	SR 2231	2-lane undivided	45 mph	1,900
Horton Mill Drive	N/A	2-lane undivided	Not Posted (25 mph assumed)	*
Old Knight Road	SR 2049	2-lane undivided	45 mph	*

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



N

LEGEND

- Study Intersection
- Proposed Site Access
- Study Area

DRMP

Terravita
Knightdale, NC

Site Location Map

Scale: Not to Scale | Figure 1

BUILDING SETBACK TABLE

SINGLE FAMILY BUILDING SETBACKS	MIN	MAX
FRONT	10 FT	N/A
CORNER SIDE	10 FT	N/A
SIDE YARD SETBACK*	"20%"	N/A
REAR YARD SETBACK	25 FT	N/A
TOWNHOME BUILDING SETBACKS	**MIN**	**MAX**
FRONT	0 FT	25 FT
SIDE YARD SETBACK*	10 FT	N/A
REAR YARD SETBACK	15 FT	N/A

*20% OF LOT WIDTH, SIDE SETBACK SHALL BE CALCULATED AS AN AGGREGATE. LOTS GREATER THAN OR EQUAL TO 60' IN WIDTH SHALL HAVE MINIMUM SETBACK OF 5'. LOTS LESS THAN 60' IN WIDTH SHALL HAVE A MINIMUM SETBACK OF 3'. SIDE YARDS OF CORNER LOTS SHALL BE A "IF PARTIWALL EXISTS, 0' SIDE YARD MIN.

LOT AREA CALCULATIONS

GROSS SITE AREA		60.68 AC
AREA IN INTERNAL PUBLIC STREET RIGHT-OF-WAY		13.38 AC
AREA IN EXISTING ACCESS EASEMENT		2.12 AC
NET SITE AREA		44.58 AC
AREA IN APPROX. 54'X120' SINGLE FAMILY RESIDENTIAL LOTS		2.41 AC
AREA IN APPROX. 60'X120' SINGLE FAMILY RESIDENTIAL LOTS		1.35 AC
AREA IN APPROX. 30'X140' REAR-LOADED SINGLE FAMILY RESIDENTIAL LOTS		10.56 AC
AREA IN APPROX. 35'X140' REAR-LOADED SINGLE FAMILY RESIDENTIAL LOTS		5.83 AC
AREA IN REAR-LOADED TOWNHOUSE LOTS		5.43 AC
TOTAL AREA IN OPEN SPACE	41.50%	18.50 AC
AREA IN ACTIVE RECREATIONAL OPEN SPACE	9.60%	4.28 AC
AREA IN PASSIVE RECREATIONAL OPEN SPACE	11.23%	5.00 AC
AREA IN COMMON AREA OPEN SPACE	13.82%	6.16 AC
AREA IN PRIVATE ALLEY EASEMENTS		3.06 AC
TOTAL UNITS PROPOSED	245	4.0 UN/AC
'59' SINGLE FAMILY (4 BEDROOM)	17	
'60' SINGLE FAMILY (4 BEDROOM)	6	
'30' REAR-LOADED SINGLE FAMILY (3 BEDROOM)	100	
'35' REAR-LOADED SINGLE FAMILY (3 BEDROOM)	47	
REAR-LOADED TOWNHOUSE (3 BEDROOM)	75	

OPEN SPACE AREA TABLE

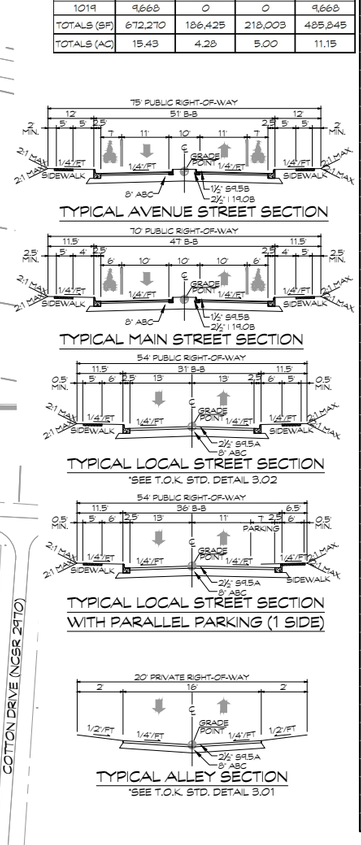
LOT NO.	TOTAL OPEN SPACE AREA (SF)	ACTIVE OPEN SPACE AREA (SF)	PASSIVE OPEN SPACE AREA (SF)	COMMON OPEN SPACE AREA (SF)
1000	72,786	15,535	12,410	44,841
1001	7,617	7,617	0	0
1002	29,063	11,299	0	17,764
1003	5,824	0	5,824	0
1004	138,843	34,908	27,162	76,773
1005	3,739	0	3,739	0
1006	5,875	0	5,875	0
1007	6,502	0	6,502	0
1008	11,507	0	11,507	0
1009	291,942	89,301	129,119	73,522
1010	619	0	0	619
1011	1,049	0	0	1,049
1012	1,123	0	0	1,123
1013	600	0	0	600
1014	1,823	0	0	1,823
1015	18,191	0	0	18,191
1016	15,865	0	15,865	0
1017	46,168	24,299	0	21,869
1018	3,466	3,466	0	0
1019	9,668	0	0	9,668
TOTALS (SF)	672,270	186,425	218,003	485,845
TOTALS (AC)	15.43	4.28	5.00	11.15

LOT AREA TABLE

LOT #	(AC)	(SF)
13	0.10	4,211
14	0.10	4,198
15	0.10	4,198
16	0.10	4,198
17	0.12	5,043
18	0.12	5,048
19	0.10	4,200
20	0.10	4,200
21	0.10	4,200
22	0.13	5,627
23	0.13	5,677
24	0.11	4,900
25	0.11	5,001
26	0.11	4,888
27	0.17	7,266
28	0.11	4,900
29	0.11	4,900
30	0.11	4,900
31	0.11	4,900
32	0.11	4,900
33	0.11	4,900
34	0.14	6,128
35	0.12	5,248
36	0.12	5,248
37	0.12	5,248
38	0.12	5,248
39	0.12	5,232
40	0.12	5,287
41	0.10	4,400
42	0.10	4,400
43	0.10	4,401
44	0.10	4,401
45	0.12	5,423
46	0.10	4,401
47	0.10	4,401
48	0.10	4,401
49	0.10	4,401
50	0.12	5,180
51	0.10	4,200
52	0.10	4,200
53	0.10	4,200
54	0.10	4,200
55	0.13	5,511
56	0.10	4,340
57	0.10	4,343
58	0.10	4,311
59	0.10	4,276
60	0.10	4,211
61	0.11	4,950
62	0.17	7,304
63	0.10	4,200
64	0.10	4,200
65	0.10	4,200
66	0.10	4,200
67	0.10	4,200
68	0.10	4,200
69	0.10	4,200
70	0.15	6,485
71	0.16	6,862
72	0.10	4,200
73	0.10	4,200
74	0.10	4,200
75	0.10	4,200
76	0.10	4,198
77	0.10	4,175
78	0.10	4,148
79	0.10	4,149
80	0.10	4,150
81	0.10	4,184
82	0.15	6,448
83	0.14	6,308
84	0.10	4,184
85	0.10	4,153
86	0.10	4,148
87	0.10	4,144
88	0.10	4,188
89	0.10	4,198
90	0.10	4,200
91	0.10	4,200
92	0.21	9,170
93	0.17	7,542
94	0.10	4,200
95	0.10	4,200
96	0.10	4,200
97	0.10	4,200
98	0.10	4,200
99	0.10	4,200
100	0.10	4,216
101	0.15	6,474
102	0.15	6,735
103	0.10	4,200
104	0.10	4,200
105	0.10	4,200
106	0.10	4,200
107	0.10	4,200
108	0.10	4,200
109	0.10	4,200
110	0.14	6,026
111	0.13	5,466
112	0.10	4,200
113	0.10	4,200
114	0.10	4,197
115	0.10	4,165
116	0.10	4,148
117	0.10	4,148
118	0.10	4,155
119	0.10	4,192
120	0.13	5,466
121	0.15	6,333
122	0.12	5,430
123	0.12	5,405
124	0.12	5,429
125	0.12	5,353
126	0.12	5,315
127	0.12	5,320
128	0.14	6,308
129	0.13	5,748
130	0.11	4,900
131	0.11	4,900
132	0.11	4,900
133	0.11	4,900
134	0.11	4,784
135	0.18	7,834
136	0.12	5,093
137	0.12	5,141
138	0.14	5,908
139	0.14	5,936
140	0.11	4,900
141	0.11	4,900
142	0.11	4,900
143	0.11	4,900
144	0.13	5,880
145	0.11	4,900
146	0.11	4,900
147	0.11	4,881
148	0.06	2,540
149	0.06	2,645
150	0.06	2,709
151	0.09	3,971
152	0.09	3,950
153	0.06	2,703
154	0.06	2,694
155	0.06	2,694
156	0.09	3,876
157	0.06	2,640
158	0.06	2,640
159	0.06	2,640
160	0.06	2,640
161	0.06	2,640
162	0.06	2,640
163	0.09	3,840
164	0.06	2,640
165	0.06	2,640
166	0.06	2,640
167	0.06	2,640
168	0.06	2,640
169	0.08	3,543
170	0.09	3,921
171	0.06	2,648
172	0.06	2,640
173	0.06	2,631
174	0.06	2,623
175	0.09	3,806
176	0.09	3,956
177	0.06	2,804
178	0.07	2,911
179	0.07	3,050
180	0.07	3,221
181	0.11	4,983
182	0.08	3,552
183	0.06	2,581
184	0.06	2,868
185	0.10	4,457
187	0.07	2,837
188	0.06	2,770
189	0.06	2,720
190	0.06	2,713
191	0.06	2,713
192	0.09	3,812
210	0.06	2,640
211	0.06	2,640
212	0.06	2,640
213	0.09	3,840
220	0.06	2,843
221	0.06	2,640
222	0.09	3,840
223	0.22	9,600
224	0.25	10,124
225	0.22	9,600
226	0.22	9,600
227	0.22	9,600
228	0.22	9,600
229	0.16	6,832
230	0.16	7,080
231	0.16	7,080
232	0.16	7,080
233	0.16	7,080
234	0.16	7,080
235	0.16	7,080
236	0.16	7,080
237	0.16	7,080
238	0.16	7,080
239	0.16	7,080
240	0.16	7,080
241	0.16	7,080
242	0.16	7,080
243	0.16	7,136
244	0.23	10,012
245	0.22	9,670
1007	0.15	6,502

OPEN SPACE

LOT #	(AC)	(SF)
1000	1.67	72,786
1001	0.17	7,617
1003	0.13	5,824
1004	3.19	138,843
1005	0.09	3,739
1006	0.13	5,875
1007	0.15	6,502
1008	0.26	11,507
1009	6.70	291,942
1010	0.01	619
1011	0.02	1,049
1012	0.03	1,123
1014	0.04	1,823
1015	0.45	19,414
1016	0.36	15,865
1017	1.06	46,168
1018	0.08	3,466
1019	0.22	9,668



GENERAL NOTES:

1. THE CONCEPTUAL PLAN WAS PREPARED BY CHARLES R. WALKER, III, PLA AND ENTITLEMENT PRESERVATION GROUP.
2. THIS PLAN IS CONCEPTUAL IN NATURE AND SUBJECT TO CHANGE AS DESIGN PROGRESSES.
3. BOUNDARY INFORMATION IS TAKEN FROM A SURVEY BY THIS OFFICE.
4. SITE TOPOGRAPHIC INFORMATION IS TAKEN FROM A COMBINATION OF DATA FROM A SURVEY PERFORMED BY THIS OFFICE AND WAKE COUNTY GIS INFORMATION.
5. PLANIMETRIC AND TOPOGRAPHIC INFORMATION FOR AREAS OUTSIDE OF THIS SITE ARE TAKEN FROM WAKE COUNTY GIS INFORMATION.
6. ALL MATERIALS AND CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE TOWN OF KNIGHTDALE, NCDOT, AND NCDEQ STANDARDS AND SPECIFICATIONS.
7. THERE ARE NO FEMA DESIGNATED FLOOD ZONES LOCATED ON THIS PROPERTY
8. EXISTING UTILITIES SHOWN ARE APPROXIMATE. CONTRACTOR RESPONSIBLE FOR LOCATION OF ALL EXISTING ABOVE AND BELOW GROUND UTILITY FIELD LOCATION PRIOR TO ANY CONSTRUCTION.
9. NO NEW BUFFER IMPACTS SHALL OCCUR PRIOR TO APPROVAL FROM NCDEQ.
10. WETLAND AND STREAM BUFFER LOCATIONS ARE SUBJECT TO FIELD VERIFICATION.
11. STORMWATER CONTROL MEASURES ARE CONCEPTUAL AND ARE SUBJECT TO FUTURE SIZING CALCULATIONS AND DESIGN.

NOT FOR CONSTRUCTION FOR REVIEW ONLY

SHEET C2.01 | SHEET C2.02 | SHEET C2.03 | SHEET C2.04

NORTH
GRAPHIC SCALE 1" = 100

TERRAVITA

TOWN OF KNIGHTDALE NORTH CAROLINA

SCALE:	1"=100
DATE:	JULY 21, 2023
PROJECT NUMBER:	2016-012.009
CLIENT:	SITE INVESTMENTS, LLC
PLAN TYPE:	SKETCH PLAN REVIEW

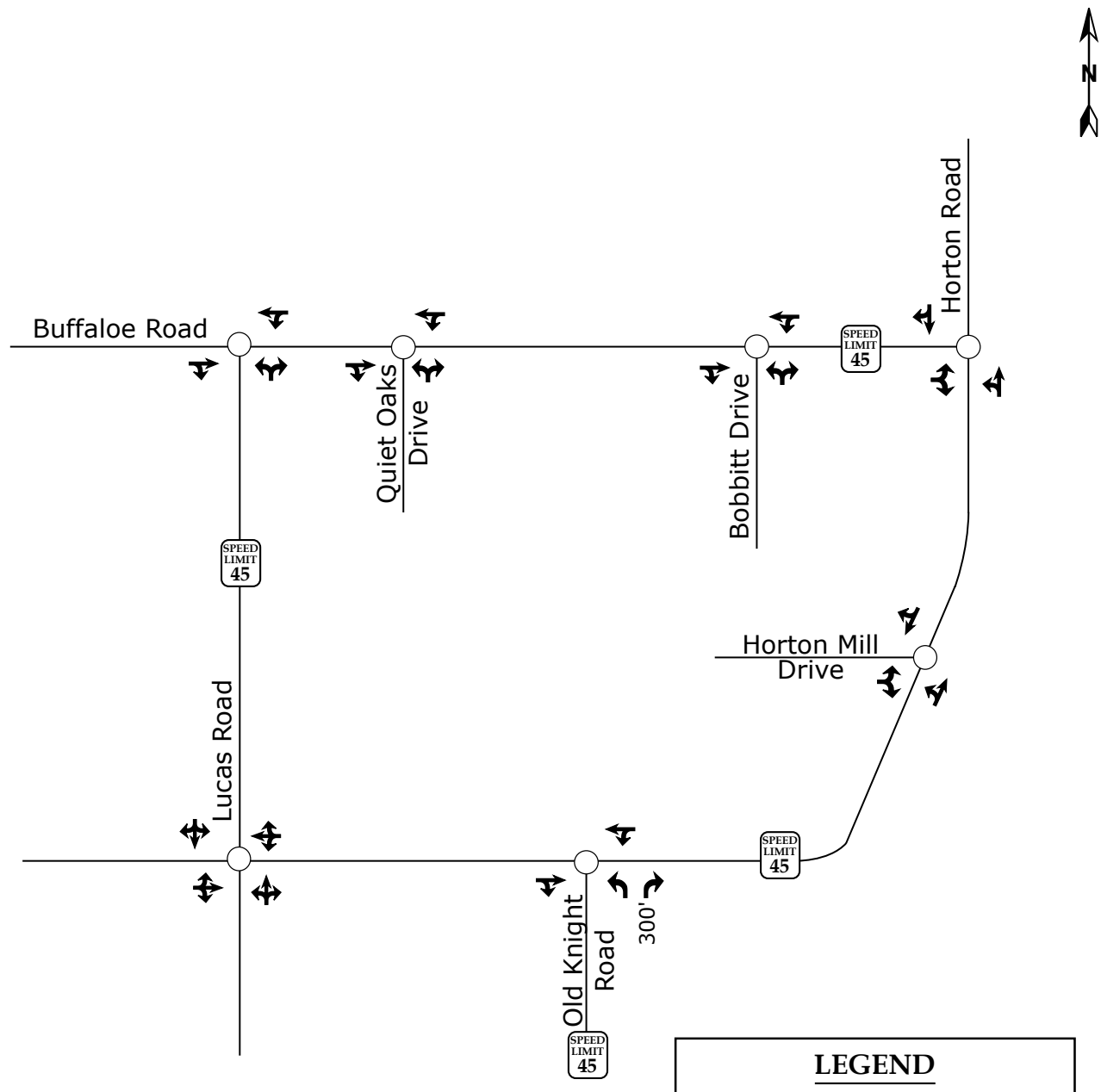
OVERALL PRELIMINARY SITE LAYOUT PLAN

TOWN COMMENTS	12/14/2023
TOWN COMMENTS	3/18/2024
TOWN COMMENTS	5/17/2024

RELEASED FOR CONSTRUCTION DATE (SEE COVER) ■ NO □ YES

PRIEST, CRAVEN & ASSOCIATES, INC.
LAND USE CONSULTANTS PLANNERS / LANDSCAPE DESIGNERS / SURVEYORS / ENGINEERS
3803 - B Computer Drive, Suite 104 Raleigh, N.C. 27609 . Phone 919 / 781-0300 . Fax 919 / 782-1288 . Email PCA@PriestCraven.com / Firm #: C-0488

SHEET # C2.00



DRMP	Terravita Knightdale, NC	2024 Existing Lane Configurations	
		Scale: Not to Scale	Figure 3

2. 2024 EXISTING PEAK HOUR CONDITIONS

2.1. 2024 Existing Peak Hour Traffic Volumes

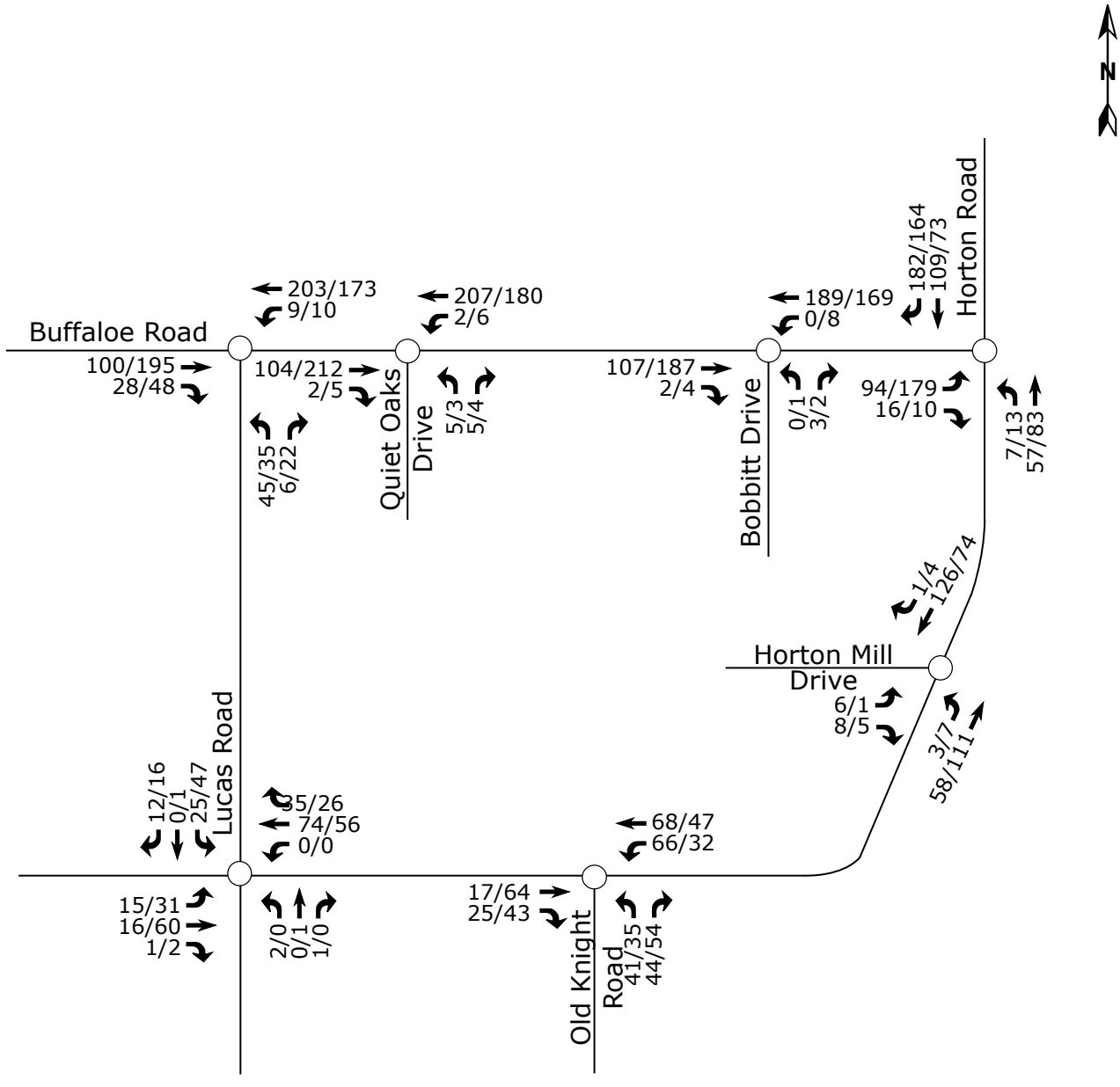
Existing peak hour traffic volumes were determined based on traffic counts conducted at the study intersections listed below, in October of 2024 during a typical weekday AM (7:00 AM – 9:00 AM) and PM (4:00 PM – 6:00 PM) peak periods:

- Buffaloe Road and Lucas Road
- Buffaloe Road and Quiet Oaks Drive
- Buffaloe Road and Bobbitt Drive
- Buffaloe Road and Horton Road
- Horton Road and Horton Mill Drive
- Horton Road and Old Knight Road
- Horton Road and Lucas Road

Weekday AM and PM traffic volumes were balanced between study intersections, where appropriate. It should be noted that traffic volumes at the intersection of Buffaloe Road and Quiet Oaks Drive were not recorded. Google Earth and the Town parcel map shows that 16 single family homes are located along Quiet Oaks Drive. The Institute for Transportation Engineers (ITE) Trip Generation Manual, 11th edition, was used to generate traffic for those 16 single-family homes. Through volumes were then balanced along Buffaloe Road with the Lucas Road intersection. Refer to Figure 4 for 2024 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 2024 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. The results of the analysis are presented in Section 7 of this report.



LEGEND

- ○ Unsignalized 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	Terravita Knightdale, NC	2024 Existing Peak Hour Traffic
		Scale: Not to Scale | Figure 4

3. 2030 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 projected weekday AM and PM peak hour traffic volumes. Per the Town UDO, a 1% growth rate was applied to the projected traffic for every year after 2030 in the future analysis. Refer to Figures 5a and 5b for 2030 and 2039 projected peak hour traffic, respectively.

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:

- Haywood Glen
- Weldon Village
- Brio Development

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
Haywood Glen	Southeast quadrant of Horton Road and Old Knight Road	2025	107 single-family homes and 10,000 s.f. of commercial	N/A *Trip generation letter applied to roadway network*
Weldon Village	South of proposed site, internal connectivity proposed	2029	Mixed-use consisting of residential, office, and retail	October 2022 By RKA
Brio Development	South of Buffaloe Road, west of Lucas Road	2027	Mixed-use residential and retail	May 2021 By RKA

The Haywood Glen development is expected to be constructed by the end of 2025. After the TIA was approved, a trip generation letter was done for the proposed site, adding on commercial square footage. The trip generation from the letter was distributed based on distributions for the proposed site and engineering judgement. Weldon Village is expected to be constructed the same year as the proposed development and are proposed to have interconnectivity. Roadway improvements at the intersection of Horton Road and Old Knight Road are considered under all future analysis conditions of the proposed site. The Brio development along Buffaloe Road, west of the proposed site, is expected to be constructed by the end of 2027. Site trips expected to utilize the study area were included in all future analysis.

It should be noted that the adjacent developments were approved, during scoping, by the Town. Adjacent development trips are shown in Figure 6. Adjacent development information can be found in Appendix C.

3.3. Future Roadway Improvements

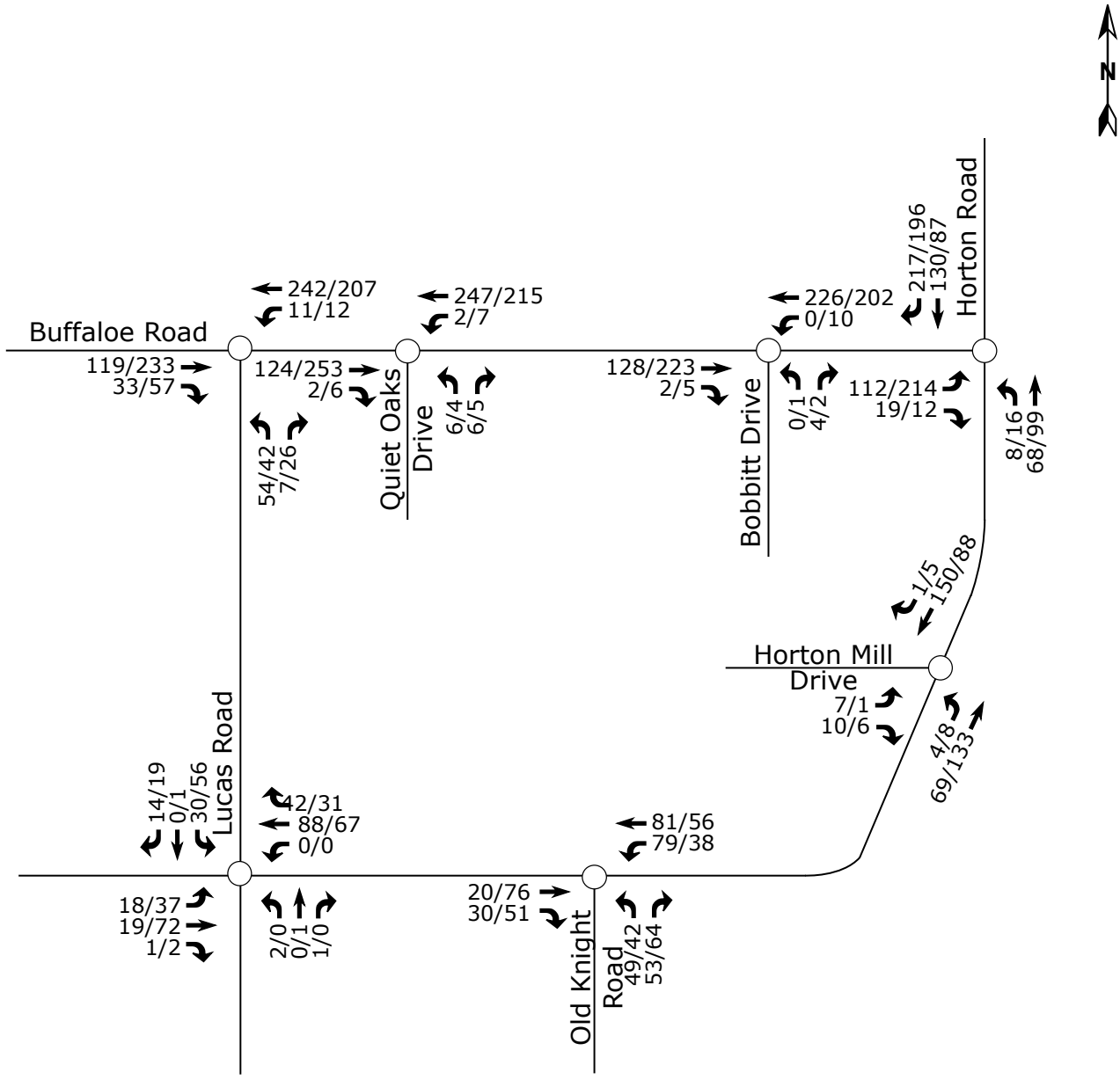
Based on coordination with the Town, it was determined there were no future roadway improvements to consider with this study.

3.4. No-Build Peak Hour Traffic Volumes

The 2030 no-build traffic volumes were determined by projecting the 2024 existing peak hour traffic to the year 2030, and adding the adjacent development trips. For the future analysis, a 1% growth rate was applied beyond the year 2030 to 2039. Refer to Figures 7a and 7b for illustrations 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

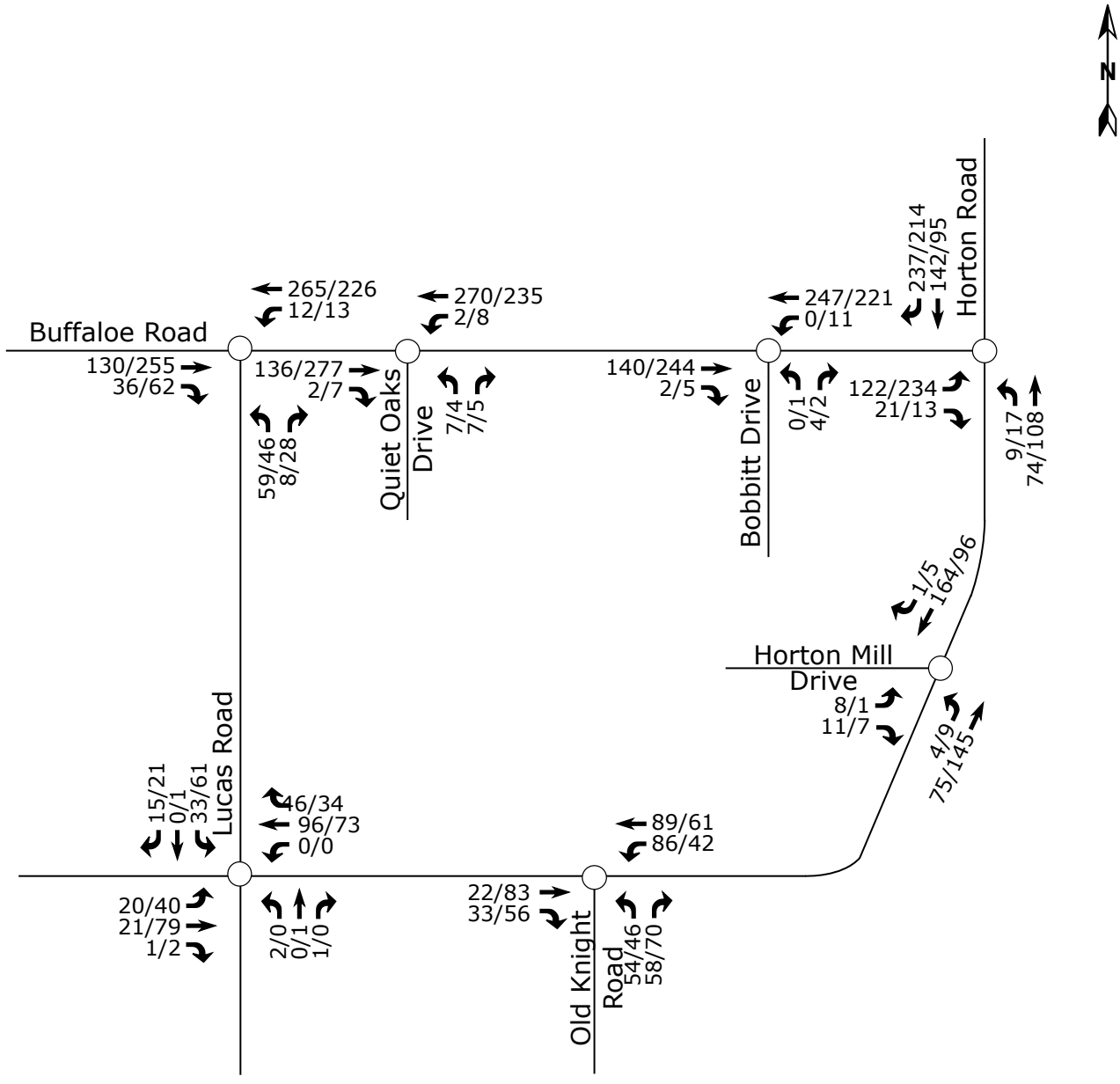
The 2030 no-build AM and PM peak hour traffic volumes at the study intersections were analyzed with future geometric roadway conditions and traffic control. The analysis results are presented in Section 7 of this report.



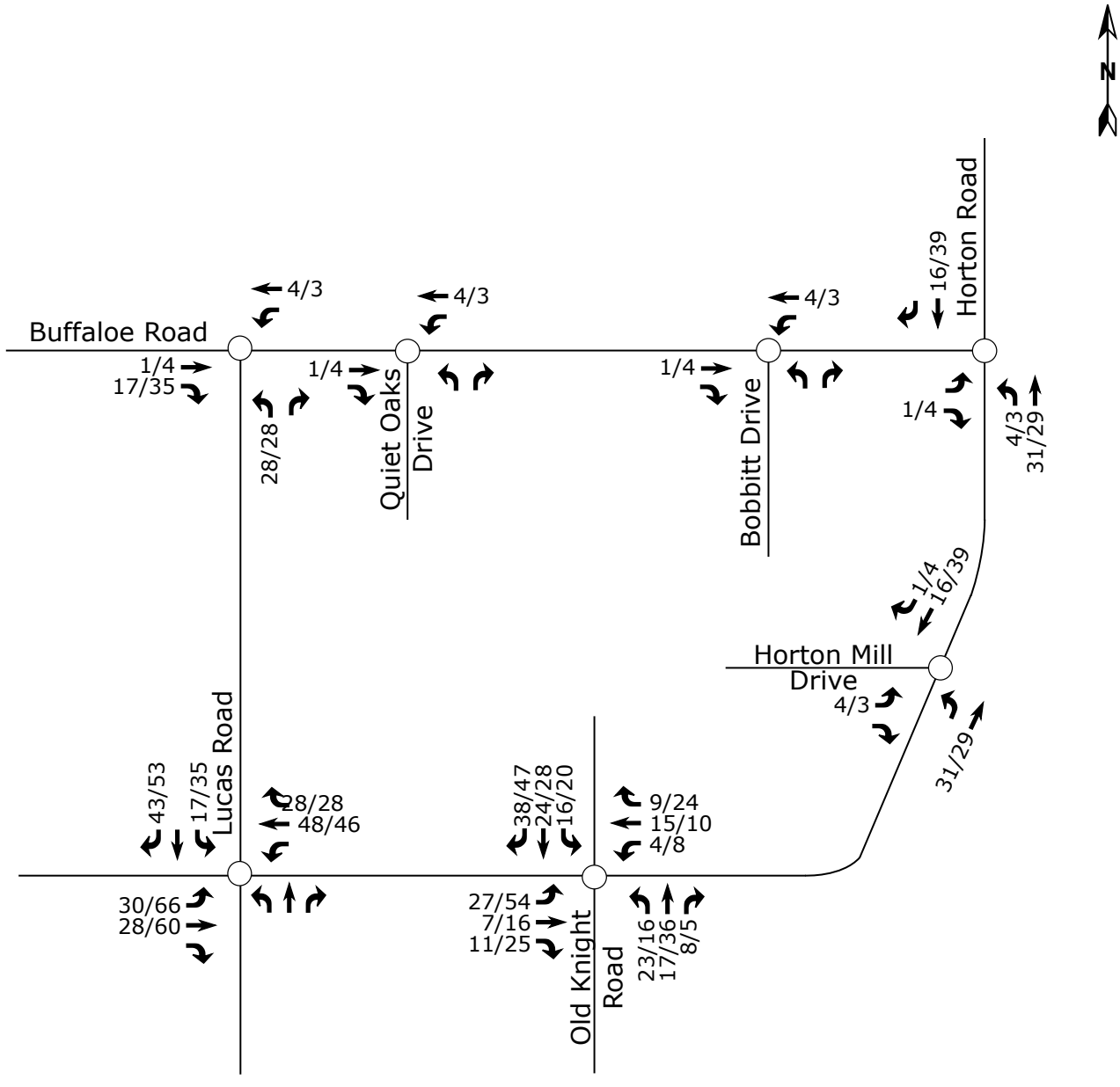
LEGEND

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

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



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

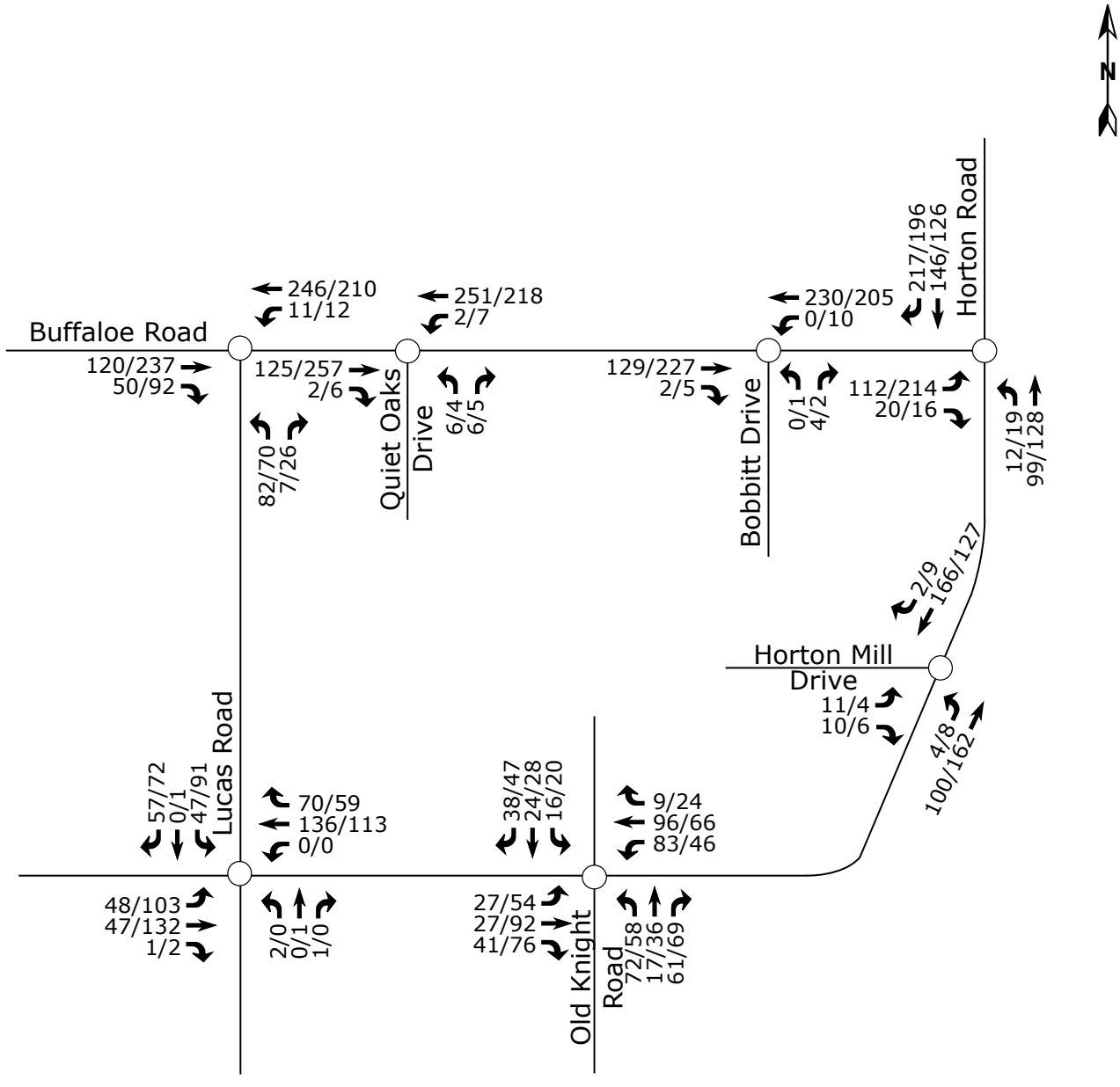


LEGEND

○ Unsignalized Intersection

X / Y → Weekday AM / PM Peak Hour Adjacent Development Trips

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

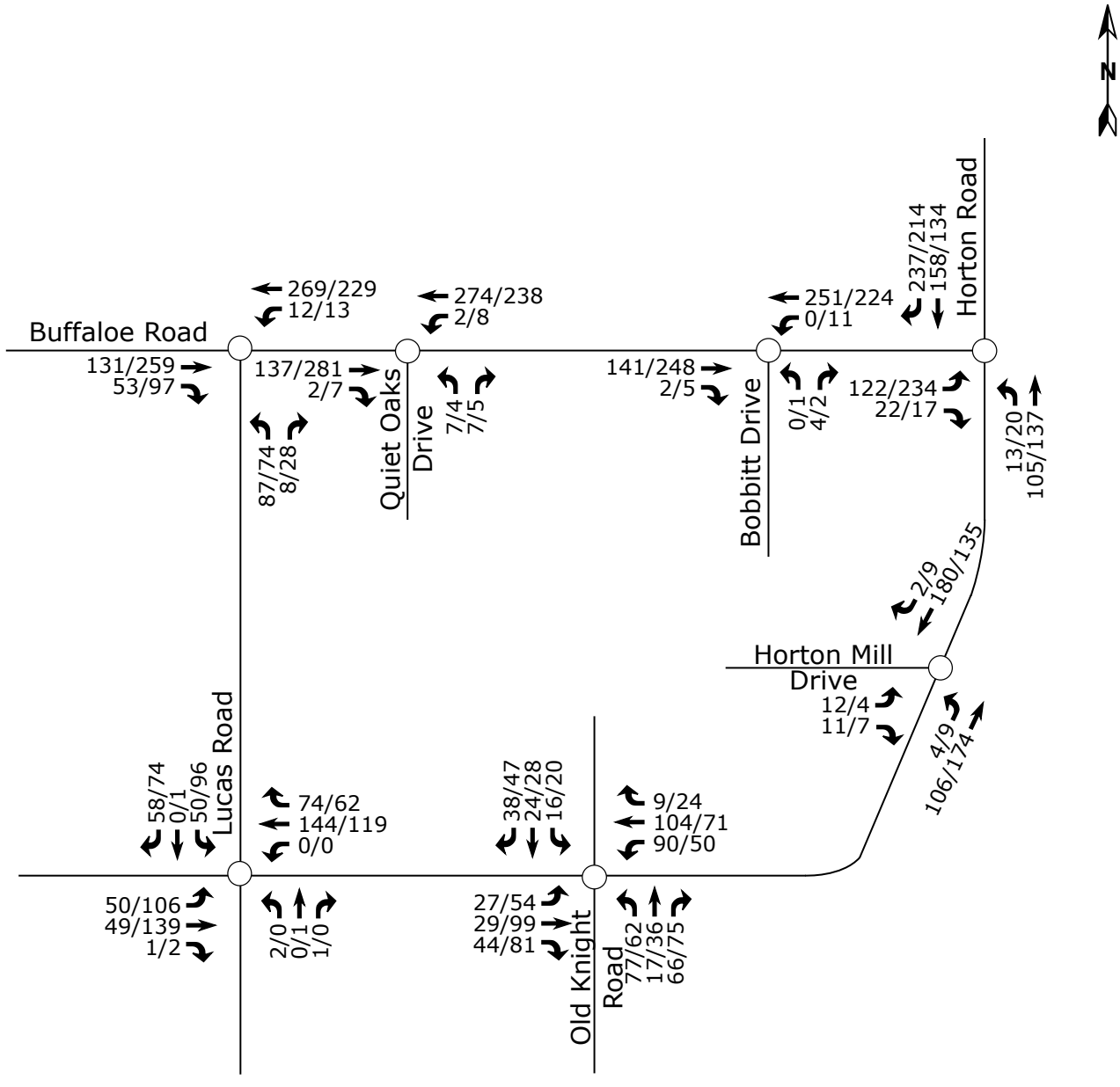


LEGEND

- ○ Unsignalized 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	Terravita Knightdale, NC	2030 No-Build Peak Hour Traffic	
		Scale: Not to Scale	Figure 7a



LEGEND

- ○ Unsignalized 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	Terravita 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	Enter	Exit
Single Family Lots (210)	170 DU	1,644	30	91	103	61
Townhomes (215)	75 DU	522	8	25	24	17
Total Trips		2,166	38	116	127	78

It is estimated that the proposed development will generate approximately 2,166 total site trips on the roadway network during a typical 24-hour weekday period. Of the daily traffic volume, it is anticipated that 154 trips (38 entering and 116 exiting) will occur during the weekday AM peak hour and 205 trips (127 entering and 78 exiting) will occur during the weekday PM peak hour.

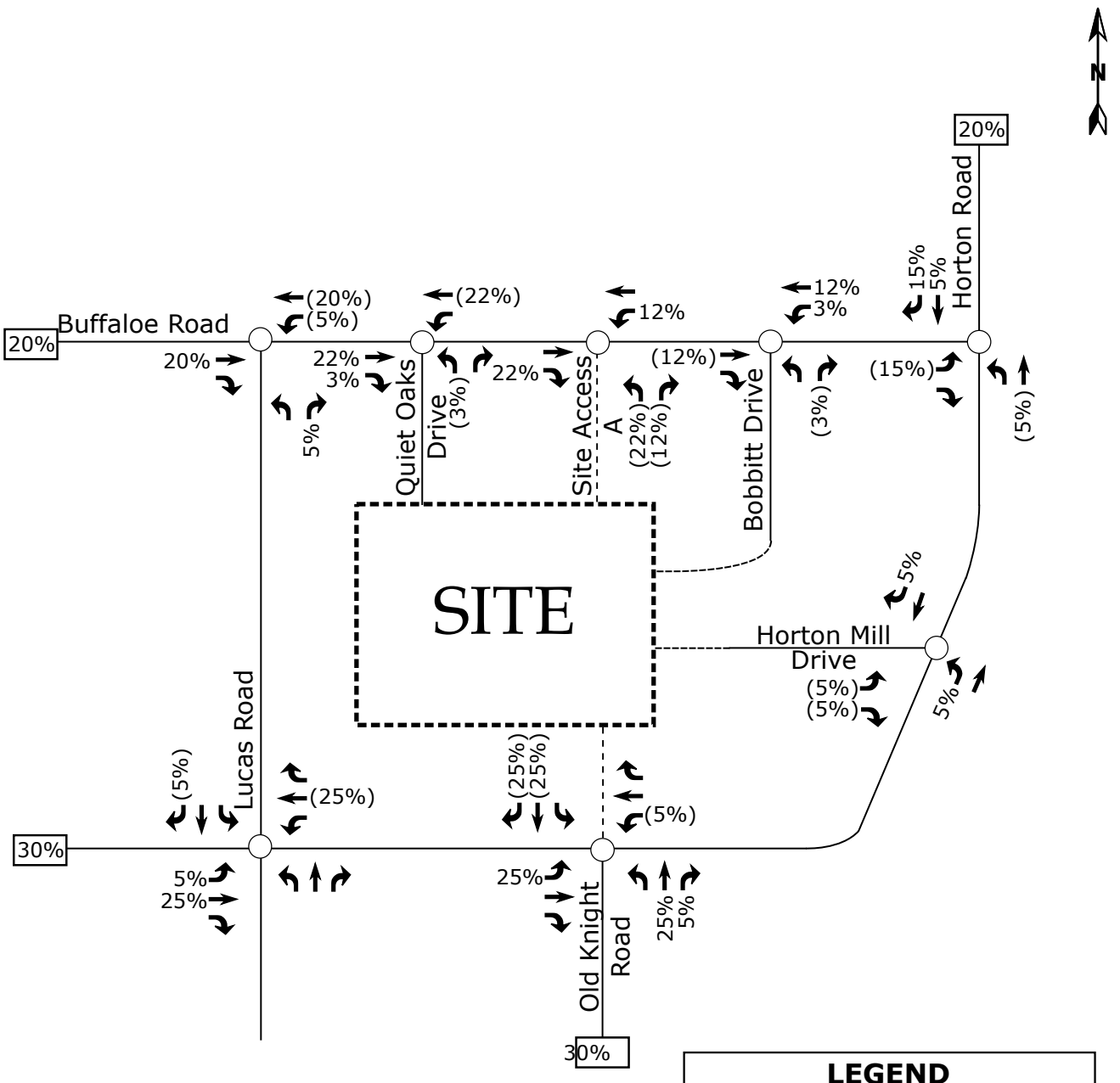
4.2. Site Trip Distribution and Assignment

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

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

- 30% to/from the south via Old Knight Road
- 30% to/from the west via Horton Road
- 20% to/from the west via Buffaloe Road
- 20% to/from the north via Horton Road

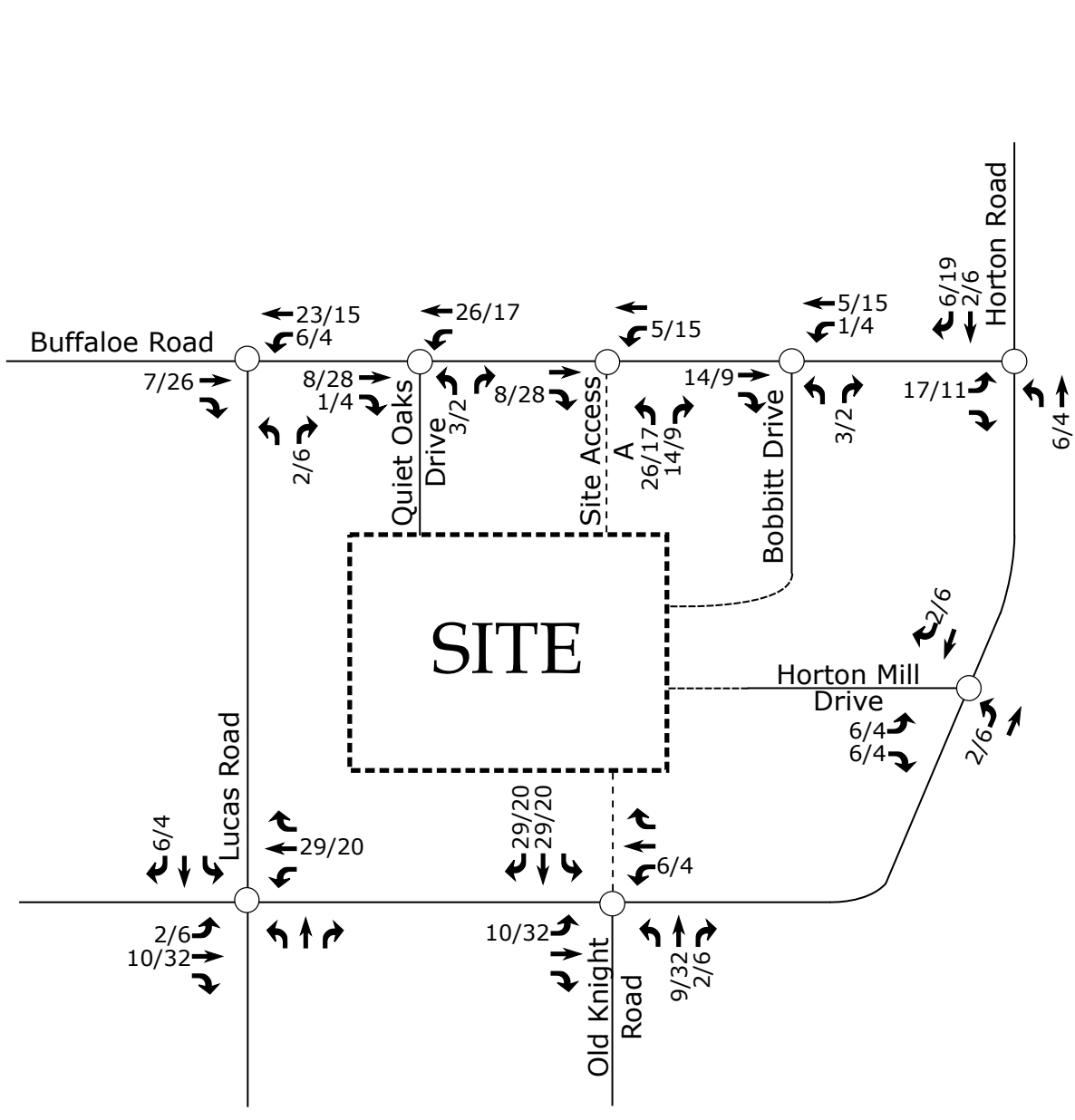
The site trip distribution is shown in Figure 8 and the site trip assignment is shown in Figure 9. Due to connectivity to an adjacent development, some trips are expected to be diverted to use the proposed Site Access. These diverted site trips are shown in Figure 10. The total site trips were determined by adding the site trip assignment and diverted trip assignment together. The total peak hour site trips are shown in Figure 11. It should be noted that the site trip distribution was approved by the Town during scoping.



LEGEND

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

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

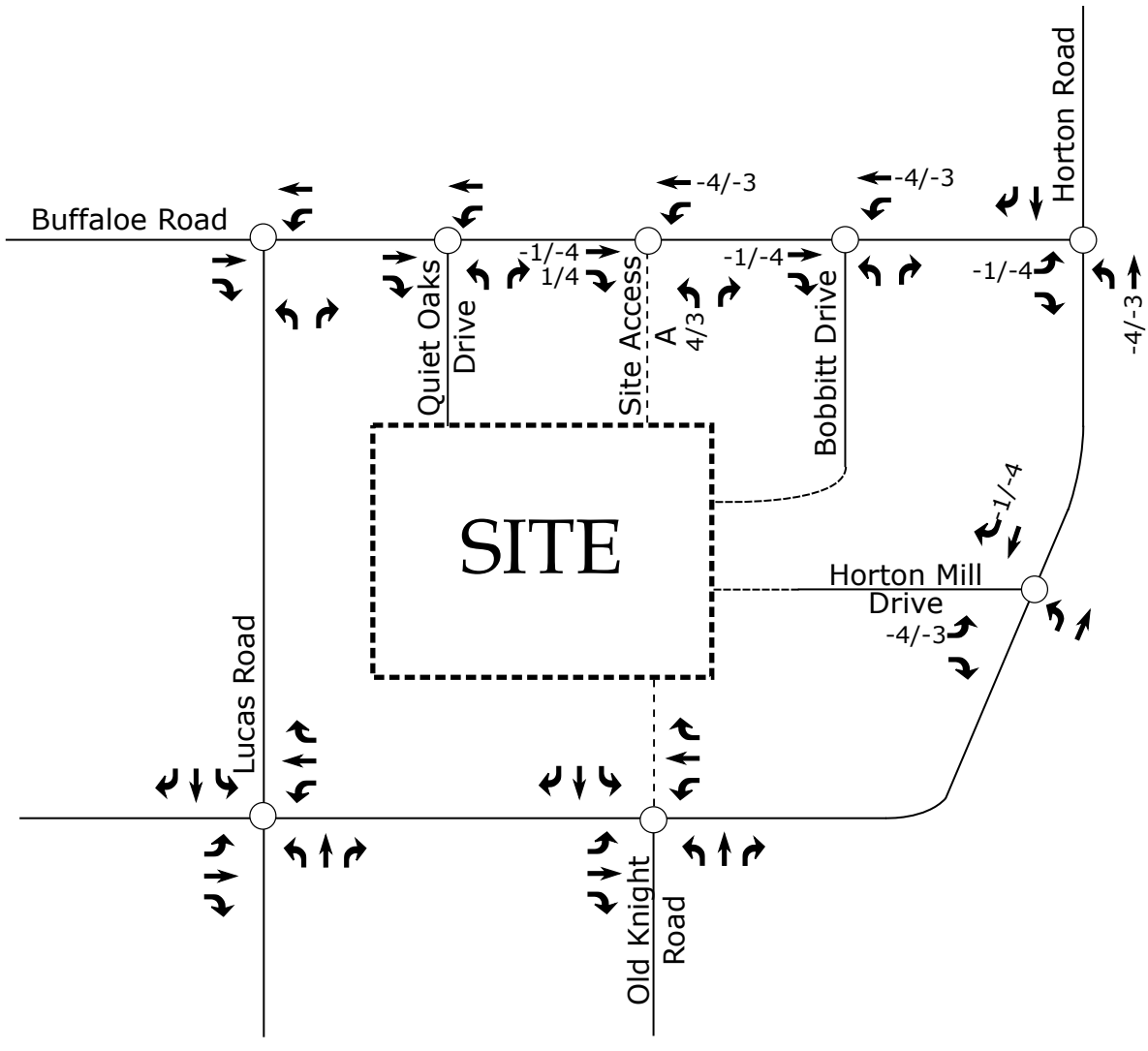


LEGEND

○ Unsignalized Intersection

X / Y → Weekday AM / PM Peak Hour Site Trips

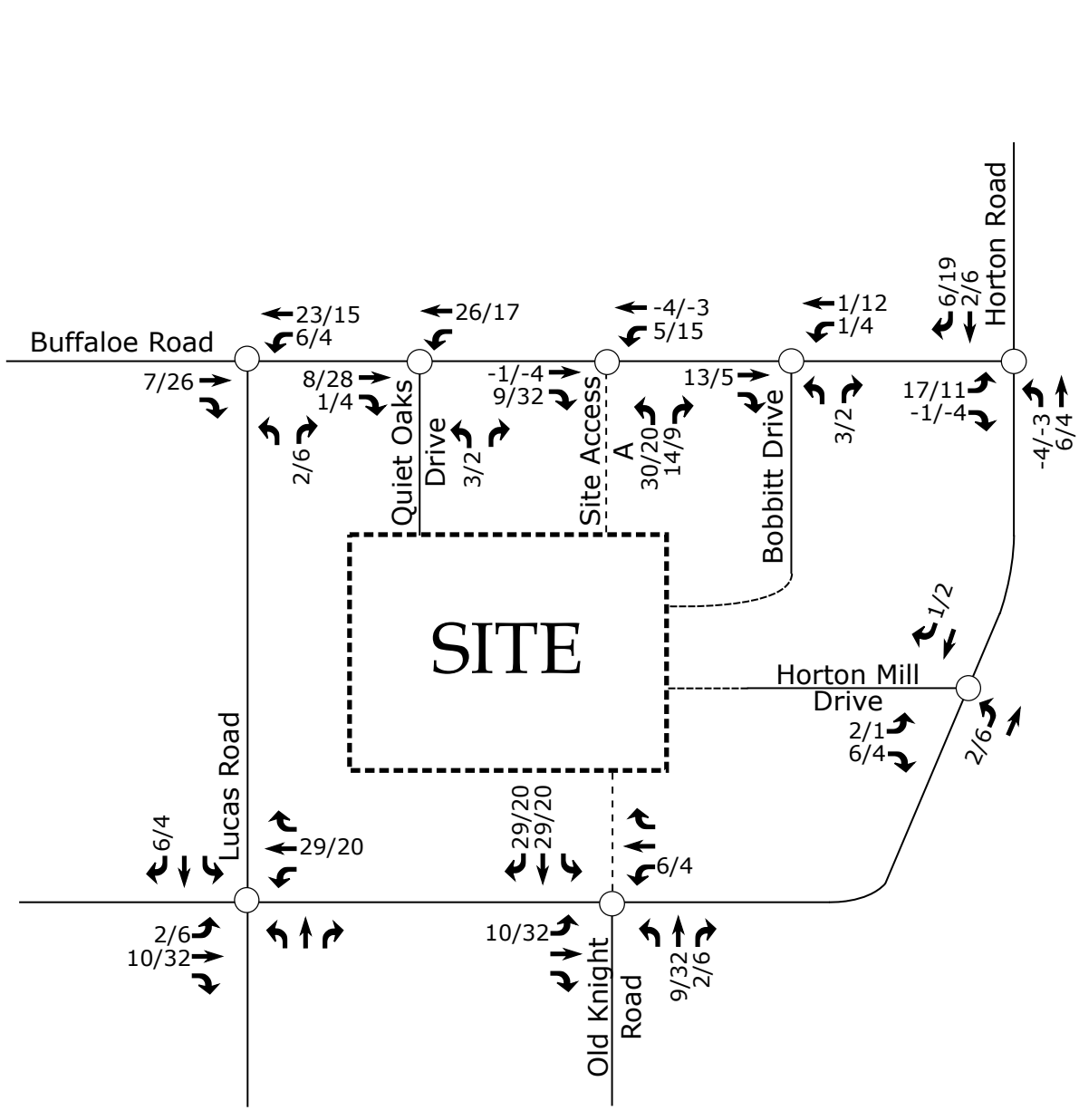
DRMP	Terravita Knightdale, NC	Site Trip Assignment
		Scale: Not to Scale | Figure 9



LEGEND

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

DRMP	Terravita Knightdale, NC	Diverted Site Trip Assignment Scale: Not to Scale | Figure 10



LEGEND

◯ Unsignalized Intersection

X / Y → Weekday AM / PM Peak Hour Site Trips

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

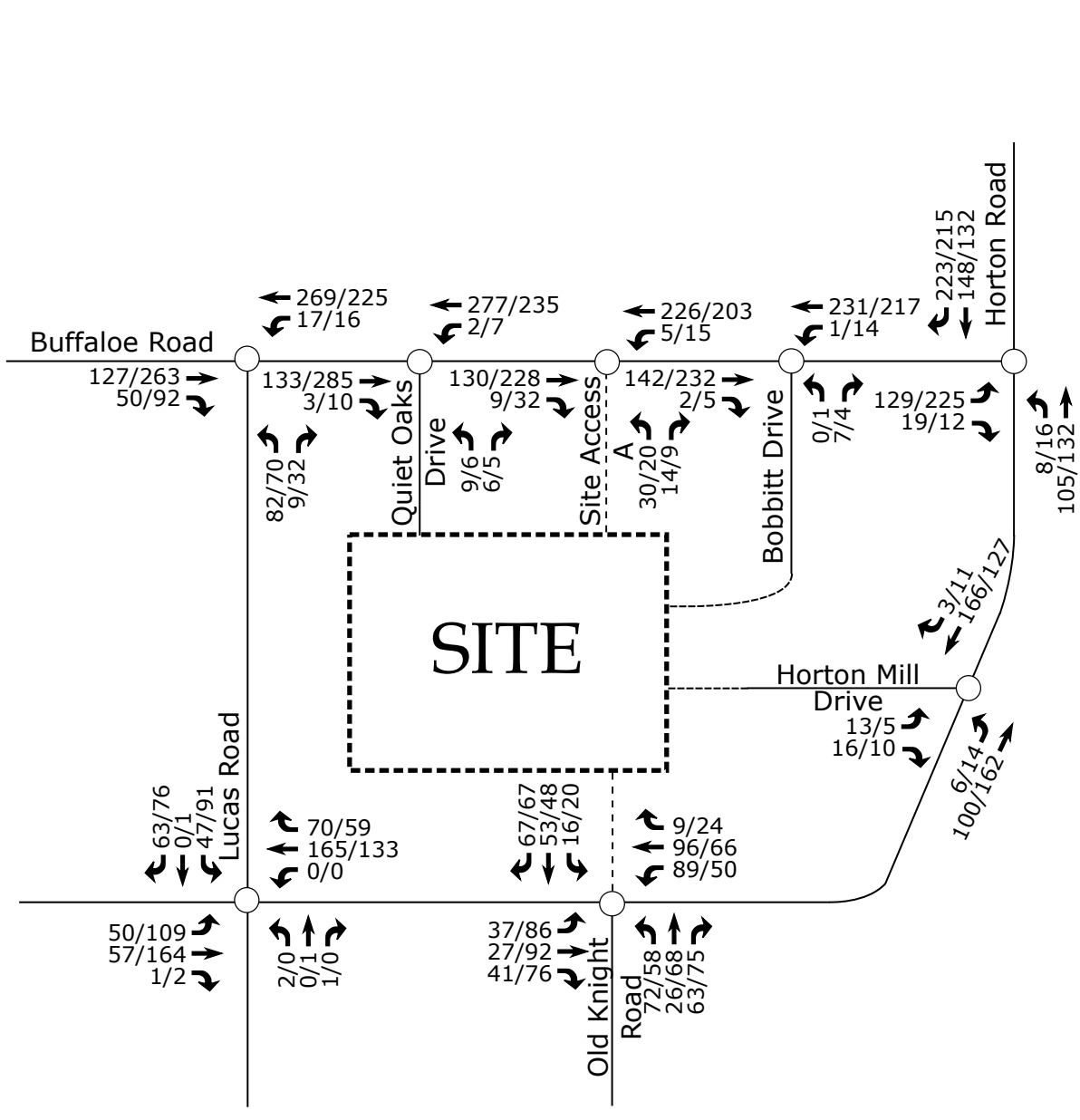
5. BUILD AND FUTURE TRAFFIC CONDITIONS

5.1. Build and Future Peak Hour Traffic Volumes

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

5.2. Analysis of Build and Future Peak Hour Traffic Conditions

Study intersections were analyzed with the 2030 build and 2039 future traffic volumes using the same methodology previously discussed for existing and no-build traffic conditions. Intersections were analyzed with improvements to accommodate future traffic volumes, if necessary. The results of the capacity analysis for each intersection are presented in Section 7 of this report.

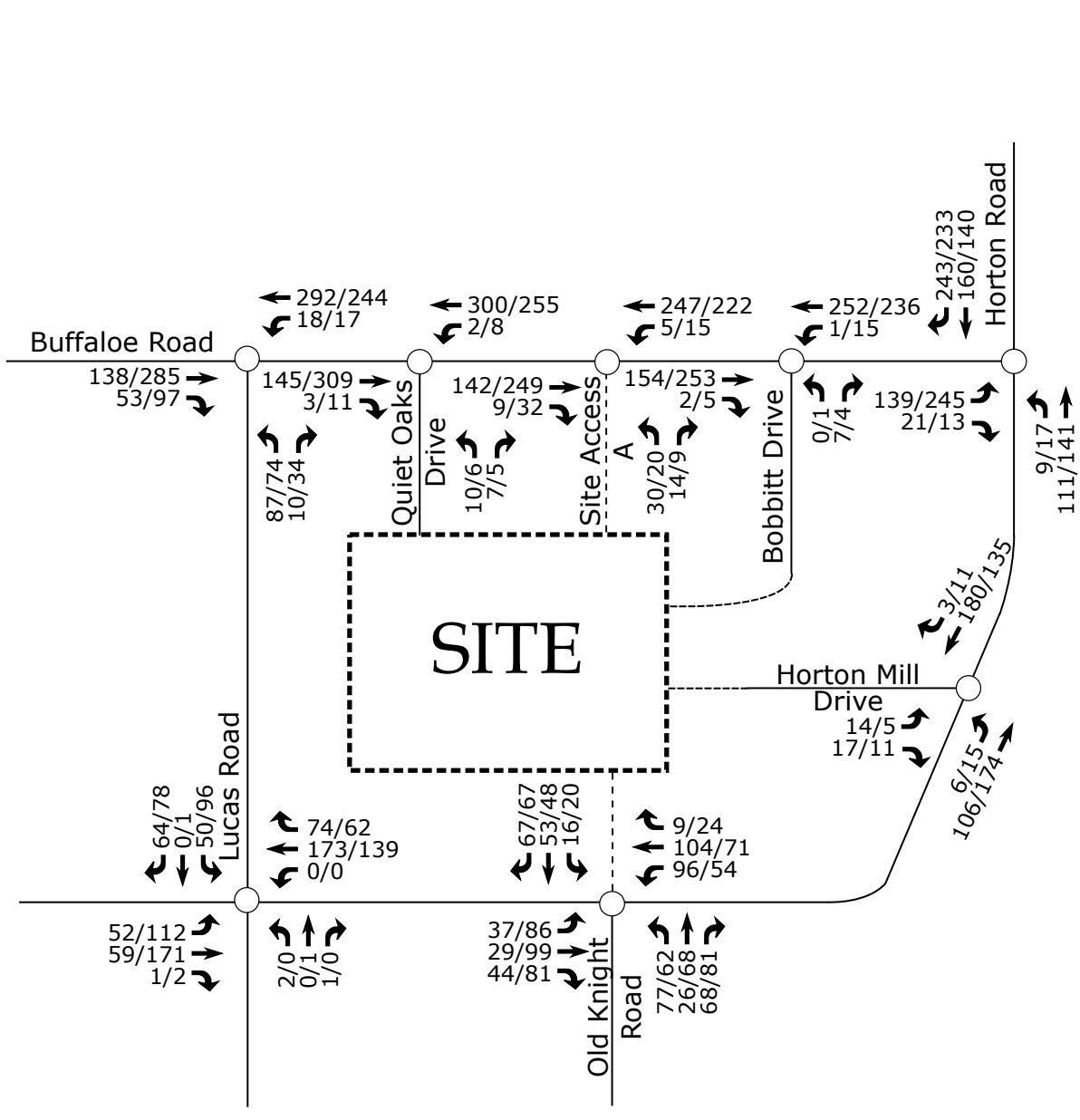


LEGEND

- ○ Unsignalized 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	Terravita Knightdale, NC	2030 Build Peak Hour Traffic
		Scale: Not to Scale | Figure 12a



LEGEND

- ○ Unsignalized 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	Terravita 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. 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 2024 existing, 2030 no-build, 2030 build, and 2039 future traffic conditions:

- Buffaloe Road and Lucas Road
- Buffaloe Road and Quiet Oaks Drive
- Buffaloe Road and Bobbitt Drive
- Buffaloe Road and Horton Road
- Horton Road and Horton Mill Drive
- Horton Road and Old Knight Road
- Horton Road and Lucas Road

The proposed site access was analyzed under 2030 build and 2039 future traffic conditions. Refer to Tables 5-12 for a summary of capacity analysis results. Refer to Appendices D-L for the Synchro capacity analysis reports and SimTraffic queueing reports.

7.1. Buffaloe Road and Lucas 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 Buffaloe Road and Lucas 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)
2024 Existing	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] B (11)[2]	N/A	-- A (8)[1] B (11)[2]	N/A
2030 No-Build	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] B (13)[2]	N/A	-- A (8)[1] B (14)[2]	N/A
2030 Build	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] B (13)[2]	N/A	-- A (8)[1] B (14)[2]	N/A
2039 Future	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] B (14)[2]	N/A	-- A (8)[1] C (15)[2]	N/A

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

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

No improvements are recommended by the developer.

7.2. Buffaloe Road and Quiet Oaks Drive

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 Buffaloe Road and Quiet Oaks Drive

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)
2024 Existing	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] A (10)[2]	N/A	-- A (8)[1] B (11)[2]	N/A
2030 No-Build	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] B (10)[2]	N/A	-- A (8)[1] B (11)[2]	N/A
2030 Build	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] B (11)[2]	N/A	-- A (8)[1] B (12)[2]	N/A
2039 Future	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] B (11)[2]	N/A	-- A (8)[1] B (12)[2]	N/A

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

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

No improvements are recommended by the developer.

7.3. Buffaloe Road and Bobbitt Drive

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 Buffaloe Road and Bobbitt Drive

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)
2024 Existing	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] A (10)[2]	N/A	-- A (8)[1] B (10)[2]	N/A
2030 No-Build	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] B (10)[2]	N/A	-- A (8)[1] B (11)[2]	N/A
2030 Build	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] A (10)[2]	N/A	-- A (8)[1] B (11)[2]	N/A
2039 Future	EB WB NB	1 TH-RT 1 LT-TH 1 LT-RT	-- A (8)[1] B (10)[2]	N/A	-- A (8)[1] B (11)[2]	N/A

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

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

No improvements are recommended by the developer.

7.4. Buffaloe Road and Horton 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 Buffaloe Road and Horton 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)
2024 Existing	EB NB SB	1 LT-RT 1 LT-TH 1 TH-RT	B (11)[2] A (8)[1] --	N/A	B (12)[2] A (8)[1] --	N/A
2030 No-Build	EB NB SB	1 LT-RT 1 LT-TH 1 TH-RT	B (13)[2] A (8)[1] --	N/A	C (16)[2] A (8)[1] --	N/A
2030 Build	EB NB SB	1 LT-RT 1 LT-TH 1 TH-RT	B (13)[2] A (8)[1] --	N/A	C (17)[2] A (8)[1] --	N/A
2039 Future	EB NB SB	1 LT-RT 1 LT-TH 1 TH-RT	B (14)[2] A (8)[1] --	N/A	C (19)[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 of all traffic conditions indicates the major street left-turn movement is expected to operate at LOS A during the weekday AM and PM peak hours. Additionally, the minor street approach is expected to operate at an overall LOS C or better during the AM and PM peak hours. No significant queuing is expected at the intersection.

No improvements are recommended by the developer.

7.5. Horton Road and Horton Mill Drive

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 Horton Road and Horton Mill Drive

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)
2024 Existing	EB NB SB	1 LT-RT 1 LT-TH 1 TH-RT	A (9)[2] A (8)[1] --	N/A	A (9)[2] A (7)[1] --	N/A
2030 No-Build	EB NB SB	1 LT-RT 1 LT-TH 1 TH-RT	A (10)[2] A (8)[1] --	N/A	A (10)[2] A (8)[1] --	N/A
2030 Build	EB NB SB	1 LT-RT 1 LT-TH 1 TH-RT	A (10)[2] A (8)[1] --	N/A	A (10)[2] A (8)[1] --	N/A
2039 Future	EB NB SB	1 LT-RT 1 LT-TH 1 TH-RT	B (10)[2] A (8)[1] --	N/A	A (10)[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 of all traffic conditions indicates the major street left-turn movement is expected to operate at LOS A during the weekday AM and PM peak hours. Additionally, the minor street approach is expected to operate at an overall LOS B or better during the AM and PM peak hours. No significant queuing is expected at the intersection.

No improvements are recommended by the developer.

7.6. Horton Road and Old Knight Road

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 Horton Road and Old Knight 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)
2024 Existing	EB WB NB	1 TH-RT 1 LT-TH 1 LT, 1 RT	-- A (7)[1] A (10)[2]	N/A	-- A (8)[1] A (9)[2]	N/A
2030 No-Build	EB WB NB SB	1 LT, 1 TH-RT 1 LT-TH-RT 1 LT-TH, 1 RT 1 LT-TH-RT	A (8)[1] A (8)[1] B (13)[2] B (12)[2]	N/A	A (8)[1] A (8)[1] B (13)[2] B (13)[2]	N/A
2030 Build	EB WB NB SB	1 LT, 1 TH-RT 1 LT-TH-RT 1 LT-TH, 1 RT 1 LT-TH-RT	A (8)[1] A (8)[1] B (15)[2] B (13)[2]	N/A	A (8)[1] A (8)[1] C (17)[2] B (15)[2]	N/A
2039 Future	EB WB NB SB	1 LT, 1 TH-RT 1 LT-TH-RT 1 LT-TH, 1 RT 1 LT-TH-RT	A (8)[1] A (8)[1] C (15)[2] B (14)[2]	N/A	A (8)[1] A (8)[1] C (18)[2] C (16)[2]	N/A

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 all traffic conditions indicates the major street left-turn movements are expected to operate at LOS A during the weekday AM and PM peak hours. Additionally, the minor street approaches are expected to operate at an overall LOS C or better during the AM and PM peak hours. No significant queuing is expected at the intersection.

Under no-build conditions, the Weldon Village adjacent development is expected to construct the southbound approach at the intersection and construct an eastbound left turn lane with 100 feet of storage plus appropriate deceleration and taper. The Weldon Village connection with provide indirect connectivity to the proposed development. No additional improvements are recommended by the developer.

7.7. Horton Road and Lucas Road

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 Horton Road and Lucas 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)
2024 Existing	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A (8)[1] A (7)[1] A (10)[2] A (10)[2]	N/A	A (8)[1] A (7)[1] A (10)[2] B (10)[2]	N/A
2030 No-Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A (8)[1] A (7)[1] B (11)[2] B (11)[2]	N/A	A (8)[1] A (8)[1] B (13)[2] C (15)[2]	N/A
2030 Build	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A (8)[1] A (7)[1] B (12)[2] B (12)[2]	N/A	A (8)[1] A (8)[1] B (14)[2] C (17)[2]	N/A
2039 Future	EB WB NB SB	1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT 1 LT-TH-RT	A (8)[1] A (7)[1] B (12)[2] B (12)[2]	N/A	A (8)[1] A (8)[1] B (14)[2] C (18)[2]	N/A

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

Capacity analysis of all traffic conditions indicates the major street left-turn movements are expected to operate at LOS A during the weekday AM and PM peak hours. Additionally, the minor street approaches are expected to operate at an overall LOS C or better during the AM and PM peak hours. No significant queuing is expected at the intersection.

No improvements are recommended by the developer.

7.8. Buffaloe 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 12: Analysis Summary of Buffaloe 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 **NB**	1 TH-**RT** 1 **LT**-TH 1 **LT-RT**	-- A (8)[1] B (11)[2]	N/A	-- A (8)[1] B (12)[2]	N/A
2039 Future	EB WB **NB**	1 TH-**RT** 1 **LT**-TH 1 **LT-RT**	-- A (8)[1] B (11)[2]	N/A	-- A (8)[1] B (12)[2]	N/A

Modifications to lane configurations by developer are shown in bold.

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

Capacity analysis of all the 2030 build and 2039 traffic conditions indicates the major street left-turn movement is expected to operate at LOS A during the weekday AM and PM peak hours. Additionally, the minor street approach is expected to operate at an overall LOS B or better during the AM and PM peak hours. No significant queuing is expected at the intersection.

Turn lanes along Buffaloe Road at the proposed Site Access were considered based on the NCDOT *Policy on Street and Driveway Access to North Carolina Highways*, but are not warranted based on peak hour volumes. Sight distance appears to be sufficient along Buffaloe Road at the proposed access location. As typical, actual sight distances will be measured and verified in the field as part of the driveway permitting process. No improvements are recommended by the developer.

8. CONCLUSIONS

This Traffic Impact Analysis was conducted to determine the potential traffic impacts of the Terravita development to be located south of Buffaloe Road between Quiet Oaks Drive and Bobbitt Drive in Knightdale, North Carolina. The proposed development, anticipated to be completed in 2029, is assumed to consist of 170 single-family homes and 75 townhomes. Site access is proposed via one (1) new full movement driveway along Buffaloe Road and internal connections to Quiet Oaks Road, Bobbitt Drive, Proc Ridge Lane, and the Old Knight Road extension (a part of the Weldon Village adjacent development).

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

- 2024 Existing Traffic Conditions
- 2030 No-Build (build year+1) Traffic Conditions
- 2030 Build (build year+1) Traffic Conditions
- 2039 Future (build year+10) Traffic Conditions

Trip Generation

It is anticipated that proposed development will generate 154 total trips (38 entering and 116 exiting) during the weekday AM peak hour and 205 total trips (127 entering and 78 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.

9. RECOMMENDATIONS

Based on the findings of this study, no specific geometric improvements have been identified to accommodate future traffic conditions. See a more detailed description of the recommended modifications below. Refer to Figure 13 for an illustration of the recommended lane configuration for the proposed development.

Improvements by Weldon Village

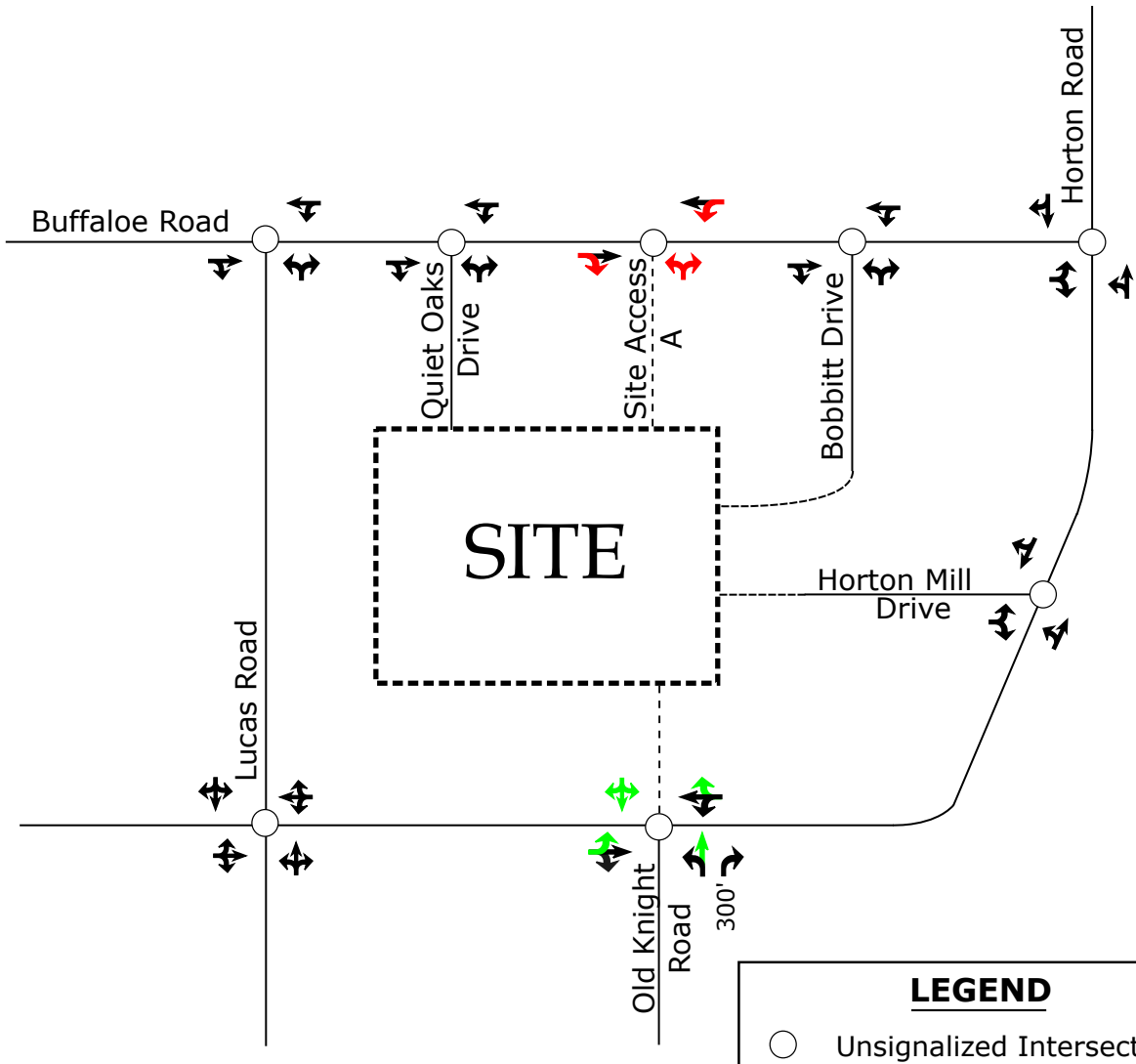
Horton Road and Old Knight Road

- Construct southbound approach (of Old Knight Road) with one ingress lane and one egress lane.
- Provide stop control for southbound approach.
- Construct eastbound left turn lane (on Horton Road) with 100’ of storage plus appropriate deceleration and taper.

Recommended Modifications by Developer

Buffaloe Road and Site Access

- Construct northbound approach (of the proposed site access) with one ingress lane and one egress lane. Provide stop-control for the northbound approach.



LEGEND

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

DRMP

Terravita
Knightdale, NC

Recommended Lane Configurations

Scale: Not to Scale | Figure 13