

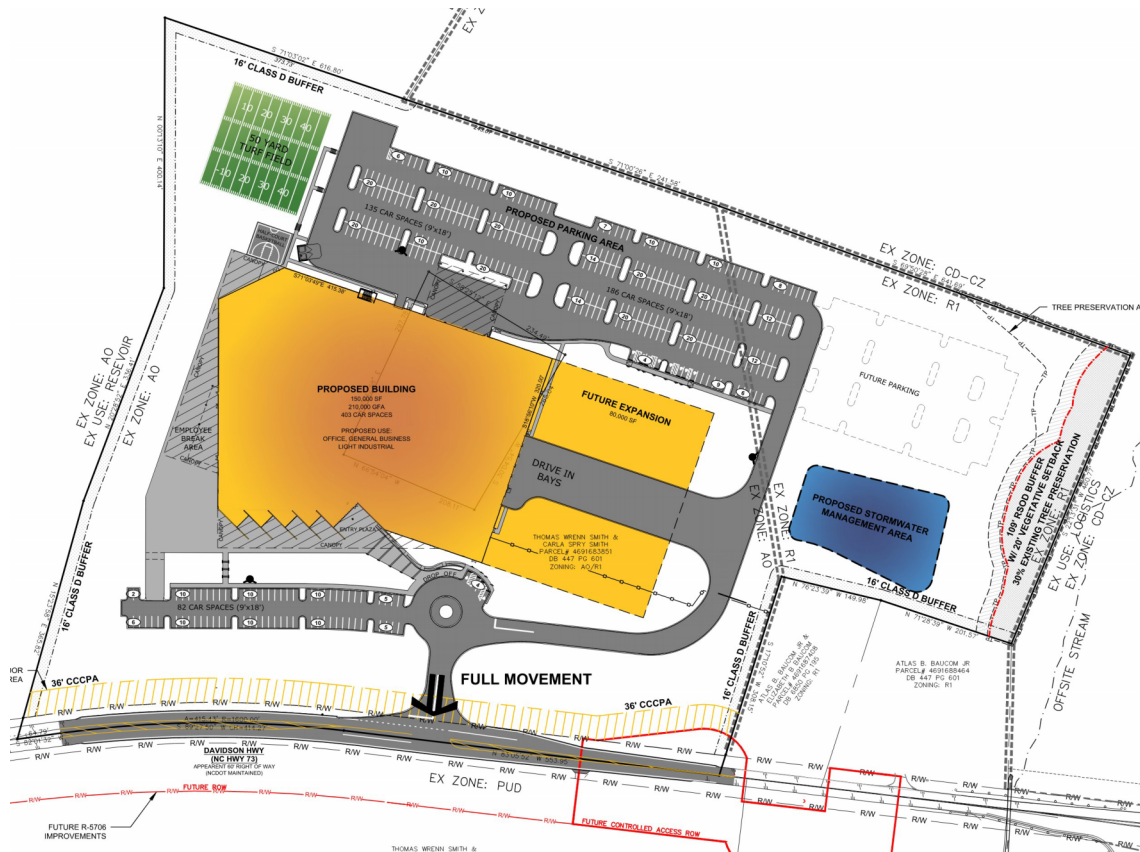
DRAFT

TRAFFIC IMPACT ANALYSIS

TRACKHOUSE RACING

North of Davidson Highway and West of Kannapolis Parkway

Kannapolis, North Carolina



for

Burton Engineering Associates

June 2026

133-022 (C-2165)



TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
PROPOSED DEVELOPMENT	4
AREA CONDITIONS	7
PROJECTED TRAFFIC	11
TRAFFIC ANALYSIS	21
CONCLUSION	42
APPENDIX	43

LIST OF TABLES

TABLE 1: AVERAGE ANNUAL DAILY TRAFFIC VOLUMES (VEHICLES PER DAY)	8
TABLE 2: CRASH DATA FROM 2010-2024	8
TABLE 3: TRIP GENERATION	11
TABLE 4: OFFSITE TRIP GENERATION	11
TABLE 5: DAVIDSON HWY & ODELL SCHOOL RD ANALYSIS RESULTS	24
TABLE 6: DAVIDSON HWY & ODELL SCHOOL RD QUEUE LENGTHS	26
TABLE 7: DAVIDSON HWY & YELLOW BIRCH PL/AMAZON DWY ANALYSIS RESULTS	28
TABLE 8: DAVIDSON HWY & YELLOW BIRCH PL/AMAZON DWY QUEUE LENGTHS	29
TABLE 9: DAVIDSON HWY & KANNAPOLIS PKWY ANALYSIS RESULTS	31
TABLE 10: DAVIDSON HWY & KANNAPOLIS PKWY QUEUE LENGTHS	33
TABLE 11: KANNAPOLIS PKWY & AMAZON DWY ANALYSIS RESULTS	35
TABLE 12: KANNAPOLIS PKWY & AMAZON DWY QUEUEING AND BLOCKING REPORT	36
TABLE 13: DAVIDSON HWY & ACCESS "A" ANALYSIS RESULTS	37
TABLE 14: DAVIDSON HWY & ACCESS "A" QUEUEING AND BLOCKING REPORT	38

LIST OF FIGURES

FIGURE 1: AREA OF INFLUENCE	5
SITE PLAN	6
FIGURE 2: EXISTING PEAK HOUR TRAFFIC VOLUMES	9
FIGURE 3: SITE DIRECTIONAL DISTRIBUTION	10
FIGURE 4: 2027 PHASE 1 AM NO BUILD PEAK HOUR TRAFFIC VOLUMES	13
FIGURE 5: 2027 PHASE 1 PM NO BUILD PEAK HOUR TRAFFIC VOLUMES	14
FIGURE 6: 2027 PHASE 1 AM BUILD PEAK HOUR TRAFFIC VOLUMES	15
FIGURE 7: 2027 PHASE 1 PM BUILD PEAK HOUR TRAFFIC VOLUMES	16
FIGURE 8: 2032 PHASE 2 AM NO BUILD PEAK HOUR TRAFFIC VOLUMES	17
FIGURE 9: 2032 PHASE 2 PM NO BUILD PEAK HOUR TRAFFIC VOLUMES	18
FIGURE 10: 2032 PHASE 2 AM BUILD PEAK HOUR TRAFFIC VOLUMES	19
FIGURE 11: 2032 PHASE 2 PM BUILD PEAK HOUR TRAFFIC VOLUMES	20
FIGURE 12: EXISTING LANEAGE	39
FIGURE 13: PHASE 1 SUGGESTED LANEAGE	40
FIGURE 14: PHASE 2 SUGGESTED LANEAGE	41



EXECUTIVE SUMMARY

Burton Engineering Associates is assisting Trackhouse Racing in the development of a two-phase industrial site with the following splits:

- Phase 1:
 - 150,000 SF Light Industrial
 - 60,000 SF General Office
- Phase 2:
 - 60,000 SF Light Industrial
 - 20,000 SF General Office



Davidson Highway Facing West Near The Site Access

The proposed site is located on the north side of Davidson Highway and west of Kannapolis Parkway located in Kannapolis, NC (see Figure 1). Phase 1 and Phase 2 of the development are expected to be completed in 2027 and 2032, respectively.

This report provides analysis of the traffic operations within the area of influence, according to the standards set by the North Carolina Department of Transportation's (NCDOT) "Policy on Street and Driveway Access to North Carolina Highways, Chapter 4 Part C" and the Kannapolis Development Ordinance (KDO). It provides intersection improvements needed for mitigating traffic impacts. This study evaluates the following scenarios:

- 2026 Existing Conditions
- 2027 Phase 1 No Build Conditions
- 2027 Phase 1 Build Conditions
- 2032 Phase 2 No Build Conditions
- 2032 Phase 2 Build Conditions

The area of influence of the site as defined by City of Kannapolis and the North Carolina Department of Transportation (NCDOT) staff includes the following four existing intersections and one proposed access location (see Appendix for the approved scoping information):

1. Davidson Highway & Odell School Road (Signalized)
2. Davidson Highway & Amazon Driveway/Yellow Birch Place (Signalized)
3. Davidson Highway & Kannapolis Parkway (Signalized)
4. Kannapolis Parkway & Amazon Driveway (Signalized)
5. Davidson Highway & Access "A" (Unsignalized)

According to the preliminary site plan (Site Plan), access to the site is expected to occur via one full movement access located on Davidson Highway:

- Proposed Access "A" (Full Movement): unsignalized full movement access located on Davidson Highway approximately 3,250 feet west of Kannapolis Parkway.



The Phase 1 trip generation results indicate that the site is expected to generate 159 AM peak hour trips and 165 PM peak hour trips. The Phase 2 trip generation results indicate that the site is expected to generate 230 AM peak hour trips and 245 PM peak hour trips.

With the results of our analyses (the specifics are described in the Traffic Analysis section of this report) we suggest the following improvements/modifications at the study intersections/proposed accesses:

Build Suggested Improvements:

1. Davidson Highway & Odell School Road (Signalized)

- No suggested improvements.

2. Davidson Highway & Yellow Birch Place/Amazon Driveway (Signalized)

2027 Phase 1

- No suggested improvements.

2032 Phase 2

- Widen the existing pavement on northbound Yellow Birch Place to provide a pocket thru lane with 50 feet of storage and a separate right turn lane.

3. Davidson Highway & Kannapolis Parkway (Signalized)

2027 Phase 1

- Remark the westbound right turn lane to a combined thru-right turn lane on Davidson Highway.

2032 Phase 2

- No additional suggested improvements.

4. Kannapolis Parkway & Amazon Driveway (Signalized)

- No suggested improvements.

5. Davidson Highway & Access "A" (Unsignalized)

We propose the following access configuration:

- One ingress lane and two egress lanes (a terminating southbound left turn lane and a separate right turn lane with 100 feet of storage).
- Construct an eastbound left turn lane on Davidson Highway with 100 feet of storage.
- Construct a westbound right turn lane on Davidson Highway with 100 feet of storage.



In summary, even though the proposed Trackhouse Racing site will slightly increase the amount of vehicular traffic on the adjacent roadways/corridors, the project will not materially impact adjacent roadways, intersections, or the general public traveling in the area if the site is developed according to the proposed plan and includes the suggested intersection improvements and access configuration.



PROPOSED DEVELOPMENT

Burton Engineering Associates is assisting Trackhouse Racing in the development of a two-phase industrial site with the following splits:

- Phase 1:
 - 150,000 SF Light Industrial
 - 60,000 SF General Office
- Phase 2:
 - 60,000 SF Light Industrial
 - 20,000 SF General Office



Davidson Highway Facing West Near The Site Access

The proposed site is located on the north side of Davidson Highway and west of Kannapolis Parkway located in Kannapolis, NC (see Figure 1). Phase 1 and Phase 2 of the development are expected to be completed in 2027 and 2032, respectively.

According to the preliminary site plan (Site Plan), access to the site is expected to occur via one full movement access located on Davidson Highway:

- Proposed Access "A" (Full Movement): unsignalized full movement access located on Davidson Highway approximately 3,250 feet west of Kannapolis Parkway.



TRACKHOUSE RACING

KANNAPOLIS, NC

CHOATE CONSTRUCTION
2907 PROVIDENCE ROAD SUITE 400
CHARLOTTE, NC 28211

AREA OF
INFLUENCE

Figure 1



AREA CONDITIONS

The area of influence of the site as defined by City of Kannapolis and the North Carolina Department of Transportation (NCDOT) staff includes the following four existing intersections and one proposed access location (see Appendix for the approved scoping information):

1. Davidson Highway & Odell School Road (Signalized)
2. Davidson Highway & Amazon Driveway/Yellow Birch Place (Signalized)
3. Davidson Highway & Kannapolis Parkway (Signalized)
4. Kannapolis Parkway & Amazon Driveway (Signalized)
5. Davidson Highway & Access "A" (Unsignalized)



Davidson Highway Facing West At Yellow Birch Place



Kannapolis Parkway Facing North At Davidson Highway

Morning (7:00-9:00 AM) and afternoon (4:00-6:00 PM) peak period turning movement counts (TMCs) were taken on Thursday, April 16, 2026.

According to the latest NCDOT Roadway Functional Classification data, Davidson Highway is a Principal Arterial with a posted speed limit of 55-mph within the vicinity of the site. The roadway is a two-lane undivided facility (one lane in each direction). No curb/gutter, planting strip, or sidewalk are present on either side of the roadway within the vicinity of the site.

According to the latest NCDOT Roadway Functional Classification data, Kannapolis Parkway is a Principal Arterial with a posted speed limit of 45-mph within the vicinity of the site. The roadway is a five-lane median divided facility (two lanes in each direction with a two-way left-turn lane). Curb/gutter or present on both sides of the roadway within the vicinity of the site. No bike lanes are present on either side of the roadway within the vicinity of the site.

In addition to the intersection TMCs, geospatial information provided by NCDOT's ArcGIS portal (*Go! NC*), such as annual average daily traffic (AADT) was collected.

AADT for two-way volumes on roadways within the area of influence are depicted in Table 1 based on the latest data.



Table 1: Average Annual Daily Traffic Volumes (vehicles per day)

Roadway	AADT (Year)
Odell School Road north of Davidson Highway	14,500 (2024)
Davidson Highway west of Odell School Road	17,500 (2024)
Odell School Road south of Davidson Highway	14,000 (2024)
Davidson Highway east of Odell School Road	19,000 (2024)
Kannapolis Parkway north of Davidson Highway	21,500 (2024)
Kannapolis Parkway south of Davidson Highway	29,000 (2024)

Crash frequency per intersection is reported in Table 2 with data ranging from January 1, 2020, to December 31, 2024.

Table 2: Crash Data from 2010-2024

Intersection	Severity Type			Total Crashes
	K & A Injury Crashes	B & C Injury Crashes	PDO Crashes	
Davidson Hwy & Odell School Rd	0	4	31	35
Kannapolis Pkwy & Davidson Hwy	1	30	116	147

Notes: **K**: Fatality **A**: A injury type (disabling) **B**: B injury type (evident) **C**: injury type (possible) **PDO**: Property Damage Only

Figure 2 portrays the existing TMCs for the AM and PM peak hours. Figure 3 includes the site directional distribution.

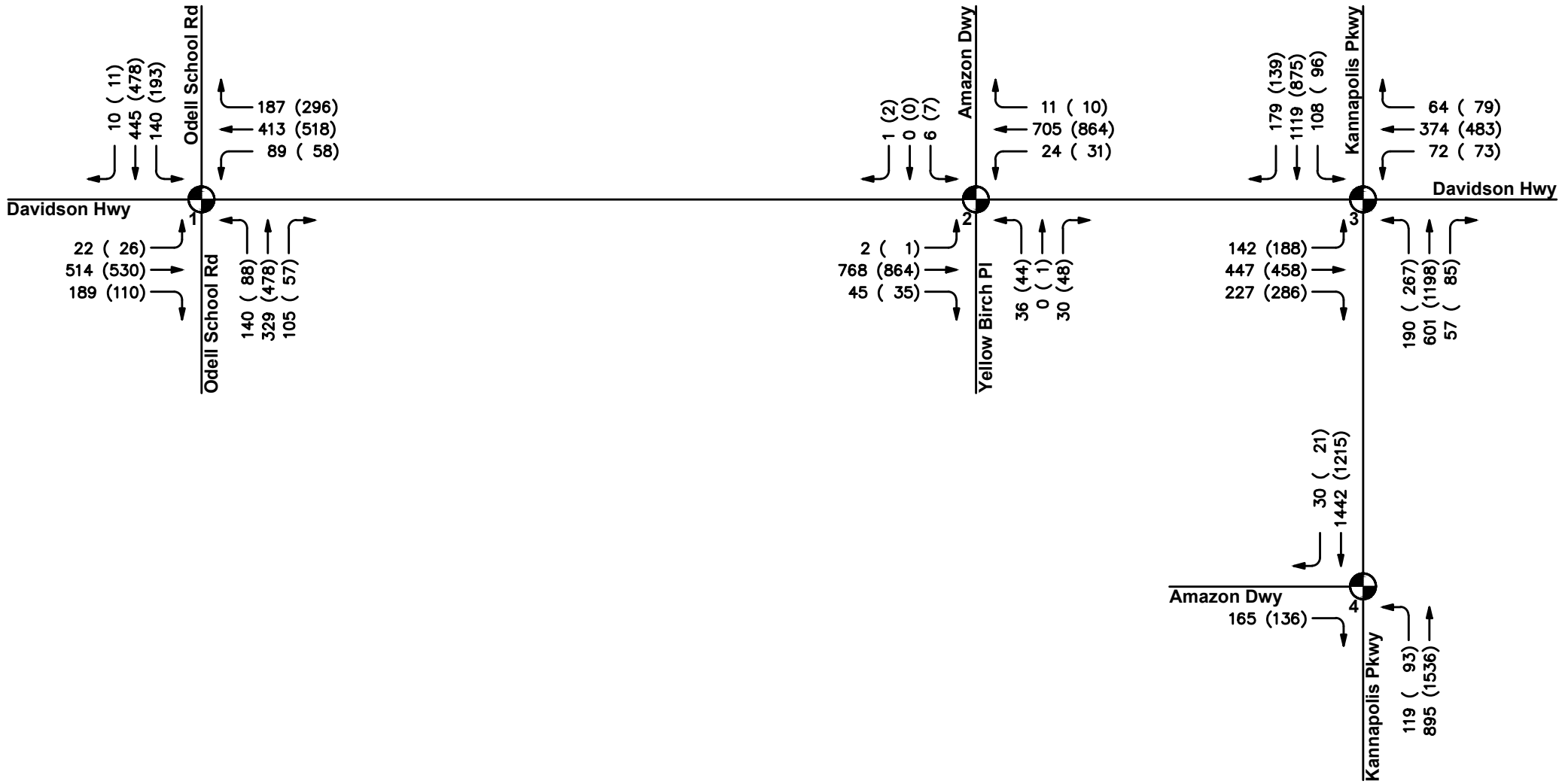
LEGEND

Traffic Signal

Stop Sign Control

Directional Movement

VOLUMES: AM (PM)



Note

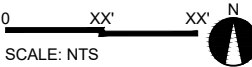
Turning Movement Counts (TMCs) were collected at all study intersections on Thursday, April 16, 2026.

TRACKHOUSE RACING

KANNAPOLIS, NC

CHOATE CONSTRUCTION
2907 PROVIDENCE ROAD SUITE 400
CHARLOTTE, NC 28211

**EXISTING PEAK
HOUR TRAFFIC
VOLUMES**

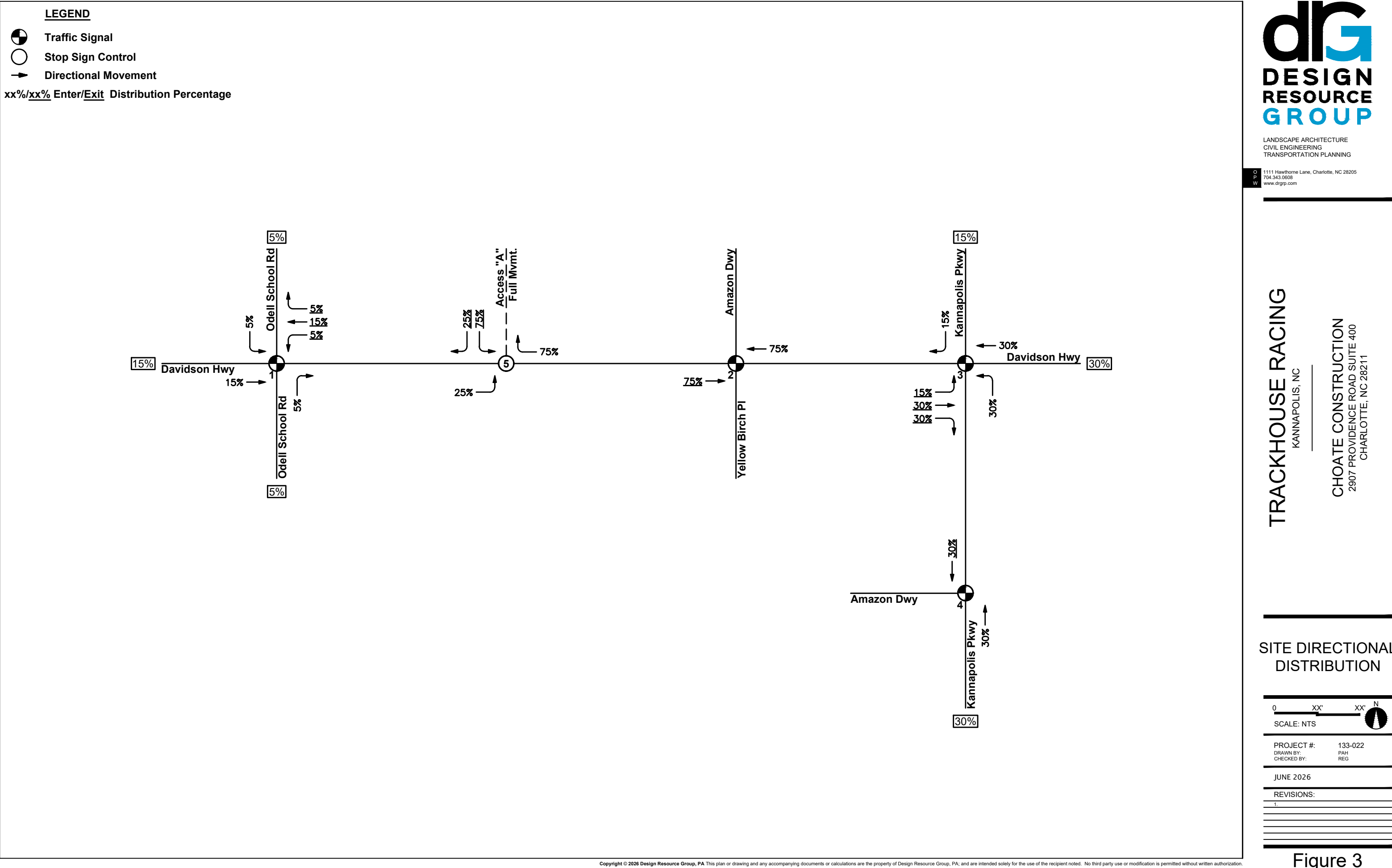


PROJECT #: 133-022
DRAWN BY: PAH
CHECKED BY: REG

JUNE 2026

REVISIONS:
1.

Figure 2





PROJECTED TRAFFIC

The daily and peak-hour-trip-generation data for the site is presented in Table 3. The estimates for the trips generated by the land use are obtained from the Institute of Transportation Engineers, Trip Generation Manual, 12th Edition, 2025.

Table 3: Trip Generation

Land Use [ITE Code]			Daily	AM Peak Hour			PM Peak Hour		
				Enter	Exit	Total	Enter	Exit	Total
Phase 1									
Light Industrial [110]	150,000	SF	540	62	10	72	18	56	74
General Office [710]	60,000	SF	579	77	10	87	14	77	91
Phase 1 Total Trips			1,119	139	20	159	32	133	165
Phase 2									
Light Industrial [110]	60,000	SF	216	25	4	29	7	22	29
General Office [710]	20,000	SF	332	37	5	42	8	43	51
Phase 2 Total Trips			548	62	9	71	15	65	80
Total Development Trips			1,667	201	29	230	47	198	245

References: Trip Generation, 12th Edition, Institute of Transportation Engineers, Washington, DC. 2025.

The Phase 1 trip generation results indicate that the site is expected to generate 159 AM peak hour trips and 165 PM peak hour trips. The Phase 2 trip generation results indicate that the site is expected to generate 230 AM peak hour trips and 245 PM peak hour trips.

Per NCDOT and City of Kannapolis staff, three nearby offsite developments are included in the TIA (see Appendix for site trip breakdowns per development):

- Nexus Legacy Mills – Proposed residential development consisting of 294 dwelling units of multi-family apartments located on the northwest quadrant of the intersection of Davidson Highway and Kannapolis Parkway.
- Stanley Industrial – Industrial development with 706,400 SF of warehousing located on Davidson Highway. No approved traffic study was available for this site at the time this Traffic Impact Analysis was completed.
- 85 Exchange – A mixed-use development with 1.75 million SF of warehousing, 300 multi-family apartments, and 5,000 SF of convenience store/gas station located on the southwest quadrant of the intersection of Davidson Highway and Kannapolis Parkway. Based on observations during the site visit, only the convenience store has been constructed and is currently generating trips.

Table 4: Offsite Trip Generation

Offsite Development	Daily	AM Peak Hour			PM Peak Hour		
		Enter	Exit	Total	Enter	Exit	Total
Nexus Legacy Mills	1,601	25	73	98	76	49	125
Stanley Industrial	975	64	21	85	29	77	106
85 Exchange	9,961	261	202	463	186	266	452
Total Trips	12,537	350	296	646	291	392	683



The projected background traffic volumes used in the analysis were developed from the existing peak hour TMCs. Per NCDOT and City of Kannapolis, a 1% per year growth rate was used for the 2027 and 2032 background volumes. The 2027 Phase 1 AM and PM No Build volumes can be found in Figures 4 and 5, respectively. The 2032 Phase 2 AM and PM No Build volumes can be found in Figures 8 and 9, respectively. The background traffic is indicated to the far left of the movement arrows, followed by the offsite traffic in brackets. The two are added to obtain the projected total No Build traffic for that movement:

$$\underline{\text{Background} + [\text{Offsite}] = \text{No Build}}$$

The 2027 Phase 1 AM and PM Build volumes can be found in Figures 6 and 7, respectively. The 2032 Phase 2 AM and PM Build volumes can be found in Figures 10 and 11, respectively. The No Build traffic is indicated to the far left of the movement arrows, followed by the site traffic in parentheses. The two volumes are added to obtain the projected total Build traffic for that movement:

$$\underline{\text{No Build} + (\text{Site}) = \text{Total}}$$

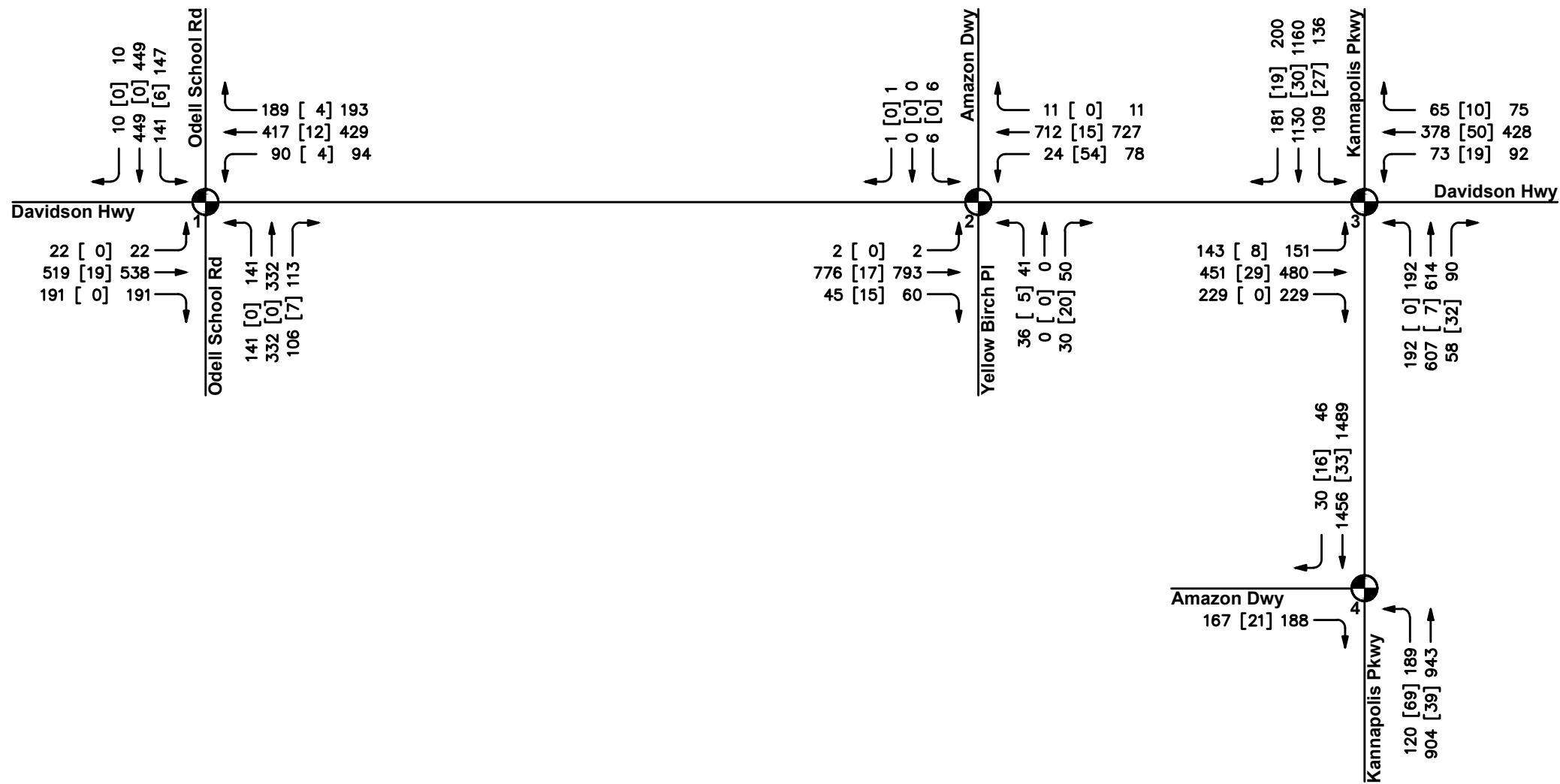
LEGEND

Traffic Signal

Stop Sign Control

Directional Movement

VOLUMES: Background [Offsite] No Build



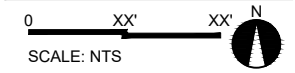
Note

Existing TMCs were grown by 1% compounded annually in order to obtain 2027 background volumes.

TRACKHOUSE RACING
KANNAPOLIS, NC

CHOATE CONSTRUCTION
2907 PROVIDENCE ROAD SUITE 400
CHARLOTTE, NC 28211

**2027 PHASE 1 AM
NO BUILD PEAK
HOUR TRAFFIC
VOLUMES**



PROJECT #: 133-022
DRAWN BY: PAH
CHECKED BY: REG

JUNE 2026

REVISIONS:
1.

Figure 4

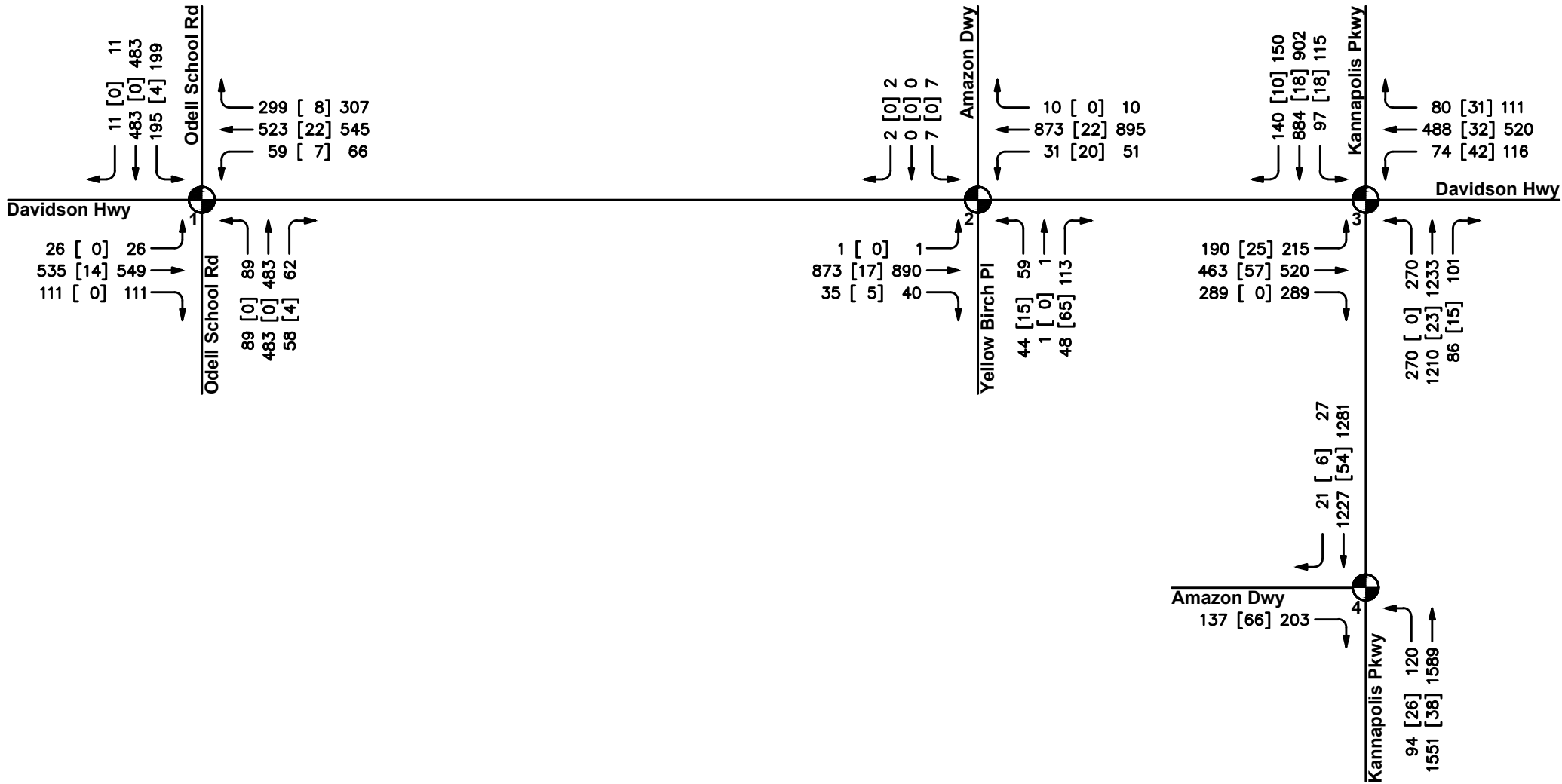
LEGEND

Traffic Signal

Stop Sign Control

Directional Movement

VOLUMES: Background [Offsite] No Build



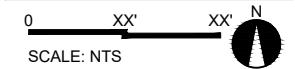
Note

Existing TMCs were grown by 1% compounded annually in order to obtain 2027 background volumes.

TRACKHOUSE RACING
KANNAPOLIS, NC

CHOATE CONSTRUCTION
2907 PROVIDENCE ROAD SUITE 400
CHARLOTTE, NC 28211

**2027 PHASE 1 PM
NO BUILD PEAK
HOUR TRAFFIC
VOLUMES**



PROJECT #: 133-022
DRAWN BY: PAH
CHECKED BY: REG

JUNE 2026
REVISIONS:
1.

Figure 5

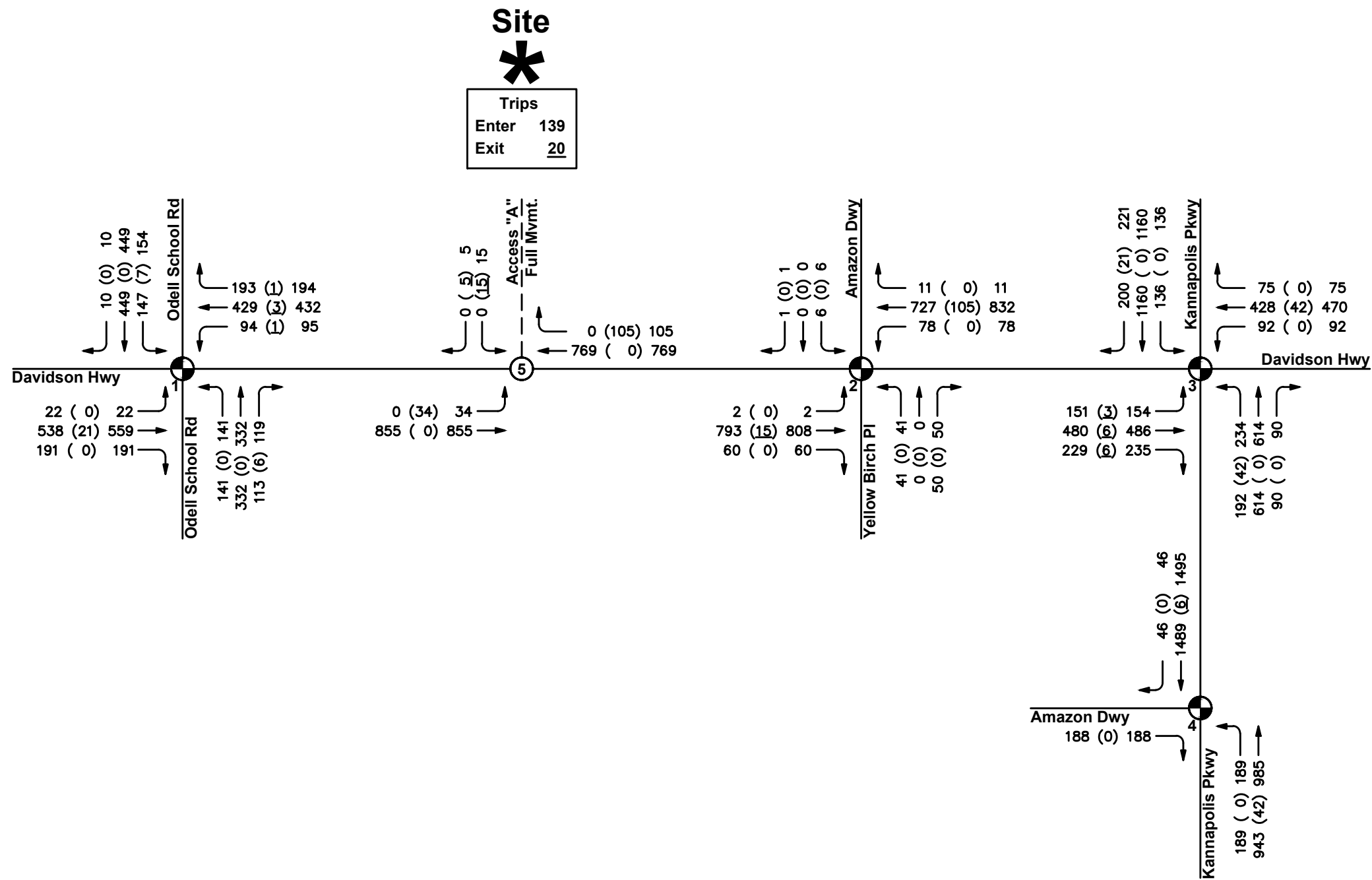
LEGEND

Traffic Signal

Stop Sign Control

Directional Movement

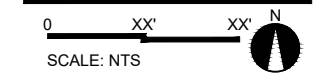
VOLUMES: No Build (Site) Build



TRACKHOUSE RACING
KANNAPOLIS, NC

CHOATE CONSTRUCTION
2907 PROVIDENCE ROAD SUITE 400
CHARLOTTE, NC 28211

**2027 PHASE 1 AM
BUILD PEAK
HOUR TRAFFIC
VOLUMES**



PROJECT #: 133-022
DRAWN BY: PAH
CHECKED BY: REG

JUNE 2026
REVISIONS:
1.

Figure 6



Figure 7: 2027 Phase 1 PM Build Peak Hour Traffic Volumes



Figure 8: 2032 Phase 2 AM No Build Peak Hour Traffic Volumes



Figure 9: 2032 Phase 2 PM No Build Peak Hour Traffic Volumes



Figure 10: 2032 Phase 2 AM Build Peak Hour Traffic Volumes



Figure 11: 2032 Phase 2 PM Build Peak Hour Traffic Volumes



TRAFFIC ANALYSIS

The intersections identified within the area of influence were analyzed to identify the traffic impact that the site development has under the build scenario. The traffic analysis is based on the LOS analysis at the identified intersections. The intersections were analyzed assuming Full Build in 2027.

Level of service (LOS) of an intersection or approach is a qualitative MOE of traffic operations. It is a measure of average control delay in time within a peak period. The Transportation Research Board's Highway Capacity Manual¹ (HCM) defines the LOS thresholds established for signalized and unsignalized intersections per the following exhibits:

Intersection LOS	Exhibit 19-8 Signalized Intersection Control Delay per Vehicle (sec/vehicle)	Exhibit 20-2 Unsignalized Intersection Control Delay per Vehicle (sec/vehicle)
A	<10.0	< 10.0
B	> 10.0 and < 20.0	> 10.0 and < 15.0
C	> 20.0 and < 35.0	> 15.0 and < 25.0
D	> 35.0 and < 55.0	> 25.0 and < 35.0
E	> 55.0 and < 80.0	> 35.0 and < 50.0
F	>80.0	> 50.0

For the analysis of unsignalized intersections, intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. It should be noted that stop sign-controlled streets/driveways intersecting major streets typically experience long delays during peak hours, while most of the traffic moving through the intersection on the major street experiences little or no delay.

This report provides analysis of the traffic operations within the area of influence, according to the standards set by the North Carolina Department of Transportation's (NCDOT) "Policy on Street and Driveway Access to North Carolina Highways, Chapter 4 Part C" and the Kannapolis Development Ordinance (KDO). It provides intersection improvements needed for mitigating traffic impacts. This study evaluates the following scenarios:

- 2026 Existing Conditions
- 2027 Phase 1 No Build Conditions
- 2027 Phase 1 Build Conditions
- 2032 Phase 2 No Build Conditions
- 2032 Phase 2 Build Conditions

1 National Research Council. Transportation Research Board. Highway Capacity Manual 7th Ed., Washington, DC. 2022.



NCDOT ANALYSIS REQUIREMENTS - In order to determine the mitigation responsibility of the developer, this study compares 2027/2032 Build results to the 2027/2032 No Build results.

Per Chapter 5, Section J of the *August 2003 NCDOT Policy on Street and Driveway Access to North Carolina Highways*, the applicant shall be required to identify mitigation improvements to the roadway network if at least one of the following conditions exists when comparing base network conditions to project conditions:

- *The total average delay at an intersection or an individual approach increases by 25% or greater, while maintaining the same level of service,*
- *The Level of Service (LOS) degrades by at least one level at an intersection or an individual approach,*
- *Or the Level of Service is "F" for an intersection or an individual approach.*

This section of the NCDOT access policy also states that, *mitigation improvements shall be identified when the analysis indicates that the 95th percentile queue exceeds the storage capacity of the existing lane.*

CITY OF KANNAPOLIS ANALYSIS REQUIREMENTS - In order to determine the mitigation responsibility of the developer, this study compares 2027/2032 Build results to the 2027/2032 No Build results.

Per Article 5, Section 13 of the July 2022 Kannapolis Development Ordinance, the applicant shall be required to identify mitigation improvements to the roadway network if any road will fall below the established LOS for that road based on the following table:

TABLE 5.13.F: ROAD LEVEL OF SERVICE STANDARDS (LOS) [1]

ROAD TYPE	LEVEL OF SERVICE STANDARD (LOS) – PEAK HOUR [1]		
	RURAL [2]	SUBURBAN [3]	URBAN [4]
Major Thoroughfare	C	D	Not Applicable
Minor Thoroughfare	C	D	E
Minor Arterial	C	D	E
Major Collector	C	D	E
Minor Collector	B	D	E
Local Road	B	C	E
Local Street	B	C	E
NOTES:			
[1] LOS shall be based upon the volume-to-capacity ratios as established by the NCDOT. The traffic analysis shall be consistent with the assumptions and guidelines of the NCDOT, and the most recent version of the ITE Trip Generation Manual. For uses generating less than ten trips per day, the directional split of traffic leaving the site shall be deemed to be 50 percent in either direction. For all other applications, the directional split shall be based upon the TIA.			
[2] Rural areas include lands in the following districts: AG and R1.			
[3] Suburban areas include lands in the following zoning districts: R2, R4, R6, R7, R8, R18, O-I, GC, LI, HI, PD, and PD-C.			
[4] Urban areas include lands in the following zoning districts: MU-N, MU-AC, CC, MU-SC, and PD-TND.			



SYNCHRO 12 was the software tool used in determining the delay, capacity, and corresponding LOS at the study intersections. SimTraffic 12, a traffic simulation software application for unsignalized and signalized intersections, was used to calculate the maximum queue lengths at the study intersections. The Synchro and SimTraffic results of each scenario are displayed per intersection and are presented in Tables 5 – 11. Analysis software result reports per scenario are provided in the Appendix.

Base assumptions for the analysis scenarios include:

- A 1% per year background growth rate between the existing TMC's and future 2027/2032 conditions
- All study intersections and movements assume a 0.90 peak hour factor (PHF)
- Observed heavy vehicle (HV) percentages (from TMCs) were used in all analysis for all intersections, a minimum of 2% was applied to proposed intersections and to approaches with less than 2% HV
- A minimum volume of 4 vehicles per hour for all allowable movements
- Existing signal operations were used in the existing conditions (see Appendix for existing signal plans)
- For all future scenarios protected/permitted left turns were adjusted to protected only where applicable
- RTOR was disabled for all scenarios
- Signal timings were optimized in all scenarios based on NCDOT parameters
- Yellow, red, and lost times were adjusted to NCDOT parameters (5, 2, -2)



1. Davidson Highway & Odell School Road (Signalized)

Table 5: Davidson Hwy & Odell School Rd Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
Existing Conditions						
Intersection	D	40.5	0.91	D	51.5	0.98
Eastbound - Davidson Hwy	D	39.6	-	D	42.4	-
Westbound - Davidson Hwy	C	29.9	-	D	36.9	-
Northbound - Odell School Rd	D	41.2	-	E	64.3	-
Southbound - Odell School Rd	D	53.2	-	E	67.4	-
2027 No Build Conditions						
Intersection	D	53.0	0.96	E	63.2	1.02
Eastbound - Davidson Hwy	D	46.1	-	E	69.4	-
Westbound - Davidson Hwy	D	37.6	-	D	42.2	-
Northbound - Odell School Rd	E	58.5	-	F	80.3	-
Southbound - Odell School Rd	E	74.3	-	E	69.4	-
2027 Build Conditions						
Intersection	D	54.8	0.99	E	64.2	1.02
Eastbound - Davidson Hwy	D	47.0	-	E	71.4	-
Westbound - Davidson Hwy	D	37.1	-	D	44.1	-
Northbound - Odell School Rd	E	61.2	-	F	80.2	-
Southbound - Odell School Rd	E	79.1	-	E	69.8	-
2032 No Build Conditions						
Intersection	E	57.7	0.98	E	70.4	1.07
Eastbound - Davidson Hwy	E	55.7	-	F	80.4	-
Westbound - Davidson Hwy	D	39.8	-	D	44.2	-
Northbound - Odell School Rd	E	62.9	-	F	91.0	-
Southbound - Odell School Rd	E	76.4	-	E	76.6	-
2032 Build Conditions						
Intersection	E	60.7	1.06	E	73.2	1.10
Eastbound - Davidson Hwy	E	60.1	-	F	83.6	-
Westbound - Davidson Hwy	D	39.0	-	D	48.1	-
Northbound - Odell School Rd	E	71.7	-	F	97.1	-
Southbound - Odell School Rd	E	76.2	-	E	75.6	-
2032 Build Conditions with Tested Improvements						
Intersection	D	42.8	0.87	D	46.5	0.90
Eastbound - Davidson Hwy	D	40.7	-	D	47.4	-
Westbound - Davidson Hwy	C	29.6	-	D	39.5	-
Northbound - Odell School Rd	D	49.2	-	D	54.8	-
Southbound - Odell School Rd	D	54.6	-	D	47.7	-

Existing Conditions

Currently, the intersection operates at LOS “D” during both the AM and PM peak hours.



2027 No Build Conditions

With the inclusion of growth in the background traffic and the offsite development trips, the intersection operates at LOS “D” during the AM peak hour and LOS “E” during the PM peak hour.

2027 Build Conditions

When comparing the impact of the 2027 Build to the 2027 No Build conditions, the intersection continues to operate at LOS “D” during the AM peak hour and LOS “E” during the PM peak hour. The overall intersection delay increases by 3% in the AM peak hour and 1% in the PM peak hour. **Therefore, no developer required improvements should be deemed necessary at this intersection.**

2032 No Build Conditions

With the inclusion of growth in the background traffic and the offsite development trips, the intersection operates at LOS “E” during both the AM and PM peak hours.

2032 Build Conditions

When comparing the impact of the 2032 Build to the 2032 No Build conditions, the intersection continues to operate at LOS “E” during both the AM and PM peak hours. The overall intersection delay increases by 6% in the AM peak hour and 4% in the PM peak hour. **Therefore, no developer required improvements should be deemed necessary at this intersection.**

2032 Build with Tested Improvements Conditions

Based on the City of Kannapolis analysis guidelines, the results indicate the need to identify mitigation to improve the intersection to LOS “D”.

- Construct an additional eastbound thru lane on Davidson Highway including a corresponding receiving lane.
- Construct an additional westbound thru lane on Davidson Highway including a corresponding receiving lane.

Assuming these improvements in place, the intersection operates at LOS “D” during both the AM and PM peak hours.

The above improvements were tested but are not suggested, as the No Build condition indicates that the intersection operates below the City of Kannapolis Road Level of Service standard of LOS “D” for suburban areas, and the Build conditions is not projected to result in a change in LOS or a significant increase in delay.



Table 6: Davidson Hwy & Odell School Rd Queue Lengths

Davidson Hwy & Odell School Rd	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2027 No Build Conditions					
Eastbound Left-Turn (Davidson Hwy)	150'	47'	249'	57'	249'
Eastbound Thru (Davidson Hwy)	-	#669'	543'	#752'	788'
Eastbound Right-Turn (Davidson Hwy)	350'	149'	399'	101'	450'
Westbound Left-Turn (Davidson Hwy)	450'	#193'	185'	m88'	137'
Westbound Thru (Davidson Hwy)	-	536'	302'	#715'	507'
Westbound Right-Turn (Davidson Hwy)	325'	257'	136'	242'	384'
Northbound Left-Turn (Odell School Rd)	550'	#267'	286'	#170'	546'
Northbound Thru (Odell School Rd)	-	408'	390'	#682'	953'
Northbound Right-Turn (Odell School Rd)	750'	113'	151'	68'	547'
Southbound Left-Turn (Odell School Rd)	250	#244'	350'	#358'	350'
Southbound Thru-Right (Odell School Rd)	-	#640'	840'	#617'	748'
2027 Build Conditions with Improvements					
Eastbound Left-Turn (Davidson Hwy)	150'	47'	212'	57'	250'
Eastbound Thru (Davidson Hwy)	-	#698'	714'	#762'	921'
Eastbound Right-Turn (Davidson Hwy)	350'	147'	450'	101'	450'
Westbound Left-Turn (Davidson Hwy)	450'	m#167'	197'	m94'	315'
Westbound Thru (Davidson Hwy)	-	537'	314'	#756'	762'
Westbound Right-Turn (Davidson Hwy)	325'	251'	163'	m245'	425'
Northbound Left-Turn (Odell School Rd)	550'	#267'	413'	#170'	349'
Northbound Thru (Odell School Rd)	-	#449'	504'	#682'	816'
Northbound Right-Turn (Odell School Rd)	750'	122'	161'	68'	414'
Southbound Left-Turn (Odell School Rd)	250	#248'	350'	#358'	350'
Southbound Thru-Right (Odell School Rd)	-	#653'	781'	#617'	832'
2032 No Build Conditions					
Eastbound Left-Turn (Davidson Hwy)	150'	50'	249'	59'	250'
Eastbound Thru (Davidson Hwy)	-	#736'	847'	#805'	1034'
Eastbound Right-Turn (Davidson Hwy)	350'	160'	388'	107'	450'
Westbound Left-Turn (Davidson Hwy)	450'	m#202'	222'	m89'	237'
Westbound Thru (Davidson Hwy)	-	#567'	361'	#768'	462'
Westbound Right-Turn (Davidson Hwy)	325'	267'	148'	m246'	335'
Northbound Left-Turn (Odell School Rd)	550'	#285'	415'	#178'	650'
Northbound Thru (Odell School Rd)	-	#460'	573'	#729'	1117'
Northbound Right-Turn (Odell School Rd)	750'	118'	304'	69'	850'
Southbound Left-Turn (Odell School Rd)	250	#250'	350'	#378'	350'
Southbound Thru-Right (Odell School Rd)	-	#677'	928'	#666'	977'
2032 Build Conditions with Improvements					
Eastbound Left-Turn (Davidson Hwy)	150'	50'	250'	59'	216'
Eastbound Thru (Davidson Hwy)	-	#781'	824'	#808'	974'
Eastbound Right-Turn (Davidson Hwy)	350'	157'	449'	105'	450'
Westbound Left-Turn (Davidson Hwy)	450'	m#163'	238'	m#116'	306'
Westbound Thru (Davidson Hwy)	-	559'	346'	#813'	663'
Westbound Right-Turn (Davidson Hwy)	325'	m268'	150'	253'	425'
Northbound Left-Turn (Odell School Rd)	550'	#185'	424'	#178'	650'
Northbound Thru (Odell School Rd)	-	#485'	547'	#742'	1037'
Northbound Right-Turn (Odell School Rd)	750'	130'	156'	75'	707'
Southbound Left-Turn (Odell School Rd)	250	#261'	350'	#384'	350'
Southbound Thru-Right (Odell School Rd)	-	#690'	915'	#678'	1040'



Although some of the queues in the Build conditions extend beyond the existing storage, these queues are also present under the No Build conditions. Therefore, no developer required improvements should be deemed necessary.



2. Davidson Highway & Yellow Birch Place/Amazon Driveway (Signalized)

Table 7: Davidson Hwy & Yellow Birch Pl/Amazon Dwy Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
Existing Conditions						
Intersection	B	19.0	0.62	B	13.8	0.71
Eastbound - Davidson Hwy	C	24.6	-	B	12.9	-
Westbound - Davidson Hwy	A	9.0	-	A	9.6	-
Northbound - Yellow Birch Pl	D	53.2	-	E	56.3	-
Southbound - Amazon Dwy	D	49.8	-	D	50.1	-
2027 No Build Conditions						
Intersection	C	25.5	0.72	C	22.7	0.84
Eastbound - Davidson Hwy	C	33.2	-	C	20.9	-
Westbound - Davidson Hwy	B	13.0	-	B	16.3	-
Northbound - Yellow Birch Pl	E	59.9	-	E	63.5	-
Southbound - Amazon Dwy	D	53.1	-	D	53.6	-
2027 Build Conditions						
Intersection	C	24.4	0.72	C	26.3	0.94
Eastbound - Davidson Hwy	C	31.1	-	C	29.2	-
Westbound - Davidson Hwy	B	13.9	-	B	16.4	-
Northbound - Yellow Birch Pl	E	59.9	-	E	61.7	-
Southbound - Amazon Dwy	D	53.1	-	D	53.9	-
2032 No Build Conditions						
Intersection	C	25.9	0.75	C	23.9	0.88
Eastbound - Davidson Hwy	C	33.7	-	C	23.3	-
Westbound - Davidson Hwy	B	13.3	-	B	17.0	-
Northbound - Yellow Birch Pl	E	60.4	-	E	63.2	-
Southbound - Amazon Dwy	D	53.1	-	D	53.6	-
2032 Build Conditions						
Intersection	C	25.4	0.77	D	36.3	1.03
Eastbound - Davidson Hwy	C	32.6	-	D	49.6	-
Westbound - Davidson Hwy	B	15.0	-	B	17.3	-
Northbound - Yellow Birch Pl	E	60.4	-	E	61.2	-
Southbound - Amazon Dwy	D	53.1	-	D	53.8	-
2032 Build Conditions with Improvements						
Intersection	C	25.1	0.75	C	28.4	0.97
Eastbound - Davidson Hwy	C	30.3	-	C	33.3	-
Westbound - Davidson Hwy	B	17.2	-	B	18.3	-
Northbound - Yellow Birch Pl	D	52.7	-	D	53.8	-
Southbound - Amazon Dwy	D	53.1	-	D	53.0	-

Existing Conditions

Currently, the intersection operates at LOS “B” during both the AM and PM peak hours.

2027 No Build Conditions

With the inclusion of growth in the background traffic and the offsite development trips, the intersection operates at LOS “C” during both the AM and PM peak hours.



2027 Build Conditions

When comparing the impact of the 2027 Build to the 2027 No Build conditions, the intersection continues to operate at LOS “C” during both the AM and PM peak hours. The overall intersection delay does not increase in the AM peak hour and increases by 16% in the PM peak hour. **Therefore, no developer required improvements should be deemed necessary at this intersection.**

2032 No Build Conditions

With the inclusion of growth in the background traffic and the offsite development trips, the intersection operates at LOS “C” during both the AM and PM peak hours.

2032 Build Conditions

When comparing the impact of the 2032 Build to the 2032 No Build conditions, the intersection continues to operate at LOS “C” during the AM peak hour and operates at LOS “D” during the PM peak hour. The overall intersection delay does not increase in the AM peak hour and increases by 50% in the PM peak hour.

2032 Build with Improvements Conditions

Based on NCDOT/City of Kannapolis guidelines, the analysis results indicate the need to identify mitigation at the study intersection. The following improvement was tested and is suggested:

- Widen the existing pavement on northbound Yellow Birch Place to provide a pocket thru lane with 50 feet of storage and a separate right turn lane.

Assuming this improvement in place, the intersection operates at LOS “C” during both the AM and PM peak hours.

Table 8: Davidson Hwy & Yellow Birch Pl/Amazon Dwy Queue Lengths

Davidson Hwy & Yellow Birch Pl/Amazon Dwy	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2027 No Build Conditions					
Eastbound Left-Turn (Davidson Hwy)	250'	m6'	33'	m6'	34'
Eastbound Thru (Davidson Hwy)	-	m779'	358'	m357'	685'
Eastbound Right-Turn (Davidson Hwy)	100'	m49'	169'	m15'	200'
Westbound Left-Turn (Davidson Hwy)	300'	m92'	169'	m53'	116'
Westbound Thru (Davidson Hwy)	-	m258'	252'	m317'	317'
Westbound Right-Turn (Davidson Hwy)	TERM.	m4'	63'	m3'	71'
Northbound Left-Turn (Yellow Birch Pl)	150'	83'	109'	101'	142'
Northbound Thru-Right (Yellow Birch Pl)	-	94'	116'	#224'	229'
Southbound Left-Turn (Amazon Dwy)	TERM.	26'	48'	35'	69'
Southbound Thru-Right (Amazon Dwy)	200'	23'	31'	22'	39'



Table 8: Davidson Hwy & Yellow Birch Pl/Amazon Dwy Queue Lengths Cont.

Davidson Hwy & Yellow Birch Pl/Amazon Dwy	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2027 Build Conditions with Improvements					
Eastbound Left-Turn (Davidson Hwy)	250'	m6'	35'	m7'	222'
Eastbound Thru (Davidson Hwy)	-	m759'	384'	m#966'	1267'
Eastbound Right-Turn (Davidson Hwy)	100'	m46'	172'	m15'	200'
Westbound Left-Turn (Davidson Hwy)	300'	m#110'	212'	m64'	100'
Westbound Thru (Davidson Hwy)	-	m340'	478'	m#570'	400'
Westbound Right-Turn (Davidson Hwy)	TERM.	m3'	269'	m2'	260'
Northbound Left-Turn (Yellow Birch Pl)	150'	83'	97'	101'	106'
Northbound Thru-Right (Yellow Birch Pl)	-	94'	98'	#235'	201'
Southbound Left-Turn (Amazon Dwy)	TERM.	26'	59'	35'	72'
Southbound Thru-Right (Amazon Dwy)	200'	23'	30'	23'	26'
2032 No Build Conditions					
Eastbound Left-Turn (Davidson Hwy)	250'	m5'	39'	m5'	158'
Eastbound Thru (Davidson Hwy)	-	m766'	692'	m367'	706'
Eastbound Right-Turn (Davidson Hwy)	100'	m48'	200'	m15'	200'
Westbound Left-Turn (Davidson Hwy)	300'	m91'	151'	m53'	92'
Westbound Thru (Davidson Hwy)	-	m269'	263'	m322'	309'
Westbound Right-Turn (Davidson Hwy)	TERM.	m5'	62'	m3'	80'
Northbound Left-Turn (Yellow Birch Pl)	150'	86'	129'	106'	122'
Northbound Thru-Right (Yellow Birch Pl)	-	#97'	99'	#229'	200'
Southbound Left-Turn (Amazon Dwy)	TERM.	26'	65'	35'	81'
Southbound Thru-Right (Amazon Dwy)	200'	23'	34'	22'	44'
2032 Build Conditions with Improvements					
Eastbound Left-Turn (Davidson Hwy)	250'	m5'	41'	m7'	98'
Eastbound Thru (Davidson Hwy)	-	m760'	287'	m#1117'	1195'
Eastbound Right-Turn (Davidson Hwy)	100'	m45'	173'	m18'	200'
Westbound Left-Turn (Davidson Hwy)	300'	m103'	193'	m61'	111'
Westbound Thru (Davidson Hwy)	-	m#545'	360'	m#612'	364'
Westbound Right-Turn (Davidson Hwy)	TERM.	m3'	187'	m1'	260'
Northbound Left-Turn (Yellow Birch Pl)	150'	86'	119'	105'	118'
Northbound Thru (Yellow Birch Pl)	-	15'	32'	15'	23'
Northbound Right-Turn (Yellow Birch Pl)	100'	80'	105'	153'	161'
Southbound Left-Turn (Amazon Dwy)	TERM.	26'	53'	35'	78'
Southbound Thru-Right (Amazon Dwy)	200'	23'	35'	23'	39'

When comparing the Build conditions to the No Build conditions from the queueing and blocking reports, no developer required improvements should be deemed necessary.



3. Davidson Highway & Kannapolis Parkway (Signalized)

Table 9: Davidson Hwy & Kannapolis Pkwy Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
Existing Conditions						
Intersection	D	48.3	1.05	E	58.6	1.03
Eastbound - Davidson Hwy	D	46.5	-	E	61.9	-
Westbound - Davidson Hwy	D	43.3	-	E	63.7	-
Northbound - Kannapolis Pkwy	D	46.9	-	E	62.6	-
Southbound - Kannapolis Pkwy	D	52.1	-	D	47.4	-
2027 No Build Conditions						
Intersection	E	72.4	1.08	F	93.1	1.20
Eastbound - Davidson Hwy	E	76.7	-	E	71.8	-
Westbound - Davidson Hwy	F	85.2	-	F	91.2	-
Northbound - Kannapolis Pkwy	E	56.4	-	F	109.9	-
Southbound - Kannapolis Pkwy	E	74.4	-	F	90.1	-
2027 Build Conditions						
Intersection	F	83.3	1.16	F	100.5	1.22
Eastbound - Davidson Hwy	F	84.1	-	E	74.6	-
Westbound - Davidson Hwy	F	96.4	-	F	95.4	-
Northbound - Kannapolis Pkwy	E	63.8	-	F	121.4	-
Southbound - Kannapolis Pkwy	F	89.5	-	F	99.7	-
2027 Build Conditions with Improvements						
Intersection	E	57.7	1.00	E	68.8	1.10
Eastbound - Davidson Hwy	E	67.2	-	E	75.9	-
Westbound - Davidson Hwy	E	58.4	-	E	71.5	-
Northbound - Kannapolis Pkwy	D	51.1	-	E	73.1	-
Southbound - Kannapolis Pkwy	E	56.0	-	D	54.5	-
2032 No Build Conditions						
Intersection	F	83.0	1.20	F	107.9	1.25
Eastbound - Davidson Hwy	F	91.9	-	E	78.9	-
Westbound - Davidson Hwy	F	87.5	-	F	103.1	-
Northbound - Kannapolis Pkwy	E	61.0	-	F	130.4	-
Southbound - Kannapolis Pkwy	F	89.2	-	F	105.6	-
2032 Build Conditions						
Intersection	F	102.3	1.24	F	123.7	1.26
Eastbound - Davidson Hwy	F	89.3	-	E	77.9	-
Westbound - Davidson Hwy	F	109.1	-	F	109.7	-
Northbound - Kannapolis Pkwy	E	72.0	-	F	149.9	-
Southbound - Kannapolis Pkwy	F	126.0	-	F	142.0	-
2032 Build Conditions with Improvements						
Intersection	E	65.6	1.06	F	83.2	1.17
Eastbound - Davidson Hwy	E	73.3	-	E	79.1	-
Westbound - Davidson Hwy	E	63.5	-	E	72.6	-
Northbound - Kannapolis Pkwy	E	59.7	-	F	110.0	-
Southbound - Kannapolis Pkwy	E	65.8	-	E	57.2	-



Table 9: Davidson Hwy & Kannapolis Pkwy Analysis Results Cont.

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
2032 Build Conditions with Tested Improvements						
Intersection	D	50.8	0.97	D	53.2	1.01
Eastbound - Davidson Hwy	D	45.6	-	D	52.4	-
Westbound - Davidson Hwy	D	47.9	-	D	52.7	-
Northbound - Kannapolis Pkwy	D	52.2	-	D	54.6	-
Southbound - Kannapolis Pkwy	D	54.2	-	D	52.5	-

Existing Conditions

Currently, the intersection operates at LOS “D” during the AM peak hour and LOS “E” during the PM peak hour.

2027 No Build Conditions

With the inclusion of growth in the background traffic and the offsite development trips/improvements, the intersection operates at LOS “E” during the AM peak hour and LOS “F” during the PM peak hour.

2027 Build Conditions

When comparing the impact of the 2027 Build to the 2027 No Build conditions, the intersection continues to operate at LOS “F” during both the AM and PM peak hours. The overall intersection delay increases by 15% in the AM peak hour and 8% in the PM peak hour.

2027 Build with Improvements Conditions

Based on NCDOT/City of Kannapolis guidelines, the analysis results indicate the need to identify mitigation at the study intersection. The following improvement was tested and is suggested:

- Remark the westbound right turn lane to a combined thru-right turn lane on Davidson Highway.

Assuming this improvement in place, the intersection operates at LOS “E” during both the AM and PM peak hours.

2032 No Build Conditions

With the inclusion of growth in the background traffic and the offsite development trips/improvements, the intersection operates at LOS “F” during both the AM and PM peak hours.



2032 Build Conditions

When comparing the impact of the 2032 Build to the 2032 No Build conditions, the intersection continues to operate at LOS "F" during both the AM and PM peak hours. The overall intersection delay increases by 23% in the AM peak hour and 15% in the PM peak hour.

2032 Build with Improvements Conditions

Assuming the Phase 1 improvement in place, the intersection operates at LOS "E" during the AM peak hour and LOS "F" during the PM peak hour.

2032 Build with Tested Improvements Conditions

Based on the City of Kannapolis analysis guidelines, the results indicate the need to identify mitigation to improve the intersection to LOS "D".

- Construct an additional northbound thru lane on Kannapolis Parkway including a corresponding receiving lane.
- Construct an additional northbound left turn lane on Kannapolis Parkway with 450 feet of storage.
- Construct an additional southbound thru lane on Kannapolis Parkway including a corresponding receiving lane.
- Construct a westbound right turn lane on Davidson Highway with 100 feet of storage.

Assuming these improvements in place, the intersection operates at LOS "D" during both the AM and PM peak hours.

The above improvements were tested but are not suggested, as the No Build condition indicates that the intersection operates below the City of Kannapolis Road Level of Service standard of LOS "D" for suburban areas, and the Build conditions is not projected to result in a change in LOS or a significant increase in delay.

Table 10: Davidson Hwy & Kannapolis Pkwy Queue Lengths

Davidson Hwy & Kannapolis Pkwy	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2027 No Build Conditions					
Eastbound Left-Turn (Davidson Hwy)	950'	m#263'	747'	m#335'	932'
Eastbound Thru (Davidson Hwy)	-	#670'	1151'	m#646'	1314'
Eastbound Right-Turn (Davidson Hwy)	250'	m203'	350'	m206'	350'
Westbound Left-Turn (Davidson Hwy)	175'	#225'	275'	#235'	275'
Westbound Thru (Davidson Hwy)	-	#642'	872'	#735'	970'
Westbound Right-Turn (Davidson Hwy)	250'	97'	350'	129'	350'
Northbound Left-Turn (Kannapolis Pkwy)	450'	#356'	476'	#454'	550'
Northbound Thru (Kannapolis Pkwy)	-	321'	460'	#811'	990'
Northbound Right-Turn (Kannapolis Pkwy)	125'	85'	206'	92'	225'
Southbound Left-Turn (Kannapolis Pkwy)	400'	193'	500'	#230'	500'
Southbound Thru (Kannapolis Pkwy)	-	#749'	872'	#608'	952'
Southbound Right-Turn (Kannapolis Pkwy)	400	165'	500'	135'	428'

**Table 10: Davidson Hwy & Kannapolis Pkwy Queue Lengths Cont.**

Davidson Hwy & Kannapolis Pkwy	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2027 Build Conditions with Improvements					
Eastbound Left-Turn (Davidson Hwy)	950'	m#216'	412'	m#265'	1050'
Eastbound Thru (Davidson Hwy)	-	#672'	943'	m#671'	1656'
Eastbound Right-Turn (Davidson Hwy)	250'	m236'	350'	m260'	350'
Westbound Left-Turn (Davidson Hwy)	175'	#225'	275'	#235'	275'
Westbound Thru-Right (Davidson Hwy)	250'	320'	501'	#404'	568'
Northbound Left-Turn (Kannapolis Pkwy)	450'	#197'	334'	173'	501'
Northbound Thru (Kannapolis Pkwy)	-	325'	364'	#773'	814'
Northbound Right-Turn (Kannapolis Pkwy)	125'	87'	223'	87'	225'
Southbound Left-Turn (Kannapolis Pkwy)	400'	193'	463'	#230'	354'
Southbound Thru (Kannapolis Pkwy)	-	#711'	766'	#532'	456'
Southbound Right-Turn (Kannapolis Pkwy)	400	161'	439'	115'	130'
2032 No Build Conditions					
Eastbound Left-Turn (Davidson Hwy)	950'	m#280'	1050'	m#333'	923'
Eastbound Thru (Davidson Hwy)	-	#716'	1651'	m#642'	1252'
Eastbound Right-Turn (Davidson Hwy)	250'	m203'	350'	m207'	350'
Westbound Left-Turn (Davidson Hwy)	175'	#234'	275'	#242'	275'
Westbound Thru (Davidson Hwy)	-	#667'	871'	#783'	998'
Westbound Right-Turn (Davidson Hwy)	250'	100'	350'	134'	350'
Northbound Left-Turn (Kannapolis Pkwy)	450'	#378'	519'	#482'	550'
Northbound Thru (Kannapolis Pkwy)	-	344'	690'	#872'	1005'
Northbound Right-Turn (Kannapolis Pkwy)	125'	89'	202'	96'	225'
Southbound Left-Turn (Kannapolis Pkwy)	400'	198'	500'	#240'	500'
Southbound Thru (Kannapolis Pkwy)	-	#806'	1036'	#654'	1028'
Southbound Right-Turn (Kannapolis Pkwy)	400	176'	500'	142'	500'
2032 Build Conditions with Improvements					
Eastbound Left-Turn (Davidson Hwy)	950'	m#216'	848'	m#278'	976'
Eastbound Thru (Davidson Hwy)	-	#735'	1284'	m#690'	1506'
Eastbound Right-Turn (Davidson Hwy)	250'	m247'	350'	m271'	350'
Westbound Left-Turn (Davidson Hwy)	175'	#234'	275'	#242'	275'
Westbound Thru-Right (Davidson Hwy)	250'	#358'	594'	#426'	643'
Northbound Left-Turn (Kannapolis Pkwy)	450'	#229'	466'	#230'	550'
Northbound Thru (Kannapolis Pkwy)	-	349'	555'	#859'	986'
Northbound Right-Turn (Kannapolis Pkwy)	125'	90'	224'	#94'	225'
Southbound Left-Turn (Kannapolis Pkwy)	400'	198'	499'	#240'	494'
Southbound Thru (Kannapolis Pkwy)	-	#768'	755'	#565'	620'
Southbound Right-Turn (Kannapolis Pkwy)	400	172'	443'	118'	156'

Although some of the queues in the Build conditions extend beyond the existing storage, these queues are also present under the No Build conditions. Therefore, no developer required improvements should be deemed necessary.



4. Kannapolis Parkway & Amazon Driveway (Signalized)

Table 11: Kannapolis Pkwy & Amazon Dwy Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
Existing Conditions						
Intersection	A	8.1	0.74	A	4.9	0.56
Eastbound - Amazon Dwy	C	28.8	-	C	26.5	-
Northbound - Kannapolis Pkwy	A	0.2	-	A	0.5	-
Southbound - Kannapolis Pkwy	B	11.2	-	A	8.3	-
2027 No Build Conditions						
Intersection	B	10.0	0.77	A	7.6	0.69
Eastbound - Amazon Dwy	C	31.1	-	C	26.9	-
Northbound - Kannapolis Pkwy	A	4.9	-	A	1.9	-
Southbound - Kannapolis Pkwy	B	11.2	-	B	11.9	-
2027 Build Conditions						
Intersection	B	10.3	0.77	A	7.9	0.71
Eastbound - Amazon Dwy	C	31.1	-	C	26.9	-
Northbound - Kannapolis Pkwy	A	4.8	-	A	1.9	-
Southbound - Kannapolis Pkwy	B	11.9	-	B	12.6	-
2032 No Build Conditions						
Intersection	B	11.0	0.81	A	7.7	0.71
Eastbound - Amazon Dwy	C	32.3	-	C	28.9	-
Northbound - Kannapolis Pkwy	A	5.0	-	A	2.0	-
Southbound - Kannapolis Pkwy	B	12.9	-	B	11.8	-
2032 Build Conditions						
Intersection	B	12.3	0.81	A	8.0	0.74
Eastbound - Amazon Dwy	C	32.3	-	C	28.9	-
Northbound - Kannapolis Pkwy	A	4.7	-	A	2.0	-
Southbound - Kannapolis Pkwy	B	15.7	-	B	12.5	-

Existing Conditions

Currently, the intersection operates at LOS “A” during both the AM and PM peak hours.

2027 No Build Conditions

With the inclusion of growth in the background traffic and the offsite development trips, the intersection operates at LOS “B” during the AM peak hour and LOS “A” during the PM peak hour.

2027 Build Conditions

When comparing the impact of the 2027 Build to the 2027 No Build conditions, the intersection operates at LOS “B” during the AM peak hour and LOS “A” during the PM peak hour. The overall intersection delay increases by 3% in the AM peak hour and 4% in the PM peak hour. **Therefore, no developer required improvements should be deemed necessary at this intersection.**



2032 No Build Conditions

With the inclusion of growth in the background traffic and the offsite development trips, the intersection operates at LOS “B” during the AM peak hour and LOS “A” during the PM peak hour.

2032 Build Conditions

When comparing the impact of the 2032 Build to the 2032 No Build conditions, the intersection operates at LOS “B” during the AM peak hour and LOS “A” during the PM peak hour. The overall intersection delay increases by 12% in the AM peak hour and 4% in the PM peak hour. **Therefore, no developer required improvements should be deemed necessary at this intersection.**

Table 12: Kannapolis Pkwy & Amazon Dwy Queuing and Blocking Report

Amazon Dwy & Kannapolis Pkwy	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2027 No Build Conditions					
Eastbound Right-Turn (Amazon Dwy)	TERM.	#134'	136'	131'	150'
Northbound Left-Turn (Kannapolis Pkwy)	225'	129'	154'	79'	325'
Northbound Thru (Kannapolis Pkwy)	-	0'	11'	0'	1087'
Southbound Thru (Kannapolis Pkwy)	-	m311'	308'	335'	302'
Southbound Right-Turn (Kannapolis Pkwy)	125'	m16'	225'	m13'	192'
2027 Build Conditions with Improvements					
Eastbound Right-Turn (Amazon Dwy)	TERM.	#134'	180'	131'	151'
Northbound Left-Turn (Kannapolis Pkwy)	225'	129'	140'	79'	129'
Northbound Thru (Kannapolis Pkwy)	-	0'	0'	0'	88'
Southbound Thru (Kannapolis Pkwy)	-	m251'	290'	m262'	238'
Southbound Right-Turn (Kannapolis Pkwy)	125'	m12'	91'	m9'	50'
2032 No Build Conditions					
Eastbound Right-Turn (Amazon Dwy)	TERM.	#151'	148'	139'	174'
Northbound Left-Turn (Kannapolis Pkwy)	225'	133'	191'	84'	325'
Northbound Thru (Kannapolis Pkwy)	-	0'	204'	0'	1104'
Southbound Thru (Kannapolis Pkwy)	-	m332'	320'	m324'	288'
Southbound Right-Turn (Kannapolis Pkwy)	125'	m17'	225'	m12'	191'
2032 Build Conditions with Improvements					
Eastbound Right-Turn (Amazon Dwy)	TERM.	#151'	154'	139'	167'
Northbound Left-Turn (Kannapolis Pkwy)	225'	133'	177'	84'	325'
Northbound Thru (Kannapolis Pkwy)	-	0'	0'	0'	1100'
Southbound Thru (Kannapolis Pkwy)	-	m245'	279'	m229'	235'
Southbound Right-Turn (Kannapolis Pkwy)	125'	m0'	132'	m8'	40'

Although some of the queues in the Build conditions extend beyond the existing storage, these queues are also present under the No Build conditions. Therefore, no developer required improvements should be deemed necessary.



5. Davidson Highway & Access "A" (Unsignalized)

Table 13: Davidson Hwy & Access "A" Analysis Results

Approach	AM Peak Hour			PM Peak Hour		
	LOS	Delay (sec/veh)	Capacity (v/c)	LOS	Delay (sec/veh)	Capacity (v/c)
2027 Build Conditions						
Intersection	NA	NA	-	NA	NA	-
Eastbound - Davidson Hwy	A	0.4	-	A	0.1	-
Westbound - Davidson Hwy	A	0.0	-	A	0.0	-
Southbound - Access "A"	F	55.9	-	F	656.9	-
2032 Build Conditions						
Intersection	NA	NA	-	NA	NA	-
Eastbound - Davidson Hwy	A	0.6	-	A	0.1	-
Westbound - Davidson Hwy	A	0.0	-	A	0.0	-
Southbound - Access "A"	F	86.5	-	F	1401.4	-

2027 Build Conditions

We propose the following access configuration:

- One ingress lane and two egress lanes (a terminating southbound left turn lane and a separate right turn lane with 100 feet of storage).
- Construct an eastbound left turn lane on Davidson Highway with 100 feet of storage.
- Construct a westbound right turn lane on Davidson Highway with 100 feet of storage.

Assuming this access configuration in place, the worst leg of the intersection (southbound) operates at LOS "F" during both the AM and PM peak hours.

2032 Build Conditions

Assuming the proposed access configuration in place, the worst leg of the intersection (southbound) operates at LOS "F" during both the AM and PM peak hours.

Although the intersection is expected to operate at LOS "F", NCDOT plans to convert Davidson Highway to a Reduced Conflict Intersection (RCI) corridor as a part of STIP Project R-5706. Upon implementation of this project, access at this location will be restricted to either an unsignalized crossover or a right-in/right-out configuration. The STIP project will also include the construction of U-turn bulbs along the corridor, providing more direct access to and from the site.

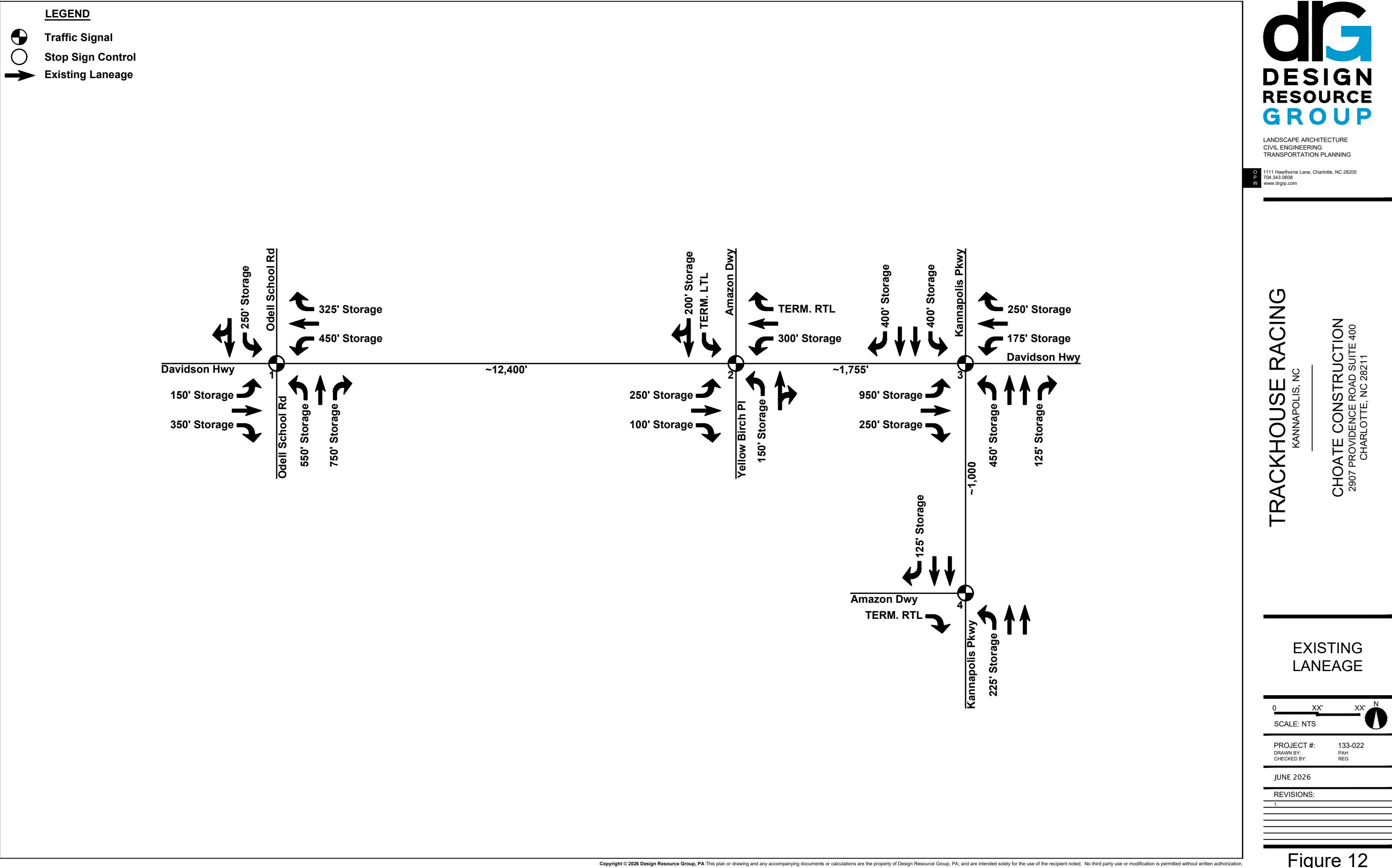
We do not recommend restricting site access prior to the construction of the STIP project, as there are currently no viable U-turn opportunities for vehicles traveling eastbound on Davidson Highway to access Kannapolis Parkway and I-85.

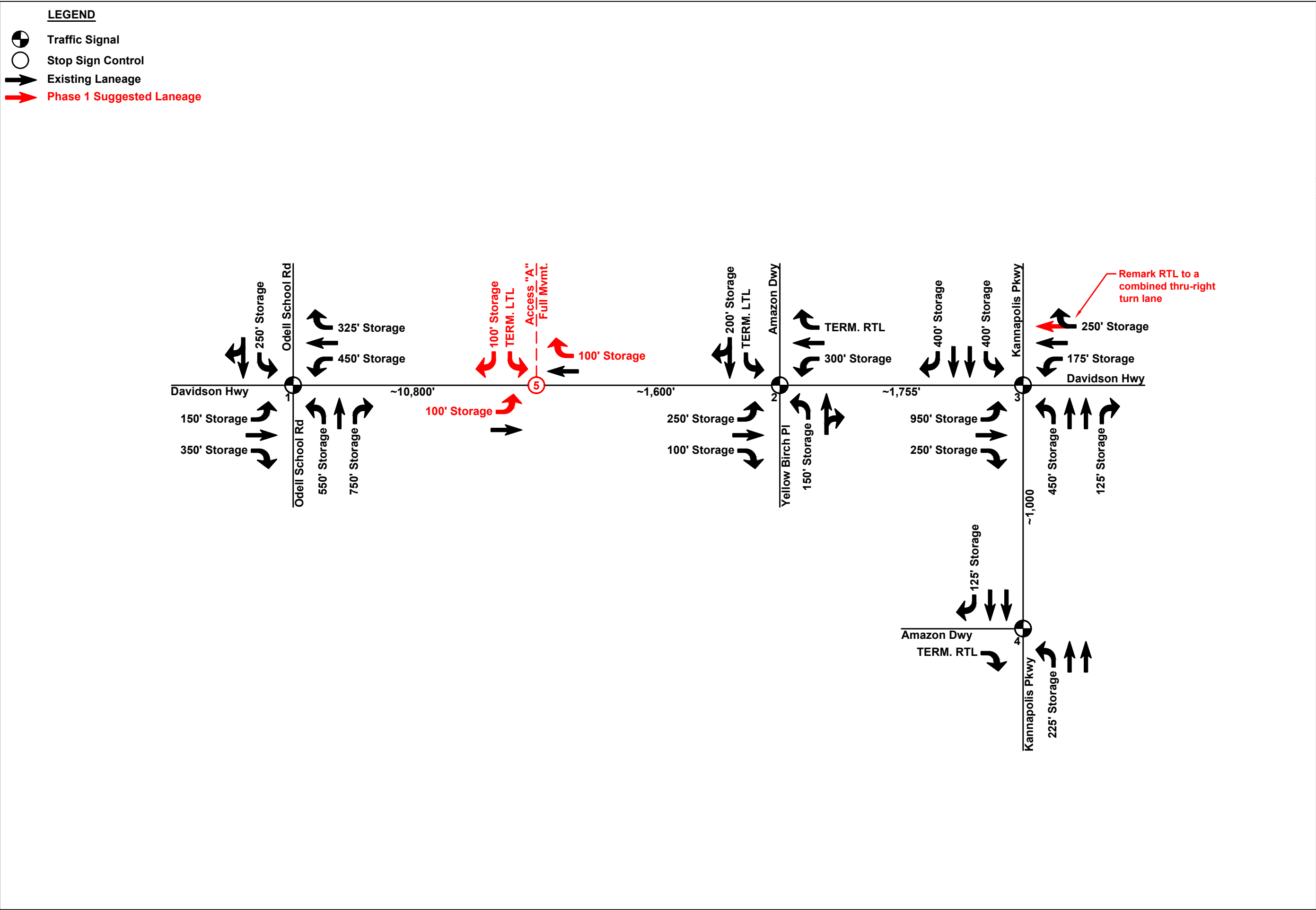


Table 14: Davidson Hwy & Access "A" Queuing and Blocking Report

Davidson Hwy & Access "A"	Storage (ft)	AM PEAK		PM PEAK	
		95th % Queue	Max Queue	95th % Queue	Max Queue
2027 Build Conditions with Improvements					
Eastbound Left-Turn (Davidson Hwy)	100'	5'	47'	0'	28'
Eastbound Thru (Davidson Hwy)	-	0'	0'	0'	13'
Westbound Thru (Davidson Hwy)	-	0'	0'	0'	0'
Westbound Right-Turn (Davidson Hwy)	100'	0'	0'	0'	0'
Southbound Left-Turn (Access "A")	TERM.	20'	38'	270'	240'
Southbound Right-Turn (Access "A")	100'	0'	21'	13'	144'
2032 Build Conditions with Improvements					
Eastbound Left-Turn (Davidson Hwy)	100'	8'	57'	3'	68'
Eastbound Thru (Davidson Hwy)	-	0'	0'	0'	158'
Westbound Thru (Davidson Hwy)	-	0'	0'	0'	0'
Westbound Right-Turn (Davidson Hwy)	100'	0'	9'	0'	0'
Southbound Left-Turn (Access "A")	TERM.	38'	60'	458'	890'
Southbound Right-Turn (Access "A")	100'	3'	26'	20'	200'

The existing laneage is shown in Figure 12. The suggested laneage for Phase 1 and Phase 2 are shown in Figures 13 and 14, respectively.





TRACKHOUSE RACING
KANNAPOLIS, NC

CHOATE CONSTRUCTION
2907 PROVIDENCE ROAD SUITE 400
CHARLOTTE, NC 28211

**PHASE 1
SUGGESTED
LANEAGE**

0 XX' XX' N
SCALE: NTS

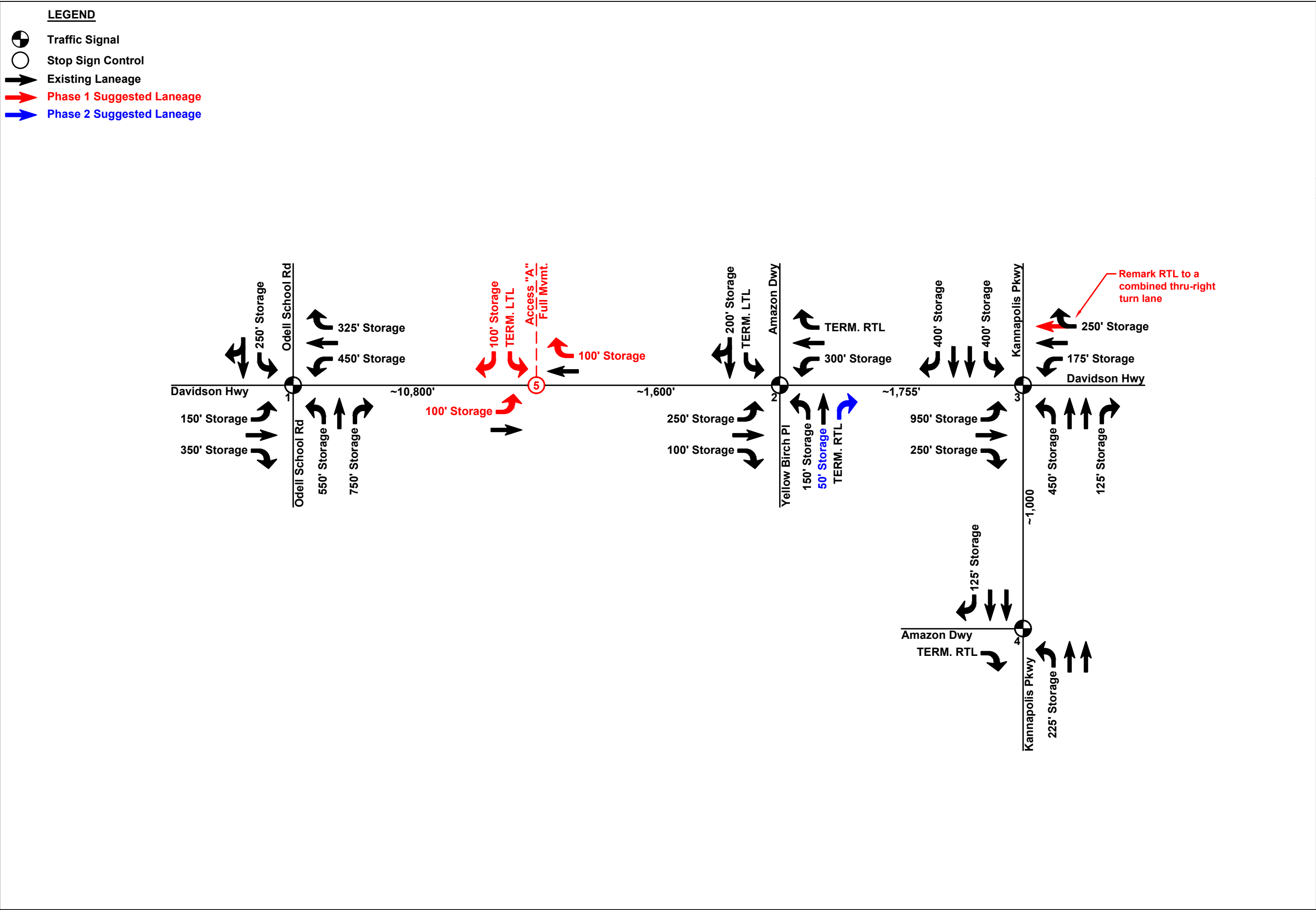
PROJECT #: 133-022
DRAWN BY: PAH
CHECKED BY: REG

JUNE 2026

REVISIONS:

1.	

Figure 13



TRACKHOUSE RACING
KANNAPOLIS, NC

CHOATE CONSTRUCTION
2907 PROVIDENCE ROAD SUITE 400
CHARLOTTE, NC 28211

**PHASE 2
SUGGESTED
LANEAGE**

0 XX' XX' N
SCALE: NTS

PROJECT #: 133-022
DRAWN BY: PAH
CHECKED BY: REG

JUNE 2026

REVISIONS:

1.	

Figure 14



CONCLUSION

In conclusion, even though the proposed Trackhouse Racing site will slightly increase the amount of vehicular traffic on the adjacent roadways/corridors, the project will not materially impact adjacent roadways, intersections, or the general public traveling in the area if the site is developed according to the proposed plan and includes the suggested intersection improvements and access configuration.



APPENDIX