Updated Traffic Impact Analysis

Williams Corner

Chatham County, NC

Prepared for:

Bradshaw Robinson Slawter LLP

Kimley»Horn

Updated Traffic Impact Analysis for

Williams Corner

Chatham County, North Carolina

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013566000

Executive Summary

Kimley-Horn has completed a Traffic Impact Analysis for the revised development plan associated with the Williams Corner development located generally in the northeast quadrant of the intersection of US 15/501 at Lystra Road in Chatham County, North Carolina. A previously-approved development plan for the site included approximately 40 townhomes, a daycare center, and 333,500 SF of retail and office space (assumed to include 50,500 SF of general retail space, 150,000 SF of medical office space, a 6,000 SF veterinary hospital, a 10,000 SF opticians office, 50,500 SF of specialty retail space, a 25,000 SF specialty supermarket, a 15,000 SF pharmacy, and a 5,000 SF drive-in bank).

The site is currently vacant, and while specific plans have not been confirmed for the site, this analysis assumed that the project will now consist of up to 120,000 square feet (SF) of mini-warehouse (self-storage) space, a maximum of 550 apartments, approximately 90,000 SF of general office space, approximately 90,000 SF of general retail space (with the potential for some restaurant space), and an approximately 50,000 SF supermarket. The development is proposed to be accessed via driveways on US 15/501, Lystra Road, and Legend Oaks Drive (at the existing traffic circle). The anticipated build-out year for the project is 2027.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the development. The traffic conditions studied include the existing (2020) traffic condition as well as the projected (2027) background and build-out traffic conditions.

As shown in Table ES-1, the proposed development is anticipated to generate significantly fewer site trips than previously-envisioned. Based on the analyzed land-use plan, the development has the potential to generate 9,416 net new trips on a typical weekday, with 665 net new trips in the AM peak hour and 757 net new trips in the PM peak hour. While some fast-casual type restaurant space is being considered, all anticipated retail space (other than the supermarket) was classified as general retail for trip generation purposes in order to analyze higher trip generation volumes in order to be conservative.

For reference, the previous development was expected to generate approximately 14,788 net new trips on a typical weekday, with 992 new trips in the AM peak hour and 1,358 new trips in the PM peak hour. Based on those volumes, the currently proposed development plan is expected to generate 5,372 fewer new daily trips, 327 fewer AM peak hour trips, and 601 fewer PM peak hour trips.

Table ES-1
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out
151	Mini-Warehouse	120,000	s.f.	91	91	7	5	20	12
221	Multifamily Housing (Mid-Rise) – North	275	d.u.	749	749	24	68	71	46
221	Multifamily Housing (Mid-Rise) – South	275	d.u.	749	749	24	68	71	46
710	General Office Building	90,000	s.f.	479	479	95	16	16	87
820	Shopping Center	90,000	s.f.	2,798	2,798	122	75	241	262
850	Supermarket	50,000	s.f.	2,379	2,379	115	76	238	228
Subtotal				7,245	7,245	387	308	646	680
Internal Capture				*973*	*973*	*15*	*15*	*138*	*138*
Pass-by Capture				*1,564*	*1,564*	*0*	*0*	*147*	*146*
Net New External Trips				**4,708**	**4,708**	**372**	**293**	**361**	**396**

Capacity analyses were performed using Synchro Version 10 & SIDRA version 4 software. Table ES-2 summarizes the operation of the study intersections for the AM and PM peak hour traffic conditions.

Table ES-2
Level-of-Service Summary

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
US 15/501 at Legend Oaks Drive (Unsignalized)		
Existing (2020) Traffic – Right-in/Right-out	WB – C (15.5)	WB – B (12.1)
Background (2027) Traffic – Right-in/Right-out	WB – C (20.3)	WB – C (15.0)
Build-out (2027) Traffic – Left-in/Right-in/Right-out with Imps.	WB – D (25.3) SBL – C (20.2)	WB – C (18.4) SBL – C (16.9)
Legend Oaks Drive at North Site Driveway (Roundabout)		
Existing (2020) Traffic	-	-
Background (2027) Traffic	-	-
Build-out (2027) Traffic	LOS: A (3.5) v/c: 0.11	LOS: A (3.6) v/c: 0.13
US 15/501 at Knox Way/Central (Left-out) Site Driveway		
Existing (2020) Traffic – Unsignalized, Right-in/Right-out	EB – B (11.5)	EB – C (20.5)
Background (2027) Traffic – Signalized, Left-out/ Right-in/Right-out	A (6.9)	B (15.6)
Build-out (2027) Traffic – Signalized, Left-out/ Right-in/Right-out with Imps.	A (7.6)	B (15.1)

Table ES-2 (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
US 15/501 at Polks Landing Road/South (Left-in) Site Driveway		
Existing (2020) Traffic – Unsignalized, Left-in/Right-in/Right-out	EB – B (11.0) NBL – A (9.6) SBU – D (28.9)	EB – B (14.6) NBL – B (13.9) SBU – C (17.6)
Background (2027) Traffic – Signalized, Left-in/Right-in/Right-out	EB Sig. – B (10.2) SBU – C (16.1)	EB Sig. – A (9.6) SBU – B (13.5)
Build-out (2027) Traffic – Signalized, Left-in/Right-in/ Right-out with Imps.	EB Sig. – A (9.9) WB Sig. – A (6.0)	EB Sig. – B (10.9) WB Sig. – B (11.1)
US 15/501 at Lystra Road (Signalized)		
Existing (2020) Traffic	B (19.5)	C (22.0)
Background (2027) Traffic – with Phasing Modifications	C (20.1)	C (20.5)
Build-out (2027) Traffic – with Phasing Modifications (by Others) & Rec. Improvements	C (20.0)	C (20.4)
Lystra Road at Chatham Downs Drive (Unsignalized)		
Existing (2020) Traffic	NB – B (11.8) WBL – A (8.0)	NB – B (13.4) WBL – A (7.9)
Background (2027) Traffic	NB – B (13.3) WBL – A (8.1)	NB – C (15.5) WBL – A (8.1)
Build-out (2027) Traffic	NB – B (14.7) WBL – A (8.3)	NB – C (18.5) WBL – A (8.3)
Lystra Road at East Site Driveway (Unsignalized)		
Build-out (2027) Traffic – Full-Movement with Imps.	SB – B (11.5) EBL – A (8.1)	SB – B (12.1) EBL – A (8.2)
Lystra Road at West Site Driveway (Unsignalized)		
Build-out (2027) Traffic – Right-in/Right-out with Imps.	SB – B (11.3)	SB – B (14.6)

Background Improvements

The following improvements were assumed to be implemented by others and were included in the analysis in the background and build-out conditions:

US 15/501 at Knox Way *(by Polks Village)*:

- Reconfigure the eastbound approach of Knox Way to provide exclusive left- and right-turn lanes
- Modify the existing median on US 15/501 to permit left-turns out of Knox Way but prohibit left-turns into Knox Way
- Install a traffic signal to accommodate the revised intersection laneage

US 15/501 at Polks Landing Road *(by Polks Village)*:

- Install a traffic signal to accommodate volumes into/out of Polks Landing Road ("superstreet" configuration with southbound US 15/501)

US 15/501 at Lystra Road *(by NCDOT – signal plans already completed)*:

- Modify the existing traffic signal to limit the northbound U-turn movement and southbound left-turn movement to protected-only phasing (from the existing permitted or permitted + protected phasing)

Recommended Improvements

The following roadway improvements are recommended to be performed as part of this project:

US 15/501 at Legend Oaks Drive:

- Construct an exclusive southbound left-turn lane on US 15/501 with 200 feet of storage and appropriate tapers

Legend Oaks Drive at North Site Driveway:

- Construct the North Site Driveway with one ingress lane and one egress lane at the existing roundabout
- Coordinate with NCDOT on required modifications to the roundabout to accommodate the Site Driveway approach, including signing and marking improvements

US 15/501 at Knox Way/Central Site Driveway:

- Construct the Central Site Driveway with one ingress lane and two egress lanes (an exclusive left-turn lane and an exclusive right-turn lane)
- Construct a northbound right-turn lane on US 15/501 with 100 feet of storage and appropriate tapers
- Modify the traffic signal to accommodate the recommended roadway laneage

US 15/501 at Polks Landing Road/South Site Driveway:

- Construct the South Site Driveway with one ingress lane and one ingress lane
- Construct a northbound right-turn lane on US 15/501 with 100 feet of storage and appropriate tapers
- Install a traffic signal to accommodate volumes into/out of the proposed South Site Driveway approach ("superstreet" configuration with northbound US 15/501)

US 15/501 at Lystra Road:

- Construct an additional southbound left-turn lane on US 15/501 with 175 feet of storage to provide dual left-turn lanes on that approach
- Construct an additional westbound left-turn lane on Lystra Road with 275 feet of storage to provide dual left-turn lanes on that approach

- Extend the storage of the existing westbound right-turn lane on Lystra Road by approximately 75 feet to provide 200 feet of storage on that movement
- Modify the existing traffic signal to accommodate the recommended laneage

Lystra Road:

- Construct an additional eastbound lane on Lystra Road from US 15/501 that terminates as a right-turn lane at Chatham Downs Drive (to provide a second receiving lane for the recommended dual southbound left-turn lanes on US 15/501)
- Restripe the existing westbound left-turn lane on Lystra Road as a two-way left-turn lane between Chatham Downs Drive and the proposed East Site Driveway

Lystra Road at East Site Driveway (Full-Movement):

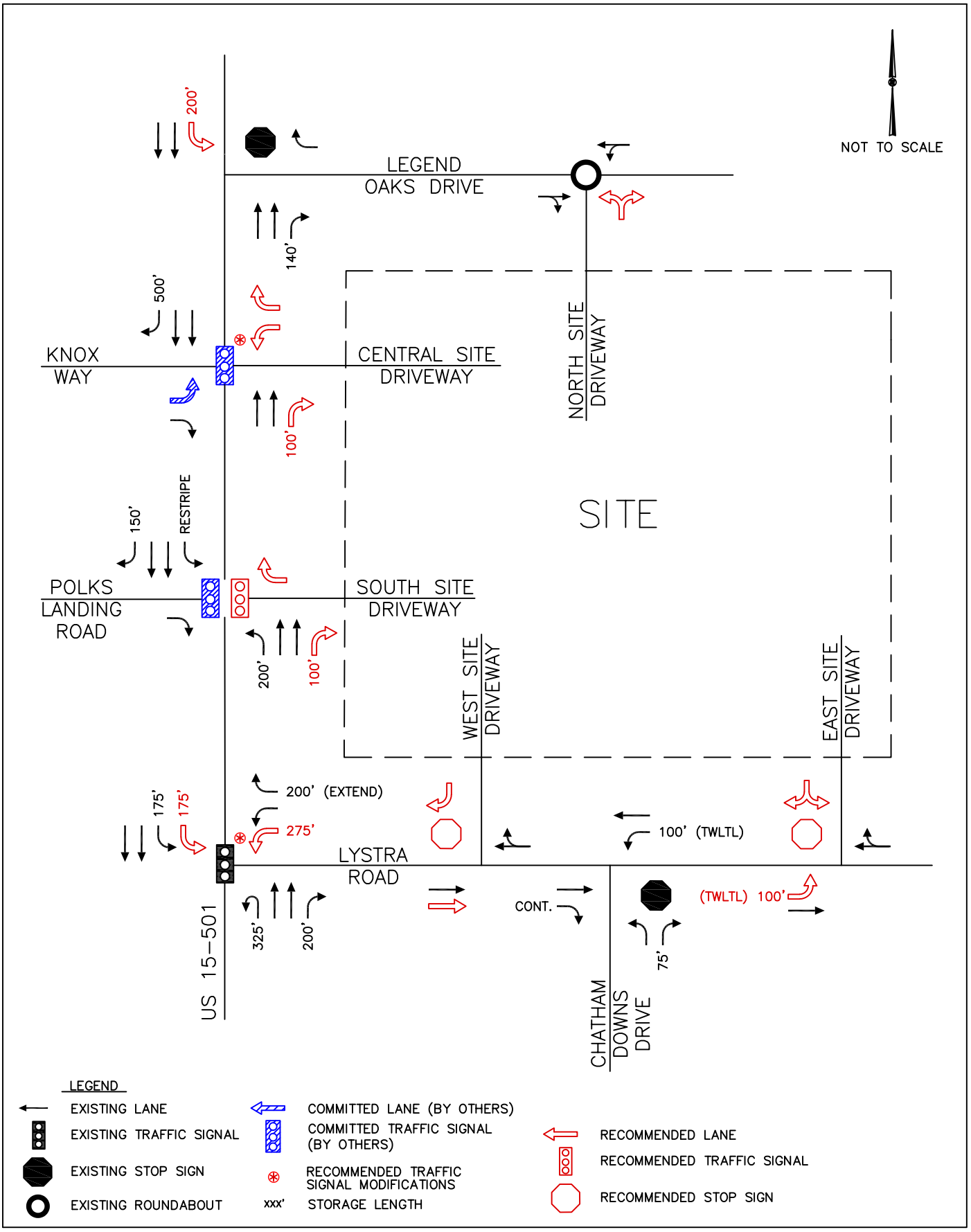
- Construct the East Site Driveway with one ingress lane and one egress lane
- Provide an eastbound left-turn lane on US 15/501

Lystra Road at West Site Driveway (Right-in/Right-out):

- Construct the West Site Driveway with one ingress lane and one egress lane

Analyses indicate that with the committed and recommended improvements in place, all of the study intersections will operate at acceptable LOS at project build-out. It should also be noted that the existing roundabout on Legend Oaks Drive is expected to operate with short overall delays at project build-out and well below the capacity of the roundabout. As the recommended turn lanes are consistent with where turn lanes were committed to be performed for the previous, more-intense development plan, site traffic impacts are expected to be effectively mitigated for this revised development plan.

The committed and recommended roadway laneage is shown on **Figure ES-1**.



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Kimley»Horn	WILLIAMS CORNER 2020 TIA UPDATE TRAFFIC IMPACT ANALYSIS CHAPEL HILL, NC	RECOMMENDED ROADWAY LANEAGE	FIGURE ES-1

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1.0 Introduction

Kimley-Horn has completed a Traffic Impact Analysis for the revised development plan associated with the Williams Corner development located generally in the northeast quadrant of the intersection of US 15/501 at Lystra Road in Chatham County, North Carolina. A previously-approved development plan for the site included approximately 40 townhomes, a daycare center, and 333,500 SF of retail and office space (assumed to include 50,500 SF of general retail space, 150,000 SF of medical office space, a 6,000 SF veterinary hospital, a 10,000 SF opticians office, 50,500 SF of specialty retail space, a 25,000 SF specialty supermarket, a 15,000 SF pharmacy, and a 5,000 SF drive-in bank).

The site is currently vacant, and while specific plans have not been confirmed for the site, this analysis assumed that the project will now consist of up to 120,000 square feet (SF) of mini-warehouse (self-storage) space, a maximum of 550 apartments, approximately 90,000 SF of general office space, approximately 90,000 SF of general retail space (with the potential for some restaurant space), and an approximately 50,000 SF supermarket. The development is proposed to be accessed via driveways on US 15/501, Lystra Road, and Legend Oaks Drive (at the existing traffic circle). The anticipated build-out year for the project is 2027.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the development. The traffic conditions studied include the existing (2020) traffic condition as well as the projected (2027) background and build-out traffic conditions.

For reference, the previous development was expected to generate approximately 14,788 net new trips on a typical weekday, with 992 new trips in the AM peak hour and 1,358 new trips in the PM peak hour. Based on those volumes, the currently proposed development plan is expected to generate 5,372 fewer new daily trips, 327 fewer AM peak hour trips, and 601 fewer PM peak hour trips.

North Carolina Department of Transportation (NCDOT) transportation staff provided background data and were consulted regarding the elements to be covered in this analysis. The Memorandum of Understanding is included in the Appendix of this report.

2.0 Inventory

2.1 *Study Area*

The study area for this development in includes the following intersections:

- US 15/501 at Legend Oaks Drive
- Legend Oaks Drive at North Site Driveway (Roundabout)
- US 15/501 at Knox Way/Central (Left-out) Site Driveway
- US 15/501 at Polks Landing Road/South (Left-in) Site Driveway
- US 15/501 at Lystra Road
- Lystra Road at Chatham Downs Drive
- Lystra Road at East Site Driveway
- Lystra Road at West Site Driveway

Figure 2.1 shows the site location, and **Figure 2.2** shows the conceptual development plan.

2.2 *Existing Conditions*

The proposed Williams Corner development is located generally in the northeast quadrant of the intersection of US 15/501 at Lystra Road in Chatham County, North Carolina. Roadways in the study area include US 15/501, Legend Oaks Drive, Knox Way, Polks Landing Road, and Lystra Road. The existing roadway laneage is shown in **Figure 2.3**.

US 15/501 is generally a 4-lane divided roadway in the vicinity of the site, and the posted speed limit reduces from 55 mph to 45 mph approximately 300 feet south of Legend Oaks Drive. The estimated 2020 average daily traffic (ADT) volume is approximately 21,400 vehicles per day (vpd) north of Lystra Road.

Legend Oaks Drive is a two-lane undivided roadway with an assumed speed limit of 25 mph. The estimated 2020 ADT volume is less than 1,000 vpd.

Knox Way is a two-lane undivided roadway that serves as the northern site driveway for Polks Village. The estimated 2020 ADT volume is approximately 1,800 vpd.

Polks Landing Road is a two-lane undivided roadway that serves as both the southern site driveway for Polks Village as well as access to single-family residences. The estimated 2020 ADT volume is approximately 1,000 vpd.

Lystra Road is a 2-lane undivided roadway in the vicinity of the site with a posted speed limit of 45 mph. The estimated 2020 ADT volume is approximately 5,900 vpd east of US 15/501.

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Kimley»Horn	WILLIAMS CORNER 2020 TIA UPDATE TRAFFIC IMPACT ANALYSIS CHATHAM COUNTY, NC	SITE LOCATION	FIGURE 2.1

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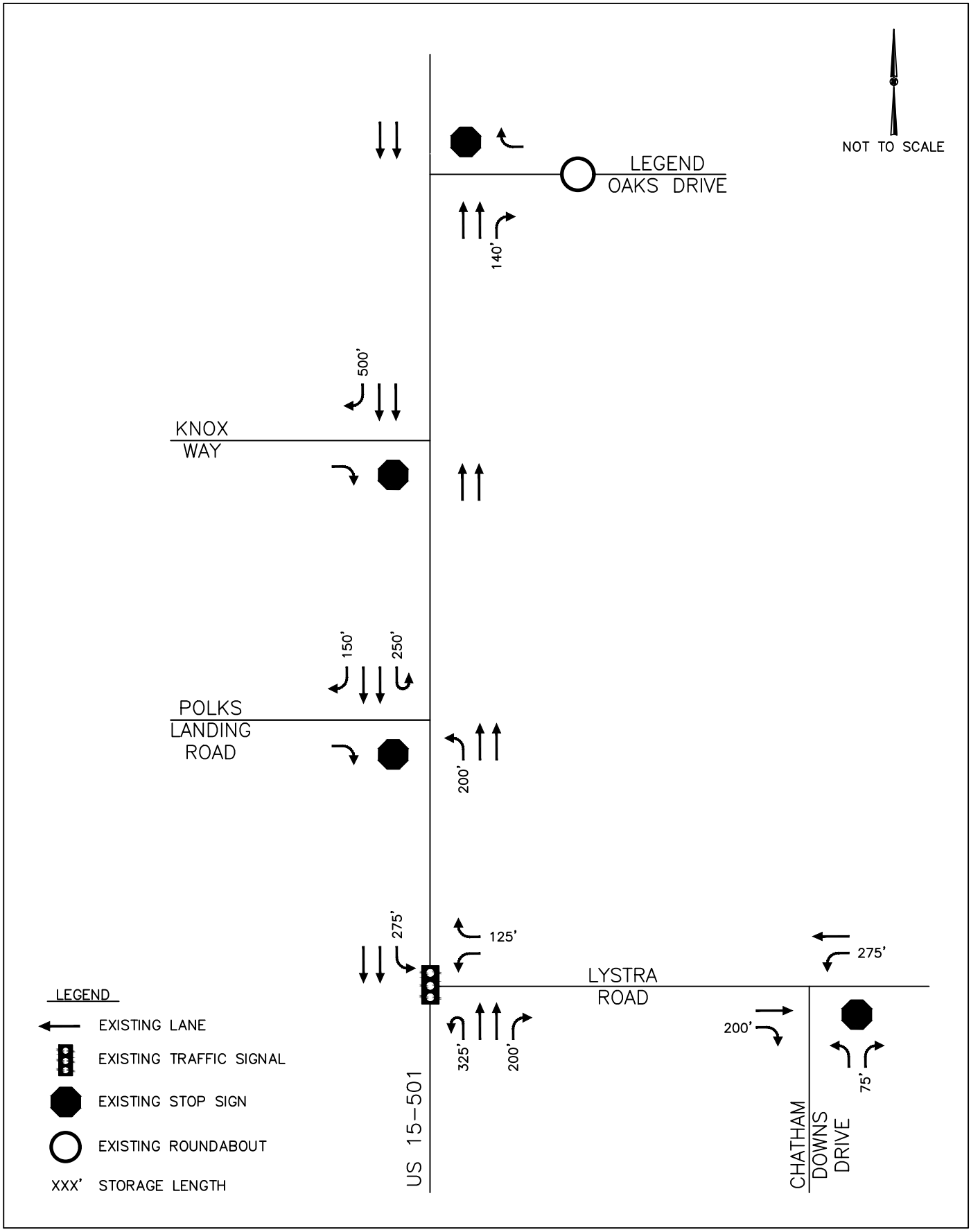
Kimley»Horn	WILLIAMS CORNER 2020 TIA UPDATE TRAFFIC IMPACT ANALYSIS CHATHAM COUNTY, NC	CONCEPTUAL DEVELOPMENT PLAN	FIGURE 2.2



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Kimley»Horn	WILLIAMS CORNER 2020 TIA UPDATE TRAFFIC IMPACT ANALYSIS CHATHAM COUNTY, NC	EXISTING ROADWAY LANEAGE	FIGURE 2.3

3.0 Traffic Generation

The traffic generation potential of the proposed development was determined using the traffic generation rates and equations published in *ITE Trip Generation* (Institute of Transportation Engineers, Tenth Edition, 2017). The site is currently vacant, and while specific plans have not been confirmed for the site, this analysis assumed that the project will now consist of up to 120,000 square feet (SF) of mini-warehouse (self-storage) space, a maximum of 550 apartments, approximately 90,000 SF of general office space, approximately 90,000 SF of general retail space, and an approximately 50,000 SF supermarket. While some fast-casual type restaurant space is being considered, all anticipated retail space (other than the supermarket) was classified as general retail for trip generation purposes in order to analyze higher trip generation volumes (in order to be conservative). The trip generation potential of the site is shown below in Table 3.0.

Table 3.0
ITE Traffic Generation (Vehicles)

Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out
151	Mini-Warehouse	120,000	s.f.	91	91	7	5	20	12
221	Multifamily Housing (Mid-Rise) – North	275	d.u.	749	749	24	68	71	46
221	Multifamily Housing (Mid-Rise) – South	275	d.u.	749	749	24	68	71	46
710	General Office Building	90,000	s.f.	479	479	95	16	16	87
820	Shopping Center	90,000	s.f.	2,798	2,798	122	75	241	262
850	Supermarket	50,000	s.f.	2,379	2,379	115	76	238	228
Subtotal				7,245	7,245	387	308	646	680
Internal Capture				*973*	*973*	*15*	*15*	*138*	*138*
Pass-by Capture				*1,564*	*1,564*	*0*	*0*	*147*	*146*
Net New External Trips				**4,708**	**4,708**	**372**	**293**	**361**	**396**

As shown in Table 3.0, the proposed development has the potential to generate 9,416 net new trips on a typical weekday, with 665 net new trips in the AM peak hour and 757 net new trips in the PM peak hour.

For reference, the previous development was expected to generate approximately 14,788 net new trips on a typical weekday, with 992 new trips in the AM peak hour and 1,358 new trips in the PM peak hour. Based on those volumes, the currently proposed development plan is expected to generate 5,372 fewer new daily trips, 327 fewer AM peak hour trips, and 601 fewer PM peak hour trips.

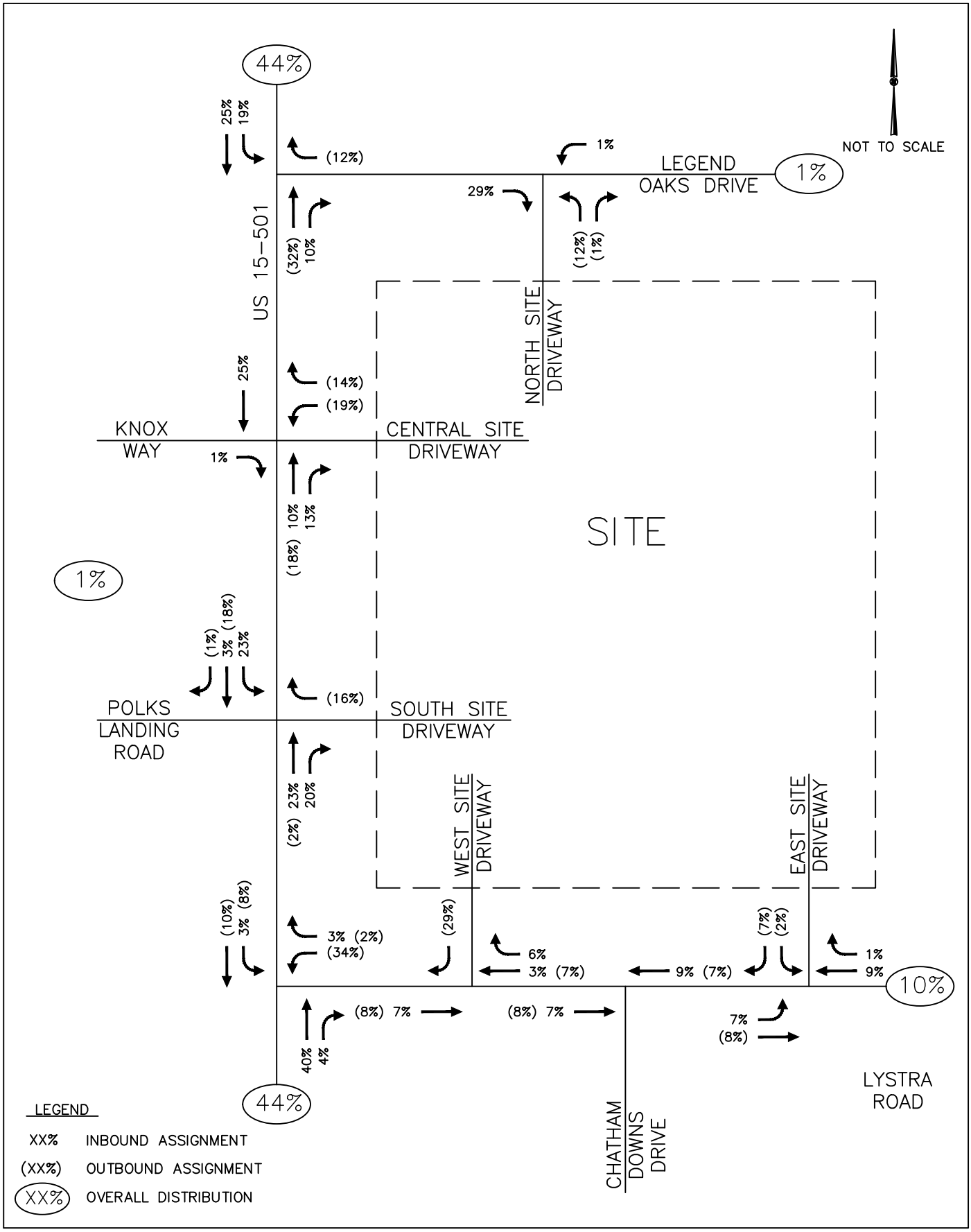
Detailed trip generation calculations are included in the Appendix.

4.0 Site Traffic Distribution

The proposed generated trips were assigned to the surrounding roadway network. The directional distribution and assignment are based on land uses in the area and existing travel patterns and are generally consistent with the previous analysis for the development. Site trips were assigned to the network based on the following distribution:

- 44% to/from the north on US 15/501
- 44% to/from the south on US 15/501
- 10% to/from the east on Lystra Road
- 1% to/from the east on Legend Oaks Drive
- 1% to/from Polks Village

The site traffic distribution and percent assignment are shown on **Figure 4.1**.



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Kimley»Horn	WILLIAMS CORNER 2020 TIA UPDATE TRAFFIC IMPACT ANALYSIS CHATHAM COUNTY, NC	SITE TRAFFIC DISTRIBUTION AND PERCENT ASSIGNMENT	FIGURE 4.1

5.0 Projected Traffic Volumes

5.1 *Existing Traffic*

AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement counts were performed at the following intersections:

- US 15/501 at Legend Oaks Drive — January 8, 2020
- US 15/501 at Knox Way — January 7, 2020
- US 15/501 at Polks Landing Road — January 7, 2020
- US 15/501 at Lystra Road — January 8, 2020
- Lystra Road at Chatham Downs Drive — January 7, 2020

Traffic counts were performed while Chatham County Public Schools were in session. The existing AM and PM peak hour traffic volumes are shown on **Figures 5.1** and **5.2**, and the traffic count data are included in the Appendix.

Volume balancing was performed to determine through volumes on Legend Oaks Drive at the existing roundabout as well as on Lystra Road at the future right-in/right-out site driveway.

5.2 *Historic Growth Traffic*

Historic growth traffic is the increase in traffic due to non-specific growth throughout the area. Based on a review of traffic volume growth in the study area as well as the volume of approved development traffic included in the analysis (discussed below), an annual growth rate of 1.5% was applied to the intersections in the study area up to the build-out year 2027.

5.3 *Approved Development Traffic*

Approved development traffic is generated by approved, but not yet constructed, projects in the vicinity of the proposed project. For this analysis, site trips from the 501 Landing retail project, as well as the remaining portions of Briar Chapel and Polks Village, were included in this analysis as background traffic.

Per an approved amendment to the Briar Chapel CUP in 2017, the Briar Chapel development is envisioned to include up to approximately 2,650 residential units, 301,000 SF of commercial space, and several schools. As of January 2019, existing development on the site included approximately 1,900 residential units, a public middle school, a charter school, a daycare center, and approximately 27,500 SF of commercial space. For the purposes of this analysis it was assumed that the remainder of Briar Chapel would be completed prior to the build-out of the Williams Corner project, and the remaining site trips were added to the study network based on previous traffic analyses for Briar Chapel (including the *Briar Chapel Traffic Improvement Phasing Analysis* by Kimley-Horn dated March 2018).

Per the *Polks Landing TIA* (Kimley-Horn, 2008), the Polks Village project was envisioned to include a 5,000 SF daycare center, approximately 49,000 SF of general office space, approximately 32,200 SF of general retail space, a 14,600 SF pharmacy, a 4,200 SF drive-in bank, and a 4,000 SF fast-food restaurant. Total site trips for the project were obtained from the *Williams Corner/Polks Landing – Addendum 2 to Traffic Impact Analyses* (Kimley-Horn, October 2008), and trips for the remaining portion of the development were calculated as the difference between existing development volumes (from peak hour traffic counts at the existing driveways) and full build-out site traffic volumes from the referenced traffic analysis.

The 501 Landing project proposes the construction of approximately 14,400 SF of retail space west of US 15/501 at Chatham Downs Drive. While that project was not been approved when this analysis was performed, trip generation was performed for the development and assigned to the roadway network to determine the impacts of that project traffic.

For reference, the combination of historic growth traffic and approved development traffic is equivalent to an effective annual growth rate of between 3.1% and 5.3% between 2020 and 2027 at each of the existing study intersections, which is generally equal to or greater than historic growth in the study area. As such, volumes and delays reported in this analysis are expected to be higher than what is observed in the field at project build-out.

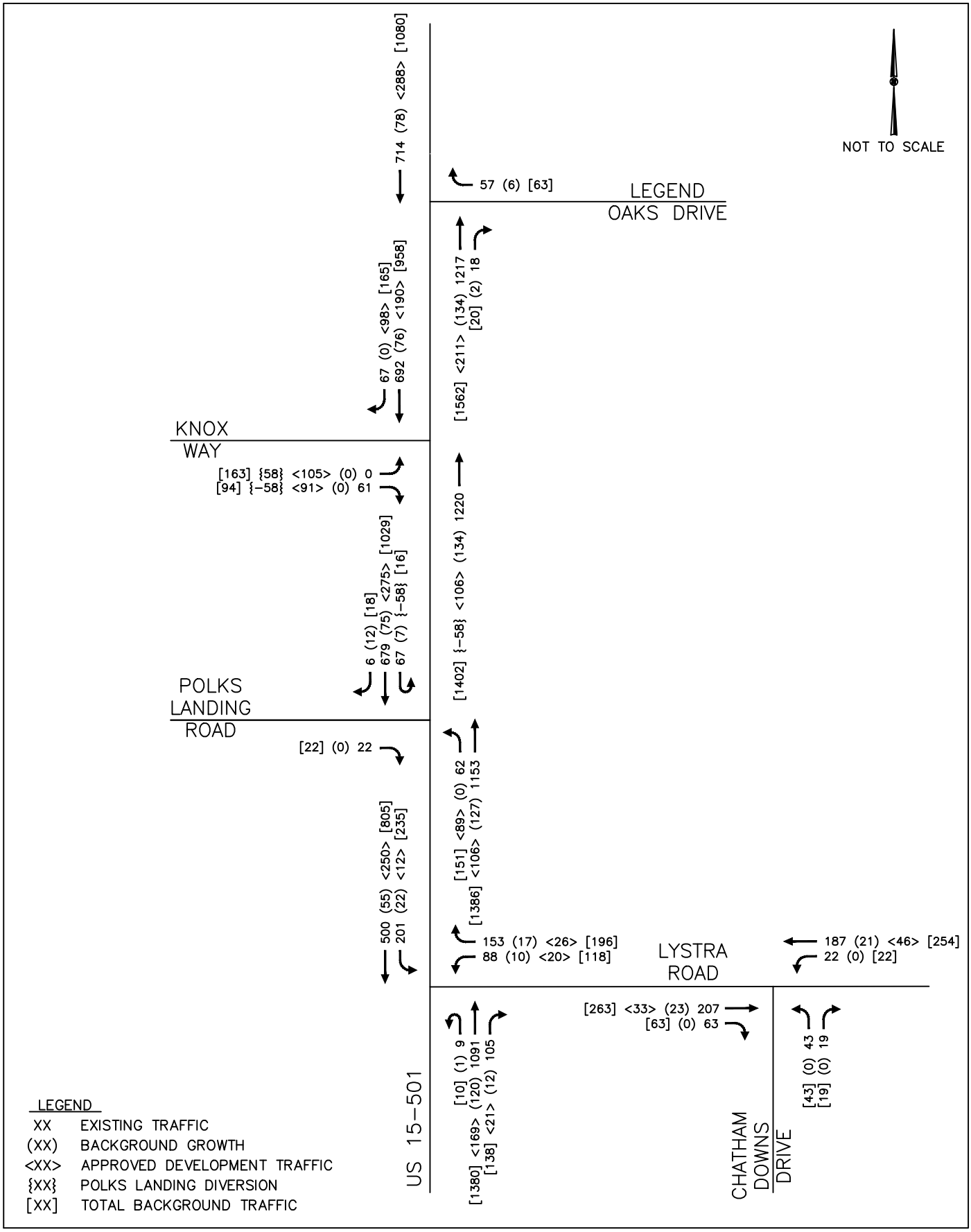
Background traffic volumes consisting of existing, historic growth, and approved development traffic are shown on **Figures 5.1** and **5.2** for the AM and PM peak hours, respectively.

5.4 *Site Traffic*

The proposed site traffic was generated and assigned to the adjacent roadway network according to the distribution discussed previously in Section 4.0. The site traffic volumes for the AM and PM peak hours are shown in **Figures 5.3** and **5.4**, respectively.

5.5 *Build-Out Traffic*

To obtain the projected (2027) build-out traffic volumes, the projected site traffic was added to the projected (2027) background traffic. Traffic volume calculations are detailed in intersection spreadsheets in the Appendix of this report. **Figures 5.3** and **5.4** show the projected (2027) AM and PM peak hour build-out traffic volumes, respectively.



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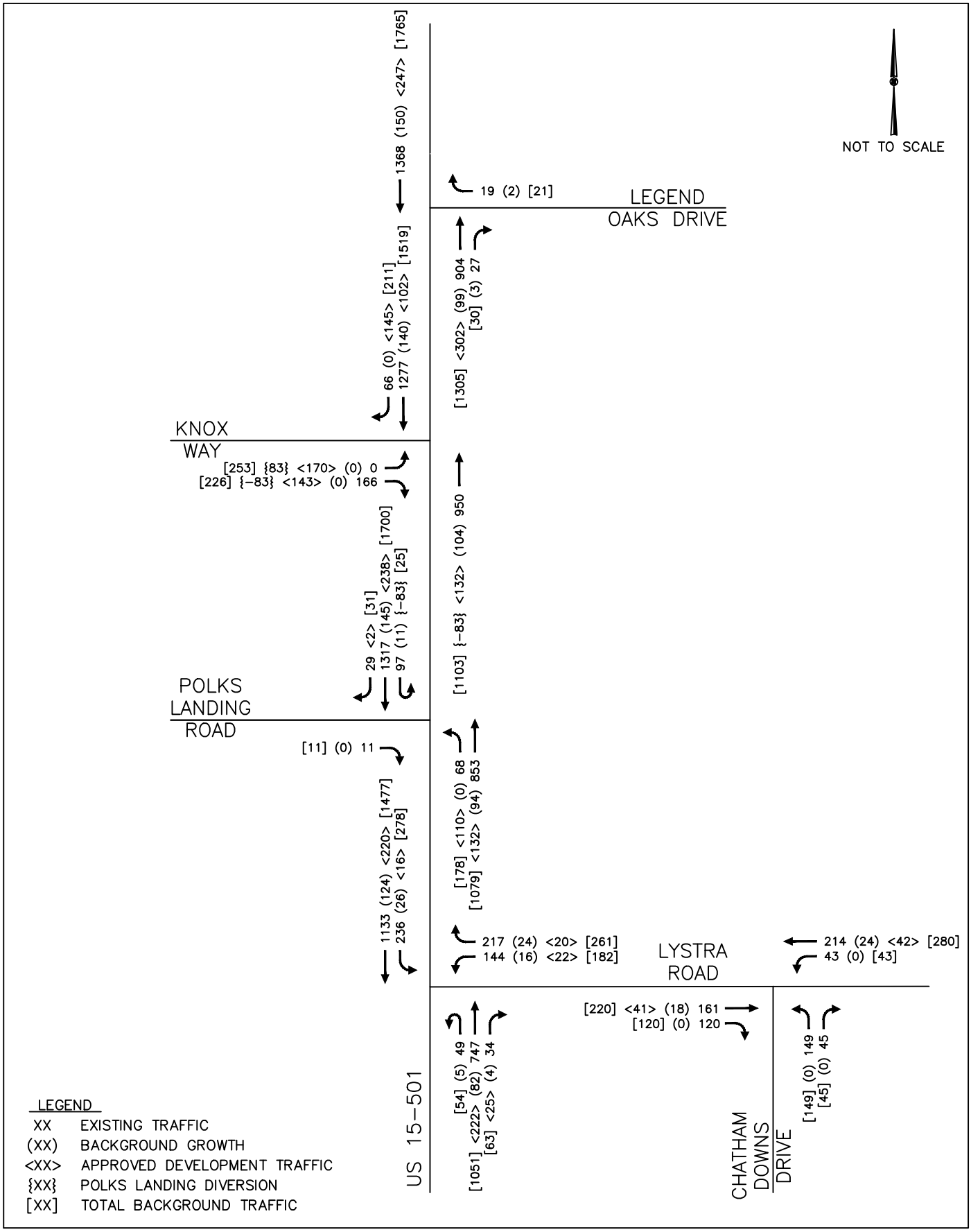
Kimley»Horn	WILLIAMS CORNER 2020 TIA UPDATE TRAFFIC IMPACT ANALYSIS CHATHAM COUNTY, NC	EXISTING AND PROJECTED (2027) BACKGROUND AM PEAK HOUR TRAFFIC VOLUMES	FIGURE 5.1



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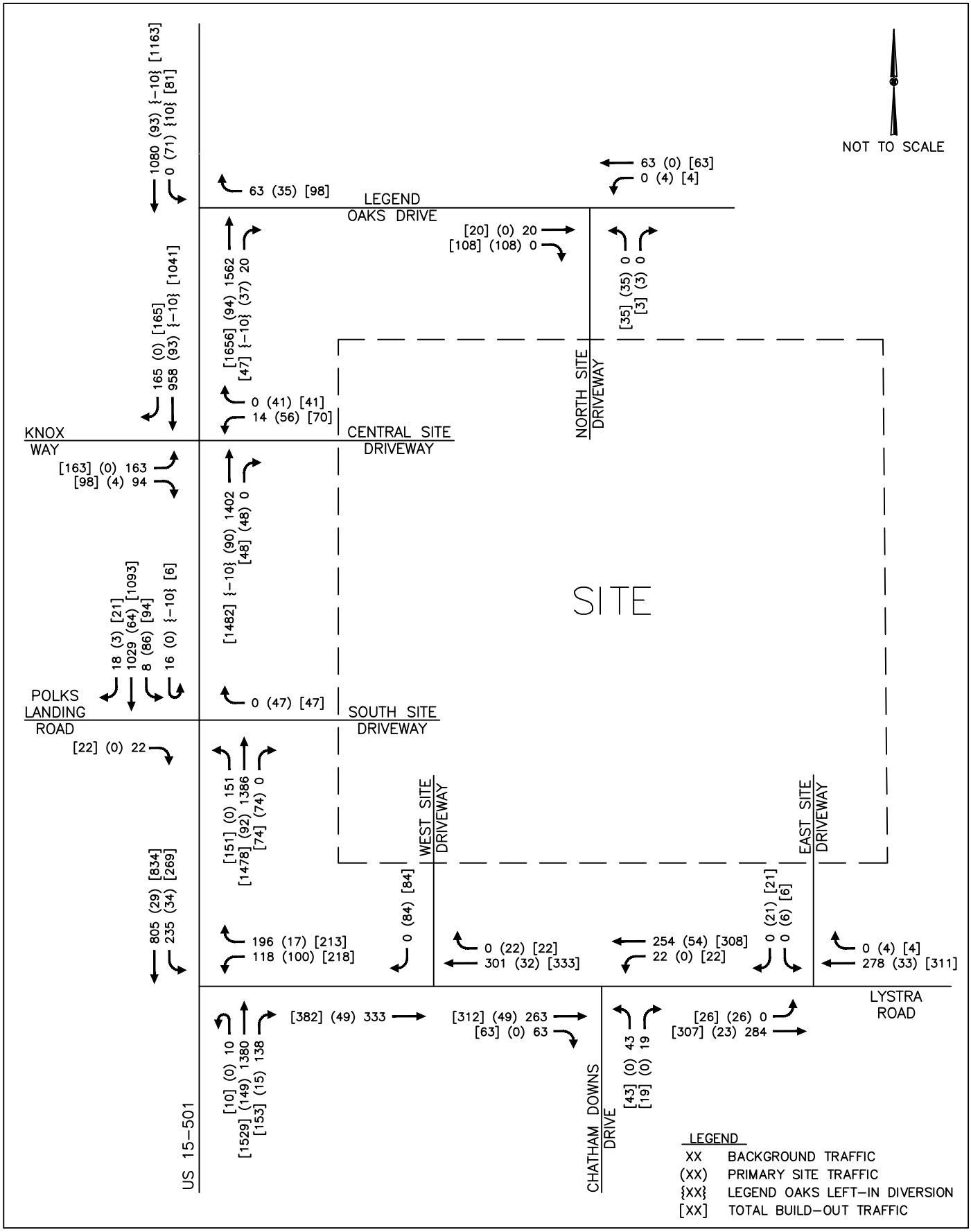
CHATHAM COUNTY, NC

EXISTING AND PROJECTED (2027)
BACKGROUND PM PEAK HOUR
TRAFFIC VOLUMES

FIGURE
5.2



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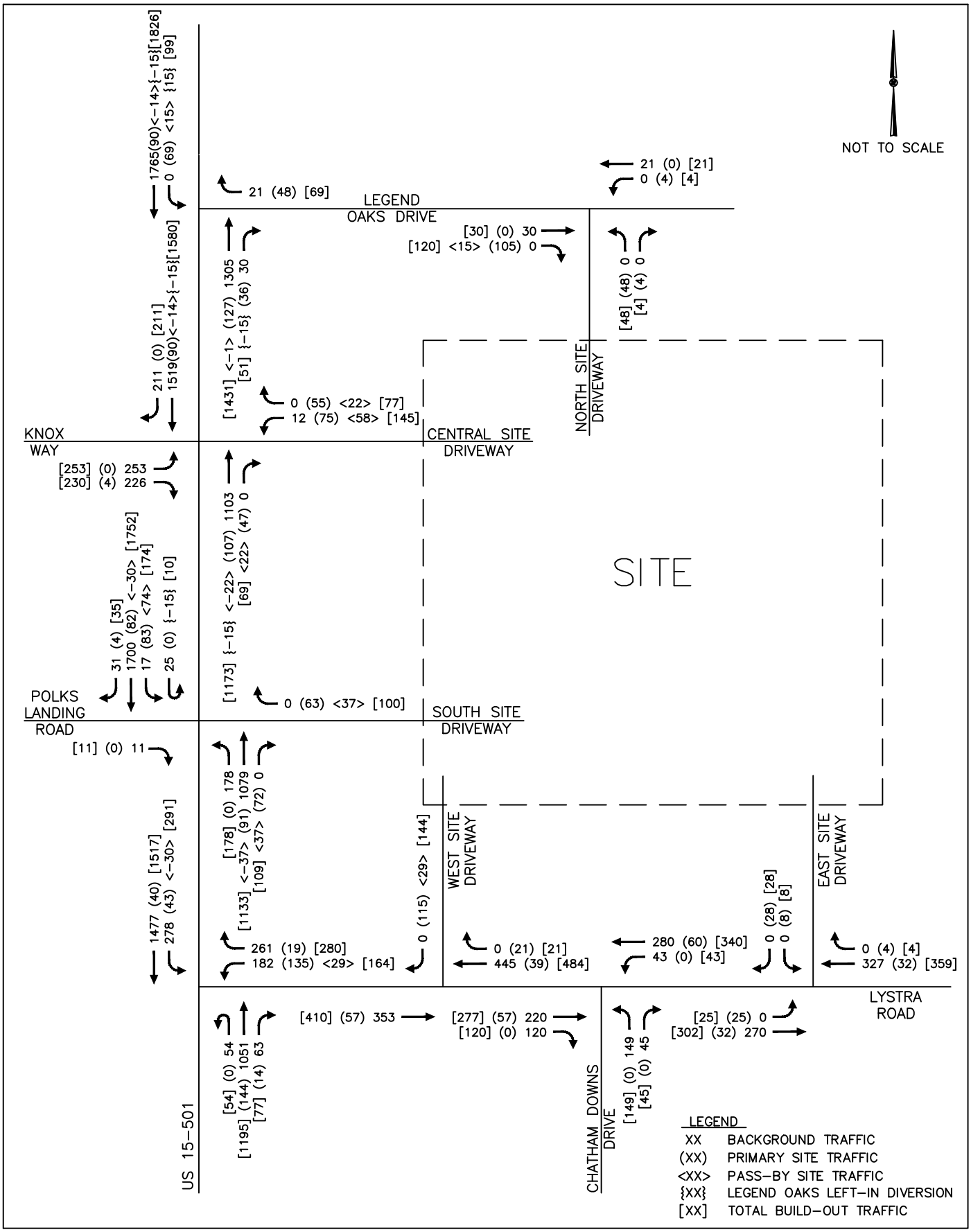
Kimley»Horn	WILLIAMS CORNER 2020 TIA UPDATE TRAFFIC IMPACT ANALYSIS CHATHAM COUNTY, NC	PROJECTED (2027) BUILD-OUT AM PEAK HOUR TRAFFIC VOLUMES	FIGURE 5.3



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Kimley»Horn	WILLIAMS CORNER 2020 TIA UPDATE TRAFFIC IMPACT ANALYSIS CHATHAM COUNTY, NC	PROJECTED (2027) BUILD-OUT PM PEAK HOUR TRAFFIC VOLUMES	FIGURE 5.4

6.0 Capacity Analysis

Capacity analyses (see Appendix) were performed for the AM and PM peak hours for the existing traffic condition and the projected background and build-out traffic conditions using Synchro/SimTraffic Version 10 and SIDRA version 4 software to determine the operating characteristics of the adjacent road network and the impacts of the proposed project.

Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a set time duration. Capacity is combined with Level-of-Service (LOS) to describe the operating characteristics of a road segment or intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with A representing the shortest average delays and F representing the longest average delays. LOS D is the typically accepted standard for signalized intersections in urbanized areas. For signalized intersections, LOS is defined for the overall intersection operation.

For unsignalized intersections, only the movements that must yield right-of-way experience control delay. Therefore, LOS criteria for the overall intersection is not reported by Synchro/SimTraffic Version 10 or computable using methodology published in the *Highway Capacity Manual.* It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. Table 6.0-A lists the LOS control delay thresholds published in the *Highway Capacity Manual* for signalized and unsignalized intersections.

Table 6.0-A
Level-of-Service Control Delay Thresholds

Level-of-Service	Signalized Intersections – Control Delay Per Vehicle [sec/veh]	Unsignalized Intersections – Average Control Delay [sec/veh] & Qualitative Operational Description	
A	≤ 10	≤ 10	Short Delays
B	> 10 – 20	> 10 – 15	
C	> 20 – 35	> 15 – 25	
D	> 35 – 55	> 25 – 35	Moderate Delays
E	> 55 – 80	> 35 – 50	
F	> 80	> 50	Long Delays

Existing peak hour factors (PHF's) were used at existing intersections, while a 0.90 PHF was used at new intersections or new intersection approaches. Signal timings were optimized for each of the studied traffic conditions.

Capacity analyses were performed for the existing (2020) traffic condition and the projected (2027) background and build-out traffic conditions for the following intersections:

- US 15/501 at Legend Oaks Drive
- Legend Oaks Drive at North Site Driveway (Roundabout)
- US 15/501 at Knox Way/Central (Left-out) Site Driveway
- US 15/501 at Polks Landing Road/South (Left-in) Site Driveway
- US 15/501 at Lystra Road
- Lystra Road at Chatham Downs Drive
- Lystra Road at East Site Driveway
- Lystra Road at West Site Driveway

Table 6.0-B summarizes the LOS and delay (seconds per vehicle) for all of the study intersections for the existing (2020) traffic condition and the projected (2027) background and build-out traffic conditions. All capacity analyses are included in the Appendix and are briefly summarized in the following sub-sections.

Table 6.0-B
Level-of-Service Summary

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
US 15/501 at Legend Oaks Drive (Unsignalized)		
Existing (2020) Traffic – Right-in/Right-out	WB – C (15.5)	WB – B (12.1)
Background (2027) Traffic – Right-in/Right-out	WB – C (20.3)	WB – C (15.0)
Build-out (2027) Traffic – Left-in/Right-in/Right-out with Imps.	WB – D (25.3) SBL – C (20.2)	WB – C (18.4) SBL – C (16.9)
Legend Oaks Drive at North Site Driveway (Roundabout)		
Existing (2020) Traffic	-	-
Background (2027) Traffic	-	-
Build-out (2027) Traffic	LOS: A (3.5) v/c: 0.11	LOS: A (3.6) v/c: 0.13
US 15/501 at Knox Way/Central (Left-out) Site Driveway		
Existing (2020) Traffic – Unsignalized, Right-in/Right-out	EB – B (11.5)	EB – C (20.5)
Background (2027) Traffic – Signalized, Left-out/ Right-in/Right-out	A (6.9)	B (15.6)
Build-out (2027) Traffic – Signalized, Left-out/ Right-in/Right-out with Imps.	A (7.6)	B (15.1)

Table 6.0-B (cont.) Level-of-Service Summary		
Condition	**AM Peak Hour LOS (Delay)**	**PM Peak Hour LOS (Delay)**
US 15/501 at Polks Landing Road/South (Left-in) Site Driveway		
Existing (2020) Traffic – Unsignalized, Left-in/Right-in/Right-out	EB – B (11.0) NBL – A (9.6) SBU – D (28.9)	EB – B (14.6) NBL – B (13.9) SBU – C (17.6)
Background (2027) Traffic – Signalized, Left-in/Right-in/Right-out	EB Sig. – B (10.2) SBU – C (16.1)	EB Sig. – A (9.6) SBU – B (13.5)
Build-out (2027) Traffic – Signalized, Left-in/Right-in/ Right-out with Imps.	EB Sig. – A (9.9) WB Sig. – A (6.0)	EB Sig. – B (10.9) WB Sig. – B (11.1)
US 15/501 at Lystra Road (Signalized)		
Existing (2020) Traffic	B (19.5)	C (22.0)
Background (2027) Traffic – with Phasing Modifications	C (20.1)	C (20.5)
Build-out (2027) Traffic – with Phasing Modifications (by Others) & Rec. Improvements	C (20.0)	C (20.4)
Lystra Road at Chatham Downs Drive (Unsignalized)		
Existing (2020) Traffic	NB – B (11.8) WBL – A (8.0)	NB – B (13.4) WBL – A (7.9)
Background (2027) Traffic	NB – B (13.3) WBL – A (8.1)	NB – C (15.5) WBL – A (8.1)
Build-out (2027) Traffic	NB – B (14.7) WBL – A (8.3)	NB – C (18.5) WBL – A (8.3)
Lystra Road at East Site Driveway (Unsignalized)		
Build-out (2027) Traffic – Full-Movement with Imps.	SB – B (11.5) EBL – A (8.1)	SB – B (12.1) EBL – A (8.2)
Lystra Road at West Site Driveway (Unsignalized)		
Build-out (2027) Traffic – Right-in/Right-out with Imps.	SB – B (11.3)	SB – B (14.6)

6.1 *US 15/501 at Legend Oaks Drive*

Analyses indicate that the unsignalized right-in/right-out intersection of US 15/501 at Legend Oaks Drive currently operates with short delays on the minor street approach (Legend Oaks Drive) in both the AM and PM peak hours. The intersection is expected to continue to operate with short delays on the minor street approach in the background traffic condition.

The following roadway improvement is recommended to be performed as part of this project to accommodate site traffic volumes:

- Construct an exclusive southbound left-turn lane on US 15/501 with 200 feet of storage and appropriate tapers

Analyses indicate that the intersection will continue to operate acceptably at project build-out with only minor increases in delays associated with the addition of site traffic. Additionally, Synchro indicates that queues along Legend Oaks Drive will not impact operations at the existing roundabout to the east.

Table 6.1 summarizes operations at the intersection of US 15/501 at Legend Oaks Drive for the existing (2020) and projected (2027) background and build-out traffic conditions.

Table 6.1
Level-of-Service
US 15/501 at Legend Oaks Drive (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2020) Traffic – Right-in/Right-out	WB – C (15.5)	WB – B (12.1)
Background (2027) Traffic – Right-in/Right-out	WB – C (20.3)	WB – C (15.0)
Build-out (2027) Traffic – Left-in/Right-in/Right-out with Imps.	WB – D (25.3) SBL – C (20.2)	WB – C (18.4) SBL – C (16.9)

6.2 *Legend Oaks Drive at North Site Driveway*

The existing roundabout on Legend Oaks Drive currently serves a residential development with approximately 105 single-family homes, though on-going construction in the development will increase that number to approximately 115 units in the future. As the roundabout currently operates without any "side-street" approaches and only serves traffic on the eastbound and westbound approaches of Legend Oaks Drive, no real delays are experienced.

The following improvements are recommended to be performed at this intersection as part of the Williams Corner project:

- Construct the North Site Driveway with one ingress lane and one egress lane at the existing roundabout
- Coordinate with NCDOT on required modifications to the roundabout to accommodate the Site Driveway approach, including signing and marking improvements

Analyses indicate that the roundabout is projected to operate at an overall LOS A with short delays and an acceptable volume-to-capacity (v/c) ratio at project build-out. Therefore, no additional geometric improvements are recommended to be performed at this intersection to accommodate the addition of site traffic.

For reference, site traffic volumes through the roundabout are projected to be lower than with the previously-approved development plan. The trip generation of the revised plan (studied in this analysis) is significantly lower than the previous plan, resulting in 161 fewer site trips through the roundabout in the AM peak hour and 130 few site trips through the roundabout in the PM peak hour.

Table 6.2 summarizes operations at the intersection of Legend Oaks Drive at the North Site Driveway for the existing (2020) and projected (2027) background and build-out traffic conditions.

Table 6.2
Level-of-Service
Legend Oaks Drive at North Site Driveway (Roundabout)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2020) Traffic	-	-
Background (2027) Traffic	-	-
Build-out (2027) Traffic	LOS: A (3.5) v/c: 0.11	LOS: A (3.6) v/c: 0.13

6.3 *US 15/501 at Knox Way/Central (Left-out) Site Driveway*

Analyses indicate that the unsignalized, right-in/right-out intersection of US 15/501 at Knox Way currently operates with short delays in both the AM and PM peak hours. The following improvements are included in Polks Village development commitments to reach full build-out of that project and were included in the background and build-out traffic conditions:

- Reconfigure the eastbound approach of Knox Way to provide exclusive left- and right-turn lanes
- Modify the existing median on US 15/501 to permit left-turns out of Knox Way but prohibit left-turns into Knox Way
- Install a traffic signal to accommodate the revised intersection laneage

The following improvements are recommended to be performed as part of the Williams Corner project to accommodate site traffic volumes:

- Construct the Central Site Driveway with one ingress lane and two egress lanes (an exclusive left-turn lane and an exclusive right-turn lane)
- Construct a northbound right-turn lane on US 15/501 with 100 feet of storage and appropriate tapers
- Modify the traffic signal to accommodate the recommended roadway laneage

Analyses indicate that with the committed and recommended improvements in place, the intersection is expected to operate at LOS A in the AM peak hour and LOS B in the PM peak hour in the study year 2027 with or without the project in place. No queuing issues are expected at this intersection, and no additional improvements are recommended to be performed.

Table 6.3 summarizes operations at the intersection of US 15/501 at Knox Way/Central (Left-out) Site Driveway for the existing (2020) and projected (2027) background and build-out traffic conditions.

Table 6.3
Level-of-Service
US 15/501 at Knox Way/Central (Left-out) Site Driveway

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2020) Traffic – Unsignalized, Right-in/Right-out	EB – B (11.5)	EB – C (20.5)
Background (2027) Traffic – Signalized, Left-out/ Right-in/Right-out	A (6.9)	B (15.6)
Build-out (2027) Traffic – Signalized, Left-out/ Right-in/Right-out with Imps.	A (7.6)	B (15.1)

6.4 *US 15/501 at Polks Landing Road/South (Left-in) Site Driveway*

Analyses indicate that the unsignalized, left-in/right-in/right-out intersection of US 15/501 at Polks Landing Road currently operates with short delays on the minor street approach (Polks Landing Road) and moderate to long delays on the southbound U-turn movement in both the AM and PM peak hours. The following improvement is included in Polks Village development commitments to reach full build-out of that project and were included in the background and build-out traffic conditions:

- Install a traffic signal to accommodate volumes into/out of Polks Landing Road ("superstreet" configuration with southbound US 15/501)

The following improvements are recommended to be performed as part of the Williams Corner project to accommodate site traffic volumes:

- Construct the South Site Driveway with one ingress lane and one ingress lane
- Construct a northbound right-turn lane on US 15/501 with 100 feet of storage and appropriate tapers
- Install a traffic signal to accommodate volumes into/out of the proposed South Site Driveway approach ("superstreet" configuration with northbound US 15/501)

Analyses indicate that with the committed and recommended improvements in place, the intersection is expected to operate at acceptable LOS at the traffic signals at project build-out. No queuing issues are expected at this intersection, and no additional improvements are recommended to be performed.

Table 6.4 summarizes operations at the intersection of US 15/501 at Polks Landing Road/South (Left-in) Site Driveway intersection for the existing (2020) and projected (2027) background and build-out traffic conditions.

Table 6.4
Level-of-Service
US 15/501 – Polks Landing Road/South (Left-in) Site Driveway

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2020) Traffic – Unsignalized, Left-in/Right-in/Right-out	EB – B (11.0) NBL – A (9.6) SBU – D (28.9)	EB – B (14.6) NBL – B (13.9) SBU – C (17.6)
Background (2027) Traffic – Signalized, Left-in/Right-in/Right-out	EB Sig. – B (10.2) SBU – C (16.1)	EB Sig. – A (9.6) SBU – B (13.5)
Build-out (2027) Traffic – Signalized, Left-in/Right-in/ Right-out with Imps.	EB Sig. – A (9.9) WB Sig. – A (6.0)	EB Sig. – B (10.9) WB Sig. – B (11.1)

6.5 *US 15/501 at Lystra Road*

Analyses indicate that the signalized intersection of US 15/501 at Lystra Road currently operates at LOS B in the AM peak hour and LOS C in the PM peak hour. NCDOT staff have indicated that signal phasing modifications are being considered at this intersection for the northbound U-turn and southbound left-turn movements on US 15/501, and the NCDOT Traffic Signals website includes completed plans to modify the signal to limit those movements to protected-only phasing. As such, that signal modification was assumed to be in place in the background and build-out traffic conditions. The following improvements are recommended to be performed as part of this project:

- Construct an additional southbound left-turn lane on US 15/501 with 175 feet of storage to provide dual left-turn lanes on that approach
- Construct an additional westbound left-turn lane on Lystra Road with 275 feet of storage to provide dual left-turn lanes on that approach
- Extend the storage of the existing westbound right-turn lane on Lystra Road by approximately 75 feet to provide 200 feet of storage on that movement
- Modify the existing traffic signal to accommodate the recommended laneage

Analyses indicate with the recommended improvements in place, the intersection is expected to operate at LOS C in both peak hours at project build-out. Projected side-street queues are expected to be mitigated with the additional westbound left-turn lane and additional westbound right-turn lane storage, and no additional improvements are recommended to be performed as part of this project.

Table 6.5 summarizes operations at the intersection of US 15/501 at Lystra Road for the existing (2020) and projected (2027) background and build-out traffic conditions.

Table 6.5
Level-of-Service
US 15/501 at Lystra Road (Signalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2020) Traffic	B (19.5)	C (22.0)
Background (2027) Traffic – with Phasing Modifications	C (20.1)	C (20.5)
Build-out (2027) Traffic – with Phasing Modifications (by Others) & Rec. Improvements	C (20.0)	C (20.4)

6.6 *Lystra Road at Chatham Downs Drive*

Analyses indicate that the unsignalized intersection of Lystra Road at Chatham Downs Drive currently operates with short delays on the minor street approach (Chatham Downs Drive) in both the AM and PM peak hours. The intersection is expected to continue to operate with short delays in study year 2027 with or without the proposed Williams Corner project in place.

Some restriping of the existing westbound left-turn lane on Lystra Road into the Chatham Downs shopping center is recommended as part of this project to accommodate the left-turn movement into the Williams Corner East Site Driveway. Synchro and SimTraffic analyses indicate that queues at project build-out will not conflict between the two driveways, so no additional improvements are recommended to accommodate the left-turns into the East Site Driveway.

Table 6.6 summarizes operations at the intersection of Lystra Road at Chatham Downs Drive for the existing (2020) and projected (2027) background and build-out traffic conditions.

Table 6.6
Level-of-Service
Lystra Road at Chatham Downs Drive (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2020) Traffic	NB – B (11.8) WBL – A (8.0)	NB – B (13.4) WBL – A (7.9)
Background (2027) Traffic	NB – B (13.3) WBL – A (8.1)	NB – C (15.5) WBL – A (8.1)
Build-out (2027) Traffic	NB – B (14.7) WBL – A (8.3)	NB – C (18.5) WBL – A (8.3)

6.7 *Lystra Road at East Site Driveway*

A full-movement site driveway is proposed on Lystra Road approximately 350 feet east of Chatham Downs Drive. The following roadway improvements are recommended to be performed at this intersection to accommodate projected future traffic volumes:

- Construct the East Site Driveway with one ingress lane and one egress lane
- Restripe the existing westbound left-turn lane on Lystra Road as a two-way left-turn lane between Chatham Downs Drive and the proposed East Site Driveway to provide an eastbound left-turn lane into the Williams Corner site

Analyses indicate that the intersection is expected to operate with short delays on the minor street approach (East Site Driveway) at project build-out. Synchro and SimTraffic analyses indicate that queues at project build-out will not conflict between this driveway and the Chatham Downs driveway, so no additional improvements are recommended to accommodate the left-turns into the East Site Driveway.

Table 6.7 summarizes operations at the intersection of Lystra Road at the East Site Driveway for the projected (2027) build-out traffic condition.

Table 6.7
Level-of-Service
Lystra Road at East Site Driveway (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Build-out (2027) Traffic	SB – B (11.5) EBL – A (8.1)	SB – B (12.1) EBL – A (8.2)

6.8 *Lystra Road at West Site Driveway*

A right-in/right-out site driveway is proposed on Lystra Road approximately 450 feet east of US 15/501. Analyses indicate that this intersection is expected to operate with short delays and queues on the minor street approach (West Site Driveway) at project build-out. No roadway improvements are recommended to be performed at this intersection to accommodate projected site traffic.

Table 6.8 summarizes operations at the intersection of Lystra Road at West Site Driveway for the projected (2027) build-out traffic condition.

Table 6.8
Level-of-Service
Lystra Road at West Site Driveway (Unsignalized)

Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Build-out (2027) Traffic	SB – B (11.3)	SB – B (14.6)

7.0 Recommendations

Background Improvements

The following improvements were assumed to be implemented by others and were included in the analysis in the background and build-out conditions:

US 15/501 at Knox Way *(by Polks Village)*:

- Reconfigure the eastbound approach of Knox Way to provide exclusive left- and right-turn lanes
- Modify the existing median on US 15/501 to permit left-turns out of Knox Way but prohibit left-turns into Knox Way
- Install a traffic signal to accommodate the revised intersection laneage

US 15/501 at Polks Landing Road *(by Polks Village)*:

- Install a traffic signal to accommodate volumes into/out of Polks Landing Road ("superstreet" configuration with southbound US 15/501)

US 15/501 at Lystra Road *(by NCDOT – signal plans already completed)*:

- Modify the existing traffic signal to limit the northbound U-turn movement and southbound left-turn movement to protected-only phasing (from the existing permitted or permitted + protected phasing)

Recommended Improvements

The following roadway improvements are recommended to be performed as part of this project:

US 15/501 at Legend Oaks Drive:

- Construct an exclusive southbound left-turn lane on US 15/501 with 200 feet of storage and appropriate tapers

Legend Oaks Drive at North Site Driveway:

- Construct the North Site Driveway with one ingress lane and one egress lane at the existing roundabout
- Coordinate with NCDOT on required modifications to the roundabout to accommodate the Site Driveway approach, including signing and marking improvements

US 15/501 at Knox Way/Central Site Driveway:

- Construct the Central Site Driveway with one ingress lane and two egress lanes (an exclusive left-turn lane and an exclusive right-turn lane)
- Construct a northbound right-turn lane on US 15/501 with 100 feet of storage and appropriate tapers
- Modify the traffic signal to accommodate the recommended roadway laneage

US 15/501 at Polks Landing Road/South Site Driveway:

- Construct the South Site Driveway with one ingress lane and one ingress lane
- Construct a northbound right-turn lane on US 15/501 with 100 feet of storage and appropriate tapers
- Install a traffic signal to accommodate volumes into/out of the proposed South Site Driveway approach ("superstreet" configuration with northbound US 15/501)

US 15/501 at Lystra Road:

- Construct an additional southbound left-turn lane on US 15/501 with 175 feet of storage to provide dual left-turn lanes on that approach
- Construct an additional westbound left-turn lane on Lystra Road with 275 feet of storage to provide dual left-turn lanes on that approach
- Extend the storage of the existing westbound right-turn lane on Lystra Road by approximately 75 feet to provide 200 feet of storage on that movement
- Modify the existing traffic signal to accommodate the recommended laneage

Lystra Road:

- Construct an additional eastbound lane on Lystra Road from US 15/501 that terminates as a right-turn lane at Chatham Downs Drive (to provide a second receiving lane for the recommended dual southbound left-turn lanes on US 15/501)
- Restripe the existing westbound left-turn lane on Lystra Road as a two-way left-turn lane between Chatham Downs Drive and the proposed East Site Driveway

Lystra Road at East Site Driveway (Full-Movement):

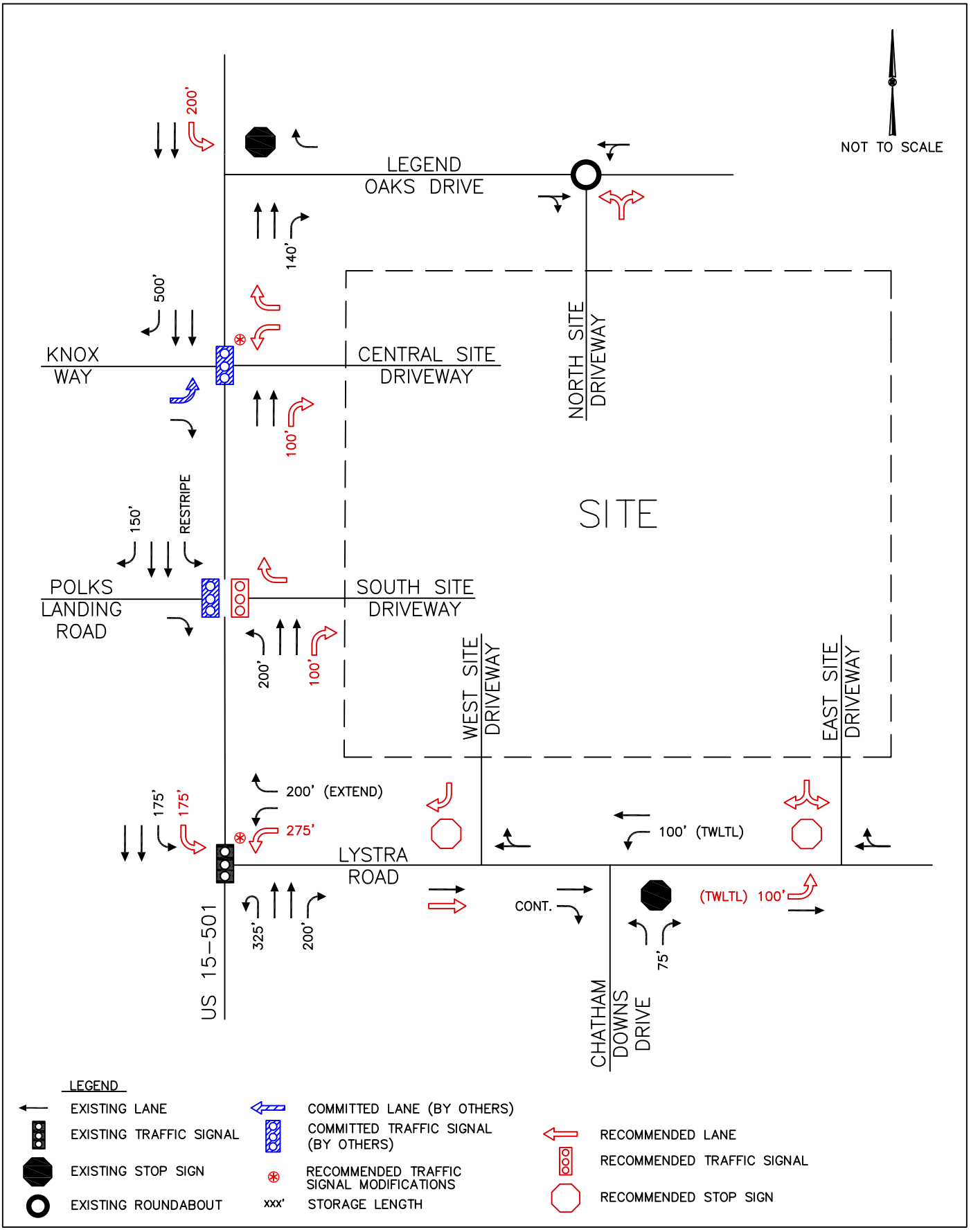
- Construct the East Site Driveway with one ingress lane and one egress lane
- Provide an eastbound left-turn lane on US 15/501

Lystra Road at West Site Driveway (Right-in/Right-out):

- Construct the West Site Driveway with one ingress lane and one egress lane

Analyses indicate that with the committed and recommended improvements in place, all of the study intersections will operate at acceptable LOS at project build-out. It should also be noted that the existing roundabout on Legend Oaks Drive is expected to operate with short overall delays at project build-out and well below the capacity of the roundabout. As the recommended turn lanes are consistent with where turn lanes were committed to be performed for the previous, more-intense development plan, site traffic impacts are expected to be effectively mitigated for this revised development plan.

The committed and recommended roadway laneage is shown on **Figure 7.1**.



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Kimley»Horn	WILLIAMS CORNER 2020 TIA UPDATE TRAFFIC IMPACT ANALYSIS CHAPEL HILL, NC	RECOMMENDED ROADWAY LANEAGE	FIGURE 7.1

Appendix

Appendix A:

Approved Assumptions Memorandum

Preliminary Assumptions
Williams Corner – Updated Traffic Impact Analysis
Chatham County, North Carolina

KHA will perform updated traffic analyses for the proposed Williams Corner mixed-use project, located generally northeast of the intersection of US 15/501 at Lystra Road in Chatham County, North Carolina. The following assumptions will be used in the analysis of the site:

Study Scenarios:
The study scenarios will consist of:

- Existing (2019)
- Background (2027)
- Build-out (2027)

Study Intersections:
The study area will consist of the following intersections:

- US 15/501 at Legend Oaks Drive
- Legend Oaks Drive at North Site Driveway (roundabout)
- US 15/501 at Knox Way/Central Site Driveway (left-out/right-in/right-out)
- US 15/501 at Polks Landing Road/South Site Driveway (left-in/right-in/right-out)
- US 15/501 at Lystra Road
- Lystra Road at Chatham Downs Drive
- Lystra Road at East Site Driveway (full-movement)
- Lystra Road at West Site Driveway (right-in/right-out)

Traffic Counts:
Weekday AM (7-9AM) and PM (4-6PM) peak hour turning movement counts were performed in January 2020 at each of these study intersections when Chatham County Public Schools were in session.

Approved Developments:
Based on a review of the study area and previous analyses for this site, the following three developments were identified for inclusion in this analysis as background traffic. Since no TIA is available for the "501 Landing" project, trip generation calculations will be performed using the 10th Edition of the ITE Trip Generation Manual, and site traffic will be assigned to the network based on a review of surrounding land uses. Those projects included:

- Polk's Landing (remaining portion)
- Briar Chapel (remaining portion)
- 501 Landing
    - 14,400 SF of general retail space

To generate AM peak hour traffic for the general retail use (LUC 820) in the 501 Landing project, an average of the 10th Edition ITE rate and equation for that LUC will be used. For that LUC, the y-intercept in the equation for AM trip generation is 151.78, primarily due to a small sample size provided in the 10th Edition of ITE Trip Generation Manual, which has a significant impact on sites with low intensities of general retail space. This methodology has been approved previously by NCDOT, and since the average of results using the rate and equation is nearly 5 times higher than results using the AM peak hour equation from the 9th Edition of ITE, results are still expected to be conservative.

It should be noted that inclusion of approved development traffic from these projects is anticipated to overestimate future traffic volumes since (generally) no traffic was assigned between the projects.

Background Growth

Historic daily traffic volumes in the study area indicate that traffic growth is approximately 3% per year since 2004. However, as shown on the attached table, the identified approved development traffic is equivalent to effective annual growth rates between 1.5% and 3.8% up to the 2027 study year. As such, a 1.5% annual growth rate will be applied to existing through volumes up to the study year 2027 except onto/off of Knox Way, Polks Landing Road, and Chatham Downs Drive since development is generally built-out along those roads or accounted for in approved development traffic.

Trip Distribution

The following directional distribution will be used for the site based on a review of surrounding land uses (see attached distribution figure):

- 44% to/from the north on US 15/501
- 44% to/from the south on US 15/501
- 10% to/from the east on Lystra Road
- 1% to/from the east on Legend Oaks Drive
- 1% to/from Polks Village

Proposed Uses and Trip Generation

The property is currently vacant, and as currently envisioned will include up to approximately 120,000 SF of mini-warehouse space, 550 apartments, 90,000 SF of general office space, 90,000 SF of general retail space, and a 50,000 SF supermarket.

Trip generation calculations (per the 10th Edition of the ITE Trip Generation Manual) are attached.

For reference, compared to the previously-approved development plan, these proposed uses are anticipated to generate 327 fewer AM peak hour trips and 601 fewer PM peak hour trips on a typical weekday.

Site Access

The site is proposed to be accessed via a driveway onto Legend Oaks Drive (at the existing roundabout), a site driveway on US 15/501 aligning with Knox Way (as a left-out/right-in/right-out), a site driveway on US 15/501 at Polks Landing Road (as a left-in/right-in/right-out), a full-movement driveway on Lystra Road (approximately 350 feet east of Chatham Downs Drive), and a right-in/right-out driveway on Lystra Road (approximately (450 feet west of Chatham Downs Drive).

Other Study Assumptions

Existing peak hour factors (PHF's) will be used at existing intersections, and a PHF of 0.90 will be used at new intersections or new approaches at existing intersections. Right-turns on red (RTOR) and permitted + protected phasing will be permitted in the analysis where currently allowed and considered for new movements at traffic signals.

Effective Annual Growth Rate Calculations: 2020-2027	
Effective Annual Growth Rate of Approved Development Traffic - AM Peak Hour	
Intersection	**Overall Int.**
US 15/501 at Legend Oaks Drive	3.2%
US 15/501 at Knox Way	3.8%
US 15/501 at Polks Landing Road	3.2%
US 15/501 at Lystra Road	3.0%
Lystra Road at Chatham Downs Drive	2.0%

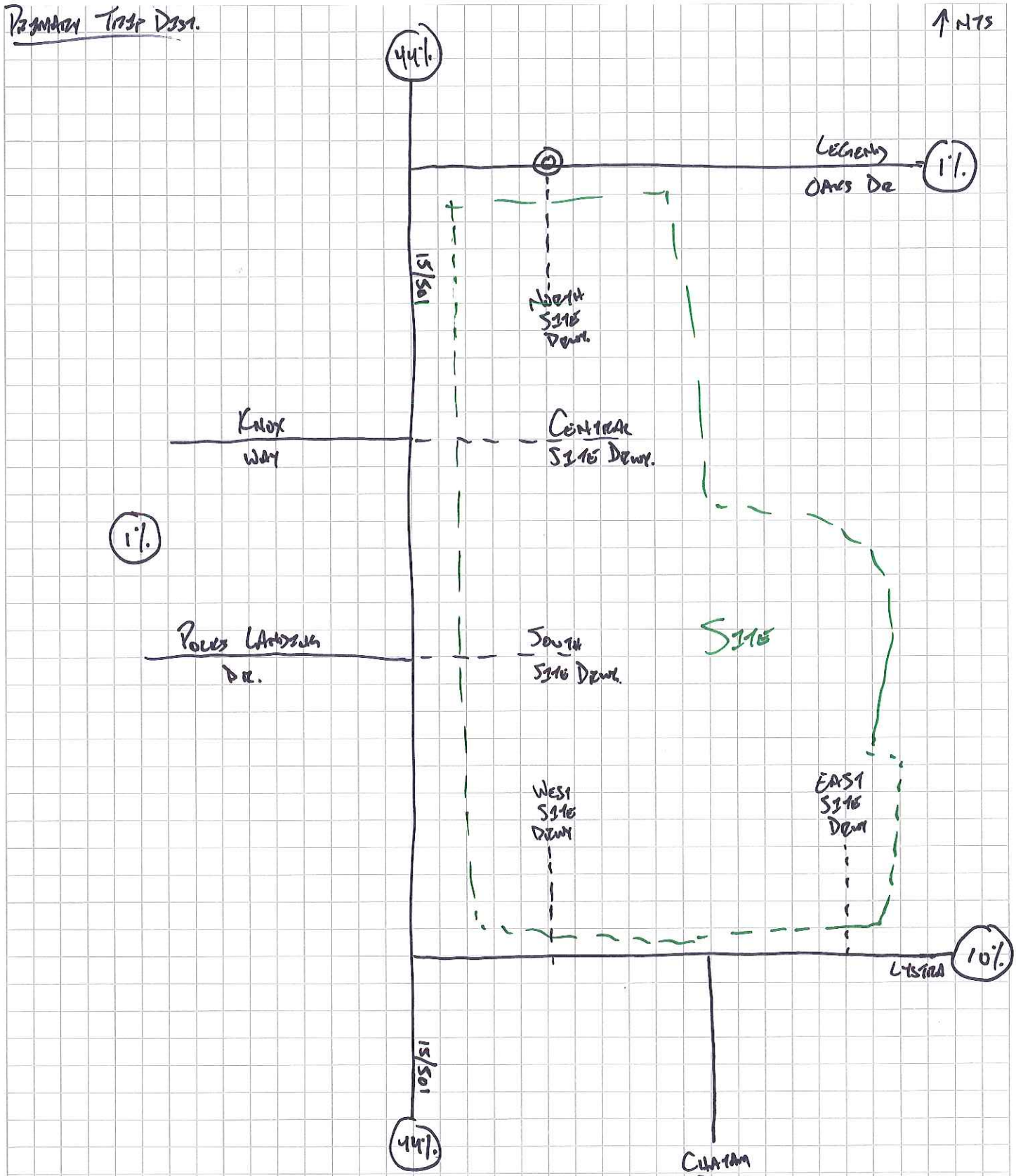
Effective Annual Growth Rate of Approved Development Traffic - PM Peak Hour	
Intersection	**Overall Int.**
US 15/501 at Legend Oaks Drive	3.1%
US 15/501 at Knox Way	3.7%
US 15/501 at Polks Landing Road	2.8%
US 15/501 at Lystra Road	2.7%
Lystra Road at Chatham Downs Drive	1.5%

*Approved development trips from Briar Chapel (remaining portion), Polks Village (remaining portion), and 501 Landing (not approved at time of study)

*Note that these effective annual growth rates do not include any background growth and only reflect approved development volumes.

US 15/501 at Lystra Road: Annual Growth Rate from 2006 to 2020 per Counts	3.2%

Primary Test Dist.



Williams Corner

Table 1 - Trip Generation - January 2020 Plan Update

Land Use	Intensity		Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
151 Mini-Warehouse	120,000	s.f.	182	91	91	12	7	5	20	9	11
221 Multifamily Housing (Mid-Rise) - North	275	d.u.	1,498	749	749	92	24	68	117	71	46
221 Multifamily Housing (Mid-Rise) - South	275	d.u.	1,498	749	749	92	24	68	117	71	46
710 General Office Building	90,000	s.f.	958	479	479	111	95	16	103	16	87
820 Shopping Center	90,000	s.f.	5,596	2,798	2,798	197	122	75	503	241	262
850 Supermarket	50,000	s.f.	4,758	2,379	2,379	191	115	76	466	238	228
Subtotal			**14,490**	**7,245**	**7,245**	**695**	**387**	**308**	**1,326**	**646**	**680**
Internal Capture											
151 Mini-Warehouse			46	23	23	1	0	1	6	4	2
221 Multifamily Housing (Mid-Rise) - North			369	185	184	3	1	2	56	34	22
221 Multifamily Housing (Mid-Rise) - South			368	185	183	2	0	2	54	33	21
710 General Office Building			245	122	123	12	7	5	28	8	20
820 Shopping Center			497	248	249	6	4	2	69	30	39
850 Supermarket			422	211	211	6	3	3	63	29	34
	AM	**PM**									
Internal Capture Total	**4.3%**	**20.8%**	1,946	973	973	30	15	15	276	138	138
Total External Trips			**12,544**	**6,272**	**6,272**	**665**	**372**	**293**	**1,050**	**508**	**542**
Pass-By Traffic (ITE)	AM	PM									
820 Shopping Center	0%	34%	1,648	824	824	0	0	0	148	72	76
850 Supermarket	0%	36%	1,480	740	740	0	0	0	145	75	70
	AM	**PM**									
Pass-By Total:	**0.0%**	**22.1%**	**3,128**	**1,564**	**1,564**	**0**	**0**	**0**	**293**	**147**	**146**
Total Net New External Trips - Jan 2020 Update			**9,416**	**4,708**	**4,708**	**665**	**372**	**293**	**757**	**361**	**396**

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	570	570	102	21	25	98
Retail	5,177	5,177	237	151	479	490
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1,498	1,498	48	136	142	92
Hotel	0	0	0	0	0	0
	7,245	7,245	387	308	646	680

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	145	146	7	6	12	22
Retail	459	460	7	5	59	73
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	369	367	1	4	67	43
Hotel	0	0	0	0	0	0
	973	973	15	15	138	138
% Reduction	13.4%		4.3%		20.8%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	425	424	95	15	13	76
Retail	4,718	4,717	230	146	420	417
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1,129	1,131	47	132	75	49
Hotel	0	0	0	0	0	0
	6,272	6,272	372	293	508	542

Appendix B:
Trip Generation

Williams Corner

Table 1 - Trip Generation - January 2020 Plan Update

Land Use	Intensity		Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
151 Mini-Warehouse	120,000	s.f.	182	91	91	12	7	5	20	9	11
221 Multifamily Housing (Mid-Rise) - North	275	d.u.	1,498	749	749	92	24	68	117	71	46
221 Multifamily Housing (Mid-Rise) - South	275	d.u.	1,498	749	749	92	24	68	117	71	46
710 General Office Building	90,000	s.f.	958	479	479	111	95	16	103	16	87
820 Shopping Center	90,000	s.f.	5,596	2,798	2,798	197	122	75	503	241	262
850 Supermarket	50,000	s.f.	4,758	2,379	2,379	191	115	76	466	238	228
Subtotal			**14,490**	**7,245**	**7,245**	**695**	**387**	**308**	**1,326**	**646**	**680**
Internal Capture											
151 Mini-Warehouse			46	23	23	1	0	1	6	4	2
221 Multifamily Housing (Mid-Rise) - North			369	185	184	3	1	2	56	34	22
221 Multifamily Housing (Mid-Rise) - South			368	185	183	2	0	2	54	33	21
710 General Office Building			245	122	123	12	7	5	28	8	20
820 Shopping Center			497	248	249	6	4	2	69	30	39
850 Supermarket			422	211	211	6	3	3	63	29	34
	AM	**PM**									
Internal Capture Total	**4.3%**	**20.8%**	1,946	973	973	30	15	15	276	138	138
Total External Trips			**12,544**	**6,272**	**6,272**	**665**	**372**	**293**	**1,050**	**508**	**542**
Pass-By Traffic (ITE)	AM	PM									
820 Shopping Center	0%	34%	1,648	824	824	0	0	0	148	72	76
850 Supermarket	0%	36%	1,480	740	740	0	0	0	145	75	70
	AM	**PM**									
Pass-By Total:	**0.0%**	**22.1%**	**3,128**	**1,564**	**1,564**	**0**	**0**	**0**	**293**	**147**	**146**
Total Net New External Trips - Jan 2020 Update			**9,416**	**4,708**	**4,708**	**665**	**372**	**293**	**757**	**361**	**396**

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	570	570	102	21	25	98
Retail	5,177	5,177	237	151	479	490
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1,498	1,498	48	136	142	92
Hotel	0	0	0	0	0	0
	7,245	7,245	387	308	646	680

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	145	146	7	6	12	22
Retail	459	460	7	5	59	73
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	369	367	1	4	67	43
Hotel	0	0	0	0	0	0
	973	973	15	15	138	138
% Reduction	13.4%		4.3%		20.8%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	425	424	95	15	13	76
Retail	4,718	4,717	230	146	420	417
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	1,129	1,131	47	132	75	49
Hotel	0	0	0	0	0	0
	6,272	6,272	372	293	508	542

Appendix C:
Traffic Count Data

Your Company Name Here

US 15-501 @ Legend Oaks Dr.
Pittsboro, NC
Counter:LV
January 8, 2020

File Name : US15501LegendOaks
Site Code : 00020201
Start Date : 1/8/2020
Page No : 1

Groups Printed- Vehicles

	Eastbound	Legend Oaks Dr. Westbound				US 15-501 Northbound				US 15-501 Southbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	0	0	12	12	0	249	3	252	0	128	0	128	392
07:15 AM	0	0	0	11	11	0	315	1	316	0	145	0	145	472
07:30 AM	0	0	0	17	17	0	294	6	300	0	170	0	170	487
07:45 AM	0	0	0	14	14	0	302	7	309	0	222	0	222	545
Total	0	0	0	54	54	0	1160	17	1177	0	665	0	665	1896
08:00 AM	0	0	0	15	15	0	306	4	310	0	177	0	177	502
08:15 AM	0	0	1	7	8	0	290	11	301	0	147	0	147	456
08:30 AM	0	0	0	6	6	0	260	6	266	0	157	0	157	429
08:45 AM	0	0	0	8	8	0	256	6	262	0	178	0	178	448
Total	0	0	1	36	37	0	1112	27	1139	0	659	0	659	1835
*** BREAK ***														
04:00 PM	0	0	0	3	3	0	187	12	199	0	319	0	319	521
04:15 PM	0	0	0	5	5	0	215	4	219	0	336	0	336	560
04:30 PM	0	0	0	4	4	0	249	5	254	0	306	0	306	564
04:45 PM	0	0	0	4	4	0	219	6	225	0	343	0	343	572
Total	0	0	0	16	16	0	870	27	897	0	1304	0	1304	2217
05:00 PM	0	0	0	6	6	0	221	12	233	0	383	0	383	622
05:15 PM	0	0	0	7	7	0	222	16	238	0	314	0	314	559
05:30 PM	0	0	0	3	3	0	198	11	209	0	343	0	343	555
05:45 PM	0	0	0	9	9	0	179	20	199	0	307	0	307	515
Total	0	0	0	25	25	0	820	59	879	0	1347	0	1347	2251
Grand Total	0	0	1	131	132	0	3962	130	4092	0	3975	0	3975	8199
Apprch %		0	0.8	99.2		0	96.8	3.2		0	100	0		
Total %	0	0	0	1.6	1.6	0	48.3	1.6	49.9	0	48.5	0	48.5	

	Eastbound	Legend Oaks Dr. Westbound				US 15-501 Northbound				US 15-501 Southbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:15 AM														
07:15 AM	0	0	0	11	11	0	**315**	1	**316**	0	145	0	145	472
07:30 AM	0	0	0	**17**	**17**	0	294	6	300	0	170	0	170	487
07:45 AM	0	0	0	14	14	0	302	**7**	309	0	**222**	0	**222**	**545**
08:00 AM	0	0	0	15	15	0	306	4	310	0	177	0	177	502
Total Volume	0	0	0	57	57	0	1217	18	1235	0	714	0	714	2006
% App. Total		0	0	100		0	98.5	1.5		0	100	0		
PHF	.000	.000	.000	.838	.838	.000	.966	.643	.977	.000	.804	.000	.804	.920
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:15 PM														
04:15 PM	0	0	0	5	5	0	215	4	219	0	336	0	336	560
04:30 PM	0	0	0	4	4	0	**249**	5	**254**	0	306	0	306	564
04:45 PM	0	0	0	4	4	0	219	6	225	0	343	0	343	572
05:00 PM	0	0	0	**6**	**6**	0	221	**12**	233	0	**383**	0	**383**	**622**
Total Volume	0	0	0	19	19	0	904	27	931	0	1368	0	1368	2318
% App. Total		0	0	100		0	97.1	2.9		0	100	0		
PHF	.000	.000	.000	.792	.792	.000	.908	.563	.916	.000	.893	.000	.893	.932

Your Company Name Here

US 15-501 @ Knox Way
Pittsboro, NC
Counter:LV
January 7, 2020

File Name : US15501KnoxWay
Site Code : 00020202
Start Date : 1/7/2020
Page No : 1

Groups Printed- Vehhicles

	Knox Way Eastbound					Westb ound	US 15-501 Northbound					US 15-501 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	16	0	16	0	0	252	0	0	252	0	126	5	0	131	399
07:15 AM	0	1	19	0	20	0	0	316	0	0	316	0	136	7	0	143	479
07:30 AM	0	0	15	0	15	0	0	300	0	0	300	0	160	11	0	171	486
07:45 AM	0	0	10	2	12	0	0	309	0	0	309	0	214	20	0	234	555
Total	0	1	60	2	63	0	0	1177	0	0	1177	0	636	43	0	679	1919
08:00 AM	0	0	18	0	18	0	0	310	0	0	310	0	154	24	0	178	506
08:15 AM	0	0	18	0	18	0	0	301	0	0	301	0	164	12	0	176	495
08:30 AM	0	0	23	0	23	0	0	266	0	0	266	0	122	9	0	131	420
08:45 AM	0	0	18	0	18	0	0	267	0	0	267	0	152	13	0	165	450
Total	0	0	77	0	77	0	0	1144	0	0	1144	0	592	58	0	650	1871
*** BREAK ***																	
04:00 PM	0	0	23	0	23	0	0	199	0	0	199	0	283	8	0	291	513
04:15 PM	0	0	29	0	29	0	0	219	0	0	219	0	303	19	0	322	570
04:30 PM	0	0	49	0	49	0	0	254	0	0	254	0	291	10	0	301	604
04:45 PM	0	0	30	0	30	0	0	225	0	0	225	0	308	19	0	327	582
Total	0	0	131	0	131	0	0	897	0	0	897	0	1185	56	0	1241	2269
05:00 PM	0	1	36	0	37	0	0	233	0	0	233	0	351	15	0	366	636
05:15 PM	0	0	51	0	51	0	0	238	0	0	238	0	327	22	0	349	638
05:30 PM	0	0	32	0	32	0	0	209	0	0	209	0	336	15	0	351	592
05:45 PM	0	0	27	0	27	0	0	199	0	0	199	0	296	15	0	311	537
Total	0	1	146	0	147	0	0	879	0	0	879	0	1310	67	0	1377	2403
Grand Total	0	2	414	2	418	0	0	4097	0	0	4097	0	3723	224	0	3947	8462
Apprch %	0	0.5	99	0.5			0	100	0	0		0	94.3	5.7	0		
Total %	0	0	4.9	0	4.9	0	0	48.4	0	0	48.4	0	44	2.6	0	46.6	

	Knox Way Eastbound					Westb ound	US 15-501 Northbound					US 15-501 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	15	0	15	0	0	300	0	0	300	0	160	11	0	171	486
07:45 AM	0	0	10	**2**	12	0	0	309	0	0	309	0	**214**	20	0	**234**	**555**
08:00 AM	0	0	**18**	0	**18**	0	0	**310**	0	0	**310**	0	154	**24**	0	178	506
08:15 AM	0	0	18	0	18	0	0	301	0	0	301	0	164	12	0	176	495
Total Volume	0	0	61	2	63	0	0	1220	0	0	1220	0	692	67	0	759	2042
% App. Total	0	0	96.8	3.2			0	100	0	0		0	91.2	8.8	0		
PHF	.000	.000	.847	.250	.875	.000	.000	.984	.000	.000	.984	.000	.808	.698	.000	.811	.920
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	49	0	49	0	0	**254**	0	0	**254**	0	291	10	0	301	604
04:45 PM	0	0	30	0	30	0	0	225	0	0	225	0	308	19	0	327	582
05:00 PM	0	**1**	36	0	37	0	0	233	0	0	233	0	**351**	15	0	**366**	636
05:15 PM	0	0	**51**	0	**51**	0	0	238	0	0	238	0	327	**22**	0	349	**638**
Total Volume	0	1	166	0	167	0	0	950	0	0	950	0	1277	66	0	1343	2460
% App. Total	0	0.6	99.4	0			0	100	0	0		0	95.1	4.9	0		
PHF	.000	.250	.814	.000	.819	.000	.000	.935	.000	.000	.935	.000	.910	.750	.000	.917	.964

Your Company Name Here

US 15-501 @ Polks Landing Way
Pittsboro, NC
Counter:JCG
January 7, 2020

File Name : US15501PolksLandingway
Site Code : 00020203
Start Date : 1/7/2020
Page No : 1

Groups Printed- Vehhicles

	Polks Landing Way Eastbound					Westb ound	US 15-501 Northbound					US 15-501 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	"U" turn	Thru	Right	Peds	App. Total	Int. Total
07:00 AM	0	0	5	0	5	0	4	236	0	0	240	16	124	2	0	142	387
07:15 AM	0	0	8	0	8	0	8	301	0	0	309	15	138	3	0	156	473
07:30 AM	0	0	6	0	6	0	12	286	0	0	298	14	161	0	0	175	479
07:45 AM	0	0	6	0	6	0	21	296	0	0	317	13	208	3	0	224	547
Total	0	0	25	0	25	0	45	1119	0	0	1164	58	631	8	0	697	1886
08:00 AM	0	0	9	0	9	0	18	289	0	1	308	21	149	2	0	172	489
08:15 AM	0	0	1	0	1	0	11	282	0	0	293	19	161	1	0	181	475
08:30 AM	0	0	5	0	5	0	11	247	0	0	258	19	125	1	0	145	408
08:45 AM	0	0	7	0	7	0	9	252	0	0	261	15	152	3	0	170	438
Total	0	0	22	0	22	0	49	1070	0	1	1120	74	587	7	0	668	1810
*** BREAK ***																	
04:00 PM	0	0	4	0	4	0	8	184	0	0	192	15	285	6	0	306	502
04:15 PM	0	0	8	0	8	0	11	203	0	0	214	16	308	8	0	332	554
04:30 PM	0	0	2	0	2	0	17	227	0	0	244	27	304	9	0	340	586
04:45 PM	0	0	4	0	4	0	10	199	0	0	209	26	310	2	0	338	551
Total	0	0	18	0	18	0	46	813	0	0	859	84	1207	25	0	1316	2193
05:00 PM	0	0	1	0	1	0	24	213	0	1	238	20	356	11	0	387	626
05:15 PM	0	0	4	0	4	0	17	214	0	0	231	24	347	7	0	378	613
05:30 PM	0	0	9	0	9	0	12	190	0	0	202	19	338	11	0	368	579
05:45 PM	0	0	10	0	10	0	9	179	0	0	188	20	281	7	0	308	506
Total	0	0	24	0	24	0	62	796	0	1	859	83	1322	36	0	1441	2324
Grand Total	0	0	89	0	89	0	202	3798	0	2	4002	299	3747	76	0	4122	8213
Apprch %	0	0	100	0			5	94.9	0	0		7.3	90.9	1.8	0		
Total %	0	0	1.1	0	1.1	0	2.5	46.2	0	0	48.7	3.6	45.6	0.9	0	50.2	

	Polks Landing Way Eastbound					Westb ound	US 15-501 Northbound					US 15-501 Southbound					
Start Time	Left	Thru	Right	Peds	App. Total	App. Total	Left	Thru	Right	Peds	App. Total	"U" turn	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	6	0	6	0	12	286	0	0	298	14	161	0	0	175	479
07:45 AM	0	0	6	0	6	0	**21**	**296**	0	0	**317**	13	**208**	**3**	0	**224**	**547**
08:00 AM	0	0	**9**	0	**9**	0	18	289	0	**1**	308	**21**	149	2	0	172	489
08:15 AM	0	0	1	0	1	0	11	282	0	0	293	19	161	1	0	181	475
Total Volume	0	0	22	0	22	0	62	1153	0	1	1216	67	679	6	0	752	1990
% App. Total	0	0	100	0			5.1	94.8	0	0.1		8.9	90.3	0.8	0		
PHF	.000	.000	.611	.000	.611	.000	.738	.974	.000	.250	.959	.798	.816	.500	.000	.839	.910
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	2	0	2	0	17	**227**	0	0	**244**	**27**	304	9	0	340	586
04:45 PM	0	0	**4**	0	**4**	0	10	199	0	0	209	26	310	2	0	338	551
05:00 PM	0	0	1	0	1	0	**24**	213	0	**1**	238	20	**356**	**11**	0	**387**	**626**
05:15 PM	0	0	4	0	4	0	17	214	0	0	231	24	347	7	0	378	613
Total Volume	0	0	11	0	11	0	68	853	0	1	922	97	1317	29	0	1443	2376
% App. Total	0	0	100	0			7.4	92.5	0	0.1		6.7	91.3	2	0		
PHF	.000	.000	.688	.000	.688	.000	.708	.939	.000	.250	.945	.898	.925	.659	.000	.932	.949

Your Company Name Here

US 15-501 @ Lystra Rd.
Pittsboro, NC
Counter:JCG
January 8, 2020

File Name : US15501Lystra
Site Code : 00020204
Start Date : 1/8/2020
Page No : 1

Groups Printed- Vehicles

	Eastbound	Lystra Rd. Westbound				US 15-501 Northbound				US 15-501 Southbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00 AM	0	3	0	17	20	4	205	2	211	27	102	0	129	360
07:15 AM	0	15	0	29	44	2	319	17	338	27	119	0	146	528
07:30 AM	0	25	0	28	53	3	260	34	297	51	116	0	167	517
07:45 AM	0	24	0	45	69	0	265	36	301	50	164	0	214	584
Total	0	67	0	119	186	9	1049	89	1147	155	501	0	656	1989
08:00 AM	0	25	0	48	73	4	248	23	275	53	105	0	158	506
08:15 AM	0	14	0	32	46	2	318	12	332	47	115	0	162	540
08:30 AM	0	14	0	36	50	3	224	6	233	36	94	0	130	413
08:45 AM	0	18	0	47	65	3	223	9	235	32	127	0	159	459
Total	0	71	0	163	234	12	1013	50	1075	168	441	0	609	1918
*** BREAK ***														
04:00 PM	0	31	0	47	78	8	169	11	188	58	231	0	289	555
04:15 PM	0	25	0	52	77	7	168	6	181	57	259	0	316	574
04:30 PM	0	39	0	47	86	9	180	5	194	73	233	0	306	586
04:45 PM	0	32	0	48	80	5	183	10	198	60	254	0	314	592
Total	0	127	0	194	321	29	700	32	761	248	977	0	1225	2307
05:00 PM	0	39	0	58	97	16	173	5	194	69	288	0	357	648
05:15 PM	0	33	0	57	90	15	200	14	229	64	287	0	351	670
05:30 PM	0	40	0	54	94	13	191	5	209	43	304	0	347	650
05:45 PM	0	24	0	49	73	8	201	4	213	42	249	0	291	577
Total	0	136	0	218	354	52	765	28	845	218	1128	0	1346	2545
Grand Total	0	401	0	694	1095	102	3527	199	3828	789	3047	0	3836	8759
Apprch %		36.6	0	63.4		2.7	92.1	5.2		20.6	79.4	0		
Total %	0	4.6	0	7.9	12.5	1.2	40.3	2.3	43.7	9	34.8	0	43.8	

	Eastbound	Lystra Rd. Westbound				US 15-501 Northbound				US 15-501 Southbound				
Start Time	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:30 AM														
07:30 AM	0	**25**	0	28	53	3	260	34	297	51	116	0	167	517
07:45 AM	0	24	0	45	69	0	265	**36**	301	50	**164**	0	**214**	**584**
08:00 AM	0	25	0	**48**	**73**	**4**	248	23	275	**53**	105	0	158	506
08:15 AM	0	14	0	32	46	2	**318**	12	**332**	47	115	0	162	540
Total Volume	0	88	0	153	241	9	1091	105	1205	201	500	0	701	2147
% App. Total		36.5	0	63.5		0.7	90.5	8.7		28.7	71.3	0		
PHF	.000	.880	.000	.797	.825	.563	.858	.729	.907	.948	.762	.000	.819	.919
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:45 PM														
04:45 PM	0	32	0	48	80	5	183	10	198	60	254	0	314	592
05:00 PM	0	39	0	**58**	**97**	**16**	173	5	194	**69**	288	0	**357**	648
05:15 PM	0	33	0	57	90	15	**200**	**14**	**229**	64	287	0	351	**670**
05:30 PM	0	**40**	0	54	94	13	191	5	209	43	**304**	0	347	650
Total Volume	0	144	0	217	361	49	747	34	830	236	1133	0	1369	2560
% App. Total		39.9	0	60.1		5.9	90	4.1		17.2	82.8	0		
PHF	.000	.900	.000	.935	.930	.766	.934	.607	.906	.855	.932	.000	.959	.955

Your Company Name Here

Lystra Rd. @ Chatham Downs Dr.
Pittsboro, NC
Counter:JG
January 7, 2020

File Name : LystraChathamDowns
Site Code : 00020205
Start Date : 1/7/2020
Page No : 1

Groups Printed- Vehicles

	Lystra Rd. Eastbound				Lystra Rd. Westbound				Chatham Downs Dr. Northbound				Southbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
07:00 AM	0	39	3	42	2	22	0	24	5	0	2	7	0	73
07:15 AM	0	53	4	57	1	27	0	28	8	0	3	11	0	96
07:30 AM	0	61	7	68	3	30	0	33	9	0	4	13	0	114
07:45 AM	0	66	15	81	1	62	0	63	9	0	5	14	0	158
Total	0	219	29	248	7	141	0	148	31	0	14	45	0	441
08:00 AM	0	67	17	84	6	45	0	51	11	0	6	17	0	152
08:15 AM	0	41	18	59	4	35	0	39	10	0	5	15	0	113
08:30 AM	0	33	13	46	11	45	0	56	13	0	3	16	0	118
08:45 AM	0	22	13	35	5	30	0	35	11	0	7	18	0	88
Total	0	163	61	224	26	155	0	181	45	0	21	66	0	471
*** BREAK ***														
04:00 PM	0	29	27	56	7	38	0	45	39	0	7	46	0	147
04:15 PM	0	34	32	66	10	39	0	49	35	0	9	44	0	159
04:30 PM	0	34	18	52	9	54	0	63	40	0	17	57	0	172
04:45 PM	0	41	41	82	11	52	0	63	37	0	6	43	0	188
Total	0	138	118	256	37	183	0	220	151	0	39	190	0	666
05:00 PM	0	40	33	73	11	51	0	62	38	0	13	51	0	186
05:15 PM	0	46	28	74	12	57	0	69	34	0	9	43	0	186
05:30 PM	0	38	28	66	10	41	0	51	44	0	8	52	0	169
05:45 PM	0	30	28	58	14	46	0	60	32	0	7	39	0	157
Total	0	154	117	271	47	195	0	242	148	0	37	185	0	698
Grand Total	0	674	325	999	117	674	0	791	375	0	111	486	0	2276
Apprch %	0	67.5	32.5		14.8	85.2	0		77.2	0	22.8			
Total %	0	29.6	14.3	43.9	5.1	29.6	0	34.8	16.5	0	4.9	21.4	0	

	Lystra Rd. Eastbound				Lystra Rd. Westbound				Chatham Downs Dr. Northbound				Southbound	
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:45 AM														
07:45 AM	0	66	15	81	1	**62**	0	**63**	9	0	5	14	0	**158**
08:00 AM	0	**67**	17	**84**	6	45	0	51	11	0	**6**	**17**	0	152
08:15 AM	0	41	**18**	59	4	35	0	39	10	0	5	15	0	113
08:30 AM	0	33	13	46	**11**	45	0	56	**13**	0	3	16	0	118
Total Volume	0	207	63	270	22	187	0	209	43	0	19	62	0	541
% App. Total	0	76.7	23.3		10.5	89.5	0		69.4	0	30.6			
PHF	.000	.772	.875	.804	.500	.754	.000	.829	.827	.000	.792	.912	.000	.856
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:30 PM														
04:30 PM	0	34	18	52	9	54	0	63	**40**	0	**17**	**57**	0	172
04:45 PM	0	41	**41**	**82**	11	52	0	63	37	0	6	43	0	**188**
05:00 PM	0	40	33	73	11	51	0	62	38	0	13	51	0	186
05:15 PM	0	**46**	28	74	**12**	**57**	0	**69**	34	0	9	43	0	186
Total Volume	0	161	120	281	43	214	0	257	149	0	45	194	0	732
% App. Total	0	57.3	42.7		16.7	83.3	0		76.8	0	23.2			
PHF	.000	.875	.732	.857	.896	.939	.000	.931	.931	.000	.662	.851	.000	.973

Appendix D:
Approved Development Data

Briar Chapel - Analysis Update

Table 1 - Trip Generation - Full Build-Out

Land Use		Intensity		Daily			AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out	Total	In	Out
210	Single Family Detached Housing	2,072	d.u.	17,076	8,538	8,538	1,460	365	1,095	1,608	1,013	595
220	Apartment	350	d.u.	2,246	1,123	1,123	175	35	140	210	137	73
230	Residential Condominium/Townhouse	40	d.u.	290	145	145	25	4	21	28	19	9
251	Senior Adult Housing - Detached	188	d.u.	830	415	415	62	22	40	72	44	28
412	County Park	66	acres	150	75	75	1	1	0	6	4	2
522	Middle School	800	students	1,296	648	648	432	238	194	128	63	65
536	Charter School	500	students	1,240	620	620	405	247	158	85	37	48
540	Junior/Community College	400	students	654	327	327	139	117	22	173	109	64
565	Day Care Center	160	students	800	400	400	121	64	57	114	54	60
590	Library	6,000	s.f.	538	269	269	2	1	1	47	23	24
620	Nursing Home	120	beds	330	165	165	20	14	6	26	9	17
710	General Office Building[1]	51,450	s.f.	792	396	396	112	99	13	136	23	113
720	Medical Office Building	17,555	s.f.	504	252	252	42	33	9	61	17	44
820	Shopping Center	36,000	s.f.	3,496	1,748	1,748	84	52	32	302	145	157
826	Specialty Retail[2]	9,495	s.f.	444	222	222	13	8	5	44	19	25
850	Supermarket	40,000	s.f.	4,070	2,035	2,035	136	84	52	395	201	194
934	Fast-Food Restaurant with Drive-Through Window	3,500	s.f.	1,736	868	868	159	81	78	114	59	55
945	Gasoline/Service Station with Convenience Market	4	f.p.	652	326	326	41	21	20	54	27	27
Subtotal				**37,144**	**18,572**	**18,572**	**3,429**	**1,486**	**1,943**	**3,603**	**2,003**	**1,600**
Internal Capture												
	Single Family Detached Housing			1,588	814	774	38	10	28	158	99	59
	Apartment			209	107	102	5	1	4	20	13	7
	Residential Condominium/Townhouse			27	14	13	1	0	1	3	2	1
	Senior Adult Housing - Detached			78	40	38	2	1	1	7	4	3
	County Park			46	22	24	-	-	-	3	2	1
	General Office Building			444	276	168	32	20	12	44	19	25
	Medical Office Building			282	175	107	15	7	8	24	14	10
	Shopping Center			937	399	538	17	9	8	85	34	51
	Specialty Retail			119	51	68	2	1	1	13	5	8
	Supermarket			1,090	464	626	28	15	13	111	48	63
	Fast-Food Restaurant with Drive-Through Window			1,101	612	489	76	44	32	63	27	36
	Gasoline/Service Station with Convenience Market			174	74	100	9	4	5	15	6	9
Internal Capture Total		**15.15%**		6,095	3,048	3,047	225	112	113	546	273	273
Total External Trips				**31,049**	**15,524**	**15,525**	**3,204**	**1,374**	**1,830**	**3,057**	**1,730**	**1,327**
Pass-By Traffic (ITE)		AM	PM									
820	Shopping Center	0%	34%	740	370	370	0	0	0	74	38	36
850	Supermarket	0%	36%	1,020	510	510	0	0	0	102	55	47
934	Fast-Food Restaurant with Drive-Through Window	49%	50%	260	130	130	41	18	23	26	16	10
945	Gasoline/Service Station with Convenience Market	62%	56%	220	110	110	20	11	9	22	12	10
	Pass-By Total:	**6.22%**		**2,240**	**1,120**	**1,120**	**61**	**29**	**32**	**224**	**121**	**103**
Total Net New External Trips				**28,809**	**14,404**	**14,405**	**3,143**	**1,345**	**1,798**	**2,833**	**1,609**	**1,224**

[1] *For the Office Space land use (less than 50,000 s.f.), the peak hour rates were used.*

[2] *The ITE Trip Generation Manual does not include trip generation rates for specialty retail space in the AM peak hour of the adjacent street. Therefore, the trip generation potential of the specialty retail space in the AM peak hour is estimated based on the trip generation potential of the PM peak hour for specialty retail space, adjusted by the ratio of the AM peak hour trip generation potential for general retail space divided by the PM peak hour trip generation potential for general retail space. The enter and exit percentages for the AM peak hour were also assumed to the be same as general retail space.*

Briar Chapel 2017 Update

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	648	648	132	22	40	157
Retail	4,331	4,331	165	109	392	403
Restaurant	868	868	81	78	59	55
Cinema/Entertainment	75	75	1	0	4	2
Residential	10,221	10,221	426	1,296	1,213	705
Hotel	0	0	0	0	0	0
	16,143	16,143	805	1,505	1,708	1,322

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	451	275	27	20	33	35
Retail	988	1,332	30	28	93	131
Restaurant	612	489	44	32	27	36
Cinema/Entertainment	22	24	0	0	2	1
Residential	974	927	12	33	118	70
Hotel	0	0	0	0	0	0
	3,047	3,047	113	113	273	273
% Reduction	18.9%		9.8%		18.0%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	197	373	105	2	7	122
Retail	3,343	2,999	135	81	299	272
Restaurant	256	379	37	46	32	19
Cinema/Entertainment	53	51	1	0	2	1
Residential	9,247	9,294	414	1,263	1,095	635
Hotel	0	0	0	0	0	0
	13,096	13,096	692	1,392	1,435	1,049

Briar Chapel - Analysis Update

Table 2 - Trip Generation - Existing as of 11/2019

Land Use		Intensity		Daily			AM Peak Hour			PM Peak Hour		
				Total	In	Out	Total	In	Out	Total	In	Out
210	Single Family Detached Housing	1,860	d.u.	15,462	7,731	7,731	1,312	328	984	1,459	919	540
230	Residential Condominium/Townhouse	40	d.u.	290	145	145	25	4	21	28	19	9
522	Middle School	800	students	1,296	648	648	432	238	194	128	63	65
536	Charter School	500	students	1,240	620	620	405	247	158	85	37	48
565	Day Care Center	160	students	800	400	400	121	64	57	114	54	60
720	Medical Office Building	12,252	s.f.	286	143	143	29	23	6	44	12	32
826	Specialty Retail[1]	15,290	s.f.	692	346	346	17	11	6	58	26	32
Subtotal				**20,066**	**10,033**	**10,033**	**2,341**	**915**	**1,426**	**1,916**	**1,130**	**786**
Internal Capture												
	Single Family Detached Housing			158	70	88	4	1	3	19	9	10
	Residential Condominium/Townhouse			3	1	2	0	0	0	0	0	0
	Medical Office Building			104	68	36	4	2	2	11	8	3
	Specialty Retail			175	81	94	6	4	2	14	5	9
Internal Capture Total		**2.30%**		440	220	220	14	7	7	44	22	22
Total Net New External Trips				**19,626**	**9,813**	**9,813**	**2,327**	**908**	**1,419**	**1,872**	**1,108**	**764**

[1] The ITE Trip Generation Manual does not include trip generation rates for specialty retail space in the AM peak hour of the adjacent street. Therefore, the trip generation potential of the specialty retail space in the AM peak hour is estimated based on the trip generation potential of the PM peak hour for specialty retail space, adjusted by the ratio of the AM peak hour trip generation potential for general retail space divided by the PM peak hour trip generation potential for general retail space. The enter and exit percentages for the AM peak hour were also assumed to the be same as general retail space.

Briar Chapel 2017 Update

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY

GROSS TRIP GENERATION

INPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	143	143	23	6	12	32
Retail	346	346	11	6	26	32
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	7,876	7,876	332	1,005	938	549
Hotel	0	0	0	0	0	0
	8,365	8,365	366	1,017	976	613

INTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	68	36	2	2	8	3
Retail	81	94	4	2	5	9
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	71	90	1	3	9	10
Hotel	0	0	0	0	0	0
	220	220	7	7	22	22
% Reduction	2.6%		1.0%		2.8%	

EXTERNAL TRIPS

OUTPUT

Land Use	Daily		A.M. Peak Hour		P.M. Peak Hour	
	Enter	Exit	Enter	Exit	Enter	Exit
Office	75	107	21	4	4	29
Retail	265	252	7	4	21	23
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	7,805	7,786	331	1,002	929	539
Hotel	0	0	0	0	0	0
	8,145	8,145	359	1,010	954	591

INTERSECTION ANALYSIS SHEET

Project:	**Briar Chapel - Analysis Update**
Location:	**Chapel Hill, NC**
Ct. Date	**1/31/2017**
N/S Street:	**US 15/501**
E/W Street:	**Lystra Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	437	379	501	460
Pass-By Trips:	29	32	121	103

Annual Growth Rate: 3.0%
Growth Factor: 0.194052

Existing Year: 2017
Buildout Year: 2023

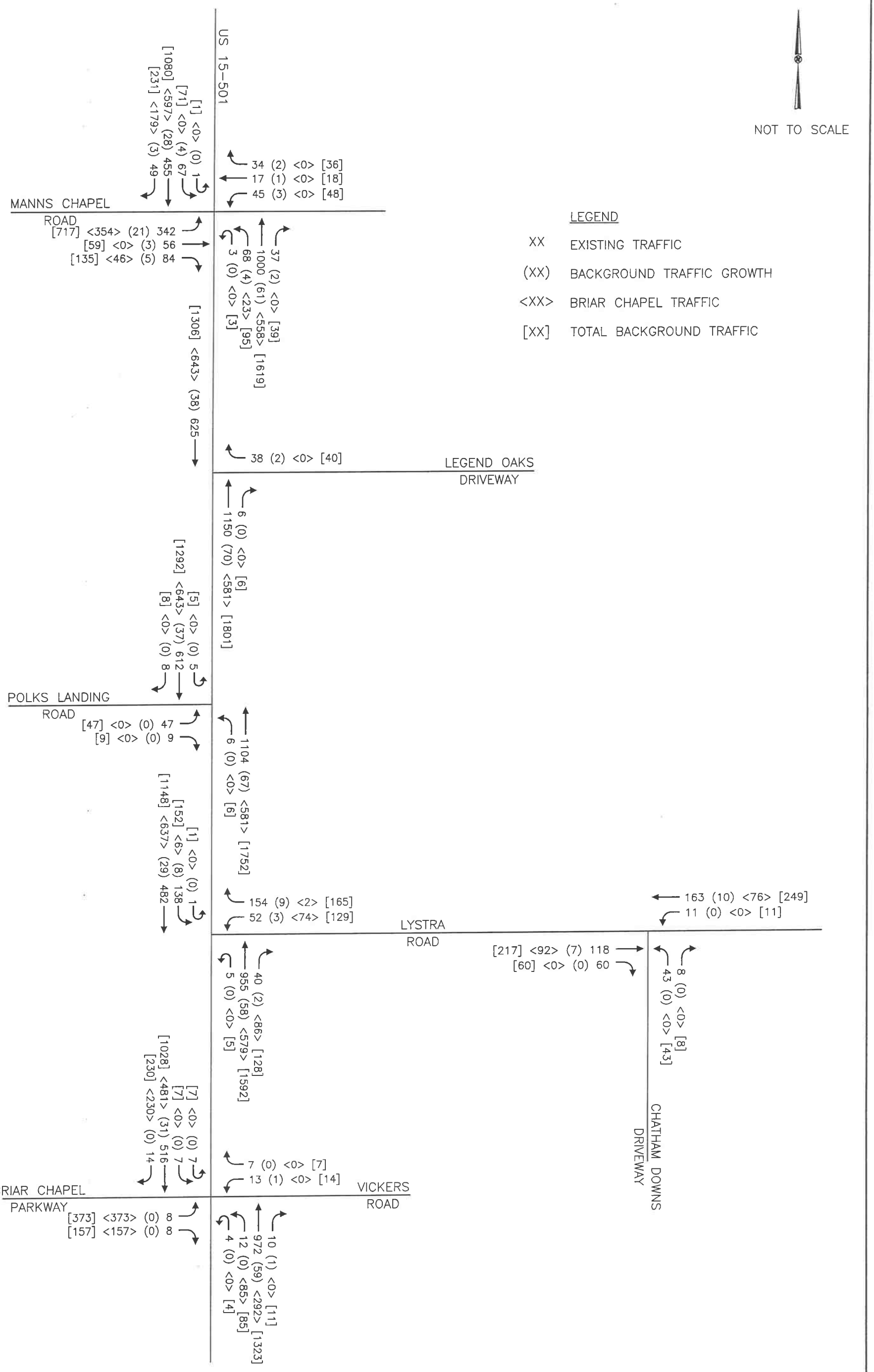
AM PEAK HOUR

Description	Lystra Road Eastbound Left	Through	Right	Lystra Road Westbound Left	Through	Right	US 15/501 Northbound U-Turn	Left	Through	Right	US 15/501 Southbound U-Turn	Left	Through	Right
Project Traffic														
Percent Assignment Inbound	0%	0%	0%	4%	0%	1%	0%	0%	0%	0%	0%	0%	43%	0%
Inbound Project Traffic	0	0	0	17	0	4	0	0	0	0	0	0	188	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	31%	5%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	118	19	0	0	0	0
Total External Site Traffic	0	0	0	17	0	4	0	0	118	19	0	0	188	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	-17	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	19	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	2	0	0	0	0	0
Total Remaining Project Traffic	0	0	0	17	0	4	0	0	120	19	0	0	188	0

PM PEAK HOUR

Description	Lystra Road Eastbound Left	Through	Right	Lystra Road Westbound Left	Through	Right	US 15/501 Northbound U-Turn	Left	Through	Right	US 15/501 Southbound U-Turn	Left	Through	Right
Project Traffic														
Percent Assignment Inbound	0%	0	0	4%	0	2%	0	0	0	0	0	0	34%	0
Inbound Project Traffic	0	0	0	20	0	10	0	0	0	0	0	0	170	0
Percent Assignment Outbound	0	0	0	0	0	0	0	0	39%	5%	0	0	0	0
Outbound Project Traffic	0	0	0	0	0	0	0	0	179	23	0	0	0	0
Total External Site Traffic	0	0	0	20	0	10	0	0	179	23	0	0	170	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	-56	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	47	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	-9	0	0	0	0	0
Total Remaining Project Traffic	0	0	0	20	0	10	0	0	170	23	0	0	170	0

K:\RDT_LDEV\012809001 Williams Corner\T4 – Analysis\Addendum 2\TIA2.dwg



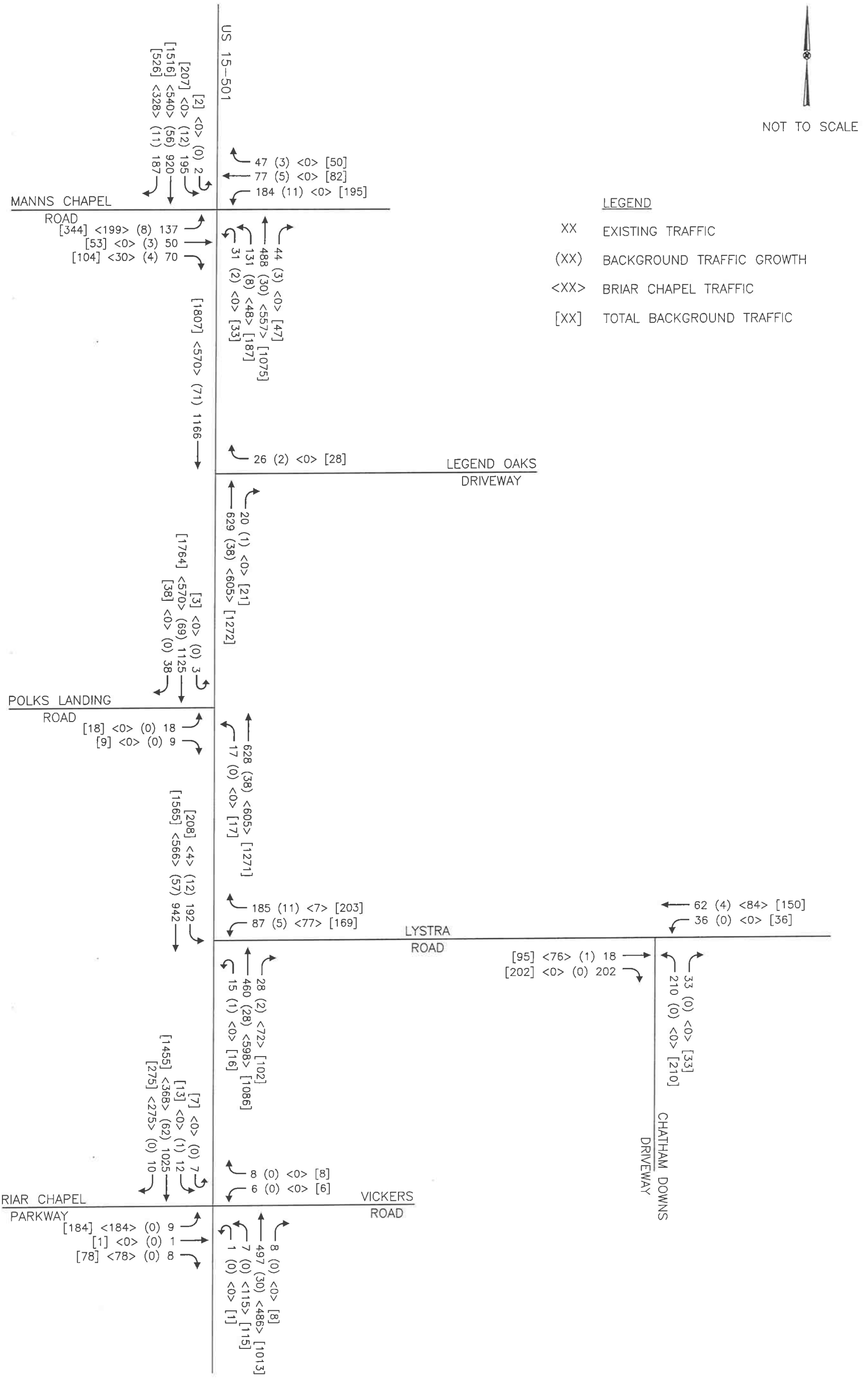
Kimley-Horn and Associates, Inc.

WILLIAMS CORNER/POLKS LANDING
TRAFFIC IMPACT ANALYSIS

EXISTING AND PROJECTED BACKGROUND
AM PEAK HOUR TRAFFIC VOLUMES

FIGURE
1

K:\RDT_LDEV\012809001 Williams Corner\T4 – Analysis\Addendum 2\TIA2.dwg



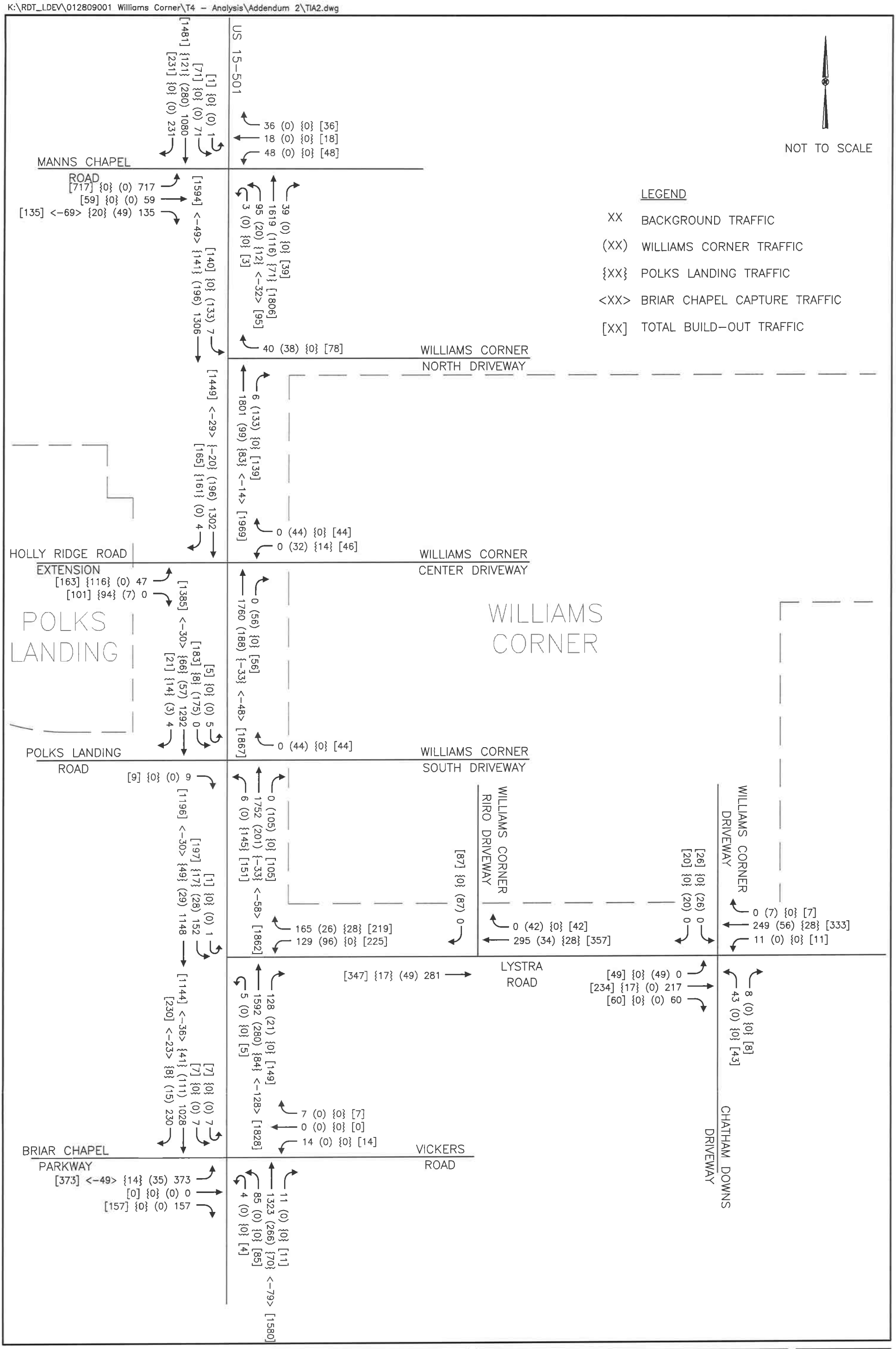
Kimley-Horn and Associates, Inc.

WILLIAMS CORNER/POLKS LANDING
TRAFFIC IMPACT ANALYSIS

EXISTING AND PROJECTED BACKGROUND
PM PEAK HOUR TRAFFIC VOLUMES

FIGURE
2

K:\RDT_LDEV\012809001 Williams Corner\T4 - Analysis\Addendum 2\TIA2.dwg



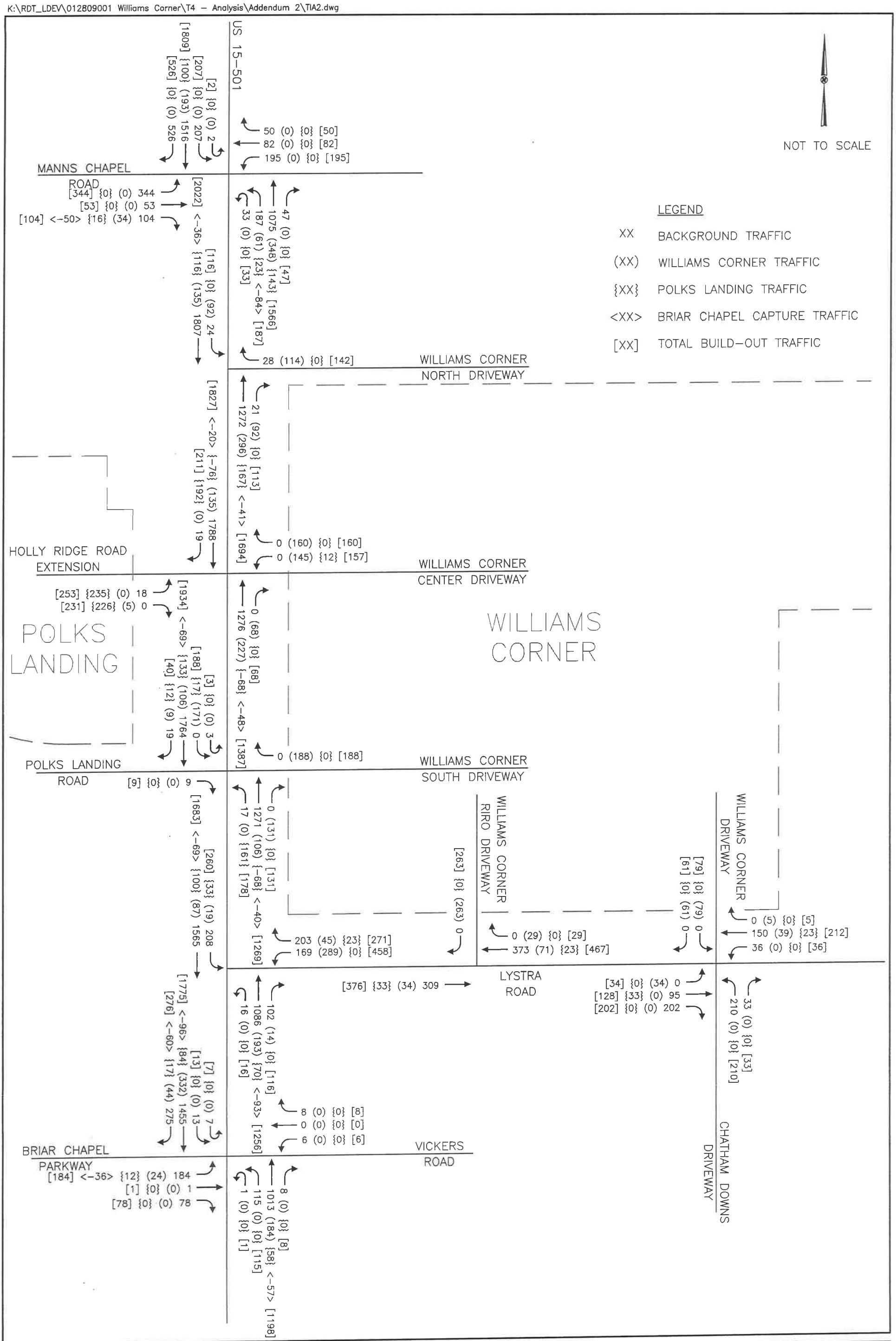
Kimley-Horn and Associates, Inc.

WILLIAMS CORNER/POLKS LANDING
TRAFFIC IMPACT ANALYSIS

PROJECTED BUILD-OUT AM
PEAK HOUR TRAFFIC VOLUMES

FIGURE
3

K:\RDT_LDEV\012809001 Williams Corner\T4 – Analysis\Addendum 2\TIA2.dwg



Kimley-Horn and Associates, Inc.

WILLIAMS CORNER/POLKS LANDING
TRAFFIC IMPACT ANALYSIS

PROJECTED BUILD-OUT PM
PEAK HOUR TRAFFIC VOLUMES

FIGURE
4

Obtained from Chatham News and Record article (by Z. Horner) dated 11/29/19

Adjacent Development - 501 Landing

Table A - Trip Generation

Land Use	Intensity		Daily			AM Peak Hour			PM Peak Hour		
			Total	In	Out	Total	In	Out	Total	In	Out
820 Shopping Center[1]	14,400	s.f.	1,610	805	805	86	53	33	130	62	68
Pass-By Traffic (ITE)	AM	PM									
820 Shopping Center1	0%	34%	546	273	273	0	0	0	44	21	23
Pass-By Total:	**0.00%**	**33.85%**	**546**	**273**	**273**	**0**	**0**	**0**	**44**	**21**	**23**
Total Net New External Trips			**1,064**	**532**	**532**	**86**	**53**	**33**	**86**	**41**	**45**

[1] For LUC 820, the y-intercept in the equation for AM trip generation is 151.78, primarily due to a small sample size provided in the 10th Edition of ITE Trip Generation Manual. For this calculation, the results of trip generation calculations using the rate and equation were averaged in the AM peak hour to balance the impacts of the y-intercept. For reference, the average of results using the rate and equation is still 50% higher than results using the the AM peak hour equation from the 9th Edition of ITE.

INTERSECTION ANALYSIS SHEET

Project:	**Adjacent Development - 501 Landing**
Location:	**Chatham County, NC**
N/S Street:	**US 15/501**
E/W Street:	**Legend Oaks Drive**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	53	33	41	45
Pass-By Trips:	0	0	21	23

AM PEAK HOUR
AM PHF =

	Eastbound			Legend Oaks Drive Westbound			US 15/501 Northbound			US 15/501 Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	24	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	15	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	15	0	0	24	0

PM PEAK HOUR
PM PHF =

	Eastbound			Legend Oaks Drive Westbound			US 15/501 Northbound			US 15/501 Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	18	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	20	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	20	0	0	18	0

INTERSECTION ANALYSIS SHEET

Project:	**Adjacent Development - 501 Landing**
Location:	**Chatham County, NC**
N/S Street:	**Site Driveway**
E/W Street:	**Legend Oaks Drive**

	AM In	AM Out	PM In	PM Out
Net New Trips:	53	33	41	45
Pass-By Trips:	0	0	21	23

AM PEAK HOUR
AM PHF =

	Legend Oaks Drive **Eastbound**			Legend Oaks Drive **Westbound**			Site Driveway **Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR
PM PHF =

	Legend Oaks Drive **Eastbound**			Legend Oaks Drive **Westbound**			Site Driveway **Northbound**			**Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	0	0	0	0	0

INTERSECTION ANALYSIS SHEET

Project:	**Adjacent Development - 501 Landing**
Location:	**Chatham County, NC**
N/S Street:	**US 15/501**
E/W Street:	**Knox Way/Site Driveway**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	53	33	41	45
Pass-By Trips:	0	0	21	23

AM PEAK HOUR
AM PHF =

	Knox Way **Eastbound**			Site Driveway **Westbound**			US 15/501 **Northbound**			US 15/501 **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	24	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	15	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	15	0	0	24	0

PM PEAK HOUR
PM PHF =

	Knox Way **Eastbound**			Site Driveway **Westbound**			US 15/501 **Northbound**			US 15/501 **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	18	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	20	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	20	0	0	18	0

INTERSECTION ANALYSIS SHEET

Project:	**Adjacent Development - 501 Landing**
Location:	**Chatham County, NC**
N/S Street:	**US 15/501**
E/W Street:	**Polks Landing Road/Site Driveway**

	AM In	AM Out	PM In	PM Out
Net New Trips:	53	33	41	45
Pass-By Trips:	0	0	21	23

AM PEAK HOUR
AM PHF =

	Polks Landing Road **Eastbound**			Site Driveway **Westbound**			US 15/501 **Northbound**			US 15/501 **Southbound**			
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	U-Turn	Left	Through	Right
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	45%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	24	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	45%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	15	0	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	15	0	0	0	24	0

PM PEAK HOUR
PM PHF =

	Polks Landing Road **Eastbound**			Site Driveway **Westbound**			US 15/501 **Northbound**			US 15/501 **Southbound**			
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	U-Turn	Left	Through	Right
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0	45%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	0	0	18	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	45%	0%	0%	0	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	20	0	0	0	0	0
Total Project Traffic	0	0	0	0	0	0	0	20	0	0	0	18	0

INTERSECTION ANALYSIS SHEET

Project:	**Adjacent Development - 501 Landing**
Location:	**Chatham County, NC**
N/S Street:	**US 15/501**
E/W Street:	**Lystra Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	53	33	41	45
Pass-By Trips:	0	0	21	23

AM PEAK HOUR
AM PHF =

	Eastbound			Lystra Road Westbound			US 15/501 Northbound			US 15/501 Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	U-Turn	Left	Through
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	45%
Inbound Project Traffic	0	0	0	3	0	0	0	0	0	0	0	24
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	45%	5%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	15	2	0	0	0
Total Project Traffic	0	0	0	3	0	0	0	15	2	0	0	24

PM PEAK HOUR
PM PHF =

	Eastbound			Lystra Road Westbound			US 15/501 Northbound			US 15/501 Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	U-Turn	Left	Through
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%	45%
Inbound Project Traffic	0	0	0	2	0	0	0	0	0	0	0	18
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	45%	5%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	0	20	2	0	0	0
Total Project Traffic	0	0	0	2	0	0	0	20	2	0	0	18

INTERSECTION ANALYSIS SHEET

Project:	**Adjacent Development - 501 Landing**
Location:	**Chatham County, NC**
N/S Street:	**Chatham Downs Drive/Site Driveway**
E/W Street:	**Lystra Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	53	33	41	45
Pass-By Trips:	0	0	21	23

AM PEAK HOUR
AM PHF =

	Lystra Road **Eastbound**			Lystra Road **Westbound**			Chatham Downs Drive **Northbound**			Site Driveway **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	3	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	2	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	2	0	0	3	0	0	0	0	0	0	0

PM PEAK HOUR
PM PHF =

	Lystra Road **Eastbound**			Lystra Road **Westbound**			Chatham Downs Drive **Northbound**			Site Driveway **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	2	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	2	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	2	0	0	2	0	0	0	0	0	0	0

INTERSECTION ANALYSIS SHEET

Project:	**Adjacent Development - 501 Landing**
Location:	**Chatham County, NC**
N/S Street:	**RI/RO Site Driveway**
E/W Street:	**Lystra Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	53	33	41	45
Pass-By Trips:	0	0	21	23

AM PEAK HOUR
AM PHF =

	Lystra Road **Eastbound**			Lystra Road **Westbound**			**Northbound**			RI/RO Site Driveway **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	3	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	2	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	2	0	0	3	0	0	0	0	0	0	0

PM PEAK HOUR
PM PHF =

	Lystra Road **Eastbound**			Lystra Road **Westbound**			**Northbound**			RI/RO Site Driveway **Southbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	0	0	2	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	2	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	2	0	0	2	0	0	0	0	0	0	0

Appendix E:
Intersection Spreadsheets

INTERSECTION ANALYSIS SHEET

Project:	**Williams Corner**
Location:	**Chatham County, NC**
Ct. Date	**1/8/2020**
Ct. Peaks	**AM: 715-815; PM: 415-515**
N/S Street:	**US 15/501**
E/W Street:	**Legend Oaks Drive**

	AM In	AM Out	PM In	PM Out
Net New Trips:	372	293	361	396
Pass-By Trips:	0	0	147	146

Annual Growth Rate:	1.5%	**Existing Year:**	2020
Growth Factor:	0.109845	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.92

Description	Eastbound			Legend Oaks Drive Westbound			US 15/501 Northbound			US 15/501 Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	57	0	1217	18	0	714	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	0	0	0	0	0	57	0	1217	18	0	714	0
Growth Factor (0.015 per year)	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110
2027 Background Growth	0	0	0	0	0	6	0	134	2	0	78	0
Committed Projects												
Briar Chapel (Remainder)	0	0	0	0	0	0	0	124	0	0	188	0
501 Landing (Not-Yet Approved)	0	0	0	0	0	0	0	15	0	0	24	0
Polks Landing (Remainder)	0	0	0	0	0	0	0	72	0	0	76	0
Total Committed Traffic	0	0	0	0	0	0	0	211	0	0	288	0
2027 Background Traffic	0	0	0	0	0	63	0	1562	20	0	1080	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	10%	19%	25%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	37	71	93	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	12%	0%	32%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	35	0	94	0	0	0	0
Total Project Traffic	0	0	0	0	0	35	0	94	37	71	93	0
Legend Oaks Left-In Diver.	0	0	0	0	0	0	0	0	-10	10	-10	0
2027 Buildout Total	0	0	0	0	0	98	0	1656	47	81	1163	0
Percent Impact (Approach)		-			35.7%			7.7%			13.2%	

Overall Percent Impact 10.8%

PM PEAK HOUR
PM PHF = 0.93

Description	Eastbound			Legend Oaks Drive Westbound			US 15/501 Northbound			US 15/501 Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	19	0	904	27	0	1368	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	0	0	0	0	0	19	0	904	27	0	1368	0
Growth Factor (0.015 per year)	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110
2027 Background Growth	0	0	0	0	0	2	0	99	3	0	150	0
Committed Projects												
Briar Chapel (Remainder)	0	0	0	0	0	0	0	180	0	0	170	0
501 Landing (Not-Yet Approved)	0	0	0	0	0	0	0	20	0	0	18	0
Polks Landing (Remainder)	0	0	0	0	0	0	0	102	0	0	59	0
Total Committed Traffic	0	0	0	0	0	0	0	302	0	0	247	0
2027 Background Traffic	0	0	0	0	0	21	0	1305	30	0	1765	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	10%	19%	25%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	36	69	90	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	12%	0%	32%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	48	0	127	0	0	0	0
Total External Site Traffic	0	0	0	0	0	48	0	127	36	69	90	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	-59	0	0	-88	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	58	0	15	74	0
Total Pass-By Traffic	0	0	0	0	0	0	0	-1	0	15	-14	0
Total Project Traffic	0	0	0	0	0	48	0	126	36	84	76	0
Legend Oaks Left-In Diver.	0	0	0	0	0	0	0	0	-15	15	-15	0
2027 Buildout Total	0	0	0	0	0	69	0	1431	51	99	1826	0
Percent Impact (Approach)		-			69.6%			10.9%			8.3%	

Overall Percent Impact 10.6%

INTERSECTION ANALYSIS SHEET

Project:	**Williams Corner**
Location:	**Chatham County, NC**
Ct. Date	**Balanced with Adjacent**
N/S Street:	**North Site Driveway (FM)**
E/W Street:	**Legend Oaks Drive**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	372	293	361	396
Pass-By Trips:	0	0	147	146

Annual Growth Rate:	1.5%	**Existing Year:**	2020
Growth Factor:	0.109845	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.90

	Legend Oaks Drive Eastbound			Legend Oaks Drive Westbound			North Site Driveway (FM) Northbound			Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	18	0	0	57	0	0	0	0	0	0	0
2020 Existing Traffic	0	18	0	0	57	0	0	0	0	0	0	0
Growth Factor (0.015 per year)	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110
2027 Background Growth	0	2	0	0	6	0	0	0	0	0	0	0
Committed Projects												
Briar Chapel (Remainder)	0	0	0	0	0	0	0	0	0	0	0	0
501 Landing (Not Yet Approved)	0	0	0	0	0	0	0	0	0	0	0	0
Polks Landing (Remainder)	0	0	0	0	0	0	0	0	0	0	0	0
Total Committed Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	20	0	0	63	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	29%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	108	4	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	12%	0%	1%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	35	0	3	0	0	0
Total Project Traffic	0	0	108	4	0	0	35	0	3	0	0	0
2027 Buildout Total	0	20	108	4	63	0	35	0	3	0	0	0
Percent Impact (Approach)		84.4%			6.0%			100.0%			-	

Overall Percent Impact 64.4%

PM PEAK HOUR
AM PHF = 0.90

	Legend Oaks Drive Eastbound			Legend Oaks Drive Westbound			North Site Driveway (FM) Northbound			Southbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	27	0	0	19	0	0	0	0	0	0	0
2020 Existing Traffic	0	27	0	0	19	0	0	0	0	0	0	0
Growth Factor (0.015 per year)	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110
2027 Background Growth	0	3	0	0	2	0	0	0	0	0	0	0
Committed Projects												
Briar Chapel (Remainder)	0	0	0	0	0	0	0	0	0	0	0	0
501 Landing (Not Yet Approved)	0	0	0	0	0	0	0	0	0	0	0	0
Polks Landing (Remainder)	0	0	0	0	0	0	0	0	0	0	0	0
Total Committed Traffic	0	0	0	0	0	0	0	0	0	0	0	0
2027 Background Traffic	0	30	0	0	21	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	0%	29%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	0	105	4	0	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	12%	0%	1%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	0	48	0	4	0	0	0
Total External Site Traffic	0	0	105	4	0	0	48	0	4	0	0	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	15	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	15	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	0	120	4	0	0	48	0	4	0	0	0
2027 Buildout Total	0	30	120	4	21	0	48	0	4	0	0	0
Percent Impact (Approach)		80.0%			16.0%			100.0%			-	

Overall Percent Impact 77.5%

INTERSECTION ANALYSIS SHEET

Project:	**Williams Corner**
Location:	**Chatham County, NC**
Ct. Date	**1/7/2020**
Ct. Peaks	**AM: 730-830; PM: 430-530**
N/S Street:	**US 15/501**
E/W Street:	**Knox Way/Central Site Driveway**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	372	293	361	396
Pass-By Trips:	0	0	147	146

Annual Growth Rate:	1.5%	**Existing Year:**	2020
Growth Factor:	0.109845	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.92

Description	Knox Way **Eastbound** Left	Through	Right	Central Site Driveway (Left-out) **Westbound** Left	Through	Right	US 15/501 **Northbound** Left	Through	Right	US 15/501 **Southbound** Left	Through	Right
2020 Traffic Count	0	0	61	0	0	0	0	1220	0	0	692	67
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	0	0	61	0	0	0	0	1220	0	0	692	67
Growth Factor (0.015 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.110	0.000	0.000	0.110	0.000
2027 Background Growth	0	0	0	0	0	0	0	134	0	0	76	0
Committed Projects												
Briar Chapel (Remainder)	0	0	0	0	0	0	0	124	0	0	188	0
501 Landing (Not-Yet Approved)	0	0	0	0	0	0	0	15	0	0	24	0
Polks Landing (Remainder)	105	0	91	14	0	0	0	-33	0	0	-22	98
Total Committed Traffic	105	0	91	14	0	0	0	106	0	0	190	98
Polks Landing Diversion	**58**	**0**	**-58**	**0**	**0**	**0**	**0**	**-58**	**0**	**0**	**0**	**0**
2027 Background Traffic	163	0	94	14	0	0	0	1402	0	0	958	165
Project Traffic												
Percent Assignment Inbound	0%	0%	1%	0%	0%	0%	0%	10%	13%	0%	25%	0%
Inbound Project Traffic	0	0	4	0	0	0	0	37	48	0	93	0
Percent Assignment Outbound	0%	0%	0%	19%	0%	14%	0%	18%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	56	0	41	0	53	0	0	0	0
Total Project Traffic	0	0	4	56	0	41	0	90	48	0	93	0
Legend Oaks Left-In Diver.	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-10**	**0**	**0**	**-10**	**0**
2027 Buildout Total	163	0	98	70	0	41	0	1482	48	0	1041	165
Percent Impact (Approach)		1.5%			87.4%			9.0%			7.7%	

Overall Percent Impact 10.7%

PM PEAK HOUR
PM PHF = 0.96

Description	Knox Way **Eastbound** Left	Through	Right	Central Site Driveway (Left-out) **Westbound** Left	Through	Right	US 15/501 **Northbound** Left	Through	Right	US 15/501 **Southbound** Left	Through	Right
2020 Traffic Count	0	0	166	0	0	0	0	950	0	0	1277	66
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	0	0	166	0	0	0	0	950	0	0	1277	66
Growth Factor (0.015 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.110	0.000	0.000	0.110	0.000
2027 Background Growth	0	0	0	0	0	0	0	104	0	0	140	0
Committed Projects												
Briar Chapel (Remainder)	0	0	0	0	0	0	0	180	0	0	170	0
501 Landing (Not-Yet Approved)	0	0	0	0	0	0	0	20	0	0	18	0
Polks Landing (Remainder)	170	0	143	12	0	0	0	-68	0	0	-86	145
Total Committed Traffic	170	0	143	12	0	0	0	132	0	0	102	145
Polks Landing Diversion	**83**	**0**	**-83**	**0**	**0**	**0**	**0**	**-83**	**0**	**0**	**0**	**0**
2027 Background Traffic	253	0	226	12	0	0	0	1103	0	0	1519	211
Project Traffic												
Percent Assignment Inbound	0%	0%	1%	0%	0%	0%	0%	10%	13%	0%	25%	0%
Inbound Project Traffic	0	0	4	0	0	0	0	36	47	0	90	0
Percent Assignment Outbound	0%	0%	0%	19%	0%	14%	0%	18%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	75	0	55	0	71	0	0	0	0
Total External Site Traffic	0	0	4	75	0	55	0	107	47	0	90	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	-59	0	0	-88	0
Pass-By Capture Assignment	0	0	0	58	0	22	0	37	22	0	74	0
Total Pass-By Traffic	0	0	0	58	0	22	0	-22	22	0	-14	0
Total Project Traffic	0	0	4	133	0	77	0	85	69	0	76	0
Legend Oaks Left-In Diver.	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-15**	**0**	**0**	**-15**	**0**
2027 Buildout Total	253	0	230	145	0	77	0	1173	69	0	1580	211
Percent Impact (Approach)		0.8%			94.6%			12.4%			4.2%	

Overall Percent Impact 11.9%

INTERSECTION ANALYSIS SHEET

Project:	**Williams Corner**
Location:	**Chatham County, NC**
Ct. Date	**1/7/2020**
Ct. Peaks	**AM: 730-830; PM: 430-530**
N/S Street:	**US 15/501**
E/W Street:	**Polks Landing Road/South Site Driveway**

	AM In	AM Out	PM In	PM Out
Net New Trips:	372	293	361	396
Pass-By Trips:	0	0	147	146

Annual Growth Rate: 1.5%
Growth Factor: 0.109845

Existing Year: 2020
Buildout Year: 2027

AM PEAK HOUR
AM PHF = 0.91

Description	Polks Landing Road Eastbound Left	Through	Right	South Site Driveway (Left-In) Westbound Left	Through	Right	US 15/501 Northbound Left	Through	Right	US 15/501 Southbound U-Turn	Left	Through	Right
2020 Traffic Count	0	0	22	0	0	0	62	1153	0	67	0	679	6
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	0	0	22	0	0	0	62	1153	0	67	0	679	6
Growth Factor (0.015 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.110	0.000	0.110	0.000	0.110	0.000
2027 Background Growth	0	0	0	0	0	0	0	127	0	7	0	75	0
Committed Projects													
Briar Chapel (Remainder)	0	0	0	0	0	0	0	124	0	0	0	188	0
501 Landing (Not-Yet Approved)	0	0	0	0	0	0	0	15	0	0	0	24	0
Polks Landing (Remainder)	0	0	0	0	0	0	89	-33	0	0	8	63	12
Total Committed Traffic	0	0	0	0	0	0	89	106	0	0	8	275	12
Polks Landing Diversion	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-58**	**0**	**0**	**0**
2027 Background Traffic	0	0	22	0	0	0	151	1386	0	16	8	1029	18
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	23%	20%	0%	23%	3%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	86	74	0	86	11	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	16%	0%	2%	0%	0%	0%	18%	1%
Outbound Project Traffic	0	0	0	0	0	47	0	6	0	0	0	53	3
Total Project Traffic	0	0	0	0	0	47	0	92	74	0	86	64	3
Legend Oaks Left-In Diver.	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-10**	**0**	**0**	**0**
2027 Buildout Total	0	0	22	0	0	47	151	1478	74	6	94	1093	21
Percent Impact (Approach)		0.0%			100.0%			9.7%				12.6%	

Overall Percent Impact 12.3%

PM PEAK HOUR
PM PHF = 0.95

Description	Polks Landing Road Eastbound Left	Through	Right	South Site Driveway (Left-In) Westbound Left	Through	Right	US 15/501 Northbound Left	Through	Right	US 15/501 Southbound U-Turn	Left	Through	Right
2020 Traffic Count	0	0	11	0	0	0	68	853	0	97	0	1317	29
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	0	0	11	0	0	0	68	853	0	97	0	1317	29
Growth Factor (0.015 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.110	0.000	0.110	0.000	0.110	0.000
2027 Background Growth	0	0	0	0	0	0	0	94	0	11	0	145	0
Committed Projects													
Briar Chapel (Remainder)	0	0	0	0	0	0	0	180	0	0	0	170	0
501 Landing (Not-Yet Approved)	0	0	0	0	0	0	0	20	0	0	0	18	0
Polks Landing (Remainder)	0	0	0	0	0	0	110	-68	0	0	17	50	2
Total Committed Traffic	0	0	0	0	0	0	110	132	0	0	17	238	2
Polks Landing Diversion	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-83**	**0**	**0**	**0**
2027 Background Traffic	0	0	11	0	0	0	178	1079	0	25	17	1700	31
Project Traffic													
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	23%	20%	0%	23%	3%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	83	72	0	83	11	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	16%	0%	2%	0%	0%	0%	18%	1%
Outbound Project Traffic	0	0	0	0	0	63	0	8	0	0	0	71	4
Total External Site Traffic	0	0	0	0	0	63	0	91	72	0	83	82	4
Pass-By Capture Reduction	0	0	0	0	0	0	0	-59	0	0	0	-88	0
Pass-By Capture Assignment	0	0	0	0	0	37	0	22	37	0	74	58	0
Total Pass-By Traffic	0	0	0	0	0	37	0	-37	37	0	74	-30	0
Total Project Traffic	0	0	0	0	0	100	0	54	109	0	157	52	4
Legend Oaks Left-In Diver.	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**-15**	**0**	**0**	**0**
2027 Buildout Total	0	0	11	0	0	100	178	1133	109	10	174	1752	35
Percent Impact (Approach)		0.0%			100.0%			11.5%				10.8%	

Overall Percent Impact 13.6%

INTERSECTION ANALYSIS SHEET

Project:	**Williams Corner**
Location:	**Chatham County, NC**
Ct. Date	**1/8/2020**
Ct. Peaks	**AM: 730-830; PM: 445-545**
N/S Street:	**US 15/501**
E/W Street:	**Lystra Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	372	293	361	396
Pass-By Trips:	0	0	147	146

Annual Growth Rate:	1.5%	**Existing Year:**	2020
Growth Factor:	0.109845	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.92

Description	Eastbound			Lystra Road Westbound			US 15/501 Northbound			US 15/501 Southbound		
	Left	Through	Right	Left	Through	Right	U-Turn	Through	Right	U-Turn	Left	Through
2020 Traffic Count	0	0	0	88	0	153	9	1091	105	0	201	500
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	0	0	0	88	0	153	9	1091	105	0	201	500
Growth Factor (0.015 per year)	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110
2027 Background Growth	0	0	0	10	0	17	1	120	12	0	22	55
Committed Projects												
Briar Chapel (Remainder)	0	0	0	17	0	4	0	120	19	0	0	188
501 Landing (Not-Yet Approved)	0	0	0	3	0	0	0	15	2	0	0	24
Polks Landing (Remainder)	0	0	0	0	0	22	0	34	0	0	12	38
Total Committed Traffic	0	0	0	20	0	26	0	169	21	0	12	250
2027 Background Traffic	0	0	0	118	0	196	10	1380	138	0	235	805
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	3%	0%	40%	4%	0%	3%	0%
Inbound Project Traffic	0	0	0	0	0	11	0	149	15	0	11	0
Percent Assignment Outbound	0%	0%	0%	34%	0%	2%	0%	0%	0%	0%	8%	10%
Outbound Project Traffic	0	0	0	100	0	6	0	0	0	0	23	29
Total Project Traffic	0	0	0	100	0	17	0	149	15	0	34	29
2027 Buildout Total	0	0	0	218	0	213	10	1529	153	0	269	834
Percent Impact (Approach)		-			27.1%			9.7%			5.7%	

Overall Percent Impact 10.7%

PM PEAK HOUR
PM PHF = 0.96

Description	Eastbound			Lystra Road Westbound			US 15/501 Northbound			US 15/501 Southbound		
	Left	Through	Right	Left	Through	Right	U-Turn	Through	Right	U-Turn	Left	Through
2020 Traffic Count	0	0	0	144	0	217	49	747	34	0	236	1133
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	0	0	0	144	0	217	49	747	34	0	236	1133
Growth Factor (0.015 per year)	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110	0.110
2027 Background Growth	0	0	0	16	0	24	5	82	4	0	26	124
Committed Projects												
Briar Chapel (Remainder)	0	0	0	20	0	10	0	170	23	0	0	170
501 Landing (Not-Yet Approved)	0	0	0	2	0	0	0	20	2	0	0	18
Polks Landing (Remainder)	0	0	0	0	0	10	0	32	0	0	16	32
Total Committed Traffic	0	0	0	22	0	20	0	222	25	0	16	220
2027 Background Traffic	0	0	0	182	0	261	54	1051	63	0	278	1477
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	3%	0%	40%	4%	0%	3%	0%
Inbound Project Traffic	0	0	0	0	0	11	0	144	14	0	11	0
Percent Assignment Outbound	0%	0%	0%	34%	0%	2%	0%	0%	0%	0%	8%	10%
Outbound Project Traffic	0	0	0	135	0	8	0	0	0	0	32	40
Total External Site Traffic	0	0	0	135	0	19	0	144	14	0	43	40
Pass-By Capture Reduction	0	0	0	0	0	0	0	-59	0	0	-88	0
Pass-By Capture Assignment	0	0	0	29	0	0	0	59	0	0	58	0
Total Pass-By Traffic	0	0	0	29	0	0	0	0	0	0	-30	0
Total Project Traffic	0	0	0	164	0	19	0	144	14	0	13	40
2027 Buildout Total	0	0	0	346	0	280	54	1195	77	0	291	1517
Percent Impact (Approach)		-			29.2%			11.9%			2.9%	

Overall Percent Impact 10.5%

INTERSECTION ANALYSIS SHEET

Project:	**Williams Corner**
Location:	**Chatham County, NC**
Ct. Date	**1/7/2020**
Ct. Peaks	**AM: 745-845; PM: 430-530**
N/S Street:	**Chatham Downs Drive**
E/W Street:	**Lystra Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	372	293	361	396
Pass-By Trips:	0	0	147	146

Annual Growth Rate:	1.5%	**Existing Year:**	2020
Growth Factor:	0.109845	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.86

Description	Lystra Road Eastbound			Lystra Road Westbound			Chatham Downs Drive Northbound			East Site Driveway (FM) Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	207	63	22	187	0	43	0	19	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	0	207	63	22	187	0	43	0	19	0	0	0
Growth Factor (0.015 per year)	0.000	0.110	0.000	0.000	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027 Background Growth	0	23	0	0	21	0	0	0	0	0	0	0
Committed Projects												
Briar Chapel (Remainder)	0	19	0	0	21	0	0	0	0	0	0	0
501 Landing (Not Yet Approved)	0	2	0	0	3	0	0	0	0	0	0	0
Polks Landing (Remainder)	0	12	0	0	22	0	0	0	0	0	0	0
Total Committed Traffic	0	33	0	0	46	0	0	0	0	0	0	0
2027 Background Traffic	0	263	63	22	254	0	43	0	19	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	7%	0%	0%	9%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	26	0	0	33	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	8%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	23	0	0	21	0	0	0	0	0	0	0
Total Project Traffic	0	49	0	0	54	0	0	0	0	0	0	0
2027 Buildout Total	0	312	63	22	308	0	43	0	19	0	0	0
Percent Impact (Approach)		13.1%			16.4%			0.0%			-	

Overall Percent Impact 13.4%

PM PEAK HOUR
PM PHF = 0.97

Description	Lystra Road Eastbound			Lystra Road Westbound			Chatham Downs Drive Northbound			East Site Driveway (FM) Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	161	120	43	214	0	149	0	45	0	0	0
Count Balancing	0	0	0	0	0	0	0	0	0	0	0	0
2020 Existing Traffic	0	161	120	43	214	0	149	0	45	0	0	0
Growth Factor (0.015 per year)	0.000	0.110	0.000	0.000	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027 Background Growth	0	18	0	0	24	0	0	0	0	0	0	0
Committed Projects												
Briar Chapel (Remainder)	0	23	0	0	30	0	0	0	0	0	0	0
501 Landing (Not Yet Approved)	0	2	0	0	2	0	0	0	0	0	0	0
Polks Landing (Remainder)	0	16	0	0	10	0	0	0	0	0	0	0
Total Committed Traffic	0	41	0	0	42	0	0	0	0	0	0	0
2027 Background Traffic	0	220	120	43	280	0	149	0	45	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	7%	0%	0%	9%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	25	0	0	32	0	0	0	0	0	0	0
Percent Assignment Outbound	0%	8%	0%	0%	7%	0%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	32	0	0	28	0	0	0	0	0	0	0
Total External Site Traffic	0	57	0	0	60	0	0	0	0	0	0	0
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	0	57	0	0	60	0	0	0	0	0	0	0
2027 Buildout Total	0	277	120	43	340	0	149	0	45	0	0	0
Percent Impact (Approach)		14.4%			15.7%			0.0%			-	

Overall Percent Impact 12.0%

INTERSECTION ANALYSIS SHEET

Project:	**Williams Corner**
Location:	**Chatham County, NC**
Ct. Date	**1/7/2020**
Ct. Peaks	**AM: 745-845; PM: 430-530**
N/S Street:	**East Site Driveway (FM)**
E/W Street:	**Lystra Road**

	AM In	AM Out	PM In	PM Out
Net New Trips:	372	293	361	396
Pass-By Trips:	0	0	147	146

Annual Growth Rate:	1.5%	**Existing Year:**	2020
Growth Factor:	0.109845	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.90

Description	Lystra Road Eastbound			Lystra Road Westbound			- Northbound			East Site Driveway (FM) Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	226	0	0	209	0	0	0	0	0	0	0
2020 Existing Traffic	0	226	0	0	209	0	0	0	0	0	0	0
Growth Factor (0.015 per year)	0.000	0.110	0.000	0.000	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027 Background Growth	0	25	0	0	23	0	0	0	0	0	0	0
Committed Projects												
Briar Chapel (Remainder)	0	19	0	0	21	0	0	0	0	0	0	0
501 Landing (Not Yet Approved)	0	2	0	0	3	0	0	0	0	0	0	0
Polks Landing (Remainder)	0	12	0	0	22	0	0	0	0	0	0	0
Total Committed Traffic	0	33	0	0	46	0	0	0	0	0	0	0
2027 Background Traffic	0	284	0	0	278	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	7%	0%	0%	0%	9%	1%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	26	0	0	0	33	4	0	0	0	0	0	0
Percent Assignment Outbound	0%	8%	0%	0%	0%	0%	0%	0%	0%	2%	0%	7%
Outbound Project Traffic	0	23	0	0	0	0	0	0	0	6	0	21
Total Project Traffic	26	23	0	0	33	4	0	0	0	6	0	21
2027 Buildout Total	26	307	0	0	311	4	0	0	0	6	0	21
Percent Impact (Approach)		14.7%			11.7%			-			100.0%	

Overall Percent Impact 16.7%

PM PEAK HOUR
PM PHF = 0.90

Description	Lystra Road Eastbound			Lystra Road Westbound			- Northbound			East Site Driveway (FM) Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	206	0	0	257	0	0	0	0	0	0	0
2020 Existing Traffic	0	206	0	0	257	0	0	0	0	0	0	0
Growth Factor (0.015 per year)	0.000	0.110	0.000	0.000	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027 Background Growth	0	23	0	0	28	0	0	0	0	0	0	0
Committed Projects												
Briar Chapel (Remainder)	0	23	0	0	30	0	0	0	0	0	0	0
501 Landing (Not Yet Approved)	0	2	0	0	2	0	0	0	0	0	0	0
Polks Landing (Remainder)	0	16	0	0	10	0	0	0	0	0	0	0
Total Committed Traffic	0	41	0	0	42	0	0	0	0	0	0	0
2027 Background Traffic	0	270	0	0	327	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	7%	0%	0%	0%	9%	1%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	25	0	0	0	32	4	0	0	0	0	0	0
Percent Assignment Outbound	0%	8%	0%	0%	0%	0%	0%	0%	0%	2%	0%	7%
Outbound Project Traffic	0	32	0	0	0	0	0	0	0	8	0	28
Total External Site Traffic	25	32	0	0	32	4	0	0	0	8	0	28
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	0
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	0
Total Project Traffic	25	32	0	0	32	4	0	0	0	8	0	28
2027 Buildout Total	25	302	0	0	359	4	0	0	0	8	0	28
Percent Impact (Approach)		17.4%			9.9%			-			100.0%	

Overall Percent Impact 17.8%

INTERSECTION ANALYSIS SHEET

Project:	**Williams Corner**
Location:	**Chatham County, NC**
Ct. Date	**Balanced with Adjacent**
N/S Street:	**West Site Driveway (RI/RO)**
E/W Street:	**Lystra Road**

	AM In	**AM Out**	**PM In**	**PM Out**
Net New Trips:	372	293	361	396
Pass-By Trips:	0	0	147	146

Annual Growth Rate:	1.5%	**Existing Year:**	2020
Growth Factor:	0.109845	**Buildout Year:**	2027

AM PEAK HOUR
AM PHF = 0.90

Description	Lystra Road **Eastbound** Left	Through	Right	Lystra Road **Westbound** Left	Through	Right	**Northbound** Left	Through	Right	West Site Driveway (RI/RO) **Southbound** Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	270	0	0	230	0	0	0	0	0	0	0
2020 Existing Traffic	0	270	0	0	230	0	0	0	0	0	0	0
Growth Factor (0.015 per year)	0.000	0.110	0.000	0.000	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027 Background Growth	0	30	0	0	25	0	0	0	0	0	0	0
Committed Projects												
Briar Chapel (Remainder)	0	19	0	0	21	0	0	0	0	0	0	0
501 Landing (Not Yet Approved)	0	2	0	0	3	0	0	0	0	0	0	0
Polks Landing (Remainder)	0	12	0	0	22	0	0	0	0	0	0	0
Total Committed Traffic	0	33	0	0	46	0	0	0	0	0	0	0
2027 Background Traffic	0	333	0	0	301	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	7%	0%	0%	3%	6%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	26	0	0	11	22	0	0	0	0	0	0
Percent Assignment Outbound	0%	8%	0%	0%	7%	0%	0%	0%	0%	0%	0%	29%
Outbound Project Traffic	0	23	0	0	21	0	0	0	0	0	0	84
Total Project Traffic	0	49	0	0	32	22	0	0	0	0	0	84
2027 Buildout Total	0	382	0	0	333	22	0	0	0	0	0	84
Percent Impact (Approach)		12.8%			15.2%			-			100.0%	

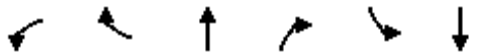
Overall Percent Impact 22.8%

PM PEAK HOUR
PM PHF = 0.90

Description	Lystra Road **Eastbound** Left	Through	Right	Lystra Road **Westbound** Left	Through	Right	**Northbound** Left	Through	Right	West Site Driveway (RI/RO) **Southbound** Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Count Balancing	0	281	0	0	363	0	0	0	0	0	0	0
2020 Existing Traffic	0	281	0	0	363	0	0	0	0	0	0	0
Growth Factor (0.015 per year)	0.000	0.110	0.000	0.000	0.110	0.000	0.000	0.000	0.000	0.000	0.000	0.000
2027 Background Growth	0	31	0	0	40	0	0	0	0	0	0	0
Committed Projects												
Briar Chapel (Remainder)	0	23	0	0	30	0	0	0	0	0	0	0
501 Landing (Not Yet Approved)	0	2	0	0	2	0	0	0	0	0	0	0
Polks Landing (Remainder)	0	16	0	0	10	0	0	0	0	0	0	0
Total Committed Traffic	0	41	0	0	42	0	0	0	0	0	0	0
2027 Background Traffic	0	353	0	0	445	0	0	0	0	0	0	0
Project Traffic												
Percent Assignment Inbound	0%	7%	0%	0%	3%	6%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	0	25	0	0	11	21	0	0	0	0	0	0
Percent Assignment Outbound	0%	8%	0%	0%	7%	0%	0%	0%	0%	0%	0%	29%
Outbound Project Traffic	0	32	0	0	28	0	0	0	0	0	0	115
Total External Site Traffic	0	57	0	0	39	21	0	0	0	0	0	115
Pass-By Capture Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Pass-By Capture Assignment	0	0	0	0	0	0	0	0	0	0	0	29
Total Pass-By Traffic	0	0	0	0	0	0	0	0	0	0	0	29
Total Project Traffic	0	57	0	0	39	21	0	0	0	0	0	144
2027 Buildout Total	0	410	0	0	484	21	0	0	0	0	0	144
Percent Impact (Approach)		13.9%			11.9%			-			100.0%	

Overall Percent Impact 24.6%

Appendix F:
Synchro Output:
Existing (2020)



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	57	1217	18	0	714
Future Volume (vph)	0	57	1217	18	0	714
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		140	0	
Storage Lanes	0	1		1	0	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	1611	3539	1583	0	3539
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	1583	0	3539
Link Speed (mph)	25		55			55
Link Distance (ft)	271		1140			1039
Travel Time (s)	7.4		14.1			12.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	62	1323	20	0	776
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 45.5%		ICU Level of Service A	
Analysis Period (min) 15			

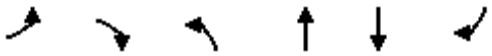
Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	57	1217	18	0	714
Future Vol, veh/h	0	57	1217	18	0	714
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	140	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	62	1323	20	0	776

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	662	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	404	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	404	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	404	-
HCM Lane V/C Ratio	-	-	0.153	-
HCM Control Delay (s)	-	-	15.5	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.5	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	61	0	1220	692	67
Future Volume (vph)	0	61	0	1220	692	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			500
Storage Lanes	0	1	0			1
Taper Length (ft)	100		100			
Satd. Flow (prot)	0	1611	0	3539	3539	1583
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	483			453	1140	
Travel Time (s)	13.2			5.6	14.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	66	0	1326	752	73
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 37.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	61	0	1220	692	67
Future Vol, veh/h	0	61	0	1220	692	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	500
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	66	0	1326	752	73

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	376	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	622	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	622	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	622	-	-
HCM Lane V/C Ratio	-	0.107	-	-
HCM Control Delay (s)	-	11.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.4	-	-

Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	0	22	62	1153	67	679	6
Future Volume (vph)	0	22	62	1153	67	679	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)	0%			0%		0%	
Storage Length (ft)	0	0	200		250		150
Storage Lanes	0	1	1		1		1
Taper Length (ft)	100		100		275		
Satd. Flow (prot)	0	1611	1770	3539	1770	3539	1583
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	0	1611	1770	3539	1770	3539	1583
Link Speed (mph)	25			55		55	
Link Distance (ft)	462			746		453	
Travel Time (s)	12.6			9.2		5.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%		0%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	24	68	1267	74	746	7
Sign Control	Stop			Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 43.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	0	22	62	1153	67	679	6
Future Vol, veh/h	0	22	62	1153	67	679	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	-	None
Storage Length	-	0	200	-	250	-	150
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	0	24	68	1267	74	746	7

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	373	753	0	1267	-	0
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	0	624	853	-	223	-	-
Stage 1	0	-	-	-	-	-	-
Stage 2	0	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	-	624	853	-	223	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11	0.5	2.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	853	-	624	223	-	-
HCM Lane V/C Ratio	0.08	-	0.039	0.33	-	-
HCM Control Delay (s)	9.6	-	11	28.9	-	-
HCM Lane LOS	A	-	B	D	-	-
HCM 95th %tile Q(veh)	0.3	-	0.1	1.4	-	-

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	88	153	9	1091	105	201	500
Future Volume (vph)	88	153	9	1091	105	201	500
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)	4%			-1%			1%
Storage Length (ft)	0	125	325		200	275	
Storage Lanes	1	1	1		1	1	
Taper Length (ft)	100		165			225	
Satd. Flow (prot)	1734	1552	1778	3557	1591	1761	3522
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	1734	1552	1778	3557	1591	1761	3522
Right Turn on Red		Yes			Yes		
Satd. Flow (RTOR)		45			114		
Link Speed (mph)	45			55			55
Link Distance (ft)	452			1115			746
Travel Time (s)	6.8			13.8			9.2
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%			0%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	96	166	10	1186	114	218	543
Turn Type	Prot	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	8	1	5	2	8	1	6
Permitted Phases		8			2		
Detector Phase	8	1	5	2	8	1	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	14.0	7.0	7.0	14.0
Minimum Split (s)	15.0	15.0	14.0	22.0	15.0	15.0	22.0
Total Split (s)	20.0	35.0	15.0	65.0	20.0	35.0	85.0
Total Split (%)	16.7%	29.2%	12.5%	54.2%	16.7%	29.2%	70.8%
Yellow Time (s)	3.0	3.0	3.0	5.3	3.0	3.0	5.1
All-Red Time (s)	3.1	3.1	2.4	1.2	3.1	3.1	1.1
Lost Time Adjust (s)	-1.1	-1.1	-0.4	-1.5	-1.1	-1.1	-1.2
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	11.3	35.8	7.9	74.2	90.5	19.5	95.7
Actuated g/C Ratio	0.09	0.30	0.07	0.62	0.75	0.16	0.80
v/c Ratio	0.59	0.34	0.09	0.54	0.09	0.76	0.19
Control Delay	66.3	23.7	53.7	15.5	1.2	64.8	3.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.3	23.7	53.7	15.5	1.2	64.8	3.9

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
LOS	E	C	D	B	A	E	A
Approach Delay	39.3			14.5			21.3
Approach LOS	D			B			C
Queue Length 50th (ft)	73	72	8	257	0	162	35
Queue Length 95th (ft)	126	115	25	399	17	229	101
Internal Link Dist (ft)	372			1035			666
Turn Bay Length (ft)		125	325		200	275	
Base Capacity (vph)	216	626	148	2200	1273	440	2808
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.44	0.27	0.07	0.54	0.09	0.50	0.19

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 19.5 Intersection LOS: B
Intersection Capacity Utilization 59.6% ICU Level of Service B
Analysis Period (min) 15
Description: 08-0429

Splits and Phases: 5: US 15/501 & Lystra Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	207	63	22	187	43	19
Future Volume (vph)	207	63	22	187	43	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		200	275		0	75
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Link Speed (mph)	45			45	25	
Link Distance (ft)	444			1126	350	
Travel Time (s)	6.7			17.1	9.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	241	73	26	217	50	22
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	207	63	22	187	43	19
Future Vol, veh/h	207	63	22	187	43	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	0	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	241	73	26	217	50	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	314	0	510	241
Stage 1	-	-	-	-	241	-
Stage 2	-	-	-	-	269	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1246	-	523	798
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	776	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1246	-	512	798
Mov Cap-2 Maneuver	-	-	-	-	512	-
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	760	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	512	798	-	-	1246	-
HCM Lane V/C Ratio	0.098	0.028	-	-	0.021	-
HCM Control Delay (s)	12.8	9.6	-	-	8	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.1	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	19	904	27	0	1368
Future Volume (vph)	0	19	904	27	0	1368
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		140	0	
Storage Lanes	0	1		1	0	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	1611	3539	1583	0	3539
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	1583	0	3539
Link Speed (mph)	25		55			55
Link Distance (ft)	271		1140			1039
Travel Time (s)	7.4		14.1			12.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	20	972	29	0	1471
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.0%		ICU Level of Service A	
Analysis Period (min) 15			

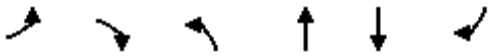
Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	19	904	27	0	1368
Future Vol, veh/h	0	19	904	27	0	1368
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	140	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	20	972	29	0	1471

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	486	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	527	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	527	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	527	-
HCM Lane V/C Ratio	-	-	0.039	-
HCM Control Delay (s)	-	-	12.1	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	166	0	950	1277	66
Future Volume (vph)	0	166	0	950	1277	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			500
Storage Lanes	0	1	0			1
Taper Length (ft)	100		100			
Satd. Flow (prot)	0	1611	0	3539	3539	1583
Flt Permitted						
Satd. Flow (perm)	0	1611	0	3539	3539	1583
Link Speed (mph)	25			55	55	
Link Distance (ft)	483			453	1140	
Travel Time (s)	13.2			5.6	14.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	173	0	990	1330	69
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 52.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	166	0	950	1277	66
Future Vol, veh/h	0	166	0	950	1277	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	500
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	173	0	990	1330	69

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	665	-	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	403	0	-	-	-
Stage 1	0	-	0	-	-	-
Stage 2	0	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	403	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	20.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	403	-	-
HCM Lane V/C Ratio	-	0.429	-	-
HCM Control Delay (s)	-	20.5	-	-
HCM Lane LOS	-	C	-	-
HCM 95th %tile Q(veh)	-	2.1	-	-

Lane Group	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	0	11	68	853	97	1317	29
Future Volume (vph)	0	11	68	853	97	1317	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)	0%			0%		0%	
Storage Length (ft)	0	0	200		250		150
Storage Lanes	0	1	1		1		1
Taper Length (ft)	100		100		275		
Satd. Flow (prot)	0	1611	1770	3539	1770	3539	1583
Flt Permitted			0.950		0.950		
Satd. Flow (perm)	0	1611	1770	3539	1770	3539	1583
Link Speed (mph)	25			55		55	
Link Distance (ft)	462			746		453	
Travel Time (s)	12.6			9.2		5.6	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%		0%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	12	72	898	102	1386	31
Sign Control	Stop			Free		Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 47.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBU	SBT	SBR
Lane Configurations							
Traffic Vol, veh/h	0	11	68	853	97	1317	29
Future Vol, veh/h	0	11	68	853	97	1317	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	-	None
Storage Length	-	0	200	-	250	-	150
Veh in Median Storage, #	0	-	-	0	-	0	-
Grade, %	0	-	-	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	0	12	72	898	102	1386	31

Major/Minor	Minor2		Major1		Major2		
Conflicting Flow All	-	693	1417	0	898	-	0
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-
Critical Hdwy	-	6.94	4.14	-	6.44	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	2.22	-	2.52	-	-
Pot Cap-1 Maneuver	0	386	477	-	386	-	-
Stage 1	0	-	-	-	-	-	-
Stage 2	0	-	-	-	-	-	-
Platoon blocked, %				-		-	-
Mov Cap-1 Maneuver	-	386	477	-	386	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	1	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBU	SBT	SBR
Capacity (veh/h)	477	-	386	386	-	-
HCM Lane V/C Ratio	0.15	-	0.03	0.265	-	-
HCM Control Delay (s)	13.9	-	14.6	17.6	-	-
HCM Lane LOS	B	-	B	C	-	-
HCM 95th %tile Q(veh)	0.5	-	0.1	1	-	-

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	144	217	49	747	34	236	1133
Future Volume (vph)	144	217	49	747	34	236	1133
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)	4%			-1%			1%
Storage Length (ft)	0	125	325		200	275	
Storage Lanes	1	1	1		1	1	
Taper Length (ft)	100		165			225	
Satd. Flow (prot)	1734	1552	1778	3557	1591	1761	3522
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	1734	1552	1778	3557	1591	1761	3522
Right Turn on Red		Yes			Yes		
Satd. Flow (RTOR)		68			35		
Link Speed (mph)	45			55			55
Link Distance (ft)	452			1115			746
Travel Time (s)	6.8			13.8			9.2
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%			0%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	150	226	51	778	35	246	1180
Turn Type	Prot	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	8	1	5	2	8	1	6
Permitted Phases		8			2		
Detector Phase	8	1	5	2	8	1	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	14.0	7.0	7.0	14.0
Minimum Split (s)	15.0	15.0	14.0	22.0	15.0	15.0	22.0
Total Split (s)	30.0	40.0	15.0	50.0	30.0	40.0	75.0
Total Split (%)	25.0%	33.3%	12.5%	41.7%	25.0%	33.3%	62.5%
Yellow Time (s)	3.0	3.0	3.0	5.3	3.0	3.0	5.1
All-Red Time (s)	3.1	3.1	2.4	1.2	3.1	3.1	1.1
Lost Time Adjust (s)	-1.1	-1.1	-0.4	-1.5	-1.1	-1.1	-1.2
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	14.9	41.4	9.5	68.6	88.5	21.5	83.1
Actuated g/C Ratio	0.12	0.34	0.08	0.57	0.74	0.18	0.69
v/c Ratio	0.69	0.39	0.36	0.38	0.03	0.78	0.48
Control Delay	66.5	20.5	59.8	16.4	2.0	63.4	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.5	20.5	59.8	16.4	2.0	63.4	10.6

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
LOS	E	C	E	B	A	E	B
Approach Delay	38.9			18.4			19.7
Approach LOS	D			B			B
Queue Length 50th (ft)	113	90	38	165	0	181	216
Queue Length 95th (ft)	175	130	80	269	10	249	305
Internal Link Dist (ft)	372			1035			666
Turn Bay Length (ft)		125	325		200	275	
Base Capacity (vph)	361	747	148	2032	1312	513	2437
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.30	0.34	0.38	0.03	0.48	0.48

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 22.0 Intersection LOS: C
Intersection Capacity Utilization 57.6% ICU Level of Service B
Analysis Period (min) 15
Description: 08-0429

Splits and Phases: 5: US 15/501 & Lystra Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	161	120	43	214	149	45
Future Volume (vph)	161	120	43	214	149	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		200	275		0	75
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Link Speed (mph)	45			45	25	
Link Distance (ft)	444			1126	350	
Travel Time (s)	6.7			17.1	9.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	166	124	44	221	154	46
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	161	120	43	214	149	45
Future Vol, veh/h	161	120	43	214	149	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	0	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	124	44	221	154	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	290	0	475	166
Stage 1	-	-	-	-	166	-
Stage 2	-	-	-	-	309	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1272	-	548	878
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	745	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1272	-	529	878
Mov Cap-2 Maneuver	-	-	-	-	529	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	719	-

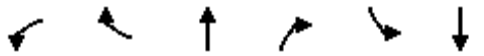
Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	529	878	-	-	1272	-
HCM Lane V/C Ratio	0.29	0.053	-	-	0.035	-
HCM Control Delay (s)	14.6	9.3	-	-	7.9	-
HCM Lane LOS	B	A	-	-	A	-
HCM 95th %tile Q(veh)	1.2	0.2	-	-	0.1	-

Appendix G:

Synchro Output:

Background (2027)



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	63	1562	20	0	1080
Future Volume (vph)	0	63	1562	20	0	1080
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		140	0	
Storage Lanes	0	1		1	0	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	1611	3539	1583	0	3539
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	1583	0	3539
Link Speed (mph)	25		55			55
Link Distance (ft)	271		1140			1039
Travel Time (s)	7.4		14.1			12.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	68	1698	22	0	1174
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 55.4%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	63	1562	20	0	1080
Future Vol, veh/h	0	63	1562	20	0	1080
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	140	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	68	1698	22	0	1174

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	849	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	304	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	304	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.3	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	304	-
HCM Lane V/C Ratio	-	-	0.225	-
HCM Control Delay (s)	-	-	20.3	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.8	-

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	163	94	0	1402	958	165
Future Volume (vph)	163	94	0	1402	958	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			500
Storage Lanes	1	1	0			1
Taper Length (ft)	100		100			
Satd. Flow (prot)	1770	1583	0	3539	3539	1583
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1583	0	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		104				183
Link Speed (mph)	25			55	55	
Link Distance (ft)	483			187	1140	
Travel Time (s)	13.2			2.3	14.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.92	0.92	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	181	104	0	1524	1041	183
Turn Type	Prot	Perm		NA	NA	Perm
Protected Phases	7			2	6	
Permitted Phases		7				6
Detector Phase	7	7		2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0		14.0	14.0	14.0
Minimum Split (s)	14.0	14.0		23.0	21.0	21.0
Total Split (s)	31.0	31.0		89.0	89.0	89.0
Total Split (%)	25.8%	25.8%		74.2%	74.2%	74.2%
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	C-Max
Act Effct Green (s)	19.5	19.5		90.5	90.5	90.5
Actuated g/C Ratio	0.16	0.16		0.75	0.75	0.75
v/c Ratio	0.63	0.30		0.57	0.39	0.15
Control Delay	56.3	9.9		2.1	6.0	1.0
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	56.3	9.9		2.1	6.0	1.0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	E	A		A	A	A
Approach Delay	39.4			2.1	5.3	
Approach LOS	D			A	A	
Queue Length 50th (ft)	132	0		18	126	0
Queue Length 95th (ft)	197	46		32	196	20
Internal Link Dist (ft)	403			107	1060	
Turn Bay Length (ft)						500
Base Capacity (vph)	383	424		2670	2670	1239
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.47	0.25		0.57	0.39	0.15

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 24 (20%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 6.9		Intersection LOS: A	
Intersection Capacity Utilization 56.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 3: US 15/501 & Knox Way

Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (vph)	0	0	22	0	0	0	0	1029	18	151	0
Future Volume (vph)	0	0	22	0	0	0	0	1029	18	151	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%				0%			0%		0%	
Storage Length (ft)	0	0		0		0	0		100	0	0
Storage Lanes	0	1		0		0	0		1	1	0
Taper Length (ft)	100			100			100			100	
Satd. Flow (prot)	0	0	1611	0	0	0	0	3539	1583	1770	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1611	0	0	0	0	3539	1583	1770	0
Right Turn on Red			Yes			Yes			Yes		Yes
Satd. Flow (RTOR)			116						36		
Link Speed (mph)	25				55			55		55	
Link Distance (ft)	337				357			214		151	
Travel Time (s)	9.2				4.4			2.7		1.9	
Confl. Peds. (#/hr)											
Confl. Bikes (#/hr)											
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)											
Mid-Block Traffic (%)	0%				0%			0%		0%	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	24	0	0	0	0	1131	20	168	0
Turn Type			Prot					NA	Perm	Prot	
Protected Phases			3					6		3	
Permitted Phases									6		
Detector Phase			3					6	6	3	
Switch Phase											
Minimum Initial (s)			7.0					14.0	14.0	7.0	
Minimum Split (s)			23.0					23.0	23.0	23.0	
Total Split (s)			35.0					85.0	85.0	35.0	
Total Split (%)			29.2%					70.8%	70.8%	29.2%	
Yellow Time (s)			5.0					5.0	5.0	5.0	
All-Red Time (s)			2.0					2.0	2.0	2.0	
Lost Time Adjust (s)			-2.0					-2.0	-2.0	-2.0	
Total Lost Time (s)			5.0					5.0	5.0	5.0	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode			None					C-Max	C-Max	None	
Act Effct Green (s)			18.7					91.3	91.3	18.7	
Actuated g/C Ratio			0.16					0.76	0.76	0.16	
v/c Ratio			0.07					0.42	0.02	0.61	
Control Delay			0.4					5.8	0.6	42.1	
Queue Delay			0.0					0.0	0.0	0.0	
Total Delay			0.4					5.8	0.6	42.1	

Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
LOS			A					A	A	D	
Approach Delay	0.4							5.7		42.1	
Approach LOS	A							A		D	
Queue Length 50th (ft)			0					137	0	125	
Queue Length 95th (ft)			0					202	m3	m178	
Internal Link Dist (ft)	257				277			134		71	
Turn Bay Length (ft)									100		
Base Capacity (vph)			489					2693	1213	442	
Starvation Cap Reductn			0					0	0	0	
Spillback Cap Reductn			0					0	0	0	
Storage Cap Reductn			0					0	0	0	
Reduced v/c Ratio			0.05					0.42	0.02	0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 96 (80%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 10.2		Intersection LOS: B	
Intersection Capacity Utilization 45.1%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: US 15/501 & Polks Landing Road

Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	1386	0	0	16	0
Future Volume (vph)	0	1386	0	0	16	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		55	55		55	
Link Distance (ft)		148	278		215	
Travel Time (s)		1.8	3.4		2.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.91	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1523	0	0	18	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 74.9%		ICU Level of Service D	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	0	1386	0	0	16	0
Future Vol, veh/h	0	1386	0	0	16	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	16979	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	91	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1523	0	0	18	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	762	-
Stage 1	-	-	0	-
Stage 2	-	-	762	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	341	0
Stage 1	0	-	-	0
Stage 2	0	-	421	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	341	-
Mov Cap-2 Maneuver	-	-	341	-
Stage 1	-	-	-	-
Stage 2	-	-	421	-

Approach	NB	SE
HCM Control Delay, s	0	16.1
HCM LOS		C

Minor Lane/Major Mvmt	NBT	SELn1
Capacity (veh/h)	-	341
HCM Lane V/C Ratio	-	0.052
HCM Control Delay (s)	-	16.1
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	0.2

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	118	196	10	1380	138	235	805
Future Volume (vph)	118	196	10	1380	138	235	805
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)	4%			-1%			1%
Storage Length (ft)	0	125	325		200	275	
Storage Lanes	1	1	1		1	1	
Taper Length (ft)	100		165			225	
Satd. Flow (prot)	1734	1552	1778	3557	1591	1761	3522
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	1734	1552	1778	3557	1591	1761	3522
Right Turn on Red		Yes			Yes		
Satd. Flow (RTOR)		25			150		
Link Speed (mph)	45			55			55
Link Distance (ft)	452			1115			377
Travel Time (s)	6.8			13.8			4.7
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%			0%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	128	213	11	1500	150	255	875
Turn Type	Prot	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	8	1	5	2	8	1	6
Permitted Phases		8			2		
Detector Phase	8	1	5	2	8	1	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	14.0	7.0	7.0	14.0
Minimum Split (s)	15.0	15.0	14.0	22.0	15.0	15.0	22.0
Total Split (s)	20.0	30.0	15.0	70.0	20.0	30.0	85.0
Total Split (%)	16.7%	25.0%	12.5%	58.3%	16.7%	25.0%	70.8%
Yellow Time (s)	3.0	3.0	3.0	5.3	3.0	3.0	5.1
All-Red Time (s)	3.1	3.1	2.4	1.2	3.1	3.1	1.1
Lost Time Adjust (s)	-1.1	-1.1	-0.4	-1.5	-1.1	-1.1	-1.2
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	12.5	38.5	7.9	71.5	89.0	21.0	94.5
Actuated g/C Ratio	0.10	0.32	0.07	0.60	0.74	0.18	0.79
v/c Ratio	0.71	0.41	0.09	0.71	0.12	0.83	0.32
Control Delay	72.8	29.3	53.9	20.5	1.1	58.5	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.8	29.3	53.9	20.5	1.1	58.5	1.2

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
LOS	E	C	D	C	A	E	A
Approach Delay	45.6			19.0			14.1
Approach LOS	D			B			B
Queue Length 50th (ft)	97	111	8	419	0	181	1
Queue Length 95th (ft)	162	169	27	560	18	234	30
Internal Link Dist (ft)	372			1035			297
Turn Bay Length (ft)		125	325		200	275	
Base Capacity (vph)	216	565	148	2119	1248	366	2773
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.59	0.38	0.07	0.71	0.12	0.70	0.32

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 20.1 Intersection LOS: C
Intersection Capacity Utilization 70.2% ICU Level of Service C
Analysis Period (min) 15
Description: 08-0429

Splits and Phases: 6: US 15/501 & Lystra Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	263	63	22	254	43	19
Future Volume (vph)	263	63	22	254	43	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		200	275		0	75
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Link Speed (mph)	45			45	25	
Link Distance (ft)	444			1126	350	
Travel Time (s)	6.7			17.1	9.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	306	73	26	295	50	22
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			

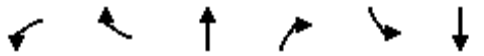
Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	263	63	22	254	43	19
Future Vol, veh/h	263	63	22	254	43	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	0	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	306	73	26	295	50	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	379	0	653	306
Stage 1	-	-	-	-	306	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1179	-	432	734
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1179	-	422	734
Mov Cap-2 Maneuver	-	-	-	-	422	-
Stage 1	-	-	-	-	747	-
Stage 2	-	-	-	-	700	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	13.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	422	734	-	-	1179	-
HCM Lane V/C Ratio	0.118	0.03	-	-	0.022	-
HCM Control Delay (s)	14.7	10.1	-	-	8.1	-
HCM Lane LOS	B	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0.1	-



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	21	1305	30	0	1765
Future Volume (vph)	0	21	1305	30	0	1765
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		140	0	
Storage Lanes	0	1		1	0	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	1611	3539	1583	0	3539
Flt Permitted						
Satd. Flow (perm)	0	1611	3539	1583	0	3539
Link Speed (mph)	25		55			55
Link Distance (ft)	271		1140			1039
Travel Time (s)	7.4		14.1			12.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	23	1403	32	0	1898
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 53.0%		ICU Level of Service A	
Analysis Period (min) 15			

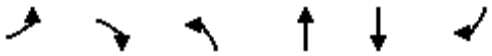
Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	21	1305	30	0	1765
Future Vol, veh/h	0	21	1305	30	0	1765
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	140	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	23	1403	32	0	1898

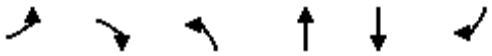
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	702	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	381	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	381	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	381	-
HCM Lane V/C Ratio	-	-	0.059	-
HCM Control Delay (s)	-	-	15	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.2	-



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	253	226	0	1103	1519	211
Future Volume (vph)	253	226	0	1103	1519	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			500
Storage Lanes	1	1	0			1
Taper Length (ft)	100		100			
Satd. Flow (prot)	1770	1583	0	3539	3539	1583
Flt Permitted	0.950					
Satd. Flow (perm)	1770	1583	0	3539	3539	1583
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)		45				234
Link Speed (mph)	25			55	55	
Link Distance (ft)	483			187	1140	
Travel Time (s)	13.2			2.3	14.1	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.96	0.96	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	281	251	0	1149	1582	234
Turn Type	Prot	Perm		NA	NA	Perm
Protected Phases	7			2	6	
Permitted Phases		7				6
Detector Phase	7	7		2	6	6
Switch Phase						
Minimum Initial (s)	7.0	7.0		14.0	14.0	14.0
Minimum Split (s)	14.0	14.0		23.0	21.0	21.0
Total Split (s)	35.0	35.0		85.0	85.0	85.0
Total Split (%)	29.2%	29.2%		70.8%	70.8%	70.8%
Yellow Time (s)	5.0	5.0		5.0	5.0	5.0
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None	None		C-Max	C-Max	C-Max
Act Effct Green (s)	25.5	25.5		84.5	84.5	84.5
Actuated g/C Ratio	0.21	0.21		0.70	0.70	0.70
v/c Ratio	0.75	0.68		0.46	0.64	0.20
Control Delay	56.5	44.3		7.8	11.6	1.3
Queue Delay	0.0	0.0		0.0	0.0	0.0
Total Delay	56.5	44.3		7.8	11.6	1.3



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
LOS	E	D		A	B	A
Approach Delay	50.7			7.8	10.3	
Approach LOS	D			A	B	
Queue Length 50th (ft)	204	147		141	315	0
Queue Length 95th (ft)	291	231		238	428	26
Internal Link Dist (ft)	403			107	1060	
Turn Bay Length (ft)						500
Base Capacity (vph)	442	429		2491	2491	1183
Starvation Cap Reductn	0	0		0	0	0
Spillback Cap Reductn	0	0		0	0	0
Storage Cap Reductn	0	0		0	0	0
Reduced v/c Ratio	0.64	0.59		0.46	0.64	0.20

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 92 (77%), Referenced to phase 2:NBT and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.75			
Intersection Signal Delay: 15.6		Intersection LOS: B	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 3: US 15/501 & Knox Way

Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (vph)	0	0	11	0	0	0	0	1700	31	178	0
Future Volume (vph)	0	0	11	0	0	0	0	1700	31	178	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%				0%			0%		0%	
Storage Length (ft)	0	0		0		0	0		100	0	0
Storage Lanes	0	1		0		0	0		1	1	0
Taper Length (ft)	100			100			100			100	
Satd. Flow (prot)	0	0	1611	0	0	0	0	3539	1583	1770	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1611	0	0	0	0	3539	1583	1770	0
Right Turn on Red			Yes			Yes			Yes		Yes
Satd. Flow (RTOR)			36						36		
Link Speed (mph)	25				55			55		55	
Link Distance (ft)	337				357			214		151	
Travel Time (s)	9.2				4.4			2.7		1.9	
Confl. Peds. (#/hr)											
Confl. Bikes (#/hr)											
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)											
Mid-Block Traffic (%)	0%				0%			0%		0%	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	12	0	0	0	0	1789	34	198	0
Turn Type			Prot					NA	Perm	Prot	
Protected Phases			3					6		3	
Permitted Phases									6		
Detector Phase			3					6	6	3	
Switch Phase											
Minimum Initial (s)			7.0					14.0	14.0	7.0	
Minimum Split (s)			23.0					23.0	23.0	23.0	
Total Split (s)			30.0					90.0	90.0	30.0	
Total Split (%)			25.0%					75.0%	75.0%	25.0%	
Yellow Time (s)			5.0					5.0	5.0	5.0	
All-Red Time (s)			2.0					2.0	2.0	2.0	
Lost Time Adjust (s)			-2.0					-2.0	-2.0	-2.0	
Total Lost Time (s)			5.0					5.0	5.0	5.0	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode			None					C-Max	C-Max	None	
Act Effct Green (s)			20.2					89.8	89.8	20.2	
Actuated g/C Ratio			0.17					0.75	0.75	0.17	
v/c Ratio			0.04					0.68	0.03	0.67	
Control Delay			0.3					5.9	0.7	44.6	
Queue Delay			0.0					0.0	0.0	0.0	
Total Delay			0.3					5.9	0.7	44.6	

Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
LOS			A					A	A	D	
Approach Delay	0.3							5.8		44.6	
Approach LOS	A							A		D	
Queue Length 50th (ft)			0					194	0	149	
Queue Length 95th (ft)			2					214	m1	223	
Internal Link Dist (ft)	257				277			134		71	
Turn Bay Length (ft)									100		
Base Capacity (vph)			364					2649	1194	368	
Starvation Cap Reductn			0					0	0	0	
Spillback Cap Reductn			0					0	0	0	
Storage Cap Reductn			0					0	0	0	
Reduced v/c Ratio			0.03					0.68	0.03	0.54	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 74 (62%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.68			
Intersection Signal Delay: 9.6		Intersection LOS: A	
Intersection Capacity Utilization 65.2%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: US 15/501 & Polks Landing Road

Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	1079	0	0	25	0
Future Volume (vph)	0	1079	0	0	25	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	3539	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3539	0	0	1770	0
Link Speed (mph)		55	55		55	
Link Distance (ft)		148	278		215	
Travel Time (s)		1.8	3.4		2.7	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.95	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1136	0	0	28	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 85.3%		ICU Level of Service E	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.3

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Vol, veh/h	0	1079	0	0	25	0
Future Vol, veh/h	0	1079	0	0	25	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	16979	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	95	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1136	0	0	28	0

Major/Minor	Major1		Minor2	
Conflicting Flow All	-	0	568	-
Stage 1	-	-	0	-
Stage 2	-	-	568	-
Critical Hdwy	-	-	6.84	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	5.84	-
Follow-up Hdwy	-	-	3.52	-
Pot Cap-1 Maneuver	0	-	453	0
Stage 1	0	-	-	0
Stage 2	0	-	530	0
Platoon blocked, %		-		
Mov Cap-1 Maneuver	-	-	453	-
Mov Cap-2 Maneuver	-	-	453	-
Stage 1	-	-	-	-
Stage 2	-	-	530	-

Approach	NB	SE
HCM Control Delay, s	0	13.5
HCM LOS		B

Minor Lane/Major Mvmt	NBT	SELn1
Capacity (veh/h)	-	453
HCM Lane V/C Ratio	-	0.061
HCM Control Delay (s)	-	13.5
HCM Lane LOS	-	B
HCM 95th %tile Q(veh)	-	0.2

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	182	261	54	1051	63	278	1477
Future Volume (vph)	182	261	54	1051	63	278	1477
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)	4%			-1%			1%
Storage Length (ft)	0	125	325		200	275	
Storage Lanes	1	1	1		1	1	
Taper Length (ft)	100		165			225	
Satd. Flow (prot)	1734	1552	1778	3557	1591	1761	3522
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	1734	1552	1778	3557	1591	1761	3522
Right Turn on Red		Yes			Yes		
Satd. Flow (RTOR)		44			66		
Link Speed (mph)	45			55			55
Link Distance (ft)	452			1115			377
Travel Time (s)	6.8			13.8			4.7
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%			0%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	190	272	56	1095	66	290	1539
Turn Type	Prot	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	8	1	5	2	8	1	6
Permitted Phases		8			2		
Detector Phase	8	1	5	2	8	1	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	14.0	7.0	7.0	14.0
Minimum Split (s)	15.0	15.0	14.0	22.0	15.0	15.0	22.0
Total Split (s)	25.0	35.0	15.0	60.0	25.0	35.0	80.0
Total Split (%)	20.8%	29.2%	12.5%	50.0%	20.8%	29.2%	66.7%
Yellow Time (s)	3.0	3.0	3.0	5.3	3.0	3.0	5.1
All-Red Time (s)	3.1	3.1	2.4	1.2	3.1	3.1	1.1
Lost Time Adjust (s)	-1.1	-1.1	-0.4	-1.5	-1.1	-1.1	-1.2
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	16.7	45.6	9.5	64.4	86.1	23.9	81.3
Actuated g/C Ratio	0.14	0.38	0.08	0.54	0.72	0.20	0.68
v/c Ratio	0.79	0.44	0.40	0.57	0.06	0.83	0.65
Control Delay	72.1	23.9	61.1	21.6	1.7	63.8	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	72.1	23.9	61.1	21.6	1.7	63.8	4.0

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
LOS	E	C	E	C	A	E	A
Approach Delay	43.7			22.3			13.5
Approach LOS	D			C			B
Queue Length 50th (ft)	143	126	42	295	0	195	178
Queue Length 95th (ft)	221	179	86	417	15	270	202
Internal Link Dist (ft)	372			1035			297
Turn Bay Length (ft)		125	325		200	275	
Base Capacity (vph)	289	694	148	1910	1202	440	2386
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.39	0.38	0.57	0.05	0.66	0.65

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.83
Intersection Signal Delay: 20.5 Intersection LOS: C
Intersection Capacity Utilization 69.2% ICU Level of Service C
Analysis Period (min) 15
Description: 08-0429

Splits and Phases: 6: US 15/501 & Lystra Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	220	120	43	280	149	45
Future Volume (vph)	220	120	43	280	149	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		200	275		0	75
Storage Lanes		1	1		1	1
Taper Length (ft)			100		100	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Link Speed (mph)	45			45	25	
Link Distance (ft)	444			1126	350	
Travel Time (s)	6.7			17.1	9.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	227	124	44	289	154	46
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	3.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	220	120	43	280	149	45
Future Vol, veh/h	220	120	43	280	149	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	200	275	-	0	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	227	124	44	289	154	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	351	0	604	227
Stage 1	-	-	-	-	227	-
Stage 2	-	-	-	-	377	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1208	-	461	812
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1208	-	444	812
Mov Cap-2 Maneuver	-	-	-	-	444	-
Stage 1	-	-	-	-	811	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	444	812	-	-	1208	-
HCM Lane V/C Ratio	0.346	0.057	-	-	0.037	-
HCM Control Delay (s)	17.3	9.7	-	-	8.1	-
HCM Lane LOS	C	A	-	-	A	-
HCM 95th %tile Q(veh)	1.5	0.2	-	-	0.1	-

Appendix H:
Synchro & SIDRA Output:
Build-out (2027)

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	98	1656	47	81	1163
Future Volume (vph)	0	98	1656	47	81	1163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		140	200	
Storage Lanes	0	1		1	1	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	1611	3539	1583	1770	3539
Flt Permitted					0.950	
Satd. Flow (perm)	0	1611	3539	1583	1770	3539
Link Speed (mph)	25		55			55
Link Distance (ft)	271		1140			1039
Travel Time (s)	7.4		14.1			12.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	107	1800	51	88	1264
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.2%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	98	1656	47	81	1163
Future Vol, veh/h	0	98	1656	47	81	1163
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	140	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	107	1800	51	88	1264

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	900	0	0	1851	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	282	-	-	324	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	282	-	-	324	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	25.3	0	1.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	282	324	-
HCM Lane V/C Ratio	-	-	0.378	0.272	-
HCM Control Delay (s)	-	-	25.3	20.2	-
HCM Lane LOS	-	-	D	C	-
HCM 95th %tile Q(veh)	-	-	1.7	1.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	20	108	4	63	35	4
Future Volume (vph)	20	108	4	63	35	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			100		100	
Satd. Flow (prot)	1650	0	0	1857	1759	0
Flt Permitted				0.997	0.957	
Satd. Flow (perm)	1650	0	0	1857	1759	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			1515	405	
Travel Time (s)	7.4			41.3	11.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	142	0	0	74	43	0
Sign Control	Yield			Yield	Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Roundabout			
Intersection Capacity Utilization 17.7%		ICU Level of Service A	
Analysis Period (min) 15			

MOVEMENT SUMMARY

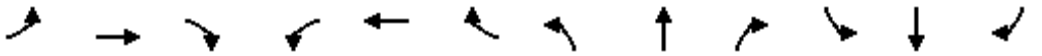
Site: 2 [Williams Corner/Polks Landing]

Build (2027) AM
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Williams Corner North Driveway												
3	L2	39	2.0	0.034	3.1	LOS A	0.2	4.2	0.11	0.03	0.11	24.6
18	R2	4	2.0	0.034	3.1	LOS A	0.2	4.2	0.11	0.03	0.11	32.5
Approach		43	2.0	0.034	3.1	LOS A	0.2	4.2	0.11	0.03	0.11	25.7
East: Legend Oaks Drive												
1	L2	4	2.0	0.059	3.3	LOS A	0.3	7.7	0.16	0.05	0.16	35.0
6	T1	70	2.0	0.059	3.3	LOS A	0.3	7.7	0.16	0.05	0.16	28.4
Approach		74	2.0	0.059	3.3	LOS A	0.3	7.7	0.16	0.05	0.16	28.9
West: Legend Oaks Drive												
2	T1	22	2.0	0.109	3.6	LOS A	0.6	15.1	0.05	0.01	0.05	33.5
12	R2	120	2.0	0.109	3.6	LOS A	0.6	15.1	0.05	0.01	0.05	32.1
Approach		142	2.0	0.109	3.6	LOS A	0.6	15.1	0.05	0.01	0.05	32.3
All Vehicles		260	2.0	0.109	3.5	LOS A	0.6	15.1	0.09	0.02	0.09	29.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.



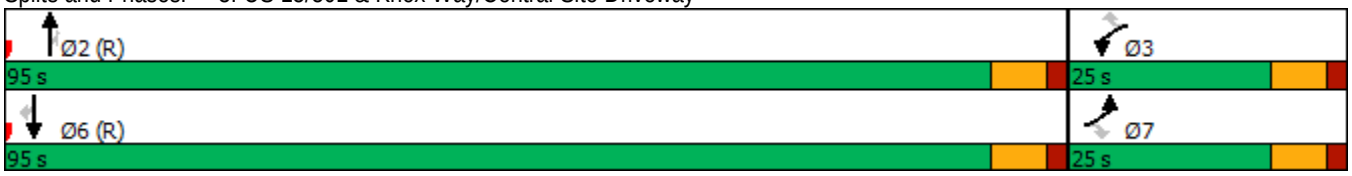
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	163	0	98	70	0	41	0	1482	48	0	1041	165
Future Volume (vph)	163	0	98	70	0	41	0	1482	48	0	1041	165
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		100	0		500
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	0	1583	1770	0	1583	0	3539	1583	0	3539	1583
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1770	0	1583	1770	0	1583	0	3539	1583	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			46			38			183
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		483			403			187			1140	
Travel Time (s)		13.2			11.0			2.3			14.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.90	0.90	0.92	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	181	0	109	78	0	46	0	1611	53	0	1132	183
Turn Type	Prot		Perm	Prot		Perm		NA	Perm		NA	Perm
Protected Phases	7			3				2			6	
Permitted Phases			7			3			2			6
Detector Phase	7		7	3		3		2	2		6	6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0		7.0		14.0	14.0		14.0	14.0
Minimum Split (s)	14.0		14.0	14.0		14.0		23.0	23.0		21.0	21.0
Total Split (s)	25.0		25.0	25.0		25.0		95.0	95.0		95.0	95.0
Total Split (%)	20.8%		20.8%	20.8%		20.8%		79.2%	79.2%		79.2%	79.2%
Yellow Time (s)	5.0		5.0	5.0		5.0		5.0	5.0		5.0	5.0
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0	-2.0		-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0		5.0	5.0		5.0		5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None		None	None		None		C-Max	C-Max		C-Max	C-Max
Act Effct Green (s)	17.9		17.9	17.1		17.1		92.1	92.1		92.1	92.1
Actuated g/C Ratio	0.15		0.15	0.14		0.14		0.77	0.77		0.77	0.77
v/c Ratio	0.69		0.33	0.31		0.17		0.59	0.04		0.42	0.15
Control Delay	61.9		10.9	48.2		14.0		1.6	0.2		5.5	0.8
Queue Delay	0.0		0.0	0.0		0.0		0.0	0.0		0.0	0.0
Total Delay	61.9		10.9	48.2		14.0		1.6	0.2		5.5	0.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E		B	D		B		A	A		A	A
Approach Delay		42.7			35.5			1.6			4.9	
Approach LOS		D			D			A			A	
Queue Length 50th (ft)	132		0	54		0		83	0		142	0
Queue Length 95th (ft)	210		51	101		34		16	m0		178	16
Internal Link Dist (ft)		403			323			107			1060	
Turn Bay Length (ft)									100			500
Base Capacity (vph)	295		354	295		302		2716	1223		2716	1257
Starvation Cap Reductn	0		0	0		0		0	0		0	0
Spillback Cap Reductn	0		0	0		0		0	0		0	0
Storage Cap Reductn	0		0	0		0		0	0		0	0
Reduced v/c Ratio	0.61		0.31	0.26		0.15		0.59	0.04		0.42	0.15

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 5 (4%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 7.6 Intersection LOS: A
Intersection Capacity Utilization 67.5% ICU Level of Service C
Analysis Period (min) 15
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: US 15/501 & Knox Way/Central Site Driveway



Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (vph)	0	0	22	0	0	0	0	1093	21	151	0
Future Volume (vph)	0	0	22	0	0	0	0	1093	21	151	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%				0%			0%		0%	
Storage Length (ft)	0	0		0		0	0		100	0	0
Storage Lanes	0	1		0		0	0		1	1	0
Taper Length (ft)	100			100			100			100	
Satd. Flow (prot)	0	0	1611	0	0	0	0	3539	1583	1770	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1611	0	0	0	0	3539	1583	1770	0
Right Turn on Red			Yes			Yes			Yes		Yes
Satd. Flow (RTOR)			100						36		
Link Speed (mph)	25				55			55		55	
Link Distance (ft)	337				357			214		151	
Travel Time (s)	9.2				4.4			2.7		1.9	
Confl. Peds. (#/hr)											
Confl. Bikes (#/hr)											
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.91	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)											
Mid-Block Traffic (%)	0%				0%			0%		0%	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	24	0	0	0	0	1201	23	168	0
Turn Type			Prot					NA	Perm	Prot	
Protected Phases			3					6		3	
Permitted Phases									6		
Detector Phase			3					6	6	3	
Switch Phase											
Minimum Initial (s)			7.0					14.0	14.0	7.0	
Minimum Split (s)			23.0					23.0	23.0	23.0	
Total Split (s)			35.0					85.0	85.0	35.0	
Total Split (%)			29.2%					70.8%	70.8%	29.2%	
Yellow Time (s)			5.0					5.0	5.0	5.0	
All-Red Time (s)			2.0					2.0	2.0	2.0	
Lost Time Adjust (s)			-2.0					-2.0	-2.0	-2.0	
Total Lost Time (s)			5.0					5.0	5.0	5.0	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode			None					C-Max	C-Max	None	
Act Effct Green (s)			18.7					91.3	91.3	18.7	
Actuated g/C Ratio			0.16					0.76	0.76	0.16	
v/c Ratio			0.07					0.45	0.02	0.61	
Control Delay			0.4					5.5	0.7	44.2	
Queue Delay			0.0					0.0	0.0	0.0	
Total Delay			0.4					5.5	0.7	44.2	

Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
LOS			A					A	A	D	
Approach Delay	0.4							5.4		44.2	
Approach LOS	A							A		D	
Queue Length 50th (ft)			0					137	0	125	
Queue Length 95th (ft)			0					190	m3	m171	
Internal Link Dist (ft)	257				277			134		71	
Turn Bay Length (ft)									100		
Base Capacity (vph)			477					2693	1213	442	
Starvation Cap Reductn			0					0	0	0	
Spillback Cap Reductn			0					0	0	0	
Storage Cap Reductn			0					0	0	0	
Reduced v/c Ratio			0.05					0.45	0.02	0.38	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 99 (83%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.61			
Intersection Signal Delay: 9.9		Intersection LOS: A	
Intersection Capacity Utilization 46.9%		ICU Level of Service A	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: US 15/501 & Polks Landing Road

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	0	0	47	0	1500	74	0	0	0	100	0
Future Volume (vph)	0	0	47	0	1500	74	0	0	0	100	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%				0%			0%		0%	
Storage Length (ft)	0	0		0		0	0		0	0	0
Storage Lanes	0	1		0		1	0		0	1	0
Taper Length (ft)	100			100			100			100	
Satd. Flow (prot)	0	0	1611	0	3539	1583	0	0	0	1770	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1611	0	3539	1583	0	0	0	1770	0
Right Turn on Red			Yes			Yes			Yes		Yes
Satd. Flow (RTOR)			39			82					
Link Speed (mph)	25				55			55		55	
Link Distance (ft)	510				148			278		215	
Travel Time (s)	13.9				1.8			3.4		2.7	
Confl. Peds. (#/hr)											
Confl. Bikes (#/hr)											
Peak Hour Factor	0.90	0.90	0.90	0.90	0.91	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)											
Mid-Block Traffic (%)	0%				0%			0%		0%	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	52	0	1648	82	0	0	0	111	0
Turn Type			Prot		NA	Perm				Prot	
Protected Phases			7		2					7	
Permitted Phases						2					
Detector Phase			7		2	2				7	
Switch Phase											
Minimum Initial (s)			7.0		14.0	14.0				7.0	
Minimum Split (s)			14.0		23.0	23.0				14.0	
Total Split (s)			35.0		85.0	85.0				35.0	
Total Split (%)			29.2%		70.8%	70.8%				29.2%	
Yellow Time (s)			5.0		5.0	5.0				5.0	
All-Red Time (s)			2.0		2.0	2.0				2.0	
Lost Time Adjust (s)			-2.0		-2.0	-2.0				-2.0	
Total Lost Time (s)			5.0		5.0	5.0				5.0	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode			None		C-Max	C-Max				None	
Act Effct Green (s)			14.9		95.1	95.1				14.9	
Actuated g/C Ratio			0.12		0.79	0.79				0.12	
v/c Ratio			0.22		0.59	0.06				0.51	
Control Delay			21.2		2.3	0.1				58.5	
Queue Delay			0.0		0.0	0.0				0.0	
Total Delay			21.2		2.3	0.1				58.5	

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
LOS			C		A	A				E	
Approach Delay	21.2				2.2					58.5	
Approach LOS	C				A					E	
Queue Length 50th (ft)			9		73	0				85	
Queue Length 95th (ft)			45		83	m0				139	
Internal Link Dist (ft)	430				68			198		135	
Turn Bay Length (ft)											
Base Capacity (vph)			432		2805	1272				442	
Starvation Cap Reductn			0		0	0				0	
Spillback Cap Reductn			0		0	0				0	
Storage Cap Reductn			0		0	0				0	
Reduced v/c Ratio			0.12		0.59	0.06				0.25	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 8 (7%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.59			
Intersection Signal Delay: 6.0		Intersection LOS: A	
Intersection Capacity Utilization 55.6%		ICU Level of Service B	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: US 15/501 & Central Site Driveway

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	218	213	10	1529	153	269	834
Future Volume (vph)	218	213	10	1529	153	269	834
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)	4%			-1%			1%
Storage Length (ft)	275	200	325		200	175	
Storage Lanes	1	1	1		1	2	
Taper Length (ft)	100		165			225	
Satd. Flow (prot)	3364	1552	1778	3557	1591	3416	3522
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	3364	1552	1778	3557	1591	3416	3522
Right Turn on Red		Yes			Yes		
Satd. Flow (RTOR)		23			107		
Link Speed (mph)	45			55			55
Link Distance (ft)	452			1115			377
Travel Time (s)	6.8			13.8			4.7
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%			0%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	237	232	11	1662	166	292	907
Turn Type	Prot	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	8	1	5	2	8	1	6
Permitted Phases		8			2		
Detector Phase	8	1	5	2	8	1	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	14.0	7.0	7.0	14.0
Minimum Split (s)	15.0	15.0	14.0	22.0	15.0	15.0	22.0
Total Split (s)	20.0	25.0	15.0	75.0	20.0	25.0	85.0
Total Split (%)	16.7%	20.8%	12.5%	62.5%	16.7%	20.8%	70.8%
Yellow Time (s)	3.0	3.0	3.0	5.3	3.0	3.0	5.1
All-Red Time (s)	3.1	3.1	2.4	1.2	3.1	3.1	1.1
Lost Time Adjust (s)	-1.1	-1.1	-0.4	-1.5	-1.1	-1.1	-1.2
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	12.6	32.4	7.9	77.6	95.2	14.8	94.4
Actuated g/C Ratio	0.10	0.27	0.07	0.65	0.79	0.12	0.79
v/c Ratio	0.67	0.53	0.09	0.72	0.13	0.70	0.33
Control Delay	61.3	37.4	53.9	17.3	1.5	55.5	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	61.3	37.4	53.9	17.3	1.5	55.5	1.4

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
LOS	E	D	D	B	A	E	A
Approach Delay	49.5			16.1			14.6
Approach LOS	D			B			B
Queue Length 50th (ft)	92	138	8	418	8	103	1
Queue Length 95th (ft)	132	204	27	588	26	120	20
Internal Link Dist (ft)	372			1035			297
Turn Bay Length (ft)	275	200	325		200	175	
Base Capacity (vph)	420	501	148	2301	1314	569	2771
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	0.46	0.07	0.72	0.13	0.51	0.33

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 8 (7%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 70
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.72
Intersection Signal Delay: 20.0 Intersection LOS: C
Intersection Capacity Utilization 68.7% ICU Level of Service C
Analysis Period (min) 15
Description: 08-0429

Splits and Phases: 6: US 15/501 & Lystra Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	312	63	22	308	43	19
Future Volume (vph)	312	63	22	308	43	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	100		0	75
Storage Lanes		1	1		1	1
Taper Length (ft)			50		100	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Link Speed (mph)	45			45	25	
Link Distance (ft)	444			341	350	
Travel Time (s)	6.7			5.2	9.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	363	73	26	358	50	22
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.3%		ICU Level of Service A	
Analysis Period (min) 15			

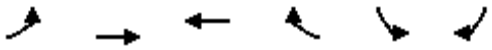
Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	312	63	22	308	43	19
Future Vol, veh/h	312	63	22	308	43	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	0	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	363	73	26	358	50	22

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	436	0	773	363
Stage 1	-	-	-	-	363	-
Stage 2	-	-	-	-	410	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1124	-	367	682
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	670	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1124	-	359	682
Mov Cap-2 Maneuver	-	-	-	-	359	-
Stage 1	-	-	-	-	704	-
Stage 2	-	-	-	-	655	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.6	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	359	682	-	-	1124	-
HCM Lane V/C Ratio	0.139	0.032	-	-	0.023	-
HCM Control Delay (s)	16.6	10.5	-	-	8.3	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	26	307	311	4	6	21
Future Volume (vph)	26	307	311	4	6	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	100			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				100	
Satd. Flow (prot)	1770	1863	1859	0	1649	0
Flt Permitted	0.950				0.988	
Satd. Flow (perm)	1770	1863	1859	0	1649	0
Link Speed (mph)		45	45		25	
Link Distance (ft)		341	794		475	
Travel Time (s)		5.2	12.0		13.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	341	350	0	30	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.6%		ICU Level of Service A	
Analysis Period (min) 15			

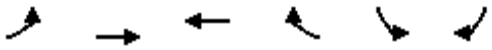
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	26	307	311	4	6	21
Future Vol, veh/h	26	307	311	4	6	21
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	341	346	4	7	23

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	350	0	-	0	747	348
Stage 1	-	-	-	-	348	-
Stage 2	-	-	-	-	399	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1209	-	-	-	381	695
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	678	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1209	-	-	-	372	695
Mov Cap-2 Maneuver	-	-	-	-	372	-
Stage 1	-	-	-	-	698	-
Stage 2	-	-	-	-	678	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1209	-	-	-	583
HCM Lane V/C Ratio	0.024	-	-	-	0.051
HCM Control Delay (s)	8.1	-	-	-	11.5
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	382	333	22	0	84
Future Volume (vph)	0	382	333	22	0	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	3539	1848	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	3539	1848	0	0	1611
Link Speed (mph)		45	45		25	
Link Distance (ft)		452	444		400	
Travel Time (s)		6.8	6.7		10.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	424	394	0	0	93
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	382	333	22	0	84
Future Vol, veh/h	0	382	333	22	0	84
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	424	370	24	0	93

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	382
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	-	0	664
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	664
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	664
HCM Lane V/C Ratio	-	-	-	0.141
HCM Control Delay (s)	-	-	-	11.3
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.5

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	69	1431	51	99	1826
Future Volume (vph)	0	69	1431	51	99	1826
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		140	200	
Storage Lanes	0	1		1	1	
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	1611	3539	1583	1770	3539
Flt Permitted					0.950	
Satd. Flow (perm)	0	1611	3539	1583	1770	3539
Link Speed (mph)	25		55			55
Link Distance (ft)	271		1140			1039
Travel Time (s)	7.4		14.1			12.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	74	1539	55	106	1963
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	69	1431	51	99	1826
Future Vol, veh/h	0	69	1431	51	99	1826
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	140	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	74	1539	55	106	1963

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	770	0	0	1594	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	4.14	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	2.22	-
Pot Cap-1 Maneuver	0	343	-	-	407	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	343	-	-	407	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	343	407	-
HCM Lane V/C Ratio	-	-	0.216	0.262	-
HCM Control Delay (s)	-	-	18.4	16.9	-
HCM Lane LOS	-	-	C	C	-
HCM 95th %tile Q(veh)	-	-	0.8	1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	30	120	4	21	48	4
Future Volume (vph)	30	120	4	21	48	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			100		100	
Satd. Flow (prot)	1662	0	0	1850	1765	0
Flt Permitted				0.993	0.956	
Satd. Flow (perm)	1662	0	0	1850	1765	0
Link Speed (mph)	25			25	25	
Link Distance (ft)	271			1515	405	
Travel Time (s)	7.4			41.3	11.0	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	166	0	0	27	57	0
Sign Control	Yield			Yield	Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Roundabout			
Intersection Capacity Utilization 19.0%		ICU Level of Service A	
Analysis Period (min) 15			

MOVEMENT SUMMARY

Site: 2 [Williams Corner/Polks Landing]

Build (2027) PM
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance ft	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed mph
South: Williams Corner North Driveway												
3	L2	53	2.0	0.046	3.2	LOS A	0.2	5.8	0.14	0.04	0.14	24.5
18	R2	4	2.0	0.046	3.2	LOS A	0.2	5.8	0.14	0.04	0.14	32.4
Approach		58	2.0	0.046	3.2	LOS A	0.2	5.8	0.14	0.04	0.14	25.3
East: Legend Oaks Drive												
1	L2	4	2.0	0.022	3.1	LOS A	0.1	2.8	0.19	0.06	0.19	34.9
6	T1	23	2.0	0.022	3.1	LOS A	0.1	2.8	0.19	0.06	0.19	28.3
Approach		28	2.0	0.022	3.1	LOS A	0.1	2.8	0.19	0.06	0.19	29.7
West: Legend Oaks Drive												
2	T1	33	2.0	0.128	3.8	LOS A	0.7	18.2	0.05	0.01	0.05	33.4
12	R2	133	2.0	0.128	3.8	LOS A	0.7	18.2	0.05	0.01	0.05	32.0
Approach		167	2.0	0.128	3.8	LOS A	0.7	18.2	0.05	0.01	0.05	32.3
All Vehicles		252	2.0	0.128	3.6	LOS A	0.7	18.2	0.09	0.02	0.09	29.9

Site Level of Service (LOS) Method: Delay & v/c (HCM 6). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Roundabout LOS Method: SIDRA Roundabout LOS.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement.
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 6).
Roundabout Capacity Model: SIDRA Standard.
HCM Delay Formula option is used. Control Delay does not include Geometric Delay since Exclude Geometric Delay option applies.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

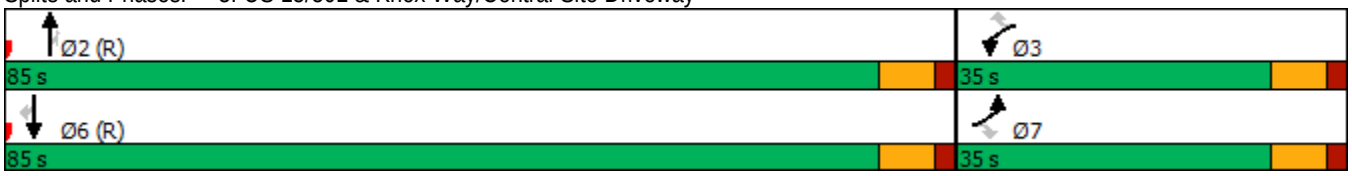
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	253	0	230	145	0	77	0	1173	69	0	1580	211
Future Volume (vph)	253	0	230	145	0	77	0	1173	69	0	1580	211
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		100	0		500
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	100			100			100			100		
Satd. Flow (prot)	1770	0	1583	1770	0	1583	0	3539	1583	0	3539	1583
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1770	0	1583	1770	0	1583	0	3539	1583	0	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			39			86			54			234
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		483			403			187			1140	
Travel Time (s)		13.2			11.0			2.3			14.1	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.96	0.90	0.90	0.96	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	281	0	256	161	0	86	0	1222	77	0	1646	234
Turn Type	Prot		Perm	Prot		Perm		NA	Perm		NA	Perm
Protected Phases	7			3				2			6	
Permitted Phases			7			3			2			6
Detector Phase	7		7	3		3		2	2		6	6
Switch Phase												
Minimum Initial (s)	7.0		7.0	7.0		7.0		14.0	14.0		14.0	14.0
Minimum Split (s)	14.0		14.0	14.0		14.0		23.0	23.0		21.0	21.0
Total Split (s)	35.0		35.0	35.0		35.0		85.0	85.0		85.0	85.0
Total Split (%)	29.2%		29.2%	29.2%		29.2%		70.8%	70.8%		70.8%	70.8%
Yellow Time (s)	5.0		5.0	5.0		5.0		5.0	5.0		5.0	5.0
All-Red Time (s)	2.0		2.0	2.0		2.0		2.0	2.0		2.0	2.0
Lost Time Adjust (s)	-2.0		-2.0	-2.0		-2.0		-2.0	-2.0		-2.0	-2.0
Total Lost Time (s)	5.0		5.0	5.0		5.0		5.0	5.0		5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None		None	None		None		C-Max	C-Max		C-Max	C-Max
Act Effct Green (s)	25.5		25.5	25.5		25.5		84.5	84.5		84.5	84.5
Actuated g/C Ratio	0.21		0.21	0.21		0.21		0.70	0.70		0.70	0.70
v/c Ratio	0.75		0.70	0.43		0.21		0.49	0.07		0.66	0.20
Control Delay	56.5		46.8	43.6		8.7		3.1	0.3		12.1	1.3
Queue Delay	0.0		0.0	0.0		0.0		0.0	0.0		0.0	0.0
Total Delay	56.5		46.8	43.6		8.7		3.1	0.3		12.1	1.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
LOS	E		D	D		A		A	A		B	A
Approach Delay		51.9			31.5			2.9			10.8	
Approach LOS		D			C			A			B	
Queue Length 50th (ft)	204		156	108		0		26	0		340	0
Queue Length 95th (ft)	291		241	168		41		43	1		461	26
Internal Link Dist (ft)		403			323			107			1060	
Turn Bay Length (ft)									100			500
Base Capacity (vph)	442		425	442		460		2491	1130		2491	1183
Starvation Cap Reductn	0		0	0		0		0	0		0	0
Spillback Cap Reductn	0		0	0		0		0	0		0	0
Storage Cap Reductn	0		0	0		0		0	0		0	0
Reduced v/c Ratio	0.64		0.60	0.36		0.19		0.49	0.07		0.66	0.20

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 7 (6%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 50
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.75
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 77.6% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 3: US 15/501 & Knox Way/Central Site Driveway



Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
Lane Configurations											
Traffic Volume (vph)	0	0	11	0	0	0	0	1752	35	178	0
Future Volume (vph)	0	0	11	0	0	0	0	1752	35	178	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%				0%			0%		0%	
Storage Length (ft)	0	0		0		0	0		100	0	0
Storage Lanes	0	1		0		0	0		1	1	0
Taper Length (ft)	100			100			100			100	
Satd. Flow (prot)	0	0	1611	0	0	0	0	3539	1583	1770	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1611	0	0	0	0	3539	1583	1770	0
Right Turn on Red			Yes			Yes			Yes		Yes
Satd. Flow (RTOR)			36						36		
Link Speed (mph)	25				55			55		55	
Link Distance (ft)	337				357			214		151	
Travel Time (s)	9.2				4.4			2.7		1.9	
Confl. Peds. (#/hr)											
Confl. Bikes (#/hr)											
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.95	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)											
Mid-Block Traffic (%)	0%				0%			0%		0%	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	12	0	0	0	0	1844	39	198	0
Turn Type			Prot					NA	Perm	Prot	
Protected Phases			3					6		3	
Permitted Phases									6		
Detector Phase			3					6	6	3	
Switch Phase											
Minimum Initial (s)			7.0					14.0	14.0	7.0	
Minimum Split (s)			14.0					21.0	21.0	14.0	
Total Split (s)			30.0					90.0	90.0	30.0	
Total Split (%)			25.0%					75.0%	75.0%	25.0%	
Yellow Time (s)			5.0					5.0	5.0	5.0	
All-Red Time (s)			2.0					2.0	2.0	2.0	
Lost Time Adjust (s)			-2.0					-2.0	-2.0	-2.0	
Total Lost Time (s)			5.0					5.0	5.0	5.0	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode			None					C-Max	C-Max	None	
Act Effct Green (s)			20.2					89.8	89.8	20.2	
Actuated g/C Ratio			0.17					0.75	0.75	0.17	
v/c Ratio			0.04					0.70	0.03	0.67	
Control Delay			0.3					7.0	1.0	49.3	
Queue Delay			0.0					0.0	0.0	0.0	
Total Delay			0.3					7.0	1.0	49.3	

Lane Group	EBL	EBR	EBR2	NBL	NBT	NBR	SBL	SBT	SBR	NWL	NWR
LOS			A					A	A	D	
Approach Delay	0.3							6.9		49.3	
Approach LOS	A							A		D	
Queue Length 50th (ft)			0					281	0	148	
Queue Length 95th (ft)			2					310	m2	224	
Internal Link Dist (ft)	257				277			134		71	
Turn Bay Length (ft)									100		
Base Capacity (vph)			364					2649	1194	368	
Starvation Cap Reductn			0					0	0	0	
Spillback Cap Reductn			0					0	0	0	
Storage Cap Reductn			0					0	0	0	
Reduced v/c Ratio			0.03					0.70	0.03	0.54	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 100 (83%), Referenced to phase 2: and 6:SBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.70			
Intersection Signal Delay: 10.9		Intersection LOS: B	
Intersection Capacity Utilization 66.6%		ICU Level of Service C	
Analysis Period (min) 15			

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: US 15/501 & Polks Landing Road

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations											
Traffic Volume (vph)	0	0	100	0	1133	109	0	0	0	184	0
Future Volume (vph)	0	0	100	0	1133	109	0	0	0	184	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12
Grade (%)	0%				0%			0%		0%	
Storage Length (ft)	0	0		0		0	0		0	0	0
Storage Lanes	0	1		0		1	0		0	1	0
Taper Length (ft)	100			100			100			100	
Satd. Flow (prot)	0	0	1611	0	3539	1583	0	0	0	1770	0
Flt Permitted										0.950	
Satd. Flow (perm)	0	0	1611	0	3539	1583	0	0	0	1770	0
Right Turn on Red			Yes			Yes			Yes		Yes
Satd. Flow (RTOR)			86			121					
Link Speed (mph)	25				55			55		55	
Link Distance (ft)	510				148			278		215	
Travel Time (s)	13.9				1.8			3.4		2.7	
Confl. Peds. (#/hr)											
Confl. Bikes (#/hr)											
Peak Hour Factor	0.90	0.90	0.90	0.90	0.95	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)											
Mid-Block Traffic (%)	0%				0%			0%		0%	
Shared Lane Traffic (%)											
Lane Group Flow (vph)	0	0	111	0	1193	121	0	0	0	204	0
Turn Type			Prot		NA	Perm				Prot	
Protected Phases			7		2					7	
Permitted Phases						2					
Detector Phase			7		2	2				7	
Switch Phase											
Minimum Initial (s)			7.0		14.0	14.0				7.0	
Minimum Split (s)			14.0		21.0	21.0				14.0	
Total Split (s)			40.0		80.0	80.0				40.0	
Total Split (%)			33.3%		66.7%	66.7%				33.3%	
Yellow Time (s)			5.0		5.0	5.0				5.0	
All-Red Time (s)			2.0		2.0	2.0				2.0	
Lost Time Adjust (s)			-2.0		-2.0	-2.0				-2.0	
Total Lost Time (s)			5.0		5.0	5.0				5.0	
Lead/Lag											
Lead-Lag Optimize?											
Recall Mode			None		C-Max	C-Max				None	
Act Effct Green (s)			21.2		88.8	88.8				21.2	
Actuated g/C Ratio			0.18		0.74	0.74				0.18	
v/c Ratio			0.31		0.46	0.10				0.65	
Control Delay			14.8		4.6	0.3				53.7	
Queue Delay			0.0		0.0	0.0				0.0	
Total Delay			14.8		4.6	0.3				53.7	

Lane Group	WBL	WBR	WBR2	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
LOS			B		A	A				D	
Approach Delay	14.8				4.2					53.7	
Approach LOS	B				A					D	
Queue Length 50th (ft)			16		113	0				146	
Queue Length 95th (ft)			63		134	2				218	
Internal Link Dist (ft)	430				68			198		135	
Turn Bay Length (ft)											
Base Capacity (vph)			530		2620	1203				516	
Starvation Cap Reductn			0		0	0				0	
Spillback Cap Reductn			0		0	0				0	
Storage Cap Reductn			0		0	0				0	
Reduced v/c Ratio			0.21		0.46	0.10				0.40	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 8 (7%), Referenced to phase 2:NBT and 6:, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.65			
Intersection Signal Delay: 11.1		Intersection LOS: B	
Intersection Capacity Utilization 49.8%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 5: US 15/501 & Central Site Driveway

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	346	280	54	1195	77	291	1517
Future Volume (vph)	346	280	54	1195	77	291	1517
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)	4%			-1%			1%
Storage Length (ft)	275	200	325		200	175	
Storage Lanes	1	1	1		1	2	
Taper Length (ft)	100		165			225	
Satd. Flow (prot)	3364	1552	1778	3557	1591	3416	3522
Flt Permitted	0.950		0.950			0.950	
Satd. Flow (perm)	3364	1552	1778	3557	1591	3416	3522
Right Turn on Red		Yes			Yes		
Satd. Flow (RTOR)		50			80		
Link Speed (mph)	45			55			55
Link Distance (ft)	452			1115			377
Travel Time (s)	6.8			13.8			4.7
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)	0%			0%			0%
Shared Lane Traffic (%)							
Lane Group Flow (vph)	360	292	56	1245	80	303	1580
Turn Type	Prot	pm+ov	Prot	NA	pm+ov	Prot	NA
Protected Phases	8	1	5	2	8	1	6
Permitted Phases		8			2		
Detector Phase	8	1	5	2	8	1	6
Switch Phase							
Minimum Initial (s)	7.0	7.0	7.0	14.0	7.0	7.0	14.0
Minimum Split (s)	15.0	15.0	14.0	22.0	15.0	15.0	22.0
Total Split (s)	25.0	25.0	15.0	70.0	25.0	25.0	80.0
Total Split (%)	20.8%	20.8%	12.5%	58.3%	20.8%	20.8%	66.7%
Yellow Time (s)	3.0	3.0	3.0	5.3	3.0	3.0	5.1
All-Red Time (s)	3.1	3.1	2.4	1.2	3.1	3.1	1.1
Lost Time Adjust (s)	-1.1	-1.1	-0.4	-1.5	-1.1	-1.1	-1.2
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag	Lag		Lead	Lead
Lead-Lag Optimize?		Yes	Yes	Yes		Yes	Yes
Recall Mode	None	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	16.9	37.1	9.5	72.9	94.8	15.2	81.1
Actuated g/C Ratio	0.14	0.31	0.08	0.61	0.79	0.13	0.68
v/c Ratio	0.76	0.57	0.40	0.58	0.06	0.70	0.66
Control Delay	60.2	32.2	61.1	16.4	0.9	56.9	4.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.2	32.2	61.1	16.4	0.9	56.9	4.9

Lane Group	WBL	WBR	NBU	NBT	NBR	SBL	SBT
LOS	E	C	E	B	A	E	A
Approach Delay	47.6			17.3			13.3
Approach LOS	D			B			B
Queue Length 50th (ft)	139	156	42	290	0	104	275
Queue Length 95th (ft)	187	226	86	412	11	145	133
Internal Link Dist (ft)	372			1035			297
Turn Bay Length (ft)	275	200	325		200	175	
Base Capacity (vph)	560	574	148	2161	1313	569	2379
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.64	0.51	0.38	0.58	0.06	0.53	0.66

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 20 (17%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 20.4 Intersection LOS: C
Intersection Capacity Utilization 70.1% ICU Level of Service C
Analysis Period (min) 15
Description: 08-0429

Splits and Phases: 6: US 15/501 & Lystra Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	277	120	43	340	149	45
Future Volume (vph)	277	120	43	340	149	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	100		0	75
Storage Lanes		1	1		1	1
Taper Length (ft)			50		100	
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted			0.950		0.950	
Satd. Flow (perm)	1863	1583	1770	1863	1770	1583
Link Speed (mph)	45			45	25	
Link Distance (ft)	444			341	350	
Travel Time (s)	6.7			5.2	9.5	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	286	124	44	351	154	46
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 36.2%		ICU Level of Service A	
Analysis Period (min) 15			

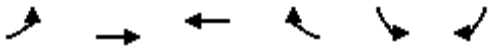
Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	277	120	43	340	149	45
Future Vol, veh/h	277	120	43	340	149	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	100	-	0	75
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	286	124	44	351	154	46

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	410	0	725	286
Stage 1	-	-	-	-	286	-
Stage 2	-	-	-	-	439	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1149	-	392	753
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	650	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1149	-	377	753
Mov Cap-2 Maneuver	-	-	-	-	377	-
Stage 1	-	-	-	-	763	-
Stage 2	-	-	-	-	625	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	18.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	377	753	-	-	1149	-
HCM Lane V/C Ratio	0.407	0.062	-	-	0.039	-
HCM Control Delay (s)	21	10.1	-	-	8.3	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	1.9	0.2	-	-	0.1	-



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	25	302	359	4	8	28
Future Volume (vph)	25	302	359	4	8	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	100			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	50				100	
Satd. Flow (prot)	1770	1863	1861	0	1649	0
Flt Permitted	0.950				0.989	
Satd. Flow (perm)	1770	1863	1861	0	1649	0
Link Speed (mph)		45	45		25	
Link Distance (ft)		341	786		536	
Travel Time (s)		5.2	11.9		14.6	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	28	336	403	0	40	0
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 30.8%		ICU Level of Service A	
Analysis Period (min) 15			

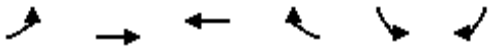
Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	302	359	4	8	28
Future Vol, veh/h	25	302	359	4	8	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	100	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	28	336	399	4	9	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	403	0	-	0	793	401
Stage 1	-	-	-	-	401	-
Stage 2	-	-	-	-	392	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1156	-	-	-	358	649
Stage 1	-	-	-	-	676	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1156	-	-	-	349	649
Mov Cap-2 Maneuver	-	-	-	-	349	-
Stage 1	-	-	-	-	660	-
Stage 2	-	-	-	-	683	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1156	-	-	-	545
HCM Lane V/C Ratio	0.024	-	-	-	0.073
HCM Control Delay (s)	8.2	-	-	-	12.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	410	484	21	0	144
Future Volume (vph)	0	410	484	21	0	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)		0%	0%		0%	
Storage Length (ft)	0			0	0	0
Storage Lanes	0			0	0	1
Taper Length (ft)	100				100	
Satd. Flow (prot)	0	3539	1852	0	0	1611
Flt Permitted						
Satd. Flow (perm)	0	3539	1852	0	0	1611
Link Speed (mph)		45	45		25	
Link Distance (ft)		452	444		400	
Travel Time (s)		6.8	6.7		10.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	456	561	0	0	160
Sign Control		Free	Free		Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 42.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	410	484	21	0	144
Future Vol, veh/h	0	410	484	21	0	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	456	538	23	0	160

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	550
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	6.23
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.319
Pot Cap-1 Maneuver	0	-	-	-	0	534
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	534
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

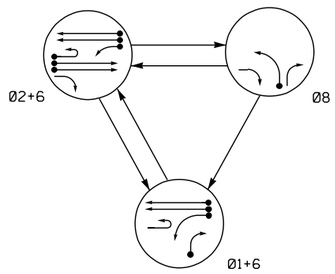
Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	534
HCM Lane V/C Ratio	-	-	-	0.3
HCM Control Delay (s)	-	-	-	14.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	1.2

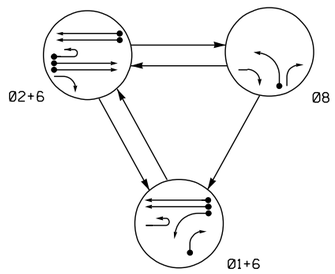
Appendix I:
Signal Plans

PROJECT REFERENCE NO.	SHEET NO.
08-0429 TOD	Sig. 1

DEFAULT PHASING DIAGRAM



ALTERNATE PHASING DIAGRAM



DEFAULT PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+6	PHASE Ø2+6	PHASE Ø8	FLASH
11	←	~~FY~~	~~R~~	~~Y~~
21	~~FY~~	~~FY~~	~~R~~	~~Y~~
22	R	G	R	Y
23	R	G	R/	Y
61, 62	G	G	R	Y
81	R	R	G	R
82	R/	R	G	R

ALTERNATE PHASING TABLE OF OPERATION

SIGNAL FACE	PHASE Ø1+6	PHASE Ø2+6	PHASE Ø8	FLASH
11	←	~~R~~	~~R~~	~~Y~~
21	~~FY~~	~~FY~~	~~R~~	~~Y~~
22	R	G	R	Y
23	R	G	R/	Y
61, 62	G	G	R	Y
81	R	R	G	R
82	R/	R	G	R

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X60	0	2-4-2	-	1	Y	Y	-	-	15**	-	-
					6 #	Y	Y	Y	-	3	-	-
1B	6X60*	0	2-4-2	-	1	Y	Y	-	-	15	-	-
2A	6X6	420	4	-	2	Y	Y	-	-	-	-	-
2B	6X6	420	4	-	2	Y	Y	-	-	-	-	-
2C	6X40	0	2-4-2	-	2	Y	Y	Y	-	3	-	-
6A	6X6	420	4	-	6	Y	Y	-	-	-	-	-
6B	6X6	420	4	-	6	Y	Y	-	-	-	-	-
8A	6X60	0	2-4-2	-	8	Y	Y	-	-	-	-	-

* Dogleg Loop
** Disable Delay During Alternate Phasing Operation.
\# Disable Phase 6 Call For Loop 1A During Alternate Phasing Operation.

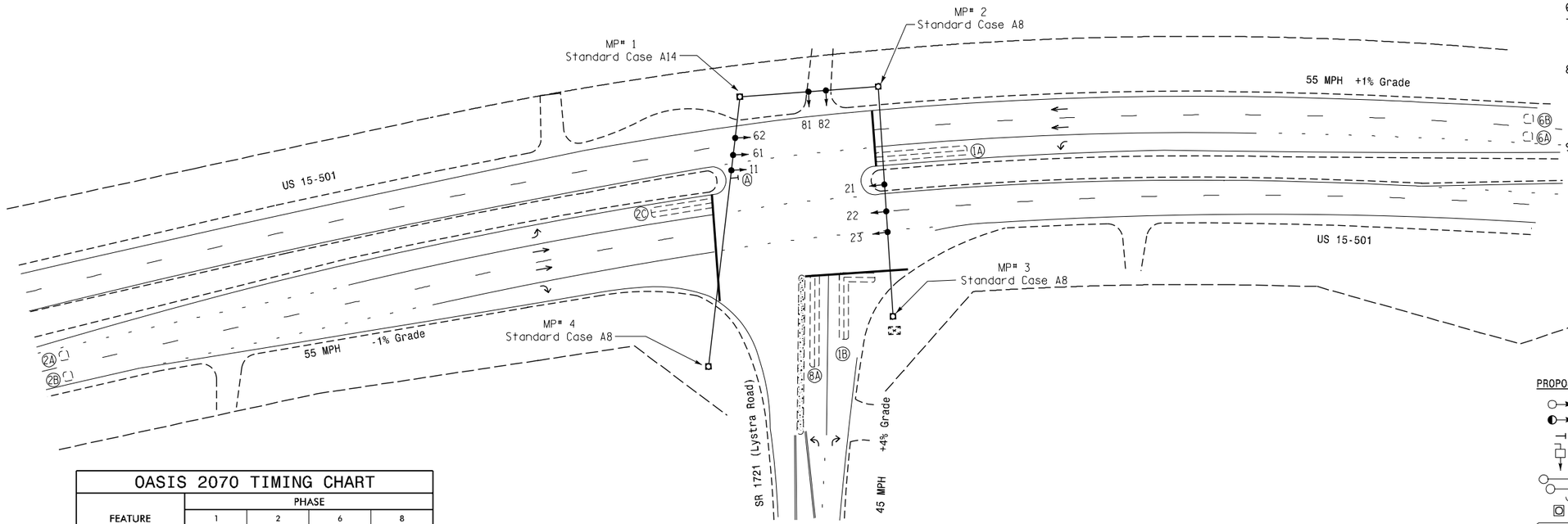
3 Phase
Fully Actuated
(US 15-501 CLS)

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2012, "Standard Specifications for Roads and Structures" dated January 2012
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 may be lagged.
4. Set all detector units to presence mode.
5. In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
6. Pavement markings are existing.
7. The Division Traffic Engineer will determine the hours of use for each phasing plan.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
9. Closed loop system data:
   Controller Asset #: 0429.

PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT



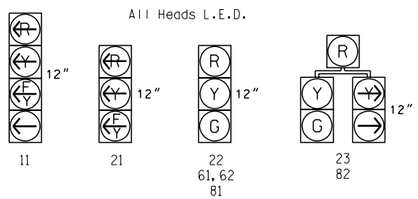
OASIS 2070 TIMING CHART

FEATURE	PHASE 1	PHASE 2	PHASE 6	PHASE 8
Min Green 1 *	7	14	14	7
Extension 1 *	1.0	6.0	6.0	1.0
Max Green 1 *	25	120	120	40
Yellow Clearance	3.0	5.3	5.3	3.0
Red Clearance	3.1	1.2	1.2	3.1
Red Revert	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-
Don't Walk 1	-	-	-	-
Seconds Per Actuation *	-	1.5	1.5	-
Max Variable Initial *	-	46	46	-
Time Before Reduction *	-	15	15	-
Time To Reduce *	-	30	30	-
Minimum Gap	-	4.0	4.0	-
Recall Mode	-	MIN RECALL	MIN RECALL	-
Vehicle Call Memory	-	YELLOW	YELLOW	-
Dual Entry	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

SIGNAL FACE I.D.

All Heads L.E.D.



LEGEND

PROPOSED		EXISTING
○→	Traffic Signal Head	●→
◐→	Modified Signal Head	N/A
⊣	Sign	⊣
↓	Pedestrian Signal Head With Push Button & Sign	■↓
○→	Signal Pole with Guy	●→
○↓	Signal Pole with Sidewalk Guy	●↓
◘	Metal Strain Pole	■
▭	Inductive Loop Detector	▭
⊠	Controller & Cabinet	⊠
□	Junction Box	■
·-·-·-·	2-in Underground Conduit	·-·-·-·
N/A	Right of Way	— — —
→	Directional Arrow	→
Ⓐ	"U-TURN YIELD TO RIGHT TURN" Sign (R10-16)	Ⓐ

Signal Upgrade

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

Prepared In the Offices of:
Transportation Mobility and Safety Division
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Signal Design Section
750 N.Greenfield Pkwy,Garner,NC 27529

US 15-501 at SR 1721 (Lystra Road)

Division 8 Chatham County NE of Pittsboro

PLAN DATE: March 2017 REVIEWED BY:
PREPARED BY: R.J. Ziemba REVIEWED BY:

REVISIONS	INIT.	DATE

SCALE 0 40 1"=40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA
DocuSigned by: 3/23/2017
DATE

SIG. INVENTORY NO. 08-0429

23-MAR-2017 15:14
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rziemba

PROJECT REFERENCE NO.	SHEET NO.
Protected Left	Sig. 1

3 Phase
Fully Actuated
(US 15-501 CLS)
Signal System #: 10822

PHASING DIAGRAM

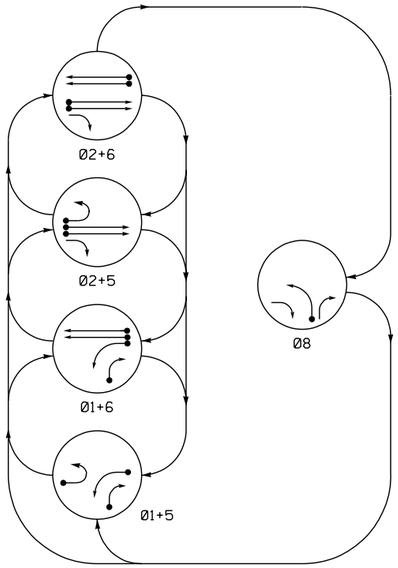


TABLE OF OPERATION

SIGNAL FACE	PHASE					
	Ø1+5	Ø1+6	Ø2+5	Ø2+6	Ø8	FLASH
11	←	←	~~R~~	~~R~~	~~R~~	~~R~~
22	R	R	G	G	R	Y
23	R	R	G	G	R/	Y
51	∩	(R)	∩	(R)	(R)	(R)
61, 62	R	G	R	G	R	Y
81	R	R	R	R	G	R
82	R/	R/	R	R	G	R

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART

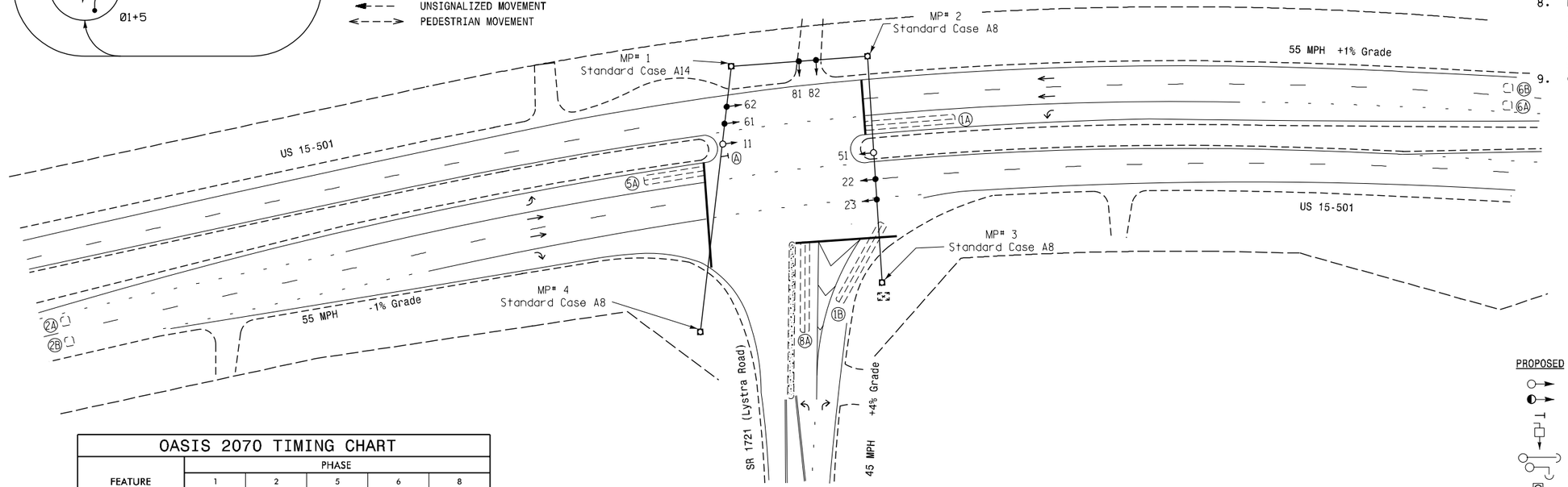
INDUCTIVE LOOPS					DETECTOR PROGRAMMING							
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X60	0	2-4-2	-	1	Y	Y	-	-	-	-	-
1B	6X60	+10	2-4-2	-	1	Y	Y	-	-	15	-	-
2A	6X6	420	4	-	2	Y	Y	-	-	-	-	-
2B	6X6	420	4	-	2	Y	Y	-	-	-	-	-
5A	6X40	0	2-4-2	-	5	Y	Y	-	-	-	-	Y
6A	6X6	420	4	-	6	Y	Y	-	-	-	-	-
6B	6X6	420	4	-	6	Y	Y	-	-	-	-	-
8A	6X60	0	2-4-2	-	8	Y	Y	-	-	-	-	-

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018, "Standard Specifications for Roads and Structures" dated January 2018
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 may be lagged.
4. Renumber existing loop 2C as 5A.
5. Set all detector units to presence mode.
6. In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
7. Pavement markings are existing.
8. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
9. Closed loop system data:
   Controller Asset #: 0429.

PHASING DIAGRAM DETECTION LEGEND

- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT



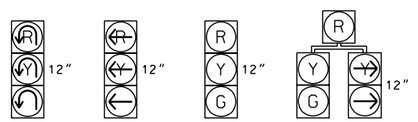
OASIS 2070 TIMING CHART

FEATURE	PHASE				
	1	2	5	6	8
Min Green 1 *	7	14	7	14	7
Extension 1 *	1.0	6.0	1.0	6.0	1.0
Max Green 1 *	25	120	25	120	40
Yellow Clearance	3.0	5.3	3.0	5.1	3.0
Red Clearance	3.1	1.2	2.4	1.1	3.1
Red Revert	2.0	2.0	2.0	2.0	2.0
Walk 1 *	-	-	-	-	-
Don't Walk 1	-	-	-	-	-
Seconds Per Actuation *	-	1.5	-	1.5	-
Max Variable Initial *	-	46	-	45	-
Time Before Reduction *	-	15	-	15	-
Time To Reduce *	-	30	-	30	-
Minimum Gap	-	4.0	-	4.0	-
Recall Mode	-	MIN RECALL	-	MIN RECALL	-
Vehicle Call Memory	-	YELLOW	-	YELLOW	-
Dual Entry	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

SIGNAL FACE I.D.

All Heads L.E.D.



LEGEND

PROPOSED		EXISTING
	Traffic Signal Head	
	Modified Signal Head	N/A
	Sign	
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Metal Strain Pole	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way	
	Directional Arrow	
Ⓐ	"U-TURN YIELD TO RIGHT TURN" Sign (R10-16)	Ⓐ

Signal Upgrade

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US 15-501
at
SR 1721 (Lystra Road)

Division 8 Chatham County NE of Pittsboro

PLAN DATE: December 2019 REVIEWED BY: I.O. Imozurike
PREPARED BY: W. LeShure REVIEWED BY:

REVISIONS	INIT.	DATE

SCALE 0 40 1"=40'

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 026486 ENGINEER ROBERT J. ZIEMBA
Docusigned by: 12/19/2019
SIGNATURE DATE
SIG. INVENTORY NO. 08-0429

19-DEC-2019 15:56
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