Chatham County Planning Board
80-A East Street
Pittsboro, NC 27312

September 19, 2024

Re: September 3rd, 2024 Chatham County Planning Board Meeting Follow Up/Clarifications Letter
Summit Church Chatham Campus Conditional Rezoning and General Rezoning Cases

Dear Planning Board Chairman and Board Members,

After listening to the public input session and hearing the planning board discuss these two zoning cases, we thought it might be beneficial to provide the following clarifications in advance of the October 1st Planning Board meeting.

The following is a list of the primary concerns we heard in the September 3rd Planning Board meeting, in no particular order;

- Considering the General Rezoning Case as dependent on the Conditional Rezoning Case
- Potential Tax Revenue loss
- Inconsistent with the rural character
- Architectural Façade, massing, and proximity to the roadway
- Massing/buffers related to existing adjacent residential buildings
- Potential property tax revenue loss
- Concerns the 'Mega' church is not right for the immediate community
- Concerns the largest auditorium in the county will lead to rentals and huge events
- Traffic and pedestrian safety
- Lack of public notification regarding the project

The following Clarifications are included in this narrative;

- Rezoning Cases Overview
    - Conditional Rezoning vs General Rezoning
    - Neighborhood Meeting Clarifications
    - Potential Economic Impact
- Rural Character
    - Rural Character Defined
    - Existing and Proposed Viewshed Comparison along US 15-501
        - Architectural Façade, massing, and proximity to the roadway
        - Massing/buffers related to existing adjacent residential buildings
        - Inconsistent with the rural character
    - Proposed Site Sections
        - Northern Boundary Adjacent to Hidden Oaks Drive
        - Main Entrance at US 15-501
    - Proposed Development Comparison to Existing and Proposed Regulations
        - Comprehensive Plan 2017 & Proposed Development
        - Current UDO, Proposed Development & Recode Chatham
- Land Use
    - Planned Uses (also see Attachments I + II)
    - Wastewater Clarifications (also see Attachment III)
    - Traffic Clarifications (also see Attachment IV)
- Project Updates Summary

REZONING CASES OVERVIEW

Rezoning Case Comparison

As you consider the published materials, please keep in mind there are two separate zoning cases; a General Rezoning to return to R-1 for Parcel Numbers 2752, 93852, 18909 and a Conditional Rezoning to OI for Parcel Numbers 18750, 18896 & 18897. The General Rezoning case is not impacted by the decision of the Conditional Rezoning case. The General Rezoning of the parcels included in the General Rezoning case is a direct recommendation Chatham County Staff, made in October 2023 pre-application meeting. Because all the parcels referenced above are currently tied to an expired Conditional Rezoning, coupled with the desire to exclude them from the proposed development project considered as the Conditional Rezoning Case, the best course of action for the parcels included in the General Rezoning is to return them to the original zoning.

Neighborhood Meeting Notifications

For General Rezonings, a Community Meeting is not required. However, in addition to the minimum requirement of notifying the landowners adjacent to the Conditional Rezoning case parcels, we also sent notifications of the Conditional Rezoning Neighborhood Meeting to the landowners adjacent to the General Rezoning case parcels. This was done in an effort to be transparent and hear from all those that may have been directly engaged in the now expired Conditional Rezoning approved as part of the Herndon Farms Compact Community (which included all of the parcel numbers reference above).

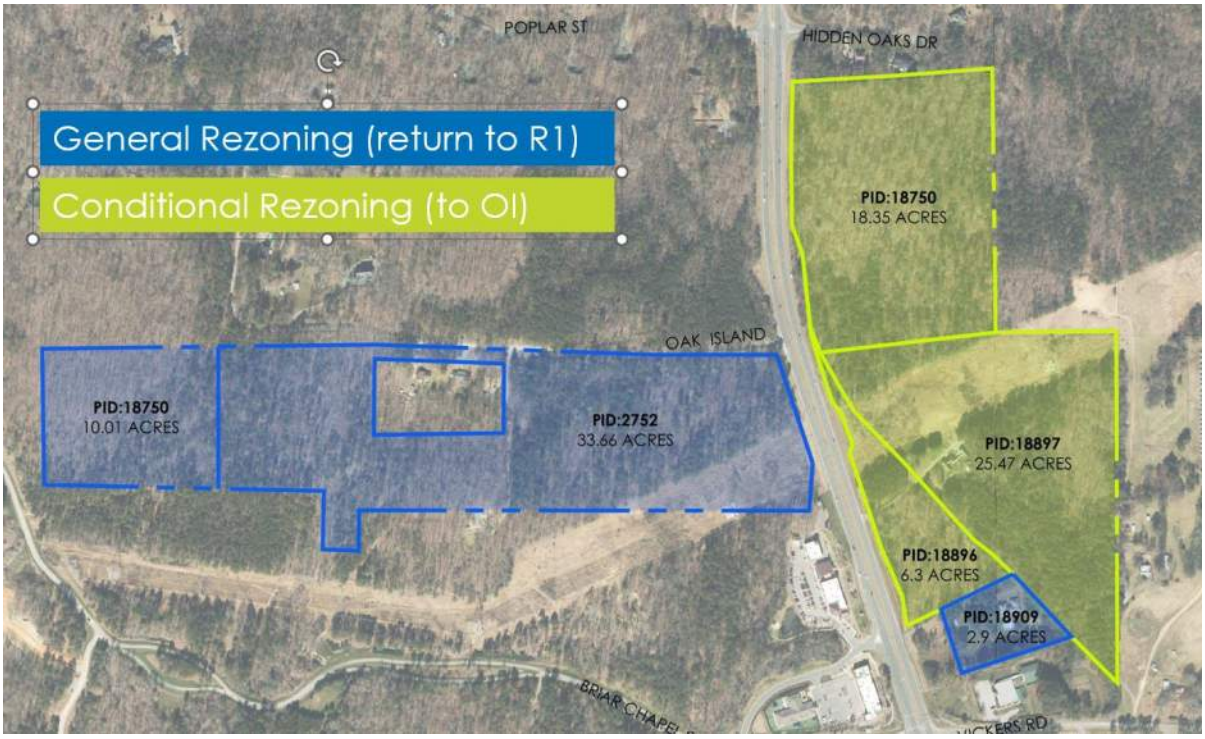


Image 1.1 – Summit Church Rezoning Cases

Potential Economic Impact

The previously approved Conditional Rezoning does not necessarily provide better Tax Revenue, it provides Potential Tax Revenue differently. The Herndon Farms 1st Plat Submittal includes 53.63 ac ± of Tax-Exempt acreage, whereas the Summit Church Rezoning Cases includes 50.117 ac± Tax-Exempt acreage. The Herdon Farms 1st Plat Submittal includes 20.75 ac ± of taxable Commercial/Office and Residential acreage, while the Summit Church Rezoning Cases include 43.67 ac of taxable undeveloped R-1 residential and 2.9 ac ± of taxable developed R-1 residential. The Herndon Farms 1st Plat Submittal does not include consumer-based services as a potential tax revenue option. While the Summitt Rezoning cases also do not offer consumer-based services, the conditional rezoning case has the significant potential to impact the surrounding consumer-based developments due to the increased demand to support the parishioner base before and after the planned program events.

Image 1.2 – Areas show in green represent Tax Exempt Open Space included in the Herndon Farms 1st Plat Submittal

The Chapel Hill Campus is planned to relocate to this permanent facility. Currently there are approximately 800 parishioners that attend the Chapel Hill Campus transient location at East Chapel Hill High School. Of these parishioners, approximately 15% are Chatham County residents that travel out of Chatham County for services. This location will keep Chatham County residents local and promotes spending tax dollars at the adjacent commercial developments. The relocation of this service center will bring with it residents of neighboring Orange County, Chapel Hill, Carrboro, and Dogwood Acres and with them consumer-based spending. An increase in consumer- based spending will support the Chatham County vision of growing the US 15-501 Commercial corridor.

Herndon Farms 1st Plat Submittal	Summit Church Rezoning Cases
Land Use Categories for Potential Tax Revenue	
Tax Exempt Open Space= 53.630 ac ±	Tax Exempt= 50.117 ac
Commercial/office= 5.540 ac ±	R-1, Undeveloped=43.67 ac
Residential=15.231 ac ±	R-1, Developed=2.9 ac
Potential Tax Revenue Sources	
Property Taxes: North Chatham 107: $0.853/ $100 of Assessed Value, annually Sales Tax: 7% (State + County) Chatham County Manager's Office is focused on boosting sales tax Revenues to prevent boosting other taxes and fees Chatham County Sales tax revenues will support: • Local schools • Law enforcement • Parks and recreation • Public libraries • Economic development Chapel Hill Campus will relocate to this facility • This will keep Chatham County parishioners in Chatham County • This will bring parishioners from immediate area to Chatham County, meeting The Summit Church vision of having a campus within 20 minutes of everyone in the Triangle Supply and Demand when the facility is in use will drive consumerism Increased Consumerism will attract businesses to this corridor, further developing the compact community region shown on the Future Land Use Plan, while the project limits residential density, retains undisturbed open space, and limits overall traffic impacts	

Table 1.1 – Potential Tax Revenue Analysis

RURAL CHARACTURE

Rural Character Defined

The Comprehensive Plan notes preserving the rural character and lifestyle of Chatham County as its number one goal. The comprehensive plan reflects the Chatham County community's desire to preserve the rural character and lifestyle by diversifying the tax base and encouraging compact growth in concentrated areas. This is achieved through development in and around existing towns, communities, and designated, well-planned, walkable, mixed-use centers. This project falls within the Compact Community located along US 15-501, which is the only designated Compact Community in the Comprehensive Plan.

The Future Land Use and Conservation Plan illustrates the Chatham County vision of concentrated growth and density in portions of the county along major road networks and adjacent to existing developments. This approach promotes promote the preservation of the vast majority of undeveloped and natural land areas Chatham County has to offer. As shown below on the Future Land Use and Conservation Plan, the various shades of green are the areas as designated as preserved rural character, with the multi-color nodes/circles and yellow areas representing designated areas of growth. The Conditional Rezoning site is located within the only Compact Community District shown on the Plan, between two Community Center nodes which is the second to most growth designated areas in the County; second only to the municipal areas such as Pittsboro and Siler City.

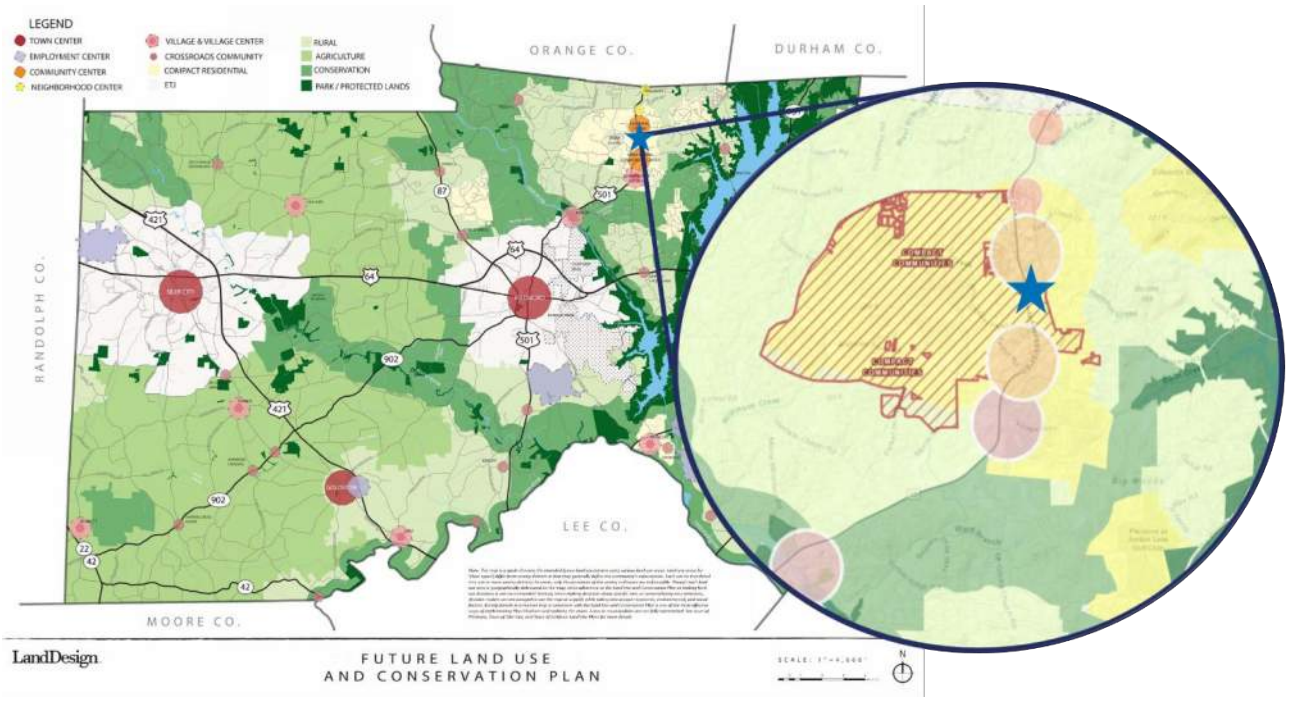


Image 2.1 – Location of Project on Future Land Use and Conservation Plan

In the April 2024 Neighborhood Meeting, the August 2024 Joint Public Hearing, and the September 2024 Planning Board Meeting we heard the Chatham County leaders and residents express their desire to preserve the rural character of this project area. The layout of this project presents an opportunity to bridge the gap between the desires of the Chatham County community and the goals of the Comprehensive Land Use plan by retaining a substantial acreage of natural areas, limiting land disturbance and grading to the extent practical, carefully selecting building materials and color palates, and providing a low density community asset within an area marked for future dense growth.

Existing and Proposed Viewshed Comparison along US 15-501

We understand the concerns for architectural façade, massing, proximity of the building to the roadway, buffers related to existing adjacent residential buildings, material selections, and ensuring the building type meets its surrounding character. We have developed a series graphics to show the existing development adjacent to or within close-proximity to the project site (within the same development corridor shown on the Future Land use and Conservation Plan).

Included as Exhibit A are images showing the comparison of existing viewshed showing the build environment adjacent to the site and viewsheds within 2 miles of the site, along US 15-501. These images demonstrate that the proposed architectural façade, building type, and material selections are in keeping with the surrounding development(s). Additionally, these graphics demonstrate that the surrounding existing development building massing is substantially more pronounced due to their proximity to the road than that of the proposed building.

Included as Exhibit B are images showing the comparison of existing views to the proposed development model, adjacent to the site traveling along US 15-501. These graphics demonstrate that the existing viewshed is generally preserved above the minimum regulatory requirements. Additionally, on exhibit B 3 or 3, we show that additional view protections could be implemented to further retain the existing views across the powerline easement if desired.

Proposed Site Sections

Image 2.2 below shows the view from an adjacent parcel to the north through the future building, which is closest to the northern parcel line. This section view demonstrates the vertical elevation change and the retained existing vegetation that will serve as a visual barrier between the residential lot and the church facilities. The 100' no-build zone is a proffered solution to resolve the adjacent landowners concerns regarding privacy and building massing, not required by the current or future regulations.

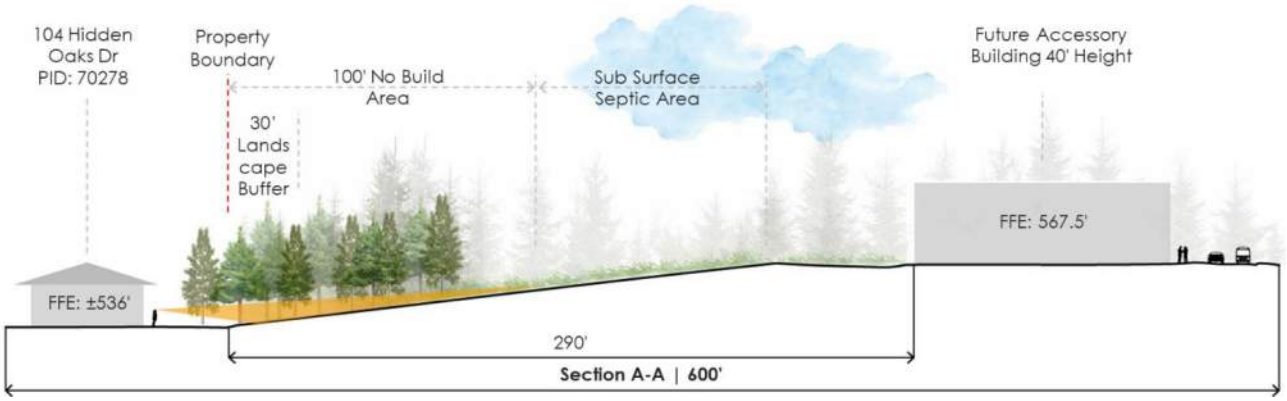


Image 2.2 – Proposed Section From Northern Parcel Boundary south through Future Accessory Building

Image 2.3 below shows the view from the main entrance at US 15-501 east along the access drive to the proposed church building. This section view demonstrates the vertical elevation change from the road to the proposed building, and the viewshed/massing insolation the distance from the road offers.

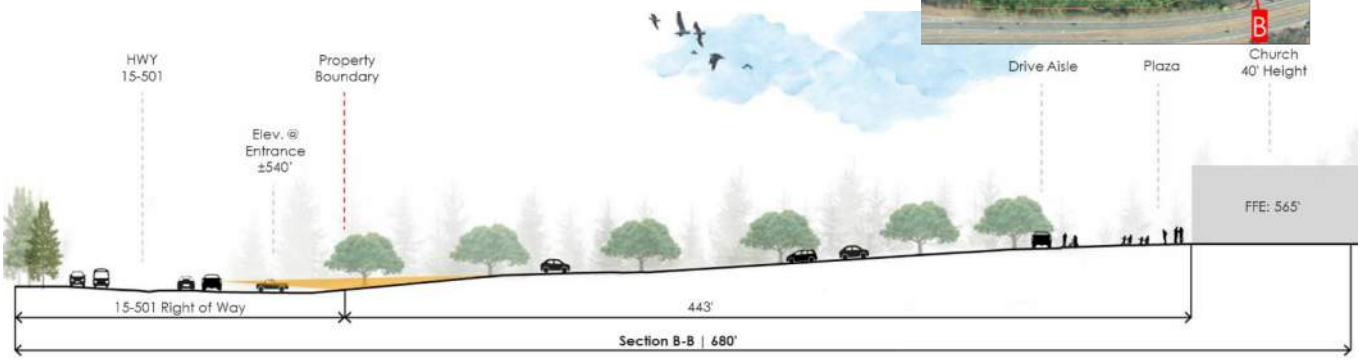


Image 2.3 – Proposed Section US 15-501 east along the main entrance drive to Proposed Church Building

Proposed Development Comparison to Existing and Proposed Regulations

The comprehensive plan for the location of this Conditional Rezoning supports High Density Development as well as incentivizes conservation design and the preservation of unique natural features. The Compact Community/High Density Development designation for the Conditional Rezoning parcels meet Goals 3, 4, & 9 of the Comprehensive Land Use Plan; it promotes strategic compact growth, diversification of tax base to be less dependent on residential property tazes, and provide equitable access to high-quality education, housing, and community options. The Conditional Rezoning project meets Goals 1, 3, 5, 6, & 10 of the Comprehensive land Use Plan; it preserve the rural character of Chatham County by preserving the natural resources to the extent possible and controlling density, provides access to recreational facilities and access to open space, fosters a healthy community by providing valuable support and resources, and promotes and controls compact growth due to its location within a designated development corridor and within a compact community area.

The project sits within the Compact Residential + Community Center designations. Churches are listed as part of the fabric of the development of these designated areas, falling within the desire to implement a range of complimentary used in the identified development nodes, near existing communities and neighborhood centers. This project balances the high density development strategies of developing these existing communities and neighborhood centers with the vision of the community by breaking up future dense development along the entire extent of the identified US 15-501 commercial corridor, it conforms to Land Use Strategy 6.2 of improving aesthetics by careful material selection to fit the existing and improved aesthetic also responding to context-sensitive architectural design features. It also provides much needed civic and support services components the growing compact community needs (Land use Strategies 2.1, 2.2, 3.4, 5.1, 6.1, 6.2, Sidebar on page P63).

This project honors the ideals outlined for conservation design, by protecting and maintaining key natural resources, preserving unique natural features, and limiting density, without the need to involve density transfers for natural resource protection/preservation (Natural Resources Strategies 1.1, 2.1, 2.2, 3.2, & 3.3) This project provides access to recreational opportunities and open space (Park and Recreation Strategy 4.1).

This Conditional Rezoning project does NOT require the density transfers allowed for High Density Development (Agriculture Strategy 5.2, Natural Resources Strategy 3.3). Due to the type of development, it also does not directly support key housing strategies of high density development regions (Strategy 1.1 and 2.1).

Plan Chatham Comprehensive Plan 2017	
High Density Development	**Summit Church Development**
Chapter 3 Goals & Objectives Pg. 41-42	
Goal 3 Goal 4 Goal 9	Goal 1 Goal 6 Goal 3 Goal 10 Goal 5
Chatham Future Land Use Descriptions Pg. 47	
Site within both Compact Residential & Community Center	Churchs are listed as part of the fabric
Chapter 4 Plan Elements Pg. 51	
Economic Development Pg. 53 Strategy 2.2	Economic Development Pg. 53 Strategy 3.4
Land Use Pg. 61 Strategy 2.1 Strategy 2.2 Strategy 6.1 Strategy 6.2 Strategy 6.3 Strategy 6.4	Land Use Pg. 61 Side Bar Description Strategy 2.1 Strategy 5.1 Strategy 6.4 Strategy 10.2
Natural Resources Pg. 103 Strategy 3.3 Agriculture Pg. 93 Strategy 5.2	Natural Resources Pg. 103 Strategy 1.1 Strategy 2.1 Strategy 2.2 Strategy 3.2
Housing Pg. 71 Strategy 1.1 Strategy 2.1	Parks and Recreation Pg. 117 Primary Goal Strategy 4.1

Table 2.1 – Comparison of High Density Development and Proposed Conditional Rezoning Development

In addition to the Comprehensive Land Use Plan 2017, Chatham County is currently working through the last steps required to publish an updated Unified Development Ordinance as project 'Recode Chatham'. This UDO update is necessary to better support the initiatives and goals set forth in the Comprehensive Land Use Plan. The final draft of updated UDO was published in August 2024. The official updated UDO is anticipated to be release during the first quarter of 2025. Table 2.2 is a matrix that shows the current regulations the Condition Rezoning project is required to meet, how the proposed plan aligns with the current regulations, and it will compare to the future regulation requirements. The proposed development data shows that the minimum/maximum requirements set forth in the current UDO are achieved or greatly exceeded.

August 2024 UDO Final Draft Comparison Section 2.2.7 R1 Section 2.2.9 OI Section 2.2.11 CB Section 2.2.12 RB Section 8.4.1 Watershed Intensity			
	Current Regulations OI Zoning	**Proposed Plan** OI Zoning	**Future Recommended Zonings** OI, CB, RB, R1 zoning
Building Setbacks	Front- 40 Ft. Side- 25 Ft. Rear- 25 Ft.	Front ≥ 440 Ft. Side ≥ 295 Ft. Rear ≥ 155 Ft.	Along 15/501- 75Ft. OI/RB : Side- 25 Ft. Rear- 25 Ft. CB/RB: Side- 25 Ft. Rear- 20 Ft.
Height Maximum	60 Ft.	40 Ft.	75 Ft.
Watershed Built Upon Area	36%	< 36%	Compact Residential 50% Community Center 60%

Table 2.2 – Comparison of Current Regulations, Proposed Development, and Future Regulations

The comprehensive plan identifies this project area as a zone to support high density development and growth. The update to the UDO will adjust the minimum/maximum requirements to better meet the goals set forth in the Comprehensive Land Use Plan. This project aims to bridge the gap the allowed future development of this project site will create between the community vision for rural character and the density goals of the Comprehensive Plan.

LAND USE

Planned Uses Clarifications

The Summit Church is committed to making a local impact on Triangle communities. A primary focus of the church leadership is to place a 'Summit Campus within 20 minutes of everyone in the Triangle" (see Attachment I). As part of this initiative, leadership is proposing Summit Church relocate the Chapel Hill Campus that meets at East Chapel Hill High School relocate to the facility included in the Conditional Rezoning.

In addition to providing a campus within 20 minutes of everyone in the Triangle, the Summit Church is committed to making an impact in the communities where they locate a campus. Attachment II provides a summary of the impact the current Chapel Hill Campus has had since its inception in 2013. The overall Summit Church Goals of assisting Community Organizations, Public Schools, Area Families, and Triangle Universities have been realized in great detail over the last decade. The Summit Church plans to continue these efforts and will implement or provide these resources to Chatham County with the relocation of the Chapel Hill Campus. As part of this effort, The Summit Church has confirmed the privately owned playground, sport court, and open field will be open for public use. As is standard of publicly owned facilities, hours of operation and other safety regulations may be implemented.

The Summit Church does not offer its facilities as rental space and has no plans to change this church wide policy. Even if this policy were to change in the future, the use of the building is limited to the on-site wastewater capacity. Any change to the current planned usage will require permitting approvals, costly utility system upgrades, and/or additional transportation improvements in the future (see Wastewater Clarifications and Traffic Clarifications below for more).

Wastewater Clarifications

The previously approved Herdon Farms Compact Community included a Wastewater Treatment Plant located on the parcels West of US 15-501 (included in the Summit Church General Rezoning Case). This design included aboveground treatment ponds/lagoons and an aboveground spray field located along US 15-501, with an underground septic field at the rear of the parcels. The WWTP was sized to handle the wastewater flow generated from the dense compact community, which was approved to be routed from the east side of US 15-501 under US 15-501 to this large treatment plant.

The wastewater treatment methodology for the Summit Church Conditional Rezoning proposes a subsurface holding facility and a subsurface septic drip facility. The methodology implements an equalization approach, sizing the facilities to handle the rate of use for specific capacity using the programming provided by the client. This approach limits the equalized gallons per day to 2,999 gpd. This limitation does not allow for increased use, beyond the programming and capacity outlined in Attachment III.

The more detailed wastewater design has revealed a reduced subsurface field is required than previously anticipated. The result is an opportunity to provide a 100' no build area along northern parcel line, as requested by the adjacent landowners. This area will not be cleared as a portion of this project and the installation of buildings or infrastructure in the future without obtaining a conditional rezoning approval.

Traffic Clarifications

As we worked the finalize the programming and services, the preliminary Traffic Impact Analysis (TIA) has been honed. NCDOT and the County have reviewed the documents. The current TIA substantially meets DOT criteria. NCDOT has agreed the NCDOT TIP U-6192 project should work with this development design and surrounding existing community as the project progresses.

The Traffic Analysis Addendum included as attachment IV summarizes the TIA changes and provides a simplified approach to sharing trip generation results, capacity analysis result, and a list of recommendations. Increased use beyond the programmed capacities outlined in Attachment IV will not be allowed without additional analysis.

PROJECT UPDATES SUMMARY

The design team heard the concerns and the desires of the community leaders and residents. To that end, the following plan and document adjustments/ clarifications have been included for your consideration prior to and during the October 1st 2024 Chatham County Planning Board Meeting;

- Plans have been updated to include:
    - A further developed the wastewater treatment design to hone minimum treatment area required
    - A 100 ft no build setback from northern parcels shown as a result of the reduction of the wastewater treatment requirement
- Assessed additional screening options, prepared to include additional plantings to screen building if desired
- The Summit Church is committed to:
    - Providing public access to playground, sport court, and open field
    - Making an impact in the Chatham County Community by offering support for Community Organizations, Schools, Families, Colleges, and Universities.
- An addendum to the TIA Memo has been generated to concisely summarize requirements, study area, and recommendations while refining calculations based on updated programing commitments

Please do not hesitate to contact me at **jwagoner@qunity.com** if you have any questions regarding these clarifications.

Respectfully,

Jael Wagoner, PLA, ASLA

Assistant Vice President | Landscape Architect
Qunity, P.A.

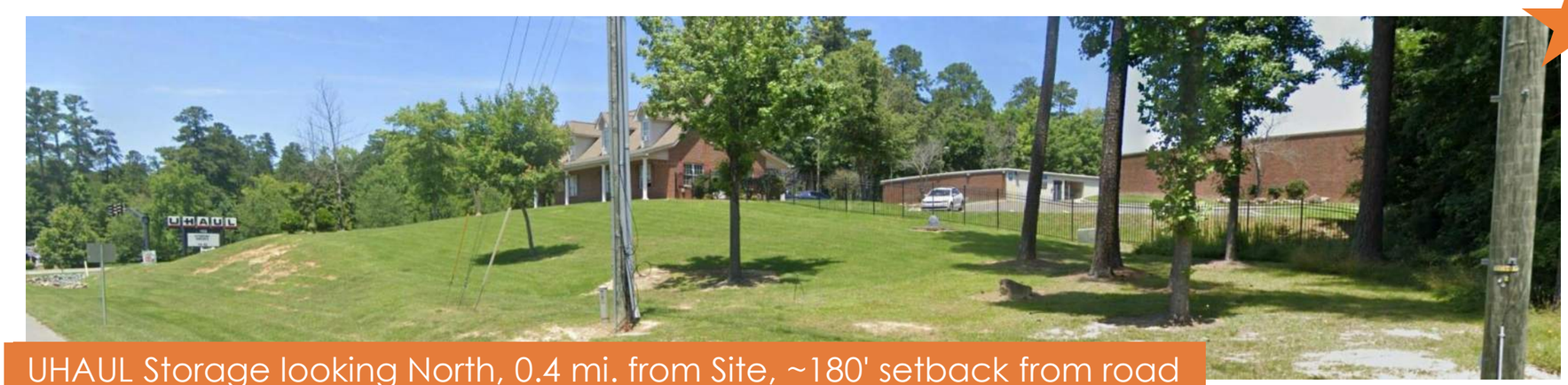
EXHIBITS
Exhibit A – Existing Adjacent Development Viewsheds
Exhibit B – Existing Site + Proposed Development Model Viewshed Comparison

ATTACHMENTS
Attachment I – The Summit Church Chapel Hill Public Statement
Attachment II – The Summit Church Chapel Hill Community Impact Overview
Attachment III – MacConnell Associates Technical Memorandum (wastewater)
Attachment IV – Gannett Flemming Traffic Analysis Addendum | Memorandum

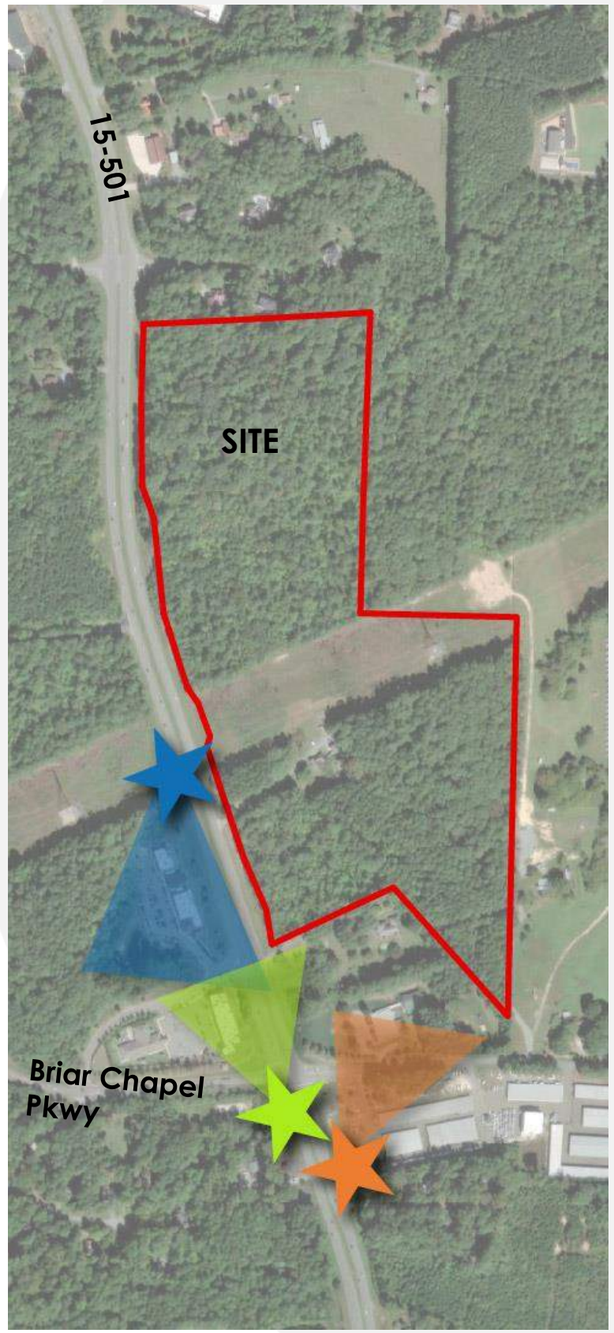
Rural Character: Viewsheds Adjacent to Site Along 15/501

The Veranda looking South, 0.1 mi. from Site, ~85' setback from road

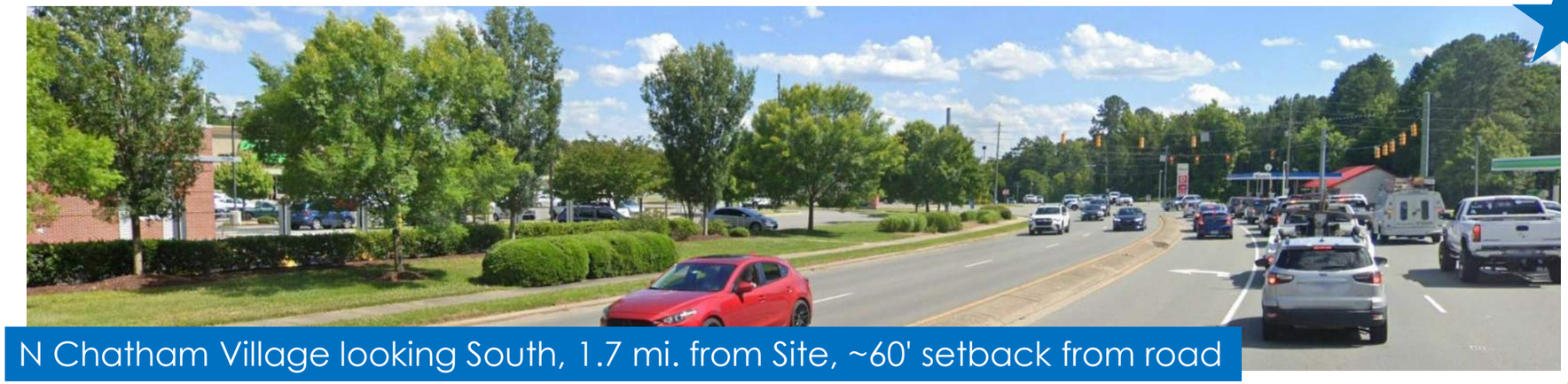
15-501/Briar Chapel Pkwy Int. looking North, 0.2 mi. from Site, ~85' setback from road



UHAUL Storage looking North, 0.4 mi. from Site, ~180' setback from road



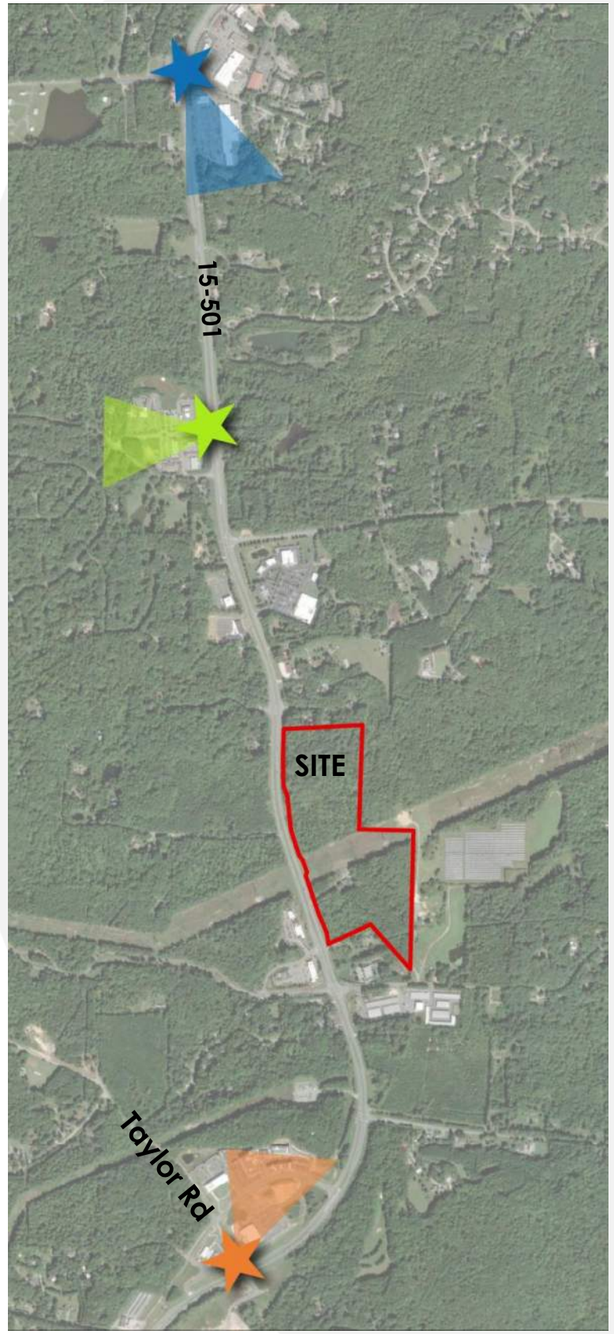
Rural Character: Viewsheds within 2 Miles from Site along 15/501



N Chatham Village looking South, 1.7 mi. from Site, ~60' setback from road

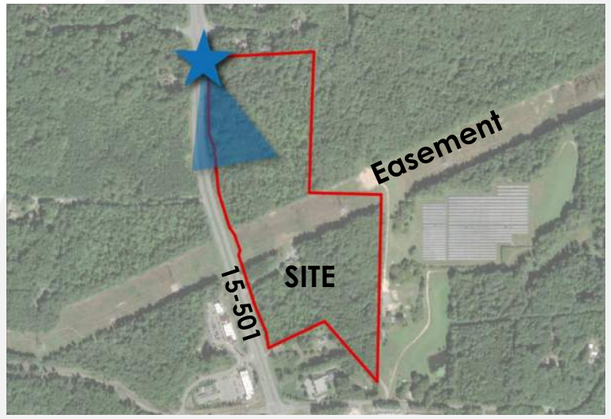
Polks Village looking West, 1 mi. from Site, ~150' setback from road

15-501/Taylor Rd Int. looking North, 2.1 mi. from Site, ~150' setback from road



Rural Character: Existing & Proposed Viewsheds Traveling South on 15/501

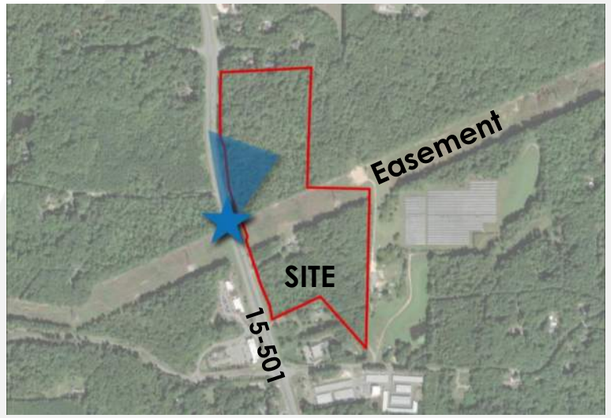
Existing view, looking East



Proposed view, looking East

Rural Character: Existing & Proposed Viewsheds Traveling North on 15/501

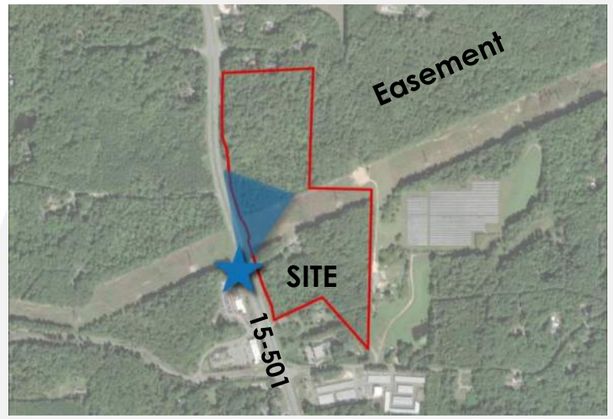
Existing view, looking East

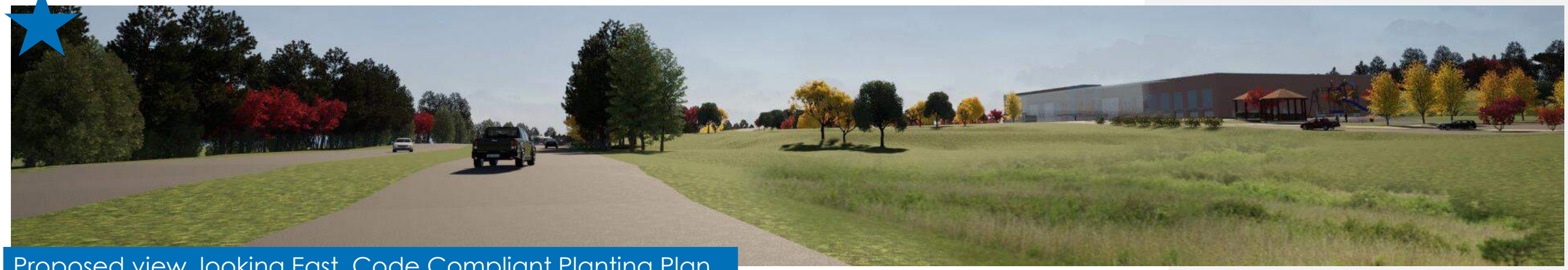


Proposed view, looking East

Rural Character: Easement Viewsheds

Existing view, looking East





Proposed view, looking East, Code Compliant Planting Plan

Proposed view, looking East, with supplemental trees

20240903 Planning Board Meeting Clarifications: Attachment I

At The Summit Church, we believe that the local church is God's "plan A" and therefore our local campuses are our primary focus for executing the mission that God has given us. Because of this, it is our vision to have a Summit Campus within 20 minutes of everyone in the Triangle.

Launching new campuses helps us more effectively make disciples in our communities, city, and throughout the world. Not just a way to increase our seating capacity, launching a new Summit campus multiplies leadership opportunities while facilitating the vision for our people to "stay where you are; serve where you live; let's be the church in your community."

In 2013, we launched in East Chapel Hill High School and have built relationships in the surrounding area as well as on the UNC campus. With this new facility will be able to continue partnering with this group as we reach the broader areas of Pittsboro and beyond.

Summit Chapel Hill Community Impact Overview

Community Organizations

Hargraves Community Center

- Members and staff from our church provided tutoring services to students in all grades.
- We were able to provide backpacks and school supplies to around 200 kids every fall for the past 4 years through this partnership.
- We were able to help impact around 300 families through collecting Thanksgiving meals for families.

Brookdale Assisted Living

Our staff had a weekly devotional and time of worship with the men and women at this facility for over a year.

ServeRDU

ServeRDU was a service project (2013-2019) that we have participated in as a church in the past. Through partnerships with *Empowerment*, a local non-profit organization focused on low-incoming housing, we were able to provide free labor and materials to renovate homes for needy families.

Prison Ministry

Over the past several years we have had church members involved in ministry opportunities in local prisons, while also helping men and women with re-entry into the community at the end of their sentences.

Public Schools

FCA

Over the past one year, we have had a consistent presence at the Fellowship of Christian Athletes clubs at both Chapel Hill High School and Jordan High School. We have been able to help provide snacks for the clubs and weekly encouragement for the office staff and club advisors. Additionally, we provide mentorship and guidance for their student leaders. We have seen the club consistently reach close to 50 students at Chapel Hill High School and grow from an average of 20 to 75 students at Jordan High School.

Tutoring

In the past our church has participated in tutoring services for high school students at ECHHS as needed.

ServeRDU
ServeRDU was a service project (2013-2019) that we have participated in as a church in the past. Through partnerships with East Chapel Hill High School, Phillips Middle School, and Ephesus Elementary school we were able to provide free labor and materials to renovate classrooms, paint bathrooms, restore playground spaces, and provide meals for staff of all levels at each school.

Gift Bags and Meals for Teachers and Athletes
Our church has catered meals on many different occasions for the football team. We have also provided breakfast for the teachers and put together beginning of the year appreciation gift bags.

Families

Foster and Adoption
We have helped support families who have had 12 foster kids over the past 4 years. Some of these experiences with families have also led to adoption by families from our local church.

Care and Counsel
Our pastors provide resources and support for 25 to 50 individuals a year going through crisis situations from difficulty in marriage to mental health struggles. Because we have access and relationships to so many community resources, we are able to help individuals get the care they need more quickly than if they were seeking it on their own. We also provide a support network for those individuals as they navigate crises.

Benevolence
Our church is always and has many examples of ways that we have helped out non-church members in the community who needed help in crisis situations from job loss and financial turmoil, to unsuspected sickness and funeral services for community members.

UNC

Promoting engagement with mental health resources
The leader of the UNC Student Life Engagement Department recently told us that “loneliness is

one of the biggest problems facing campus. He thinks that religious organizations like Summit's college ministry on campus provide a sense of belonging for students. This is good for mental health.

Our organization has helped countless students battling mental health over the last 12 years. One of our students that is a senior at UNC recently said this: "I do not think I would be alive today if it was not for Summit Church and the Summit College ministry."

Career and Live Coaching
We do not just provide spiritual care. Our staff engages in conversations regarding finances, relationships, careers and major life decisions. We want to help mentor our students in every aspect of life.

Our students volunteer with many non-profits
Some of these organizations include the Jackson Center, Hargreaves Community Center, Community Foster Care and the International Justice Mission protecting people from human trafficking and abuse.

P.O. Box 129
Morrisville, NC 27560

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MacCONNELL & Associates, P.C.
"Engineering Today For Tomorrow's Future"

Technical Memorandum

To:	Chatham Planning Board
From:	David Barcal, Project Manager/MacConnell & Associates, PC
Date:	September 17, 2024
Client:	Qunity
Subject:	Summit Church Chatham Campus
Project No.:	C26302.00

Introduction:

Summit Church is proposing to develop the property at 9780 US 15-501 North Chatham County, NC. An Auditorium with a seating capacity of 1,200 seats within the auditorium and 905-person capacity for the youth ministry area is proposed along with a proposed gymnasium. The site will utilize an onsite treatment and disposal system for its wastewater disposal. The system is currently proposed to be a pretreated subsurface drip system and utilize flow equalization. An estimated weekly schedule of waste generation is provided below.

Estimated Flows

Table 1 below is the current estimated weekly schedule. It is estimated that there will be two Sunday services with maximum capacity of 2,105 people per service, three meetings during the week that will have a maximum capacity of 75 people, one additional full service that will happen quarterly with a maximum capacity of 1,200 people and the gymnasium with a maximum capacity of 739 people will be used three times week. The facility is assumed to have a warming kitchen only and utilizes flow equalization and flow reduction based on low-flow fixtures to reduce the drain field area. The drain field is preliminary sized based on the equalized flow of 2,999-gallons and the weekly uses will be limited to keep the flow below 3,000-gallons of equalized flow per day.

Table 1: Estimated Flow Equalized Total Flow

	Number of Attendees	Design Daily Flowrate - Warming Kitchen (Attendees)	Flow From Gymnasium (GPD)	Unreduced GPD	Reduced Flow (25% Flow Reduction)	Equalized GPD	Balance (GAL)
Sunday	4210	3	0	12630	9472.5	2999	6474
Monday	75	3	3695	3920	2940	2999	6415
Tuesday	1200	3	3695	7295	5471	2999	8887
Wednesday	75	3	3695	3920	2940	2999	8828
Thursday	75	3	0	225	169	2999	5998
Friday	0	3	0	0	0	2999	2999
Saturday	0	3	0	0	0	2999	0
(1) Two services on Sunday (1,200 seats each), Plus Two Children Service (905) (3 gal/person)							
(2) Three 75 People services throughout the week (3 gal/person)							
(3) Quarterly 1,200-person service during the week (3 gal/person)							
(4) 739 Person Gymnasium used Three times per week (5 gal/person)							

Treatment and Disposal System

The treatment system uses E-Z Treat recirculating media filters for biological treatment of the wastewater. The E-Z Treat technology has the following NSF certifications: 40, 245, and 350. The treatment and disposal system design has not been finalized but typically includes the following components:

- Surge tanks with effluent filters.
- Septic tank with effluent filters.
- Equalization tanks with equalization pumps.
- Recirculation tanks in series with one effluent bypass valve per tank, and pod dosing pumps.
- E-Z Treat filter pods
- Field dosing tank with pumps.
- subsurface drip irrigation fields with initial drip tubing.
- Controls and electrical components for the above equipment.

The surge tank has a settling compartment which is approximately equal to $2/3^{rd}$ of the tank volume and the second chamber is approximately $1/3^{rd}$ of the tank volume. Wastewater from the surge tank flows by gravity through effluent filters into the septic tank. The description below describes the flow movement of an example system. The final number of recirculation tanks and treatment pods will be determined during final design.

From the septic tank the wastewater enters the flow equalization tank where the equalized volume provides sufficient emergency and peak capacity for the treatment system. The submersible equalization pumps will convey the wastewater into the first recirculation tank where wastewater

will be pumped into E-Z Treat filter pods for secondary treatment. Then, the flow is returned by gravity into the first recirculation tank or to the second recirculation tank through a bypass valve. Similarly, the second recirculation tank pumps the treated water through E-Z Treat filter pods for tertiary treatment before the water returns to the second recirculation tank or flows by gravity into the field irrigation tank.

The field irrigation tank will dose the treated water to the subsurface drip irrigation fields. One pump will run to dose the zones depending on the size of the fields. The zones will be dosed according to the dose group number in the Design Calculations. Each filter has provisions to backwash at the desired intervals and return the water to the surge tanks. Automatic flushing of the fields should take place a minimum of once a month.

Operation and Maintenance

To ensure a smooth operating system, regular maintenance shall be performed on each treatment unit. The maintenance for each unit is displayed in the following table.

Operation and Maintenance Tasks

Unit	Frequency	Task
Septic Tank: damage	3 – 6 months	Check for solids accumulation, blockages, or baffle damages, in/exfiltration, pump septage.
Septic Tank: solids and scum	12 months	Pump out accumulated solids if necessary, remove scum layer.
Effluent Filter: Testing	3 – 6 months	Check and clean as needed.
Effluent Filter: Replacement	12 months	Replace each time septic tank is pumped.
E-Z Treat Treatment Unit	monthly	Inspect control/alarm panel, recirculation tank, and E-Z Treat treatment unit (filter pod).
Ultraviolet Disinfection	weekly	Wipe (clean) UV lamp, check intensity and replace lamp when required.
Pump Tanks: Pumps and Controls	weekly	Check pumps, controls, alarms, elapsed time meters.
Pump Tanks: Solids and Potential Leaks	3 – 6 months	Check for solids accumulation, or infiltration and exfiltration.
Pump Tanks: Scum Accumulation	12 months	Remove scum layer when septic tank is pumped.
Drip Field: Vegetation	2 – 4 weeks	Weed Eat vegetative cover to a minimum height of 4 inches if applicable to ensure vegetation does not interfere with the system operation.
Drip System: Piping and Distribution Equipment	3 – 6 months	Check for leaks in force mains, odors, ponding, and erosion to ensure runoff does not occur in drip area.

Pumps, Distribution Piping, and Alarm System	monthly	Check flow meter readout and compare to recorded flows, check pumps for leaks.
Pumps, Distribution Piping, and Alarm System	quarterly	Remove filter covers and inspect for accumulation of debris.
Pumps, Distribution Piping, and Alarm System	semiannually	Remove and lubricate O-Rings on filter canister, replace if damaged. Clean filter discs at hydraulic tubing feed.
Pumps, Distribution Piping, and Alarm System	annually	Remove filter disc cartridge and replace, clean cartridge and store for next annual replacement. Dig along side dripper line and remove small section with emitter, repair with "RAM" couplings and new tubing, inspect removed tubing for excess slime or buildup. Flush dripper lines with chemical solution as needed. Check and or replace batteries in flow meter.
Control Panel and Pump Efficiency	6 – 12 months	Check amp readout and compare to manufacturers instructions.

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MEMORANDUM

Date:	**September 17, 2024**
To:	Jael Wagoner, PLA, ASLA, Qunity
From:	Baohong Wan, PhD, PE, Gannett Fleming
RE:	Summit Church Chatham County Traffic Analysis Addendum

Gannett Fleming is contracted with Qunity to prepare the Summit Church Chatham County Traffic Impact Analysis (TIA) in accordance with the North Carolina Department of Transportation (NCDOT) Congestion Management Capacity Analysis Guidelines and Chatham County Unified Development ordinance (UDO) requirements. A quick summary of the traffic analysis timeline is provided below:

- A Traffic Summary Letter (outlining trip generation results and adjacent roadway conditions) was completed on 5/20/2024 as part of the rezoning application submittal for staff review.
- Gannett Fleming started TIA scoping coordination with NCDOT in July 2024. The final TIA scoping document (MOU, dated 8/9/2024) was approved by NCDOT on August 12, 2024.
- The Summit Church Traffic Impact Analysis was completed on 8/16/2024 and submitted to the County and NCDOT for review and comment. NCDOT issued preliminary review on 9/13/2024, indicating the TIA substantially meet DOT's criteria for further review and comments.

In addition to preparing the TIA, Gannett Fleming staff attended public hearings on 8/19 during the Chatham County Board of Commissioners (BOC) meeting and on 9/3 during the Planning Board (PB) meeting.

This Technical Memorandum provides a summary of Gannett Fleming's responses to some of the comments we received during the public hearings, particularly concerning traffic analysis results of the proposed development.

Trip Generation Comparisons

Some residents and board members expressed concerns regarding the total number of trips to be generated by the proposed Summit Church Chatham County development.

The preliminary plan of Summit Church Chatham County is to construct an 88,460 square foot (SF) church with a 1,200-seating capacity sanctuary. Trip generation was conducted in accordance with the procedures outlined in the Institute of Transportation Engineers (ITE) report entitled *Trip Generation 11th Edition*. In summary, the proposed Summit Church is projected to generate approximately 669 vehicular trips on a typical weekday, with 28 trips expected to occur during the AM peak hour and 43 trips during the PM peak hour; it is projected to generate approximately 2,768 trips on a typical Sunday, with 912 trips expected to occur during the Sunday peak hour.

Compared to the current Conditional District Compact Community designation (TIA prepared by Kimley-Horn and Associates in May 2021), the proposed Summit Church is expected to generate 59% less vehicular traffic on a typical weekday (669 trips compared to 1,616 trips). Admittedly, the church is projected to cause a significant traffic increase (over 2000 vehicles per day) on a Sunday. Nevertheless, in terms of the total weekly trips (weekdays x 5 + Saturday + Sunday), the proposed Summit Church is anticipated to generate 26% less traffic than Herdon Farm (6,539 trips compared to 8,792 trips).

Project	Land Use	Weekday			Sunday	
		Daily	AM	PM	Daily	Peak
Summit Church	88.5 KSF church	669	28	43	2768	912
Herndon Farm (CDCC)	170 SA Housing, 125 Cong Care, 10 ksf Daycare	1616	192	209	640	74
Womble Parcel (Catalyst)	243 MF, 15 ksf MOB	1653	139	153	933	81
Vickers Village TIA	225 SF, 25 ksf Office, 50 ksf Commercial	6230	375	402	4060	428
Vickers Village Site Plan	189 SF, 25 ksf Commercial	2283	159	283	2463	252

In comparison to a couple other recently approved developments along the US 15-501 corridor, the proposed Summit Church is projected to generate significantly less weekday trips (79% less than Vickers Village Site Plan, 59% less than Womble/Catalyst) and weekly total trips (70% less than Vickers Village Site Plan, 38% less than Womble/Catalyst).

Roadway Capacity Assessment

In accordance with the anticipated traffic patterns, capacity analysis was conducted for the proposed Summit Church during Sunday peak hours. Here is a quick summary of the analysis results:

- The intersection of US 15-501 at Lystra Road (with existing geometrics and signal control) is found to operate LOS B under the No-Build conditions and LOS C under the Build conditions. Additional improvements are not required.
- The intersection of US 15-501 at Briar Chapel Parkway/Vickers Road (with existing geometrics and signal control) is found to operate LOS B under the future year conditions, with or without the proposed Summit Church. Additional improvements are not required.
- The intersection of US 15-501 at Jack Bennett Road (with RCI improvements to be constructed with Vickers Village) is found to operate LOS A under the future year conditions, with or without the proposed Summit Church. Additional improvements are not required.
- The intersection of US 15-501 at Poplar Street and Hidden Oaks Court (with existing geometrics and traffic control) is found to operate LOS F at the stop-controlled approaches under the Build conditions. A traffic signal is not expected to be warranted. Dedicate turn lanes are already in place, and the storage lengths appear sufficient to accommodate vehicle queues. No feasible improvements are not identified through the TIA. Nevertheless, traffic should be monitored at this location during large events (full occupancy or near capacity of the Church sanctuary), and traffic management plan elements may be considered to improve traffic operations and safety at this location.
- Both site accesses are projected to operate at LOS C under the Buildout conditions. Dedicated right-turn lanes are recommended based on the NCDOT turn lane warrant analysis results.

Based on discussions with NCDOT, a TIP year (2036) analysis was included in the TIA to account for future year conditions with the reduced conflict intersection (RCI) improvements in place (to be constructed with TIP U-6192). Note that capacity analysis was conducted during the weekday AM and PM peak hours to be consistent with NCDOT traffic forecasts and capacity analysis standards. Below is a quick summary of the analysis results:

- No significant LOS decline or traffic delay increase is found at any of the intersections of US 15-501 at Lystra Road, US 15-501 at Briar Chapel Parkway/Vickers Road, and US 15-501 at Jack Bennett Road.

- The intersection of US 15-501 at Poplar Street and Hidden Oaks Court (with existing geometrics and traffic control) is found to operate LOS F at the stop-controlled approaches under the Build conditions with reduced traffic delay (than 2026 conditions). Storage lengths of the existing dedicate turn lanes are found to be adequate to accommodate future vehicle queues.
- **A supplement analysis (after the TIA submittal)** was conducted in this addendum to address traffic conditions in case small group activities (such as college bible study groups, etc.) are planned during weekdays. To be conservative, 75 inbound and 75 outbound vehicular trips were added to the PM peak analysis of the TIA. Based on the supplemental analysis results, the addition of small group activities will only lead to minimal increases of traffic delay at the study intersections. No significant LOS decline, or delay increase is found at any of the adjacent roadways or intersections in the study area.

Roadway Improvement Recommendations

The proposed Summit Church is anticipated to generate significantly less weekday traffic than the current zoning designation or in comparison to other new developments along the US 15-501 corridor. Based on the capacity analysis results, the proposed Church is anticipated to have minimal traffic impact on adjacent roadways and study intersections.

Although the Church is expected to generate significant amount of traffic on a Sunday, total traffic within the study area could be less since baseline traffic on adjacent streets is typically much lower on a Sunday (60% to 75% of weekday traffic volumes). Nevertheless, due to the project location, coordination with the NCDOT is recommended to ensure consistencies between this project and roadway improvements planned by TIP U-6192.

The roadway improvements recommended by the TIA is summarized below:

US 15-501 at Site Access #1 (future right-in/right-out)

- Construct Site Access #1 with one inbound and one outbound lane under STOP control.
- Provide a dedicated right-turn lane with 150 feet of storage and appropriate taper along northbound US 15-501 at this location.
- Provide sufficient internal protection stem length at Site Access #1.

US 15-501 at Site Access #2 (future right-in/right-out)

- Construct Site Access #2 with one inbound and one outbound lane under STOP control.
- Provide a dedicated right-turn lane with 100 feet of storage and appropriate taper along northbound US 15-501 at this location.
- Provide sufficient internal protection stem length at Site Access #2.

Coordination with NCDOT TIP

- Gannett Fleming recommends the proposed development coordinate with the NCDOT to ensure consistent design between this project and the roadway improvements planned by TIP U-6192, and to provide sufficient spacing between Site Access #1 and Site Access #2 so locations of U-turn bulbs with the TIP project can be shifted and aligned with the planned site driveways to improve community access while maintaining traffic operations and safety along the site frontage of US 15-501.

Additional Traffic Management Considerations

During the public hearings, residents and board members expressed concerns regarding traffic management plans during Sundy peak hours. Following discussions with the project development team, evidently Summit Church has significant experience in implementing traffic management strategies and forming dedicated traffic control teams at various other locations.

Some of the common traffic management strategies may include:

- Adopt **transportation demand management (TDM) strategies**, including carpooling and ridesharing, to connect key gathering points like downtown Pittsboro, Chapel Hill, and other church locations with the project site.
- Deploy **signage** ahead of large events to alert drivers of anticipated traffic and ensure smoother traffic flow.
- During large events with full occupancy at the Church sanctuary, implement **traffic management** measures and station **traffic control** staff at key locations where significant vehicular and pedestrian traffic conflicts occur.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J.R. "JOEY" HOPKINS
SECRETARY

September 13, 2024

MEMORANDUM

In reply, refer to
File No. SC-2024-160

TO: Jeron Monroe, District Engineer
Division 8, District 1

Document Sent Electronically

FROM: Madonna Saleh, Design Engineer
Congestion Management Section

SUBJECT: Preliminary Review for the Summit Church Chatham County in Chapel Hill, Chatham County

The Congestion Management Section has performed a preliminary review of the Traffic Impact Analysis (TIA) for the subject site. The key dates regarding this development are as follows:

Date Received by This Office	08/19/24	Date of Site Plan	05/07/24
		Date of Sealed TIA	08/16/24

X	We consider the Traffic Impact Analysis to substantially meet our criteria for further review and comments. This review has been added to our queue of projects to perform a more detailed review that will be submitted under separate cover at a later date.
	We require additional information from the TIA preparer as noted on the attached list. We are unable to perform a thorough review until we receive this information.
	We have concerns with the Traffic Impact Analysis. The attached list includes inconsistencies or other questionable aspects that vary from our recommended practices and require further explanation or justification. A revised TIA should be submitted before a thorough review can be completed.

Based on this preliminary review, the TIA is "Complete" according to N.C.G.S.136-93.1A

Please refer to the Driveway Manual and the Capacity Analysis Guidelines available via https://connect.ncdot.gov/resources/safety/Pages/Congestion-Management.aspx for additional information. This letter is only being distributed electronically and should be considered as the official documentation. If we can provide further assistance with this project or if you require a paper copy of this letter, please contact me or Nicholas C. Lineberger, P.E.

NCL:ms

cc: R. Blakley, P.E.
B. K. Mayhew, P.E.
T. J. Fowler, P.E.
D. Y. Ishak
A. Kluttz, P.E.
J. H. Grant, P.E.
B. Wan, P.E. (Gannett Fleming)
D.B. Willett

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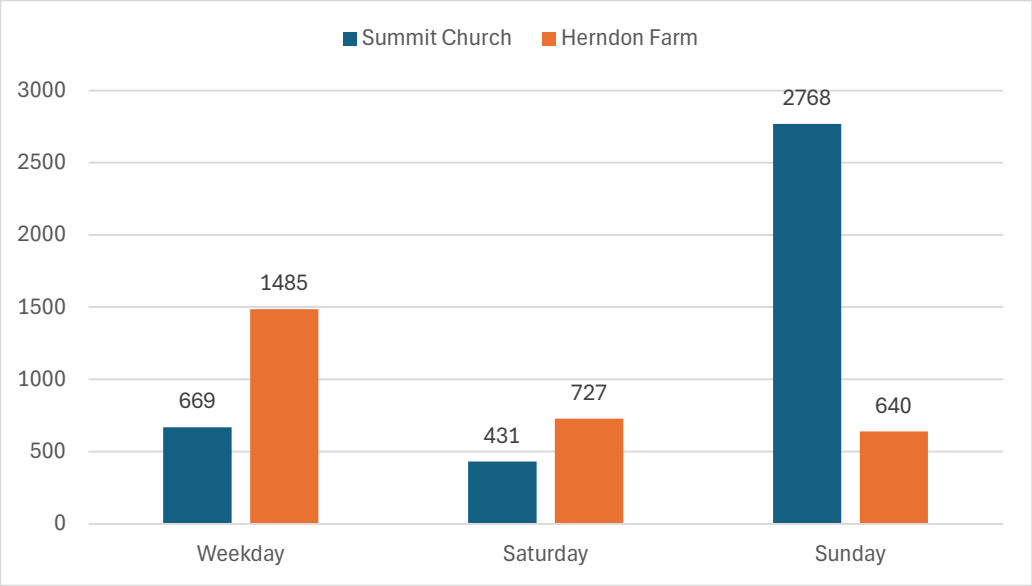
Website: www.ncdot.gov

Location:
750 N. GREENFIELD PARKWAY
GARNER, NC 27529

Project	LUC	Density	Weekday	Saturday	Sunday	SunPeak	Weekly
Summit Church	560	88	669	431	2768	912	
	Total		669	431	2768	912	6544
Herndon Farm	251	170	733	483	423	41	
	253	125	276	182	159	15	
	565	10	476	62	58	18	
	Total		1485	727	640	74	8792
Vickers Village TIA	210	225	2128	2133	1908	187	
	710	25	347	55	18	5	
	820	50	1851	2330	949	118	
	821	50	4725	5808	4244	380	
	821	50	3376	4053	2134	236	
	Total		5851	6241	4060	428	39556
Vickers Village Site Plan	210	189	1782	1792	1603	157	
	822	25	1361	1634	860	95	
	Total		3143	3426	2463	252	21604
Womble/Catalyst	221	243	1103	1111	916	78	
	720	15	540	207	17	3	
	Total		1643	1318	933	81	10466

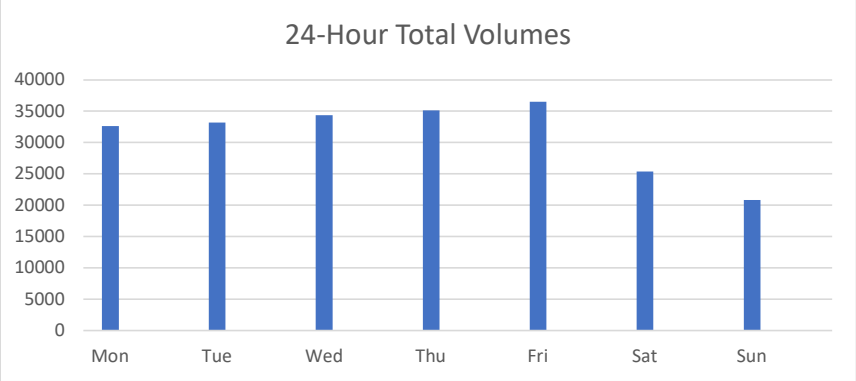


NCDOT

0530000479 Weekly Volume Report - Mon 08/26/2024 - Sun 09/01/2024

Location ID:	0530000479	**Type:**	SPOT
Located On:	US 1	**NORTH OF:**	NC 42
Direction	2-WAY		
Community:	-	**Period:**	Mon 08/26/2024 - Sun 09/01/2024
AADT:			

Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg
12:00 AM	146	161	170	181	273	338	226	214
1:00 AM	104	129	134	147	159	228	155	151
2:00 AM	94	124	121	143	143	123	94	120
3:00 AM	136	132	138	154	167	101	96	132
4:00 AM	415	398	379	393	349	154	121	316
5:00 AM	1075	1163	1191	1155	877	324	217	857
6:00 AM	2040	2061	2031	1974	1772	580	340	1543
7:00 AM	2814	2915	2962	2907	2656	832	534	2231
8:00 AM	2119	2116	2263	2152	1974	1134	844	1800
9:00 AM	1757	1749	1772	1857	1842	1495	1096	1653
10:00 AM	1751	1671	1681	1747	1919	1761	1448	1711
11:00 AM	1704	1713	1794	1817	2051	1847	1574	1786
12:00 PM	1791	1823	1856	1964	2244	1853	1685	1888
1:00 PM	1862	1919	1957	1963	2292	1916	1668	1940
2:00 PM	2109	2162	2187	2357	2643	1831	1686	2139
3:00 PM	2262	2377	2439	2582	2823	1804	1625	2273
4:00 PM	2659	2669	2664	2802	2684	1829	1593	2414
5:00 PM	2650	2662	2808	2703	2729	1586	1554	2385
6:00 PM	1830	1889	1989	1933	2199	1499	1327	1809
7:00 PM	1173	1181	1328	1401	1606	1241	1105	1291
8:00 PM	821	932	1019	1045	1108	1037	902	981
9:00 PM	592	624	722	797	793	832	281	663
10:00 PM	416	416	469	583	706	609	370	510
11:00 PM	285	227	254	395	510	414	287	339
Total	**32605**	**33213**	**34328**	**35152**	**36519**	**25368**	**20828**	
24HrTotal		32605	33213	34328	35152	36519	25368	31145
AM Pk Hr	7:00	7:00	7:00	7:00	7:00	11:00	11:00	
AM Peak	2814	2915	2962	2907	2656	1847	1574	2525
PM Pk Hr	4:00	4:00	5:00	4:00	3:00	1:00	2:00	
PM Peak	2659	2669	2808	2802	2823	1916	1686	2480
% Peak Hr	8.63%	8.78%	8.63%	8.27%	7.73%	7.55%	8.09%	8.43%
% Peak Hr		8.63%	8.78%	8.63%	8.27%	7.73%	7.55%	8.24%



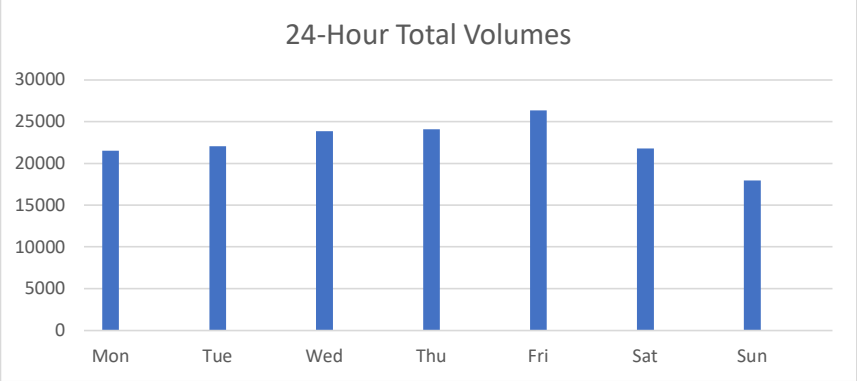
20828 Sunday
34803 Weekday Avg
0.598 Ratio

NCDOT

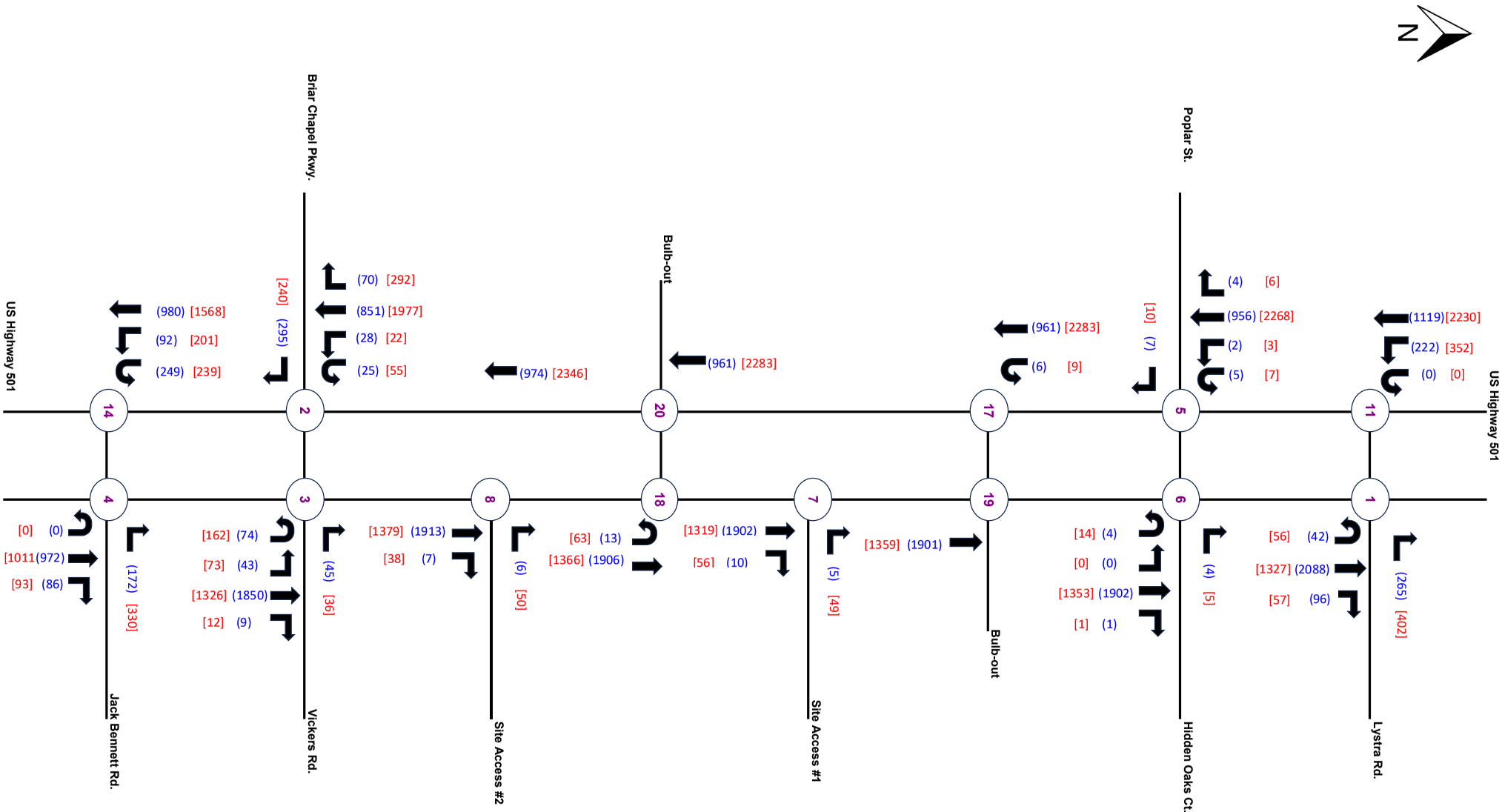
0190000004 Weekly Volume Report - Mon 04/29/2019 - Sun 05/05/2019

Location ID:	0190000004	**Type:**	SPOT
Located On:	US 64	**EAST OF:**	SR 1716 BIG WOODS RD
Direction	2-WAY		
Community:	-	**Period:**	Mon 04/29/2019 - Sun 05/05/2019
AADT:			

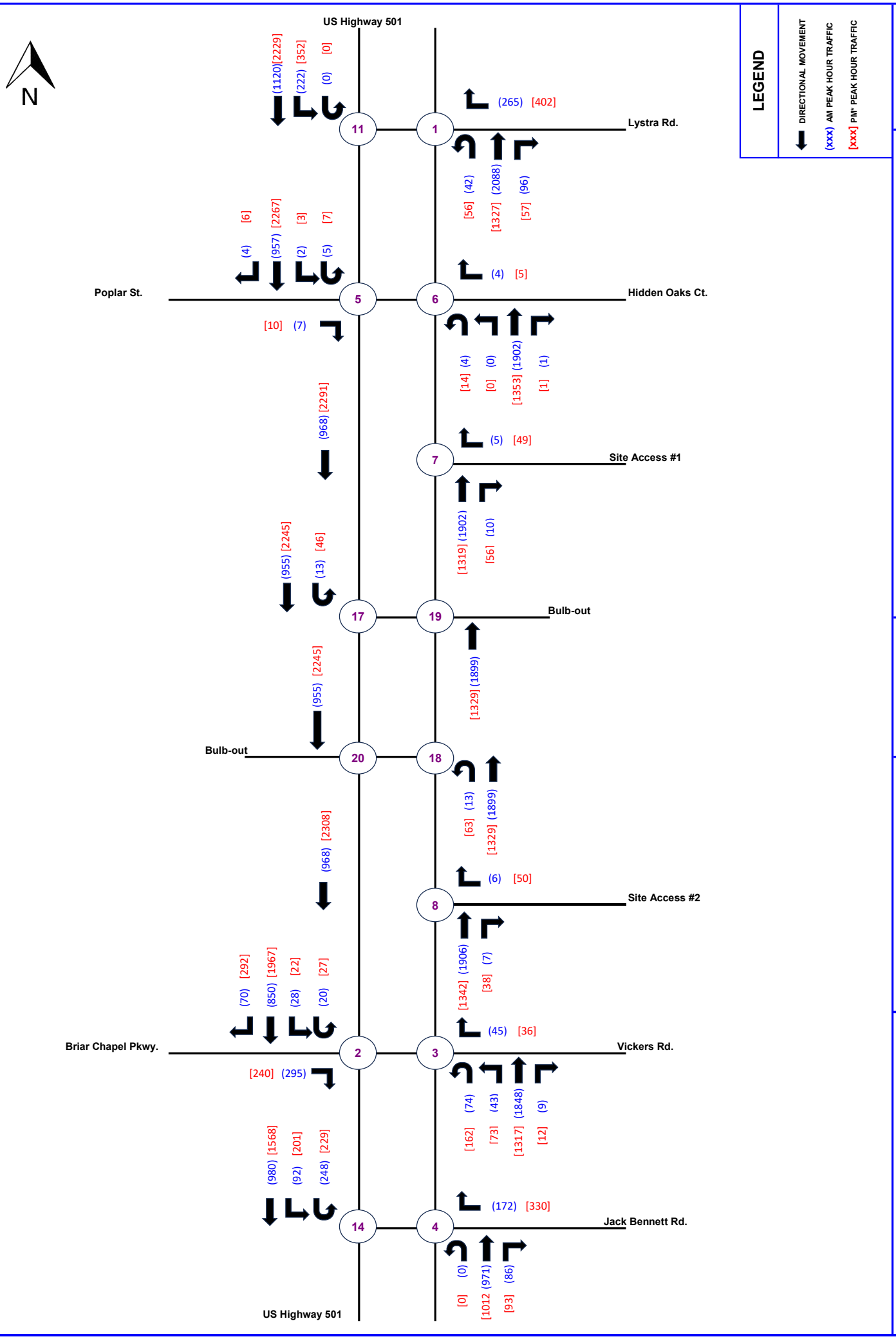
Start Time	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Avg
12:00 AM	89	61	72	115	118	170	151	111
1:00 AM	60	45	56	52	52	104	91	66
2:00 AM	34	28	48	37	51	60	62	46
3:00 AM	65	64	79	62	65	58	47	63
4:00 AM	134	111	129	137	113	70	69	109
5:00 AM	440	416	394	396	375	199	109	333
6:00 AM	1340	1291	1227	1339	1198	612	208	1031
7:00 AM	2013	2006	1920	1992	1920	876	375	1586
8:00 AM	1694	1722	1837	1726	1801	1126	586	1499
9:00 AM	1317	1322	1569	1300	1415	1350	862	1305
10:00 AM	1125	1078	1226	1223	1286	1498	1175	1230
11:00 AM	1076	1070	1201	1164	1303	1542	1203	1223
12:00 PM	1092	1164	1249	1263	1369	1641	1489	1324
1:00 PM	1086	1250	1336	1387	1640	1506	1545	1393
2:00 PM	1224	1242	1549	1488	1801	1624	1491	1488
3:00 PM	1453	1680	1603	1737	2034	1616	1644	1681
4:00 PM	1728	1824	1992	2015	2303	1754	1713	1904
5:00 PM	1936	1986	2149	2258	2272	1566	1390	1937
6:00 PM	1428	1417	1539	1570	1739	1308	1180	1454
7:00 PM	848	830	953	1018	1142	1009	976	968
8:00 PM	599	582	659	727	836	761	732	699
9:00 PM	388	473	507	544	659	617	430	517
10:00 PM	226	245	342	357	543	428	261	343
11:00 PM	124	158	225	181	306	285	160	206
Total	**21519**	**22065**	**23861**	**24088**	**26341**	**21780**	**17949**	
24HrTotal		21519	22065	23861	24088	26341	21780	22515
AM Pk Hr	7:00	7:00	7:00	7:00	7:00	11:00	11:00	
AM Peak	2013	2006	1920	1992	1920	1542	1203	1799
PM Pk Hr	5:00	5:00	5:00	5:00	4:00	4:00	4:00	
PM Peak	1936	1986	2149	2258	2303	1754	1713	2014
% Peak Hr	9.35%	9.09%	9.01%	9.37%	8.74%	8.05%	9.54%	9.00%
% Peak Hr		9.35%	9.09%	9.01%	9.37%	8.74%	8.05%	9.02%

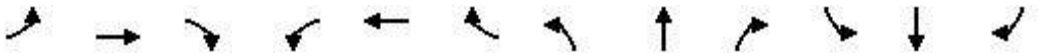


17949 Sunday
24089 Weekday Avg
0.745 Ratio



GANNETT FLEMING / TRANSYSTEMS	CHATHAM COUNTY NORTH CAROLINA	FIGURE 14*	2036 TIP SCENARIO A BUILDOUT TURNING MOVEMENT VOLUMES	SCALE: NONE


N
US Highway 501
Lystra Rd.
Poplar St.
Hidden Oaks Ct.
Site Access #1
Bulb-out
Bulb-out
Site Access #2
Briar Chapel Pkwy.
Vickers Rd.
Jack Bennett Rd.
US Highway 501
11
1
5
6
7
17
19
20
18
8
2
3
14
4
LEGEND
DIRECTIONAL MOVEMENT
(xxx) AM PEAK HOUR TRAFFIC
[xxx] PM* PEAK HOUR TRAFFIC
SCALE: NONE
2036 TIP SCENARIO B BUILDOUT TURNING MOVEMENT VOLUMES
FIGURE 15*
CHATHAM COUNTY NORTH CAROLINA
TRANSYSTEMS
GANNETT FLEMING

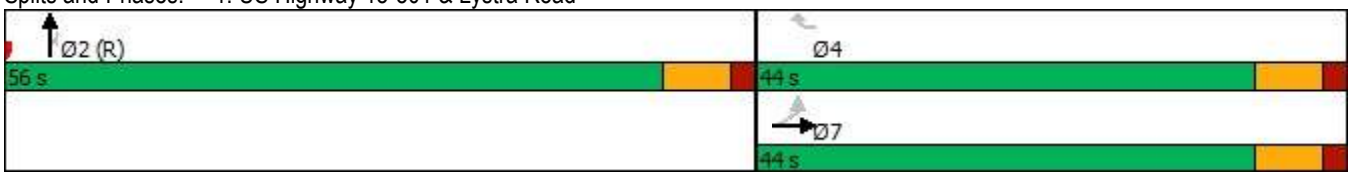


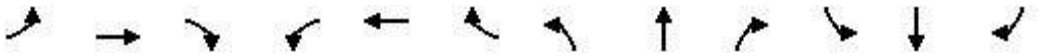
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	352	0	0	0	402	0	1327	57	0	0	0
Future Volume (vph)	4	352	0	0	0	402	0	1327	57	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		225	0		0
Storage Lanes	0		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.865			0.850			
Flt Protected		0.999										
Satd. Flow (prot)	0	1861	0	0	0	1611	0	3539	1583	0	0	0
Flt Permitted		0.999										
Satd. Flow (perm)	0	1861	0	0	0	1611	0	3539	1583	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			55			55			55	
Link Distance (ft)		217			1097			805			1004	
Travel Time (s)		3.3			13.6			10.0			12.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	391	0	0	0	447	0	1474	63	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	395	0	0	0	447	0	1474	63	0	0	0
Turn Type	Perm	NA				Perm		NA	Perm			
Protected Phases		7						2				
Permitted Phases	7					4			2			
Detector Phase	7	7				4		2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0				7.0		14.0	14.0			
Minimum Split (s)	14.0	14.0				14.0		21.0	21.0			
Total Split (s)	44.0	44.0				44.0		56.0	56.0			
Total Split (%)	44.0%	44.0%				44.0%		56.0%	56.0%			
Maximum Green (s)	37.0	37.0				37.0		49.0	49.0			
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			
Total Lost Time (s)		5.0				5.0		5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0				3.0		3.0	3.0			
Recall Mode	None	None				None		C-Max	C-Max			
Act Effct Green (s)		33.8				33.8		56.2	56.2			
Actuated g/C Ratio		0.34				0.34		0.56	0.56			
v/c Ratio		0.63				0.82		0.74	0.07			
Control Delay		31.9				43.0		20.4	12.0			
Queue Delay		0.0				0.0		0.0	0.0			
Total Delay		31.9				43.0		20.4	12.0			
LOS		C				D		C	B			
Approach Delay		31.9			43.0			20.1				
Approach LOS		C			D			C				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		205				253		361	18			
Queue Length 95th (ft)		285				356		495	41			
Internal Link Dist (ft)		137			1017			725			924	
Turn Bay Length (ft)									225			
Base Capacity (vph)		725				628		1988	889			
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		0.54				0.71		0.74	0.07			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 26.4		Intersection LOS: C	
Intersection Capacity Utilization 92.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: US Highway 15-501 & Lystra Road





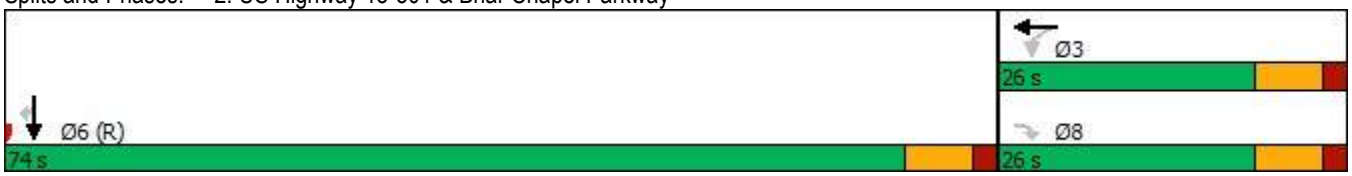
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	240	162	73	0	0	0	0	0	1977	292
Future Volume (vph)	0	0	240	162	73	0	0	0	0	0	1977	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		125
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.865									0.850
Flt Protected					0.967							
Satd. Flow (prot)	0	0	1611	0	1801	0	0	0	0	0	3539	1583
Flt Permitted					0.967							
Satd. Flow (perm)	0	0	1611	0	1801	0	0	0	0	0	3539	1583
Right Turn on Red			No	No		No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		1010			356			1194			359	
Travel Time (s)		27.5			9.7			14.8			4.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	267	180	81	0	0	0	0	0	2197	324
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	267	0	261	0	0	0	0	0	2197	324
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					3						6	
Permitted Phases			8	3								6
Detector Phase			8	3	3						6	6
Switch Phase												
Minimum Initial (s)			7.0	7.0	7.0						14.0	14.0
Minimum Split (s)			14.0	14.0	14.0						21.0	21.0
Total Split (s)			26.0	26.0	26.0						74.0	74.0
Total Split (%)			26.0%	26.0%	26.0%						74.0%	74.0%
Maximum Green (s)			19.0	19.0	19.0						67.0	67.0
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
Total Lost Time (s)			5.0		5.0						5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)			3.0	3.0	3.0						3.0	3.0
Recall Mode			None	None	None						C-Max	C-Max
Act Effct Green (s)			20.2		20.2						69.8	69.8
Actuated g/C Ratio			0.20		0.20						0.70	0.70
v/c Ratio			0.82		0.72						0.89	0.29
Control Delay			59.5		47.1						18.3	6.7
Queue Delay			0.0		0.0						0.0	0.0
Total Delay			59.5		47.1						18.3	6.7
LOS			E		D						B	A
Approach Delay		59.5			47.1						16.8	
Approach LOS		E			D						B	

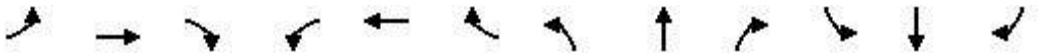
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)			162		162						530	71
Queue Length 95th (ft)			#288		251						677	110
Internal Link Dist (ft)		930			276			1114			279	
Turn Bay Length (ft)												125
Base Capacity (vph)			338		378						2471	1105
Starvation Cap Reductn			0		0						0	0
Spillback Cap Reductn			0		0						0	0
Storage Cap Reductn			0		0						0	0
Reduced v/c Ratio			0.79		0.69						0.89	0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 5 (5%), Referenced to phase 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.89			
Intersection Signal Delay: 23.2		Intersection LOS: C	
Intersection Capacity Utilization 94.8%		ICU Level of Service F	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: US Highway 15-501 & Briar Chapel Parkway



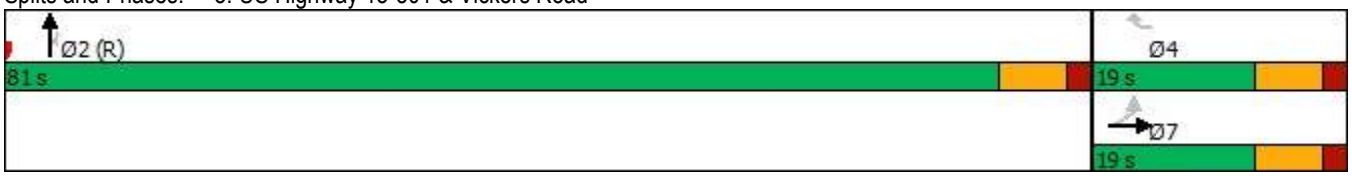


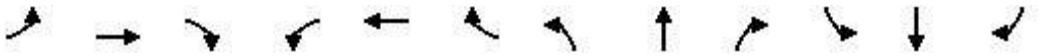
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	22	0	0	0	36	0	1326	12	0	0	0
Future Volume (vph)	55	22	0	0	0	36	0	1326	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		100	0		0
Storage Lanes	0		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.865			0.850			
Flt Protected		0.965										
Satd. Flow (prot)	0	1798	0	0	0	1611	0	3539	1583	0	0	0
Flt Permitted		0.965										
Satd. Flow (perm)	0	1798	0	0	0	1611	0	3539	1583	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		389			1031			328			1072	
Travel Time (s)		10.6			28.1			4.1			13.3	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	24	0	0	0	40	0	1473	13	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	85	0	0	0	40	0	1473	13	0	0	0
Turn Type	Perm	NA				Perm		NA	Perm			
Protected Phases		7						2				
Permitted Phases	7					4			2			
Detector Phase	7	7				4		2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0				7.0		14.0	14.0			
Minimum Split (s)	14.0	14.0				14.0		21.0	21.0			
Total Split (s)	19.0	19.0				19.0		81.0	81.0			
Total Split (%)	19.0%	19.0%				19.0%		81.0%	81.0%			
Maximum Green (s)	12.0	12.0				12.0		74.0	74.0			
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			
Total Lost Time (s)		5.0				5.0		5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0				3.0		3.0	3.0			
Recall Mode	None	None				None		C-Max	C-Max			
Act Effct Green (s)		11.8				11.8		82.0	82.0			
Actuated g/C Ratio		0.12				0.12		0.82	0.82			
v/c Ratio		0.40				0.21		0.51	0.01			
Control Delay		46.1				41.8		2.3	1.8			
Queue Delay		0.0				0.0		0.0	0.0			
Total Delay		46.1				41.8		2.3	1.8			
LOS		D				D		A	A			
Approach Delay		46.1			41.8			2.3				
Approach LOS		D			D			A				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		51				23		56	1			
Queue Length 95th (ft)		96				54		81	m2			
Internal Link Dist (ft)		309			951			248			992	
Turn Bay Length (ft)									100			
Base Capacity (vph)		251				225		2901	1297			
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		0.34				0.18		0.51	0.01			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 10 (10%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.51			
Intersection Signal Delay: 5.6		Intersection LOS: A	
Intersection Capacity Utilization 60.8%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 3: US Highway 15-501 & Vickers Road



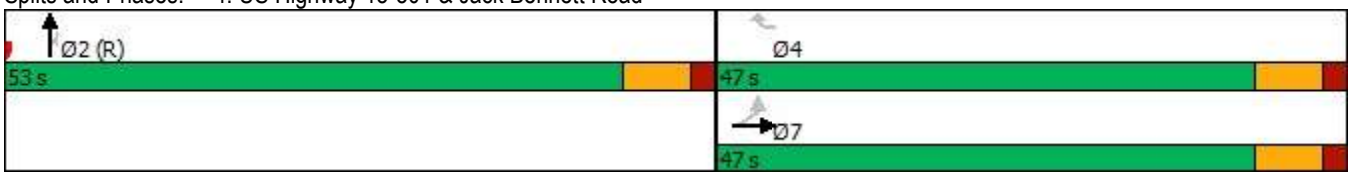


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	239	201	0	0	0	330	0	1011	93	0	0	0
Future Volume (vph)	239	201	0	0	0	330	0	1011	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		400	0		375	0		0
Storage Lanes	0		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected		0.974										
Satd. Flow (prot)	0	1814	0	0	0	2787	0	3539	1583	0	0	0
Flt Permitted		0.974										
Satd. Flow (perm)	0	1814	0	0	0	2787	0	3539	1583	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		222			1065			1061			1064	
Travel Time (s)		6.1			29.0			13.2			13.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	266	223	0	0	0	367	0	1123	103	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	489	0	0	0	367	0	1123	103	0	0	0
Turn Type	Perm	NA				Perm		NA	Perm			
Protected Phases		7						2				
Permitted Phases	7					4			2			
Detector Phase	7	7				4		2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0				7.0		14.0	14.0			
Minimum Split (s)	14.0	14.0				14.0		21.0	21.0			
Total Split (s)	47.0	47.0				47.0		53.0	53.0			
Total Split (%)	47.0%	47.0%				47.0%		53.0%	53.0%			
Maximum Green (s)	40.0	40.0				40.0		46.0	46.0			
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			
Total Lost Time (s)		5.0				5.0		5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0				3.0		3.0	3.0			
Recall Mode	None	None				None		C-Max	C-Max			
Act Effct Green (s)		34.5				34.5		55.5	55.5			
Actuated g/C Ratio		0.34				0.34		0.56	0.56			
v/c Ratio		0.78				0.38		0.57	0.12			
Control Delay		27.9				25.0		17.1	12.8			
Queue Delay		0.0				0.0		0.0	0.0			
Total Delay		27.9				25.0		17.1	12.8			
LOS		C				C		B	B			
Approach Delay		27.9			25.0			16.7				
Approach LOS		C			C			B				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		269				97		236	30			
Queue Length 95th (ft)		m265				125		349	66			
Internal Link Dist (ft)		142			985			981			984	
Turn Bay Length (ft)						400			375			
Base Capacity (vph)		761				1170		1964	878			
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		0.64				0.31		0.57	0.12			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 50			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.78			
Intersection Signal Delay: 20.8		Intersection LOS: C	
Intersection Capacity Utilization 75.8%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 4: US Highway 15-501 & Jack Bennett Road



Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	10	14	4	0	0	0	0	0	2268	6
Future Vol, veh/h	0	0	10	14	4	0	0	0	0	0	2268	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	16	4	0	0	0	0	0	2520	7

Major/Minor	Minor2			Minor1				Major2		
Conflicting Flow All	-	-	1260	1260	2527	-		-	-	0
Stage 1	-	-	-	0	0	-		-	-	-
Stage 2	-	-	-	1260	2527	-		-	-	-
Critical Hdwy	-	-	6.94	7.54	6.54	-		-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-		-	-	-
Critical Hdwy Stg 2	-	-	-	6.54	5.54	-		-	-	-
Follow-up Hdwy	-	-	3.32	3.52	4.02	-		-	-	-
Pot Cap-1 Maneuver	0	0	162	127	27	0		0	-	-
Stage 1	0	0	-	-	-	0		0	-	-
Stage 2	0	0	-	180	55	0		0	-	-
Platoon blocked, %									-	-
Mov Cap-1 Maneuver	-	-	162	118	27	-		-	-	-
Mov Cap-2 Maneuver	-	-	-	118	27	-		-	-	-
Stage 1	-	-	-	-	-	-		-	-	-
Stage 2	-	-	-	168	55	-		-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	28.9	80.1	0
HCM LOS	D	F	

Minor Lane/Major Mvmt	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	162	67	-	-
HCM Lane V/C Ratio	0.069	0.299	-	-
HCM Control Delay (s)	28.9	80.1	-	-
HCM Lane LOS	D	F	-	-
HCM 95th %tile Q(veh)	0.2	1.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	4	0	0	0	5	0	1353	4	0	0	0
Future Vol, veh/h	7	4	0	0	0	5	0	1353	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	1084969472		-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	4	0	0	0	6	0	1503	4	0	0	0

Major/Minor	Minor2		Minor1			Major1			
Conflicting Flow All	752	1507	-	-	-	752	-	0	0
Stage 1	0	0	-	-	-	-	-	-	-
Stage 2	752	1507	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	-	-	-	6.94	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	-	-	-	3.32	-	-	-
Pot Cap-1 Maneuver	299	120	0	0	0	353	0	-	-
Stage 1	-	-	0	0	0	-	0	-	-
Stage 2	368	182	0	0	0	-	0	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	294	120	-	-	-	353	-	-	-
Mov Cap-2 Maneuver	294	120	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-
Stage 2	362	182	-	-	-	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	24.9	15.4	0
HCM LOS	C	C	

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	-	-	193	353
HCM Lane V/C Ratio	-	-	0.063	0.016
HCM Control Delay (s)	-	-	24.9	15.4
HCM Lane LOS	-	-	C	C
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	49	1319	56	0	0
Future Vol, veh/h	0	49	1319	56	0	0
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	-	150	-	-
Veh in Median Storage, #	0	-	0	-	1084	271104
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	54	1466	62	0	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	733	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	363	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	363	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	16.7	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	NBR	WBLn1
Capacity (veh/h)	-	-	363
HCM Lane V/C Ratio	-	-	0.15
HCM Control Delay (s)	-	-	16.7
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	50	1379	38	0	0
Future Vol, veh/h	0	50	1379	38	0	0
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	-	100	-	-
Veh in Median Storage, #	0	-	0	-	1083228160	
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	56	1532	42	0	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	766	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	345	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	345	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	17.4	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	NBR	WBLn1
Capacity (veh/h)	-	-	345
HCM Lane V/C Ratio	-	-	0.161
HCM Control Delay (s)	-	-	17.4
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	0	0	1359	0	0
Future Vol, veh/h	9	0	0	1359	0	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	1084	417536	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	0	0	1510	0	0

Major/Minor	Minor2		Major1	
Conflicting Flow All	755	-	-	0
Stage 1	0	-	-	-
Stage 2	755	-	-	-
Critical Hdwy	6.84	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-
Follow-up Hdwy	3.52	-	-	-
Pot Cap-1 Maneuver	345	0	0	-
Stage 1	-	0	0	-
Stage 2	425	0	0	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	345	-	-	-
Mov Cap-2 Maneuver	345	-	-	-
Stage 1	-	-	-	-
Stage 2	425	-	-	-

Approach	EB	NB
HCM Control Delay, s	15.7	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	EBLn1
Capacity (veh/h)	-	345
HCM Lane V/C Ratio	-	0.029
HCM Control Delay (s)	-	15.7
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	0.1

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	0	0	0	0	2283
Future Vol, veh/h	63	0	0	0	0	2283
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	-	-	-	-	-
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	70	0	0	0	0	2537

Major/Minor	Minor1		Major2	
Conflicting Flow All	1269	-	-	-
Stage 1	0	-	-	-
Stage 2	1269	-	-	-
Critical Hdwy	6.84	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-
Follow-up Hdwy	3.52	-	-	-
Pot Cap-1 Maneuver	160	0	0	-
Stage 1	-	0	0	-
Stage 2	228	0	0	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	160	-	-	-
Mov Cap-2 Maneuver	160	-	-	-
Stage 1	-	-	-	-
Stage 2	228	-	-	-

Approach	WB	SB
HCM Control Delay, s	43.9	0
HCM LOS	E	

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	160	-
HCM Lane V/C Ratio	0.438	-
HCM Control Delay (s)	43.9	-
HCM Lane LOS	E	-
HCM 95th %tile Q(veh)	2	-

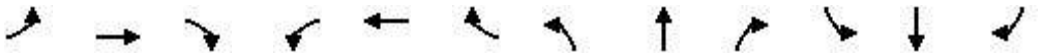
Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	56	0	0	0	0	2230
Future Vol, veh/h	56	0	0	0	0	2230
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	-	-	-	-	-
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	62	0	0	0	0	2478

Major/Minor	Minor1			Major2	
Conflicting Flow All	1239	-		-	-
Stage 1	0	-		-	-
Stage 2	1239	-		-	-
Critical Hdwy	6.84	-		-	-
Critical Hdwy Stg 1	-	-		-	-
Critical Hdwy Stg 2	5.84	-		-	-
Follow-up Hdwy	3.52	-		-	-
Pot Cap-1 Maneuver	168	0		0	-
Stage 1	-	0		0	-
Stage 2	236	0		0	-
Platoon blocked, %					-
Mov Cap-1 Maneuver	168	-		-	-
Mov Cap-2 Maneuver	168	-		-	-
Stage 1	-	-		-	-
Stage 2	236	-		-	-

Approach	WB	SB
HCM Control Delay, s	38.5	0
HCM LOS	E	

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	168	-
HCM Lane V/C Ratio	0.37	-
HCM Control Delay (s)	38.5	-
HCM Lane LOS	E	-
HCM 95th %tile Q(veh)	1.6	-

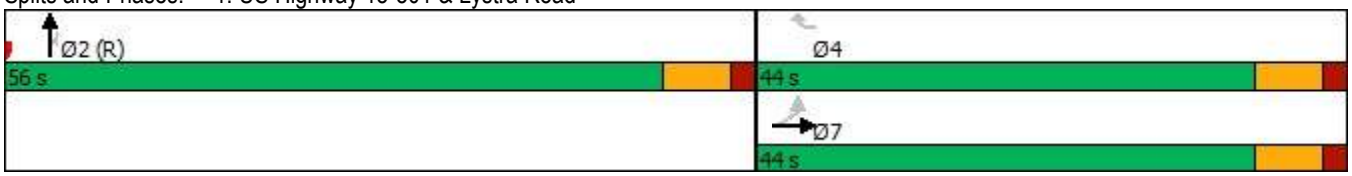


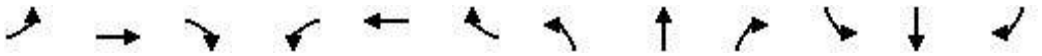
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	352	0	0	0	402	0	1327	57	0	0	0
Future Volume (vph)	4	352	0	0	0	402	0	1327	57	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		225	0		0
Storage Lanes	0		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.865			0.850			
Flt Protected		0.999										
Satd. Flow (prot)	0	1861	0	0	0	1611	0	3539	1583	0	0	0
Flt Permitted		0.999										
Satd. Flow (perm)	0	1861	0	0	0	1611	0	3539	1583	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			55			55			30	
Link Distance (ft)		217			1097			805			1004	
Travel Time (s)		3.3			13.6			10.0			22.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	4	391	0	0	0	447	0	1474	63	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	395	0	0	0	447	0	1474	63	0	0	0
Turn Type	Perm	NA				Perm		NA	Perm			
Protected Phases		7						2				
Permitted Phases	7					4			2			
Detector Phase	7	7				4		2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0				7.0		14.0	14.0			
Minimum Split (s)	14.0	14.0				14.0		21.0	21.0			
Total Split (s)	44.0	44.0				44.0		56.0	56.0			
Total Split (%)	44.0%	44.0%				44.0%		56.0%	56.0%			
Maximum Green (s)	37.0	37.0				37.0		49.0	49.0			
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			
Total Lost Time (s)		5.0				5.0		5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0				3.0		3.0	3.0			
Recall Mode	None	None				None		C-Max	C-Max			
Act Effct Green (s)		33.8				33.8		56.2	56.2			
Actuated g/C Ratio		0.34				0.34		0.56	0.56			
v/c Ratio		0.63				0.82		0.74	0.07			
Control Delay		31.9				43.0		20.4	12.0			
Queue Delay		0.0				0.0		0.0	0.0			
Total Delay		31.9				43.0		20.4	12.0			
LOS		C				D		C	B			
Approach Delay		31.9			43.0			20.1				
Approach LOS		C			D			C				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		205				253		361	18			
Queue Length 95th (ft)		285				356		495	41			
Internal Link Dist (ft)		137			1017			725			924	
Turn Bay Length (ft)									225			
Base Capacity (vph)		725				628		1988	889			
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		0.54				0.71		0.74	0.07			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 60			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 26.4		Intersection LOS: C	
Intersection Capacity Utilization 92.8%		ICU Level of Service F	
Analysis Period (min) 15			

Splits and Phases: 1: US Highway 15-501 & Lystra Road





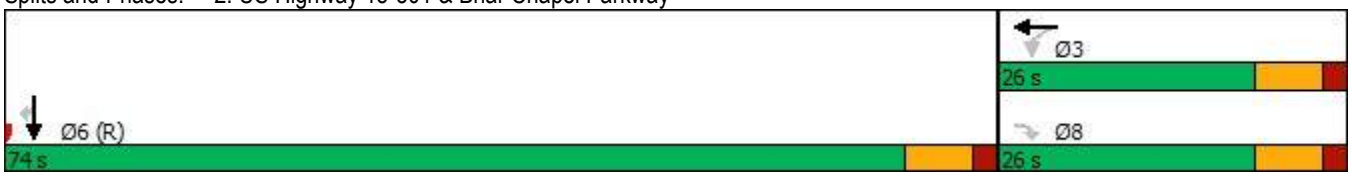
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	240	162	73	0	0	0	0	0	1967	292
Future Volume (vph)	0	0	240	162	73	0	0	0	0	0	1967	292
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		125
Storage Lanes	0		1	0		0	0		0	0		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.865									0.850
Flt Protected					0.967							
Satd. Flow (prot)	0	0	1611	0	1801	0	0	0	0	0	3539	1583
Flt Permitted					0.967							
Satd. Flow (perm)	0	0	1611	0	1801	0	0	0	0	0	3539	1583
Right Turn on Red			No	No		No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			55	
Link Distance (ft)		1010			356			1194			359	
Travel Time (s)		27.5			9.7			32.6			4.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	267	180	81	0	0	0	0	0	2186	324
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	267	0	261	0	0	0	0	0	2186	324
Turn Type			Perm	Perm	NA						NA	Perm
Protected Phases					3						6	
Permitted Phases			8	3								6
Detector Phase			8	3	3						6	6
Switch Phase												
Minimum Initial (s)			7.0	7.0	7.0						14.0	14.0
Minimum Split (s)			14.0	14.0	14.0						21.0	21.0
Total Split (s)			26.0	26.0	26.0						74.0	74.0
Total Split (%)			26.0%	26.0%	26.0%						74.0%	74.0%
Maximum Green (s)			19.0	19.0	19.0						67.0	67.0
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
Total Lost Time (s)			5.0		5.0						5.0	5.0
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)			3.0	3.0	3.0						3.0	3.0
Recall Mode			None	None	None						C-Max	C-Max
Act Effct Green (s)			20.2		20.2						69.8	69.8
Actuated g/C Ratio			0.20		0.20						0.70	0.70
v/c Ratio			0.82		0.72						0.88	0.29
Control Delay			59.5		47.2						18.0	6.7
Queue Delay			0.0		0.0						0.0	0.0
Total Delay			59.5		47.2						18.0	6.7
LOS			E		D						B	A
Approach Delay		59.5			47.2						16.5	
Approach LOS		E			D						B	

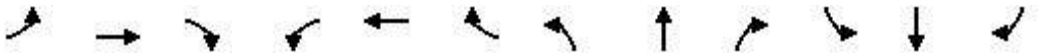
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)			162		162						523	71
Queue Length 95th (ft)			#288		251						668	110
Internal Link Dist (ft)		930			276			1114			279	
Turn Bay Length (ft)												125
Base Capacity (vph)			338		378						2471	1105
Starvation Cap Reductn			0		0						0	0
Spillback Cap Reductn			0		0						0	0
Storage Cap Reductn			0		0						0	0
Reduced v/c Ratio			0.79		0.69						0.88	0.29

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 5 (5%), Referenced to phase 6:SBT, Start of Green			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 23.0		Intersection LOS: C	
Intersection Capacity Utilization 94.5%		ICU Level of Service F	
Analysis Period (min) 15			

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: US Highway 15-501 & Briar Chapel Parkway



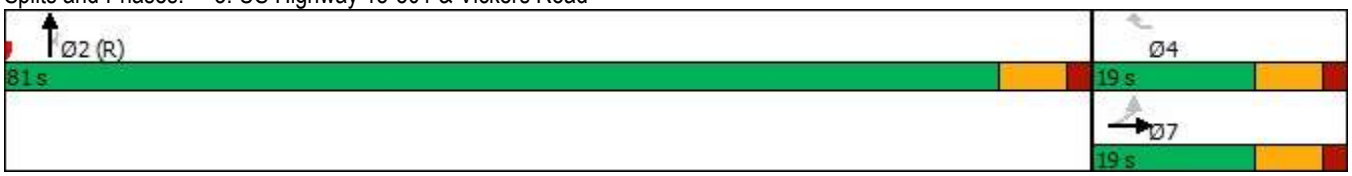


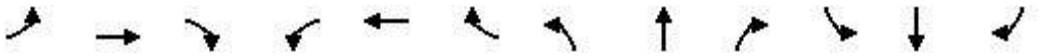
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	22	0	0	0	36	0	1317	12	0	0	0
Future Volume (vph)	27	22	0	0	0	36	0	1317	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		100	0		0
Storage Lanes	0		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.865			0.850			
Flt Protected		0.973										
Satd. Flow (prot)	0	1812	0	0	0	1611	0	3539	1583	0	0	0
Flt Permitted		0.973										
Satd. Flow (perm)	0	1812	0	0	0	1611	0	3539	1583	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			55			30	
Link Distance (ft)		389			1031			328			1072	
Travel Time (s)		10.6			28.1			4.1			24.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	24	0	0	0	40	0	1463	13	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	54	0	0	0	40	0	1463	13	0	0	0
Turn Type	Perm	NA				Perm		NA	Perm			
Protected Phases		7						2				
Permitted Phases	7					4			2			
Detector Phase	7	7				4		2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0				7.0		14.0	14.0			
Minimum Split (s)	14.0	14.0				14.0		21.0	21.0			
Total Split (s)	19.0	19.0				19.0		81.0	81.0			
Total Split (%)	19.0%	19.0%				19.0%		81.0%	81.0%			
Maximum Green (s)	12.0	12.0				12.0		74.0	74.0			
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			
Total Lost Time (s)		5.0				5.0		5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0				3.0		3.0	3.0			
Recall Mode	None	None				None		C-Max	C-Max			
Act Effct Green (s)		10.7				10.7		83.1	83.1			
Actuated g/C Ratio		0.11				0.11		0.83	0.83			
v/c Ratio		0.28				0.23		0.50	0.01			
Control Delay		44.3				43.6		2.0	1.5			
Queue Delay		0.0				0.0		0.0	0.0			
Total Delay		44.3				43.6		2.0	1.5			
LOS		D				D		A	A			
Approach Delay		44.3			43.6			2.0				
Approach LOS		D			D			A				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		32				24		48	1			
Queue Length 95th (ft)		68				55		74	m2			
Internal Link Dist (ft)		309			951			248			992	
Turn Bay Length (ft)									100			
Base Capacity (vph)		253				225		2941	1315			
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				0.18		0.50	0.01			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 11 (11%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 40			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.50			
Intersection Signal Delay: 4.5		Intersection LOS: A	
Intersection Capacity Utilization 60.6%		ICU Level of Service B	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 3: US Highway 15-501 & Vickers Road



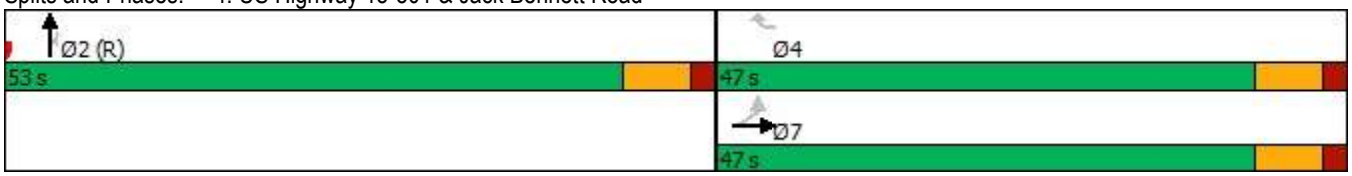


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	229	201	0	0	0	330	0	1012	93	0	0	0
Future Volume (vph)	229	201	0	0	0	330	0	1012	93	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		400	0		375	0		0
Storage Lanes	0		0	0		1	0		1	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected		0.974										
Satd. Flow (prot)	0	1814	0	0	0	2787	0	3539	1583	0	0	0
Flt Permitted		0.974										
Satd. Flow (perm)	0	1814	0	0	0	2787	0	3539	1583	0	0	0
Right Turn on Red	No		No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			55			30	
Link Distance (ft)		222			1065			1061			1064	
Travel Time (s)		6.1			29.0			13.2			24.2	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	254	223	0	0	0	367	0	1124	103	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	477	0	0	0	367	0	1124	103	0	0	0
Turn Type	Perm	NA				Perm		NA	Perm			
Protected Phases		7						2				
Permitted Phases	7					4			2			
Detector Phase	7	7				4		2	2			
Switch Phase												
Minimum Initial (s)	7.0	7.0				7.0		14.0	14.0			
Minimum Split (s)	14.0	14.0				14.0		21.0	21.0			
Total Split (s)	47.0	47.0				47.0		53.0	53.0			
Total Split (%)	47.0%	47.0%				47.0%		53.0%	53.0%			
Maximum Green (s)	40.0	40.0				40.0		46.0	46.0			
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			
Total Lost Time (s)		5.0				5.0		5.0	5.0			
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0				3.0		3.0	3.0			
Recall Mode	None	None				None		C-Max	C-Max			
Act Effct Green (s)		34.0				34.0		56.0	56.0			
Actuated g/C Ratio		0.34				0.34		0.56	0.56			
v/c Ratio		0.77				0.39		0.57	0.12			
Control Delay		28.0				25.4		16.8	12.6			
Queue Delay		0.0				0.0		0.0	0.0			
Total Delay		28.0				25.4		16.8	12.6			
LOS		C				C		B	B			
Approach Delay		28.0			25.4			16.4				
Approach LOS		C			C			B				

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)		263				98		233	30			
Queue Length 95th (ft)		m257				125		350	66			
Internal Link Dist (ft)		142			985			981			984	
Turn Bay Length (ft)						400			375			
Base Capacity (vph)		761				1170		1981	886			
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		0.63				0.31		0.57	0.12			

Intersection Summary			
Area Type:	Other		
Cycle Length: 100			
Actuated Cycle Length: 100			
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green			
Natural Cycle: 45			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.77			
Intersection Signal Delay: 20.7		Intersection LOS: C	
Intersection Capacity Utilization 75.3%		ICU Level of Service D	
Analysis Period (min) 15			
m Volume for 95th percentile queue is metered by upstream signal.			

Splits and Phases: 4: US Highway 15-501 & Jack Bennett Road



Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	10	14	4	0	0	0	0	0	2267	6
Future Vol, veh/h	0	0	10	14	4	0	0	0	0	0	2267	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	11	16	4	0	0	0	0	0	2519	7

Major/Minor	Minor2			Minor1				Major2		
Conflicting Flow All	-	-	1260	1260	2526	-		-	-	0
Stage 1	-	-	-	0	0	-		-	-	-
Stage 2	-	-	-	1260	2526	-		-	-	-
Critical Hdwy	-	-	6.94	7.54	6.54	-		-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-		-	-	-
Critical Hdwy Stg 2	-	-	-	6.54	5.54	-		-	-	-
Follow-up Hdwy	-	-	3.32	3.52	4.02	-		-	-	-
Pot Cap-1 Maneuver	0	0	162	127	27	0		0	-	-
Stage 1	0	0	-	-	-	0		0	-	-
Stage 2	0	0	-	180	55	0		0	-	-
Platoon blocked, %									-	-
Mov Cap-1 Maneuver	-	-	162	118	27	-		-	-	-
Mov Cap-2 Maneuver	-	-	-	118	27	-		-	-	-
Stage 1	-	-	-	-	-	-		-	-	-
Stage 2	-	-	-	168	55	-		-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	28.9	80.1	0
HCM LOS	D	F	

Minor Lane/Major Mvmt	EBLn1	WBLn1	SBT	SBR
Capacity (veh/h)	162	67	-	-
HCM Lane V/C Ratio	0.069	0.299	-	-
HCM Control Delay (s)	28.9	80.1	-	-
HCM Lane LOS	D	F	-	-
HCM 95th %tile Q(veh)	0.2	1.1	-	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	4	0	0	0	5	0	1353	4	0	0	0
Future Vol, veh/h	7	4	0	0	0	5	0	1353	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	-	-	200	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	1084970496		-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	4	0	0	0	6	0	1503	4	0	0	0

Major/Minor	Minor2			Minor1			Major1					
Conflicting Flow All	752	1507	-	-	-	752	-	0	0			
Stage 1	0	0	-	-	-	-	-	-	-			
Stage 2	752	1507	-	-	-	-	-	-	-			
Critical Hdwy	7.54	6.54	-	-	-	6.94	-	-	-			
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-			
Critical Hdwy Stg 2	6.54	5.54	-	-	-	-	-	-	-			
Follow-up Hdwy	3.52	4.02	-	-	-	3.32	-	-	-			
Pot Cap-1 Maneuver	299	120	0	0	0	353	0	-	-			
Stage 1	-	-	0	0	0	-	0	-	-			
Stage 2	368	182	0	0	0	-	0	-	-			
Platoon blocked, %								-	-			
Mov Cap-1 Maneuver	294	120	-	-	-	353	-	-	-			
Mov Cap-2 Maneuver	294	120	-	-	-	-	-	-	-			
Stage 1	-	-	-	-	-	-	-	-	-			
Stage 2	362	182	-	-	-	-	-	-	-			

Approach	EB	WB	NB
HCM Control Delay, s	24.9	15.4	0
HCM LOS	C	C	

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	WBLn1
Capacity (veh/h)	-	-	193	353
HCM Lane V/C Ratio	-	-	0.063	0.016
HCM Control Delay (s)	-	-	24.9	15.4
HCM Lane LOS	-	-	C	C
HCM 95th %tile Q(veh)	-	-	0.2	0

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	49	1319	56	0	0
Future Vol, veh/h	0	49	1319	56	0	0
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	-	150	-	-
Veh in Median Storage, #	0	-	0	-	1084	310528
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	54	1466	62	0	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	733	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	363	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	363	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	16.7	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	NBR	WBLn1
Capacity (veh/h)	-	-	363
HCM Lane V/C Ratio	-	-	0.15
HCM Control Delay (s)	-	-	16.7
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	50	1342	38	0	0
Future Vol, veh/h	0	50	1342	38	0	0
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	-	100	-	-
Veh in Median Storage, #	0	-	0	-	1083228160	
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	56	1491	42	0	0

Major/Minor	Minor1		Major1	
Conflicting Flow All	-	746	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	356	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	356	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s	17	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	NBR	WBLn1
Capacity (veh/h)	-	-	356
HCM Lane V/C Ratio	-	-	0.156
HCM Control Delay (s)	-	-	17
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.5

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	46	0	0	1329	0	0
Future Vol, veh/h	46	0	0	1329	0	0
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	-	-	-	-	-
Veh in Median Storage, #	0	-	-	1088892736		-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	0	0	1477	0	0

Major/Minor	Minor2		Major1	
Conflicting Flow All	739	-	-	0
Stage 1	0	-	-	-
Stage 2	739	-	-	-
Critical Hdwy	6.84	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-
Follow-up Hdwy	3.52	-	-	-
Pot Cap-1 Maneuver	353	0	0	-
Stage 1	-	0	0	-
Stage 2	433	0	0	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	353	-	-	-
Mov Cap-2 Maneuver	353	-	-	-
Stage 1	-	-	-	-
Stage 2	433	-	-	-

Approach	EB	NB
HCM Control Delay, s	16.9	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBT	EBLn1
Capacity (veh/h)	-	353
HCM Lane V/C Ratio	-	0.145
HCM Control Delay (s)	-	16.9
HCM Lane LOS	-	C
HCM 95th %tile Q(veh)	-	0.5

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	63	0	0	0	0	2245
Future Vol, veh/h	63	0	0	0	0	2245
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	-	-	-	-	-
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	70	0	0	0	0	2494

Major/Minor	Minor1		Major2	
Conflicting Flow All	1247	-	-	-
Stage 1	0	-	-	-
Stage 2	1247	-	-	-
Critical Hdwy	6.84	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-
Follow-up Hdwy	3.52	-	-	-
Pot Cap-1 Maneuver	166	0	0	-
Stage 1	-	0	0	-
Stage 2	234	0	0	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	166	-	-	-
Mov Cap-2 Maneuver	166	-	-	-
Stage 1	-	-	-	-
Stage 2	234	-	-	-

Approach	WB	SB
HCM Control Delay, s	41.6	0
HCM LOS	E	

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	166	-
HCM Lane V/C Ratio	0.422	-
HCM Control Delay (s)	41.6	-
HCM Lane LOS	E	-
HCM 95th %tile Q(veh)	1.9	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	56	0	0	0	0	2229
Future Vol, veh/h	56	0	0	0	0	2229
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	-	-	-	-	-
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	62	0	0	0	0	2477

Major/Minor	Minor1		Major2	
Conflicting Flow All	1239	-	-	-
Stage 1	0	-	-	-
Stage 2	1239	-	-	-
Critical Hdwy	6.84	-	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	5.84	-	-	-
Follow-up Hdwy	3.52	-	-	-
Pot Cap-1 Maneuver	168	0	0	-
Stage 1	-	0	0	-
Stage 2	236	0	0	-
Platoon blocked, %				-
Mov Cap-1 Maneuver	168	-	-	-
Mov Cap-2 Maneuver	168	-	-	-
Stage 1	-	-	-	-
Stage 2	236	-	-	-

Approach	WB	SB
HCM Control Delay, s	38.5	0
HCM LOS	E	

Minor Lane/Major Mvmt	WBLn1	SBT
Capacity (veh/h)	168	-
HCM Lane V/C Ratio	0.37	-
HCM Control Delay (s)	38.5	-
HCM Lane LOS	E	-
HCM 95th %tile Q(veh)	1.6	-

US Highway 15-501 & Lystra Road - Level of Service										
Intersection and Approach	**Measue of Effectiveness**	**2024 Existing Sunday Peak**	**2026 Background Sunday Peak**	**2026 Future Build Sunday Peak**	**2036 TIP Scenario A AM Peak**	**2036 TIP Scenario A PM Peak**	**2036 TIP Scenario A PM Peak***	**2036 TIP Scenario B AM Peak**	**2036 TIP Scenario B PM Peak**	**2036 TIP Scenario B PM Peak***
Intersection Level of Service (LOS)		**B**	**B**	**C**	**C**	**C**	**C**	**C**	**C**	**C**
Total Intersection Delay (Seconds/Vehicle)		**18.1**	**18.4**	23.3	**29.3**	**26.1**	**26.4**	**29.3**	**26.1**	**26.4**
Leftover to Lystra Eastbound	LOS	-	-	-	D	C	C	D	C	C
	Approach Delay	-	-	-	45.3	32.2	31.9	45.3	32.2	31.9
Lystra Road Westbound	LOS	D	D	D	E	D	D	E	D	D
	Approach Delay	37.0	36.6	37.7	67.0	42.9	43.0	67.0	42.9	43.0
US Highway 15-501 Northbound	LOS	A	B	B	C	B	C	C	B	C
	Approach Delay	9.9	10.4	20.0	23.1	19.5	20.1	23.1	19.5	20.1
US Highway 15-501 Southbound	LOS	B	B	C	-	-	-	-	-	-
	Approach Delay	18.1	18.4	22.4	-	-	-	-	-	-

Delay Decrease or LOS Improvement
Delay Increase > 25% or LOS Decrease by 1 Letter Grade
LOS "F"

US Highway 15-501 & Briar Chapel Parkway/Vickers Road - Level of Service

Intersection and Approach	Measue of Effectiveness	2024 Existing Sunday Peak	2026 Background Sunday Peak	2026 Future Build Sunday Peak	2036 TIP Scenario A AM Peak	2036 TIP Scenario A PM Peak	2036 TIP Scenario A PM Peak*	2036 TIP Scenario B AM Peak	2036 TIP Scenario B PM Peak	2036 TIP Scenario B PM Peak*
Intersection Level of Service (LOS)		**A**	**B**	**B**	-	-	-	-	-	-
Total Intersection Delay (Seconds/Vehicle)		**9.9**	**10.2**	**12.8**	-	-	-	-	-	-
Briar Chapel Parkway Eastbound	LOS	D	D	D	-	-	-	-	-	-
	Approach Delay	41.5	41.7	45.2	-	-	-	-	-	-
Vickers Road Westbound	LOS	D	D	D	-	-	-	-	-	-
	Approach Delay	44.1	44.2	44.5	-	-	-	-	-	-
US Highway 15-501 Northbound	LOS	A	A	B	-	-	-	-	-	-
	Approach Delay	7.2	6.7	11.3	-	-	-	-	-	-
US Highway 15-501 Southbound	LOS	A	A	A	-	-	-	-	-	-
	Approach Delay	6.9	8.3	9.5	-	-	-	-	-	-
Intersection Level of Service (LOS)		-	-	-	**B**	**C**	**C**	**B**	**C**	**C**
Total Intersection Delay (Seconds/Vehicle)		-	-	-	**19.2**	**22.0**	**23.2**	**19.2**	**22.0**	**23.0**
Briar Chapel Parkway Eastbound	LOS	-	-	-	D	E	E	D	E	E
	Approach Delay	-	-	-	41.4	57.8	59.5	41.4	57.8	59.5
Leftover to Briar Chapel Westbound	LOS	-	-	-	C	D	D	C	D	D
	Approach Delay	-	-	-	23.8	48.0	47.1	23.8	48.0	47.2
US Highway 15-501 Southbound	LOS	-	-	-	B	B	B	B	B	B
	Approach Delay	-	-	-	11.5	15.4	16.8	11.5	15.4	16.5
Intersection Level of Service (LOS)		-	-	-	**A**	**A**	**A**	**A**	**A**	**A**
Total Intersection Delay (Seconds/Vehicle)		-	-	-	**6.7**	**4.8**	**5.6**	**6.5**	**4.6**	**4.5**
Leftover to Vickers Eastbound	LOS	-	-	-	D	D	D	D	D	D
	Approach Delay	-	-	-	49.6	44.5	46.1	48.4	44.3	44.3
Vickers Road Westbound	LOS	-	-	-	D	D	D	D	D	D
	Approach Delay	-	-	-	50.0	43.0	41.8	50.0	43.6	43.6
US Highway 15-501 Northbound	LOS	-	-	-	A	A	A	A	A	A
	Approach Delay	-	-	-	4.4	2.0	2.3	4.4	2.0	2.0

Delay Decrease or LOS Improvement
Delay Increase > 25% or LOS Decrease by 1 Letter Grade
LOS "F"

US Highway 15-501 & Jack Bennett Road - Level of Service										
Intersection and Approach	**Measue of Effectiveness**	**2024 Existing Sunday Peak**	**2026 Background Sunday Peak**	**2026 Future Build Sunday Peak**	**2036 TIP Scenario A AM Peak**	**2036 TIP Scenario A PM Peak**	**2036 TIP Scenario A PM Peak***	**2036 TIP Scenario B AM Peak**	**2036 TIP Scenario B PM Peak**	**2036 TIP Scenario B PM Peak***
Intersection Level of Service (LOS)		**A**	**A**	**A**	**B**	**C**	**C**	**B**	**C**	**C**
Total Intersection Delay (Seconds/Vehicle)		**7.5**	**6.3**	**6.9**	**18.3**	**20.4**	**20.8**	**18.3**	**20.3**	**20.7**
Leftover to Jack Bennett Eastbound	LOS	-	-	-	C	C	C	C	C	C
	Approach Delay	-	-	-	31.8	28.4	27.9	31.9	28.4	28.0
Jack Bennett Road Westbound	LOS	D	D	D	C	C	C	C	C	C
	Approach Delay	42.4	35.3	37.1	26.5	25.7	25.0	26.5	25.7	25.4
US Highway 15-501 Northbound	LOS	A	A	A	B	B	B	B	B	B
	Approach Delay	5.8	5.1	5.8	12.7	15.7	16.7	12.6	15.7	16.4
US Highway 15-501 Southbound	LOS	A	A	A	-	-	-	-	-	-
	Approach Delay	0.6	1.1	0.9	-	-	-	-	-	-

Delay Decrease or LOS Improvement
Delay Increase > 25% or LOS Decrease by 1 Letter Grade
LOS "F"

US Highway 15-501 & Poplar Street/Hidden Oaks Court - Level of Service

Intersection and Approach	Measue of Effectiveness	2024 Existing Sunday Peak	2026 Background Sunday Peak	2026 Future Build Sunday Peak	2036 TIP Scenario A AM Peak	2036 TIP Scenario A PM Peak	2036 TIP Scenario A PM Peak*	2036 TIP Scenario B AM Peak	2036 TIP Scenario B PM Peak	2036 TIP Scenario B PM Peak*
Intersection Level of Service (LOS)		-	-	-	-	-	-	-	-	-
Total Intersection Delay (Seconds/Vehicle)		-	-	-	-	-	-	-	-	-
Poplar Street Eastbound	LOS	C	D	F	-	-	-	-	-	-
	Approach Delay	24.6	29.6	617.3	-	-	-	-	-	-
Hidden Oaks Court Westbound	LOS	C	D	F	-	-	-	-	-	-
	Approach Delay	22.8	26.7	445.9	-	-	-	-	-	-
US Highway 15-501 Northbound	LOS	-	-	-	-	-	-	-	-	-
	Approach Delay	0.2	0.1	5.1	-	-	-	-	-	-
US Highway 15-501 Southbound	LOS	-	-	-	-	-	-	-	-	-
	Approach Delay	0.1	0.1	0.1	-	-	-	-	-	-
Intersection Level of Service (LOS)		-	-	-	-	-	-	-	-	-
Total Intersection Delay (Seconds/Vehicle)		-	-	-	-	-	-	-	-	-
Poplar Street Eastbound	LOS	-	-	-	B	D	D	B	D	D
	Approach Delay	-	-	-	12.4	28.2	28.9	12.4	28.2	28.9
Leftover to Poplar Westbound	LOS	-	-	-	C	F	F	C	F	F
	Approach Delay	-	-	-	17.8	90.1	80.1	17.8	90.1	80.1
US Highway 15-501 Southbound	LOS	-	-	-	-	-	-	-	-	-
	Approach Delay	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0
Intersection Level of Service (LOS)		-	-	-	-	-	-	-	-	-
Total Intersection Delay (Seconds/Vehicle)		-	-	-	-	-	-	-	-	-
Leftover to Hidden Oaks Eastbound	LOS	-	-	-	F	C	C	F	C	C
	Approach Delay	-	-	-	54.2	24.3	24.9	54.2	24.3	24.9
Hidden Oaks Court Westbound	LOS	-	-	-	C	C	C	C	C	C
	Approach Delay	-	-	-	21.6	15.1	15.4	21.6	15.1	15.4
US Highway 15-501 Northbound	LOS	-	-	-	-	-	-	-	-	-
	Approach Delay	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0

Delay Decrease or LOS Improvement
Delay Increase > 25% or LOS Decrease by 1 Letter Grade
LOS "F"

US Highway 15-501 & Site Access #1 - Level of Service										
Intersection and Approach	**Measue of Effectiveness**	**2024 Existing Sunday Peak**	**2026 Background Sunday Peak**	**2026 Future Build Sunday Peak**	**2036 TIP Scenario A AM Peak**	**2036 TIP Scenario A PM Peak**	**2036 TIP Scenario A PM Peak***	**2036 TIP Scenario B AM Peak**	**2036 TIP Scenario B PM Peak**	**2036 TIP Scenario B PM Peak***
Intersection Level of Service (LOS)		-	-	-	-	-	-	-	-	-
Total Intersection Delay (Seconds/Vehicle)		-	-	-	-	-	-	-	-	-
Eastbound	LOS	-	-	-	-	-	-	-	-	-
	Approach Delay	-	-	-	-	-	-	-	-	-
Site Access #1 Westbound	LOS	-	-	C	C	C	C	C	C	C
	Approach Delay	-	-	19.4	21.7	15.3	16.7	21.7	15.3	16.7
US Highway 15-501 Northbound	LOS	-	-	-	-	-	-	-	-	-
	Approach Delay	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0
US Highway 15-501 Southbound	LOS	-	-	-	-	-	-	-	-	-
	Approach Delay	-	-	0.0	-	-	-	-	-	-

Delay Decrease or LOS Improvement
Delay Increase > 25% or LOS Decrease by 1 Letter Grade
LOS "F"

US Highway 15-501 & Site Access #2 - Level of Service										
Intersection and Approach	**Measue of Effectiveness**	**2024 Existing Sunday Peak**	**2026 Background Sunday Peak**	**2026 Future Build Sunday Peak**	**2036 TIP Scenario A AM Peak**	**2036 TIP Scenario A PM Peak**	**2036 TIP Scenario A PM Peak***	**2036 TIP Scenario B AM Peak**	**2036 TIP Scenario B PM Peak**	**2036 TIP Scenario B PM Peak***
Intersection Level of Service (LOS)		-	-	-	-	-	-	-	-	-
Total Intersection Delay (Seconds/Vehicle)		-	-	-	-	-	-	-	-	-
Eastbound	LOS	-	-	-	-	-	-	-	-	-
	Approach Delay	-	-	-	-	-	-	-	-	-
Site Access #2 Westbound	LOS	-	-	C	C	C	C	C	C	C
	Approach Delay	-	-	16.3	22.0	15.4	17.4	21.8	15.4	17.0
US Highway 15-501 Northbound	LOS	-	-	-	-	-	-	-	-	-
	Approach Delay	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0
US Highway 15-501 Southbound	LOS	-	-	-	-	-	-	-	-	-
	Approach Delay	-	-	0.0	-	-	-	-	-	-

Delay Decrease or LOS Improvement
Delay Increase > 25% or LOS Decrease by 1 Letter Grade
LOS "F"