

# Revised Traffic Impact Analysis

## Lystra Gardens

Chatham County, NC

Prepared for:

Landmark Homes of Pinehurst

April 2007

LDM-06000

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*Earl Lewellyn*  
4/26/07

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## **1.0 Executive Summary**

The proposed Lystra Gardens Subdivision is located along the southern side of Lystra Road approximately 1 mile east of US 15-501, southeast of Chapel Hill, North Carolina. Currently only 69 residential single-family units are currently being proposed. One access point is proposed onto Lystra Road. Build out of the development is expected in 2009.

This study was performed to determine the future traffic impacts of the proposed development on the surrounding street network. Analyses were conducted during a.m. and p.m. peak hours as well as the afternoon school peak. Projected traffic volumes for intersections within the study area were analyzed under three scenarios: Existing, Future No Build, and Future Build.

This analysis includes several large approved development projects including: Williams Corner, Booth Mountain and Briar Chapel. While there will definitely be interaction of trips (trip capture) between these approved developments, no such adjustment was applied in the analysis. In addition to the growth related to specific approved development projects, existing traffic volumes were grown at a 3% annual rate. Applying both an annual growth rate and approved development traffic growth will likely result in a double counting of background traffic growth. As a result, future traffic projects are likely to be overestimated, thereby resulting in a conservative analysis.

First, by specifically including several large approved developments without accounting for interaction between any of these land uses, cumulative traffic impacts are overestimated. Second, in similar cases where traffic from several large approved projects are specifically included in the analysis, projected traffic increases resulting from additional “background” growth are often reduced or eliminated. This is based on the assumption that the approved projects adequately reflect historical background growth through the proposed build-out date. However, no such reductions were applied in this analysis. As a result, the analysis likely overestimates traffic impacts in both the Future Build and Future No-Build scenarios.

Based on the analysis, and assuming approved development traffic and their committed improvements, no additional roadway improvements are necessary to accommodate projected site traffic demands. Site traffic has a minimal impact on the adjacent roadway and nearby intersections.

## **2.0 Project Background**

The proposed Lystra Gardens Subdivision is located along the southern side of Lystra Road approximately 1 mile east of US 15-501, southeast of Chapel Hill, North Carolina. Currently only 69 residential single-family units are currently being proposed. One access point is proposed onto Lystra Road. Build out of the development is expected in 2009.

The John R. McAdams Company, Inc. was retained to determine potential traffic impacts of this proposed project. This report presents trip generation, trip distribution, analysis and recommendations for improvements to meet anticipated traffic demands.

This analysis was performed using *Synchro Professional Software Version 5.0*.

### **3.0 Inventory**

#### **3.1 Study Area**

The study area for this traffic impact analysis has been determined based on preliminary discussions with Town staff. The following intersections are included in the study area.

- US 15-501 – Lystra Road
- Lystra Road – Site Drive
- Lystra Road – Jack Bennett Road

#### **3.2 Existing Conditions**

Streets within the study area include US 15-501, Lystra Road, and Jack Bennett Road. Existing traffic volumes along the street network are relatively low during peak hours, but are projected to increase substantially in the future due to multiple approved developments. Current roadway laneage is shown on Figure 2.

Located west of the site, US 15-501 is a five-lane, north/south arterial with posted speed limits of 45 mph in the vicinity of the site, and a 2003 average daily traffic (ADT) of 20,000 vehicles per day (vpd). US 15-501 was recently widened to a multi-lane facility from a point north of Pittsboro to Chapel Hill.

Lystra Road is generally a two-lane east/west minor thoroughfare with a posted 45 mph speed limit and a 2005 ADT of 3,000 vpd in the site vicinity. Lystra Road forms a signalized T-intersection with US 15-501 and an unsignalized T-intersection with Jack Bennett Road. The subject development proposes one full-movement site drive onto Lystra Road.

Jack Bennett Road is generally a two-lane east/west minor thoroughfare with a posted 45 mph speed limit and an estimated 2007 ADT of 4,000 vpd near the intersection with Lystra Road.

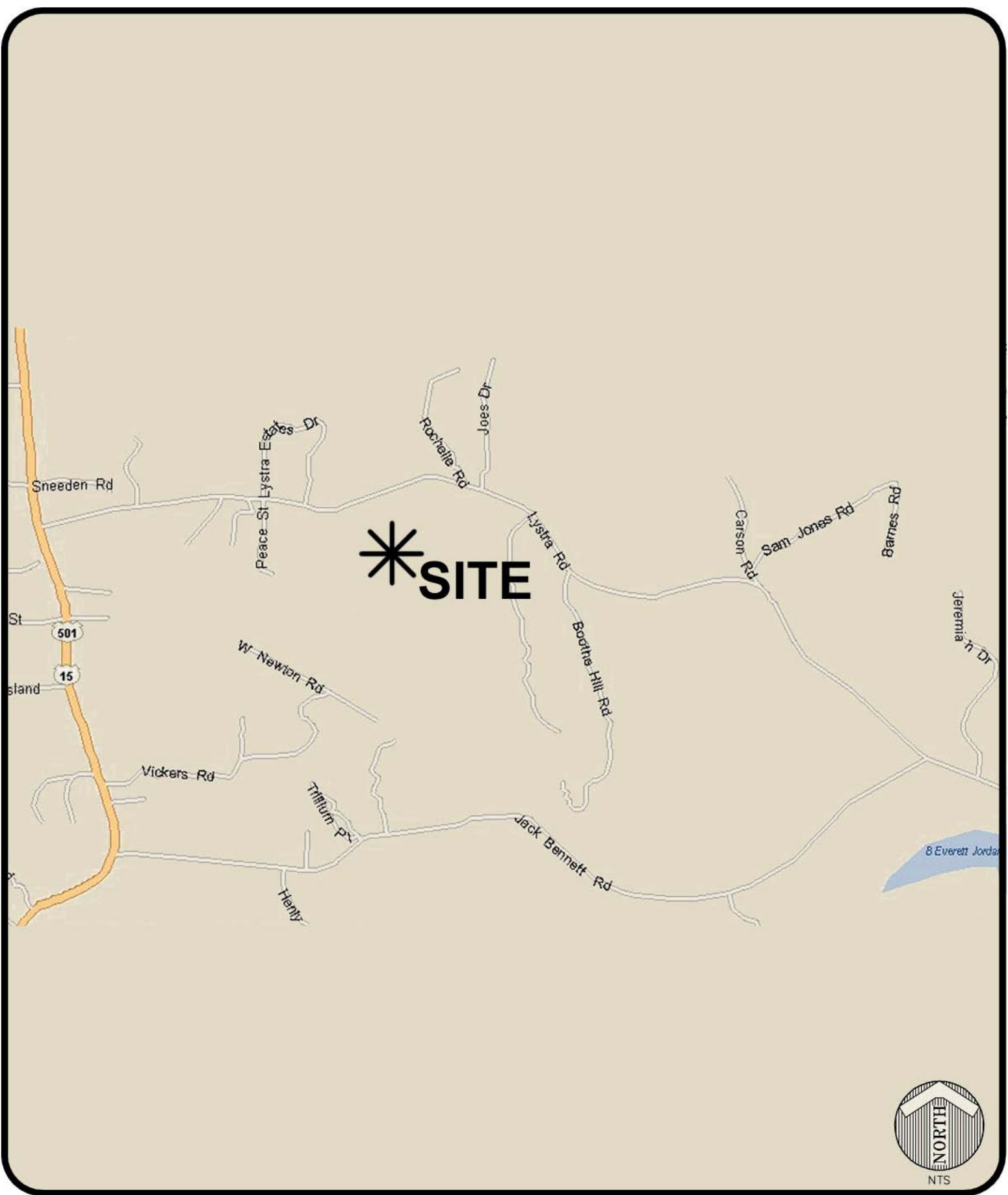


FIGURE:

1

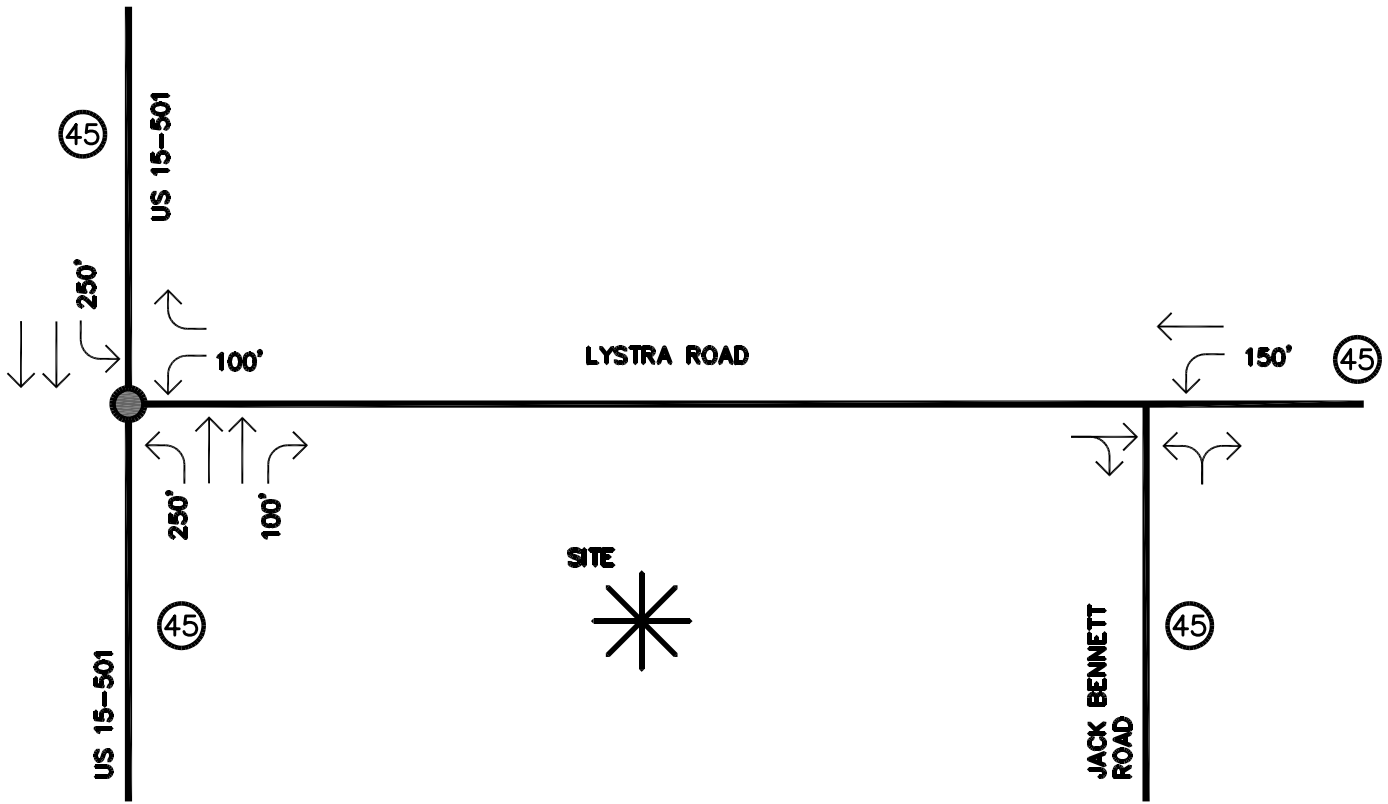
SITE LOCATION MAP

**LYSTRA GARDENS  
TRAFFIC IMPACT ANALYSIS  
CHATHAM COUNTY, NC**




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McADAMS





**LEGEND**

-  - EXISTING SIGNAL
-  - EXISTING LANE
-  - POSTED SPEED LIMIT



NTS

|                      |                         |  |  |
|----------------------|-------------------------|--|--|
| <p>FIGURE:<br/>2</p> | <p>EXISTING LANEAGE</p> | <p>LYSTRA GARDENS<br/>TRAFFIC IMPACT ANALYSIS<br/>CHATHAM COUNTY, NC</p> | <p><b>THE JOHN R. McADAMS<br/>COMPANY, INC.</b><br/>ENGINEERS/PLANNERS/SURVEYORS<br/>RESEARCH TRIANGLE PARK, NC<br/>P.O. BOX 14005 ZIP 27709-4005<br/>(919) 361-5000</p> |
|----------------------|-------------------------|--|--|

#### 4.0 Trip Generation

The gross estimated traffic generation for the proposed development was calculated based on the proposed site plan, and using the methodology, rates and equations in the *Institute of Transportation Engineers (ITE) - Trip Generation, 7<sup>th</sup> Edition, 2003*.

Table 1 summarizes the proposed site trip generation during the AM and PM peak hours.

| <b>Table 1</b>                                 |                                   |                              |                |             |                |             |
|--|-----------------------------------|------------------------------|----------------|-------------|----------------|-------------|
| <b>ITE Traffic Generation – Lystra Gardens</b> |                                   |                              |                |             |                |             |
| <b>(Average Weekday Traffic)</b>               |                                   |                              |                |             |                |             |
| <b>Land Use Code</b>                           | <b>Land Use Density</b>           | <b>Average Daily Traffic</b> | <b>AM Peak</b> |             | <b>PM Peak</b> |             |
|  |                                   |                              | <b>Enter</b>   | <b>Exit</b> | <b>Enter</b>   | <b>Exit</b> |
| 210  | Single Family Detached (69 Units) | 739                          | 14             | 43          | 48             | 28          |

The ITE Trip Generation Manual does not provide data regarding the generation of residential site traffic during a “School Peak Hour”. Based on conversations with North Chatham School staff regarding hours of operation, the typical AM peak hour also captures the AM School Peak Hour. To determine the site traffic generation during the PM School Peak, 12-hour turning movement counts for other residential projects were analyzed to determine the proportion of traffic entering and leaving the project during the hours of 2:00 – 4:00 PM compared to the total 12-hour count. This proportion (7.9%) was applied to the ITE daily trip generation for single-family dwelling units to determine a trip generation rate per unit. Because the School Peak Hour volumes were compared to the 12-hour volume total as opposed to a 24-hour volume total, the estimated trip generation is likely higher than will actually be experienced, thereby presenting a conservative analysis. Details regarding this methodology are included in the Appendix.

Table 2 summarizes the proposed site trip generation during the PM school peak hour.

| <b>Table 2</b>                                 |                                   |                              |                       |             |
|--|-----------------------------------|------------------------------|-----------------------|-------------|
| <b>ITE Traffic Generation – Lystra Gardens</b> |                                   |                              |                       |             |
| <b>(Average Weekday Traffic)</b>               |                                   |                              |                       |             |
| <b>Land Use Code</b>                           | <b>Land Use Density</b>           | <b>Average Daily Traffic</b> | <b>PM School Peak</b> |             |
|  |                                   |                              | <b>Enter</b>          | <b>Exit</b> |
| 210  | Single Family Detached (69 Units) | 739                          | 32                    | 27          |

#### 4.1 Approved Development Trip Generation

Based on conversations with Town staff, the approved, yet un-built, developments in the site vicinity include Williams Corner, Booth Mountain and Briar Chapel. These projects are assumed as approved developments and are discussed further in Section 6.3. Gross trip generation was calculated based on the methodology, rates and equations in the *Institute of Transportation Engineers (ITE) - Trip Generation, 7<sup>th</sup> Edition, 2003*.

Table 3 summarizes the total approved development gross trip generation. For general purposes, no adjustments are shown for internal capture or passby trips.

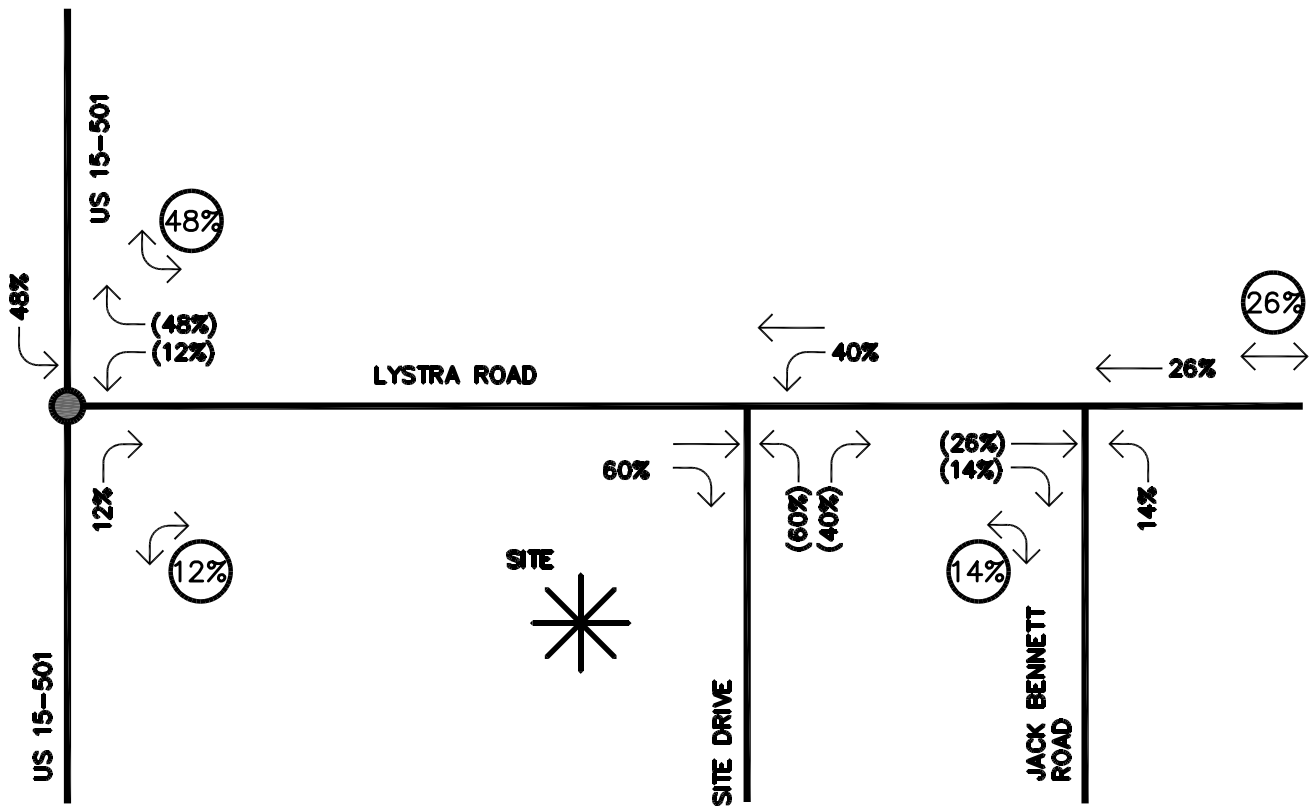
| <b>Table 3</b>  |                              |                |             |                |             |
|---|------------------------------|----------------|-------------|----------------|-------------|
| <b>ITE Traffic Generation – Approved Developments</b> |                              |                |             |                |             |
| <b>(Average Weekday Gross Traffic)</b>                |                              |                |             |                |             |
| <b>Approved Development</b>                           | <b>Average Daily Traffic</b> | <b>AM Peak</b> |             | <b>PM Peak</b> |             |
|   |                              | <b>Enter</b>   | <b>Exit</b> | <b>Enter</b>   | <b>Exit</b> |
| Williams Corner                                       | 17,717                       | 701            | 291         | 656            | 1,044       |
| Booth Mountain  | 1,786                        | 37             | 102         | 115            | 67          |
| Briar Chapel  | 39,101                       | 1,576          | 1,847       | 1,985          | 1,771       |
| Total Gross Approved Development Trips                | 58,604                       | 2,314          | 2,240       | 2,756          | 2,882       |

## 5.0 Trip Distribution

The primary site traffic distribution was determined based on a review of site trip origins and destinations, future approved developments and existing peak hour traffic volumes in the site vicinity. Given the site location, a majority of site traffic is likely to access the site via US 15-501 towards the Town of Chapel Hill. Therefore the site distribution is weighted towards the north. Primary site traffic volumes were distributed as summarized below:

|   | <u>Overall</u> |
|---|----------------|
| To/From the north via US 15-501         | 48%            |
| To/From the south via US 15-501         | 12%            |
| To/From the south via Jack Bennett      | 14%            |
| <u>To/From the east via Lystra Road</u> | <u>26%</u>     |
| Total                                   | 100%           |

A more detailed distribution of site traffic is reflected on Figure 3.



**LEGEND**



EXISTING SIGNAL

XX% - PRIMARY TRIP PERCENTAGE: IN(OUT)



NTS

FIGURE:

3

SITE TRAFFIC DISTRIBUTION

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## **6.0 Projected Traffic Volumes**

### **6.1 Existing Traffic**

Traffic Survey Services, Inc. collected turning movement counts at the intersection of US 15-501 – Lystra Road and Jack Bennett Road – Lystra Road on April 17<sup>th</sup>, 2007. A follow up traffic count was collected at the Jack Bennett – Lystra Road intersection on April 19<sup>th</sup>, 2007 by the John R. McAdams Company, Incorporated. These counts are included in the appendix. Figure 4 reflects these existing peak hour traffic volumes for intersections within the study area.

### **6.2 Historical Growth Traffic**

Historical growth (background growth) traffic is the increase in traffic volumes due to non-specific growth throughout the area. Based on standard NCDOT practice, a 3.0% annual growth rate was applied to existing traffic volumes through the build out year 2009.

### **6.3 Approved Development Traffic**

Approved development traffic is the traffic that will be generated by currently approved developments that are not yet constructed or occupied. Based on conversations with Town staff, there are three such developments to be specifically included in this analysis: Williams Corner, Booth Mountain and Briar Chapel.

The pending Williams Corner mixed-use development is located in the northeast quadrant of the US 15-501 – Lystra Road intersection. This development proposes 40 townhomes, a day care center, a specialty supermarket, a pharmacy with drive-through window, a drive-in bank, 50,500 square feet (s.f.) of specialty retail, 50,500 s.f. of office spaces, 166,000 s.f. of medical office space, and 60,000 s.f. of flex space in the projected 2010 build out year. Williams Corner site traffic volumes were distributed onto the network based on the traffic impact analysis prepared by Kimley-Horn and Associates, Inc. dated May 2005. Per the traffic study, dual westbound left turn lanes at the US 15-501 – Lystra Road intersection are recommended as part of this development and were therefore included in the Future No-Build and Future Build scenarios as a committed improvement. While this project has not yet been approved, staff asked that the traffic impacts be specifically reflected in this analysis.

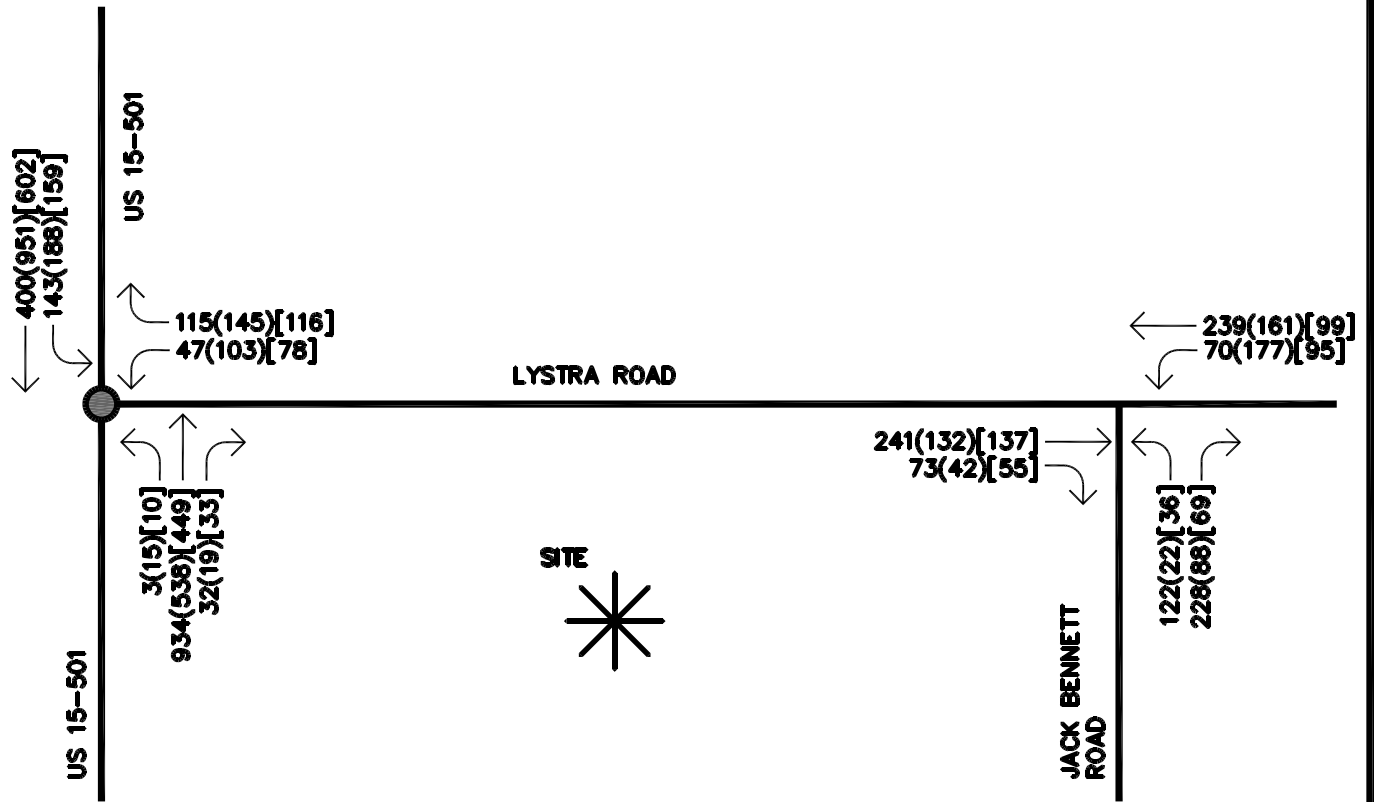
The Briar Chapel mixed-use development is located west of US 15-501 between Mann's Chapel Road and Andrews Store Road in Chatham County, NC. The project proposes approximately 1,880 single-family units, 515 multi-family units, 252,000 s.f. of retail,

270,000 s.f. of office, two schools and a county park with a projected 2014 build out year. This study assumes 60% of the Briar Chapel will be constructed by the year 2011. Therefore, 60% of the trip generation potential of the development was assigned to the intersections in the study area based on the Briar Chapel TIA prepared by Kimley-Horn and Associates, Inc. in June 2004.

The Booth Mountain residential development will be located east of US 15-501, south of south of Lystra Road and north of Jack Bennett Road. This development proposes 180 single-family units divided into three separate sections. Two sections, consisting of 39 and 53 units, will only have access onto Jack Bennett Road, while the third section, 88 units, will only have access onto Lystra Road. Build out of the development is expected in 2011. Booth Mountain site traffic volumes were distributed on the network based on the traffic impact analysis prepared by Ramey Kemp and Associates, Inc. dated August 2004.

Where necessary, approved development traffic volumes were distributed onto the network based on existing and projected traffic volumes. Approved development traffic volumes are indicated on Figure 6. As directed by staff, Future No-Build traffic volumes were determined by adding both approved development traffic and historical growth traffic to existing traffic volumes. For two reasons this approach is very conservative and likely overestimates future traffic volumes. First, by specifically including several large approved developments without accounting for interaction between any of these land uses, cumulative traffic impacts are overestimated. Second, in similar cases where traffic from several large approved projects are specifically included in the analysis, projected traffic increases resulting from additional “background” growth are often reduced or eliminated. This is based on the assumption that the approved projects adequately reflect historical background growth through the proposed build-out date. However, no such reductions were applied in this analysis. As a result, the analysis likely overestimates traffic impacts in both the Future Build and Future No-Build scenarios. Also, due to a lack of data, approved development traffic volumes during the Afternoon School Peak were assumed to equal to those during the PM peak hour. These approved development volumes will likely be significantly lower during the Afternoon School Peak. Therefore, a more conservative analysis is presented.

These Future No-Build volumes are indicated on Figure 7. Roadway improvements associated with the Williams Corner development are included in the Future No-Build and Future Build scenarios.



**LEGEND**



— EXISTING SIGNAL

XX(XX)[XX] — PEAK HOUR VOLUMES: AM(PM)[SCHOOL PM]



NTS

FIGURE:

4

EXISTING  
TRAFFIC  
VOLUMES

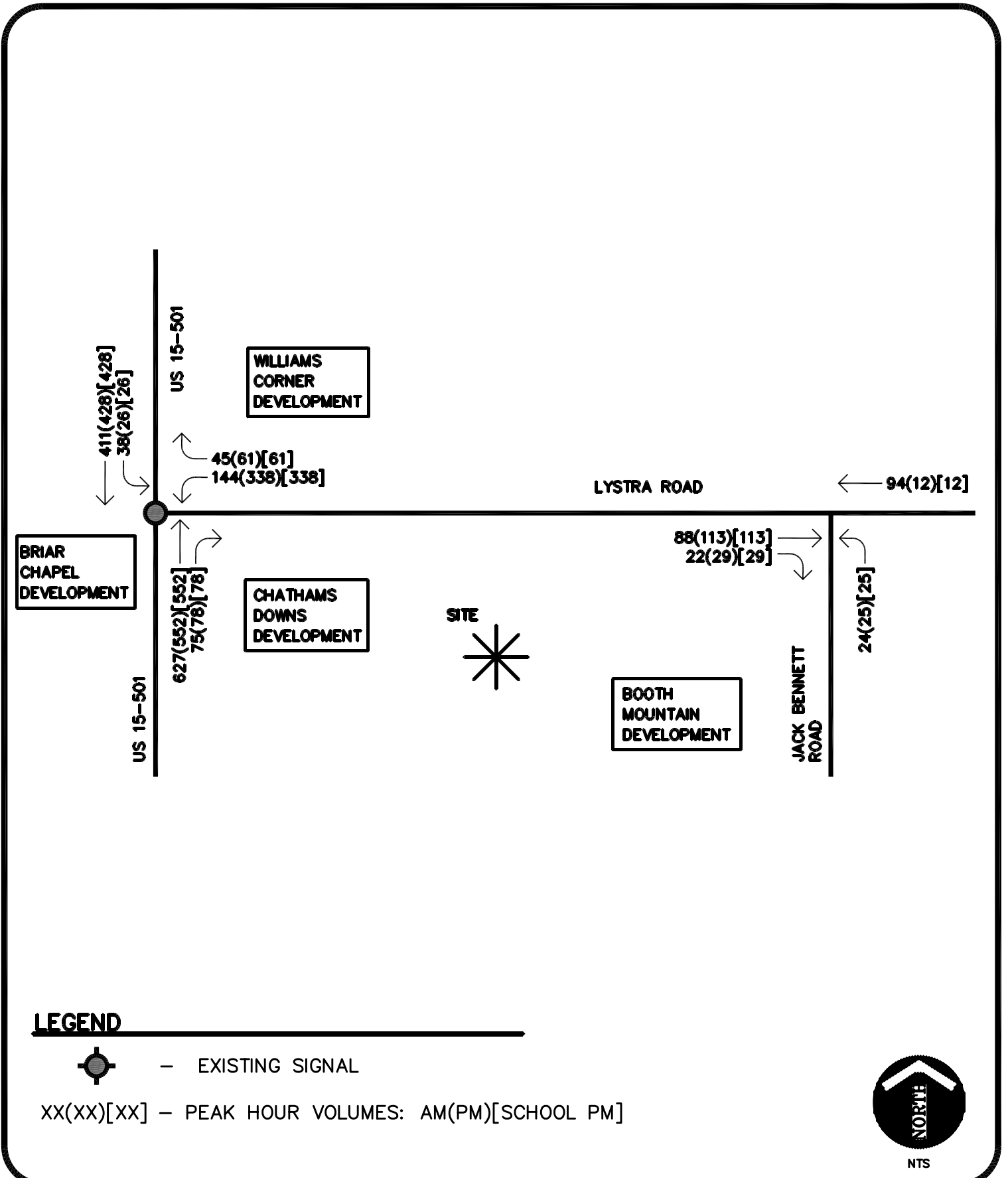
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**LEGEND**



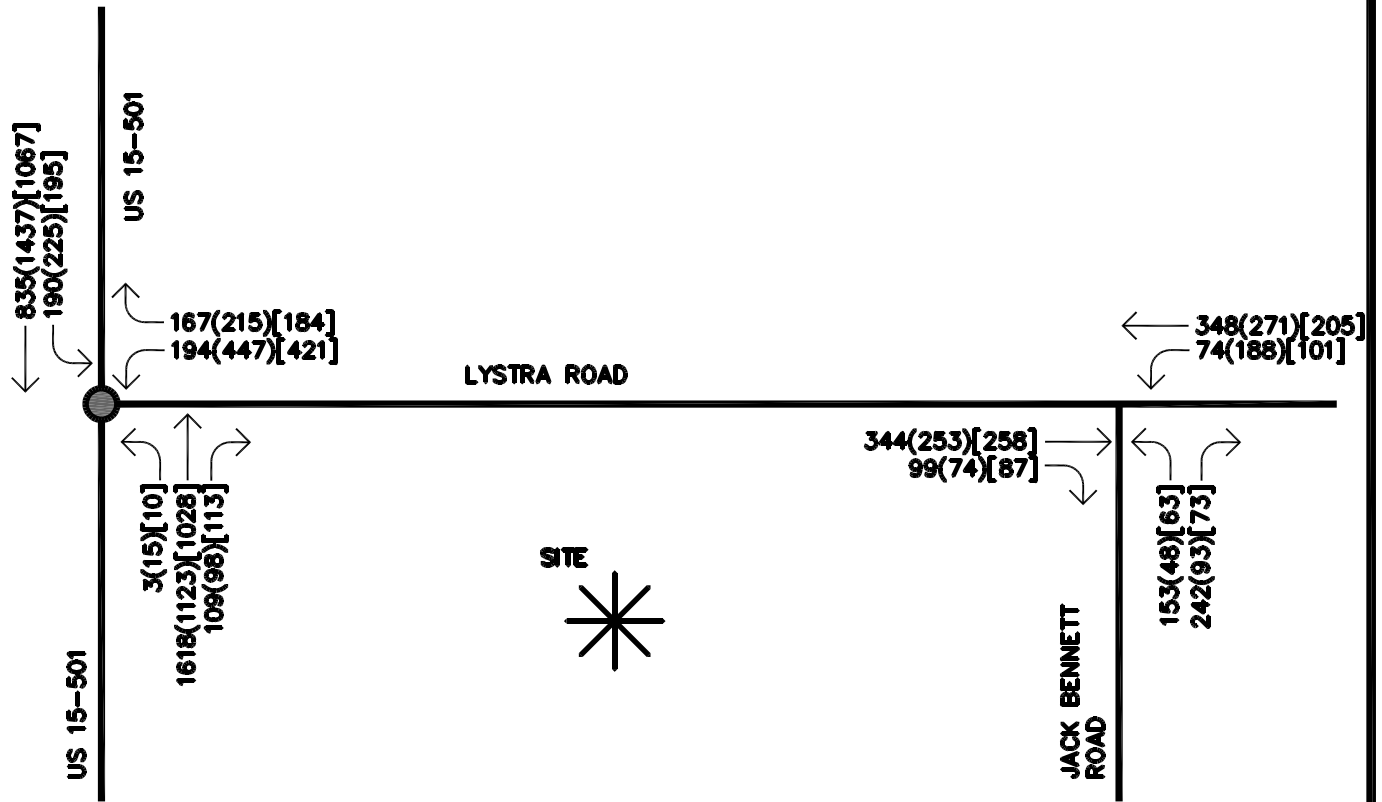
— EXISTING SIGNAL

XX(XX)[XX] — PEAK HOUR VOLUMES: AM(PM)[SCHOOL PM]



NTS

|                      |   |  |  |
|----------------------|---|--|--|
| <p>FIGURE:<br/>5</p> | <p>APPROVED<br/>DEVELOPMENT<br/>TRAFFIC VOLUMES</p> | <p>LYSTRA GARDENS<br/>TRAFFIC IMPACT ANALYSIS<br/>CHATHAM COUNTY, NC</p> | <p><b>THE JOHN R. McADAMS<br/>COMPANY, INC.</b><br/>ENGINEERS/PLANNERS/SURVEYORS<br/>RESEARCH TRIANGLE PARK, NC<br/>P.O. BOX 14005 ZIP 27709-4005<br/>(919) 361-5000</p> |
|----------------------|---|--|--|



**LEGEND**



— EXISTING SIGNAL

XX(XX)[XX] — PEAK HOUR VOLUMES: AM(PM)[SCHOOL PM]



NTS

FIGURE:

6

FUTURE  
NO-BUILD  
TRAFFIC  
VOLUMES

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CHATHAM COUNTY, NC

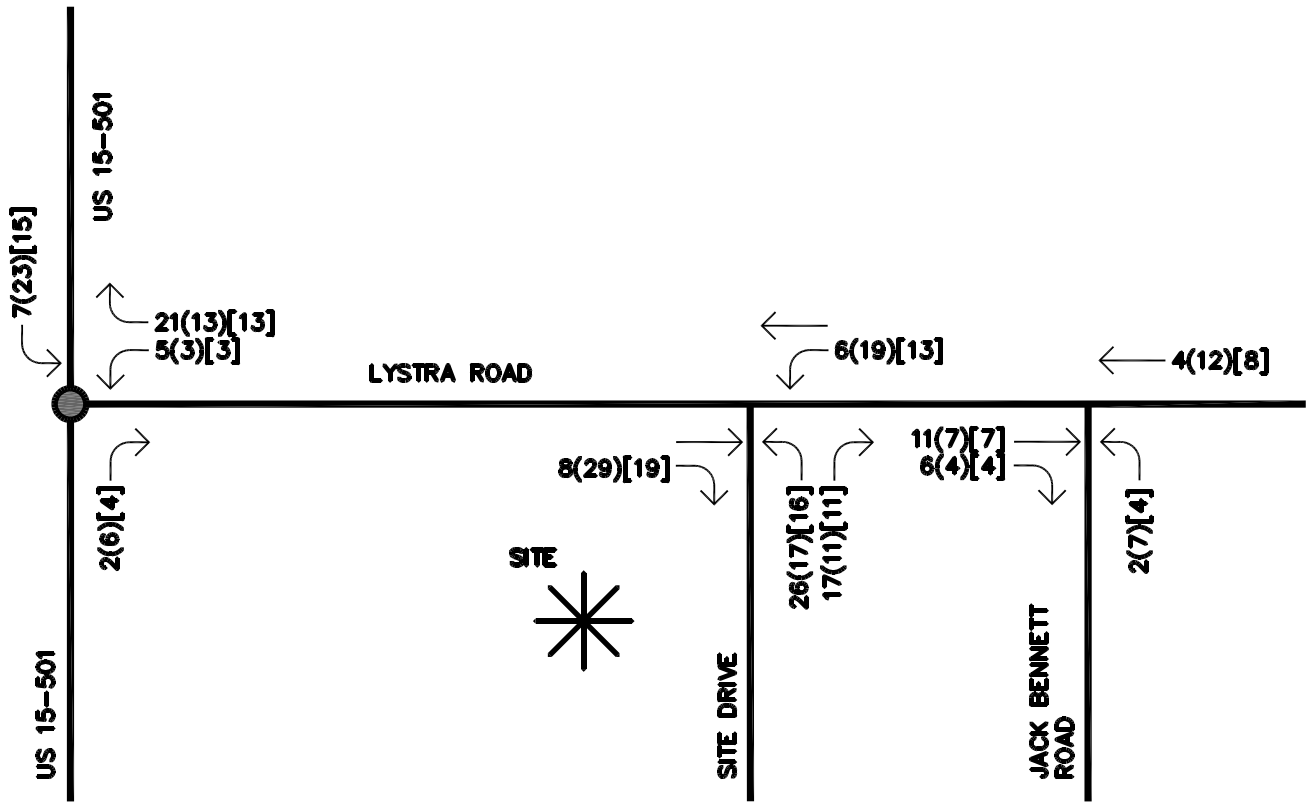


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## **7.0 Site Access and Traffic Assignment**

The proposed site will operate with one full movement drive onto Lystra Road. Site traffic was distributed and assigned onto the street network based on the distributions described in Section 5.0. Site traffic volumes are indicated on Figure 5. Site generated traffic volumes were added to Future No-Build volumes to obtain anticipated Future Build volumes. Future Build traffic volumes are indicated on Figure 7.



**LEGEND**

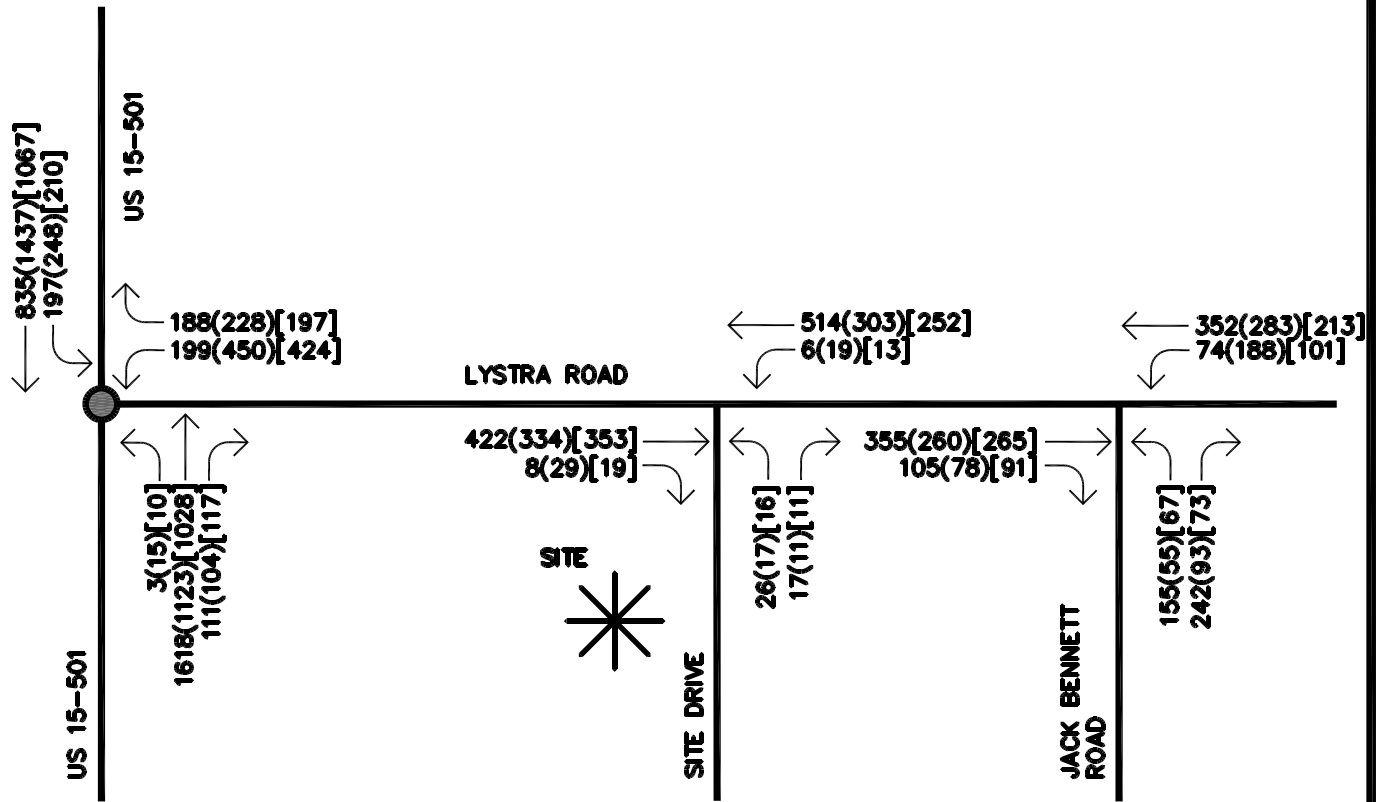


— EXISTING SIGNAL

XX(XX)[XX] — PEAK HOUR VOLUMES: AM(PM)[SCHOOL PM]



NTS



**LEGEND**



— EXISTING SIGNAL

XX(XX)[XX] — PEAK HOUR VOLUMES: AM(PM)[SCHOOL PM]



NTS

FIGURE:

8

FUTURE  
BUILD-OUT  
TRAFFIC  
VOLUMES

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## 8.0 Traffic Analysis

The *Highway Capacity Manual 2000* describes capacity as “the maximum number of vehicles that can pass a given point during a specific period under given roadway, traffic and control conditions”. Capacity is further defined at different levels of service to qualitatively measure the operational characteristics of the traffic stream. The *Highway Capacity Manual* defines six levels of service, LOS A through LOS F, with LOS A indicating the shortest average delays and LOS F indicating the longest average delays. The tables below relate average intersection control delay to level of service for both signalized and unsignalized intersections.

| <b>LOS Criteria For Signalized Intersections</b> |                           |
|--|---------------------------|
| LOS  | Control Delay (sec./veh.) |
| A  | 0 – 10                    |
| B  | >10 – 20                  |
| C  | >20 – 35                  |
| D  | >35 – 55                  |
| E  | >55 – 80                  |
| F  | >80                       |

| <b>LOS Criteria For Unsignalized Intersections (2-Way Stop)</b> |                           |
|---|---------------------------|
| LOS   | Control Delay (sec./veh.) |
| A   | 0 – 10                    |
| B   | >10 – 15                  |
| C   | >15 – 25                  |
| D   | >25 – 35                  |
| E   | >35 – 50                  |
| F   | >50                       |

Capacity analyses for a.m. and p.m. peak hours were conducted for each of the following scenarios:

- Existing (2007)
- Future No Build (2009)
- Future Build (2009)

8.1 US 15-501 – Lystra Road Intersection

This intersection has recently signalized as part of NCDOT’s TIP Project R-942, which improved US 15-501 to a four-lane, median-divided facility. With these improvements, this intersection currently operates at level of service (LOS) A during peak hours. Under the Future No-Build scenario with the addition of background growth traffic, approved development traffic and recommended westbound dual left turn lanes by the Williams Corner development, the intersection is projected to operate at LOS C. This decline in level of service is largely due to the amount of approved development traffic volumes in the site vicinity. Under the Future Build scenario with site traffic volumes, LOS C remains with minimal increase in overall intersection delay, as noted in the table below. Therefore, no improvements are necessary to address site-generated traffic.

Table 4 summarizes the peak hour levels of service.

| <b>Table 4</b><br><b>Level of Service Comparison</b><br><b>US 15-501 – Lystra Road Intersection</b> |   |   |  |
|---|---|---|--|
| <b>Scenario</b>   | <b>AM Peak LOS<br/>(Delay in Seconds)</b> | <b>PM Peak LOS<br/>(Delay in Seconds)</b> | <b>PM School Peak LOS<br/>(Delay in Seconds)</b> |
| Existing  | A (8.0)                                   | A (7.9)                                   | A (6.6)  |
| Future No-Build   | B (15.1)                                  | C (20.8)                                  | B (18.8)   |
| Future Build  | B (15.9)                                  | C (21.8)                                  | B (18.9)   |

## 8.2 Lystra Road – Site Drive Intersection

In the Future Build scenario, the proposed Site Drive will form an unsignalized T-intersection with Lystra Road. This intersection is expected to operate at LOS C during the peak hour under future traffic demands. Therefore, no improvements are necessary to address site-generated traffic.

Table 5 summarizes the peak hour levels of service.

| <b>Table 5<br/>Level of Service Comparison<br/>Lystra Road – Eastern Site Drive Intersection</b> |   |   |  |
|--|---|---|--|
| <b>Scenario</b>  | <b>AM Peak LOS<br/>(Delay in Seconds)</b> | <b>PM Peak LOS<br/>(Delay in Seconds)</b> | <b>PM School Peak LOS<br/>(Delay in Seconds)</b> |
| Future Build   | C (18.2)                                  | B (13.8)                                  | B (13.2)   |

\*Note: HCS2000 methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach are reported above.



### 8.3 Lystra Road – Jack Bennett Road Intersection

This existing unsignalized intersection currently functions with the side street approach operating at level of service (LOS) D during the AM peak. Under the Future No-Build scenario, with approved development and background growth traffic, LOS F is expected on the Jack Bennett Road approach. In the Future Build scenario with build-out of Lystra Gardens Subdivision, the side street LOS F remains with minor increases in queues and delay. The Lystra Gardens Subdivision site traffic volumes are projected to constitute only 2.4% of total intersecting volume during the AM peak hour. It should also be noted that this intersection is located almost 1.5 miles from the site. As made evident by the Future No-Build analysis, this poor side street level of service is created by projected approved development impacts and is unrelated to the proposed Lystra Gardens Subdivision. Therefore, no improvements are necessary to address site-generated traffic. This intersection should continue to be monitored for future geometric improvements. Based on the analysis there exist no rational nexus between site traffic impact and the need for roadway improvements at this intersection.

Table 6 summarizes the peak hour levels of service.

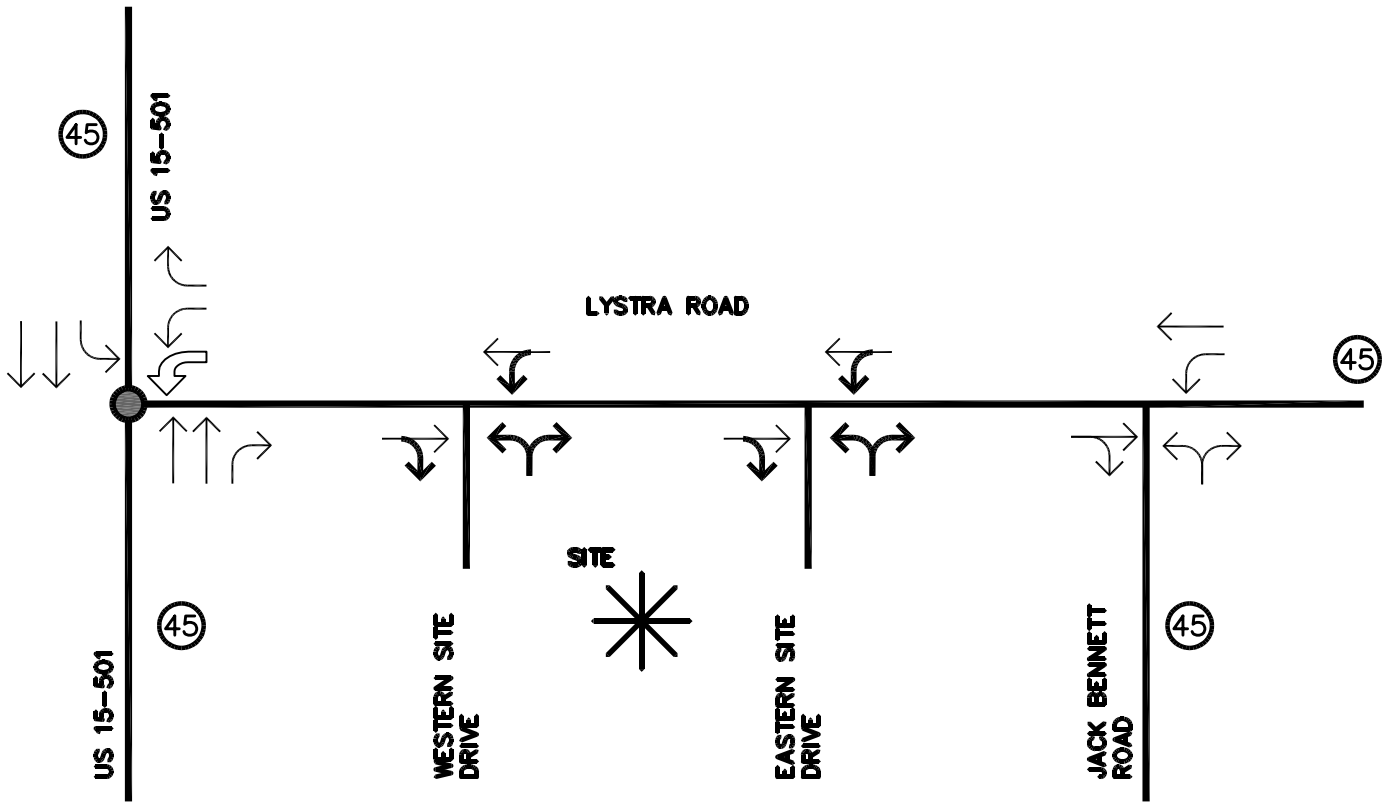
| <b>Table 6</b>                                      |   |   |  |
|---|---|---|--|
| <b>Level of Service Comparison</b>                  |   |   |  |
| <b>Lystra Road – Jack Bennett Road Intersection</b> |   |   |  |
| <b>Scenario</b>                                     | <b>AM Peak LOS<br/>(Delay in Seconds)</b> | <b>PM Peak LOS<br/>(Delay in Seconds)</b> | <b>PM School Peak LOS<br/>(Delay in Seconds)</b> |
| Existing  | D (26.8)                                  | B (11.7)                                  | B (11.4)   |
| Future No-Build                                     | F (109.4)                                 | C (20.0)                                  | C (16.7)   |
| Future Build  | F (123.3)                                 | C (22.4)                                  | C (17.4)   |

\*Note: HCS2000 methodology does not report an overall level of service for unsignalized intersections. The level of service and delay for the worst approach are reported above.






## **9.0 Summary of Conclusions and Recommendations**

Traffic generated by the proposed Lystra Gardens Subdivision will be quite low, creating minimal increases in delay at intersections within the study area. Site traffic volumes will not account for a significant portion of total intersection volumes, nor will they have a substantial impact on future intersection operations. With the addition of Williams Corner committed roadway improvements, no additional improvements are necessary at the US 15-501 – Lystra Road intersection. Also, because of the limited site traffic impact at the Lystra Road – Jack Bennett intersection and the fact that this intersection is located greater than 2.5 miles from the site drive, no improvements are recommended to address site traffic impact.

Therefore, based on the analysis, no improvements are recommended to accommodate site-generated traffic.



**LEGEND**

-  - EXISTING SIGNAL
-  - EXISTING LANE
-  - PROPOSED LANEAGE
-  - COMMITTED LANE / BY OTHERS
-  - POSTED SPEED LIMIT



NTS

# Appendix

Traffic Counts,  
Trip Generation  
&  
Trip Summary

The John R. McAdams Company, Inc.

US 15-501 @ Lyster Road  
 Date:4/17/07  
 Counter:JC  
 Weather: Clear

File Name : US15-5~1  
 Site Code : 00270261  
 Start Date : 4/17/2007  
 Page No : 1

Groups Printed- Primary

| Start Time | East Bound |      |       |      | Lyster Rd. West Bound |      |       |     | US 15-501 North Bound |      |       |     | US 15-501 South Bound |      |       |     | Int. Total |
|------------|------------|------|-------|------|-----------------------|------|-------|-----|-----------------------|------|-------|-----|-----------------------|------|-------|-----|------------|
|            | Left       | Thru | Right | Peds | Left                  | Thru | Right | Bus | Left                  | Thru | Right | Bus | Left                  | Thru | Right | Bus |            |
| 07:00      | 0          | 0    | 0     | 0    | 8                     | 0    | 9     | 0   | 1                     | 170  | 6     | 1   | 28                    | 59   | 0     | 1   | 283        |
| 07:15      | 0          | 0    | 0     | 0    | 7                     | 0    | 21    | 0   | 1                     | 249  | 3     | 1   | 28                    | 71   | 0     | 1   | 382        |
| 07:30      | 0          | 0    | 0     | 0    | 19                    | 0    | 29    | 0   | 2                     | 248  | 8     | 0   | 34                    | 89   | 0     | 1   | 430        |
| 07:45      | 0          | 0    | 0     | 0    | 11                    | 0    | 28    | 0   | 0                     | 222  | 13    | 0   | 36                    | 109  | 0     | 0   | 419        |
| Total      | 0          | 0    | 0     | 0    | 45                    | 0    | 87    | 0   | 4                     | 889  | 30    | 2   | 126                   | 328  | 0     | 3   | 1514       |
| 08:00      | 0          | 0    | 0     | 0    | 6                     | 0    | 21    | 0   | 1                     | 224  | 5     | 0   | 37                    | 91   | 0     | 0   | 385        |
| 08:15      | 0          | 0    | 0     | 0    | 11                    | 0    | 37    | 0   | 0                     | 240  | 6     | 0   | 36                    | 111  | 0     | 0   | 441        |
| 08:30      | 0          | 0    | 0     | 0    | 9                     | 0    | 36    | 0   | 1                     | 191  | 6     | 0   | 29                    | 124  | 0     | 0   | 396        |
| 08:45      | 0          | 0    | 0     | 0    | 7                     | 0    | 34    | 0   | 2                     | 196  | 6     | 0   | 32                    | 87   | 0     | 0   | 364        |
| Total      | 0          | 0    | 0     | 0    | 33                    | 0    | 128   | 0   | 4                     | 851  | 23    | 0   | 134                   | 413  | 0     | 0   | 1586       |

Break

|             |     |     |     |     |      |     |      |     |     |      |     |     |      |      |     |     |      |
|-------------|-----|-----|-----|-----|------|-----|------|-----|-----|------|-----|-----|------|------|-----|-----|------|
| 14:00       | 0   | 0   | 0   | 0   | 11   | 1   | 14   | 0   | 0   | 50   | 0   | 0   | 17   | 44   | 0   | 0   | 137  |
| 14:15       | 0   | 0   | 0   | 0   | 14   | 0   | 24   | 0   | 3   | 92   | 21  | 0   | 35   | 123  | 0   | 0   | 312  |
| 14:30       | 0   | 0   | 0   | 0   | 14   | 0   | 19   | 1   | 2   | 101  | 21  | 1   | 29   | 131  | 2   | 0   | 321  |
| 14:45       | 0   | 0   | 0   | 0   | 14   | 0   | 20   | 0   | 1   | 107  | 7   | 1   | 27   | 141  | 0   | 0   | 318  |
| Total       | 0   | 0   | 0   | 0   | 53   | 1   | 77   | 1   | 6   | 350  | 49  | 2   | 108  | 439  | 2   | 0   | 1088 |
| 15:00       | 0   | 0   | 0   | 0   | 24   | 0   | 39   | 2   | 2   | 112  | 2   | 0   | 32   | 113  | 0   | 1   | 327  |
| 15:15       | 0   | 0   | 0   | 0   | 12   | 0   | 23   | 0   | 4   | 102  | 13  | 1   | 42   | 162  | 0   | 1   | 360  |
| 15:30       | 0   | 0   | 0   | 0   | 18   | 0   | 25   | 0   | 3   | 124  | 11  | 1   | 41   | 146  | 0   | 1   | 370  |
| 15:45       | 0   | 0   | 0   | 0   | 24   | 0   | 29   | 0   | 1   | 111  | 7   | 0   | 44   | 181  | 0   | 1   | 398  |
| Total       | 0   | 0   | 0   | 0   | 78   | 0   | 116  | 2   | 10  | 449  | 33  | 2   | 159  | 602  | 0   | 4   | 1455 |
| 16:00       | 0   | 0   | 0   | 0   | 29   | 0   | 23   | 2   | 5   | 131  | 9   | 0   | 30   | 180  | 0   | 1   | 410  |
| 16:15       | 0   | 0   | 0   | 0   | 19   | 1   | 18   | 1   | 4   | 98   | 1   | 0   | 45   | 193  | 0   | 2   | 382  |
| 16:30       | 0   | 0   | 0   | 0   | 27   | 0   | 30   | 0   | 1   | 92   | 16  | 1   | 26   | 179  | 0   | 0   | 372  |
| 16:45       | 0   | 0   | 0   | 0   | 25   | 0   | 39   | 0   | 4   | 123  | 4   | 0   | 53   | 243  | 0   | 0   | 491  |
| Total       | 0   | 0   | 0   | 0   | 100  | 1   | 110  | 3   | 14  | 444  | 30  | 1   | 154  | 795  | 0   | 3   | 1655 |
| 17:00       | 0   | 0   | 0   | 0   | 26   | 0   | 35   | 0   | 4   | 124  | 3   | 0   | 42   | 201  | 0   | 0   | 435  |
| 17:15       | 0   | 0   | 0   | 0   | 24   | 2   | 32   | 0   | 6   | 131  | 7   | 0   | 57   | 248  | 0   | 0   | 507  |
| 17:30       | 0   | 0   | 0   | 0   | 28   | 0   | 39   | 0   | 1   | 160  | 5   | 0   | 36   | 259  | 0   | 0   | 528  |
| 17:45       | 0   | 0   | 0   | 0   | 30   | 0   | 33   | 1   | 1   | 152  | 5   | 0   | 51   | 181  | 0   | 0   | 454  |
| Total       | 0   | 0   | 0   | 0   | 108  | 2   | 139  | 1   | 12  | 567  | 20  | 0   | 186  | 889  | 0   | 0   | 1924 |
| Grand Total | 0   | 0   | 0   | 0   | 417  | 4   | 657  | 7   | 50  | 3550 | 185 | 7   | 867  | 3466 | 2   | 10  | 9222 |
| Apprch %    | 0.0 | 0.0 | 0.0 | 0.0 | 38.4 | 0.4 | 60.6 | 0.6 | 1.3 | 93.6 | 4.9 | 0.2 | 20.0 | 79.8 | 0.0 | 0.2 |      |
| Total %     | 0.0 | 0.0 | 0.0 | 0.0 | 4.5  | 0.0 | 7.1  | 0.1 | 0.5 | 38.5 | 2.0 | 0.1 | 9.4  | 37.6 | 0.0 | 0.1 |      |

| Start Time   | East Bound |      |       |      |            | Lyster Rd. West Bound |      |       |     |            | US 15-501 North Bound |      |       |     |            | US 15-501 South Bound |       |       |     |            | Int. Total |       |       |
|--|------------|------|-------|------|------------|-----------------------|------|-------|-----|------------|-----------------------|------|-------|-----|------------|-----------------------|-------|-------|-----|------------|------------|-------|-------|
|  | Left       | Thru | Right | Peds | App. Total | Left                  | Thru | Right | Bus | App. Total | Left                  | Thru | Right | Bus | App. Total | Left                  | Thru  | Right | Bus | App. Total |            |       |       |
| <b>Peak Hour From 07:00 to 08:45 - Peak 1 of 1</b> |            |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |       |       |     |            |            |       |       |
| Intersection                                       | 07:30      |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |       |       |     |            |            |       |       |
| Volume   | 0          | 0    | 0     | 0    | 0          | 47                    | 0    | 115   | 0   | 162        | 3                     | 934  | 32    | 0   | 969        | 143                   | 400   | 0     | 1   | 544        | 1675       |       |       |
| Percent  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0        | 29.0                  | 0.0  | 71.0  | 0.0 | 0.0        | 0.3                   | 96.4 | 3.3   | 0.0 | 0.0        | 26.3                  | 73.5  | 0.0   | 0.2 | 0.0        |            |       |       |
| 08:15  | 0          |      |       |      |            | 11                    |      |       |     |            | 0                     |      |       |     |            | 36                    |       |       |     |            | 147        |       |       |
| Volume   | 0          | 0    | 0     | 0    | 0          | 11                    | 0    | 37    | 0   | 48         | 0                     | 240  | 6     | 0   | 246        | 36                    | 111   | 0     | 0   | 147        | 441        |       |       |
| Peak Factor  |            |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |       |       |     |            |            | 0.950 |       |
| High Int.  | 6:45:00 AM |      |       |      |            | 07:30                 |      |       |     |            | 07:30                 |      |       |     |            | 08:15                 |       |       |     |            |            |       |       |
| Volume   | 0          | 0    | 0     | 0    | 0          | 19                    | 0    | 29    | 0   | 48         | 2                     | 248  | 8     | 0   | 258        | 36                    | 111   | 0     | 0   | 147        |            |       |       |
| Peak Factor  |            |      |       |      |            |                       |      |       |     |            | 0.844                 |      |       |     |            |                       | 0.939 |       |     |            |            |       | 0.925 |

The John R. McAdams Company, Inc.

File Name : US15-5~1  
 Site Code : 00270261  
 Start Date : 4/17/2007  
 Page No : 2

| Start Time   | East Bound |      |       |      |            | Lyster Rd. West Bound |      |       |     |            | US 15-501 North Bound |      |       |     |            | US 15-501 South Bound |      |       |     |            | Int. Total |
|--|------------|------|-------|------|------------|-----------------------|------|-------|-----|------------|-----------------------|------|-------|-----|------------|-----------------------|------|-------|-----|------------|------------|
|  | Left       | Thru | Right | Peds | App. Total | Left                  | Thru | Right | Bus | App. Total | Left                  | Thru | Right | Bus | App. Total | Left                  | Thru | Right | Bus | App. Total |            |
| <b>Peak Hour From 14:00 to 15:45 - Peak 1 of 1</b> |            |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |      |       |     |            |            |
| Intersection                                       | 15:00      |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |      |       |     |            |            |
| Volume   | 0          | 0    | 0     | 0    | 0          | 78                    | 0    | 116   | 2   | 196        | 10                    | 449  | 33    | 2   | 494        | 159                   | 602  | 0     | 4   | 765        | 1455       |
| Percent  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0        | 39.8                  | 0.0  | 59.2  | 1.0 | 1.0        | 2.0                   | 90.9 | 6.7   | 0.4 | 1.0        | 20.8                  | 78.7 | 0.0   | 0.5 | 1.0        |            |
| 15:45  |            |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |      |       |     |            |            |
| Volume   | 0          | 0    | 0     | 0    | 0          | 24                    | 0    | 29    | 0   | 53         | 1                     | 111  | 7     | 0   | 119        | 44                    | 181  | 0     | 1   | 226        | 398        |
| Peak Factor  |            |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |      |       |     |            | 0.914      |
| High Int.  |            |      |       |      |            | 15:00                 |      |       |     |            | 15:30                 |      |       |     |            | 15:45                 |      |       |     |            |            |
| Volume   | 0          | 0    | 0     | 0    | 0          | 24                    | 0    | 39    | 2   | 65         | 3                     | 124  | 11    | 1   | 139        | 44                    | 181  | 0     | 1   | 226        |            |
| Peak Factor  |            |      |       |      |            | 0.754                 |      |       |     |            | 0.888                 |      |       |     |            | 0.846                 |      |       |     |            |            |
| <b>Peak Hour From 16:00 to 17:45 - Peak 1 of 1</b> |            |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |      |       |     |            |            |
| Intersection                                       | 16:45      |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |      |       |     |            |            |
| Volume   | 0          | 0    | 0     | 0    | 0          | 103                   | 2    | 145   | 0   | 250        | 15                    | 538  | 19    | 0   | 572        | 188                   | 951  | 0     | 0   | 1139       | 1961       |
| Percent  | 0.0        | 0.0  | 0.0   | 0.0  | 0.0        | 41.2                  | 0.8  | 58.0  | 0.0 | 1.0        | 2.6                   | 94.1 | 3.3   | 0.0 | 1.0        | 16.5                  | 83.5 | 0.0   | 0.0 | 1.0        |            |
| 17:30  |            |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |      |       |     |            |            |
| Volume   | 0          | 0    | 0     | 0    | 0          | 28                    | 0    | 39    | 0   | 67         | 1                     | 160  | 5     | 0   | 166        | 36                    | 259  | 0     | 0   | 295        | 528        |
| Peak Factor  |            |      |       |      |            |                       |      |       |     |            |                       |      |       |     |            |                       |      |       |     |            | 0.929      |
| High Int.  |            |      |       |      |            | 17:30                 |      |       |     |            | 17:30                 |      |       |     |            | 17:15                 |      |       |     |            |            |
| Volume   | 0          | 0    | 0     | 0    | 0          | 28                    | 0    | 39    | 0   | 67         | 1                     | 160  | 5     | 0   | 166        | 57                    | 248  | 0     | 0   | 305        |            |
| Peak Factor  |            |      |       |      |            | 0.933                 |      |       |     |            | 0.861                 |      |       |     |            | 0.934                 |      |       |     |            |            |

Groups Printed- Unshifted

| Start Time  | JB Southbound |      |       |            | LYSTRA Westbound |      |       |            | JB Northbound |      |       |            | LYSTRA Eastbound |      |       |            | Int. Total |
|-------------|---------------|------|-------|------------|------------------|------|-------|------------|---------------|------|-------|------------|------------------|------|-------|------------|------------|
|             | Left          | Thru | Right | App. Total | Left             | Thru | Right | App. Total | Left          | Thru | Right | App. Total | Left             | Thru | Right | App. Total |            |
| 06:00       | 0             | 0    | 0     | 0          | 11               | 22   | 0     | 33         | 6             | 0    | 46    | 52         | 0                | 20   | 3     | 23         | 108        |
| 06:15       | 0             | 0    | 0     | 0          | 24               | 39   | 0     | 63         | 23            | 0    | 44    | 67         | 0                | 33   | 10    | 43         | 173        |
| 06:30       | 0             | 0    | 0     | 0          | 19               | 72   | 0     | 91         | 41            | 0    | 65    | 106        | 0                | 65   | 17    | 82         | 279        |
| 06:45       | 0             | 0    | 0     | 0          | 15               | 91   | 0     | 106        | 49            | 0    | 52    | 101        | 0                | 102  | 35    | 137        | 344        |
| Total       | 0             | 0    | 0     | 0          | 69               | 224  | 0     | 293        | 119           | 0    | 207   | 326        | 0                | 220  | 65    | 285        | 904        |
| 07:00       | 0             | 0    | 0     | 0          | 12               | 37   | 0     | 49         | 9             | 0    | 67    | 76         | 0                | 41   | 11    | 52         | 177        |
| 07:15       | 0             | 0    | 0     | 0          | 17               | 26   | 0     | 43         | 11            | 0    | 58    | 69         | 1                | 28   | 4     | 33         | 145        |
| 07:30       | 0             | 0    | 0     | 0          | 13               | 22   | 0     | 35         | 1             | 0    | 45    | 46         | 0                | 32   | 0     | 32         | 113        |
| 07:45       | 0             | 0    | 0     | 0          | 25               | 23   | 0     | 48         | 3             | 0    | 32    | 35         | 0                | 20   | 1     | 21         | 104        |
| Total       | 0             | 0    | 0     | 0          | 67               | 108  | 0     | 175        | 24            | 0    | 202   | 226        | 1                | 121  | 16    | 138        | 539        |
| Grand Total | 0             | 0    | 0     | 0          | 136              | 332  | 0     | 468        | 143           | 0    | 409   | 552        | 1                | 341  | 81    | 423        | 1443       |
| Apprch %    | 0             | 0    | 0     | 0          | 29.1             | 70.9 | 0     |            | 25.9          | 0    | 74.1  |            | 0.2              | 80.6 | 19.1  |            |            |
| Total %     | 0             | 0    | 0     | 0          | 9.4              | 23   | 0     | 32.4       | 9.9           | 0    | 28.3  | 38.3       | 0.1              | 23.6 | 5.6   | 29.3       |            |

| Start Time   | JB Southbound |      |       |            | LYSTRA Westbound |           |       |            | JB Northbound |      |           |            | LYSTRA Eastbound |            |           |            | Int. Total |
|--|---------------|------|-------|------------|------------------|-----------|-------|------------|---------------|------|-----------|------------|------------------|------------|-----------|------------|------------|
|  | Left          | Thru | Right | App. Total | Left             | Thru      | Right | App. Total | Left          | Thru | Right     | App. Total | Left             | Thru       | Right     | App. Total |            |
| Peak Hour Analysis From 06:00 to 07:45 - Peak 1 of 1 |               |      |       |            |                  |           |       |            |               |      |           |            |                  |            |           |            |            |
| Peak Hour for Entire Intersection Begins at 06:15    |               |      |       |            |                  |           |       |            |               |      |           |            |                  |            |           |            |            |
| 06:15  | 0             | 0    | 0     | 0          | <b>24</b>        | 39        | 0     | 63         | 23            | 0    | 44        | 67         | 0                | 33         | 10        | 43         | 173        |
| 06:30  | 0             | 0    | 0     | 0          | 19               | 72        | 0     | 91         | 41            | 0    | 65        | <b>106</b> | 0                | 65         | 17        | 82         | 279        |
| 06:45  | 0             | 0    | 0     | 0          | 15               | <b>91</b> | 0     | <b>106</b> | <b>49</b>     | 0    | 52        | 101        | 0                | <b>102</b> | <b>35</b> | <b>137</b> | <b>344</b> |
| 07:00  | 0             | 0    | 0     | 0          | 12               | 37        | 0     | 49         | 9             | 0    | <b>67</b> | 76         | 0                | 41         | 11        | 52         | 177        |
| Total Volume   | 0             | 0    | 0     | 0          | 70               | 239       | 0     | 309        | 122           | 0    | 228       | 350        | 0                | 241        | 73        | 314        | 973        |
| % App. Total   | 0             | 0    | 0     | 0          | 22.7             | 77.3      | 0     |            | 34.9          | 0    | 65.1      |            | 0                | 76.8       | 23.2      |            |            |
| PHF  | .000          | .000 | .000  | .000       | .729             | .657      | .000  | .729       | .622          | .000 | .851      | .825       | .000             | .591       | .521      | .573       | .707       |



Groups Printed- Unshifted

| Start Time  | JB Southbound |      |       |            | LYSTRA Westbound |      |       |            | JB Northbound |      |       |            | LYSTRA Eastbound |      |       |            | Int. Total |
|-------------|---------------|------|-------|------------|------------------|------|-------|------------|---------------|------|-------|------------|------------------|------|-------|------------|------------|
|             | Left          | Thru | Right | App. Total | Left             | Thru | Right | App. Total | Left          | Thru | Right | App. Total | Left             | Thru | Right | App. Total |            |
| 13:00       | 0             | 0    | 0     | 0          | 14               | 22   | 0     | 36         | 7             | 0    | 6     | 13         | 0                | 11   | 6     | 17         | 66         |
| 13:15       | 0             | 0    | 0     | 0          | 18               | 36   | 0     | 54         | 17            | 0    | 8     | 25         | 0                | 17   | 4     | 21         | 100        |
| 13:30       | 0             | 0    | 0     | 0          | 27               | 23   | 0     | 50         | 12            | 0    | 16    | 28         | 0                | 18   | 5     | 23         | 101        |
| 13:45       | 0             | 0    | 0     | 0          | 21               | 41   | 0     | 62         | 11            | 0    | 16    | 27         | 0                | 37   | 16    | 53         | 142        |
| Total       | 0             | 0    | 0     | 0          | 80               | 122  | 0     | 202        | 47            | 0    | 46    | 93         | 0                | 83   | 31    | 114        | 409        |
| 14:00       | 0             | 0    | 0     | 0          | 24               | 20   | 0     | 44         | 5             | 0    | 14    | 19         | 0                | 52   | 23    | 75         | 138        |
| 14:15       | 0             | 0    | 0     | 0          | 23               | 15   | 0     | 38         | 8             | 0    | 23    | 31         | 0                | 30   | 11    | 41         | 110        |
| 14:30       | 0             | 0    | 0     | 0          | 28               | 23   | 0     | 51         | 6             | 0    | 15    | 21         | 0                | 18   | 5     | 23         | 95         |
| 14:45       | 0             | 0    | 0     | 0          | 22               | 21   | 0     | 43         | 7             | 0    | 18    | 25         | 0                | 24   | 9     | 33         | 101        |
| Total       | 0             | 0    | 0     | 0          | 97               | 79   | 0     | 176        | 26            | 0    | 70    | 96         | 0                | 124  | 48    | 172        | 444        |
| 15:00       | 0             | 0    | 0     | 0          | 27               | 20   | 0     | 47         | 4             | 0    | 25    | 29         | 0                | 18   | 2     | 20         | 96         |
| 15:15       | 0             | 0    | 0     | 0          | 28               | 30   | 0     | 58         | 5             | 0    | 16    | 21         | 0                | 19   | 8     | 27         | 106        |
| 15:30       | 0             | 0    | 0     | 0          | 36               | 33   | 0     | 69         | 6             | 0    | 18    | 24         | 0                | 22   | 3     | 25         | 118        |
| 15:45       | 0             | 0    | 0     | 0          | 50               | 32   | 0     | 82         | 8             | 0    | 13    | 21         | 0                | 24   | 7     | 31         | 134        |
| Total       | 0             | 0    | 0     | 0          | 141              | 115  | 0     | 256        | 23            | 0    | 72    | 95         | 0                | 83   | 20    | 103        | 454        |
| 16:00       | 0             | 0    | 0     | 0          | 37               | 39   | 0     | 76         | 6             | 0    | 25    | 31         | 0                | 32   | 15    | 47         | 154        |
| 16:15       | 0             | 0    | 0     | 0          | 40               | 44   | 0     | 84         | 7             | 0    | 28    | 35         | 0                | 38   | 13    | 51         | 170        |
| 16:30       | 0             | 0    | 0     | 0          | 50               | 46   | 0     | 96         | 1             | 0    | 22    | 23         | 0                | 38   | 7     | 45         | 164        |
| 16:45       | 0             | 0    | 0     | 0          | 30               | 34   | 0     | 64         | 4             | 0    | 22    | 26         | 0                | 19   | 10    | 29         | 119        |
| Total       | 0             | 0    | 0     | 0          | 157              | 163  | 0     | 320        | 18            | 0    | 97    | 115        | 0                | 127  | 45    | 172        | 607        |
| Grand Total | 0             | 0    | 0     | 0          | 475              | 479  | 0     | 954        | 114           | 0    | 285   | 399        | 0                | 417  | 144   | 561        | 1914       |
| Apprch %    | 0             | 0    | 0     |            | 49.8             | 50.2 | 0     |            | 28.6          | 0    | 71.4  |            | 0                | 74.3 | 25.7  |            |            |
| Total %     | 0             | 0    | 0     |            | 24.8             | 25   | 0     | 49.8       | 6             | 0    | 14.9  | 20.8       | 0                | 21.8 | 7.5   | 29.3       |            |

| Start Time   | JB Southbound |      |       |            | LYSTRA Westbound |           |       |            | JB Northbound |      |           |            | LYSTRA Eastbound |           |           |            | Int. Total |
|--|---------------|------|-------|------------|------------------|-----------|-------|------------|---------------|------|-----------|------------|------------------|-----------|-----------|------------|------------|
|  | Left          | Thru | Right | App. Total | Left             | Thru      | Right | App. Total | Left          | Thru | Right     | App. Total | Left             | Thru      | Right     | App. Total |            |
| Peak Hour Analysis From 13:00 to 15:00 - Peak 1 of 1 |               |      |       |            |                  |           |       |            |               |      |           |            |                  |           |           |            |            |
| Peak Hour for Entire Intersection Begins at 13:30    |               |      |       |            |                  |           |       |            |               |      |           |            |                  |           |           |            |            |
| 13:30  | 0             | 0    | 0     | 0          | <b>27</b>        | 23        | 0     | 50         | <b>12</b>     | 0    | 16        | 28         | 0                | 18        | 5         | 23         | 101        |
| 13:45  | 0             | 0    | 0     | 0          | 21               | <b>41</b> | 0     | <b>62</b>  | 11            | 0    | 16        | 27         | 0                | 37        | 16        | 53         | <b>142</b> |
| 14:00  | 0             | 0    | 0     | 0          | 24               | 20        | 0     | 44         | 5             | 0    | 14        | 19         | 0                | <b>52</b> | <b>23</b> | <b>75</b>  | 138        |
| 14:15  | 0             | 0    | 0     | 0          | 23               | 15        | 0     | 38         | 8             | 0    | <b>23</b> | <b>31</b>  | 0                | 30        | 11        | 41         | 110        |
| Total Volume   | 0             | 0    | 0     | 0          | 95               | 99        | 0     | 194        | 36            | 0    | 69        | 105        | 0                | 137       | 55        | 192        | 491        |
| % App. Total   | 0             | 0    | 0     |            | 49               | 51        | 0     |            | 34.3          | 0    | 65.7      |            | 0                | 71.4      | 28.6      |            |            |
| PHF  | .000          | .000 | .000  | .000       | .880             | .604      | .000  | .782       | .750          | .000 | .750      | .847       | .000             | .659      | .598      | .640       | .864       |

| Start Time   | JB Southbound |      |       |            | LYSTRA Westbound |           |       |            | JB Northbound |      |           |            | LYSTRA Eastbound |           |           |            | Int. Total |
|--|---------------|------|-------|------------|------------------|-----------|-------|------------|---------------|------|-----------|------------|------------------|-----------|-----------|------------|------------|
|  | Left          | Thru | Right | App. Total | Left             | Thru      | Right | App. Total | Left          | Thru | Right     | App. Total | Left             | Thru      | Right     | App. Total |            |
| Peak Hour Analysis From 15:15 to 16:45 - Peak 1 of 1 |               |      |       |            |                  |           |       |            |               |      |           |            |                  |           |           |            |            |
| Peak Hour for Entire Intersection Begins at 15:45    |               |      |       |            |                  |           |       |            |               |      |           |            |                  |           |           |            |            |
| 15:45  | 0             | 0    | 0     | 0          | <b>50</b>        | 32        | 0     | 82         | <b>8</b>      | 0    | 13        | 21         | 0                | 24        | 7         | 31         | 134        |
| 16:00  | 0             | 0    | 0     | 0          | 37               | 39        | 0     | 76         | 6             | 0    | 25        | 31         | 0                | 32        | <b>15</b> | 47         | 154        |
| 16:15  | 0             | 0    | 0     | 0          | 40               | 44        | 0     | 84         | 7             | 0    | <b>28</b> | <b>35</b>  | 0                | <b>38</b> | 13        | <b>51</b>  | <b>170</b> |
| 16:30  | 0             | 0    | 0     | 0          | 50               | <b>46</b> | 0     | <b>96</b>  | 1             | 0    | 22        | 23         | 0                | 38        | 7         | 45         | 164        |
| Total Volume   | 0             | 0    | 0     | 0          | 177              | 161       | 0     | 338        | 22            | 0    | 88        | 110        | 0                | 132       | 42        | 174        | 622        |
| % App. Total   | 0             | 0    | 0     |            | 52.4             | 47.6      | 0     |            | 20            | 0    | 80        |            | 0                | 75.9      | 24.1      |            |            |
| PHF  | .000          | .000 | .000  | .000       | .885             | .875      | .000  | .880       | .688          | .000 | .786      | .786       | .000             | .868      | .700      | .853       | .915       |

Lystra Gardens  
 Summary of Average Vehicle Trip Generation  
 For 69 Dwelling Units of Single Family Detached Housing  
 April 25, 2007

|                 | 24 Hour<br>Two-Way<br>Volume | 7-9 AM Pk Hour |      | 4-6 PM Pk Hour |      |
|-----------------|------------------------------|----------------|------|----------------|------|
|                 |                              | Enter          | Exit | Enter          | Exit |
| Average Weekday | 739                          | 14             | 43   | 48             | 28   |

|          | 24 hour<br>Two-Way<br>Volume | Peak Hour |      |
|----------|------------------------------|-----------|------|
|          |                              | Enter     | Exit |
| Saturday | 743                          | 39        | 33   |
| Sunday   | 600                          | 36        | 32   |

Note: A zero indicates no data available.  
 The above rates were calculated from these equations:

|                        |   |
|------------------------|---|
| 24-Hr. 2-Way Volume:   | $LN(T) = .92LN(X) + 2.71, R^2 = 0.96$                           |
| 7-9 AM Peak Hr. Total: | $T = .7(X) + 9.43$<br>$R^2 = 0.89, 0.25$ Enter, 0.75 Exit       |
| 4-6 PM Peak Hr. Total: | $LN(T) = .9LN(X) + .53$<br>$R^2 = 0.91, 0.63$ Enter, 0.37 Exit  |
| AM Gen Pk Hr. Total:   | $T = .7(X) + 12.05$<br>$R^2 = 0.89, 0.26$ Enter, 0.74 Exit      |
| PM Gen Pk Hr. Total:   | $LN(T) = .89LN(X) + .61$<br>$R^2 = 0.91, 0.64$ Enter, 0.36 Exit |
| Sat. 2-Way Volume:     | $LN(T) = .94LN(X) + 2.63, R^2 = 0.93$                           |
| Sat. Pk Hr. Total:     | $T = .89(X) + 10.93$<br>$R^2 = 0.9, 0.54$ Enter, 0.46 Exit      |
| Sun. 2-Way Volume:     | $T = 8.83(X) + -9.76, R^2 = 0.94$                               |
| Sun. Pk Hr. Total:     | $LN(T) = .89LN(X) + .44$<br>$R^2 = 0.88, 0.53$ Enter, 0.47 Exit |

Source: Institute of Transportation Engineers  
 Trip Generation, 7th Edition, 2003.

TRIP GENERATION BY MICROTRANS

**Lystra Road Property  
Trip Summary Spreadsheet**

| Intersection           | NAME Lystra Road - US 15-501 |          |          |             |          |            | Peak AM   |             |            |            |            |          |
|------------------------|------------------------------|----------|----------|-------------|----------|------------|-----------|-------------|------------|------------|------------|----------|
|                        | Lystra Road                  |          |          | Lystra Road |          |            | US 15-501 |             |            | US 15-501  |            |          |
| Volumes                | EBL                          | EBT      | EBR      | WBL         | WBT      | WBR        | NBL       | NBT         | NBR        | SBL        | SBT        | SBR      |
| Existing               |                              |          |          | 47          |          | 115        | 3         | 934         | 32         | 143        | 400        |          |
| Background             | 0                            | 0        | 0        | 3           | 0        | 7          | 0         | 57          | 2          | 9          | 24         | 0        |
| Approved Development   | 0                            | 0        | 0        | 144         | 0        | 45         | 0         | 627         | 75         | 38         | 411        | 0        |
| <b>Future No-Build</b> | <b>0</b>                     | <b>0</b> | <b>0</b> | <b>194</b>  | <b>0</b> | <b>167</b> | <b>3</b>  | <b>1618</b> | <b>109</b> | <b>190</b> | <b>835</b> | <b>0</b> |
| Site Primary           |                              |          |          | 5           |          | 21         |           |             | 2          | 7          |            |          |
| <b>Future Build</b>    | <b>0</b>                     | <b>0</b> | <b>0</b> | <b>199</b>  | <b>0</b> | <b>188</b> | <b>3</b>  | <b>1618</b> | <b>111</b> | <b>197</b> | <b>835</b> | <b>0</b> |

| Intersection           | NAME Lystra Road - Site Drive |            |          |             |            |          | Peak AM    |          |           |          |          |          |
|------------------------|-------------------------------|------------|----------|-------------|------------|----------|------------|----------|-----------|----------|----------|----------|
|                        | Lystra Road                   |            |          | Lystra Road |            |          | Site Drive |          |           |          |          |          |
| Volumes                | EBL                           | EBT        | EBR      | WBL         | WBT        | WBR      | NBL        | NBT      | NBR       | SBL      | SBT      | SBR      |
| Existing               |                               | 314        |          |             | 361        |          |            |          |           |          |          |          |
| Background             | 0                             | 19         | 0        | 0           | 22         | 0        | 0          | 0        | 0         | 0        | 0        | 0        |
| Approved Development   | 0                             | 89         | 0        | 0           | 131        | 0        | 0          | 0        | 0         | 0        | 0        | 0        |
| <b>Future No-Build</b> | <b>0</b>                      | <b>422</b> | <b>0</b> | <b>0</b>    | <b>514</b> | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> |
| Site Primary           |                               |            | 8        | 6           |            |          | 26         |          | 17        |          |          |          |
| <b>Future Build</b>    | <b>0</b>                      | <b>422</b> | <b>8</b> | <b>6</b>    | <b>514</b> | <b>0</b> | <b>26</b>  | <b>0</b> | <b>17</b> | <b>0</b> | <b>0</b> | <b>0</b> |

| Intersection           | NAME Lystra Road - Jack Bennett Road |            |            |             |            |          | Peak AM           |          |            |          |          |          |
|------------------------|--------------------------------------|------------|------------|-------------|------------|----------|-------------------|----------|------------|----------|----------|----------|
|                        | Lystra Road                          |            |            | Lystra Road |            |          | Jack Bennett Road |          |            |          |          |          |
| Volumes                | EBL                                  | EBT        | EBR        | WBL         | WBT        | WBR      | NBL               | NBT      | NBR        | SBL      | SBT      | SBR      |
| Existing               |                                      | 241        | 73         | 70          | 239        |          | 122               |          | 228        |          |          |          |
| Background             | 0                                    | 15         | 4          | 4           | 15         | 0        | 7                 | 0        | 14         | 0        | 0        | 0        |
| Approved Development   | 0                                    | 88         | 22         | 0           | 94         | 0        | 24                | 0        | 0          | 0        | 0        | 0        |
| <b>Future No-Build</b> | <b>0</b>                             | <b>344</b> | <b>99</b>  | <b>74</b>   | <b>348</b> | <b>0</b> | <b>153</b>        | <b>0</b> | <b>242</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| Site Primary           |                                      | 11         | 6          | 4           | 4          |          | 2                 |          |            |          |          |          |
| <b>Future Build</b>    | <b>0</b>                             | <b>355</b> | <b>105</b> | <b>74</b>   | <b>352</b> | <b>0</b> | <b>155</b>        | <b>0</b> | <b>242</b> | <b>0</b> | <b>0</b> | <b>0</b> |

Intersection

NAME Lystra Road - US 15-501

Peak PM

| Volumes                | Lystra Road |          |          | Lystra Road |          |            | US 15-501 |             |            | US 15-501  |             |          |
|------------------------|-------------|----------|----------|-------------|----------|------------|-----------|-------------|------------|------------|-------------|----------|
|                        | EBL         | EBT      | EBR      | WBL         | WBT      | WBR        | NBL       | NBT         | NBR        | SBL        | SBT         | SBR      |
| Existing               |             |          |          | 103         | 0        | 145        | 15        | 538         | 19         | 188        | 951         |          |
| Background             | 0           | 0        | 0        | 6           | 0        | 9          | 0         | 33          | 1          | 11         | 58          | 0        |
| Approved Development   | 0           | 0        | 0        | 338         | 0        | 61         | 0         | 552         | 78         | 26         | 428         | 0        |
| <b>Future No-Build</b> | <b>0</b>    | <b>0</b> | <b>0</b> | <b>447</b>  | <b>0</b> | <b>215</b> | <b>15</b> | <b>1123</b> | <b>98</b>  | <b>225</b> | <b>1437</b> | <b>0</b> |
| Site Primary           |             |          |          | 3           |          | 13         |           |             | 6          | 23         |             |          |
| <b>Future Build</b>    | <b>0</b>    | <b>0</b> | <b>0</b> | <b>450</b>  | <b>0</b> | <b>228</b> | <b>15</b> | <b>1123</b> | <b>104</b> | <b>248</b> | <b>1437</b> | <b>0</b> |

Intersection

NAME Lystra Road - Site Drive

Peak PM

| Volumes                | Lystra Road |            |           | Lystra Road |            |          | Site Drive |          |           |          |          |          |
|------------------------|-------------|------------|-----------|-------------|------------|----------|------------|----------|-----------|----------|----------|----------|
|                        | EBL         | EBT        | EBR       | WBL         | WBT        | WBR      | NBL        | NBT      | NBR       | SBL      | SBT      | SBR      |
| Existing               |             | 174        |           |             | 183        |          |            |          |           |          |          |          |
| Background             | 0           | 11         | 0         | 0           | 11         | 0        | 0          | 0        | 0         | 0        | 0        | 0        |
| Approved Development   | 0           | 149        | 0         | 0           | 109        | 0        | 0          | 0        | 0         | 0        | 0        | 0        |
| <b>Future No-Build</b> | <b>0</b>    | <b>334</b> | <b>0</b>  | <b>0</b>    | <b>303</b> | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> |
| Site Primary           |             |            | 29        | 19          |            |          | 17         |          | 11        |          |          |          |
| <b>Future Build</b>    | <b>0</b>    | <b>334</b> | <b>29</b> | <b>19</b>   | <b>303</b> | <b>0</b> | <b>17</b>  | <b>0</b> | <b>11</b> | <b>0</b> | <b>0</b> | <b>0</b> |

Intersection

NAME Lystra Road - Jack Bennett Road

Peak PM

| Volumes                | Lystra Road |            |           | Lystra Road |            |          | Jack Bennett Road |          |           |          |          |          |
|------------------------|-------------|------------|-----------|-------------|------------|----------|-------------------|----------|-----------|----------|----------|----------|
|                        | EBL         | EBT        | EBR       | WBL         | WBT        | WBR      | NBL               | NBT      | NBR       | SBL      | SBT      | SBR      |
| Existing               |             | 132        | 42        | 177         | 161        |          | 22                |          | 88        |          |          |          |
| Background             | 0           | 8          | 3         | 11          | 10         | 0        | 1                 | 0        | 5         | 0        | 0        | 0        |
| Approved Development   | 0           | 113        | 29        | 0           | 100        | 0        | 25                | 0        | 0         | 0        | 0        | 0        |
| <b>Future No-Build</b> | <b>0</b>    | <b>253</b> | <b>74</b> | <b>188</b>  | <b>271</b> | <b>0</b> | <b>48</b>         | <b>0</b> | <b>93</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| Site Primary           |             | 7          | 4         |             | 12         |          | 7                 |          |           |          |          |          |
| <b>Future Build</b>    | <b>0</b>    | <b>260</b> | <b>78</b> | <b>188</b>  | <b>283</b> | <b>0</b> | <b>55</b>         | <b>0</b> | <b>93</b> | <b>0</b> | <b>0</b> | <b>0</b> |

Intersection

NAME Lystra Road - US 15-501 Peak PM - School

| Volumes                | Lystra Road |          |          | Lystra Road |          |            | US 15-501 |             |            | US 15-501  |             |          |
|------------------------|-------------|----------|----------|-------------|----------|------------|-----------|-------------|------------|------------|-------------|----------|
|                        | EBL         | EBT      | EBR      | WBL         | WBT      | WBR        | NBL       | NBT         | NBR        | SBL        | SBT         | SBR      |
| Existing               |             |          |          | 78          |          | 116        | 10        | 449         | 33         | 159        | 602         |          |
| Background             | 0           | 0        | 0        | 5           | 0        | 7          | 0         | 27          | 2          | 10         | 37          | 0        |
| Approved Development   | 0           | 0        | 0        | 338         | 0        | 61         | 0         | 552         | 78         | 26         | 428         | 0        |
| <b>Future No-Build</b> | <b>0</b>    | <b>0</b> | <b>0</b> | <b>421</b>  | <b>0</b> | <b>184</b> | <b>10</b> | <b>1028</b> | <b>113</b> | <b>195</b> | <b>1067</b> | <b>0</b> |
| Site Primary           |             |          |          | 3           |          | 13         |           |             | 4          | 15         |             |          |
| <b>Future Build</b>    | <b>0</b>    | <b>0</b> | <b>0</b> | <b>424</b>  | <b>0</b> | <b>197</b> | <b>10</b> | <b>1028</b> | <b>117</b> | <b>210</b> | <b>1067</b> | <b>0</b> |

Intersection

NAME Lystra Road - Site Drive Peak PM - School

| Volumes                | Lystra Road |            |           | Lystra Road |            |          | Site Drive |          |           |          |          |          |
|------------------------|-------------|------------|-----------|-------------|------------|----------|------------|----------|-----------|----------|----------|----------|
|                        | EBL         | EBT        | EBR       | WBL         | WBT        | WBR      | NBL        | NBT      | NBR       | SBL      | SBT      | SBR      |
| Existing               |             | 192        |           |             | 135        |          |            |          |           |          |          |          |
| Background             | 0           | 12         | 0         | 0           | 8          | 0        | 0          | 0        | 0         | 0        | 0        | 0        |
| Approved Development   | 0           | 149        | 0         | 0           | 109        | 0        | 0          | 0        | 0         | 0        | 0        | 0        |
| <b>Future No-Build</b> | <b>0</b>    | <b>353</b> | <b>0</b>  | <b>0</b>    | <b>252</b> | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> |
| Site Primary           |             |            | 19        | 13          |            |          | 16         |          | 11        |          |          |          |
| <b>Future Build</b>    | <b>0</b>    | <b>353</b> | <b>19</b> | <b>13</b>   | <b>252</b> | <b>0</b> | <b>16</b>  | <b>0</b> | <b>11</b> | <b>0</b> | <b>0</b> | <b>0</b> |

Intersection

NAME Lystra Road - Jack Bennett Road Peak PM - School

| Volumes                | Lystra Road |            |           | Lystra Road |            |          | Jack Bennett Road |          |           |          |          |          |
|------------------------|-------------|------------|-----------|-------------|------------|----------|-------------------|----------|-----------|----------|----------|----------|
|                        | EBL         | EBT        | EBR       | WBL         | WBT        | WBR      | NBL               | NBT      | NBR       | SBL      | SBT      | SBR      |
| Existing               |             | 137        | 55        | 95          | 99         |          | 36                |          | 69        |          |          |          |
| Background             | 0           | 8          | 3         | 6           | 6          | 0        | 2                 | 0        | 4         | 0        | 0        | 0        |
| Approved Development   | 0           | 113        | 29        | 0           | 100        | 0        | 25                | 0        | 0         | 0        | 0        | 0        |
| <b>Future No-Build</b> | <b>0</b>    | <b>258</b> | <b>87</b> | <b>101</b>  | <b>205</b> | <b>0</b> | <b>63</b>         | <b>0</b> | <b>73</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| Site Primary           |             | 7          | 4         |             | 8          |          | 4                 |          |           |          |          |          |
| <b>Future Build</b>    | <b>0</b>    | <b>265</b> | <b>91</b> | <b>101</b>  | <b>213</b> | <b>0</b> | <b>67</b>         | <b>0</b> | <b>73</b> | <b>0</b> | <b>0</b> | <b>0</b> |

US 15-501 – Lystra Road  
Intersection Capacity Analyses



| Lane Group             | WBL   | WBR   | NBU   | NBT  | NBR   | SBL   | SBT  |
|------------------------|-------|-------|-------|------|-------|-------|------|
| Lane Configurations    |       |       |       |      |       |       |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (ft)    | 150   | 0     | 250   |      | 100   | 250   |      |
| Storage Lanes          | 1     | 1     | 1     |      | 1     | 1     |      |
| Total Lost Time (s)    | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Leading Detector (ft)  | 50    | 50    | 50    | 50   | 50    | 50    | 50   |
| Trailing Detector (ft) | 0     | 0     | 0     | 0    | 0     | 0     | 0    |
| Turning Speed (mph)    | 15    | 9     | 9     |      | 9     | 15    |      |
| Lane Util. Factor      | 1.00  | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 |
| Flt                    |       | 0.850 |       |      | 0.850 |       |      |
| Flt Protected          | 0.950 |       | 0.950 |      |       | 0.950 |      |
| Satd. Flow (prot)      | 1770  | 1583  | 1770  | 3539 | 1583  | 1770  | 3539 |
| Flt Permitted          | 0.950 |       | 0.495 |      |       | 0.139 |      |
| Satd. Flow (perm)      | 1770  | 1583  | 922   | 3539 | 1583  | 259   | 3539 |
| Right Turn on Red      |       | Yes   |       |      | Yes   |       |      |
| Satd. Flow (RTOR)      |       | 47    |       |      | 36    |       |      |
| Headway Factor         | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Link Speed (mph)       | 45    |       |       | 45   |       |       | 45   |
| Link Distance (ft)     | 4998  |       |       | 1773 |       |       | 2200 |
| Travel Time (s)        | 75.7  |       |       | 26.9 |       |       | 33.3 |
| Volume (vph)           | 47    | 115   | 3     | 934  | 32    | 143   | 400  |
| Peak Hour Factor       | 0.90  | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 |
| Adj. Flow (vph)        | 52    | 128   | 3     | 1038 | 36    | 159   | 444  |
| Lane Group Flow (vph)  | 52    | 128   | 3     | 1038 | 36    | 159   | 444  |
| Turn Type              |       | pm+ov | Perm  |      | pm+ov | pm+pt |      |
| Protected Phases       | 8     | 1     |       | 2    | 8     | 1     | 6    |
| Permitted Phases       |       | 8     | 2     |      | 2     | 6     |      |
| Detector Phases        | 8     | 1     | 2     | 2    | 8     | 1     | 6    |
| Minimum Initial (s)    | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Minimum Split (s)      | 16.0  | 13.0  | 16.0  | 16.0 | 16.0  | 13.0  | 16.0 |
| Total Split (s)        | 23.0  | 23.0  | 44.0  | 44.0 | 23.0  | 23.0  | 67.0 |
| Total Split (%)        | 26%   | 26%   | 49%   | 49%  | 26%   | 26%   | 74%  |
| Maximum Green (s)      | 16.0  | 16.0  | 37.0  | 37.0 | 16.0  | 16.0  | 60.0 |
| Yellow Time (s)        | 5.0   | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   | 5.0  |
| All-Red Time (s)       | 2.0   | 2.0   | 2.0   | 2.0  | 2.0   | 2.0   | 2.0  |
| Lead/Lag               |       | Lead  | Lag   | Lag  |       | Lead  |      |
| Lead-Lag Optimize?     |       | Yes   | Yes   | Yes  |       | Yes   |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0  |
| Recall Mode            | None  | None  | Min   | Min  | None  | None  | Min  |
| Act Effct Green (s)    | 10.7  | 28.2  | 35.8  | 35.8 | 49.4  | 50.6  | 50.3 |
| Actuated g/C Ratio     | 0.16  | 0.40  | 0.59  | 0.59 | 0.72  | 0.77  | 0.82 |
| v/c Ratio              | 0.18  | 0.20  | 0.01  | 0.50 | 0.03  | 0.35  | 0.15 |
| Uniform Delay, d1      | 25.7  | 9.5   | 6.7   | 9.5  | 0.0   | 2.1   | 2.2  |
| Delay                  | 24.3  | 8.5   | 9.3   | 10.4 | 1.1   | 3.2   | 2.5  |
| LOS                    | C     | A     | A     | B    | A     | A     | A    |
| Approach Delay         | 13.1  |       |       | 10.1 |       |       | 2.7  |
| Approach LOS           | B     |       |       | B    |       |       | A    |
| Queue Length 50th (ft) | 16    | 17    | 1     | 141  | 0     | 15    | 22   |
| Queue Length 95th (ft) | 51    | 58    | 5     | 228  | 6     | 38    | 41   |



| Lane Group              | WBL  | WBR | NBU | NBT  | NBR | SBL | SBT  |
|-------------------------|------|-----|-----|------|-----|-----|------|
| Internal Link Dist (ft) | 4918 |     |     | 1693 |     |     | 2120 |
| 50th Up Block Time (%)  |      |     |     |      |     |     |      |
| 95th Up Block Time (%)  |      |     |     |      |     |     |      |
| Turn Bay Length (ft)    | 150  |     | 250 |      | 100 | 250 |      |
| 50th Bay Block Time %   |      |     |     |      |     |     |      |
| 95th Bay Block Time %   | 1%   |     |     |      |     |     |      |
| Queuing Penalty (veh)   |      |     |     |      |     |     |      |

| Intersection Summary              |                        |
|-----------------------------------|------------------------|
| Area Type:                        | Other                  |
| Cycle Length:                     | 90                     |
| Actuated Cycle Length:            | 61.1                   |
| Natural Cycle:                    | 55                     |
| Control Type:                     | Actuated-Uncoordinated |
| Maximum v/c Ratio:                | 0.50                   |
| Intersection Signal Delay:        | 8.0                    |
| Intersection LOS:                 | A                      |
| Intersection Capacity Utilization | 50.8%                  |
| ICU Level of Service              | A                      |

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







| Lane Group             | WBL   | WBR   | NBU   | NBT  | NBR   | SBL   | SBT  |
|------------------------|-------|-------|-------|------|-------|-------|------|
| Lane Configurations    |       |       |       |      |       |       |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (ft)    | 150   | 0     | 250   |      | 100   | 250   |      |
| Storage Lanes          | 1     | 1     | 1     |      | 1     | 1     |      |
| Total Lost Time (s)    | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Leading Detector (ft)  | 50    | 50    | 50    | 50   | 50    | 50    | 50   |
| Trailing Detector (ft) | 0     | 0     | 0     | 0    | 0     | 0     | 0    |
| Turning Speed (mph)    | 15    | 9     | 9     |      | 9     | 15    |      |
| Lane Util. Factor      | 1.00  | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 |
| Flt                    |       | 0.850 |       |      | 0.850 |       |      |
| Flt Protected          | 0.950 |       | 0.950 |      |       | 0.950 |      |
| Satd. Flow (prot)      | 1770  | 1583  | 1770  | 3539 | 1583  | 1770  | 3539 |
| Flt Permitted          | 0.950 |       | 0.271 |      |       | 0.274 |      |
| Satd. Flow (perm)      | 1770  | 1583  | 505   | 3539 | 1583  | 510   | 3539 |
| Right Turn on Red      |       | Yes   |       |      | Yes   |       |      |
| Satd. Flow (RTOR)      |       | 110   |       |      | 21    |       |      |
| Headway Factor         | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Link Speed (mph)       | 45    |       |       | 45   |       |       | 45   |
| Link Distance (ft)     | 4998  |       |       | 1773 |       |       | 2200 |
| Travel Time (s)        | 75.7  |       |       | 26.9 |       |       | 33.3 |
| Volume (vph)           | 103   | 145   | 15    | 538  | 19    | 188   | 951  |
| Peak Hour Factor       | 0.90  | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 |
| Adj. Flow (vph)        | 114   | 161   | 17    | 598  | 21    | 209   | 1057 |
| Lane Group Flow (vph)  | 114   | 161   | 17    | 598  | 21    | 209   | 1057 |
| Turn Type              |       | pm+ov | Perm  |      | pm+ov | pm+pt |      |
| Protected Phases       | 8     | 1     |       | 2    | 8     | 1     | 6    |
| Permitted Phases       |       | 8     | 2     |      | 2     | 6     |      |
| Detector Phases        | 8     | 1     | 2     | 2    | 8     | 1     | 6    |
| Minimum Initial (s)    | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Minimum Split (s)      | 16.0  | 13.0  | 16.0  | 16.0 | 16.0  | 13.0  | 16.0 |
| Total Split (s)        | 26.0  | 29.0  | 35.0  | 35.0 | 26.0  | 29.0  | 64.0 |
| Total Split (%)        | 29%   | 32%   | 39%   | 39%  | 29%   | 32%   | 71%  |
| Maximum Green (s)      | 19.0  | 22.0  | 28.0  | 28.0 | 19.0  | 22.0  | 57.0 |
| Yellow Time (s)        | 5.0   | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   | 5.0  |
| All-Red Time (s)       | 2.0   | 2.0   | 2.0   | 2.0  | 2.0   | 2.0   | 2.0  |
| Lead/Lag               |       | Lead  | Lag   | Lag  |       | Lead  |      |
| Lead-Lag Optimize?     |       | Yes   | Yes   | Yes  |       | Yes   |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0  |
| Recall Mode            | None  | None  | Min   | Min  | None  | None  | Min  |
| Act Effct Green (s)    | 12.5  | 31.7  | 27.8  | 27.8 | 43.5  | 42.7  | 41.4 |
| Actuated g/C Ratio     | 0.20  | 0.48  | 0.47  | 0.47 | 0.68  | 0.67  | 0.70 |
| v/c Ratio              | 0.32  | 0.20  | 0.07  | 0.36 | 0.02  | 0.36  | 0.43 |
| Uniform Delay, d1      | 21.6  | 3.3   | 9.8   | 11.3 | 0.0   | 3.5   | 4.4  |
| Delay                  | 18.4  | 3.1   | 14.1  | 13.4 | 1.8   | 4.5   | 5.1  |
| LOS                    | B     | A     | B     | B    | A     | A     | A    |
| Approach Delay         | 9.5   |       |       | 13.0 |       |       | 5.0  |
| Approach LOS           | A     |       |       | B    |       |       | A    |
| Queue Length 50th (ft) | 29    | 7     | 4     | 75   | 0     | 22    | 75   |
| Queue Length 95th (ft) | 78    | 36    | 17    | 139  | 5     | 55    | 138  |

















| Lane Group              | WBL  | WBR | NBU | NBT  | NBR | SBL | SBT  |
|-------------------------|------|-----|-----|------|-----|-----|------|
| Internal Link Dist (ft) | 4918 |     |     | 1693 |     |     | 2120 |
| 50th Up Block Time (%)  |      |     |     |      |     |     |      |
| 95th Up Block Time (%)  |      |     |     |      |     |     |      |
| Turn Bay Length (ft)    | 150  |     | 250 |      | 100 | 250 |      |
| 50th Bay Block Time %   |      |     |     |      |     |     |      |
| 95th Bay Block Time %   |      |     |     |      |     |     |      |
| Queuing Penalty (veh)   |      |     |     |      |     |     |      |

| Intersection Summary              |                        |
|-----------------------------------|------------------------|
| Area Type:                        | Other                  |
| Cycle Length:                     | 90                     |
| Actuated Cycle Length:            | 59.2                   |
| Natural Cycle:                    | 45                     |
| Control Type:                     | Actuated-Uncoordinated |
| Maximum v/c Ratio:                | 0.43                   |
| Intersection Signal Delay:        | 7.9                    |
| Intersection LOS:                 | A                      |
| Intersection Capacity Utilization | 48.9%                  |
| ICU Level of Service              | A                      |

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



|                           |  |  |  |  |  |  |   |
|---------------------------|---|---|---|---|---|---|---|
| Lane Group                | WBL   | WBR   | NBU   | NBT   | NBR   | SBL   | SBT   |
| Lane Configurations       |  |  |  |  |  |  |  |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)       | 150   | 0   | 250   |   | 100   | 250   |   |
| Storage Lanes             | 1   | 1   | 1   |   | 1   | 1   |   |
| Total Lost Time (s)       | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Leading Detector (ft)     | 50  | 50  | 50  | 50  | 50  | 50  | 50  |
| Trailing Detector (ft)    | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Turning Speed (mph)       | 15  | 9   | 9   |   | 9   | 15  |   |
| Lane Util. Factor         | 1.00  | 1.00  | 1.00  | 0.95  | 1.00  | 1.00  | 0.95  |
| Fr <sub>t</sub>           |   | 0.850   |   |   | 0.850   |   |   |
| Fl <sub>t</sub> Protected | 0.950   |   | 0.950   |   |   | 0.950   |   |
| Satd. Flow (prot)         | 1770  | 1583  | 1770  | 3539  | 1583  | 1770  | 3539  |
| Fl <sub>t</sub> Permitted | 0.950   |   | 0.397   |   |   | 0.328   |   |
| Satd. Flow (perm)         | 1770  | 1583  | 740   | 3539  | 1583  | 611   | 3539  |
| Right Turn on Red         |   | Yes   |   |   | Yes   |   |   |
| Satd. Flow (RTOR)         |   | 129   |   |   | 37  |   |   |
| Headway Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Link Speed (mph)          | 45  |   |   | 45  |   |   | 45  |
| Link Distance (ft)        | 4998  |   |   | 1773  |   |   | 2200  |
| Travel Time (s)           | 75.7  |   |   | 26.9  |   |   | 33.3  |
| Volume (vph)              | 78  | 116   | 10  | 449   | 33  | 159   | 602   |
| Peak Hour Factor          | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  |
| Adj. Flow (vph)           | 87  | 129   | 11  | 499   | 37  | 177   | 669   |
| Lane Group Flow (vph)     | 87  | 129   | 11  | 499   | 37  | 177   | 669   |
| Turn Type                 |   | pm+ov   | Perm  |   | pm+ov   | pm+pt   |   |
| Protected Phases          | 8   | 1   |   | 2   | 8   | 1   | 6   |
| Permitted Phases          |   | 8   | 2   |   | 2   | 6   |   |
| Detector Phases           | 8   | 1   | 2   | 2   | 8   | 1   | 6   |
| Minimum Initial (s)       | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Minimum Split (s)         | 16.0  | 13.0  | 16.0  | 16.0  | 16.0  | 13.0  | 16.0  |
| Total Split (s)           | 28.0  | 28.0  | 34.0  | 34.0  | 28.0  | 28.0  | 62.0  |
| Total Split (%)           | 31%   | 31%   | 38%   | 38%   | 31%   | 31%   | 69%   |
| Maximum Green (s)         | 21.0  | 21.0  | 27.0  | 27.0  | 21.0  | 21.0  | 55.0  |
| Yellow Time (s)           | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| All-Red Time (s)          | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   |
| Lead/Lag                  |   | Lead  | Lag   | Lag   |   | Lead  |   |
| Lead-Lag Optimize?        |   | Yes   | Yes   | Yes   |   | Yes   |   |
| Vehicle Extension (s)     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode               | None  | None  | Min   | Min   | None  | None  | Min   |
| Act Effct Green (s)       | 13.0  | 33.3  | 29.4  | 29.4  | 46.8  | 48.1  | 47.7  |
| Actuated g/C Ratio        | 0.19  | 0.46  | 0.48  | 0.48  | 0.67  | 0.72  | 0.77  |
| v/c Ratio                 | 0.25  | 0.16  | 0.03  | 0.30  | 0.03  | 0.26  | 0.24  |
| Uniform Delay, d1         | 23.6  | 0.0   | 8.8   | 10.1  | 0.0   | 2.7   | 3.0   |
| Delay                     | 16.7  | 1.7   | 13.0  | 11.4  | 1.6   | 3.7   | 3.5   |
| LOS                       | B   | A   | B   | B   | A   | A   | A   |
| Approach Delay            | 7.7   |   |   | 10.8  |   |   | 3.5   |
| Approach LOS              | A   |   |   | B   |   |   | A   |
| Queue Length 50th (ft)    | 20  | 0   | 2   | 57  | 0   | 17  | 38  |
| Queue Length 95th (ft)    | 58  | 20  | 12  | 107   | 7   | 43  | 71  |

















| Lane Group              | WBL  | WBR | NBU | NBT  | NBR | SBL | SBT  |
|-------------------------|------|-----|-----|------|-----|-----|------|
| Internal Link Dist (ft) | 4918 |     |     | 1693 |     |     | 2120 |
| 50th Up Block Time (%)  |      |     |     |      |     |     |      |
| 95th Up Block Time (%)  |      |     |     |      |     |     |      |
| Turn Bay Length (ft)    | 150  |     | 250 |      | 100 | 250 |      |
| 50th Bay Block Time %   |      |     |     |      |     |     |      |
| 95th Bay Block Time %   |      |     |     |      |     |     |      |
| Queuing Penalty (veh)   |      |     |     |      |     |     |      |

| Intersection Summary              |                        |
|-----------------------------------|------------------------|
| Area Type:                        | Other                  |
| Cycle Length:                     | 90                     |
| Actuated Cycle Length:            | 61.8                   |
| Natural Cycle:                    | 45                     |
| Control Type:                     | Actuated-Uncoordinated |
| Maximum v/c Ratio:                | 0.30                   |
| Intersection Signal Delay:        | 6.6                    |
| Intersection LOS:                 | A                      |
| Intersection Capacity Utilization | 38.4%                  |
| ICU Level of Service              | A                      |

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



|                        |  |  |  |  |  |  |   |
|------------------------|---|---|---|---|---|---|---|
| Lane Group             | WBL   | WBR   | NBU   | NBT   | NBR   | SBL   | SBT   |
| Lane Configurations    |  |  |  |  |  |  |  |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)    | 150   | 0   | 250   |   | 100   | 250   |   |
| Storage Lanes          | 1   | 1   | 1   |   | 1   | 1   |   |
| Total Lost Time (s)    | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Leading Detector (ft)  | 50  | 50  | 50  | 50  | 50  | 50  | 50  |
| Trailing Detector (ft) | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Turning Speed (mph)    | 15  | 9   | 9   |   | 9   | 15  |   |
| Lane Util. Factor      | 1.00  | 1.00  | 1.00  | 0.95  | 1.00  | 1.00  | 0.95  |
| Flt                    |   | 0.850   |   |   | 0.850   |   |   |
| Flt Protected          | 0.950   |   | 0.950   |   |   | 0.950   |   |
| Satd. Flow (prot)      | 1770  | 1583  | 1770  | 3539  | 1583  | 1770  | 3539  |
| Flt Permitted          | 0.950   |   | 0.308   |   |   | 0.070   |   |
| Satd. Flow (perm)      | 1770  | 1583  | 574   | 3539  | 1583  | 130   | 3539  |
| Right Turn on Red      |   | Yes   |   |   | Yes   |   |   |
| Satd. Flow (RTOR)      |   | 17  |   |   | 121   |   |   |
| Headway Factor         | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Link Speed (mph)       | 45  |   |   | 45  |   |   | 45  |
| Link Distance (ft)     | 4973  |   |   | 1773  |   |   | 2200  |
| Travel Time (s)        | 75.3  |   |   | 26.9  |   |   | 33.3  |
| Volume (vph)           | 194   | 167   | 3   | 1618  | 109   | 190   | 835   |
| Peak Hour Factor       | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  |
| Adj. Flow (vph)        | 216   | 186   | 3   | 1798  | 121   | 211   | 928   |
| Lane Group Flow (vph)  | 216   | 186   | 3   | 1798  | 121   | 211   | 928   |
| Turn Type              |   | pm+ov   | Perm  |   | pm+ov   | pm+pt   |   |
| Protected Phases       | 8   | 1   |   | 2   | 8   | 1   | 6   |
| Permitted Phases       |   | 8   | 2   |   | 2   | 6   |   |
| Detector Phases        | 8   | 1   | 2   | 2   | 8   | 1   | 6   |
| Minimum Initial (s)    | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Minimum Split (s)      | 16.0  | 13.0  | 16.0  | 16.0  | 16.0  | 13.0  | 16.0  |
| Total Split (s)        | 18.0  | 15.0  | 57.0  | 57.0  | 18.0  | 15.0  | 72.0  |
| Total Split (%)        | 20%   | 17%   | 63%   | 63%   | 20%   | 17%   | 80%   |
| Maximum Green (s)      | 11.0  | 8.0   | 50.0  | 50.0  | 11.0  | 8.0   | 65.0  |
| Yellow Time (s)        | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| All-Red Time (s)       | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   |
| Lead/Lag               |   | Lead  | Lag   | Lag   |   | Lead  |   |
| Lead-Lag Optimize?     |   | Yes   | Yes   | Yes   |   | Yes   |   |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode            | None  | None  | Min   | Min   | None  | None  | Min   |
| Act Effct Green (s)    | 13.8  | 28.6  | 50.2  | 50.2  | 68.1  | 65.1  | 65.1  |
| Actuated g/C Ratio     | 0.16  | 0.33  | 0.58  | 0.58  | 0.78  | 0.75  | 0.75  |
| v/c Ratio              | 0.77  | 0.35  | 0.01  | 0.88  | 0.10  | 0.70  | 0.35  |
| Uniform Delay, d1      | 34.9  | 19.9  | 7.7   | 15.7  | 0.0   | 15.9  | 3.7   |
| Delay                  | 45.0  | 21.3  | 7.7   | 16.9  | 0.4   | 22.4  | 3.7   |
| LOS                    | D   | C   | A   | B   | A   | C   | A   |
| Approach Delay         | 34.1  |   |   | 15.9  |   |   | 7.2   |
| Approach LOS           | C   |   |   | B   |   |   | A   |
| Queue Length 50th (ft) | 120   | 72  | 1   | 414   | 0   | 63  | 73  |
| Queue Length 95th (ft) | #232  | 130   | 4   | 530   | 8   | #160  | 95  |



| Lane Group              | WBL  | WBR | NBU | NBT  | NBR | SBL | SBT  |
|-------------------------|------|-----|-----|------|-----|-----|------|
| Internal Link Dist (ft) | 4893 |     |     | 1693 |     |     | 2120 |
| 50th Up Block Time (%)  |      |     |     |      |     |     |      |
| 95th Up Block Time (%)  |      |     |     |      |     |     |      |
| Turn Bay Length (ft)    | 150  |     | 250 |      | 100 | 250 |      |
| 50th Bay Block Time %   |      |     |     | 19%  |     |     |      |
| 95th Bay Block Time %   | 36%  |     |     |      | 24% |     |      |
| Queuing Penalty (veh)   | 67   |     |     |      | 1   |     |      |

**Intersection Summary**

|   |                        |
|---|------------------------|
| Area Type:  | Other                  |
| Cycle Length:   | 90                     |
| Actuated Cycle Length:  | 86.9                   |
| Natural Cycle:  | 70                     |
| Control Type:   | Actuated-Uncoordinated |
| Maximum v/c Ratio:  | 0.88                   |
| Intersection Signal Delay:  | 15.1                   |
| Intersection LOS:   | B                      |
| Intersection Capacity Utilization:  | 83.3%                  |
| ICU Level of Service:   | D                      |
| # 95th percentile volume exceeds capacity, queue may be longer.<br>Queue shown is maximum after two cycles. |                        |

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





| Lane Group             | WBL   | WBR   | NBU   | NBT  | NBR   | SBL   | SBT  |
|------------------------|-------|-------|-------|------|-------|-------|------|
| Lane Configurations    |       |       |       |      |       |       |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (ft)    | 150   | 0     | 250   |      | 100   | 250   |      |
| Storage Lanes          | 1     | 1     | 1     |      | 1     | 1     |      |
| Total Lost Time (s)    | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Leading Detector (ft)  | 50    | 50    | 50    | 50   | 50    | 50    | 50   |
| Trailing Detector (ft) | 0     | 0     | 0     | 0    | 0     | 0     | 0    |
| Turning Speed (mph)    | 15    | 9     | 9     |      | 9     | 15    |      |
| Lane Util. Factor      | 1.00  | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 |
| Flt                    |       | 0.850 |       |      | 0.850 |       |      |
| Flt Protected          | 0.950 |       | 0.950 |      |       | 0.950 |      |
| Satd. Flow (prot)      | 1770  | 1583  | 1770  | 3539 | 1583  | 1770  | 3539 |
| Flt Permitted          | 0.950 |       | 0.108 |      |       | 0.098 |      |
| Satd. Flow (perm)      | 1770  | 1583  | 201   | 3539 | 1583  | 183   | 3539 |
| Right Turn on Red      |       | Yes   |       |      | Yes   |       |      |
| Satd. Flow (RTOR)      |       | 17    |       |      | 109   |       |      |
| Headway Factor         | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Link Speed (mph)       | 45    |       |       | 45   |       |       | 45   |
| Link Distance (ft)     | 4973  |       |       | 1773 |       |       | 2200 |
| Travel Time (s)        | 75.3  |       |       | 26.9 |       |       | 33.3 |
| Volume (vph)           | 447   | 215   | 15    | 1123 | 98    | 225   | 1437 |
| Peak Hour Factor       | 0.90  | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 |
| Adj. Flow (vph)        | 497   | 239   | 17    | 1248 | 109   | 250   | 1597 |
| Lane Group Flow (vph)  | 497   | 239   | 17    | 1248 | 109   | 250   | 1597 |
| Turn Type              |       | pm+ov | Perm  |      | pm+ov | pm+pt |      |
| Protected Phases       | 8     | 1     |       | 2    | 8     | 1     | 6    |
| Permitted Phases       |       | 8     | 2     |      | 2     | 6     |      |
| Detector Phases        | 8     | 1     | 2     | 2    | 8     | 1     | 6    |
| Minimum Initial (s)    | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Minimum Split (s)      | 16.0  | 13.0  | 16.0  | 16.0 | 16.0  | 13.0  | 16.0 |
| Total Split (s)        | 33.0  | 16.0  | 41.0  | 41.0 | 33.0  | 16.0  | 57.0 |
| Total Split (%)        | 37%   | 18%   | 46%   | 46%  | 37%   | 18%   | 63%  |
| Maximum Green (s)      | 26.0  | 9.0   | 34.0  | 34.0 | 26.0  | 9.0   | 50.0 |
| Yellow Time (s)        | 5.0   | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   | 5.0  |
| All-Red Time (s)       | 2.0   | 2.0   | 2.0   | 2.0  | 2.0   | 2.0   | 2.0  |
| Lead/Lag               |       | Lead  | Lag   | Lag  |       | Lead  |      |
| Lead-Lag Optimize?     |       | Yes   | Yes   | Yes  |       | Yes   |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0  |
| Recall Mode            | None  | None  | Min   | Min  | None  | None  | Min  |
| Act Effct Green (s)    | 27.7  | 43.6  | 35.5  | 35.5 | 67.3  | 51.5  | 51.5 |
| Actuated g/C Ratio     | 0.32  | 0.50  | 0.41  | 0.41 | 0.77  | 0.59  | 0.59 |
| v/c Ratio              | 0.88  | 0.30  | 0.21  | 0.87 | 0.09  | 0.77  | 0.76 |
| Uniform Delay, d1      | 28.1  | 11.7  | 16.7  | 23.6 | 0.0   | 16.1  | 13.3 |
| Delay                  | 36.8  | 12.4  | 19.3  | 25.8 | 0.5   | 25.7  | 13.9 |
| LOS                    | D     | B     | B     | C    | A     | C     | B    |
| Approach Delay         | 28.9  |       |       | 23.7 |       |       | 15.5 |
| Approach LOS           | C     |       |       | C    |       |       | B    |
| Queue Length 50th (ft) | 264   | 70    | 6     | 331  | 0     | 85    | 330  |
| Queue Length 95th (ft) | #443  | 120   | 24    | 424  | 9     | #204  | 421  |

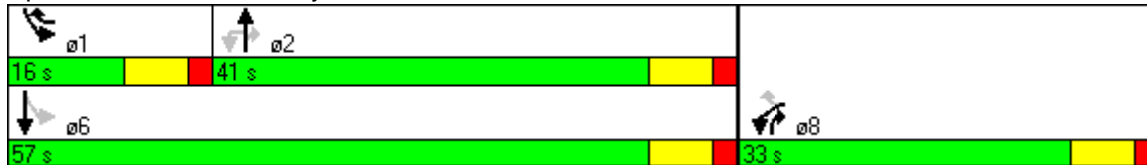


| Lane Group              | WBL  | WBR | NBU | NBT  | NBR | SBL | SBT  |
|-------------------------|------|-----|-----|------|-----|-----|------|
| Internal Link Dist (ft) | 4893 |     |     | 1693 |     |     | 2120 |
| 50th Up Block Time (%)  |      |     |     |      |     |     |      |
| 95th Up Block Time (%)  |      |     |     |      |     |     |      |
| Turn Bay Length (ft)    | 150  |     | 250 |      | 100 | 250 |      |
| 50th Bay Block Time %   | 33%  |     |     | 17%  |     |     | 14%  |
| 95th Bay Block Time %   | 49%  |     |     | 26%  |     |     | 20%  |
| Queuing Penalty (veh)   | 196  |     |     | 3    |     |     | 41   |

**Intersection Summary**

|   |                        |
|---|------------------------|
| Area Type:  | Other                  |
| Cycle Length:   | 90                     |
| Actuated Cycle Length:  | 87.2                   |
| Natural Cycle:  | 70                     |
| Control Type:   | Actuated-Uncoordinated |
| Maximum v/c Ratio:  | 0.88                   |
| Intersection Signal Delay:  | 20.8                   |
| Intersection LOS:   | C                      |
| Intersection Capacity Utilization   | 85.9%                  |
| ICU Level of Service  | D                      |
| # 95th percentile volume exceeds capacity, queue may be longer.<br>Queue shown is maximum after two cycles. |                        |

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







| Lane Group                | WBL   | WBR   | NBU   | NBT  | NBR   | SBL   | SBT  |
|---------------------------|-------|-------|-------|------|-------|-------|------|
| Lane Configurations       |       |       |       |      |       |       |      |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (ft)       | 150   | 0     | 250   |      | 100   | 250   |      |
| Storage Lanes             | 1     | 1     | 1     |      | 1     | 1     |      |
| Total Lost Time (s)       | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Leading Detector (ft)     | 50    | 50    | 50    | 50   | 50    | 50    | 50   |
| Trailing Detector (ft)    | 0     | 0     | 0     | 0    | 0     | 0     | 0    |
| Turning Speed (mph)       | 15    | 9     | 9     |      | 9     | 15    |      |
| Lane Util. Factor         | 1.00  | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 |
| Fr <sub>t</sub>           |       | 0.850 |       |      | 0.850 |       |      |
| Fl <sub>t</sub> Protected | 0.950 |       | 0.950 |      |       | 0.950 |      |
| Satd. Flow (prot)         | 1770  | 1583  | 1770  | 3539 | 1583  | 1770  | 3539 |
| Fl <sub>t</sub> Permitted | 0.950 |       | 0.233 |      |       | 0.103 |      |
| Satd. Flow (perm)         | 1770  | 1583  | 434   | 3539 | 1583  | 192   | 3539 |
| Right Turn on Red         |       | Yes   |       |      | Yes   |       |      |
| Satd. Flow (RTOR)         |       | 20    |       |      | 126   |       |      |
| Headway Factor            | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Link Speed (mph)          | 45    |       |       | 45   |       |       | 45   |
| Link Distance (ft)        | 4973  |       |       | 1773 |       |       | 2200 |
| Travel Time (s)           | 75.3  |       |       | 26.9 |       |       | 33.3 |
| Volume (vph)              | 421   | 184   | 10    | 1028 | 113   | 195   | 1067 |
| Peak Hour Factor          | 0.90  | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 |
| Adj. Flow (vph)           | 468   | 204   | 11    | 1142 | 126   | 217   | 1186 |
| Lane Group Flow (vph)     | 468   | 204   | 11    | 1142 | 126   | 217   | 1186 |
| Turn Type                 |       | pm+ov | Perm  |      | pm+ov | pm+pt |      |
| Protected Phases          | 8     | 1     |       | 2    | 8     | 1     | 6    |
| Permitted Phases          |       | 8     | 2     |      | 2     | 6     |      |
| Detector Phases           | 8     | 1     | 2     | 2    | 8     | 1     | 6    |
| Minimum Initial (s)       | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Minimum Split (s)         | 16.0  | 13.0  | 16.0  | 16.0 | 16.0  | 13.0  | 16.0 |
| Total Split (s)           | 35.0  | 16.0  | 39.0  | 39.0 | 35.0  | 16.0  | 55.0 |
| Total Split (%)           | 39%   | 18%   | 43%   | 43%  | 39%   | 18%   | 61%  |
| Maximum Green (s)         | 28.0  | 9.0   | 32.0  | 32.0 | 28.0  | 9.0   | 48.0 |
| Yellow Time (s)           | 5.0   | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   | 5.0  |
| All-Red Time (s)          | 2.0   | 2.0   | 2.0   | 2.0  | 2.0   | 2.0   | 2.0  |
| Lead/Lag                  |       | Lead  | Lag   | Lag  |       | Lead  |      |
| Lead-Lag Optimize?        |       | Yes   | Yes   | Yes  |       | Yes   |      |
| Vehicle Extension (s)     | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0  |
| Recall Mode               | None  | None  | Min   | Min  | None  | None  | Min  |
| Act Effct Green (s)       | 27.4  | 43.1  | 32.4  | 32.4 | 63.9  | 48.2  | 48.2 |
| Actuated g/C Ratio        | 0.33  | 0.51  | 0.39  | 0.39 | 0.76  | 0.58  | 0.58 |
| v/c Ratio                 | 0.81  | 0.25  | 0.07  | 0.83 | 0.10  | 0.66  | 0.58 |
| Uniform Delay, d1         | 25.6  | 10.1  | 15.9  | 22.9 | 0.0   | 11.5  | 11.2 |
| Delay                     | 28.5  | 10.7  | 18.0  | 24.9 | 0.5   | 18.1  | 12.0 |
| LOS                       | C     | B     | B     | C    | A     | B     | B    |
| Approach Delay            | 23.1  |       |       | 22.4 |       |       | 13.0 |
| Approach LOS              | C     |       |       | C    |       |       | B    |
| Queue Length 50th (ft)    | 235   | 54    | 4     | 302  | 0     | 64    | 215  |
| Queue Length 95th (ft)    | #368  | 95    | 15    | 388  | 9     | #156  | 276  |

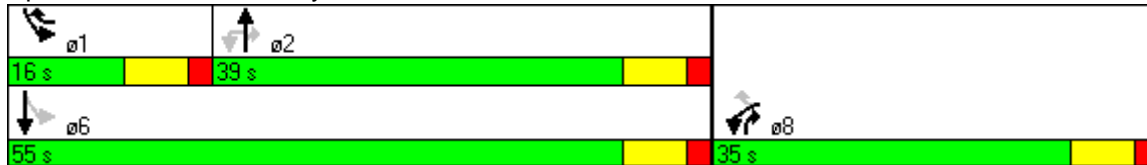


| Lane Group              | WBL  | WBR | NBU | NBT  | NBR | SBL | SBT  |
|-------------------------|------|-----|-----|------|-----|-----|------|
| Internal Link Dist (ft) | 4893 |     |     | 1693 |     |     | 2120 |
| 50th Up Block Time (%)  |      |     |     |      |     |     |      |
| 95th Up Block Time (%)  |      |     |     |      |     |     |      |
| Turn Bay Length (ft)    | 150  |     | 250 |      | 100 | 250 |      |
| 50th Bay Block Time %   | 28%  |     |     | 14%  |     |     |      |
| 95th Bay Block Time %   | 42%  |     |     | 24%  |     |     | 8%   |
| Queuing Penalty (veh)   | 141  |     |     | 2    |     |     | 9    |

**Intersection Summary**

|   |                        |
|---|------------------------|
| Area Type:  | Other                  |
| Cycle Length:   | 90                     |
| Actuated Cycle Length:  | 83.7                   |
| Natural Cycle:  | 65                     |
| Control Type:   | Actuated-Uncoordinated |
| Maximum v/c Ratio:  | 0.83                   |
| Intersection Signal Delay:  | 18.6                   |
| Intersection LOS:   | B                      |
| Intersection Capacity Utilization   | 79.5%                  |
| ICU Level of Service  | C                      |
| # 95th percentile volume exceeds capacity, queue may be longer.<br>Queue shown is maximum after two cycles. |                        |

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





| Lane Group             | WBL   | WBR   | NBU   | NBT  | NBR   | SBL   | SBT  |
|------------------------|-------|-------|-------|------|-------|-------|------|
| Lane Configurations    |       |       |       |      |       |       |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (ft)    | 150   | 0     | 250   |      | 100   | 250   |      |
| Storage Lanes          | 1     | 1     | 1     |      | 1     | 1     |      |
| Total Lost Time (s)    | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Leading Detector (ft)  | 50    | 50    | 50    | 50   | 50    | 50    | 50   |
| Trailing Detector (ft) | 0     | 0     | 0     | 0    | 0     | 0     | 0    |
| Turning Speed (mph)    | 15    | 9     | 9     |      | 9     | 15    |      |
| Lane Util. Factor      | 1.00  | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 |
| Flt                    |       | 0.850 |       |      | 0.850 |       |      |
| Flt Protected          | 0.950 |       | 0.950 |      |       | 0.950 |      |
| Satd. Flow (prot)      | 1770  | 1583  | 1770  | 3539 | 1583  | 1770  | 3539 |
| Flt Permitted          | 0.950 |       | 0.308 |      |       | 0.071 |      |
| Satd. Flow (perm)      | 1770  | 1583  | 574   | 3539 | 1583  | 132   | 3539 |
| Right Turn on Red      |       | Yes   |       |      | Yes   |       |      |
| Satd. Flow (RTOR)      |       | 16    |       |      | 123   |       |      |
| Headway Factor         | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Link Speed (mph)       | 45    |       |       | 45   |       |       | 45   |
| Link Distance (ft)     | 4998  |       |       | 1773 |       |       | 2200 |
| Travel Time (s)        | 75.7  |       |       | 26.9 |       |       | 33.3 |
| Volume (vph)           | 199   | 188   | 3     | 1618 | 111   | 197   | 835  |
| Peak Hour Factor       | 0.90  | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 |
| Adj. Flow (vph)        | 221   | 209   | 3     | 1798 | 123   | 219   | 928  |
| Lane Group Flow (vph)  | 221   | 209   | 3     | 1798 | 123   | 219   | 928  |
| Turn Type              |       | pm+ov | Perm  |      | pm+ov | pm+pt |      |
| Protected Phases       | 8     | 1     |       | 2    | 8     | 1     | 6    |
| Permitted Phases       |       | 8     | 2     |      | 2     | 6     |      |
| Detector Phases        | 8     | 1     | 2     | 2    | 8     | 1     | 6    |
| Minimum Initial (s)    | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Minimum Split (s)      | 16.0  | 13.0  | 16.0  | 16.0 | 16.0  | 13.0  | 16.0 |
| Total Split (s)        | 19.0  | 15.0  | 56.0  | 56.0 | 19.0  | 15.0  | 71.0 |
| Total Split (%)        | 21%   | 17%   | 62%   | 62%  | 21%   | 17%   | 79%  |
| Maximum Green (s)      | 12.0  | 8.0   | 49.0  | 49.0 | 12.0  | 8.0   | 64.0 |
| Yellow Time (s)        | 5.0   | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   | 5.0  |
| All-Red Time (s)       | 2.0   | 2.0   | 2.0   | 2.0  | 2.0   | 2.0   | 2.0  |
| Lead/Lag               |       | Lead  | Lag   | Lag  |       | Lead  |      |
| Lead-Lag Optimize?     |       | Yes   | Yes   | Yes  |       | Yes   |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0  |
| Recall Mode            | None  | None  | Min   | Min  | None  | None  | Min  |
| Act Effct Green (s)    | 14.6  | 29.4  | 49.7  | 49.7 | 68.2  | 64.5  | 64.5 |
| Actuated g/C Ratio     | 0.17  | 0.34  | 0.57  | 0.57 | 0.78  | 0.74  | 0.74 |
| v/c Ratio              | 0.75  | 0.38  | 0.01  | 0.89 | 0.10  | 0.73  | 0.35 |
| Uniform Delay, d1      | 34.5  | 20.1  | 8.0   | 16.3 | 0.0   | 16.6  | 4.0  |
| Delay                  | 41.9  | 21.4  | 8.3   | 18.2 | 0.4   | 24.1  | 4.0  |
| LOS                    | D     | C     | A     | B    | A     | C     | A    |
| Approach Delay         | 31.9  |       |       | 17.1 |       |       | 7.9  |
| Approach LOS           | C     |       |       | B    |       |       | A    |
| Queue Length 50th (ft) | 121   | 83    | 1     | 427  | 0     | 68    | 78   |
| Queue Length 95th (ft) | #228  | 144   | 4     | 547  | 8     | #173  | 102  |

















| Lane Group              | WBL  | WBR | NBU | NBT  | NBR | SBL | SBT  |
|-------------------------|------|-----|-----|------|-----|-----|------|
| Internal Link Dist (ft) | 4918 |     |     | 1693 |     |     | 2120 |
| 50th Up Block Time (%)  |      |     |     |      |     |     |      |
| 95th Up Block Time (%)  |      |     |     |      |     |     |      |
| Turn Bay Length (ft)    | 150  |     | 250 |      | 100 | 250 |      |
| 50th Bay Block Time %   |      |     |     | 20%  |     |     |      |
| 95th Bay Block Time %   | 34%  | 4%  | 25% |      |     |     |      |
| Queuing Penalty (veh)   | 71   | 4   | 1   |      |     |     |      |

**Intersection Summary**

Area Type: Other  
 Cycle Length: 90  
 Actuated Cycle Length: 87.1  
 Natural Cycle: 75  
 Control Type: Actuated-Uncoordinated  
 Maximum v/c Ratio: 0.89  
 Intersection Signal Delay: 15.9 Intersection LOS: B  
 Intersection Capacity Utilization 84.1% ICU Level of Service D  
 # 95th percentile volume exceeds capacity, queue may be longer.  
 Queue shown is maximum after two cycles.

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



|                           |  |  |  |  |  |  |   |
|---------------------------|---|---|---|---|---|---|---|
| Lane Group                | WBL   | WBR   | NBU   | NBT   | NBR   | SBL   | SBT   |
| Lane Configurations       |  |  |  |  |  |  |  |
| Ideal Flow (vphpl)        | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)       | 150   | 0   | 250   |   | 100   | 250   |   |
| Storage Lanes             | 1   | 1   | 1   |   | 1   | 1   |   |
| Total Lost Time (s)       | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Leading Detector (ft)     | 50  | 50  | 50  | 50  | 50  | 50  | 50  |
| Trailing Detector (ft)    | 0   | 0   | 0   | 0   | 0   | 0   | 0   |
| Turning Speed (mph)       | 15  | 9   | 9   |   | 9   | 15  |   |
| Lane Util. Factor         | 1.00  | 1.00  | 1.00  | 0.95  | 1.00  | 1.00  | 0.95  |
| Fr <sub>t</sub>           |   | 0.850   |   |   | 0.850   |   |   |
| Fl <sub>t</sub> Protected | 0.950   |   | 0.950   |   |   | 0.950   |   |
| Satd. Flow (prot)         | 1770  | 1583  | 1770  | 3539  | 1583  | 1770  | 3539  |
| Fl <sub>t</sub> Permitted | 0.950   |   | 0.111   |   |   | 0.100   |   |
| Satd. Flow (perm)         | 1770  | 1583  | 207   | 3539  | 1583  | 186   | 3539  |
| Right Turn on Red         |   | Yes   |   |   | Yes   |   |   |
| Satd. Flow (RTOR)         |   | 15  |   |   | 116   |   |   |
| Headway Factor            | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Link Speed (mph)          | 45  |   |   | 45  |   |   | 45  |
| Link Distance (ft)        | 4998  |   |   | 1773  |   |   | 2200  |
| Travel Time (s)           | 75.7  |   |   | 26.9  |   |   | 33.3  |
| Volume (vph)              | 450   | 228   | 15  | 1123  | 104   | 248   | 1437  |
| Peak Hour Factor          | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  | 0.90  |
| Adj. Flow (vph)           | 500   | 253   | 17  | 1248  | 116   | 276   | 1597  |
| Lane Group Flow (vph)     | 500   | 253   | 17  | 1248  | 116   | 276   | 1597  |
| Turn Type                 |   | pm+ov   | Perm  |   | pm+ov   | pm+pt   |   |
| Protected Phases          | 8   | 1   |   | 2   | 8   | 1   | 6   |
| Permitted Phases          |   | 8   | 2   |   | 2   | 6   |   |
| Detector Phases           | 8   | 1   | 2   | 2   | 8   | 1   | 6   |
| Minimum Initial (s)       | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   |
| Minimum Split (s)         | 16.0  | 13.0  | 16.0  | 16.0  | 16.0  | 13.0  | 16.0  |
| Total Split (s)           | 33.0  | 17.0  | 40.0  | 40.0  | 33.0  | 17.0  | 57.0  |
| Total Split (%)           | 37%   | 19%   | 44%   | 44%   | 37%   | 19%   | 63%   |
| Maximum Green (s)         | 26.0  | 10.0  | 33.0  | 33.0  | 26.0  | 10.0  | 50.0  |
| Yellow Time (s)           | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   | 5.0   |
| All-Red Time (s)          | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   |
| Lead/Lag                  |   | Lead  | Lag   | Lag   |   | Lead  |   |
| Lead-Lag Optimize?        |   | Yes   | Yes   | Yes   |   | Yes   |   |
| Vehicle Extension (s)     | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   | 3.0   |
| Recall Mode               | None  | None  | Min   | Min   | None  | None  | Min   |
| Act Effct Green (s)       | 27.9  | 44.8  | 35.0  | 35.0  | 66.9  | 51.9  | 51.9  |
| Actuated g/C Ratio        | 0.32  | 0.51  | 0.40  | 0.40  | 0.76  | 0.59  | 0.59  |
| v/c Ratio                 | 0.89  | 0.31  | 0.20  | 0.88  | 0.09  | 0.81  | 0.76  |
| Uniform Delay, d1         | 28.4  | 11.7  | 17.3  | 24.5  | 0.0   | 17.8  | 13.4  |
| Delay                     | 37.7  | 12.2  | 19.9  | 27.8  | 0.5   | 28.7  | 13.9  |
| LOS                       | D   | B   | B   | C   | A   | C   | B   |
| Approach Delay            | 29.1  |   |   | 25.4  |   |   | 16.1  |
| Approach LOS              | C   |   |   | C   |   |   | B   |
| Queue Length 50th (ft)    | 267   | 74  | 6   | 338   | 0   | 100   | 330   |
| Queue Length 95th (ft)    | #448  | 124   | 24  | #469  | 10  | #231  | 421   |

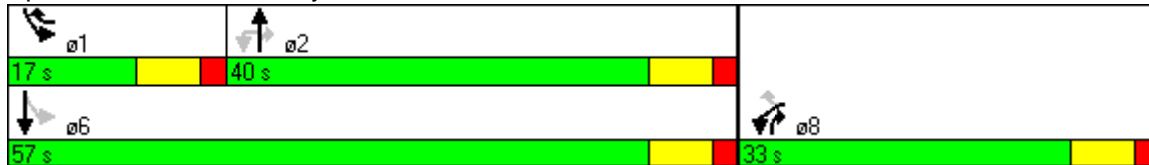


| Lane Group              | WBL  | WBR | NBU | NBT  | NBR | SBL | SBT  |
|-------------------------|------|-----|-----|------|-----|-----|------|
| Internal Link Dist (ft) | 4918 |     |     | 1693 |     |     | 2120 |
| 50th Up Block Time (%)  |      |     |     |      |     |     |      |
| 95th Up Block Time (%)  |      |     |     |      |     |     |      |
| Turn Bay Length (ft)    | 150  |     | 250 |      | 100 | 250 |      |
| 50th Bay Block Time %   | 33%  |     |     | 18%  |     |     | 14%  |
| 95th Bay Block Time %   | 49%  |     |     | 29%  |     |     | 20%  |
| Queuing Penalty (veh)   | 209  |     |     | 4    |     |     | 45   |

**Intersection Summary**

|   |                        |
|---|------------------------|
| Area Type:  | Other                  |
| Cycle Length:   | 90                     |
| Actuated Cycle Length:  | 87.8                   |
| Natural Cycle:  | 70                     |
| Control Type:   | Actuated-Uncoordinated |
| Maximum v/c Ratio:  | 0.89                   |
| Intersection Signal Delay:  | 21.8                   |
| Intersection LOS:   | C                      |
| Intersection Capacity Utilization   | 87.5%                  |
| ICU Level of Service  | D                      |
| # 95th percentile volume exceeds capacity, queue may be longer.<br>Queue shown is maximum after two cycles. |                        |

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





| Lane Group             | WBL   | WBR   | NBU   | NBT  | NBR   | SBL   | SBT  |
|------------------------|-------|-------|-------|------|-------|-------|------|
| Lane Configurations    |       |       |       |      |       |       |      |
| Ideal Flow (vphpl)     | 1900  | 1900  | 1900  | 1900 | 1900  | 1900  | 1900 |
| Storage Length (ft)    | 150   | 0     | 250   |      | 100   | 250   |      |
| Storage Lanes          | 1     | 1     | 1     |      | 1     | 1     |      |
| Total Lost Time (s)    | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Leading Detector (ft)  | 50    | 50    | 50    | 50   | 50    | 50    | 50   |
| Trailing Detector (ft) | 0     | 0     | 0     | 0    | 0     | 0     | 0    |
| Turning Speed (mph)    | 15    | 9     | 9     |      | 9     | 15    |      |
| Lane Util. Factor      | 1.00  | 1.00  | 1.00  | 0.95 | 1.00  | 1.00  | 0.95 |
| Flt                    |       | 0.850 |       |      | 0.850 |       |      |
| Flt Protected          | 0.950 |       | 0.950 |      |       | 0.950 |      |
| Satd. Flow (prot)      | 1770  | 1583  | 1770  | 3539 | 1583  | 1770  | 3539 |
| Flt Permitted          | 0.950 |       | 0.238 |      |       | 0.103 |      |
| Satd. Flow (perm)      | 1770  | 1583  | 443   | 3539 | 1583  | 192   | 3539 |
| Right Turn on Red      |       | Yes   |       |      | Yes   |       |      |
| Satd. Flow (RTOR)      |       | 20    |       |      | 130   |       |      |
| Headway Factor         | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00  | 1.00 |
| Link Speed (mph)       | 45    |       |       | 45   |       |       | 45   |
| Link Distance (ft)     | 4998  |       |       | 1773 |       |       | 2200 |
| Travel Time (s)        | 75.7  |       |       | 26.9 |       |       | 33.3 |
| Volume (vph)           | 424   | 197   | 10    | 1028 | 117   | 210   | 1067 |
| Peak Hour Factor       | 0.90  | 0.90  | 0.90  | 0.90 | 0.90  | 0.90  | 0.90 |
| Adj. Flow (vph)        | 471   | 219   | 11    | 1142 | 130   | 233   | 1186 |
| Lane Group Flow (vph)  | 471   | 219   | 11    | 1142 | 130   | 233   | 1186 |
| Turn Type              |       | pm+ov | Perm  |      | pm+ov | pm+pt |      |
| Protected Phases       | 8     | 1     |       | 2    | 8     | 1     | 6    |
| Permitted Phases       |       | 8     | 2     |      | 2     | 6     |      |
| Detector Phases        | 8     | 1     | 2     | 2    | 8     | 1     | 6    |
| Minimum Initial (s)    | 4.0   | 4.0   | 4.0   | 4.0  | 4.0   | 4.0   | 4.0  |
| Minimum Split (s)      | 16.0  | 13.0  | 16.0  | 16.0 | 16.0  | 13.0  | 16.0 |
| Total Split (s)        | 34.0  | 17.0  | 39.0  | 39.0 | 34.0  | 17.0  | 56.0 |
| Total Split (%)        | 38%   | 19%   | 43%   | 43%  | 38%   | 19%   | 62%  |
| Maximum Green (s)      | 27.0  | 10.0  | 32.0  | 32.0 | 27.0  | 10.0  | 49.0 |
| Yellow Time (s)        | 5.0   | 5.0   | 5.0   | 5.0  | 5.0   | 5.0   | 5.0  |
| All-Red Time (s)       | 2.0   | 2.0   | 2.0   | 2.0  | 2.0   | 2.0   | 2.0  |
| Lead/Lag               |       | Lead  | Lag   | Lag  |       | Lead  |      |
| Lead-Lag Optimize?     |       | Yes   | Yes   | Yes  |       | Yes   |      |
| Vehicle Extension (s)  | 3.0   | 3.0   | 3.0   | 3.0  | 3.0   | 3.0   | 3.0  |
| Recall Mode            | None  | None  | Min   | Min  | None  | None  | Min  |
| Act Effct Green (s)    | 27.2  | 43.7  | 32.7  | 32.7 | 64.0  | 49.3  | 49.3 |
| Actuated g/C Ratio     | 0.32  | 0.52  | 0.39  | 0.39 | 0.76  | 0.58  | 0.58 |
| v/c Ratio              | 0.83  | 0.26  | 0.06  | 0.83 | 0.11  | 0.68  | 0.58 |
| Uniform Delay, d1      | 26.4  | 10.3  | 16.1  | 23.2 | 0.0   | 13.0  | 11.0 |
| Delay                  | 30.7  | 10.9  | 18.0  | 25.1 | 0.5   | 18.7  | 11.6 |
| LOS                    | C     | B     | B     | C    | A     | B     | B    |
| Approach Delay         | 24.4  |       |       | 22.5 |       |       | 12.8 |
| Approach LOS           | C     |       |       | C    |       |       | B    |
| Queue Length 50th (ft) | 241   | 59    | 4     | 302  | 0     | 73    | 208  |
| Queue Length 95th (ft) | #397  | 102   | 15    | 388  | 10    | #168  | 267  |

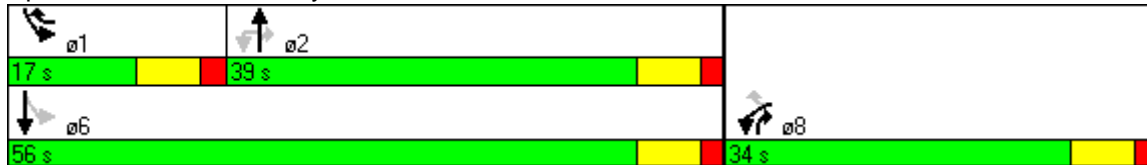


| Lane Group              | WBL  | WBR | NBU | NBT  | NBR | SBL | SBT  |
|-------------------------|------|-----|-----|------|-----|-----|------|
| Internal Link Dist (ft) | 4918 |     |     | 1693 |     |     | 2120 |
| 50th Up Block Time (%)  |      |     |     |      |     |     |      |
| 95th Up Block Time (%)  |      |     |     |      |     |     |      |
| Turn Bay Length (ft)    | 150  |     | 250 |      | 100 | 250 |      |
| 50th Bay Block Time %   | 29%  |     |     | 14%  |     |     |      |
| 95th Bay Block Time %   | 44%  |     |     | 24%  |     |     | 7%   |
| Queuing Penalty (veh)   | 160  |     |     | 2    |     |     | 8    |

**Intersection Summary**

|   |                        |
|---|------------------------|
| Area Type:  | Other                  |
| Cycle Length:   | 90                     |
| Actuated Cycle Length:  | 84.6                   |
| Natural Cycle:  | 65                     |
| Control Type:   | Actuated-Uncoordinated |
| Maximum v/c Ratio:  | 0.83                   |
| Intersection Signal Delay:  | 18.9                   |
| Intersection LOS:   | B                      |
| Intersection Capacity Utilization   | 80.6%                  |
| ICU Level of Service  | D                      |
| # 95th percentile volume exceeds capacity, queue may be longer.<br>Queue shown is maximum after two cycles. |                        |

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





# Lystra Road – Site Drive Intersection Capacity Analyses



| Movement                          | EBT         | EBR         | WBL         | WBT                  | NBL  | NBR  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               | ↩           |             |             | ↩                    | ↩    | ↩    |
| Sign Control                      | Free        |             |             | Free                 | Stop |      |
| Grade                             | 0%          |             |             | 0%                   | 0%   |      |
| Volume (veh/h)                    | 422         | 8           | 6           | 514                  | 26   | 17   |
| Peak Hour Factor                  | 0.90        | 0.90        | 0.90        | 0.90                 | 0.90 | 0.90 |
| Hourly flow rate (veh/h)          | 469         | 9           | 7           | 571                  | 29   | 19   |
| Pedestrians                       |             |             |             |                      |      |      |
| Lane Width (ft)                   |             |             |             |                      |      |      |
| Walking Speed (ft/s)              |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       |             |             |             | None                 |      |      |
| Median storage (veh)              |             |             |             |                      |      |      |
| vC, conflicting volume            |             |             | 478         | 1058                 | 473  |      |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| tC, single (s)                    |             |             | 4.1         | 6.4                  | 6.2  |      |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            |             |             | 2.2         | 3.5                  | 3.3  |      |
| p0 queue free %                   |             |             | 99          | 88                   | 97   |      |
| cM capacity (veh/h)               |             |             | 1084        | 247                  | 591  |      |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>WB 1</b> | <b>NB 1</b> |                      |      |      |
| Volume Total                      | 478         | 578         | 48          |                      |      |      |
| Volume Left                       | 0           | 7           | 29          |                      |      |      |
| Volume Right                      | 9           | 0           | 19          |                      |      |      |
| cSH                               | 1700        | 1084        | 321         |                      |      |      |
| Volume to Capacity                | 0.28        | 0.01        | 0.15        |                      |      |      |
| Queue Length (ft)                 | 0           | 0           | 13          |                      |      |      |
| Control Delay (s)                 | 0.0         | 0.2         | 18.2        |                      |      |      |
| Lane LOS                          |             | A           | C           |                      |      |      |
| Approach Delay (s)                | 0.0         | 0.2         | 18.2        |                      |      |      |
| Approach LOS                      |             |             | C           |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 0.9         |                      |      |      |
| Intersection Capacity Utilization |             | 43.8%       |             | ICU Level of Service |      | A    |

HCM Unsignalized Intersection Capacity Analysis  
6: Lystra Road & Site Drive

Future Build PM (2007)  
4/25/2007



| Movement                          | EBT         | EBR         | WBL         | WBT                  | NBL  | NBR  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               | ↶           |             |             | ↷                    |      | ↷    |
| Sign Control                      | Free        |             |             | Free                 | Stop |      |
| Grade                             | 0%          |             |             | 0%                   | 0%   |      |
| Volume (veh/h)                    | 334         | 29          | 19          | 303                  | 17   | 11   |
| Peak Hour Factor                  | 0.90        | 0.90        | 0.90        | 0.90                 | 0.90 | 0.90 |
| Hourly flow rate (veh/h)          | 371         | 32          | 21          | 337                  | 19   | 12   |
| Pedestrians                       |             |             |             |                      |      |      |
| Lane Width (ft)                   |             |             |             |                      |      |      |
| Walking Speed (ft/s)              |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       | None        |             |             |                      |      |      |
| Median storage (veh)              |             |             |             |                      |      |      |
| vC, conflicting volume            |             |             | 403         |                      | 766  | 387  |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| tC, single (s)                    |             |             | 4.1         |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            |             |             | 2.2         |                      | 3.5  | 3.3  |
| p0 queue free %                   |             |             | 98          |                      | 95   | 98   |
| cM capacity (veh/h)               |             |             | 1155        |                      | 364  | 661  |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>WB 1</b> | <b>NB 1</b> |                      |      |      |
| Volume Total                      | 403         | 358         | 31          |                      |      |      |
| Volume Left                       | 0           | 21          | 19          |                      |      |      |
| Volume Right                      | 32          | 0           | 12          |                      |      |      |
| cSH                               | 1700        | 1155        | 442         |                      |      |      |
| Volume to Capacity                | 0.24        | 0.02        | 0.07        |                      |      |      |
| Queue Length (ft)                 | 0           | 1           | 6           |                      |      |      |
| Control Delay (s)                 | 0.0         | 0.7         | 13.8        |                      |      |      |
| Lane LOS                          |             | A           | B           |                      |      |      |
| Approach Delay (s)                | 0.0         | 0.7         | 13.8        |                      |      |      |
| Approach LOS                      |             |             | B           |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 0.8         |                      |      |      |
| Intersection Capacity Utilization |             |             | 37.3%       | ICU Level of Service | A    |      |

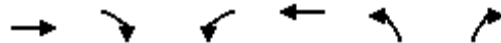
HCM Unsignalized Intersection Capacity Analysis  
6: Lystra Road & Site Drive

Future Build School PM (2007)  
4/25/2007



| Movement                          | EBT         | EBR         | WBL         | WBT                  | NBL  | NBR  |
|-----------------------------------|-------------|-------------|-------------|----------------------|------|------|
| Lane Configurations               | ↗           |             |             | ↖                    |      | ↘    |
| Sign Control                      | Free        |             |             | Free                 | Stop |      |
| Grade                             | 0%          |             |             | 0%                   | 0%   |      |
| Volume (veh/h)                    | 299         | 19          | 13          | 331                  | 16   | 11   |
| Peak Hour Factor                  | 0.90        | 0.90        | 0.90        | 0.90                 | 0.90 | 0.90 |
| Hourly flow rate (veh/h)          | 332         | 21          | 14          | 368                  | 18   | 12   |
| Pedestrians                       |             |             |             |                      |      |      |
| Lane Width (ft)                   |             |             |             |                      |      |      |
| Walking Speed (ft/s)              |             |             |             |                      |      |      |
| Percent Blockage                  |             |             |             |                      |      |      |
| Right turn flare (veh)            |             |             |             |                      |      |      |
| Median type                       | None        |             |             |                      |      |      |
| Median storage (veh)              |             |             |             |                      |      |      |
| vC, conflicting volume            |             |             | 353         |                      | 739  | 343  |
| vC1, stage 1 conf vol             |             |             |             |                      |      |      |
| vC2, stage 2 conf vol             |             |             |             |                      |      |      |
| tC, single (s)                    |             |             | 4.1         |                      | 6.4  | 6.2  |
| tC, 2 stage (s)                   |             |             |             |                      |      |      |
| tF (s)                            |             |             | 2.2         |                      | 3.5  | 3.3  |
| p0 queue free %                   |             |             | 99          |                      | 95   | 98   |
| cM capacity (veh/h)               |             |             | 1205        |                      | 380  | 700  |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>WB 1</b> | <b>NB 1</b> |                      |      |      |
| Volume Total                      | 353         | 382         | 30          |                      |      |      |
| Volume Left                       | 0           | 14          | 18          |                      |      |      |
| Volume Right                      | 21          | 0           | 12          |                      |      |      |
| cSH                               | 1700        | 1205        | 467         |                      |      |      |
| Volume to Capacity                | 0.21        | 0.01        | 0.06        |                      |      |      |
| Queue Length (ft)                 | 0           | 1           | 5           |                      |      |      |
| Control Delay (s)                 | 0.0         | 0.4         | 13.2        |                      |      |      |
| Lane LOS                          |             | A           | B           |                      |      |      |
| Approach Delay (s)                | 0.0         | 0.4         | 13.2        |                      |      |      |
| Approach LOS                      |             |             | B           |                      |      |      |
| <b>Intersection Summary</b>       |             |             |             |                      |      |      |
| Average Delay                     |             |             | 0.7         |                      |      |      |
| Intersection Capacity Utilization |             |             | 35.5%       | ICU Level of Service | A    |      |

Lystra Road – Jack Bennett Road  
Intersection Capacity Analyses



| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↻    |      | ↻    | ↻    | ↻    | ↻    |
| Sign Control             | Free |      |      | Free | Stop |      |
| Grade                    | 0%   |      |      | 0%   | 0%   |      |
| Volume (veh/h)           | 241  | 73   | 70   | 239  | 122  | 228  |
| Peak Hour Factor         | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (veh/h) | 268  | 81   | 78   | 266  | 136  | 253  |
| Pedestrians              |      |      |      |      |      |      |
| Lane Width (ft)          |      |      |      |      |      |      |
| Walking Speed (ft/s)     |      |      |      |      |      |      |
| Percent Blockage         |      |      |      |      |      |      |
| Right turn flare (veh)   |      |      |      |      |      |      |
| Median type              |      |      |      | None |      |      |
| Median storage (veh)     |      |      |      |      |      |      |
| vC, conflicting volume   |      |      | 349  |      | 729  | 308  |
| vC1, stage 1 conf vol    |      |      |      |      |      |      |
| vC2, stage 2 conf vol    |      |      |      |      |      |      |
| tC, single (s)           |      |      | 4.1  |      | 6.4  | 6.2  |
| tC, 2 stage (s)          |      |      |      |      |      |      |
| tF (s)                   |      |      | 2.2  |      | 3.5  | 3.3  |
| p0 queue free %          |      |      | 94   |      | 63   | 65   |
| cM capacity (veh/h)      |      |      | 1210 |      | 365  | 732  |

| Direction, Lane #  | EB 1 | WB 1 | WB 2 | NB 1 |
|--------------------|------|------|------|------|
| Volume Total       | 349  | 78   | 266  | 389  |
| Volume Left        | 0    | 78   | 0    | 136  |
| Volume Right       | 81   | 0    | 0    | 253  |
| cSH                | 1700 | 1210 | 1700 | 542  |
| Volume to Capacity | 0.21 | 0.06 | 0.16 | 0.72 |
| Queue Length (ft)  | 0    | 5    | 0    | 146  |
| Control Delay (s)  | 0.0  | 8.2  | 0.0  | 26.8 |
| Lane LOS           |      | A    |      | D    |
| Approach Delay (s) | 0.0  | 1.9  |      | 26.8 |
| Approach LOS       |      |      |      | D    |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 10.2                 |   |
| Intersection Capacity Utilization | 56.4% | ICU Level of Service | A |



| Movement                          | EBT         | EBR         | WBL         | WBT         | NBL                  | NBR  |
|-----------------------------------|-------------|-------------|-------------|-------------|----------------------|------|
| Lane Configurations               | ↩           |             | ↩           | ↩           | ↩                    | ↩    |
| Sign Control                      | Free        |             |             | Free        | Stop                 |      |
| Grade                             | 0%          |             |             | 0%          | 0%                   |      |
| Volume (veh/h)                    | 132         | 42          | 177         | 161         | 22                   | 88   |
| Peak Hour Factor                  | 0.90        | 0.90        | 0.90        | 0.90        | 0.90                 | 0.90 |
| Hourly flow rate (veh/h)          | 147         | 47          | 197         | 179         | 24                   | 98   |
| Pedestrians                       |             |             |             |             |                      |      |
| Lane Width (ft)                   |             |             |             |             |                      |      |
| Walking Speed (ft/s)              |             |             |             |             |                      |      |
| Percent Blockage                  |             |             |             |             |                      |      |
| Right turn flare (veh)            |             |             |             |             |                      |      |
| Median type                       |             |             |             | None        |                      |      |
| Median storage (veh)              |             |             |             |             |                      |      |
| vC, conflicting volume            |             |             | 193         |             | 742                  | 170  |
| vC1, stage 1 conf vol             |             |             |             |             |                      |      |
| vC2, stage 2 conf vol             |             |             |             |             |                      |      |
| tC, single (s)                    |             |             | 4.1         |             | 6.4                  | 6.2  |
| tC, 2 stage (s)                   |             |             |             |             |                      |      |
| tF (s)                            |             |             | 2.2         |             | 3.5                  | 3.3  |
| p0 queue free %                   |             |             | 86          |             | 93                   | 89   |
| cM capacity (veh/h)               |             |             | 1380        |             | 328                  | 874  |
| <b>Direction, Lane #</b>          | <b>EB 1</b> | <b>WB 1</b> | <b>WB 2</b> | <b>NB 1</b> |                      |      |
| Volume Total                      | 193         | 197         | 179         | 122         |                      |      |
| Volume Left                       | 0           | 197         | 0           | 24          |                      |      |
| Volume Right                      | 47          | 0           | 0           | 98          |                      |      |
| cSH                               | 1700        | 1380        | 1700        | 656         |                      |      |
| Volume to Capacity                | 0.11        | 0.14        | 0.11        | 0.19        |                      |      |
| Queue Length (ft)                 | 0           | 12          | 0           | 17          |                      |      |
| Control Delay (s)                 | 0.0         | 8.0         | 0.0         | 11.7        |                      |      |
| Lane LOS                          |             | A           |             | B           |                      |      |
| Approach Delay (s)                | 0.0         | 4.2         |             | 11.7        |                      |      |
| Approach LOS                      |             |             |             | B           |                      |      |
| <b>Intersection Summary</b>       |             |             |             |             |                      |      |
| Average Delay                     |             |             | 4.4         |             |                      |      |
| Intersection Capacity Utilization |             |             | 38.8%       |             | ICU Level of Service | A    |



| Movement                          | EBT  | EBR  | WBL   | WBT  | NBL                  | NBR  |
|-----------------------------------|------|------|-------|------|----------------------|------|
| Lane Configurations               | ↻    |      | ↻     | ↻    | ↻                    | ↻    |
| Sign Control                      | Free |      |       | Free | Stop                 |      |
| Grade                             | 0%   |      |       | 0%   | 0%                   |      |
| Volume (veh/h)                    | 137  | 55   | 95    | 99   | 36                   | 69   |
| Peak Hour Factor                  | 0.90 | 0.90 | 0.90  | 0.90 | 0.90                 | 0.90 |
| Hourly flow rate (veh/h)          | 152  | 61   | 106   | 110  | 40                   | 77   |
| Pedestrians                       |      |      |       |      |                      |      |
| Lane Width (ft)                   |      |      |       |      |                      |      |
| Walking Speed (ft/s)              |      |      |       |      |                      |      |
| Percent Blockage                  |      |      |       |      |                      |      |
| Right turn flare (veh)            |      |      |       |      |                      |      |
| Median type                       |      |      |       |      | None                 |      |
| Median storage (veh)              |      |      |       |      |                      |      |
| vC, conflicting volume            |      |      | 213   |      | 504                  | 183  |
| vC1, stage 1 conf vol             |      |      |       |      |                      |      |
| vC2, stage 2 conf vol             |      |      |       |      |                      |      |
| tC, single (s)                    |      |      | 4.1   |      | 6.4                  | 6.2  |
| tC, 2 stage (s)                   |      |      |       |      |                      |      |
| tF (s)                            |      |      | 2.2   |      | 3.5                  | 3.3  |
| p0 queue free %                   |      |      | 92    |      | 92                   | 91   |
| cM capacity (veh/h)               |      |      | 1357  |      | 487                  | 860  |
| Direction, Lane #                 | EB 1 | WB 1 | WB 2  | NB 1 |                      |      |
| Volume Total                      | 213  | 106  | 110   | 117  |                      |      |
| Volume Left                       | 0    | 106  | 0     | 40   |                      |      |
| Volume Right                      | 61   | 0    | 0     | 77   |                      |      |
| cSH                               | 1700 | 1357 | 1700  | 681  |                      |      |
| Volume to Capacity                | 0.13 | 0.08 | 0.06  | 0.17 |                      |      |
| Queue Length (ft)                 | 0    | 6    | 0     | 15   |                      |      |
| Control Delay (s)                 | 0.0  | 7.9  | 0.0   | 11.4 |                      |      |
| Lane LOS                          |      | A    |       | B    |                      |      |
| Approach Delay (s)                | 0.0  | 3.9  |       | 11.4 |                      |      |
| Approach LOS                      |      |      |       | B    |                      |      |
| Intersection Summary              |      |      |       |      |                      |      |
| Average Delay                     |      |      | 4.0   |      |                      |      |
| Intersection Capacity Utilization |      |      | 34.5% |      | ICU Level of Service | A    |



| Movement                          | EBT  | EBR  | WBL   | WBT   | NBL                  | NBR  |
|-----------------------------------|------|------|-------|-------|----------------------|------|
| Lane Configurations               |      |      |       |       |                      |      |
| Sign Control                      | Free |      |       | Free  | Stop                 |      |
| Grade                             | 0%   |      |       | 0%    | 0%                   |      |
| Volume (veh/h)                    | 344  | 99   | 74    | 348   | 153                  | 242  |
| Peak Hour Factor                  | 0.90 | 0.90 | 0.90  | 0.90  | 0.90                 | 0.90 |
| Hourly flow rate (veh/h)          | 382  | 110  | 82    | 387   | 170                  | 269  |
| Pedestrians                       |      |      |       |       |                      |      |
| Lane Width (ft)                   |      |      |       |       |                      |      |
| Walking Speed (ft/s)              |      |      |       |       |                      |      |
| Percent Blockage                  |      |      |       |       |                      |      |
| Right turn flare (veh)            |      |      |       |       |                      |      |
| Median type                       |      |      |       | None  |                      |      |
| Median storage (veh)              |      |      |       |       |                      |      |
| vC, conflicting volume            |      |      | 492   |       | 988                  | 437  |
| vC1, stage 1 conf vol             |      |      |       |       |                      |      |
| vC2, stage 2 conf vol             |      |      |       |       |                      |      |
| tC, single (s)                    |      |      | 4.1   |       | 6.4                  | 6.2  |
| tC, 2 stage (s)                   |      |      |       |       |                      |      |
| tF (s)                            |      |      | 2.2   |       | 3.5                  | 3.3  |
| p0 queue free %                   |      |      | 92    |       | 33                   | 57   |
| cM capacity (veh/h)               |      |      | 1071  |       | 253                  | 619  |
| Direction, Lane #                 | EB 1 | WB 1 | WB 2  | NB 1  |                      |      |
| Volume Total                      | 492  | 82   | 387   | 439   |                      |      |
| Volume Left                       | 0    | 82   | 0     | 170   |                      |      |
| Volume Right                      | 110  | 0    | 0     | 269   |                      |      |
| cSH                               | 1700 | 1071 | 1700  | 397   |                      |      |
| Volume to Capacity                | 0.29 | 0.08 | 0.23  | 1.11  |                      |      |
| Queue Length (ft)                 | 0    | 6    | 0     | 393   |                      |      |
| Control Delay (s)                 | 0.0  | 8.6  | 0.0   | 109.4 |                      |      |
| Lane LOS                          |      | A    |       | F     |                      |      |
| Approach Delay (s)                | 0.0  | 1.5  |       | 109.4 |                      |      |
| Approach LOS                      |      |      |       | F     |                      |      |
| Intersection Summary              |      |      |       |       |                      |      |
| Average Delay                     |      |      | 34.8  |       |                      |      |
| Intersection Capacity Utilization |      |      | 67.3% |       | ICU Level of Service | B    |



| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↻    |      | ↻    | ↻    | ↻    | ↻    |
| Sign Control             | Free |      |      | Free | Stop |      |
| Grade                    | 0%   |      |      | 0%   | 0%   |      |
| Volume (veh/h)           | 253  | 74   | 188  | 271  | 48   | 93   |
| Peak Hour Factor         | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (veh/h) | 281  | 82   | 209  | 301  | 53   | 103  |
| Pedestrians              |      |      |      |      |      |      |
| Lane Width (ft)          |      |      |      |      |      |      |
| Walking Speed (ft/s)     |      |      |      |      |      |      |
| Percent Blockage         |      |      |      |      |      |      |
| Right turn flare (veh)   |      |      |      |      |      |      |
| Median type              |      |      |      |      | None |      |
| Median storage (veh)     |      |      |      |      |      |      |
| vC, conflicting volume   |      |      | 363  |      | 1041 | 322  |
| vC1, stage 1 conf vol    |      |      |      |      |      |      |
| vC2, stage 2 conf vol    |      |      |      |      |      |      |
| tC, single (s)           |      |      | 4.1  |      | 6.4  | 6.2  |
| tC, 2 stage (s)          |      |      |      |      |      |      |
| tF (s)                   |      |      | 2.2  |      | 3.5  | 3.3  |
| p0 queue free %          |      |      | 83   |      | 75   | 86   |
| cM capacity (veh/h)      |      |      | 1195 |      | 210  | 719  |

| Direction, Lane #  | EB 1 | WB 1 | WB 2 | NB 1 |
|--------------------|------|------|------|------|
| Volume Total       | 363  | 209  | 301  | 157  |
| Volume Left        | 0    | 209  | 0    | 53   |
| Volume Right       | 82   | 0    | 0    | 103  |
| cSH                | 1700 | 1195 | 1700 | 394  |
| Volume to Capacity | 0.21 | 0.17 | 0.18 | 0.40 |
| Queue Length (ft)  | 0    | 16   | 0    | 47   |
| Control Delay (s)  | 0.0  | 8.6  | 0.0  | 20.0 |
| Lane LOS           |      | A    |      | C    |
| Approach Delay (s) | 0.0  | 3.5  |      | 20.0 |
| Approach LOS       |      |      |      | C    |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 4.8                  |   |
| Intersection Capacity Utilization | 50.7% | ICU Level of Service | A |



| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↻    |      | ↻    | ↻    | ↻    | ↻    |
| Sign Control             | Free |      |      | Free | Stop |      |
| Grade                    | 0%   |      |      | 0%   | 0%   |      |
| Volume (veh/h)           | 258  | 87   | 101  | 205  | 63   | 73   |
| Peak Hour Factor         | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (veh/h) | 287  | 97   | 112  | 228  | 70   | 81   |
| Pedestrians              |      |      |      |      |      |      |
| Lane Width (ft)          |      |      |      |      |      |      |
| Walking Speed (ft/s)     |      |      |      |      |      |      |
| Percent Blockage         |      |      |      |      |      |      |
| Right turn flare (veh)   |      |      |      |      |      |      |
| Median type              |      |      |      | None |      |      |
| Median storage (veh)     |      |      |      |      |      |      |
| vC, conflicting volume   |      |      | 383  |      | 787  | 335  |
| vC1, stage 1 conf vol    |      |      |      |      |      |      |
| vC2, stage 2 conf vol    |      |      |      |      |      |      |
| tC, single (s)           |      |      | 4.1  |      | 6.4  | 6.2  |
| tC, 2 stage (s)          |      |      |      |      |      |      |
| tF (s)                   |      |      | 2.2  |      | 3.5  | 3.3  |
| p0 queue free %          |      |      | 90   |      | 79   | 89   |
| cM capacity (veh/h)      |      |      | 1175 |      | 326  | 707  |

| Direction, Lane #  | EB 1 | WB 1 | WB 2 | NB 1 |
|--------------------|------|------|------|------|
| Volume Total       | 383  | 112  | 228  | 151  |
| Volume Left        | 0    | 112  | 0    | 70   |
| Volume Right       | 97   | 0    | 0    | 81   |
| cSH                | 1700 | 1175 | 1700 | 459  |
| Volume to Capacity | 0.23 | 0.10 | 0.13 | 0.33 |
| Queue Length (ft)  | 0    | 8    | 0    | 36   |
| Control Delay (s)  | 0.0  | 8.4  | 0.0  | 16.7 |
| Lane LOS           |      | A    |      | C    |
| Approach Delay (s) | 0.0  | 2.8  |      | 16.7 |
| Approach LOS       |      |      |      | C    |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 4.0                  |   |
| Intersection Capacity Utilization | 46.0% | ICU Level of Service | A |



| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↻    |      | ↻    | ↻    | ↻    | ↻    |
| Sign Control             | Free |      |      | Free | Stop |      |
| Grade                    | 0%   |      |      | 0%   | 0%   |      |
| Volume (veh/h)           | 355  | 105  | 74   | 352  | 155  | 242  |
| Peak Hour Factor         | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (veh/h) | 394  | 117  | 82   | 391  | 172  | 269  |
| Pedestrians              |      |      |      |      |      |      |
| Lane Width (ft)          |      |      |      |      |      |      |
| Walking Speed (ft/s)     |      |      |      |      |      |      |
| Percent Blockage         |      |      |      |      |      |      |
| Right turn flare (veh)   |      |      |      |      |      |      |
| Median type              |      |      |      |      | None |      |
| Median storage (veh)     |      |      |      |      |      |      |
| vC, conflicting volume   |      |      | 511  |      | 1008 | 453  |
| vC1, stage 1 conf vol    |      |      |      |      |      |      |
| vC2, stage 2 conf vol    |      |      |      |      |      |      |
| tC, single (s)           |      |      | 4.1  |      | 6.4  | 6.2  |
| tC, 2 stage (s)          |      |      |      |      |      |      |
| tF (s)                   |      |      | 2.2  |      | 3.5  | 3.3  |
| p0 queue free %          |      |      | 92   |      | 30   | 56   |
| cM capacity (veh/h)      |      |      | 1054 |      | 246  | 607  |

| Direction, Lane #  | EB 1 | WB 1 | WB 2 | NB 1  |
|--------------------|------|------|------|-------|
| Volume Total       | 511  | 82   | 391  | 441   |
| Volume Left        | 0    | 82   | 0    | 172   |
| Volume Right       | 117  | 0    | 0    | 269   |
| cSH                | 1700 | 1054 | 1700 | 386   |
| Volume to Capacity | 0.30 | 0.08 | 0.23 | 1.14  |
| Queue Length (ft)  | 0    | 6    | 0    | 420   |
| Control Delay (s)  | 0.0  | 8.7  | 0.0  | 123.3 |
| Lane LOS           |      | A    |      | F     |
| Approach Delay (s) | 0.0  | 1.5  |      | 123.3 |
| Approach LOS       |      |      |      | F     |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 38.7                 |   |
| Intersection Capacity Utilization | 68.5% | ICU Level of Service | B |



| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↻    |      | ↻    | ↻    | ↻    | ↻    |
| Sign Control             | Free |      |      | Free | Stop |      |
| Grade                    | 0%   |      |      | 0%   | 0%   |      |
| Volume (veh/h)           | 260  | 78   | 188  | 283  | 55   | 93   |
| Peak Hour Factor         | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (veh/h) | 289  | 87   | 209  | 314  | 61   | 103  |
| Pedestrians              |      |      |      |      |      |      |
| Lane Width (ft)          |      |      |      |      |      |      |
| Walking Speed (ft/s)     |      |      |      |      |      |      |
| Percent Blockage         |      |      |      |      |      |      |
| Right turn flare (veh)   |      |      |      |      |      |      |
| Median type              |      |      |      |      | None |      |
| Median storage (veh)     |      |      |      |      |      |      |
| vC, conflicting volume   |      |      | 376  |      | 1064 | 332  |
| vC1, stage 1 conf vol    |      |      |      |      |      |      |
| vC2, stage 2 conf vol    |      |      |      |      |      |      |
| tC, single (s)           |      |      | 4.1  |      | 6.4  | 6.2  |
| tC, 2 stage (s)          |      |      |      |      |      |      |
| tF (s)                   |      |      | 2.2  |      | 3.5  | 3.3  |
| p0 queue free %          |      |      | 82   |      | 70   | 85   |
| cM capacity (veh/h)      |      |      | 1183 |      | 203  | 709  |

| Direction, Lane #  | EB 1 | WB 1 | WB 2 | NB 1 |
|--------------------|------|------|------|------|
| Volume Total       | 376  | 209  | 314  | 164  |
| Volume Left        | 0    | 209  | 0    | 61   |
| Volume Right       | 87   | 0    | 0    | 103  |
| cSH                | 1700 | 1183 | 1700 | 368  |
| Volume to Capacity | 0.22 | 0.18 | 0.18 | 0.45 |
| Queue Length (ft)  | 0    | 16   | 0    | 56   |
| Control Delay (s)  | 0.0  | 8.7  | 0.0  | 22.4 |
| Lane LOS           |      | A    |      | C    |
| Approach Delay (s) | 0.0  | 3.5  |      | 22.4 |
| Approach LOS       |      |      |      | C    |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 5.2                  |   |
| Intersection Capacity Utilization | 51.8% | ICU Level of Service | A |



| Movement                 | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↻    |      | ↻    | ↻    | ↻    | ↻    |
| Sign Control             | Free |      |      | Free | Stop |      |
| Grade                    | 0%   |      |      | 0%   | 0%   |      |
| Volume (veh/h)           | 265  | 91   | 101  | 213  | 67   | 73   |
| Peak Hour Factor         | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Hourly flow rate (veh/h) | 294  | 101  | 112  | 237  | 74   | 81   |
| Pedestrians              |      |      |      |      |      |      |
| Lane Width (ft)          |      |      |      |      |      |      |
| Walking Speed (ft/s)     |      |      |      |      |      |      |
| Percent Blockage         |      |      |      |      |      |      |
| Right turn flare (veh)   |      |      |      |      |      |      |
| Median type              |      |      |      | None |      |      |
| Median storage (veh)     |      |      |      |      |      |      |
| vC, conflicting volume   |      |      | 396  |      | 806  | 345  |
| vC1, stage 1 conf vol    |      |      |      |      |      |      |
| vC2, stage 2 conf vol    |      |      |      |      |      |      |
| tC, single (s)           |      |      | 4.1  |      | 6.4  | 6.2  |
| tC, 2 stage (s)          |      |      |      |      |      |      |
| tF (s)                   |      |      | 2.2  |      | 3.5  | 3.3  |
| p0 queue free %          |      |      | 90   |      | 77   | 88   |
| cM capacity (veh/h)      |      |      | 1163 |      | 317  | 698  |

| Direction, Lane #  | EB 1 | WB 1 | WB 2 | NB 1 |
|--------------------|------|------|------|------|
| Volume Total       | 396  | 112  | 237  | 156  |
| Volume Left        | 0    | 112  | 0    | 74   |
| Volume Right       | 101  | 0    | 0    | 81   |
| cSH                | 1700 | 1163 | 1700 | 443  |
| Volume to Capacity | 0.23 | 0.10 | 0.14 | 0.35 |
| Queue Length (ft)  | 0    | 8    | 0    | 39   |
| Control Delay (s)  | 0.0  | 8.4  | 0.0  | 17.4 |
| Lane LOS           |      | A    |      | C    |
| Approach Delay (s) | 0.0  | 2.7  |      | 17.4 |
| Approach LOS       |      |      |      | C    |

| Intersection Summary              |       |                      |   |
|-----------------------------------|-------|----------------------|---|
| Average Delay                     |       | 4.1                  |   |
| Intersection Capacity Utilization | 47.0% | ICU Level of Service | A |

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