PREPARED FOR
TOWN OF CORNELIUS

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CORNELIUS BOND PACKAGE

TRAFFIC ANALYSIS

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CORNELIUS
NORTH CAROLINA

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I. EXECUTIVE SUMMARY

The Town of Cornelius retained Parsons Brinckerhoff, Inc. to evaluate traffic operations for several potential road improvement projects identified in the Town's Bond Package. The project study area for this analysis includes several intersections throughout the Town, as well as the Catawba Avenue corridor from Statesville Road (US 21) to Main Street (NC 115). This study includes analyses for all of the identified intersections and potential street extension alternatives. The purpose of this study is to prioritize the various projects based on capacity improvements and aide in the decision making process for the potential improvements identified in the Town Bond Package.

Different scenarios were analyzed for each project to evaluate the existing operations of the intersections, as well as the projected operations in the future build-out year. For this study the Build year scenario was 2035. A 1.5% growth rate was used to determine the future traffic volumes throughout the study area. This growth rate was chosen to correspond to the growth rate used in "*Catawba Avenue & US 21 Modified Roundabout" (Parsons Brinckerhoff, 2012)*. The analysis compared the existing operations to the future operations, for both a "No-Build" and a "Build" scenario. The No-Build scenario was analyzed based on the existing conditions with the future traffic volumes to determine how the intersections would operate with no improvements. The Build scenario was analyzed based on the future traffic volumes along with the proposed improvements for the various projects.

Overall the proposed projects provided positive impacts to the study intersections. The proposed street extension projects provided the greatest improvements to LOS for the study intersections. These projects reduced the delays at the Statesville Road (US 21) & Catawba Avenue, Main Street (NC 115) & Catawba Avenue, and Bailey Road & Statesville Road (US 21) intersections up to 50% in some scenarios. None of the proposed projects will negatively impact the proposed roundabout at the Catawba Avenue & Statesville Road (US 21) intersection. The extension projects also reduce trips along Catawba Avenue by providing direct access to other streets in the study area. The intersection improvement projects to Bailey Road & Old Statesville Road (NC 115) and Westmoreland Road & Statesville Road (US 21) improved the LOS and reduced the delay at these intersections between 40-50% by adding turn lanes and increasing storage on existing turn lanes. While the turn lane additions improved the operations of these intersections, additional thru lanes will be needed on Statesville Road and Old Statesville Road in order to improve the operations any further due to the high volumes.

Cost estimates were developed for all of the proposed projects and compared to benefit rankings for each project based on delay reduction, connectivity, and safety improvements. The intersection improvement projects at Bailey Rd & Old Statesville Rd and Westmoreland Rd & Statesville Rd had the highest benefit-cost ratios. The Catawba Ave Turn Lanes project had the lowest ratio. Based on the Benefit-Cost results we recommend moving forward with the following intersections: Bailey Rd & NC 115, Westmoreland Rd & US 21, Floral Ln Extension, Gem St Extension, and Hickory St Extension. These projects have a combined cost estimate of approximately $5,430,000.

II. INTRODUCTION

The Town of Cornelius retained Parsons Brinckerhoff, Inc. to evaluate traffic operations for several potential road improvement projects identified in the Town's Bond Package. The project study area for this analysis includes the Catawba Avenue corridor from Statesville Road (US 21) to Main Street (NC 115), as well as several additional intersections throughout the Town. This study includes analyses for all of the identified intersections and potential street extension alternatives. The purpose of this study is to prioritize the various projects based on capacity improvements and aide in the decision making process for the potential improvements identified in the Town Bond Package.

III. AREA CONDITIONS

Area Roads

A description of the roads and lane geometry within the study area is given below and shown in **Figures 1-4: Existing Lane Configurations**. The proposed lane configurations for the construction of each project are described in the Capacity Analysis Results section and shown in **Figures 5-14: Proposed Lane Configurations**.

Catawba Avenue is a two-lane facility that runs east/west in the study area. It functions as a major collector road with a posted speed limit of 35 miles per hour (mph) from Statesville Road to Smith Circle and 25 mph from Smith Circle to Main Street.

Statesville Road (US 21) is a two-lane facility that runs north/south in the study area. It functions as a major thoroughfare road with a posted speed limit of 35 mph. Statesville Road connects the Town of Cornelius with the Town of Huntersville as well as the City of Charlotte. Statesville Road terminates at a signalized intersection with Catawba Avenue and Holiday Lane.

Main Street/Old Statesville Road (NC 115) is a two-lane facility that runs north/south in the study area. It functions as a major thoroughfare road with a posted speed limit of 35 mph. Main Street also connects Cornelius with Huntersville and Charlotte, as well as the Town of Davidson.

Westmoreland Road is a two-lane facility that runs east/west in the study area. It functions as a major collector with a posted speed limit of 45 mph. Westmoreland Road intersects Statesville Road to form a signalized four-leg intersection.

Bailey Road is a two-lane facility that runs east/west in the study area. It functions as a minor collector with a posted speed limit of 25 mph from Statesville Road to just east of Washam Potts Road and 35 mph from that point to its terminus. Bailey Road intersects Statesville Road to form a signalized three-leg intersection and it intersects Old Statesville Road to form a signalized four-leg intersection.

The remaining streets in the study are two-lane facilities that function as local roads with posted speed limits of 25 mph.

Existing Traffic Volumes
Existing turning movement counts were collected for the following intersections:

- Catawba Avenue & Statesville Road (US 21)
- Catawba Avenue & Burton Lane
- Catawba Avenue & Ferry Street
- Catawba Avenue & Smith Circle
- Catawba Avenue & School Street
- Catawba Avenue & Meridian Street
- Catawba Avenue & Lake Village Boulevard
- Catawba Avenue & Oak Street
- Catawba Avenue & Main Street (NC 115)
- Main Street (NC 115) & Hickory Street
- Old Statesville Road (NC 115) & Bailey Road
- Statesville Road (US 21) & Westmoreland Road
- Statesville Road (US 21) & Bailey Road
- Bailey Road & Poole Place Drive

These counts were performed on February 26, 2014. A review of the traffic counts revealed that the morning and afternoon peak hours varied amongst the study area intersections. In order to analyze the worst cases for all intersections, the peak hour volumes for each intersection were used. (Please see **Figures 15-18: 2014 Traffic Volumes** and **Figures 19-22: 2035 No-Build Traffic Volumes** for existing and projected AM and PM peak hour traffic volumes. The raw traffic count data collected is included in **Appendix A**.)

IV. HISTORICAL GROWTH

A background growth rate of 1.5% was used to project the normal growth of traffic on the adjacent roadways. This growth rate was chosen to correspond to the growth rate used in "*Catawba Avenue & US 21 Modified Roundabout" (Parsons Brinckerhoff, 2012).*

V. PROPOSED PROJECTS

The purpose of this study is to aide in the decision making process for projects identified in the Town Bond Package. Nine projects have been identified for analyses as follows:

- Proposed construction of left turn lanes along Catawba Avenue
- Proposed extension of Floral Lane to Statesville Road (US 21)
- Proposed extension of Smithville Lane to Statesville Road (US 21)
- Proposed Bailey Road re-alignment at Statesville Road (US 21)
- Proposed intersection improvements to Old Statesville Road (NC 115) & Bailey Road
- Proposed intersection improvements to Statesville Road (US 21) & Westmoreland Road
- Proposed extension of Gem Street to Oak Street
- Proposed extension of Hickory Street to Antiquity
- Proposed construction of Holiday Lane & Ferry Street connector street

The proposed left turn lane construction along Catawba Avenue will improve safety and traffic operations along the corridor. In order to reduce costs and impacts to the surrounding properties,

turn lanes were proposed only at essential streets with above average peak turning volumes. These streets included Ferry Street, Lake Village Boulevard, Smith Circle, and School Street.

The proposed street extension projects and the construction of the connector street will improve connectivity of the street network in the study area. This will help reduce congestion in the area by providing alternate traffic patterns to the surrounding drivers.

The Bailey Road re-alignment project will create an additional three-leg intersection with Statesville Road (US 21) south of the existing signalized intersection. The proposed improvements will provide more connectivity for this area as well as eliminate a sharp curve in the existing Bailey Road geometry.

The intersections of Old Statesville Road (NC 115) & Bailey Road and Statesville Road (US 21) & Westmoreland Road were analyzed to determine the most cost effective improvements in order to improve safety and minimize delay. Timing modifications, increasing existing storage, and adding turn lanes were evaluated as possible improvements to the intersections.

VI. CAPACITY ANALYSIS METHODOLOGY

The existing conditions were analyzed for every project to create a base scenario. The base scenario was then adjusted with the proposed growth rate. This established a basis for how these intersections operate today (2014) and how they will operate in the future without improvements (2035 No-Build). The proposed projects were then analyzed with the associated improvements in place for the design year (2035 Build).

For the street extension projects, including the Bailey Road Re-alignment and Holiday Lane-Ferry Street Connector projects, trips were re-distributed along the network to account for the expected new traffic patterns associated with the connectivity established by the project. These distributions were revised based on the existing turning volumes that would benefit from the new connections. The percentages were established using the existing volume splits from the upstream intersections. This provided a reasonable, conservative percentage to use for the distributions. The trip distributions for each project are shown in **Figures 23-28: Trip Distributions** and the resulting traffic volumes are shown in **Figures 29-37: 2035 Build Traffic Volumes**.

The Base, No-Build, and Build scenarios were then compared to determine the overall effectiveness of the proposed improvements for each project. Each project was analyzed separately since there is no time frame for when projects will be constructed or whether some of the projects will be constructed at all. However, the Holiday Lane-Ferry Street Connector project increases the traffic at the Catawba Avenue and Statesville Road (US 21) intersection. Therefore analysis was performed on the roundabout proposed at this intersection as part of a separate project. SIDRA was used for this analysis.

SIDRA is recognized by the US Highway Capacity Manual (HCM) and FHWA Roundabout Guide as the standard software for roundabout analysis. This software calculates measures of effectiveness based on the HCM calculation methods. The SIDRA results give a level of service (LOS) for the intersections similar to SYNCHRO.

SYNCHRO 8.0 was used to analyze the projects in the study area for the alternatives. The Synchro results give a level of service (LOS) for the intersections. The LOS is an important measure of roadway congestion. The LOS is determined by calculating the delay for the intersection and converting it to a letter. The LOS ranges from A (no congestion) to F (severe congestion). The LOS criteria for signalized and unsignalized intersections are shown in **Table 1: Level of Service Criteria**.

Table 1: Level of Service Criteria

Signalized Intersections		**Unsignalized Intersections**		**Roundabouts**	
LOS	Delay per Vehicle (seconds)	LOS	Delay per Vehicle (seconds)	LOS	Delay per Vehicle (seconds)
A	≤10	A	≤10	A	≤10
B	>10 and ≤20	B	>10 and ≤15	B	>10 and ≤20
C	>20 and ≤35	C	>15 and ≤25	C	>20 and ≤35
D	>35 and ≤55	D	>25 and ≤35	D	>35 and ≤50
E	>55 and ≤80	E	>35 and ≤50	E	>50 and ≤70
F	>80	F	>50	F	>70

VII. CAPACITY ANALYSIS RESULTS

Catawba Avenue Left Turn Lane Construction

Description

The proposed intersections that were evaluated for turn lanes were Ferry Street, Lake Village Boulevard, Smith Circle, and School Street. The turn lane storages were determined based on the proposed queue length of each movement and the existing spacing between intersections. The proposed lane configurations are shown in **Figures 5-6: Proposed Lane Configurations**.

Analysis

Table 2 summarizes the measures of effectiveness at these intersections for each scenario. The Synchro analyses are located in **Appendix B**.

Table 2: Catawba Avenue Turn Lanes MOE

Intersection		AM Peak			PM Peak		
		2014	2035 No-Build	2035 Build	2014	2035 No-Build	2035 Build
Catawba Avenue & Ferry Street	LOS	C	D	D	C	D	D
	Delay (sec)	19.1	31.6	31.6	18.7	31.3	31.1
Catawba Avenue & Lake Village Blvd	LOS	B	C	B	B	B	B
	Delay (sec)	12.8	16.8	14.9	11.7	14.5	13.2
Catawba Avenue & Smith Circle	LOS	A	B	B	A	A	A
	Delay (sec)	9.1	13.2	11.9	4.6	9.1	8.7
Catawba Avenue & School Street	LOS	A	A	A	A	A	A
	Delay (sec)	6.7	6.7	5.9	6.9	7.5	6.9

Note: Delay is based on the worst approach for unsignalized intersections.

Conclusion

The addition of the left turn lanes did not greatly affect the operations for most of the study intersections, due to the low turning volumes along the corridor, although they were improved. The addition of the turn lanes also provides future capacity to these intersections as the traffic volumes continue to grow.

The turn lanes will remove the left turn traffic from the thru lanes at these intersections and therefore reduce or eliminate traffic queuing. However, it is difficult to accurately measure the impact of the turn lanes due to the overall congestion along the corridor. The congestion is mostly due to the capacity issues associated with the Statesville Rd (US 21) and Main St (NC 115) intersections creating traffic queues along the corridor. The proposed adjacent construction projects, the DDI and US 21 roundabout, were modeled in SimTraffic and greatly reduced the westbound queuing. Improvements at NC 115, such as additional thru lanes along NC 115, are necessary in order to reduce eastbound queuing along Catawba Ave. Improving the congestion at each end of the corridor will minimize the corridor queuing and therefore maximize the benefit from the turn lanes removing the turning traffic queues from the thru lanes.

Floral Lane Extension

Description

The proposed project will extend the southern terminus of Floral Lane to an unsignalized three-leg intersection with Statesville Road (US 21) approximately 4,200ft south of Catawba Avenue. The proposed lane configurations are shown in **Figure 7: Proposed Lane Configurations**. Currently, there are several other local roads serving single family homes and Cornelius Elementary School in this area that are forced to travel on Catawba Avenue in order to access Statesville Road (US 21). The proposed extension will allow this traffic to bypass the Catawba Avenue corridor and access Statesville Road (US 21) via the new intersection formed with the Floral Lane extension. Therefore, an analysis was performed for the following additional intersections to determine the impact of the trip diversions shown in **Figure 23**:

- Catawba Avenue & School Street
- Catawba Avenue & Smith Circle
- Catawba Avenue & Statesville Road (US 21)

Analysis

Table 3 summarizes the measures of effectiveness for the subject intersections. The Synchro analyses are located in **Appendix C**.

Table 3: Floral Lane Extension MOE

Intersection		AM Peak			PM Peak		
		2014	2035 No-Build	2035 Build	2014	2035 No-Build	2035 Build
Catawba Avenue & School Street	LOS	A	A	A	A	A	B
	Delay (sec)	6.7	7.1	7.4	6.9	7.1	12.1
Catawba Avenue & Smith Circle	LOS	A	B	B	A	A	A
	Delay (sec)	9.1	13.6	10.1	4.6	8.3	7.0
Catawba Avenue & Statesville Road (US 21)	LOS	E	F	E	D	F	E
	Delay (sec)	66.8	113.7	71.1	41.0	81.1	60.3
Statesville Road & Floral Lane Extension	LOS	-	-	F	-	-	D
	Delay (sec)	-	-	57.0	-	-	30.1

Note: Delay is based on the worst approach for unsignalized intersections.

Conclusion

The Floral Lane Extension option had a significant positive impact for the LOS of the Statesville Rd (US 21) & Catawba Ave intersection due to a redistribution of traffic from Catawba Ave onto Floral Ln. LOS for the 2035 AM and PM Build scenarios are improved to an E and the delays were reduced by approximately 35% and 25% for the AM and PM Build scenarios, respectively. The other existing intersections operate at LOS A or B, both of which are acceptable. Similar improvements would be expected at Statesville Rd (US 21) & Catawba Ave if the proposed roundabout is installed at that intersection. It is not uncommon for side streets that form unsignalized intersections with high volume facilities to experience high delays or failing levels of service.

Smithville Lane Extension

Description

The proposed project will extend the southern terminus to an unsignalized three-leg intersection with Statesville Road (US 21) approximately 2,500ft south of Catawba Avenue. The proposed lane configuration is shown in **Figure 8: Proposed Lane Configurations**. The proposed extension will improve safety and traffic operations by reducing the left turn movements from South Hill Street and Ferry Street for traffic traveling to Statesville Road (US 21). Similarly to the Floral Lane extension, traffic will be able to bypass the Catawba Avenue corridor by accessing Statesville Road (US 21) via the new intersection formed with the Smithville Lane extension. Therefore, an analysis was performed for the following additional intersections to determine the impact of the trip diversions shown in **Figure 24**:

- Catawba Avenue & Ferry Street
- Catawba Avenue & South Hill Street
- Catawba Avenue & Statesville Road (US 21)

Analysis

Table 4 summarizes the measures of effectiveness for the subject intersections. The Synchro analyses are located in **Appendix D**.

Table 4: Smithville Lane Extension MOE

Intersection		AM Peak			PM Peak		
		2014	2035 No-Build	2035 Build	2014	2035 No-Build	2035 Build
Catawba Avenue & Ferry Street	LOS	B	D	D	C	D	D
	Delay (sec)	11.7	31.6	29.3	18.7	31.3	28.6
Catawba Avenue & South Hill Street	LOS	C	E	D	C	E	D
	Delay (sec)	21.0	36.5	33.3	21.5	35.7	33.3
Catawba Avenue & Statesville Road (US 21)	LOS	E	F	F	D	F	E
	Delay (sec)	66.8	113.0	89.5	41.0	81.5	66.1
Statesville Road & Smithville Lane Extension	LOS	-	-	C	-	-	C
	Delay (sec)	-	-	18.9	-	-	19.4

Note: Delay is based on the worst approach for unsignalized intersections.

Conclusion

The extension project removes some traffic from Catawba Ave, but due to the low density of the neighborhood it serves, less traffic is diverted than the Floral Ln extension project. The Smithville Lane extension provided a positive impact to the Statesville Rd (US 21) & Catawba Ave intersection while maintaining or improving the LOS at the other existing intersections. Although the LOS for the 2035 AM Build scenario at Catawba Ave & Statesville Rd is still an F, the delay was reduced approximately 20% for both AM and PM scenarios. Similar improvements would be expected at Statesville Rd (US 21) & Catawba Ave if the proposed roundabout is installed at that intersection. Similar results would be expected if Vivian Ln or Weathers St were extended to Statesville Rd because the distribution would likely remain the same.

Bailey Road Re-alignment

Description

The proposed project will create a new signalized three-leg intersection with Statesville Road (US 21) approximately 1,700ft south of the existing Bailey Road intersection. The proposed lane configuration is shown in **Figure 9: Proposed Lane Configurations**. This new connection will provide an additional access point to Statesville Road for a significant number of local roads and neighborhoods that access Bailey Road. The re-alignment will also provide a more direct east/west connection between Old Statesville Road (NC 115) and Statesville Road (US 21). The existing Bailey Road and proposed Bailey Road extension intersections with Statesville Road (US 21) were analyzed to determine the impact of the trip diversions shown in **Figure 25**.

Analysis

Table 5 summarizes the measures of effectiveness for the subject intersections. The Synchro analyses are located in **Appendix E**.

Table 5: Bailey Road Re-alignment MOE

Intersection		AM Peak			PM Peak		
		2014	2035 No-Build	2035 Build	2014	2035 No-Build	2035 Build
Statesville Road (US 21) & Existing Bailey Road	LOS	C	F	F	C	E	C
	Delay (sec)	31.4	100.4	83.0	22.8	59.7	28.3
Statesville Road (US 21) & Bailey Road Re-alignment	LOS	-	-	E	-	-	D
	Delay (sec)	-	-	80.0	-	-	48.9
Bailey Road & Bailey Road Re-alignment	LOS	-	-	D	-	-	F
	Delay (sec)	-	-	25.4	-	-	61.2

Note: Delay is based on the worst approach for unsignalized intersections.

Conclusion

The Bailey Road re-alignment scenario provides a benefit to the existing Bailey Rd & Statesville Rd (US 21) intersection and an acceptable LOS for the proposed extension intersection. The LOS for the existing intersection is still an F in the 2035 AM Build scenario; however, the delay is reduced by almost 20%. The LOS for the PM scenario is improved to a C, reducing delay by more than 50%. It is not uncommon for side streets that form unsignalized intersections with high volume facilities to experience high delays or failing levels of service.

In order to further improve the LOS for these intersections, Statesville Rd (US 21) will need to be widened for additional thru lanes to accommodate the high thru volumes. The additional thru lanes would allow the heavy thru volumes to process through the intersection with less required green time, providing additional green time to the other approaches/movements. Additional storage lengths for turn lanes will not improve the LOS due to the queuing in the thru lanes.

Old Statesville Road (NC 115) & Bailey Road Improvements

Description

The analysis for this project was based on determining what improvements are needed to maintain a satisfactory LOS for the future traffic conditions. Various scenarios were analyzed to determine the most cost effective improvements that resulted in the desired traffic operations.

Improvements included optimizing the signal timing; extending the storage lengths for the southbound and eastbound left turn lanes to 500ft and 175ft, respectively; extending the storage for the westbound right turn lane to 250ft; and adding right turn lanes for the southbound, eastbound, and northbound approaches. The proposed lane configuration for the recommended improvements is shown in **Figure 10: Proposed Lane Configurations**. The scenario results below are based on our recommendations for improvements at the subject intersection.

Analysis

Table 6 summarizes the measures of effectiveness for the subject intersection. The Synchro analyses are located in **Appendix F**.

Table 6: Old Statesville Road & Bailey Road MOE

Intersection		AM Peak			PM Peak		
		2014	2035 No-Build	2035 Build	2014	2035 No-Build	2035 Build
Old Statesville Road (NC 115) & Bailey Road	LOS	D	F	E	E	F	E
	Delay (sec)	45.7	111.6	66.3	55.6	149.1	72.5

Conclusion

The proposed improvements to the intersection improved the LOS to E for both AM and PM scenarios. The delay was reduced by approximately 40% and 50% for the AM and PM peak hours, respectively.

In order to further improve the LOS, Old Statesville Rd (NC 115) will need to be widened for additional thru lanes to accommodate the high thru volumes along the highway. The additional thru lanes will allow the heavy thru volumes to process through the intersection with less required green time, providing additional green time to the other approaches/movements.

Construction of all of the improvements is recommended in order to maximize the operational benefits. The individual improvements will not improve the LOS to an acceptable level.

A roundabout would not be recommended at this location due to the proximity of the railroad crossing.

Statesville Road (US 21) & Westmoreland Road Improvements

Description

The analysis for this project was based on determining what improvements are needed to maintain a satisfactory LOS for the future traffic conditions. Various scenarios were analyzed to determine the most cost effective improvements that resulted in the desired traffic operations.

Improvements included optimizing the signal timing; extending the storage lengths for the northbound and southbound left turn lanes to 500ft; extending the storage length for the eastbound right turn lane to 350ft; adding a left turn lane for the eastbound approach; and adding right turn lanes for the northbound, southbound, and westbound approaches. The proposed lane configuration for the recommended improvements is shown in **Figure 11: Proposed Lane Configurations**. The scenario results below are based on our recommendations for improvements at the subject intersection.

Analysis

Table 7 summarizes the measures of effectiveness for the subject intersection. The Synchro analyses are located in **Appendix G**.

Table 7: Statesville Road & Westmoreland Road MOE

Intersection		AM Peak			PM Peak		
		2014	2035 No-Build	2035 Build	2014	2035 No-Build	2035 Build
Statesville Road (US 21) & Westmoreland Road	LOS	D	F	F	D	F	E
	Delay (sec)	49.6	156.7	85.8	52.6	151.1	76.0

Conclusion

The proposed improvements to the intersection improved the LOS to E for the 2035 PM Build scenario, reducing the delay by 50%. The 2035 AM Build LOS is still an F however the delay was reduced by approximately 45%.

In order to further improve the LOS, Statesville Rd (US 21) will need to be widened for additional thru lanes to accommodate the high thru volumes along the highway. The additional thru lanes will allow the heavy thru volumes to process through the intersection with less required green time, providing additional green time to the other approaches/movements.

Construction of all of the improvements is recommended in order to maximize the operational benefits. The individual improvements will not improve the LOS to an acceptable level.

A roundabout would not be recommended here due to the number of lanes needed to provide an acceptable LOS and the associated costs with construction.

Gem Street Extension

Description

The proposed project will extend the eastern terminus approximately 600ft to an unsignalized four-leg intersection with Oak Street and Aftonshire Drive. The proposed lane configuration is shown in **Figure 12: Proposed Lane Configurations**. Currently there are several other local roads serving single family homes and Cornelius Elementary School in this area that are forced to travel Catawba Avenue in order to access Main Street (NC 115). The proposed extension will allow this traffic to bypass the Catawba Avenue corridor and access Main Street (NC 115) via the existing Hickory Street intersection, which reduces the amount of traffic on Catawba Avenue. Therefore analysis was performed for the following intersections to determine the impact of the trip diversions shown in **Figure 26**:

- Catawba Avenue & School Street
- Catawba Avenue & Meridian Street
- Catawba Avenue & Main Street (NC 115)
- Main Street (NC 115) & Hickory Street

Analysis

Table 8 summarizes the measures of effectiveness for the subject intersections. The Synchro analyses are located in **Appendix H**.

Table 8: Gem Street Extension MOE

Intersection		AM Peak			PM Peak		
		2014	2035 No-Build	2035 Build	2014	2035 No-Build	2035 Build
Catawba Avenue & School Street	LOS	A	A	A	A	B	A
	Delay (sec)	6.7	9.3	7.0	6.9	10.1	6.7
Catawba Avenue & Meridian Street	LOS	C	E	D	C	E	D
	Delay (sec)	18.4	35.5	29.5	21.1	40.8	33.5
Catawba Avenue & Main Street (NC 115)	LOS	C	E	D	C	E	D
	Delay (sec)	28.5	64.6	52.4	27.8	65.1	51.9
Main St (NC 115) & Hickory Street	LOS	F	F	B	F	F	C
	Delay (sec)	60.2	531.5	15.5	73.6	742.7	21.3

Note: Delay is based on the worst approach for unsignalized intersections.

Conclusion

The Gem St Extension option had a significant positive impact for the LOS of the Main St (NC 115) & Catawba Ave intersection. The LOS was improved for both 2035 AM and PM Build scenarios, reducing delay by approximately 20%. The Main St (NC 115) & Hickory St intersection was signalized in the Build scenario in order to reduce the excessively high delay. The delay would be expected to increase from the No-Build to Build scenario if no signal was installed due to the additional trips being added to the stop controlled approach.

Hickory Street Extension

Description

The proposed project will extend the eastern terminus approximately 500ft to an unsignalized four-leg intersection with Lawn Market Street, Lovers Lawn Terrace, and Brennady Drive. The proposed lane configuration is shown in **Figure 13: Proposed Lane Configurations**. The proposed extension will provide a significant number of local roads and residencies an additional access point to Main Street (NC 115). Currently all traffic in this area is forced to use the existing Catawba Avenue intersection to access Main Street (NC 115). The Hickory Street extension also creates additional connectivity with Main Street (NC 115), which permits the adjacent infrastructure to handle additional development. Therefore analysis was performed for the following intersections to determine the impact of the trip diversions shown in **Figure 27**:

- Main Street (NC 115) & Catawba Avenue
- Main Street (NC 115) & Hickory Street

Analysis

Table 9 summarizes the measures of effectiveness for the subject intersections. The Synchro analyses are located in **Appendix I**.

Table 9: Hickory Street Extension MOE

Intersection		AM Peak			PM Peak		
		2014	2035 No-Build	2035 Build	2014	2035 No-Build	2035 Build
Main Street (NC 115) & Catawba Avenue	LOS	C	E	E	C	E	E
	Delay (sec)	28.5	65.6	61.9	27.8	71.1	59.5
Main Street (NC 115) & Hickory Street	LOS	F	F	B	F	F	B
	Delay (sec)	60.2	531.5	10.3	73.6	742.7	13.3

Note: Delay is based on the worst approach for unsignalized intersections.

Conclusion

The Hickory St Extension option maintains the LOS of the Main St (NC 115) & Catawba Ave intersection. The delay was reduced for both AM and PM Build scenarios, approximately 5% to 15% respectively. The Main St (NC 115) & Hickory St intersection was signalized in the Build scenario in order to reduce the excessively high delay. The delay would be expected to increase from the No-Build to Build scenario if no signal was installed due to the additional trips being added to the stop controlled approach.

Currently, there are a relatively low number of trips being redistributed with this project; however, additional connectivity for future development in the Southeast quadrant of these intersections is provided with this project. Currently any additional trips from future development are forced to travel through the Catawba Ave intersection. This project will allow those trips to bypass that intersection and utilize the Hickory St intersection which still has substantial capacity available.

Holiday Lane-Ferry Street Connector

Description

The proposed project will construct a connection road between the northern terminus of Ferry Street, Burton Lane, and Holiday Lane. The proposed lane configuration is shown in **Figure 14: Proposed Lane Configurations**. The proposed connection will provide a significant amount of local roads and residencies improved access to Catawba Avenue. Traffic will be able to access the signalized intersection at Holiday Lane via the connector street, which reduces the thru trips on Catawba Avenue, and results in a more efficient intersection. Therefore analysis was performed for the following intersections to determine the impact of the trip diversions shown in **Figure 28**:

- Catawba Avenue & Lake Village Boulevard
- Catawba Avenue & Ferry Street
- Catawba Avenue & South Hill Street/Burton Lane
- Catawba Avenue & Statesville Road (US 21)/Holiday Lane

Analysis

Table 10 summarizes the measures of effectiveness for the subject intersections. The Synchro analyses are located in **Appendix J**. The planned roundabout at the intersection of Catawba Ave & Statesville Rd (US 21) was analyzed due to the trip distribution at the intersection. The SIDRA results are located in **Appendix L.**

Table 10: Holiday Lane-Ferry Street Connector MOE

Intersection		AM Peak			PM Peak		
		2014	2035 No-Build	2035 Build	2014	2035 No-Build	2035 Build
Catawba Avenue & Lake Village Boulevard	LOS	B	C	C	B	B	B
	Delay (sec)	12.8	16.8	16.8	11.7	14.5	14.5
Catawba Avenue & Ferry Street	LOS	C	D	D	C	D	D
	Delay (sec)	19.1	31.6	31.4	18.7	31.3	30.6
Catawba Avenue & Hill Street/Burton Lane	LOS	C	E	E	C	E	E
	Delay (sec)	21.0	36.5	36.8	21.5	35.7	35.5
Catawba Avenue & Statesville Road (US 21) (Signal)	LOS	E	F	F	D	F	E
	Delay (sec)	66.8	113.0	89.9	41.0	81.5	68.3
Catawba Avenue & Statesville Road (US 21) (Roundabout)	LOS	-	A	A	-	C	C

Note: Delay is based on the worst approach for unsignalized intersections.
Roundabout analysis performed with SIDRA

Conclusion

The Holiday Ln-Ferry St Connector road provided a positive impact to the Statesville Rd (US 21) & Catawba Ave signalized intersection, while maintaining the LOS for the proposed roundabout and the other intersections. The LOS for the 2035 PM Build scenario was improved to an E, reducing delay by approximately 20% for the AM and 15% for the PM peak hours.

VIII. RECOMMENDATIONS

Ranking Methodology

Three ranking metrics were used to determine the potential benefits of each project. These categories were Operations, Connectivity, and Safety. Each category was assigned a maximum value and then each project was evaluated to determine the appropriate value to be assigned to that category. Operations were given the highest value since the main goal of the study was to determine improvements to LOS and congestion. Connectivity and Safety were included to assign values for additional benefits such as additional future capacity, decreased travel times, and improved safety.

The Operations value was determined by comparing the percent reduction in delay versus the number of vehicles at each intersection. This provided weighted values for the AM and PM peak hours for each intersection. Those values were then averaged together for every project and compared to the other projects. The Connectivity value was determined by looking at a number of variables for each project, such as adjacent land use, density, and potential for development. Those factors were then compared between projects and assigned values. Projects that did not create additional street network were not assigned a value. The Safety value considered the net change in conflict points and ranked the projects that decreased the potential for collisions.

These values were combined for each project to establish an overall benefit ranking. The rankings were compared to the estimated cost of each project, in $100,000, to determine a benefit-cost ratio number between 0-10. The largest number provides the most benefits based on the criteria above as compared to the cost of the project.

Cost Estimate Assumptions

Due to the conceptual nature of the improvements as well as minimal existing condition information, several assumptions were made during the cost estimate phase of this analysis. An Estimate Criteria document containing a detailed list of assumptions used for developing the cost estimates will be provided to the town along with the cost estimate summary sheets. Some of the major assumptions are as follow:

- Unit prices were determined from comparing 2014 Average Bid Prices from the City of Charlotte for similar size projects. Any items that were not included in the City of Charlotte Bid Tabs were taken from NCDOT Average Bid Prices.
- Typical sections and Right of Way widths used for street extensions matched the existing conditions of the roadway being extended. The only exception being Bailey Rd Re-alignment which the Town provided a typical section for.
- Right of Way costs were determined based on Mecklenburg County POLARIS database information.
- Percentages of overall construction cost were used for various line items. These percentages follow standard industry practice for pre-design cost estimating.
- Site visits and aerial imagery examination were used to determine potential utility impacts due to the lack of survey information.
- Floral Lane extension Right of Way has already been acquired by Town.

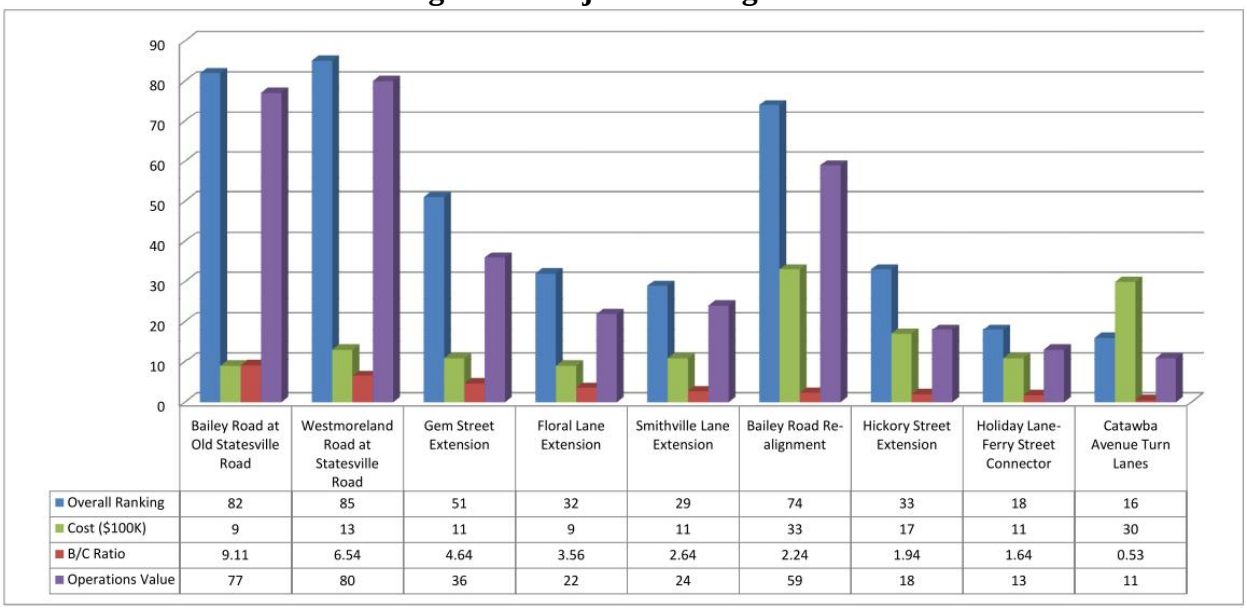
Project rankings

The table below shows the project ranking values assigned to each project. A bar graph compares the benefit-cost ratios, overall benefit ranking, and cost for every project. The intersection improvement projects at Bailey Rd & Old Statesville Rd and Westmoreland Rd & Statesville Rd had the highest benefit-cost ratios of 9.11 and 6.54, respectively. The Catawba Ave Turn Lanes project had the lowest ratio of 0.53.

Table 11: Project Ranking Criteria

Project	Operations	Connectivity	Safety	Overall	B/C Ratio	Cost ($100K)
Bailey Road at Old Statesville Road	77	0	5	82	9.11	9
Westmoreland Road at Statesville Road	80	0	5	85	6.54	13
Gem Street Extension	36	10	5	51	4.64	11
Floral Lane Extension	22	10	0	32	3.56	9
Smithville Lane Extension	24	5	0	29	2.64	11
Bailey Road Re-alignment	59	15	0	74	2.24	33
Hickory Street Extension	18	10	5	33	1.94	17
Holiday Lane-Ferry Street Connector	13	5	0	18	1.64	11
Catawba Avenue Turn Lanes	11	0	5	16	0.53	30

Figure 1: Project Ranking Chart



Recommendations

Based on the comparison results and estimated budget of the Town's phase 1 Bond Package the following projects are recommended to be progressed:

- Bailey Road & NC 115 ($900,000)
- Westmoreland Road & US 21 ($1,300,000)
- Gem Street Extension ($1,100,000)
- Hickory Street Extension ($1,700,000)
- Floral Lane Extension ($900,000)

The two intersection projects provide a substantial benefit to the traffic operations of the intersections and have the highest rankings of all the projects. The Floral Lane extension provides a significant benefit for the Catawba Avenue & US 21 intersection and provides new street network for the residences and school to US 21. The Gem Street and Hickory Street extension projects will alleviate congestion from the Catawba Avenue & NC 115 intersection, which currently does not have any funded improvements scheduled. The Gem Street and Hickory Street extension projects both propose a traffic signal at Hickory Street & NC 115, therefore if both are constructed that cost would be eliminated from the Hickory Street extension project. The estimated cost of the signal is approximately $470,000. Removing that cost results in the Benefit-Cost ratio increasing to 2.75, this is the 5th highest ranking. Therefore the recommended projects are all within the top 5 highest rankings. These projects combine for a total estimated Bond Package cost of $5,430,000.

FIGURES

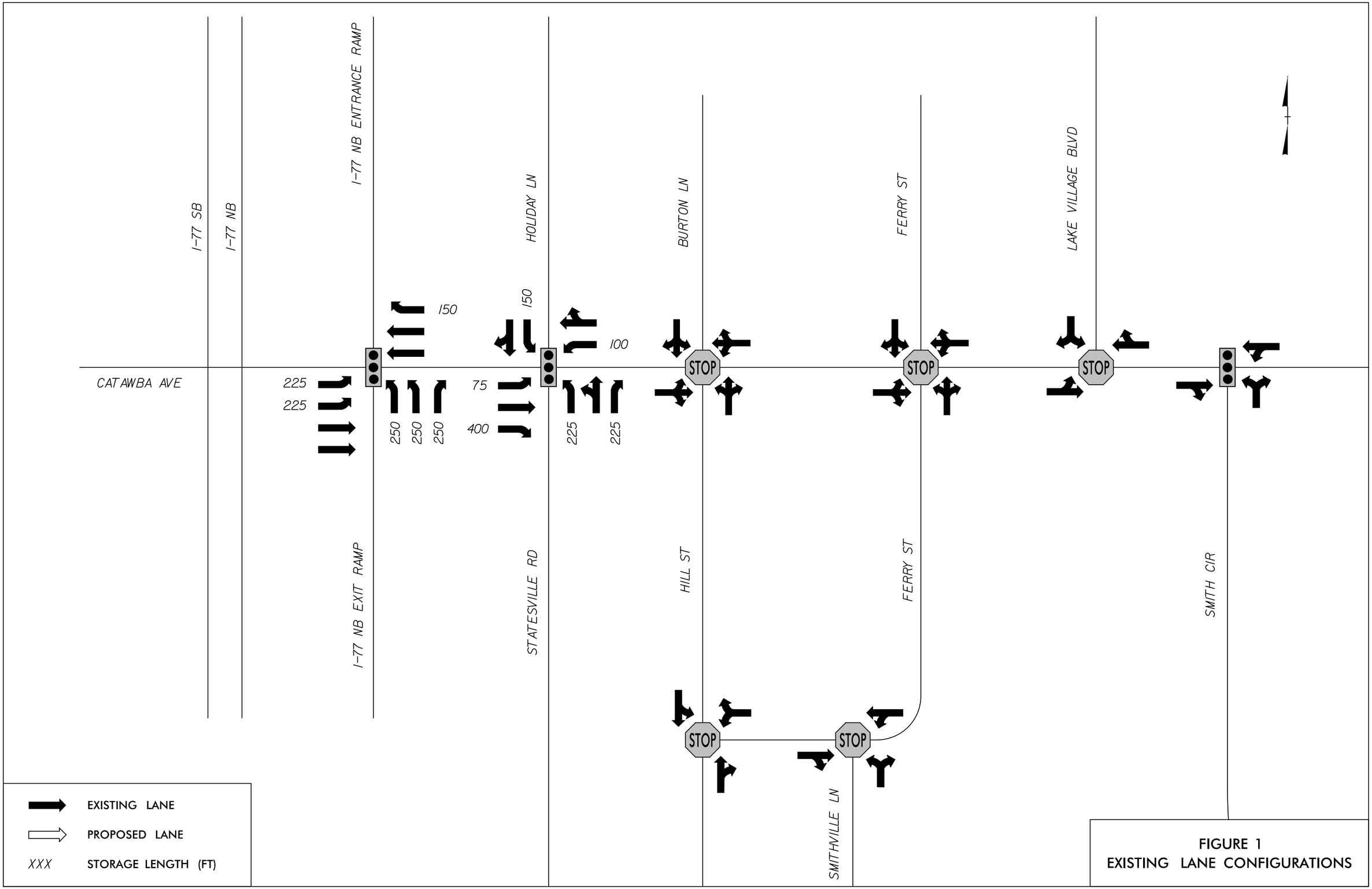


FIGURE 1
EXISTING LANE CONFIGURATIONS

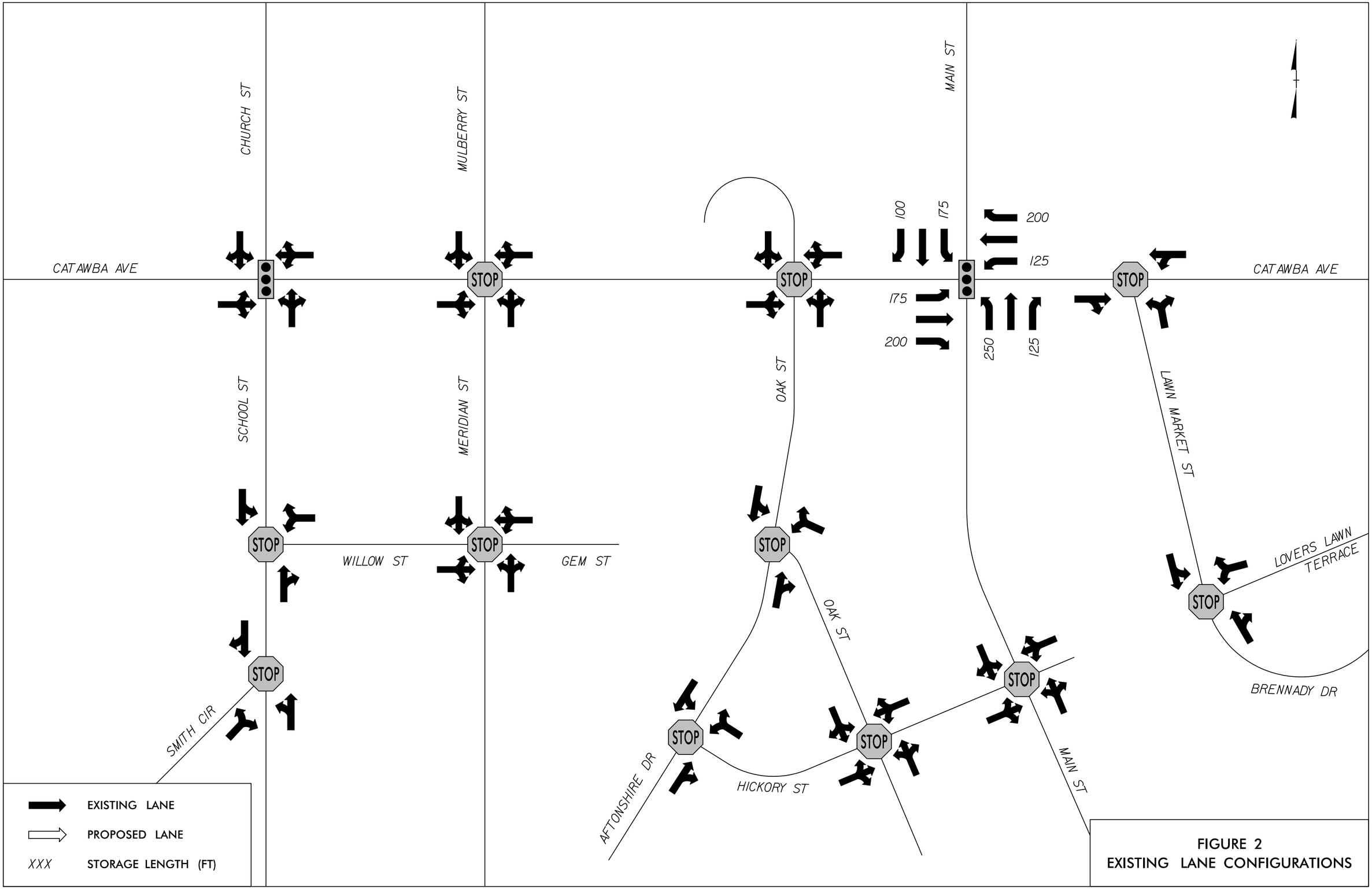


FIGURE 2
EXISTING LANE CONFIGURATIONS

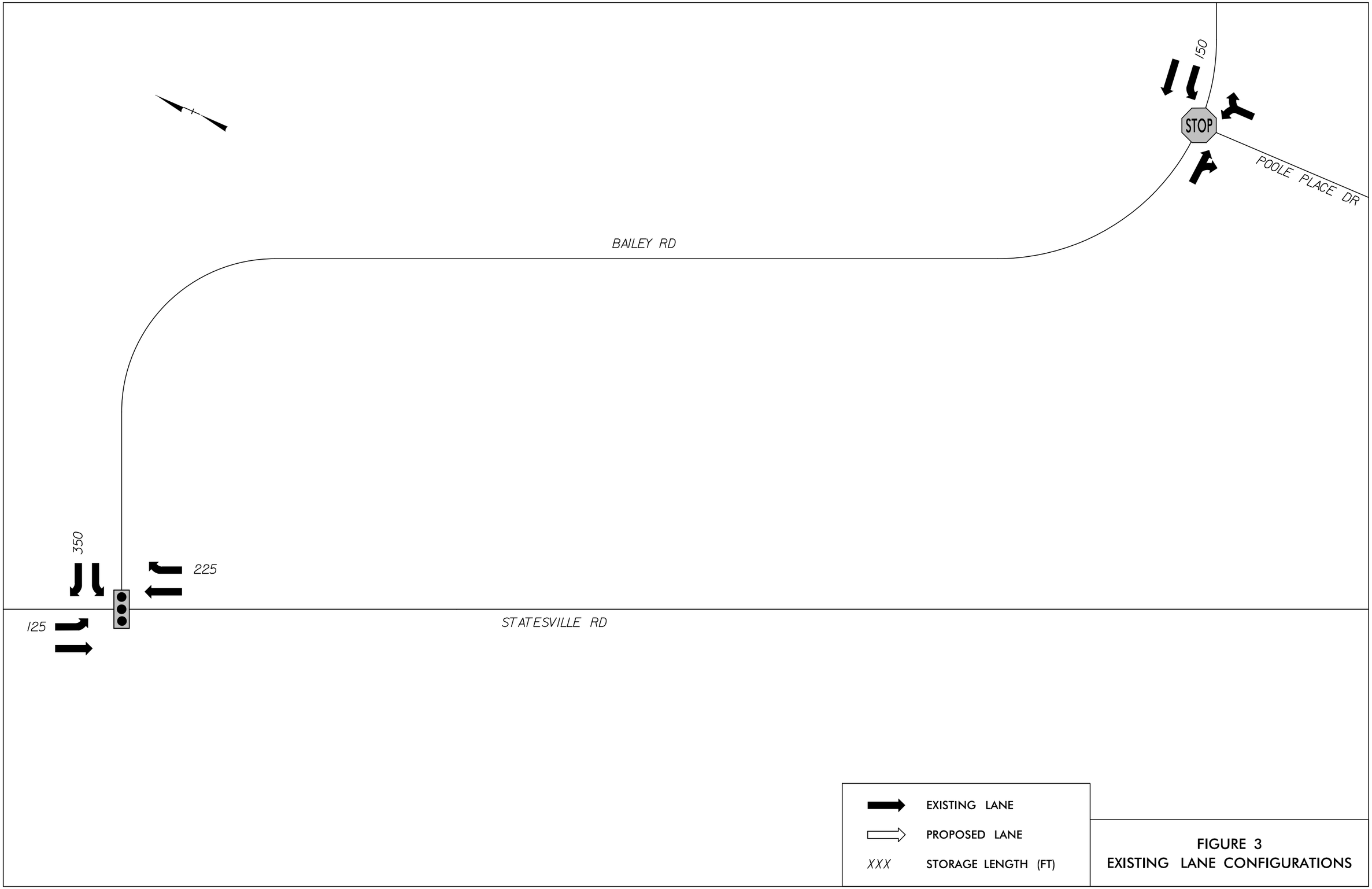
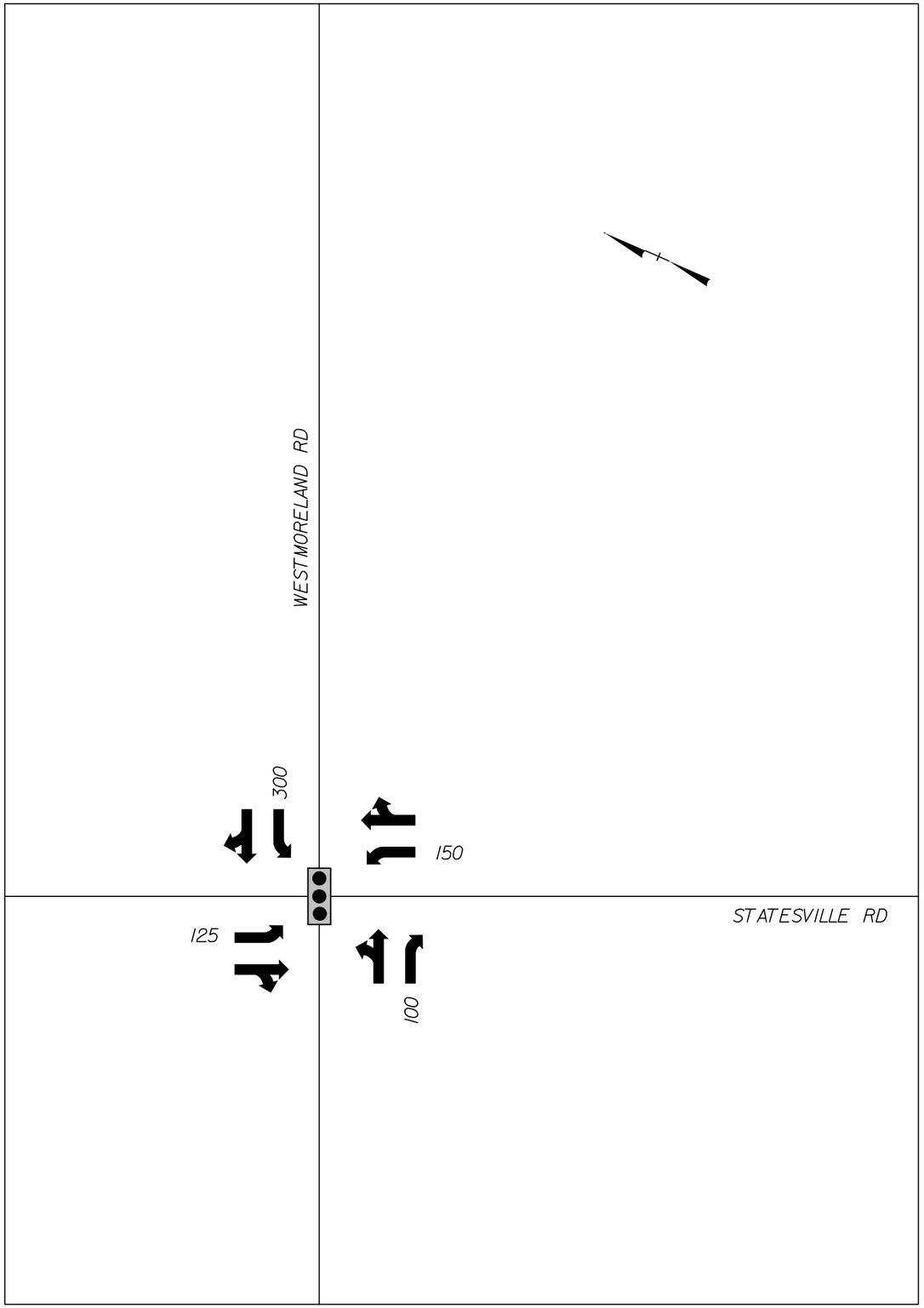


FIGURE 3
EXISTING LANE CONFIGURATIONS



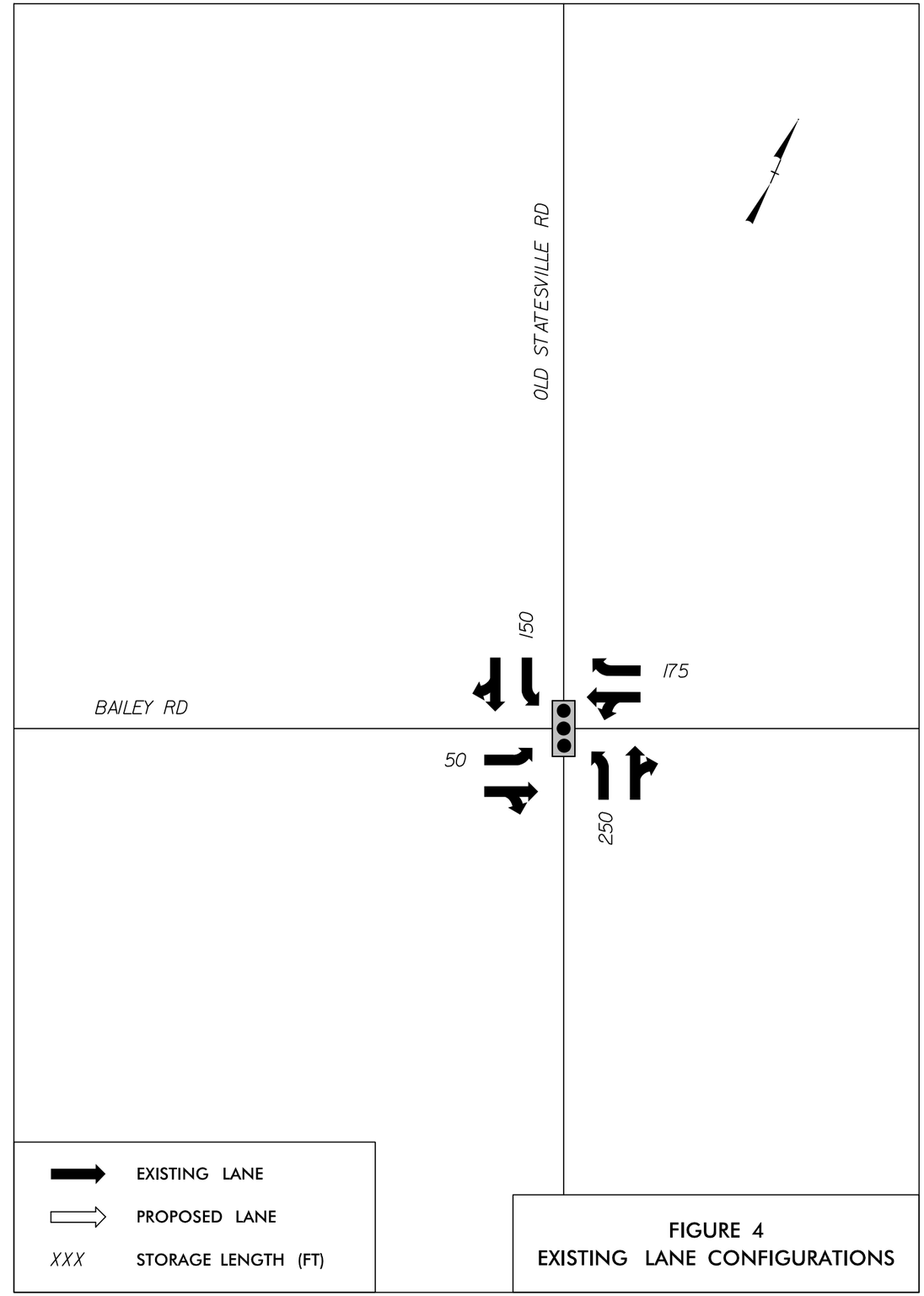


FIGURE 4
EXISTING LANE CONFIGURATIONS

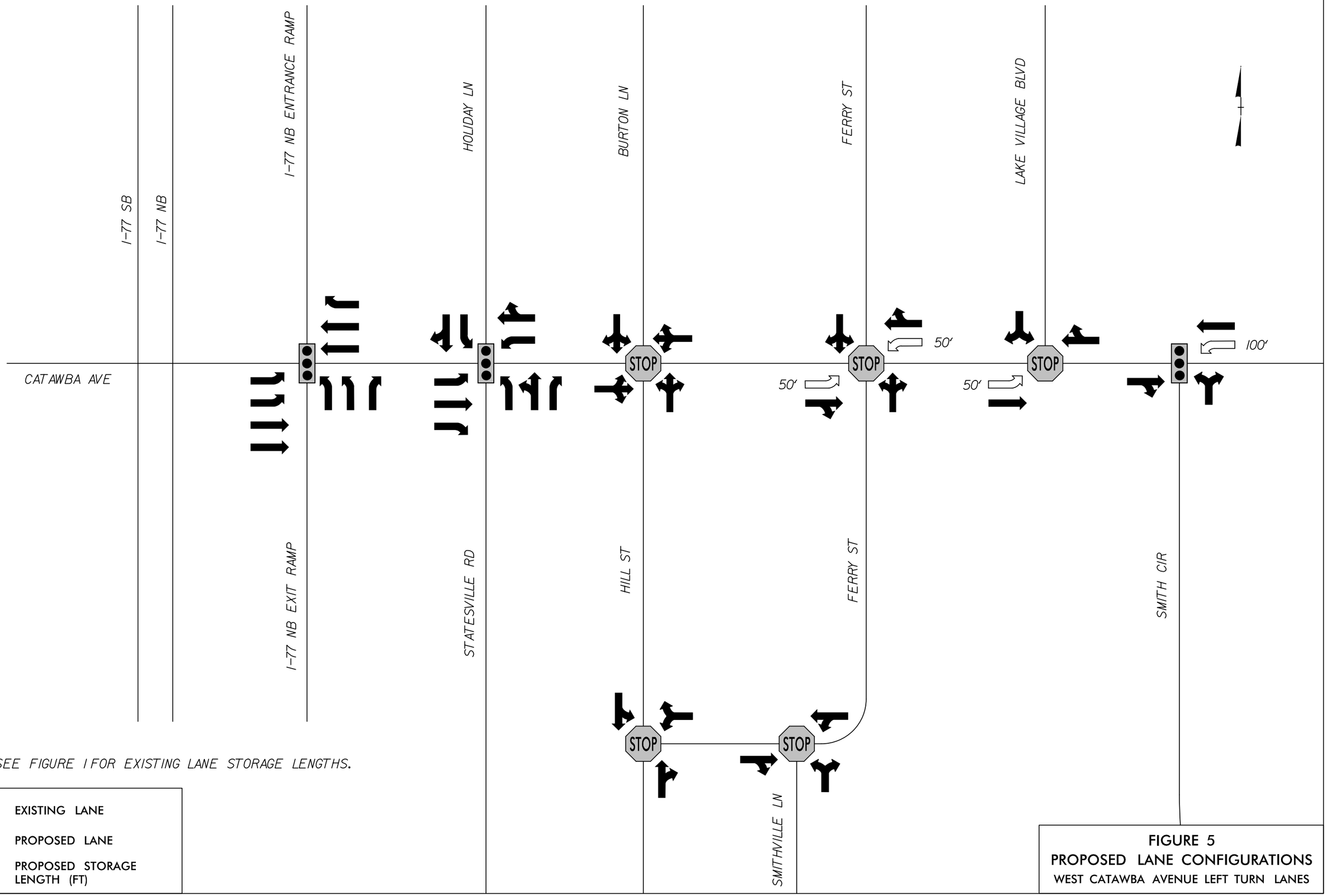


FIGURE 5
PROPOSED LANE CONFIGURATIONS
WEST CATAWBA AVENUE LEFT TURN LANES

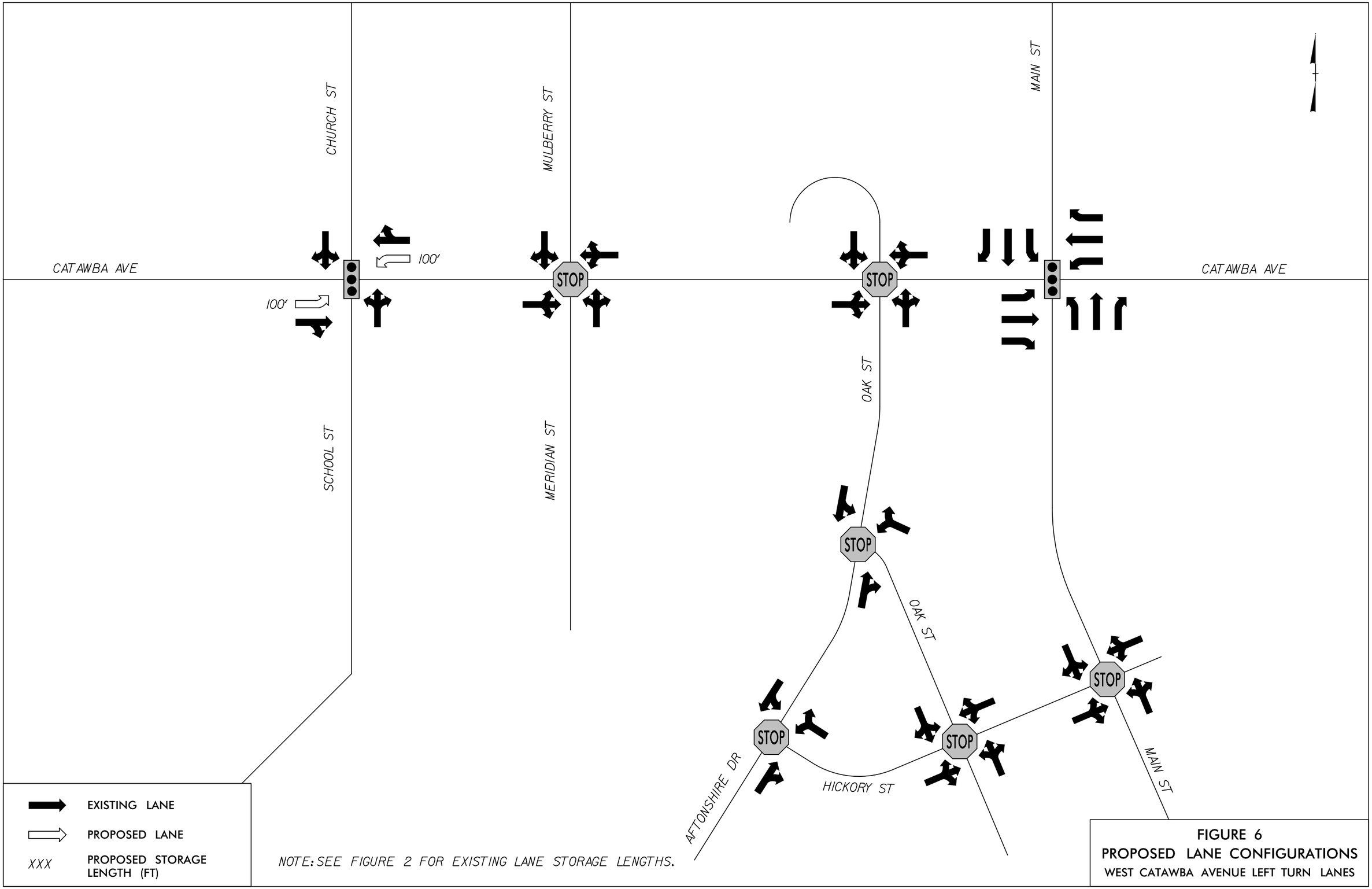


FIGURE 6
PROPOSED LANE CONFIGURATIONS
WEST CATAWBA AVENUE LEFT TURN LANES

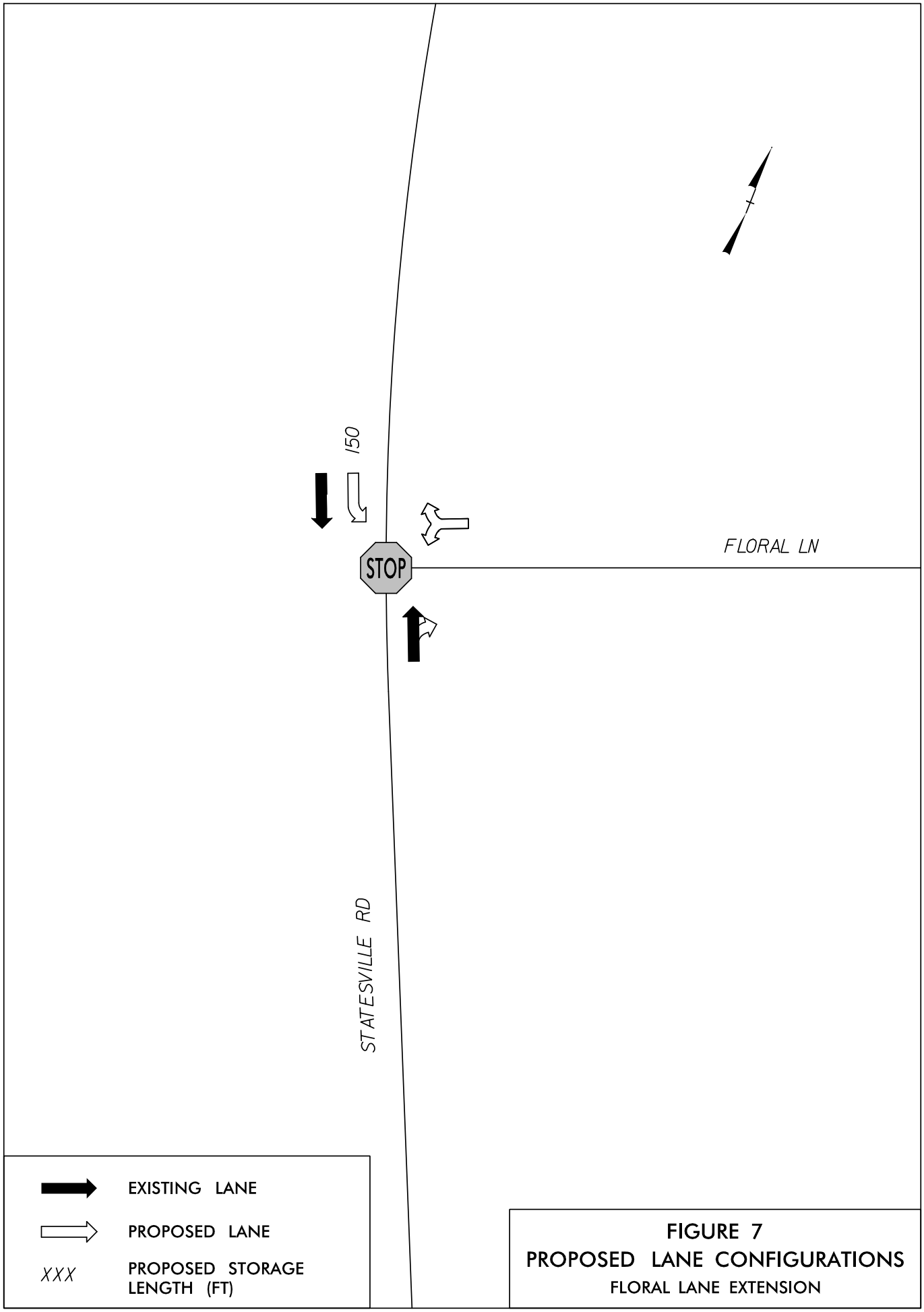


FIGURE 7
PROPOSED LANE CONFIGURATIONS
FLORAL LANE EXTENSION

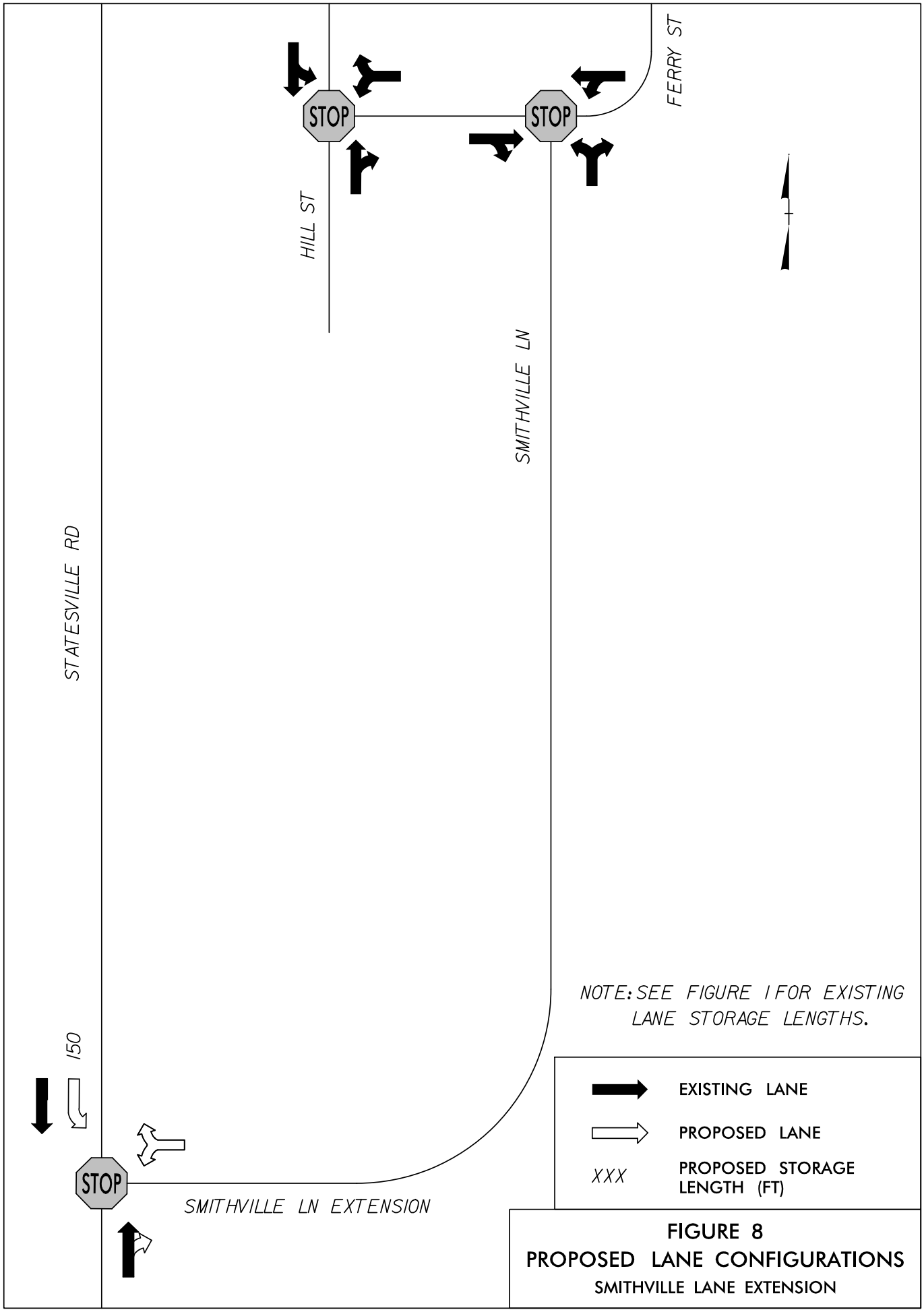


FIGURE 8
PROPOSED LANE CONFIGURATIONS
SMITHVILLE LANE EXTENSION

NOTE: SEE FIGURE 3 FOR EXISTING LANE STORAGE LENGTHS.

EXISTING LANE

PROPOSED LANE

XXX PROPOSED STORAGE LENGTH (FT)

FIGURE 9
PROPOSED LANE CONFIGURATIONS
BAILEY ROAD RE-ALIGNMENT

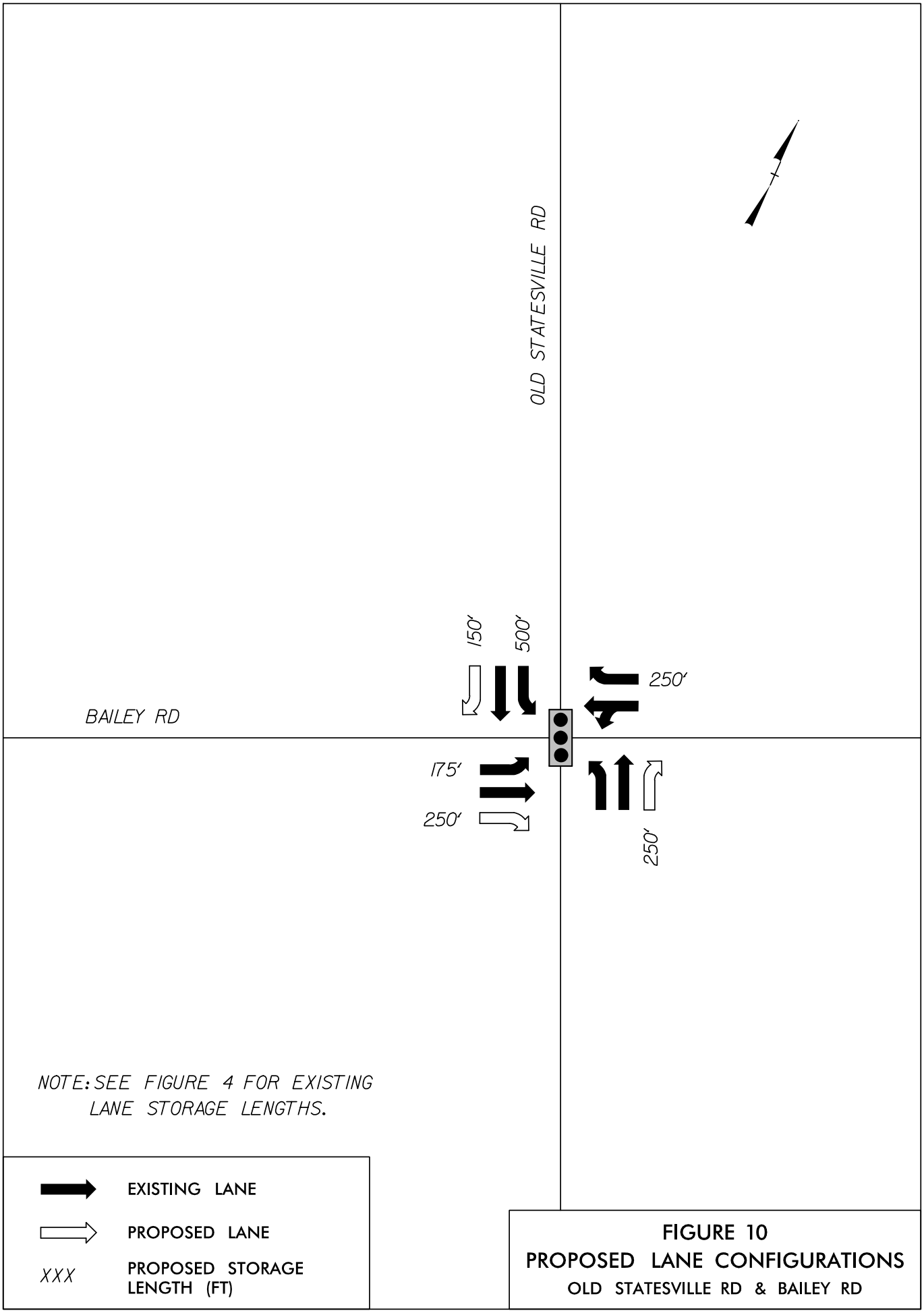


FIGURE 10
PROPOSED LANE CONFIGURATIONS
OLD STATESVILLE RD & BAILEY RD

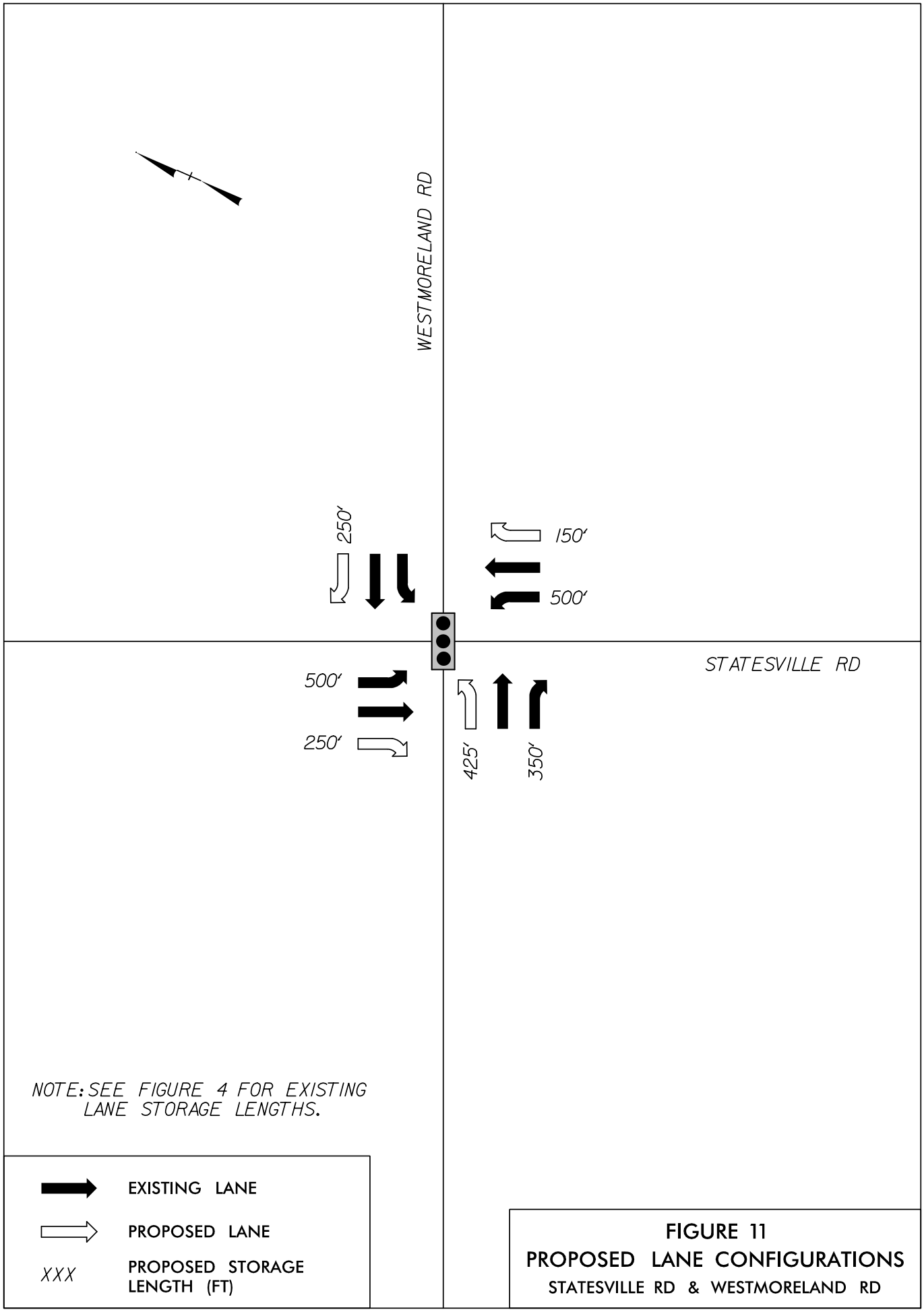


FIGURE 11
PROPOSED LANE CONFIGURATIONS
STATESVILLE RD & WESTMORELAND RD

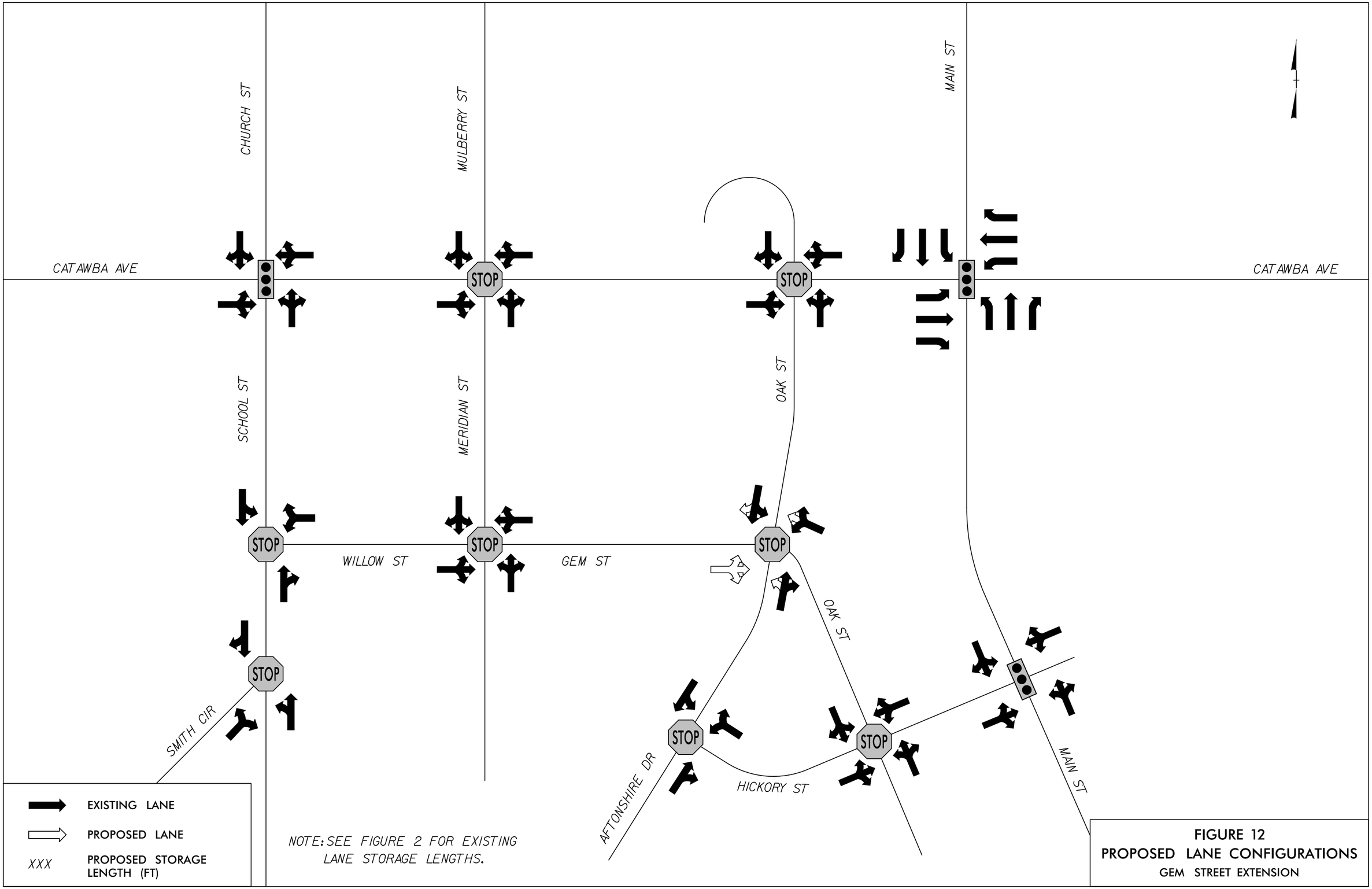


FIGURE 12
PROPOSED LANE CONFIGURATIONS
GEM STREET EXTENSION

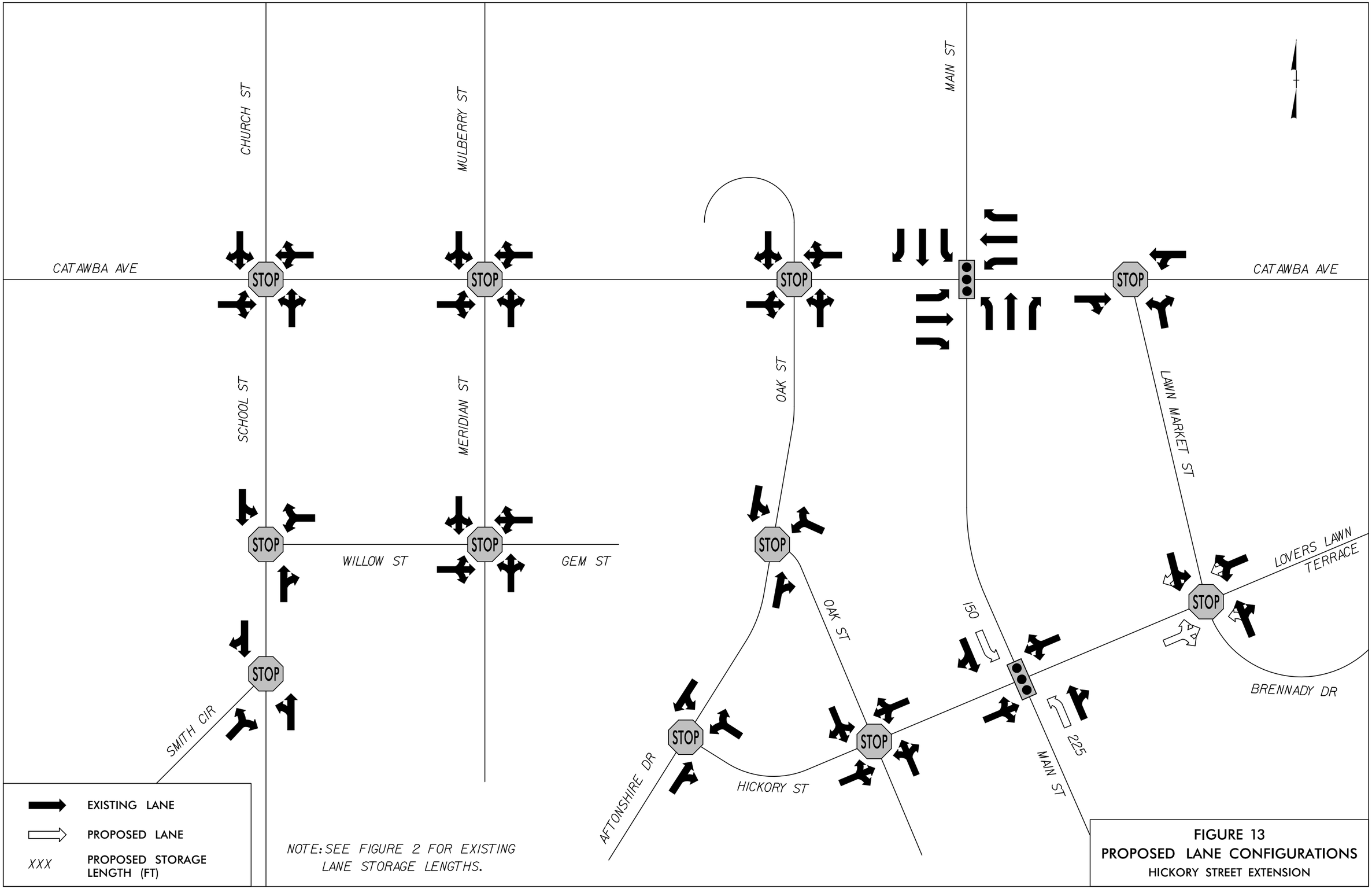


FIGURE 13
PROPOSED LANE CONFIGURATIONS
HICKORY STREET EXTENSION

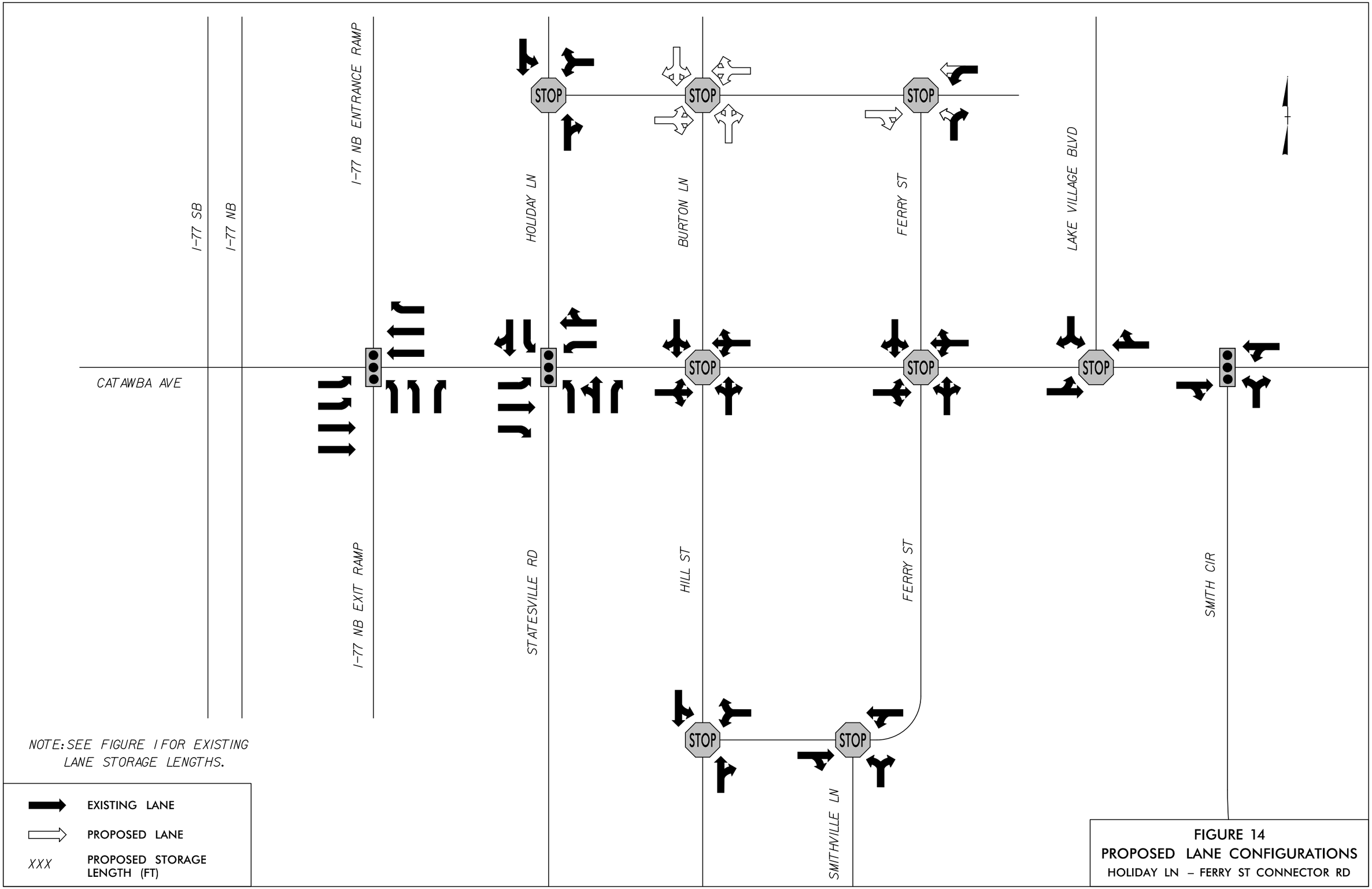


FIGURE 14
PROPOSED LANE CONFIGURATIONS
HOLIDAY LN – FERRY ST CONNECTOR RD

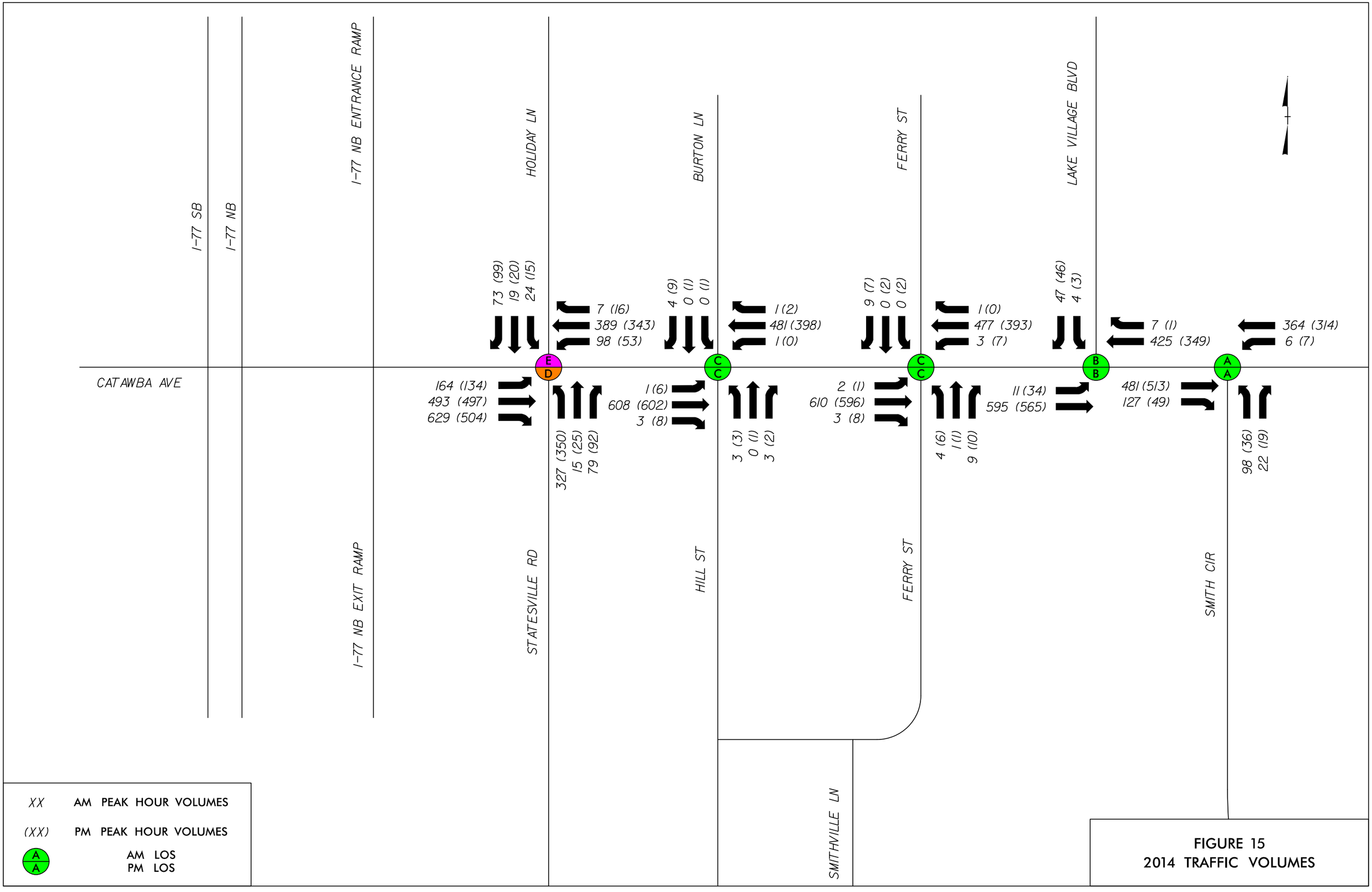


FIGURE 15
2014 TRAFFIC VOLUMES

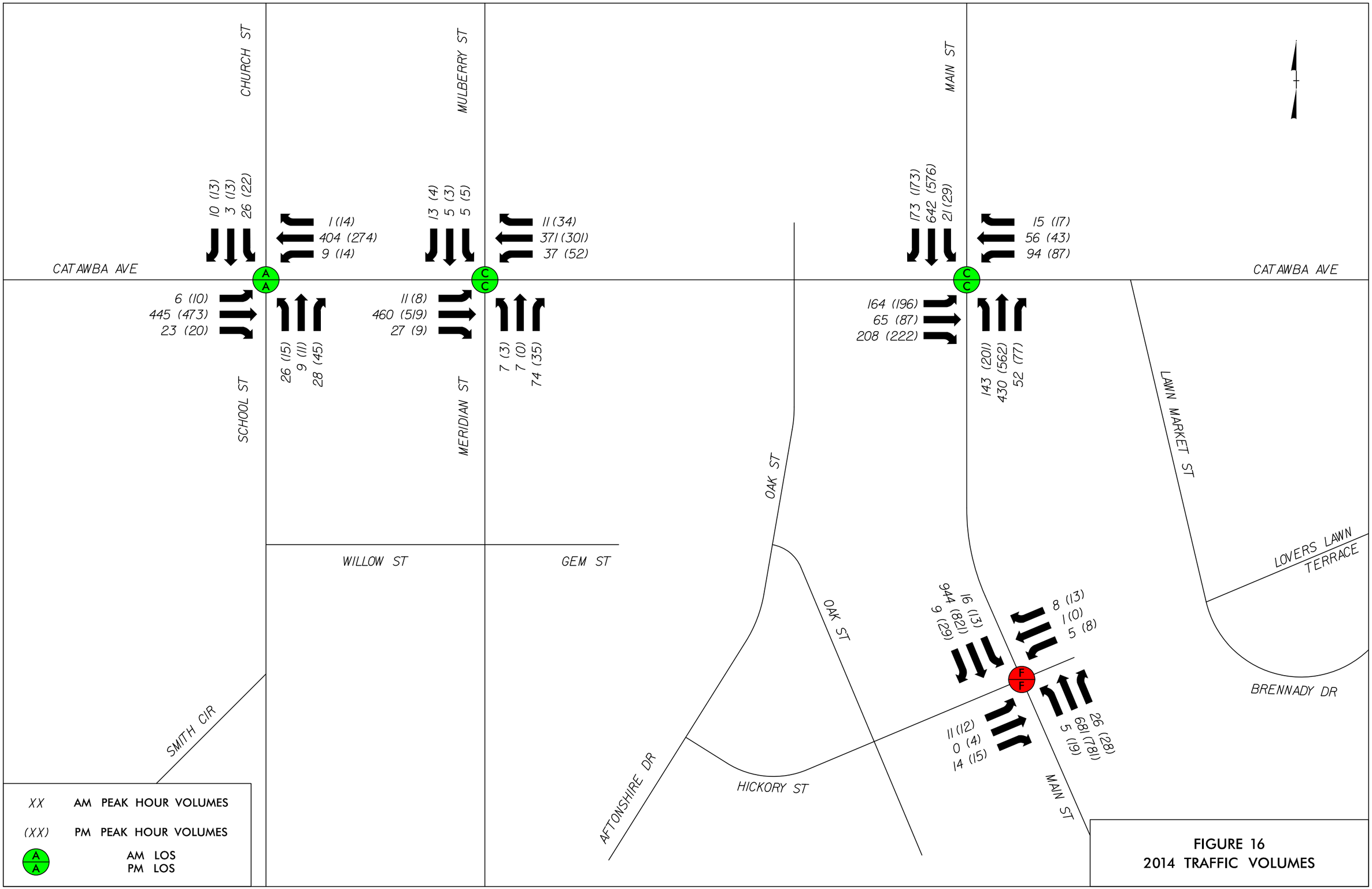


FIGURE 16
2014 TRAFFIC VOLUMES

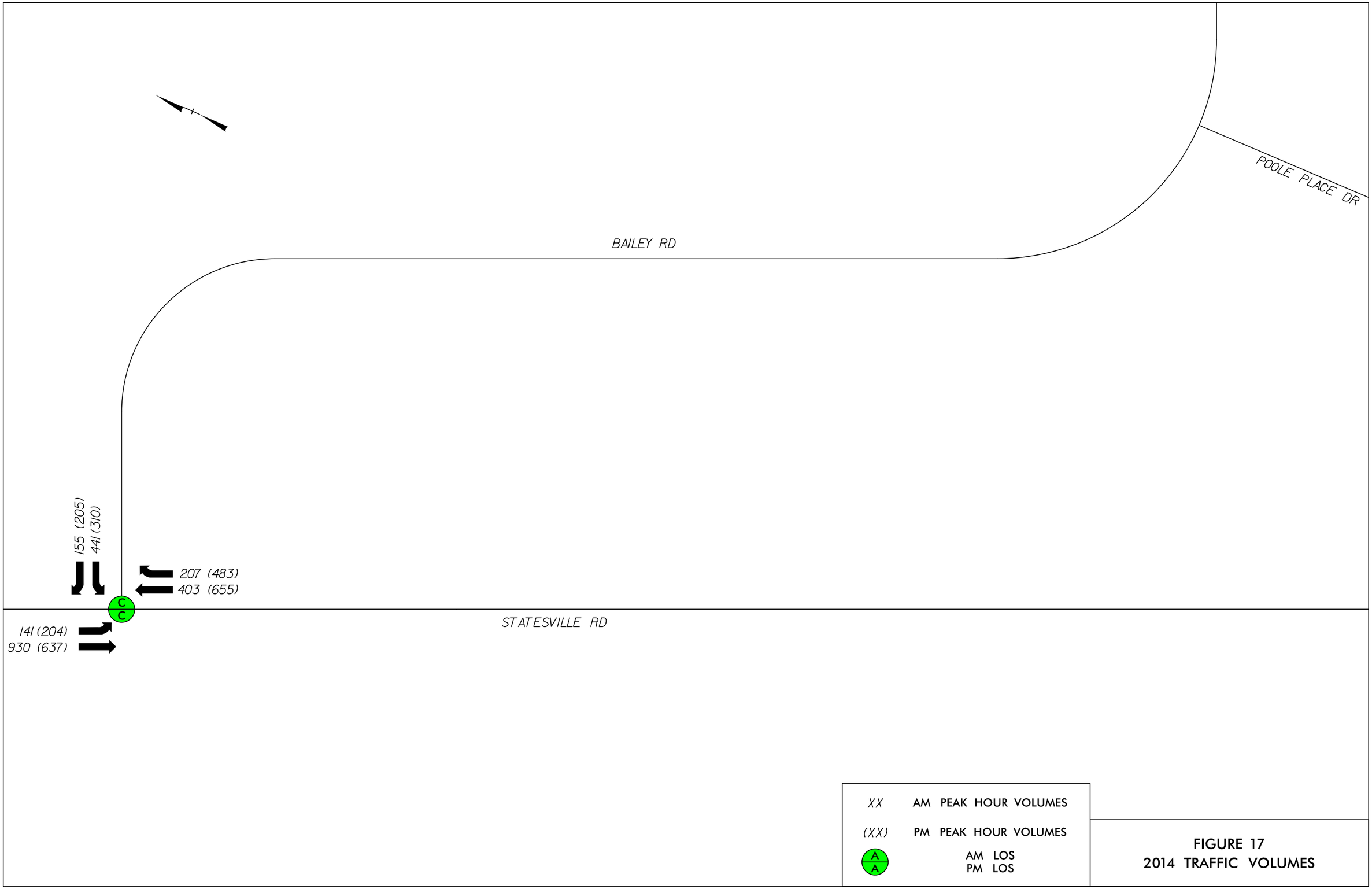
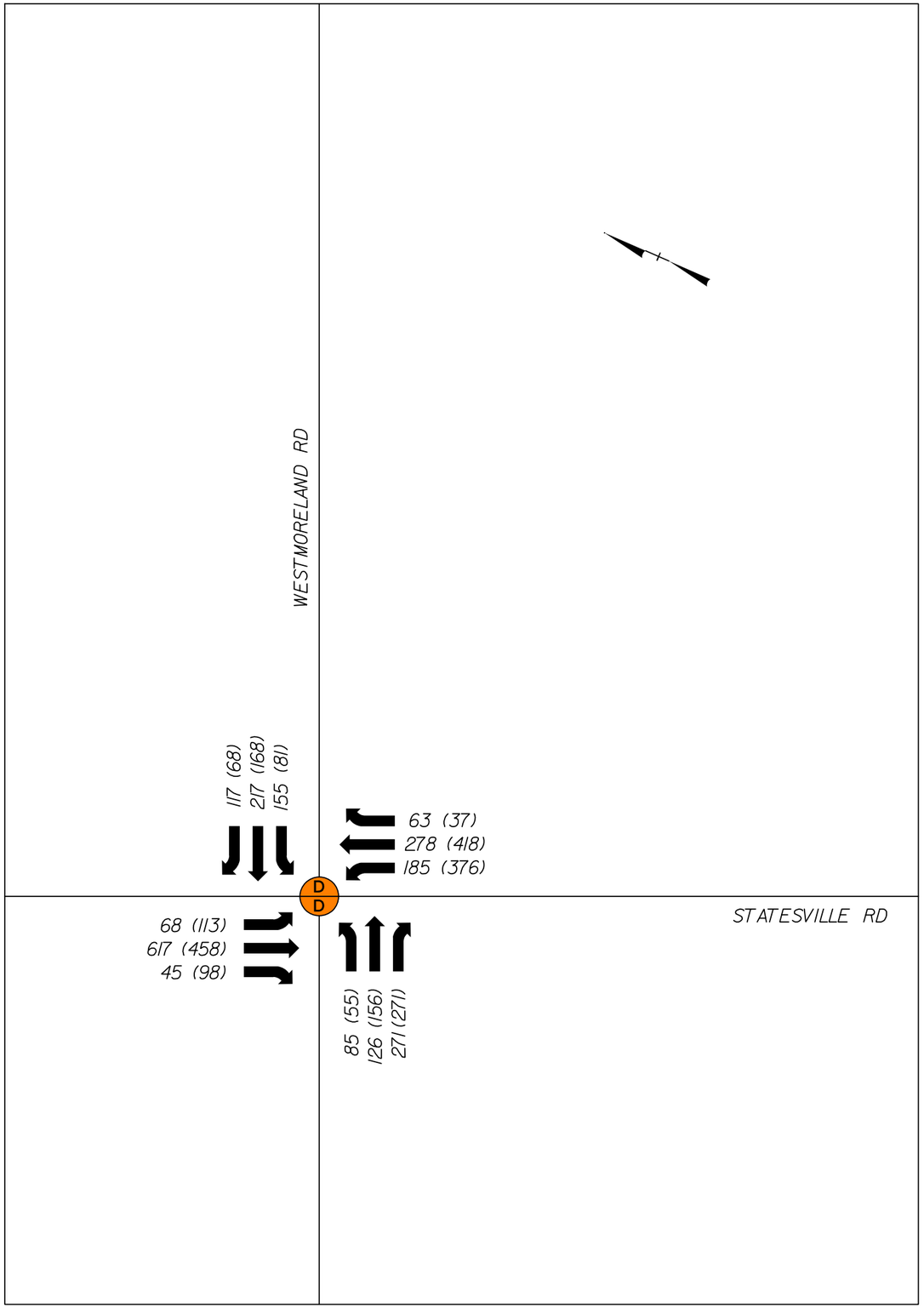


FIGURE 17
2014 TRAFFIC VOLUMES



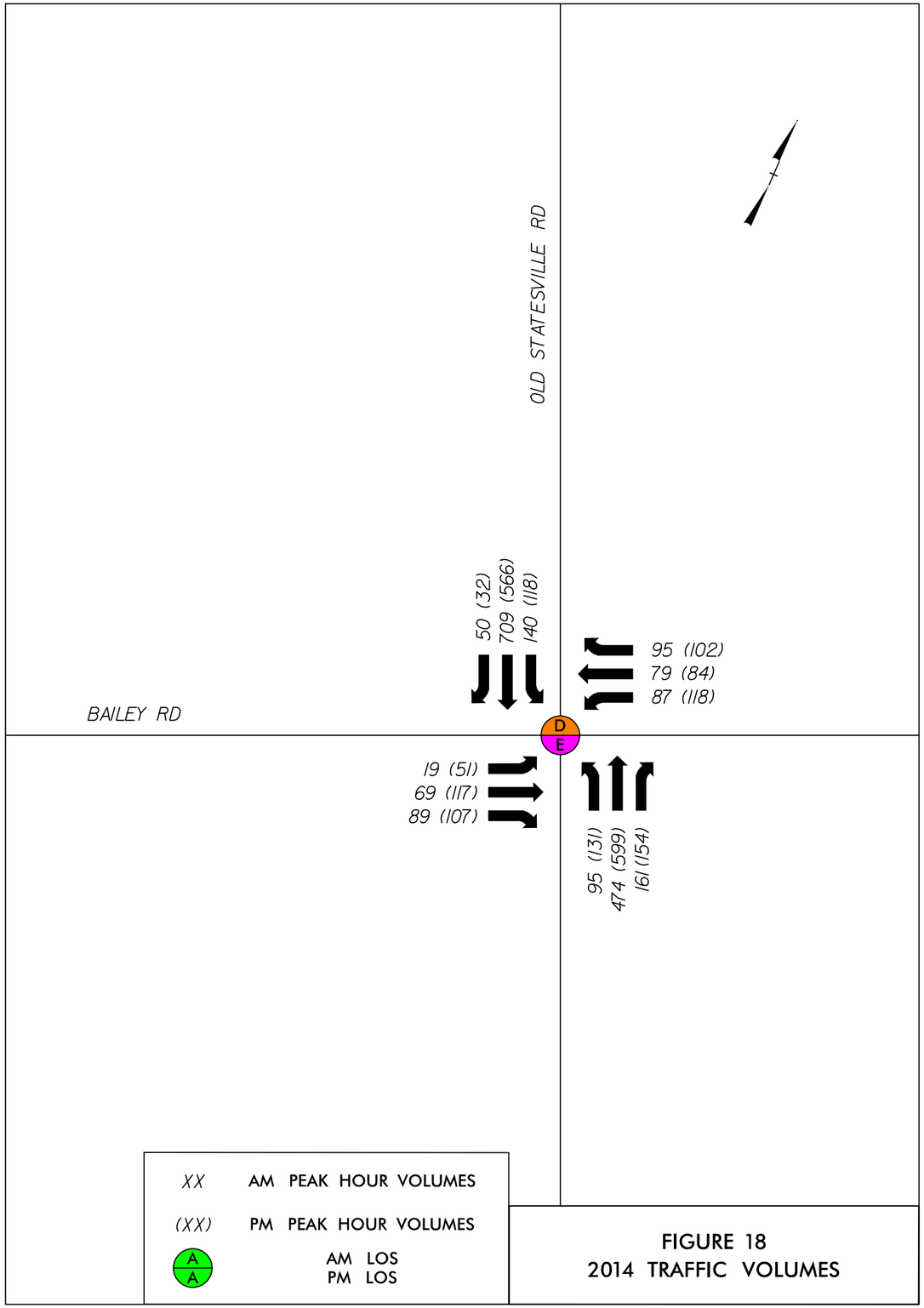


FIGURE 18
2014 TRAFFIC VOLUMES

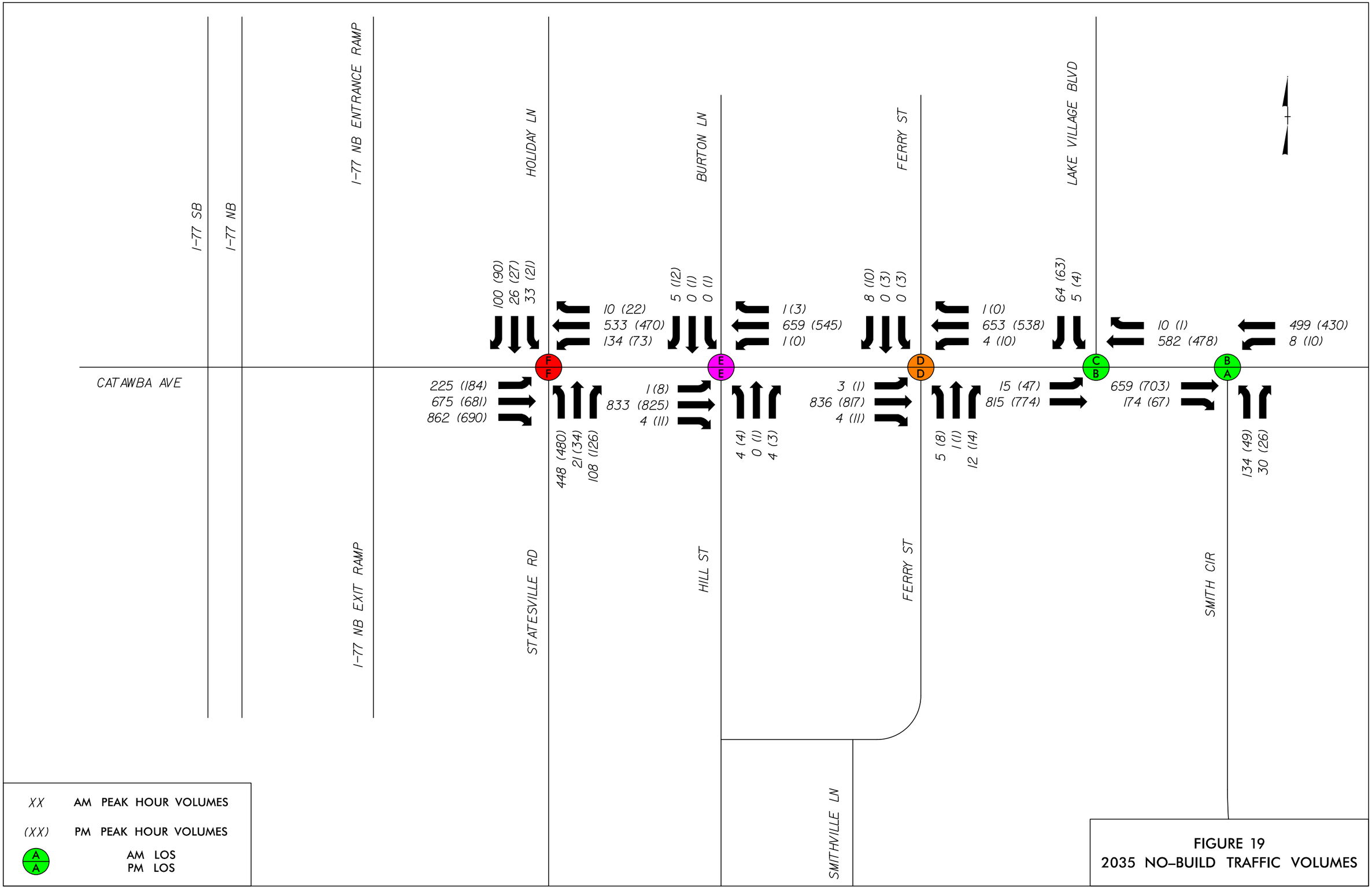


FIGURE 19
2035 NO-BUILD TRAFFIC VOLUMES

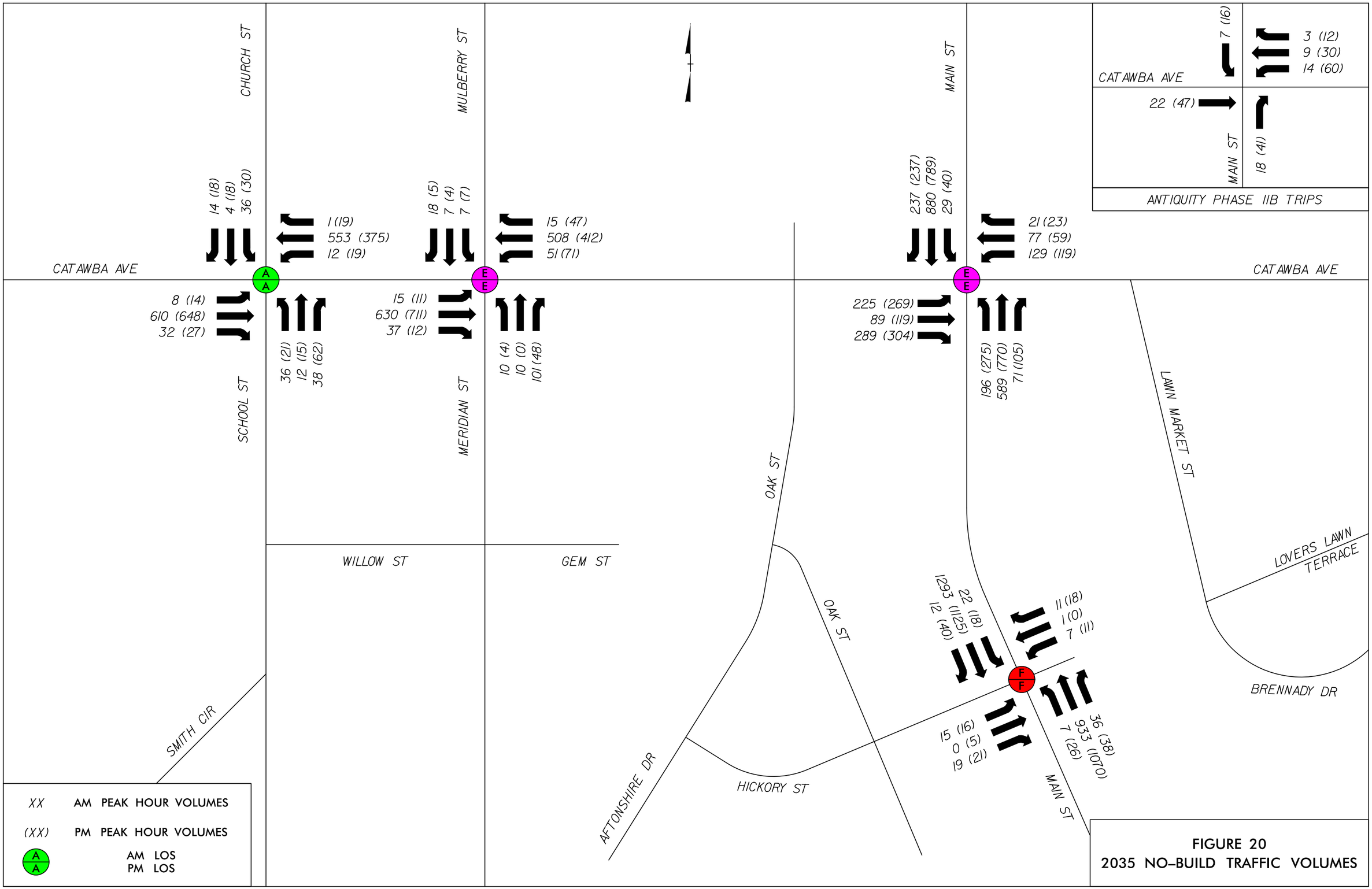


FIGURE 20
2035 NO-BUILD TRAFFIC VOLUMES

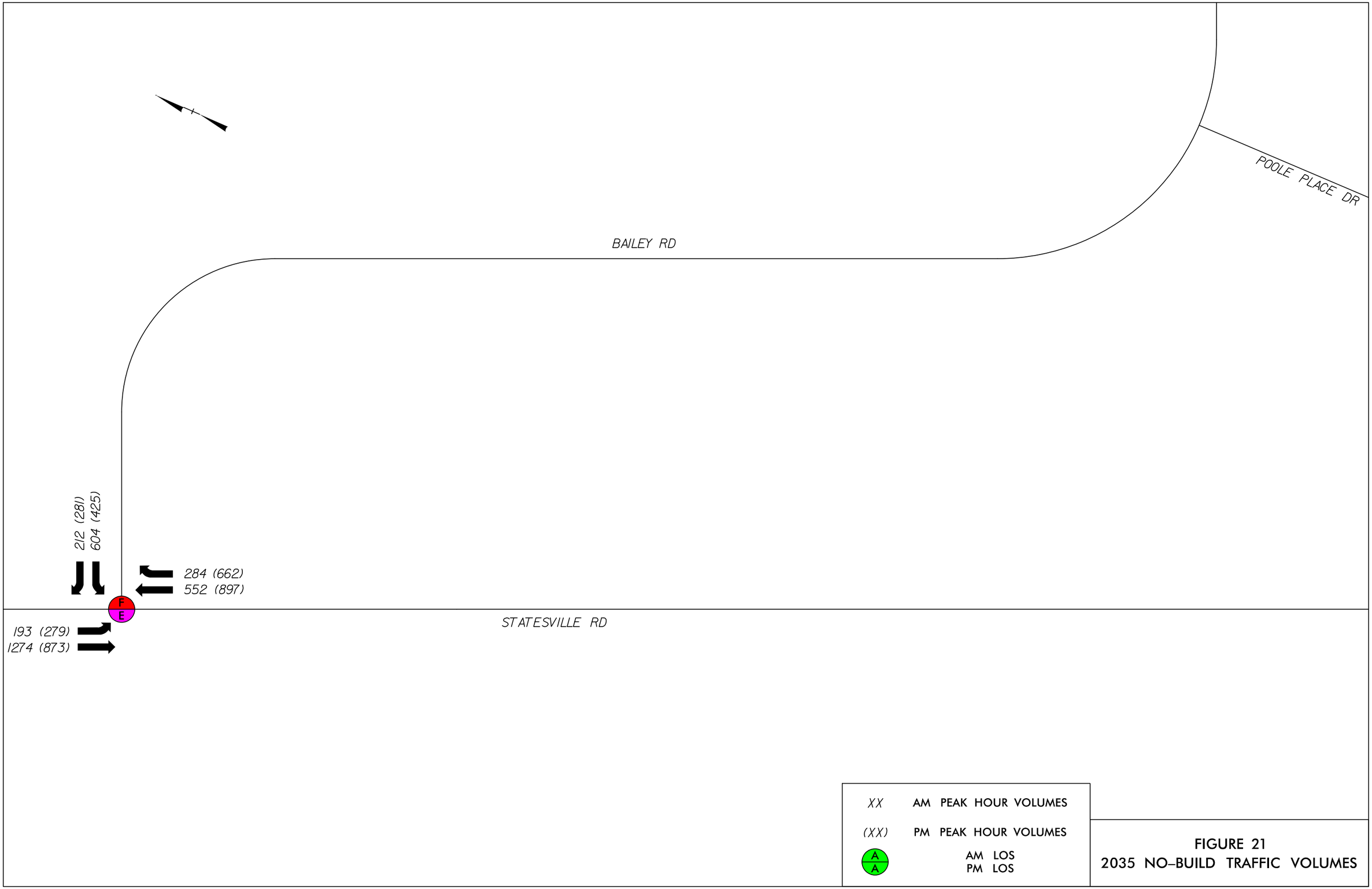
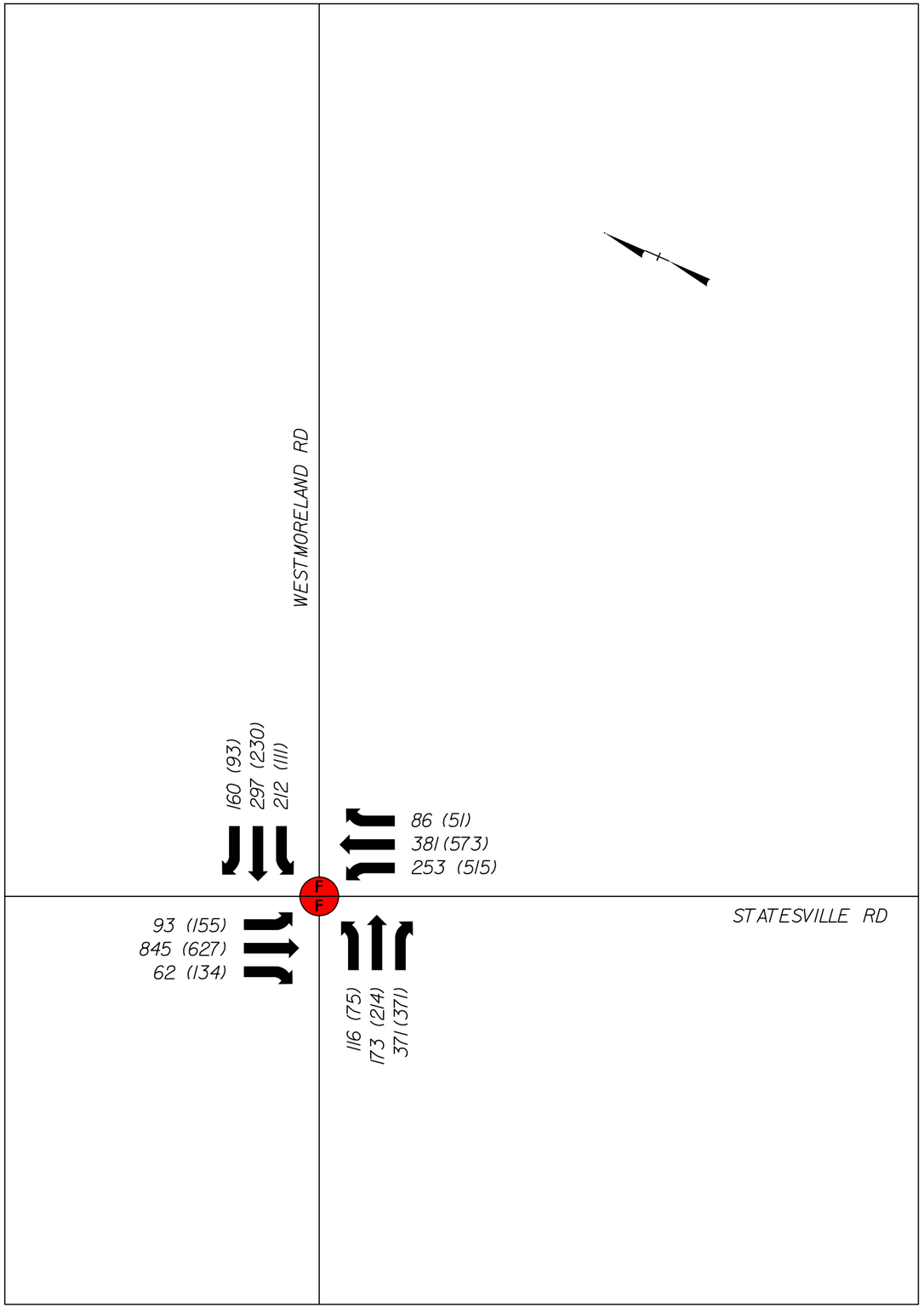


FIGURE 21
2035 NO-BUILD TRAFFIC VOLUMES



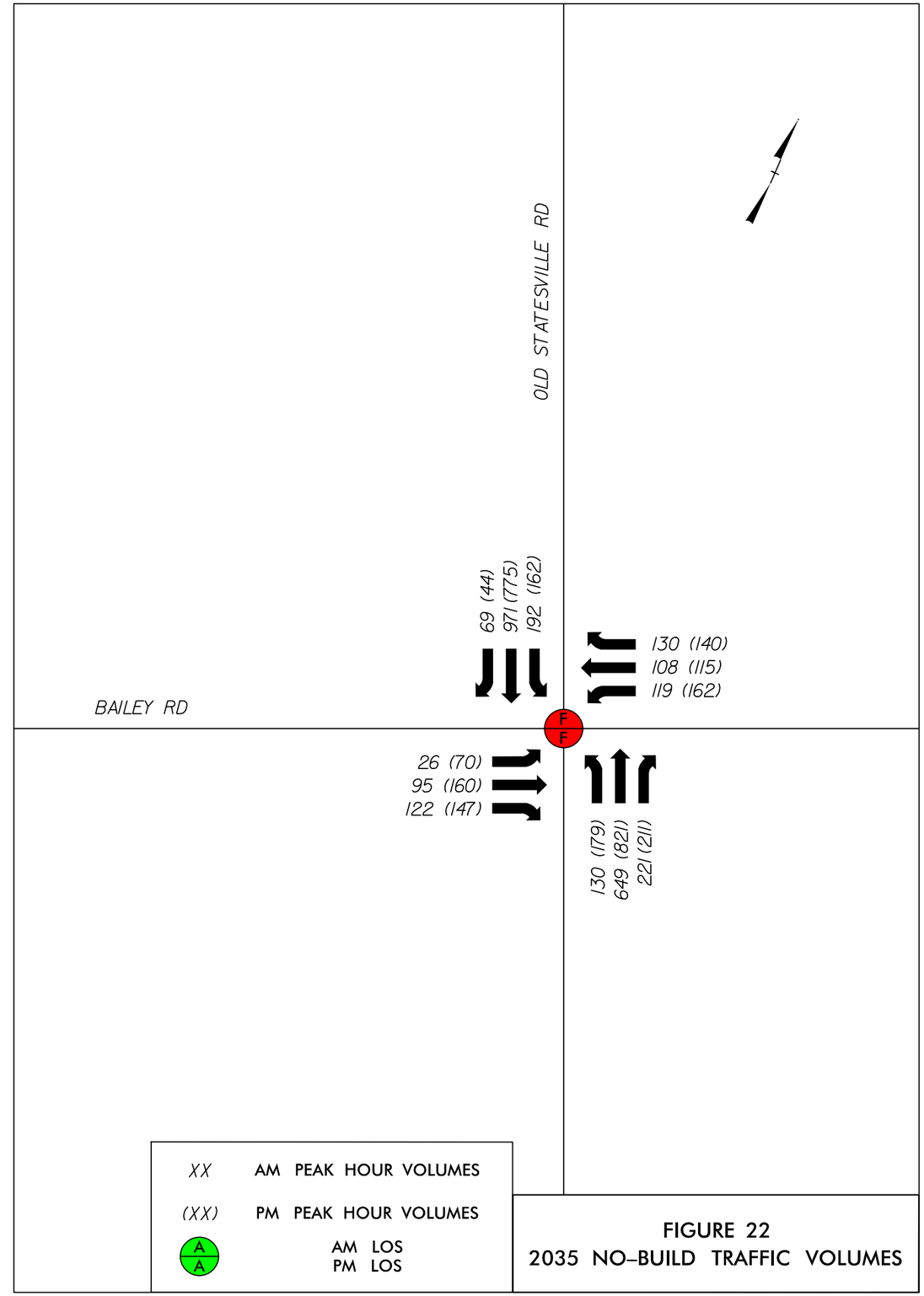


FIGURE 22
2035 NO-BUILD TRAFFIC VOLUMES

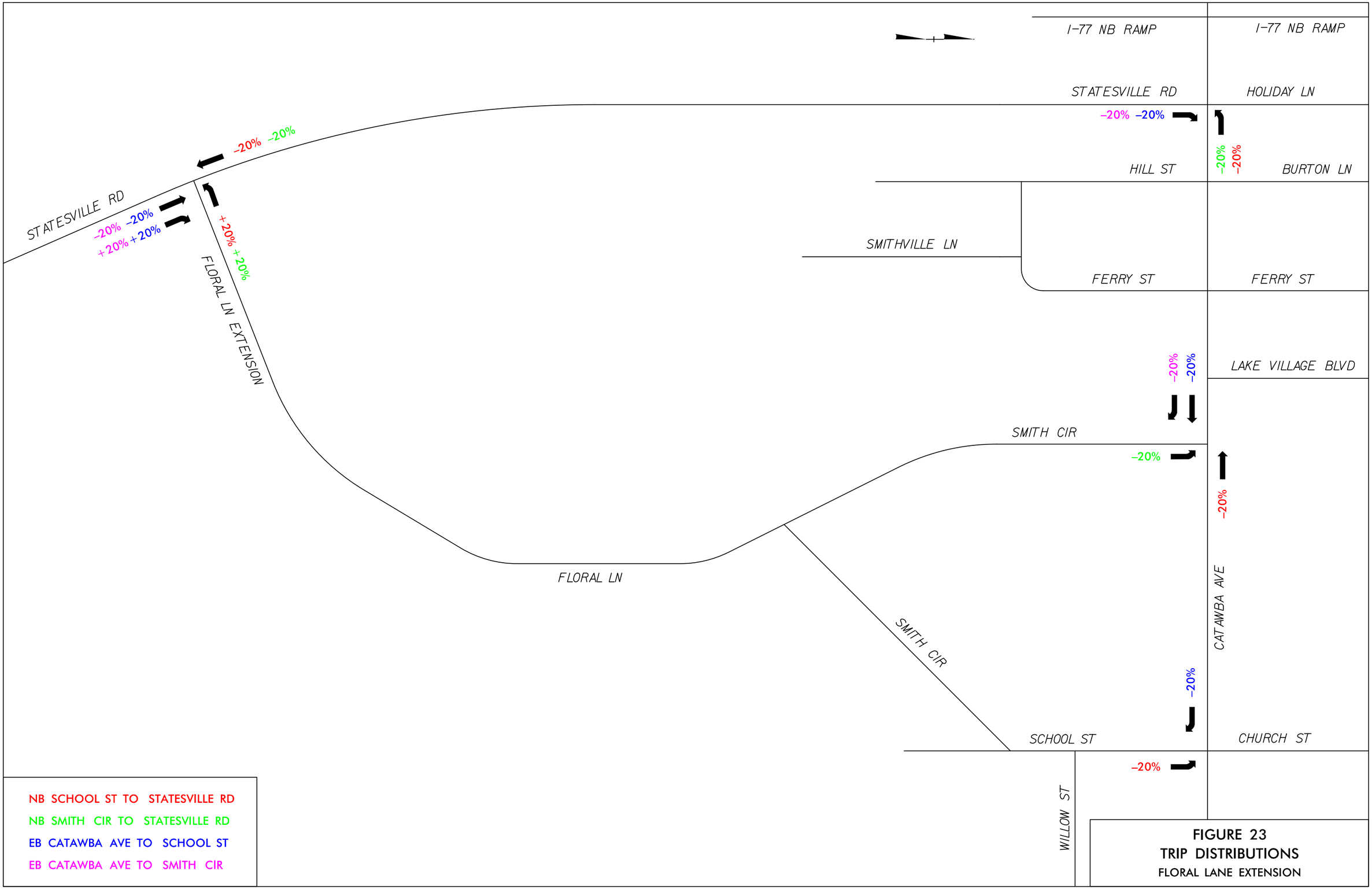


FIGURE 23
TRIP DISTRIBUTIONS
FLORAL LANE EXTENSION

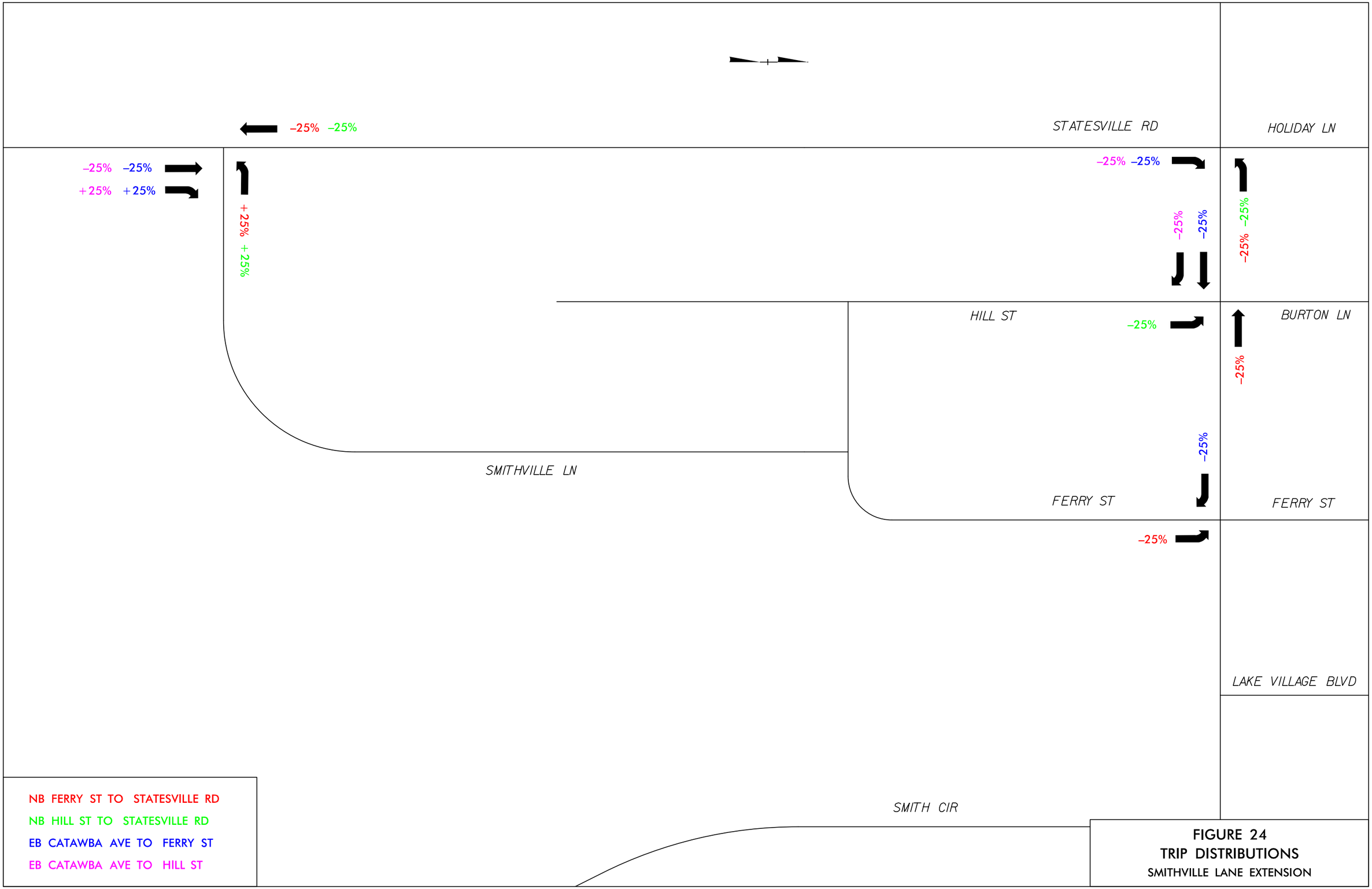
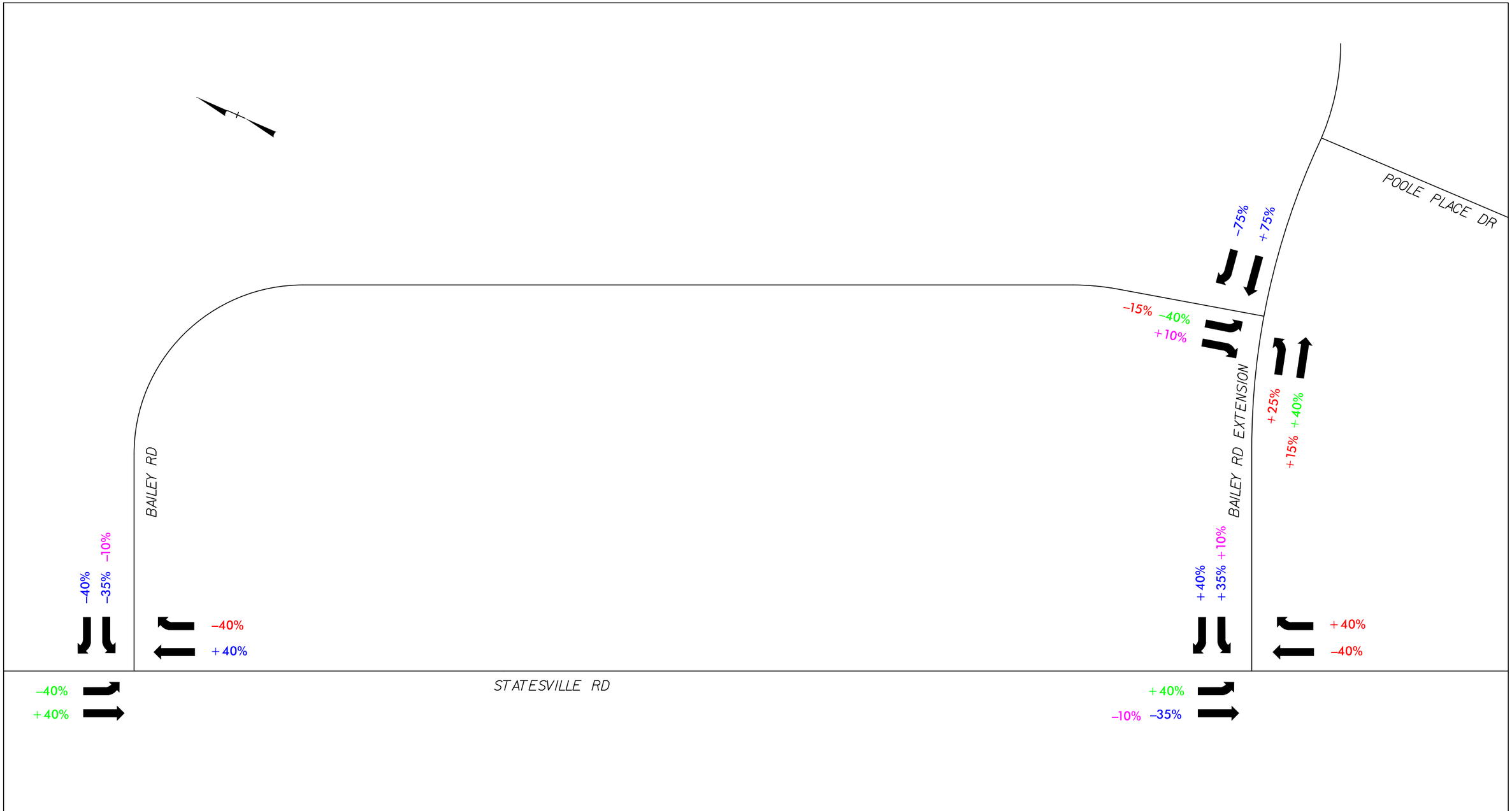


FIGURE 24
TRIP DISTRIBUTIONS
SMITHVILLE LANE EXTENSION



NB STATESVILLE RD TO BAILEY RD
SB STATESVILLE RD TO BAILEY RD
WB BAILEY RD TO STATESVILLE RD
EB BAILEY RD TO STATESVILLE RD

FIGURE 25
TRIP DISTRIBUTIONS
BAILEY ROAD RE-ALIGNMENT

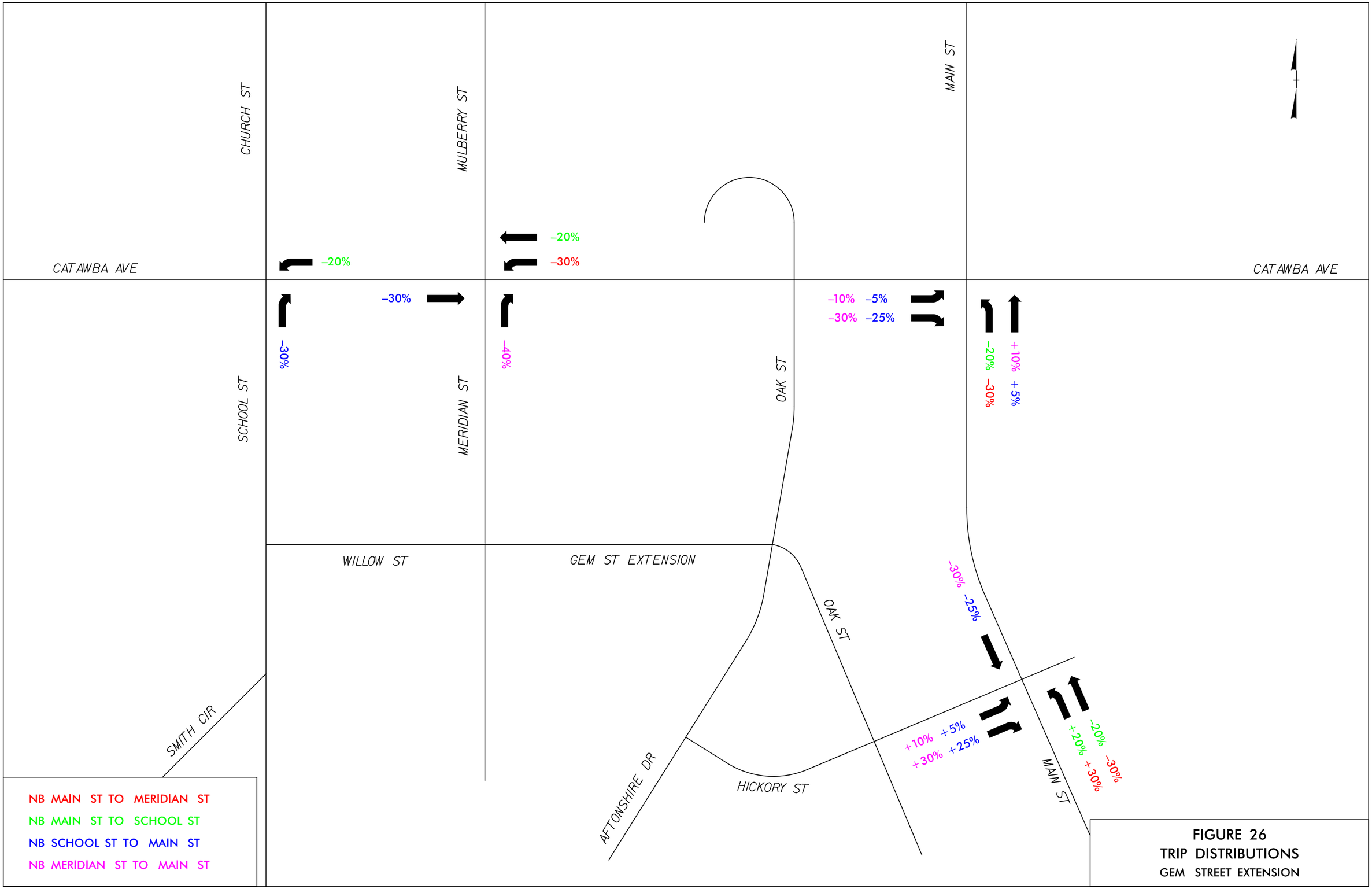


FIGURE 26
TRIP DISTRIBUTIONS
GEM STREET EXTENSION

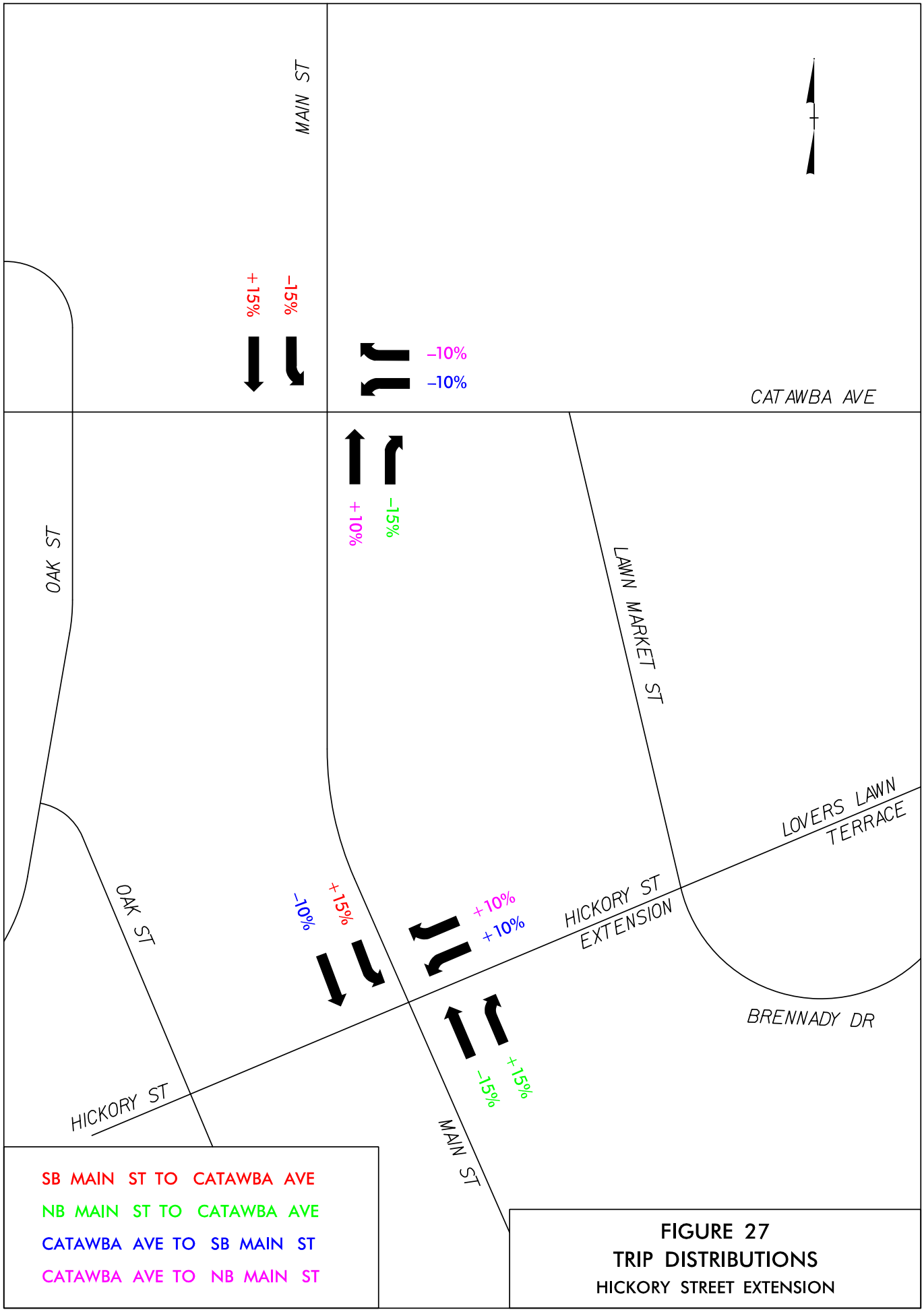


FIGURE 27
TRIP DISTRIBUTIONS
HICKORY STREET EXTENSION

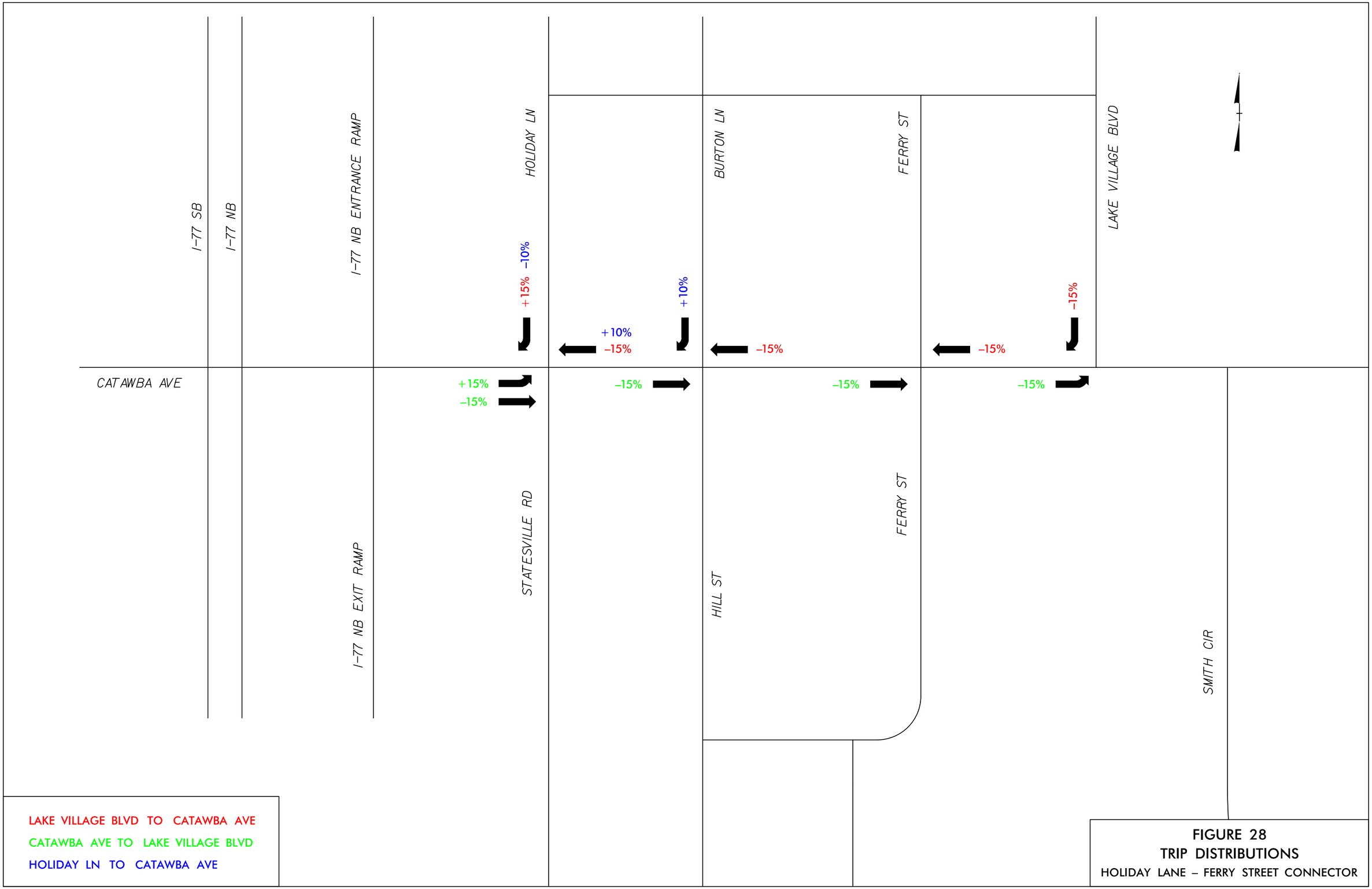


FIGURE 28
TRIP DISTRIBUTIONS
HOLIDAY LANE – FERRY STREET CONNECTOR

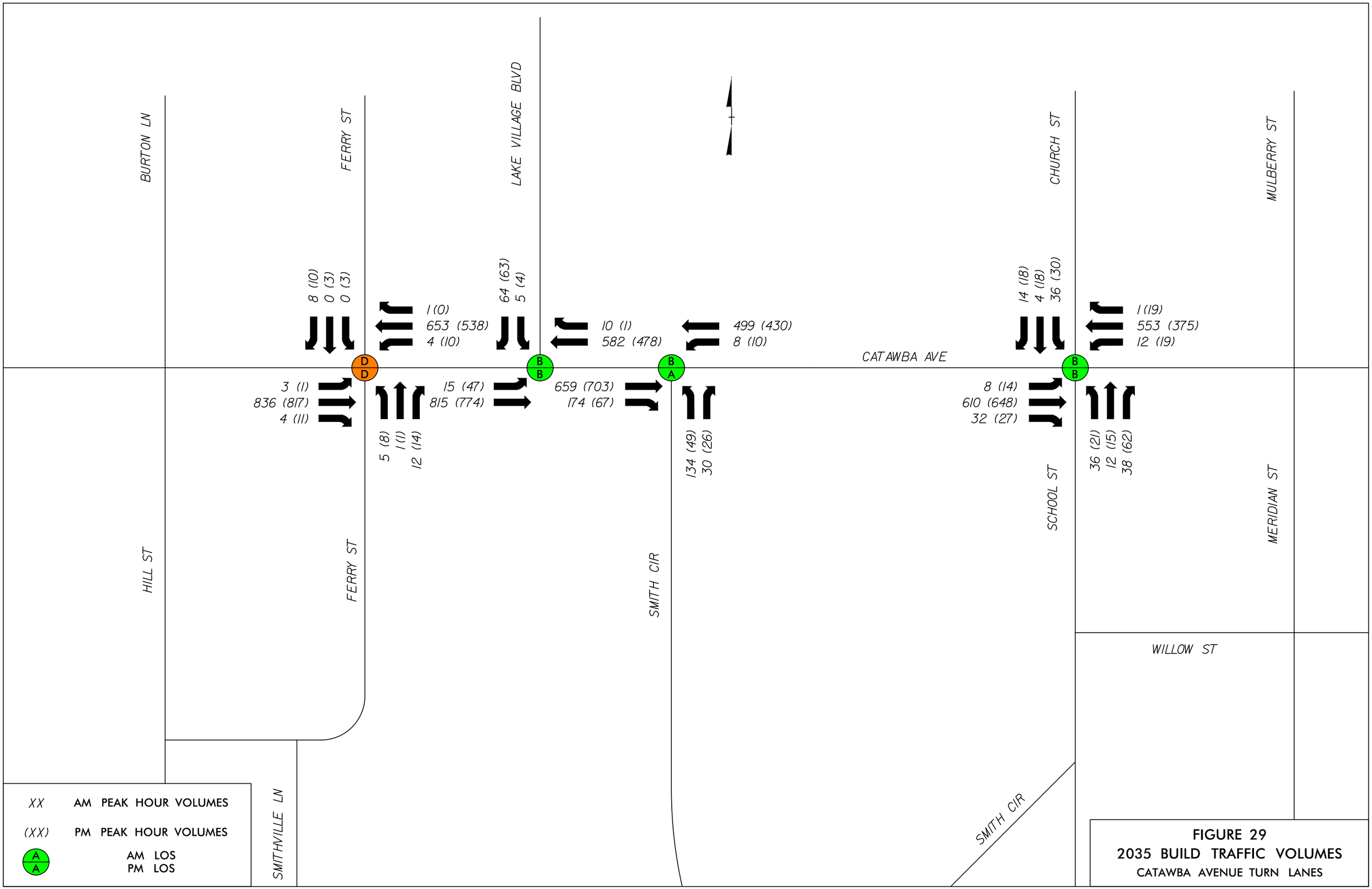


FIGURE 29
2035 BUILD TRAFFIC VOLUMES
CATAWBA AVENUE TURN LANES

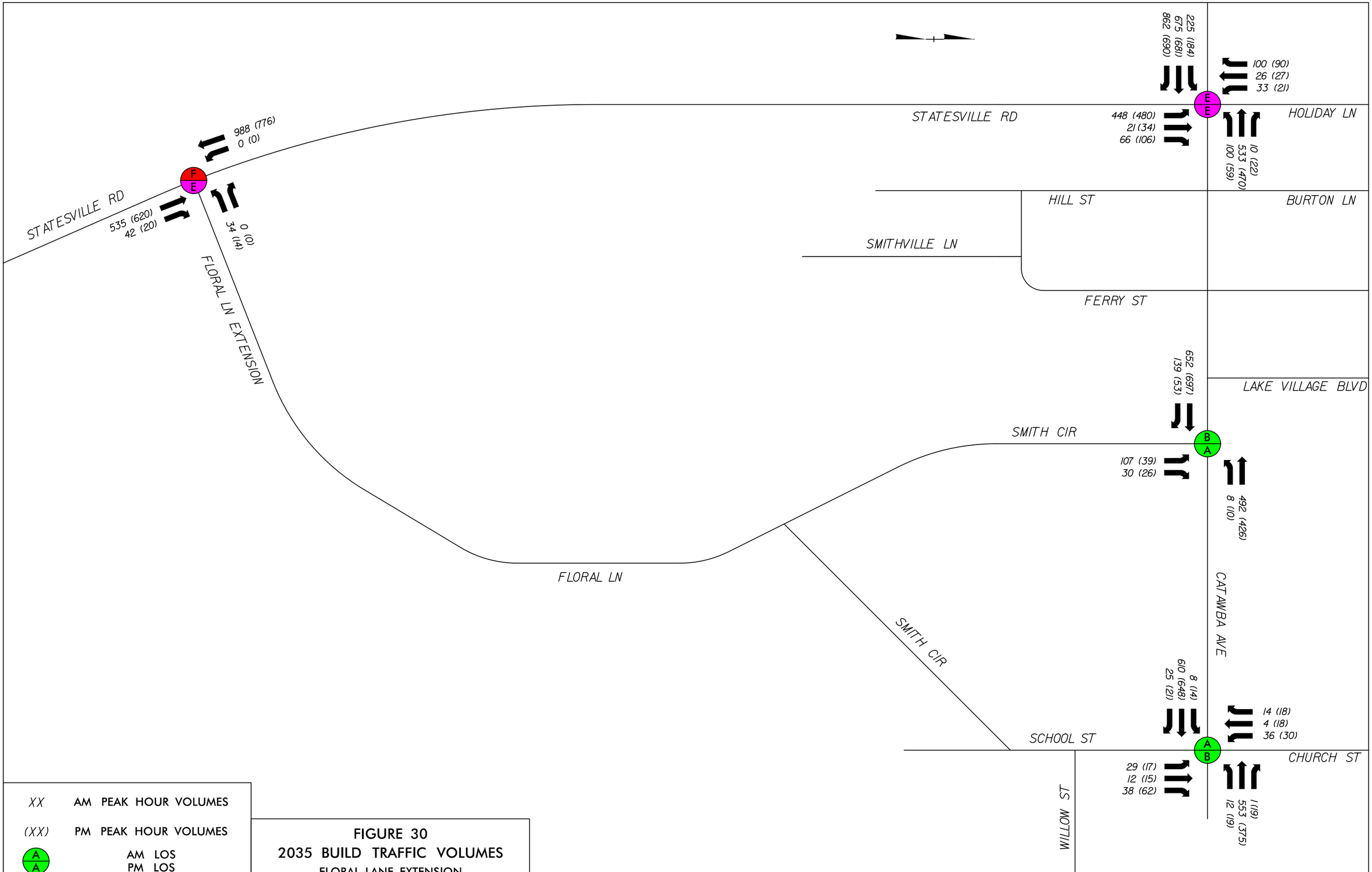


FIGURE 30
2035 BUILD TRAFFIC VOLUMES
FLORAL LANE EXTENSION

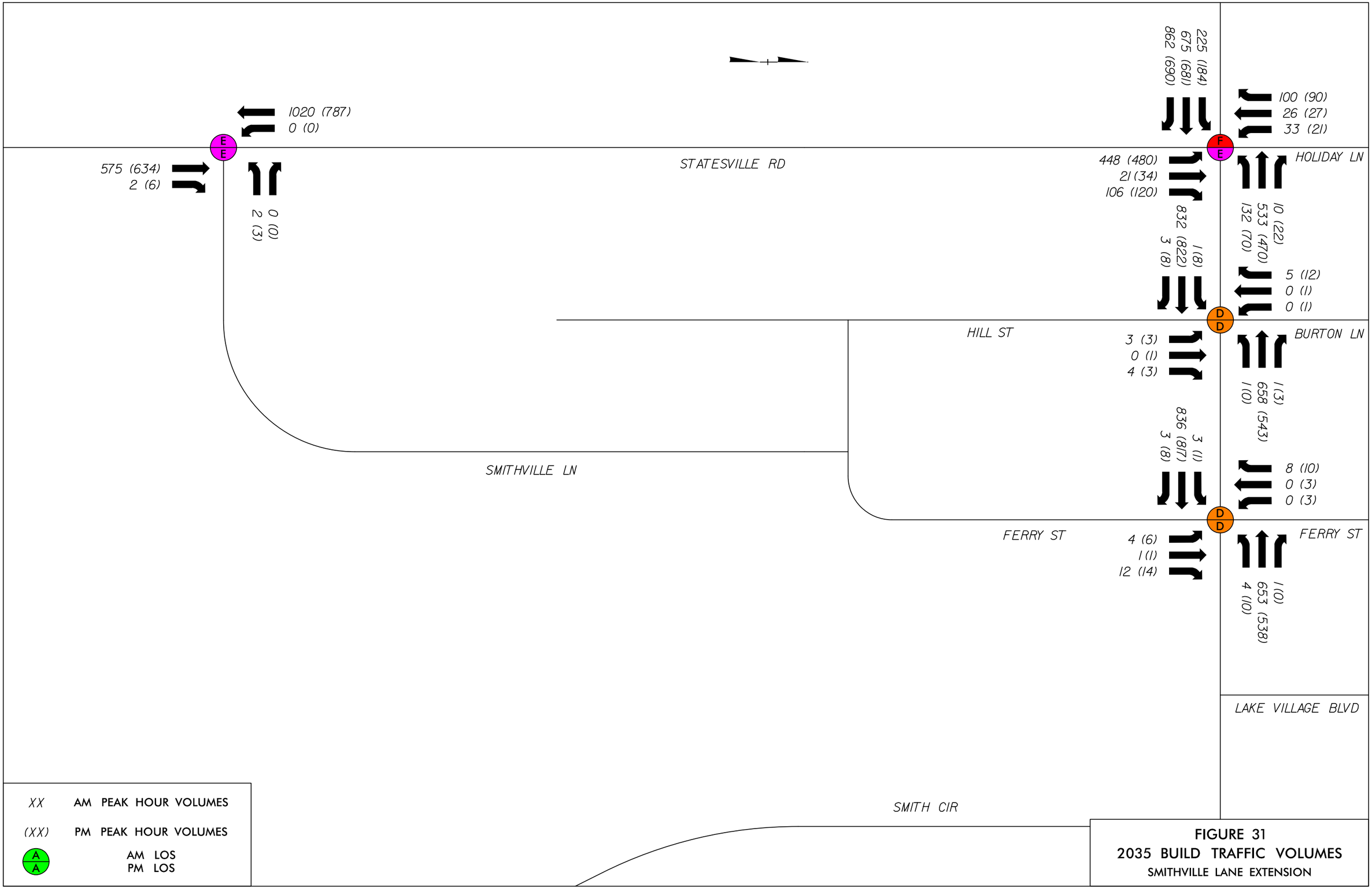


FIGURE 31
2035 BUILD TRAFFIC VOLUMES
SMITHVILLE LANE EXTENSION

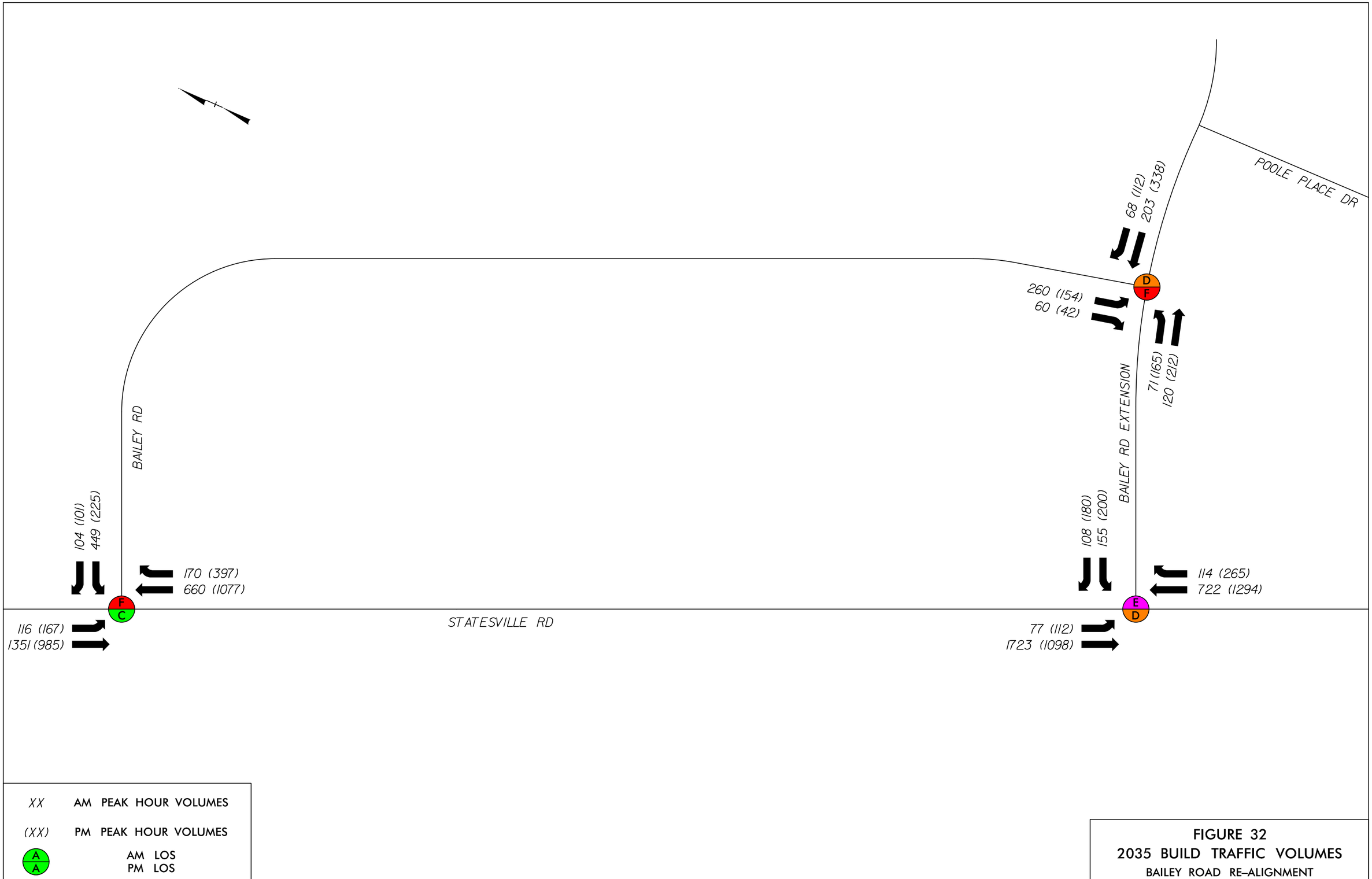


FIGURE 32
2035 BUILD TRAFFIC VOLUMES
BAILEY ROAD RE-ALIGNMENT

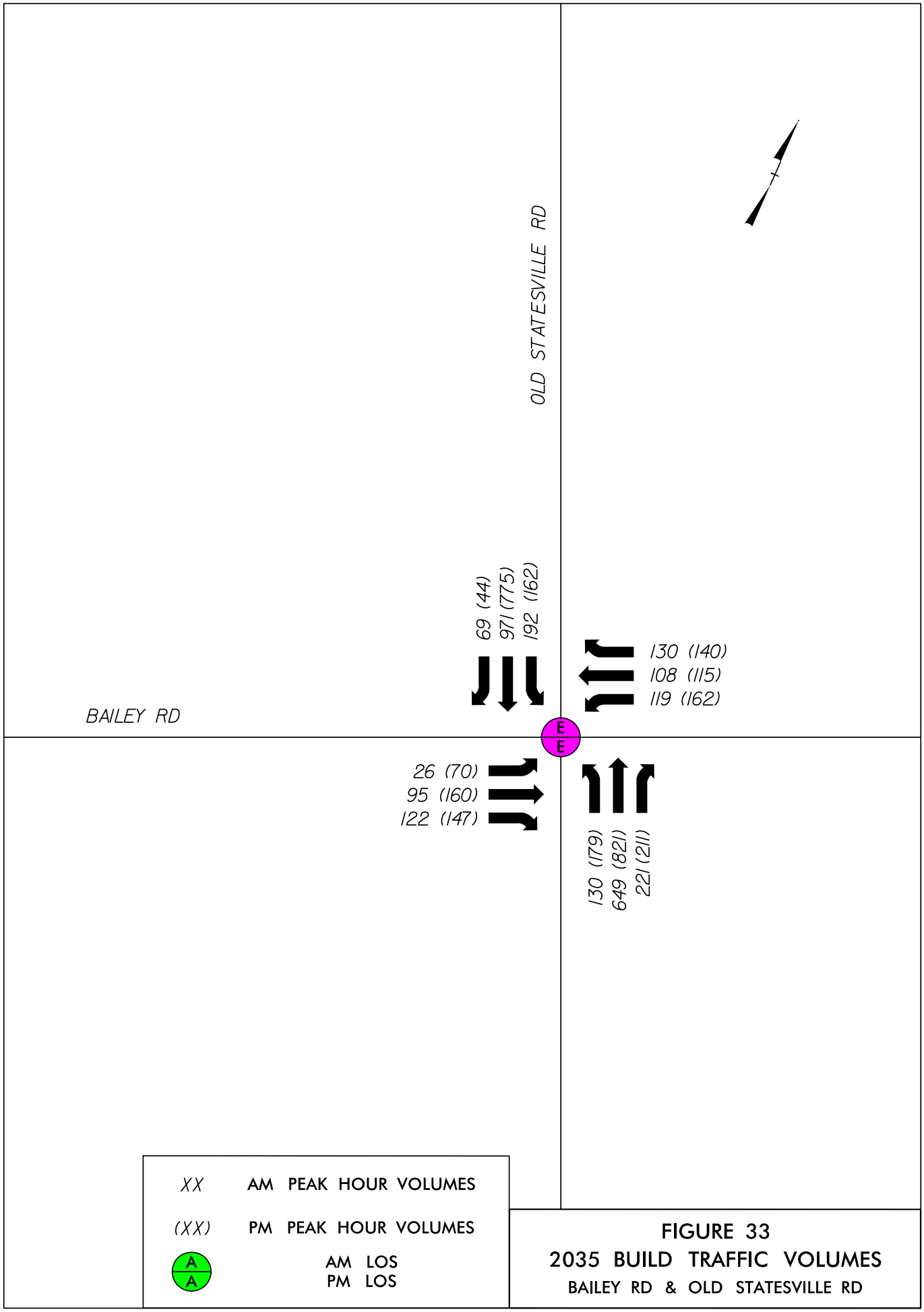


FIGURE 33
2035 BUILD TRAFFIC VOLUMES
BAILEY RD & OLD STATESVILLE RD

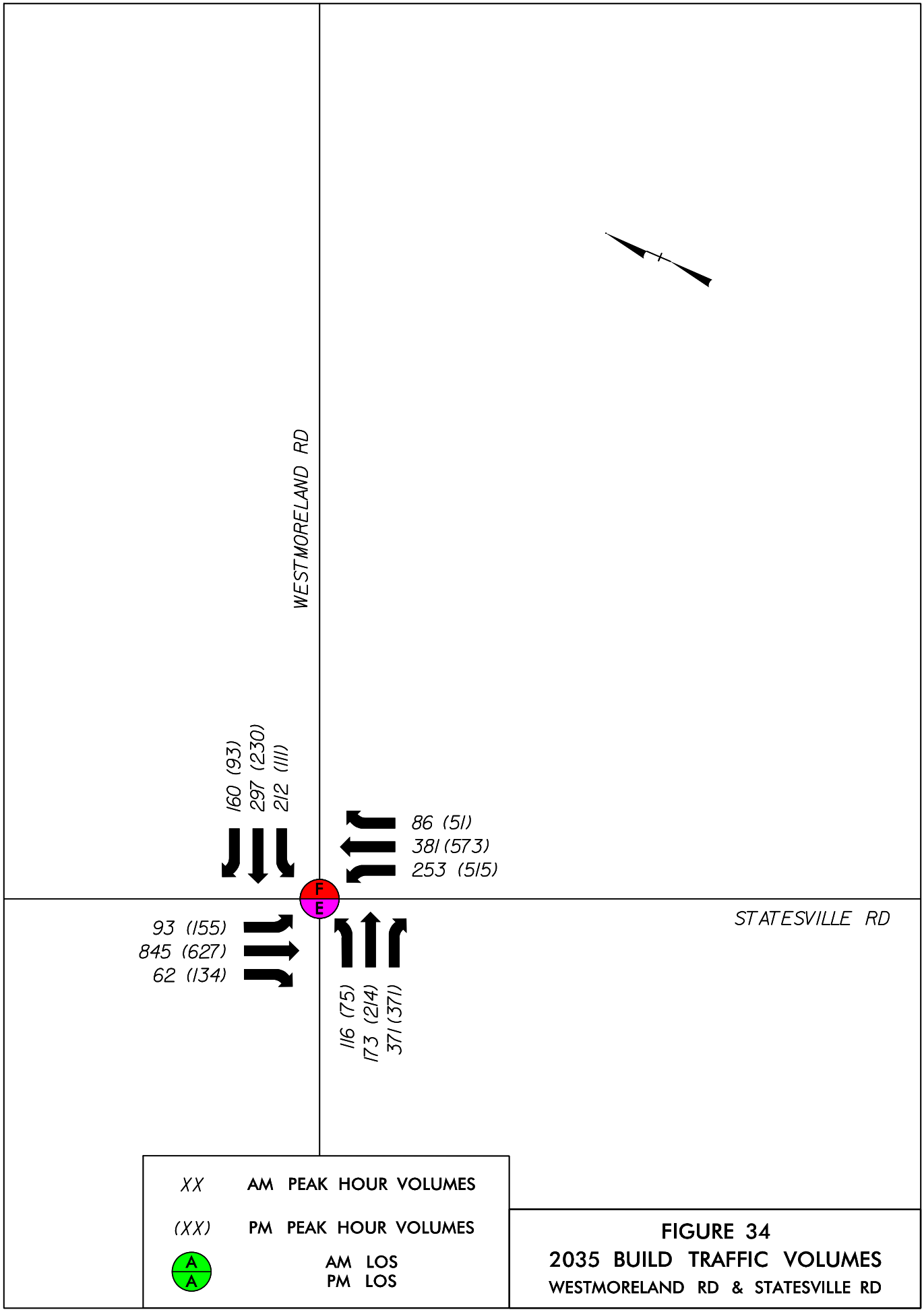


FIGURE 34
2035 BUILD TRAFFIC VOLUMES
WESTMORELAND RD & STATESVILLE RD

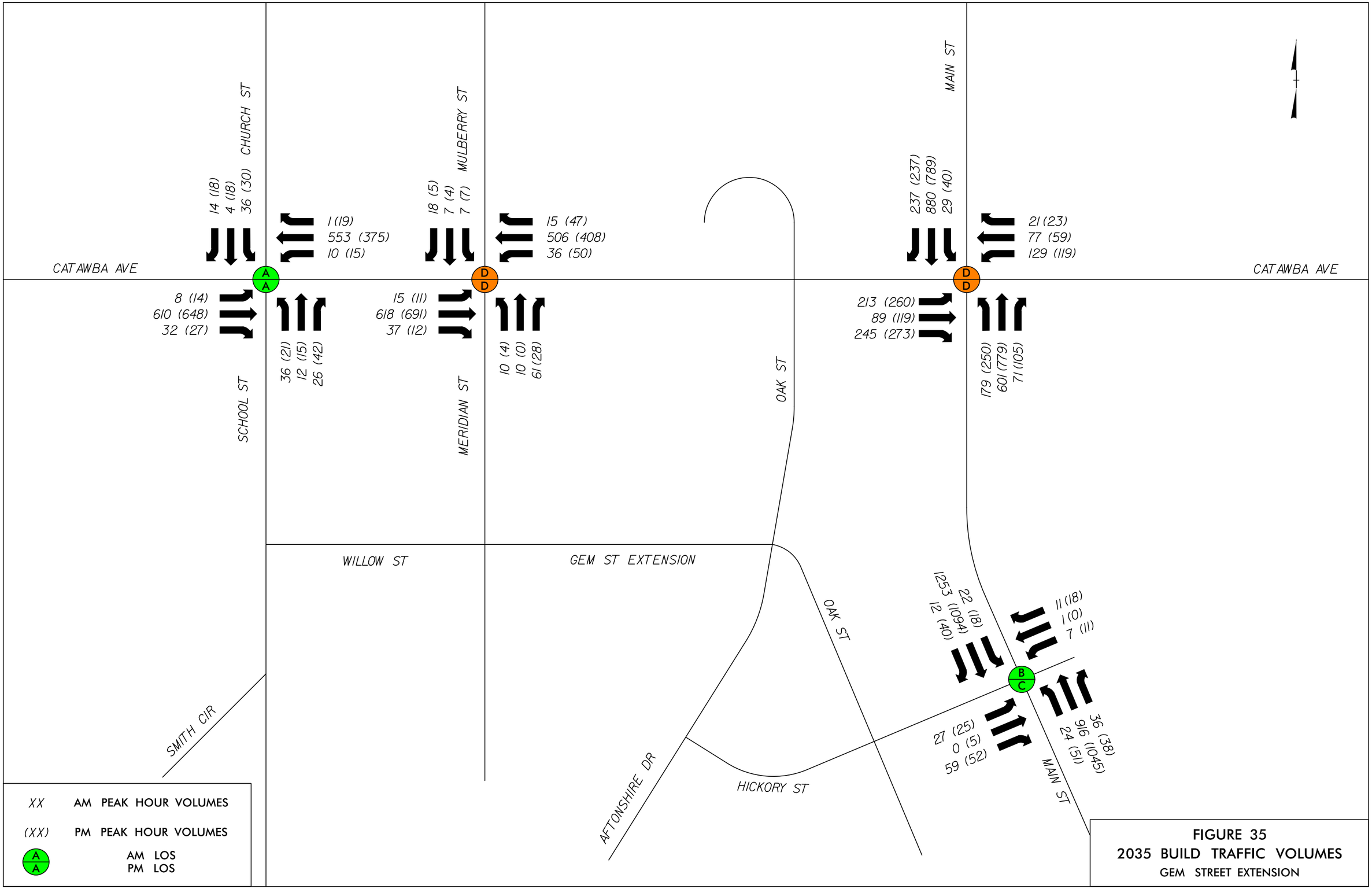


FIGURE 35
2035 BUILD TRAFFIC VOLUMES
GEM STREET EXTENSION

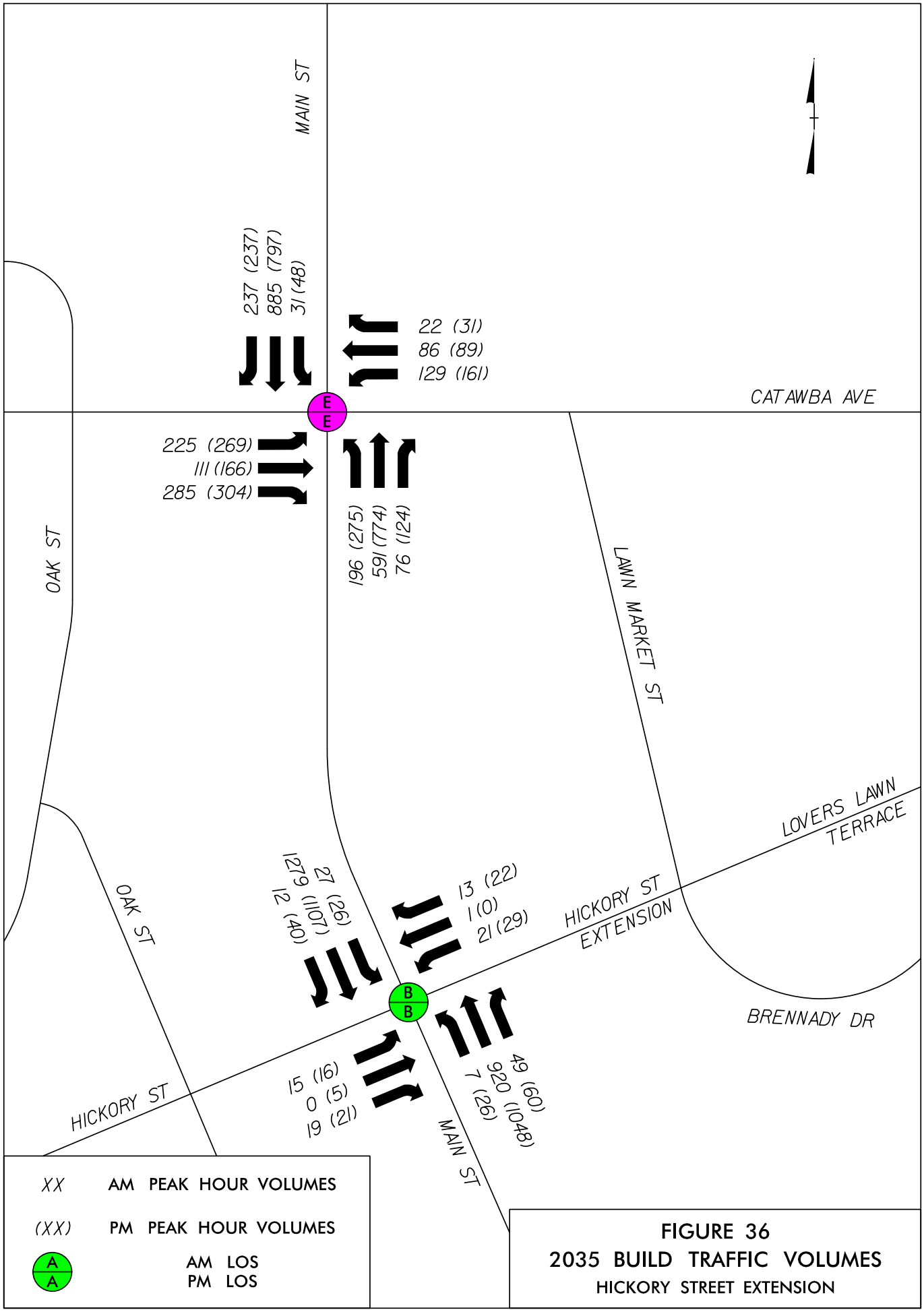


FIGURE 36
2035 BUILD TRAFFIC VOLUMES
HICKORY STREET EXTENSION

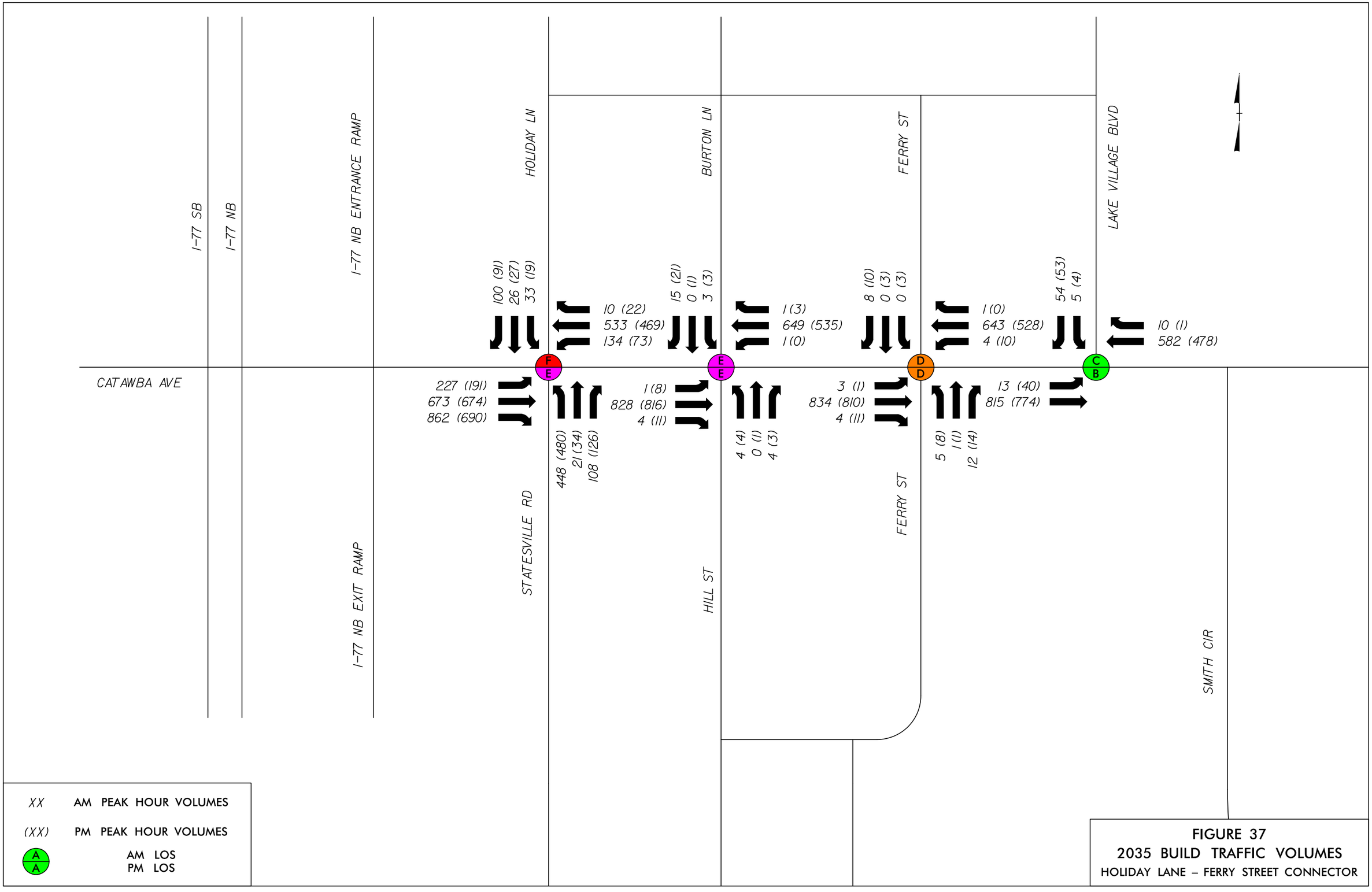


FIGURE 37
2035 BUILD TRAFFIC VOLUMES
HOLIDAY LANE – FERRY STREET CONNECTOR

APPENDIX A

RAW TRAFFIC COUNT DATA

Project ID: 14-9059-001
Location: Statesville Rd (US 21) & Catawba Ave
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Statesville Rd (US 21) Northbound					Statesville Rd (US 21) Southbound					Catawba Ave Eastbound					Catawba Ave Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	45	0	10	0	55	0	7	13	0	20	7	76	158	0	241	30	79	2	0	111	427
7:15 AM	60	1	15	0	76	2	6	16	0	24	14	80	183	0	277	31	99	3	0	133	510
7:30 AM	86	3	29	0	118	6	6	14	0	26	37	117	165	0	319	22	90	1	0	113	576
7:45 AM	75	4	20	0	99	5	4	24	0	33	51	127	164	0	342	27	92	2	0	121	595
Total	266	8	74	0	348	13	23	67	0	103	109	400	670	0	1179	110	360	8	0	478	2108
8:00 AM	83	4	14	0	101	6	5	22	0	33	49	123	146	0	318	24	99	0	0	123	575
8:15 AM	83	4	16	0	103	7	4	13	0	24	27	126	154	0	307	25	108	4	0	137	571
8:30 AM	60	7	27	0	94	4	9	28	0	41	24	136	137	0	297	36	82	3	0	121	553
8:45 AM	91	1	22	0	114	1	6	20	0	27	24	115	99	0	238	31	100	2	0	133	512
Total	317	16	79	0	412	18	24	83	0	125	124	500	536	0	1160	116	389	9	0	514	2211
BREAK																					
4:00 PM	96	3	34	0	133	2	2	14	0	18	23	120	115	0	258	6	68	4	0	78	487
4:15 PM	87	4	29	0	120	2	4	24	0	30	29	140	118	0	287	12	64	3	0	79	516
4:30 PM	94	2	25	0	121	5	5	23	0	33	26	91	99	0	216	16	90	6	0	112	482
4:45 PM	79	1	21	0	101	3	4	26	0	33	39	119	110	0	268	10	76	7	0	93	495
Total	356	10	109	0	475	12	15	87	0	114	117	470	442	0	1029	44	298	20	0	362	1980
5:00 PM	102	4	21	0	127	3	4	16	0	23	22	122	137	0	281	11	82	7	0	100	531
5:15 PM	77	4	23	0	104	4	2	16	0	22	39	119	119	0	277	17	93	3	0	113	516
5:30 PM	85	8	21	0	114	2	10	11	0	23	33	127	112	0	272	12	80	4	0	96	505
5:45 PM	86	9	27	0	122	6	4	23	0	33	40	129	136	0	305	13	88	2	0	103	563
Total	350	25	92	0	467	15	20	66	0	101	134	497	504	0	1135	53	343	16	0	412	2115
Grand Total	1289	59	354	0	1702	58	82	303	0	443	484	1867	2152	0	4503	323	1390	53	0	1766	8414
Apprch %	75.7	3.5	20.8	0.0		13.1	18.5	68.4	0.0		10.7	41.5	47.8	0.0		18.3	78.7	3.0	0.0		
Total %	15.3	0.7	4.2	0.0	20.2	0.7	1.0	3.6	0.0	5.3	5.8	22.2	25.6	0.0	53.5	3.8	16.5	0.6	0.0	21.0	
Cars, PU, Vans	1283	59	348	0	1690	57	82	301	0	440	483	1861	2139	0	4483	322	1379	53	0	1754	8367
% Cars, PU, Vans	99.5	####	98.3	0.0	99.3	98.3	####	99.3	0.0	99.3	99.8	99.7	99.4	0.0	99.6	99.7	99.2	####	0.0	99.3	99.4
Heavy Trucks	6	0	6		12	1	0	2		3	1	6	13		20	1	11	0		12	47
%Heavy Trucks	0.5	0.0	1.7	0.0	0.7	1.7	0.0	0.7	0.0	0.7	0.2	0.3	0.6	0.0	0.4	0.3	0.8	0.0	0.0	0.7	0.6

Project ID: 14-9059-001
Location: Statesville Rd (US 21) &
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Statesville Rd (US 21) Northbound				Statesville Rd (US 21) Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
7:30 AM	86	3	29	118	6	6	14	26	37	117	165	319	22	90	1	113	576
7:45 AM	75	4	20	99	5	4	24	33	51	127	164	342	27	92	2	121	595
8:00 AM	83	4	14	101	6	5	22	33	49	123	146	318	24	99	0	123	575
8:15 AM	83	4	16	103	7	4	13	24	27	126	154	307	25	108	4	137	571
Total Volume	327	15	79	421	24	19	73	116	164	493	629	1286	98	389	7	494	2317
% App. Total	77.7	3.6	18.8	100	20.7	16.4	62.9	100	12.8	38.3	48.9	100	19.8	78.7	1.4	100	
PHF				0.892				0.879				0.940				0.901	
Cars, PU, Vans	324	15	78	417	24	19	73	116	163	490	624	1277	98	385	7	490	2300
% Cars, PU, Vans	99.1	####	98.7	99.0	100.0	####	####	100.0	99.4	99.4	99.2	99.3	####	99.0	100.0	99.2	99.3
Heavy Trucks	3	0	1	4	0	0	0	0	1	3	5	9	0	4	0	4	17
%Heavy Trucks	0.9	0.0	1.3	1.0	0.0	0.0	0.0	0.0	0.6	0.6	0.8	0.7	0.0	1.0	0.0	0.8	0.7

PM

	Statesville Rd (US 21) Northbound				Statesville Rd (US 21) Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	102	4	21	127	3	4	16	23	22	122	137	281	11	82	7	100	531
5:15 PM	77	4	23	104	4	2	16	22	39	119	119	277	17	93	3	113	516
5:30 PM	85	8	21	114	2	10	11	23	33	127	112	272	12	80	4	96	505
5:45 PM	86	9	27	122	6	4	23	33	40	129	136	305	13	88	2	103	563
Total Volume	350	25	92	467	15	20	66	101	134	497	504	1135	53	343	16	412	2115
% App. Total	74.9	5.4	19.7	100	14.9	19.8	65.3	100	11.8	43.8	44.4	100	12.9	83.3	3.9	100	
PHF				0.919				0.765				0.930				0.912	
Cars, PU, Vans	349	25	90	464	15	20	66	101	134	497	504	1135	53	343	16	412	2112
% Cars, PU, Vans	99.7	####	97.8	99.4	100.0	####	####	100.0	####	100.0	####	100.0	####	####	100.0	100.0	99.9
Heavy Trucks	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	3
%Heavy Trucks	0.3	0.0	2.2	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1

Project ID: 14-9059-002
Location: Burton Lane & Catawba Ave
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Burton Lane Northbound					Burton Lane Southbound					Catawba Ave Eastbound					Catawba Ave Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	0	0	0	0	0	1	0	1	0	2	1	84	0	0	85	0	114	0	0	114	201
7:15 AM	0	0	1	0	1	0	0	1	0	1	1	91	1	0	93	0	129	0	0	129	224
7:30 AM	1	0	1	0	2	0	0	1	0	1	0	151	1	0	152	0	122	0	0	122	277
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	153	0	0	153	1	116	0	0	117	270
Total	1	0	2	0	3	1	0	3	0	4	2	479	2	0	483	1	481	0	0	482	972
8:00 AM	0	0	0	0	0	0	0	3	0	3	1	140	0	0	141	0	123	0	0	123	267
8:15 AM	2	0	2	0	4	0	0	0	0	0	0	149	1	0	150	0	123	0	0	123	277
8:30 AM	1	0	1	0	2	0	0	1	0	1	0	166	2	0	168	0	119	1	0	120	291
8:45 AM	1	0	1	0	2	0	0	0	0	0	0	133	3	0	136	0	130	0	0	130	268
Total	4	0	4	0	8	0	0	4	0	4	1	588	6	0	595	0	495	1	0	496	1103
BREAK																					
4:00 PM	1	0	1	0	2	0	1	2	0	3	4	148	3	0	155	0	69	0	0	69	229
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	162	5	0	167	0	84	0	0	84	251
4:30 PM	4	0	2	0	6	0	0	0	0	0	0	117	3	0	120	0	97	1	0	98	224
4:45 PM	2	2	3	0	7	0	0	1	0	1	2	141	1	0	144	0	93	0	0	93	245
Total	7	2	6	0	15	0	1	3	0	4	6	568	12	0	586	0	343	1	0	344	949
5:00 PM	1	0	0	0	1	0	0	1	0	1	2	146	3	0	151	0	98	2	0	100	253
5:15 PM	1	0	0	0	1	1	0	1	0	2	1	138	1	0	140	0	112	0	0	112	255
5:30 PM	1	1	1	0	3	0	1	5	0	6	2	157	3	0	162	0	94	0	0	94	265
5:45 PM	0	0	1	0	1	0	0	2	0	2	1	161	1	0	163	0	94	0	0	94	260
Total	3	1	2	0	6	1	1	9	0	11	6	602	8	0	616	0	398	2	0	400	1033
Grand Total	15	3	14	0	32	2	2	19	0	23	15	2237	28	0	2280	1	1717	4	0	1722	4057
Apprch %	46.9	9.4	43.8	0.0		8.7	8.7	82.6	0.0		0.7	98.1	1.2	0.0		0.1	99.7	0.2	0.0		
Total %	0.4	0.1	0.3	0.0	0.8	0.0	0.0	0.5	0.0	0.6	0.4	55.1	0.7	0.0	56.2	0.0	42.3	0.1	0.0	42.4	
Cars, PU, Vans	15	3	14	0	32	2	2	19	0	23	14	2227	26	0	2267	1	1707	4	0	1712	4034
% Cars, PU, Vans	####	####	####	0.0	100.0	####	####	100.0	0.0	100.0	93.3	99.6	92.9	0.0	99.4	100.0	99.4	####	0.0	99.4	99.4
Heavy Trucks	0	0	0		0	0	0	0		0	1	10	2		13	0	10	0		10	23
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.7	0.4	7.1	0.0	0.6	0.0	0.6	0.0	0.0	0.6	0.6

Project ID: 14-9059-002
Location: Burton Lane & Catawba
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Burton Lane Northbound				Burton Lane Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
7:45 AM	0	0	0	0	0	0	0	0	0	153	0	153	1	116	0	117	270
8:00 AM	0	0	0	0	0	0	3	3	1	140	0	141	0	123	0	123	267
8:15 AM	2	0	2	4	0	0	0	0	0	149	1	150	0	123	0	123	277
8:30 AM	1	0	1	2	0	0	1	1	0	166	2	168	0	119	1	120	291
Total Volume	3	0	3	6	0	0	4	4	1	608	3	612	1	481	1	483	1105
% App. Total	50.0	0.0	50.0	100	0.0	0.0	####	100	0.2	99.3	0.5	100	0.2	99.6	0.2	100	
PHF				0.375				0.333				0.911				0.982	
Cars, PU, Vans	3	0	3	6	0	0	4	4	1	606	2	609	1	477	1	479	1098
% Cars, PU, Vans	####	0.0	####	100.0	0.0	0.0	####	100.0	####	99.7	66.7	99.5	####	99.2	100.0	99.2	99.4
Heavy Trucks	0	0	0	0	0	0	0	0	0	2	1	3	0	4	0	4	7
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	33.3	0.5	0.0	0.8	0.0	0.8	0.6

PM

	Burton Lane Northbound				Burton Lane Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	1	0	0	1	0	0	1	1	2	146	3	151	0	98	2	100	253
5:15 PM	1	0	0	1	1	0	1	2	1	138	1	140	0	112	0	112	255
5:30 PM	1	1	1	3	0	1	5	6	2	157	3	162	0	94	0	94	265
5:45 PM	0	0	1	1	0	0	2	2	1	161	1	163	0	94	0	94	260
Total Volume	3	1	2	6	1	1	9	11	6	602	8	616	0	398	2	400	1033
% App. Total	50.0	16.7	33.3	100	9.1	9.1	81.8	100	1.0	97.7	1.3	100	0.0	99.5	0.5	100	
PHF				0.500				0.458				0.945				0.893	
Cars, PU, Vans	3	1	2	6	1	1	9	11	5	602	7	614	0	398	2	400	1031
% Cars, PU, Vans	####	####	####	100.0	100.0	####	####	100.0	83.3	100.0	87.5	99.7	0.0	####	100.0	100.0	99.8
Heavy Trucks	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	2
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	0.0	12.5	0.3	0.0	0.0	0.0	0.0	0.2

Project ID: 14-9059-003
Location: Ferry St & Catawba Ave
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Ferry St Northbound					Ferry St Southbound					Catawba Ave Eastbound					Catawba Ave Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	0	0	0	0	0	0	0	1	0	1	1	80	0	0	81	0	112	1	0	113	195
7:15 AM	1	0	1	0	2	0	0	2	0	2	1	95	0	0	96	2	129	0	0	131	231
7:30 AM	0	0	3	0	3	0	0	2	0	2	0	146	5	0	151	0	123	1	0	124	280
7:45 AM	2	0	3	0	5	0	0	1	0	1	0	151	0	0	151	0	119	1	0	120	277
Total	3	0	7	0	10	0	0	6	0	6	2	472	5	0	479	2	483	3	0	488	983
8:00 AM	2	0	1	0	3	0	0	2	0	2	0	141	0	0	141	0	122	0	0	122	268
8:15 AM	0	1	2	0	3	0	0	2	0	2	1	152	1	0	154	2	119	0	0	121	280
8:30 AM	0	0	3	0	3	0	0	1	0	1	1	166	2	0	169	1	117	0	0	118	291
8:45 AM	0	0	5	0	5	0	1	4	0	5	0	131	1	0	132	3	127	0	0	130	272
Total	2	1	11	0	14	0	1	9	0	10	2	590	4	0	596	6	485	0	0	491	1111
BREAK																					
4:00 PM	1	0	5	0	6	0	1	2	0	3	1	143	1	0	145	1	66	0	0	67	221
4:15 PM	0	0	2	0	2	0	0	1	0	1	1	153	1	0	155	3	80	0	0	83	241
4:30 PM	0	0	2	0	2	0	1	2	0	3	4	121	0	0	125	2	99	0	0	101	231
4:45 PM	4	1	3	0	8	1	2	4	0	7	2	137	0	0	139	3	78	0	0	81	235
Total	5	1	12	0	18	1	4	9	0	14	8	554	2	0	564	9	323	0	0	332	928
5:00 PM	3	0	5	0	8	1	0	3	0	4	0	152	3	0	155	1	96	0	0	97	264
5:15 PM	0	1	1	0	2	1	0	1	0	2	1	130	1	0	132	2	110	0	0	112	248
5:30 PM	1	0	3	0	4	0	2	2	0	4	0	156	3	0	159	3	92	0	0	95	262
5:45 PM	2	0	1	0	3	0	0	1	0	1	0	158	1	0	159	1	95	0	0	96	259
Total	6	1	10	0	17	2	2	7	0	11	1	596	8	0	605	7	393	0	0	400	1033
Grand Total	16	3	40	0	59	3	7	31	0	41	13	2212	19	0	2244	24	1684	3	0	1711	4055
Apprch %	27.1	5.1	67.8	0.0		7.3	17.1	75.6	0.0		0.6	98.6	0.8	0.0		1.4	98.4	0.2	0.0		
Total %	0.4	0.1	1.0	0.0	1.5	0.1	0.2	0.8	0.0	1.0	0.3	54.5	0.5	0.0	55.3	0.6	41.5	0.1	0.0	42.2	
Cars, PU, Vans	16	3	40	0	59	3	7	31	0	41	13	2203	19	0	2235	24	1675	3	0	1702	4037
% Cars, PU, Vans	####	####	####	0.0	100.0	####	####	100.0	0.0	100.0	####	99.6	####	0.0	99.6	100.0	99.5	####	0.0	99.5	99.6
Heavy Trucks	0	0	0		0	0	0	0		0	0	9	0		9	0	9	0		9	18
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.5	0.0	0.0	0.5	0.4

Project ID: 14-9059-003
Location: Ferry St & Catawba Ave
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Ferry St Northbound				Ferry St Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
7:45 AM	2	0	3	5	0	0	1	1	0	151	0	151	0	119	1	120	277
8:00 AM	2	0	1	3	0	0	2	2	0	141	0	141	0	122	0	122	268
8:15 AM	0	1	2	3	0	0	2	2	1	152	1	154	2	119	0	121	280
8:30 AM	0	0	3	3	0	0	1	1	1	166	2	169	1	117	0	118	291
Total Volume	4	1	9	14	0	0	6	6	2	610	3	615	3	477	1	481	1116
% App. Total	28.6	7.1	64.3	100	0.0	0.0	####	100	0.3	99.2	0.5	100	0.6	99.2	0.2	100	
PHF				0.700				0.750				0.910				0.986	
Cars, PU, Vans	4	1	9	14	0	0	6	6	2	607	3	612	3	474	1	478	1110
% Cars, PU, Vans	####	####	####	100.0	0.0	0.0	####	100.0	####	99.5	####	99.5	####	99.4	100.0	99.4	99.5
Heavy Trucks	0	0	0	0	0	0	0	0	0	3	0	3	0	3	0	3	6
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.5	0.0	0.6	0.0	0.6	0.5

PM

	Ferry St Northbound				Ferry St Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	3	0	5	8	1	0	3	4	0	152	3	155	1	96	0	97	264
5:15 PM	0	1	1	2	1	0	1	2	1	130	1	132	2	110	0	112	248
5:30 PM	1	0	3	4	0	2	2	4	0	156	3	159	3	92	0	95	262
5:45 PM	2	0	1	3	0	0	1	1	0	158	1	159	1	95	0	96	259
Total Volume	6	1	10	17	2	2	7	11	1	596	8	605	7	393	0	400	1033
% App. Total	35.3	5.9	58.8	100	18.2	18.2	63.6	100	0.2	98.5	1.3	100	1.8	98.3	0.0	100	
PHF				0.531				0.688				0.951				0.893	
Cars, PU, Vans	6	1	10	17	2	2	7	11	1	596	8	605	7	393	0	400	1033
% Cars, PU, Vans	####	####	####	100.0	100.0	####	####	100.0	####	100.0	####	100.0	####	####	0.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Project ID: 14-9059-004
Location: Smith Circle & Catawba Ave
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Smith Circle Northbound					Smith Circle Southbound					Catawba Ave Eastbound					Catawba Ave Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	15	0	2	0	17	0	0	0	0	0	0	79	2	0	81	2	94	0	0	96	194
7:15 AM	11	0	0	0	11	0	0	0	0	0	0	86	5	0	91	0	108	0	0	108	210
7:30 AM	6	0	3	0	9	0	0	0	0	0	0	143	5	0	148	2	116	0	0	118	275
7:45 AM	7	0	5	0	12	0	0	0	0	0	0	143	4	0	147	0	111	0	0	111	270
Total	39	0	10	0	49	0	0	0	0	0	0	451	16	0	467	4	429	0	0	433	949
8:00 AM	15	0	3	0	18	0	0	0	0	0	0	123	23	0	146	4	111	0	0	115	279
8:15 AM	40	0	9	0	49	0	0	0	0	0	0	91	60	0	151	0	72	0	0	72	272
8:30 AM	36	0	5	0	41	0	0	0	0	0	0	124	40	0	164	2	70	0	0	72	277
8:45 AM	33	0	8	0	41	0	0	0	0	0	0	132	6	0	138	1	81	0	0	82	261
Total	124	0	25	0	149	0	0	0	0	0	0	470	129	0	599	7	334	0	0	341	1089
BREAK																					
4:00 PM	26	0	3	0	29	0	0	0	0	0	0	128	14	0	142	1	37	0	0	38	209
4:15 PM	11	0	4	0	15	0	0	0	0	0	0	137	10	0	147	2	58	0	0	60	222
4:30 PM	8	0	6	0	14	0	0	0	0	0	0	111	7	0	118	1	83	0	0	84	216
4:45 PM	4	0	9	0	13	0	0	0	0	0	0	112	14	0	126	3	70	0	0	73	212
Total	49	0	22	0	71	0	0	0	0	0	0	488	45	0	533	7	248	0	0	255	859
5:00 PM	13	0	5	0	18	0	0	0	0	0	0	132	13	0	145	3	75	0	0	78	241
5:15 PM	5	0	4	0	9	0	0	0	0	0	0	116	16	0	132	2	101	0	0	103	244
5:30 PM	9	0	5	0	14	0	0	0	0	0	0	130	8	0	138	1	67	0	0	68	220
5:45 PM	9	0	5	0	14	0	0	0	0	0	0	135	12	0	147	1	71	0	0	72	233
Total	36	0	19	0	55	0	0	0	0	0	0	513	49	0	562	7	314	0	0	321	938
Grand Total	248	0	76	0	324	0	0	0	0	0	0	1922	239	0	2161	25	1325	0	0	1350	3835
Apprch %	76.5	0.0	23.5	0.0		0.0	0.0	0.0	0.0		0.0	88.9	11.1	0.0		1.9	98.1	0.0	0.0		
Total %	6.5	0.0	2.0	0.0	8.4	0.0	0.0	0.0	0.0	0.0	0.0	50.1	6.2	0.0	56.3	0.7	34.6	0.0	0.0	35.2	
Cars, PU, Vans	246	0	76	0	322	0	0	0	0	0	0	1914	237	0	2151	25	1316	0	0	1341	3814
% Cars, PU, Vans	99.2	0.0	####	0.0	99.4	0.0	0.0	0.0	0.0	0.0	0.0	99.6	99.2	0.0	99.5	100.0	99.3	0.0	0.0	99.3	99.5
Heavy Trucks	2	0	0		2	0	0	0		0	0	8	2		10	0	9	0		9	21
%Heavy Trucks	0.8	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	0.0	0.5	0.0	0.7	0.0	0.0	0.7	0.5

Project ID: 14-9059-004
Location: Smith Circle & Catawba
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Smith Circle Northbound				Smith Circle Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
7:45 AM	7	0	5	12	0	0	0	0	0	143	4	147	0	111	0	111	270
8:00 AM	15	0	3	18	0	0	0	0	0	123	23	146	4	111	0	115	279
8:15 AM	40	0	9	49	0	0	0	0	0	91	60	151	0	72	0	72	272
8:30 AM	36	0	5	41	0	0	0	0	0	124	40	164	2	70	0	72	277
Total Volume	98	0	22	120	0	0	0	0	0	481	127	608	6	364	0	370	1098
% App. Total	81.7	0.0	18.3	100	0.0	0.0	0.0	0	0.0	79.1	20.9	100	1.6	98.4	0.0	100	
PHF				0.612				0.000				0.927				0.804	
Cars, PU, Vans	98	0	22	120	0	0	0	0	0	479	126	605	6	359	0	365	1090
% Cars, PU, Vans	####	0.0	####	100.0	0.0	0.0	0.0	0.0	0.0	99.6	99.2	99.5	####	98.6	0.0	98.6	99.3
Heavy Trucks	0	0	0	0	0	0	0	0	0	2	1	3	0	5	0	5	8
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	0.5	0.0	1.4	0.0	1.4	0.7

PM

	Smith Circle Northbound				Smith Circle Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	13	0	5	18	0	0	0	0	0	132	13	145	3	75	0	78	241
5:15 PM	5	0	4	9	0	0	0	0	0	116	16	132	2	101	0	103	244
5:30 PM	9	0	5	14	0	0	0	0	0	130	8	138	1	67	0	68	220
5:45 PM	9	0	5	14	0	0	0	0	0	135	12	147	1	71	0	72	233
Total Volume	36	0	19	55	0	0	0	0	0	513	49	562	7	314	0	321	938
% App. Total	65.5	0.0	34.5	100	0.0	0.0	0.0	0	0.0	91.3	8.7	100	2.2	97.8	0.0	100	
PHF				0.764				0.000				0.956				0.779	
Cars, PU, Vans	36	0	19	55	0	0	0	0	0	513	49	562	7	313	0	320	937
% Cars, PU, Vans	####	0.0	####	100.0	0.0	0.0	0.0	0.0	0.0	100.0	####	100.0	####	99.7	0.0	99.7	99.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.1

Project ID: 14-9059-005
Location: School St & Catawba Ave
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	School St Northbound					School St Southbound					Catawba Ave Eastbound					Catawba Ave Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	5	0	3	0	8	2	1	3	0	6	1	72	2	0	75	3	82	0	0	85	174
7:15 AM	9	0	9	0	18	2	0	2	0	4	3	72	3	0	78	1	88	0	0	89	189
7:30 AM	9	1	6	0	16	7	0	1	0	8	0	124	8	0	132	2	100	1	0	103	259
7:45 AM	8	4	11	0	23	3	2	2	0	7	2	128	10	0	140	6	122	0	0	128	298
Total	31	5	29	0	65	14	3	8	0	25	6	396	23	0	425	12	392	1	0	405	920
8:00 AM	6	2	6	0	14	10	1	4	0	15	1	109	5	0	115	1	94	0	0	95	239
8:15 AM	3	2	5	0	10	6	0	3	0	9	3	84	0	0	87	0	88	0	0	88	194
8:30 AM	2	1	5	0	8	10	0	5	0	15	3	120	0	0	123	0	65	6	0	71	217
8:45 AM	5	0	8	0	13	5	1	2	0	8	3	121	1	0	125	0	48	1	0	49	195
Total	16	5	24	0	45	31	2	14	0	47	10	434	6	0	450	1	295	7	0	303	845
BREAK																					
4:00 PM	2	5	17	0	24	6	1	1	0	8	3	122	1	0	126	2	32	2	0	36	194
4:15 PM	3	1	11	0	15	7	4	0	0	11	5	133	4	0	142	2	44	2	0	48	216
4:30 PM	4	1	9	0	14	6	4	2	0	12	2	96	2	0	100	2	64	2	0	68	194
4:45 PM	3	0	10	0	13	3	1	2	0	6	3	113	3	0	119	6	63	4	0	73	211
Total	12	7	47	0	66	22	10	5	0	37	13	464	10	0	487	12	203	10	0	225	815
5:00 PM	4	2	14	0	20	6	6	4	0	16	3	129	3	0	135	2	69	3	0	74	245
5:15 PM	8	2	13	0	23	2	3	1	0	6	2	111	4	0	117	5	83	4	0	92	238
5:30 PM	3	2	7	0	12	8	2	4	0	14	2	110	4	0	116	7	63	6	0	76	218
5:45 PM	0	5	11	0	16	6	2	4	0	12	3	123	9	0	135	0	59	1	0	60	223
Total	15	11	45	0	71	22	13	13	0	48	10	473	20	0	503	14	274	14	0	302	924
Grand Total	74	28	145	0	247	89	28	40	0	157	39	1767	59	0	1865	39	1164	32	0	1235	3504
Apprch %	30.0	11.3	58.7	0.0		56.7	17.8	25.5	0.0		2.1	94.7	3.2	0.0		3.2	94.3	2.6	0.0		
Total %	2.1	0.8	4.1	0.0	7.0	2.5	0.8	1.1	0.0	4.5	1.1	50.4	1.7	0.0	53.2	1.1	33.2	0.9	0.0	35.2	
Cars, PU, Vans	74	28	145	0	247	89	28	39	0	156	39	1759	59	0	1857	39	1152	32	0	1223	3483
% Cars, PU, Vans	####	####	####	0.0	100.0	####	####	97.5	0.0	99.4	####	99.5	####	0.0	99.6	100.0	99.0	####	0.0	99.0	99.4
Heavy Trucks	0	0	0		0	0	0	1		1	0	8	0		8	0	12	0		12	21
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.6	0.0	0.5	0.0	0.0	0.4	0.0	1.0	0.0	0.0	1.0	0.6

Project ID: 14-9059-005
Location: School St & Catawba Av
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	School St Northbound				School St Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
7:30 AM	9	1	6	16	7	0	1	8	0	124	8	132	2	100	1	103	259
7:45 AM	8	4	11	23	3	2	2	7	2	128	10	140	6	122	0	128	298
8:00 AM	6	2	6	14	10	1	4	15	1	109	5	115	1	94	0	95	239
8:15 AM	3	2	5	10	6	0	3	9	3	84	0	87	0	88	0	88	194
Total Volume	26	9	28	63	26	3	10	39	6	445	23	474	9	404	1	414	990
% App. Total	41.3	14.3	44.4	100	66.7	7.7	25.6	100	1.3	93.9	4.9	100	2.2	97.6	0.2	100	
PHF				0.685				0.650				0.846				0.809	
Cars, PU, Vans	26	9	28	63	26	3	10	39	6	441	23	470	9	399	1	409	981
% Cars, PU, Vans	####	####	####	100.0	100.0	####	####	100.0	####	99.1	####	99.2	####	98.8	100.0	98.8	99.1
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	4	0	5	0	5	9
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.8	0.0	1.2	0.0	1.2	0.9

PM

	School St Northbound				School St Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	4	2	14	20	6	6	4	16	3	129	3	135	2	69	3	74	245
5:15 PM	8	2	13	23	2	3	1	6	2	111	4	117	5	83	4	92	238
5:30 PM	3	2	7	12	8	2	4	14	2	110	4	116	7	63	6	76	218
5:45 PM	0	5	11	16	6	2	4	12	3	123	9	135	0	59	1	60	223
Total Volume	15	11	45	71	22	13	13	48	10	473	20	503	14	274	14	302	924
% App. Total	21.1	15.5	63.4	100	45.8	27.1	27.1	100	2.0	94.0	4.0	100	4.6	90.7	4.6	100	
PHF				0.772				0.750				0.931				0.821	
Cars, PU, Vans	15	11	45	71	22	13	13	48	10	473	20	503	14	273	14	301	923
% Cars, PU, Vans	####	####	####	100.0	100.0	####	####	100.0	####	100.0	####	100.0	####	99.6	100.0	99.7	99.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.1

Project ID: 14-9059-006
Location: Meridian St & Catawba Ave
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Meridian St Northbound					Meridian St Southbound					Catawba Ave Eastbound					Catawba Ave Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	1	1	5	0	7	2	1	0	0	3	1	76	2	0	79	2	82	1	0	85	174
7:15 AM	0	0	3	0	3	2	0	0	0	2	1	81	1	0	83	4	93	1	0	98	186
7:30 AM	2	0	4	0	6	0	0	2	0	2	3	125	2	0	130	6	97	0	0	103	241
7:45 AM	0	1	7	0	8	0	0	6	0	6	4	135	1	0	140	4	119	0	0	123	277
Total	3	2	19	0	24	4	1	8	0	13	9	417	6	0	432	16	391	2	0	409	878
8:00 AM	3	0	3	0	6	1	0	2	0	3	1	117	8	0	126	13	89	1	0	103	238
8:15 AM	4	2	25	0	31	1	1	2	0	4	2	89	7	0	98	13	93	1	0	107	240
8:30 AM	0	4	39	0	43	3	4	3	0	10	4	119	11	0	134	7	70	9	0	86	273
8:45 AM	1	0	8	0	9	2	1	5	0	8	2	128	4	0	134	2	41	4	0	47	198
Total	8	6	75	0	89	7	6	12	0	25	9	453	30	0	492	35	293	15	0	343	949
BREAK																					
4:00 PM	1	4	16	0	21	1	1	4	0	6	4	141	3	0	148	14	29	3	0	46	221
4:15 PM	0	0	11	0	11	2	0	1	0	3	3	147	5	0	155	12	52	4	0	68	237
4:30 PM	0	2	6	0	8	0	0	0	0	0	1	105	6	0	112	16	72	4	0	92	212
4:45 PM	2	0	9	0	11	0	3	1	0	4	1	122	6	0	129	9	69	3	0	81	225
Total	3	6	42	0	51	3	4	6	0	13	9	515	20	0	544	51	222	14	0	287	895
5:00 PM	2	0	9	0	11	1	1	0	0	2	1	144	3	0	148	17	70	8	0	95	256
5:15 PM	0	0	8	0	8	1	0	1	0	2	2	121	1	0	124	11	93	9	0	113	247
5:30 PM	1	0	5	0	6	0	1	2	0	3	4	120	2	0	126	16	78	9	0	103	238
5:45 PM	0	0	13	0	13	3	1	1	0	5	1	134	3	0	138	8	60	8	0	76	232
Total	3	0	35	0	38	5	3	4	0	12	8	519	9	0	536	52	301	34	0	387	973
Grand Total	17	14	171	0	202	19	14	30	0	63	35	1904	65	0	2004	154	1207	65	0	1426	3695
Apprch %	8.4	6.9	84.7	0.0		30.2	22.2	47.6	0.0		1.7	95.0	3.2	0.0		10.8	84.6	4.6	0.0		
Total %	0.5	0.4	4.6	0.0	5.5	0.5	0.4	0.8	0.0	1.7	0.9	51.5	1.8	0.0	54.2	4.2	32.7	1.8	0.0	38.6	
Cars, PU, Vans	17	14	171	0	202	19	14	30	0	63	35	1897	65	0	1997	154	1195	65	0	1414	3676
% Cars, PU, Vans	####	####	####	0.0	100.0	####	####	100.0	0.0	100.0	####	99.6	####	0.0	99.7	100.0	99.0	####	0.0	99.2	99.5
Heavy Trucks	0	0	0		0	0	0	0		0	0	7	0		7	0	12	0		12	19
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.3	0.0	1.0	0.0	0.0	0.8	0.5

Project ID: 14-9059-006
Location: Meridian St & Catawba A
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Meridian St Northbound				Meridian St Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
7:45 AM	0	1	7	8	0	0	6	6	4	135	1	140	4	119	0	123	277
8:00 AM	3	0	3	6	1	0	2	3	1	117	8	126	13	89	1	103	238
8:15 AM	4	2	25	31	1	1	2	4	2	89	7	98	13	93	1	107	240
8:30 AM	0	4	39	43	3	4	3	10	4	119	11	134	7	70	9	86	273
Total Volume	7	7	74	88	5	5	13	23	11	460	27	498	37	371	11	419	1028
% App. Total	8.0	8.0	84.1	100	21.7	21.7	56.5	100	2.2	92.4	5.4	100	8.8	88.5	2.6	100	
PHF				0.512				0.575				0.889				0.852	
Cars, PU, Vans	7	7	74	88	5	5	13	23	11	457	27	495	37	364	11	412	1018
% Cars, PU, Vans	####	####	####	100.0	100.0	####	####	100.0	####	99.3	####	99.4	####	98.1	100.0	98.3	99.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	3	0	3	0	7	0	7	10
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.6	0.0	1.9	0.0	1.7	1.0

PM

	Meridian St Northbound				Meridian St Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	2	0	9	11	1	1	0	2	1	144	3	148	17	70	8	95	256
5:15 PM	0	0	8	8	1	0	1	2	2	121	1	124	11	93	9	113	247
5:30 PM	1	0	5	6	0	1	2	3	4	120	2	126	16	78	9	103	238
5:45 PM	0	0	13	13	3	1	1	5	1	134	3	138	8	60	8	76	232
Total Volume	3	0	35	38	5	3	4	12	8	519	9	536	52	301	34	387	973
% App. Total	7.9	0.0	92.1	100	41.7	25.0	33.3	100	1.5	96.8	1.7	100	13.4	77.8	8.8	100	
PHF				0.731				0.600				0.905				0.856	
Cars, PU, Vans	3	0	35	38	5	3	4	12	8	519	9	536	52	300	34	386	972
% Cars, PU, Vans	####	0.0	####	100.0	100.0	####	####	100.0	####	100.0	####	100.0	####	99.7	100.0	99.7	99.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.1

Project ID: 14-9059-007
Location: Lake Village Blvd & Catawba Ave
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Lake Village Blvd Northbound					Lake Village Blvd Southbound					Catawba Ave Eastbound					Catawba Ave Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	0	0	0	0	0	3	1	10	0	14	1	77	0	0	78	0	99	0	0	99	191
7:15 AM	0	0	0	0	0	0	0	6	0	6	2	93	0	0	95	0	124	0	0	124	225
7:30 AM	0	0	0	0	0	0	0	9	0	9	1	145	1	0	147	0	122	0	0	122	278
7:45 AM	1	0	0	0	1	1	0	18	0	19	1	148	1	0	150	0	102	1	0	103	273
Total	1	0	0	0	1	4	1	43	0	48	5	463	2	0	470	0	447	1	0	448	967
8:00 AM	0	0	0	0	0	2	0	7	0	9	1	138	2	0	141	0	122	2	0	124	274
8:15 AM	0	0	0	0	0	1	0	10	0	11	3	145	1	0	149	0	101	4	0	105	265
8:30 AM	0	0	0	0	0	0	0	12	0	12	6	164	0	0	170	1	100	0	0	101	283
8:45 AM	1	0	0	0	1	2	0	13	0	15	2	132	1	0	135	0	118	0	0	118	269
Total	1	0	0	0	1	5	0	42	0	47	12	579	4	0	595	1	441	6	0	448	1091
BREAK																					
4:00 PM	0	0	0	0	0	0	0	12	0	12	14	132	1	0	147	1	55	0	0	56	215
4:15 PM	1	0	1	0	2	1	0	10	0	11	13	137	3	0	153	0	72	0	0	72	238
4:30 PM	0	0	0	0	0	1	0	10	0	11	5	119	2	0	126	0	87	1	0	88	225
4:45 PM	1	1	1	0	3	0	0	12	0	12	8	125	1	0	134	0	73	3	0	76	225
Total	2	1	2	0	5	2	0	44	0	46	40	513	7	0	560	1	287	4	0	292	903
5:00 PM	0	1	0	0	1	1	0	7	0	8	9	148	0	0	157	1	88	0	0	89	255
5:15 PM	0	0	1	0	1	0	0	9	0	9	4	133	1	0	138	0	103	0	0	103	251
5:30 PM	0	0	1	0	1	0	0	14	0	14	8	142	3	0	153	0	78	0	0	78	246
5:45 PM	0	0	0	0	0	2	0	16	0	18	13	142	5	0	160	1	80	1	0	82	260
Total	0	1	2	0	3	3	0	46	0	49	34	565	9	0	608	2	349	1	0	352	1012
Grand Total	4	2	4	0	10	14	1	175	0	190	91	2120	22	0	2233	4	1524	12	0	1540	3973
Apprch %	40.0	20.0	40.0	0.0		7.4	0.5	92.1	0.0		4.1	94.9	1.0	0.0		0.3	99.0	0.8	0.0		
Total %	0.1	0.1	0.1	0.0	0.3	0.4	0.0	4.4	0.0	4.8	2.3	53.4	0.6	0.0	56.2	0.1	38.4	0.3	0.0	38.8	
Cars, PU, Vans	4	2	4	0	10	14	1	175	0	190	91	2110	22	0	2223	4	1514	12	0	1530	3953
% Cars, PU, Vans	####	####	####	0.0	100.0	####	####	100.0	0.0	100.0	####	99.5	####	0.0	99.6	100.0	99.3	####	0.0	99.4	99.5
Heavy Trucks	0	0	0		0	0	0	0		0	0	10	0		10	0	10	0		10	20
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.4	0.0	0.7	0.0	0.0	0.6	0.5

Project ID: 14-9059-007
Location: Lake Village Blvd & Cata
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Lake Village Blvd Northbound				Lake Village Blvd Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
7:45 AM	1	0	0	1	1	0	18	19	1	148	1	150	0	102	1	103	273
8:00 AM	0	0	0	0	2	0	7	9	1	138	2	141	0	122	2	124	274
8:15 AM	0	0	0	0	1	0	10	11	3	145	1	149	0	101	4	105	265
8:30 AM	0	0	0	0	0	0	12	12	6	164	0	170	1	100	0	101	283
Total Volume	1	0	0	1	4	0	47	51	11	595	4	610	1	425	7	433	1095
% App. Total	####	0.0	0.0	100	7.8	0.0	92.2	100	1.8	97.5	0.7	100	0.2	98.2	1.6	100	
PHF				0.250				0.671				0.897				0.873	
Cars, PU, Vans	1	0	0	1	4	0	47	51	11	591	4	606	1	422	7	430	1088
% Cars, PU, Vans	####	0.0	0.0	100.0	100.0	0.0	####	100.0	####	99.3	####	99.3	####	99.3	100.0	99.3	99.4
Heavy Trucks	0	0	0	0	0	0	0	0	0	4	0	4	0	3	0	3	7
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.7	0.0	0.7	0.0	0.7	0.6

PM

	Lake Village Blvd Northbound				Lake Village Blvd Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	0	1	0	1	1	0	7	8	9	148	0	157	1	88	0	89	255
5:15 PM	0	0	1	1	0	0	9	9	4	133	1	138	0	103	0	103	251
5:30 PM	0	0	1	1	0	0	14	14	8	142	3	153	0	78	0	78	246
5:45 PM	0	0	0	0	2	0	16	18	13	142	5	160	1	80	1	82	260
Total Volume	0	1	2	3	3	0	46	49	34	565	9	608	2	349	1	352	1012
% App. Total	0.0	33.3	66.7	100	6.1	0.0	93.9	100	5.6	92.9	1.5	100	0.6	99.1	0.3	100	
PHF				0.750				0.681				0.950				0.854	
Cars, PU, Vans	0	1	2	3	3	0	46	49	34	565	9	608	2	348	1	351	1011
% Cars, PU, Vans	0.0	####	####	100.0	100.0	0.0	####	100.0	####	100.0	####	100.0	####	99.7	100.0	99.7	99.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.1

Project ID: 14-9059-008
Location: Oak St & Catawba Ave
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Oak St Northbound					Oak St Southbound					Catawba Ave Eastbound					Catawba Ave Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	8	0	4	0	12	0	0	1	0	1	0	75	3	0	78	1	74	0	0	75	166
7:15 AM	12	0	2	0	14	0	0	1	0	1	0	83	3	0	86	0	83	1	0	84	185
7:30 AM	10	1	5	0	16	0	0	0	0	0	0	111	5	0	116	1	86	3	0	90	222
7:45 AM	10	0	4	0	14	0	0	0	0	0	0	134	2	0	136	1	104	1	0	106	256
Total	40	1	15	0	56	0	0	2	0	2	0	403	13	0	416	3	347	5	0	355	829
8:00 AM	10	0	4	0	14	0	0	0	0	0	0	114	2	0	116	5	81	0	0	86	216
8:15 AM	12	0	1	0	13	0	0	2	0	2	1	97	3	0	101	1	84	4	0	89	205
8:30 AM	11	1	5	0	17	0	0	0	0	0	1	139	4	0	144	3	97	4	0	104	265
8:45 AM	2	1	10	0	13	1	0	1	0	2	2	114	8	0	124	5	54	11	0	70	209
Total	35	2	20	0	57	1	0	3	0	4	4	464	17	0	485	14	316	19	0	349	895
BREAK																					
4:00 PM	3	1	9	0	13	2	0	0	0	2	1	147	10	0	158	5	65	2	0	72	245
4:15 PM	2	0	9	0	11	1	2	0	0	3	0	146	10	0	156	13	74	8	0	95	265
4:30 PM	6	1	7	0	14	5	0	0	0	5	1	103	4	0	108	8	97	7	0	112	239
4:45 PM	7	0	7	0	14	5	0	2	0	7	1	122	9	0	132	10	60	1	0	71	224
Total	18	2	32	0	52	13	2	2	0	17	3	518	33	0	554	36	296	18	0	350	973
5:00 PM	10	1	8	0	19	3	1	0	0	4	1	139	12	0	152	5	106	1	0	112	287
5:15 PM	10	0	9	0	19	1	2	0	0	3	0	114	8	0	122	3	87	0	0	90	234
5:30 PM	8	0	11	0	19	1	0	0	0	1	1	106	10	0	117	11	94	0	0	105	242
5:45 PM	6	2	11	0	19	2	1	1	0	4	0	127	10	0	137	11	89	11	0	111	271
Total	34	3	39	0	76	7	4	1	0	12	2	486	40	0	528	30	376	12	0	418	1034
Grand Total	127	8	106	0	241	21	6	8	0	35	9	1871	103	0	1983	83	1335	54	0	1472	3731
Apprch %	52.7	3.3	44.0	0.0		60.0	17.1	22.9	0.0		0.5	94.4	5.2	0.0		5.6	90.7	3.7	0.0		
Total %	3.4	0.2	2.8	0.0	6.5	0.6	0.2	0.2	0.0	0.9	0.2	50.1	2.8	0.0	53.1	2.2	35.8	1.4	0.0	39.5	
Cars, PU, Vans	127	8	106	0	241	21	6	8	0	35	9	1864	103	0	1976	83	1325	54	0	1462	3714
% Cars, PU, Vans	####	####	####	0.0	100.0	####	####	100.0	0.0	100.0	####	99.6	####	0.0	99.6	100.0	99.3	####	0.0	99.3	99.5
Heavy Trucks	0	0	0		0	0	0	0		0	0	7	0		7	0	10	0		10	17
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.7	0.0	0.0	0.7	0.5

Project ID: 14-9059-008
Location: Oak St & Catawba Ave
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Oak St Northbound				Oak St Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
7:45 AM	10	0	4	14	0	0	0	0	0	134	2	136	1	104	1	106	256
8:00 AM	10	0	4	14	0	0	0	0	0	114	2	116	5	81	0	86	216
8:15 AM	12	0	1	13	0	0	2	2	1	97	3	101	1	84	4	89	205
8:30 AM	11	1	5	17	0	0	0	0	1	139	4	144	3	97	4	104	265
Total Volume	43	1	14	58	0	0	2	2	2	484	11	497	10	366	9	385	942
% App. Total	74.1	1.7	24.1	100	0.0	0.0	####	100	0.4	97.4	2.2	100	2.6	95.1	2.3	100	
PHF				0.853				0.250				0.863				0.908	
Cars, PU, Vans	43	1	14	58	0	0	2	2	2	481	11	494	10	359	9	378	932
% Cars, PU, Vans	####	####	####	100.0	0.0	0.0	####	100.0	####	99.4	####	99.4	####	98.1	100.0	98.2	98.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	3	0	3	0	7	0	7	10
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.6	0.0	1.9	0.0	1.8	1.1

PM

	Oak St Northbound				Oak St Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	10	1	8	19	3	1	0	4	1	139	12	152	5	106	1	112	287
5:15 PM	10	0	9	19	1	2	0	3	0	114	8	122	3	87	0	90	234
5:30 PM	8	0	11	19	1	0	0	1	1	106	10	117	11	94	0	105	242
5:45 PM	6	2	11	19	2	1	1	4	0	127	10	137	11	89	11	111	271
Total Volume	34	3	39	76	7	4	1	12	2	486	40	528	30	376	12	418	1034
% App. Total	44.7	3.9	51.3	100	58.3	33.3	8.3	100	0.4	92.0	7.6	100	7.2	90.0	2.9	100	
PHF				1.000				0.750				0.868				0.933	
Cars, PU, Vans	34	3	39	76	7	4	1	12	2	486	40	528	30	375	12	417	1033
% Cars, PU, Vans	####	####	####	100.0	100.0	####	####	100.0	####	100.0	####	100.0	####	99.7	100.0	99.8	99.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.2	0.1

Project ID: 14-9059-009
Location: Main St & Catawba Ave
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Main St Northbound					Main St Southbound					Catawba Ave Eastbound					Catawba Ave Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	40	52	13	0	105	6	125	32	0	163	22	8	41	0	71	21	10	5	0	36	375
7:15 AM	42	66	17	0	125	2	132	30	0	164	22	16	42	0	80	17	7	2	0	26	395
7:30 AM	30	90	7	0	127	4	180	42	0	226	33	13	53	0	99	17	17	4	0	38	490
7:45 AM	44	129	25	0	198	3	152	43	0	198	48	24	68	0	140	33	21	3	0	57	593
Total	156	337	62	0	555	15	589	147	0	751	125	61	204	0	390	88	55	14	0	157	1853
8:00 AM	41	113	12	0	166	11	151	37	0	199	49	15	42	0	106	18	6	2	0	26	497
8:15 AM	28	98	8	0	134	3	159	51	0	213	34	13	45	0	92	26	12	6	0	44	483
8:30 AM	45	85	9	0	139	4	103	38	0	145	45	19	67	0	131	33	23	7	0	63	478
8:45 AM	38	108	13	0	159	11	102	30	0	143	36	13	64	0	113	23	9	18	0	50	465
Total	152	404	42	0	598	29	515	156	0	700	164	60	218	0	442	100	50	33	0	183	1923
BREAK																					
4:00 PM	36	80	15	0	131	4	108	34	0	146	61	18	74	0	153	28	7	9	0	44	474
4:15 PM	46	124	18	0	188	7	102	36	0	145	55	18	81	0	154	18	8	12	0	38	525
4:30 PM	59	106	20	0	185	9	97	34	0	140	48	15	61	0	124	23	7	9	0	39	488
4:45 PM	28	137	10	0	175	9	129	33	0	171	55	14	60	0	129	21	8	11	0	40	515
Total	169	447	63	0	679	29	436	137	0	602	219	65	276	0	560	90	30	41	0	161	2002
5:00 PM	47	141	15	0	203	7	136	50	0	193	42	24	73	0	139	22	15	7	0	44	579
5:15 PM	55	129	19	0	203	7	148	29	0	184	44	16	49	0	109	23	5	6	0	34	530
5:30 PM	46	162	18	0	226	9	151	43	0	203	50	20	50	0	120	25	12	1	0	38	587
5:45 PM	53	130	25	0	208	6	141	51	0	198	60	27	50	0	137	17	11	3	0	31	574
Total	201	562	77	0	840	29	576	173	0	778	196	87	222	0	505	87	43	17	0	147	2270
Grand Total	678	1750	244	0	2672	102	2116	613	0	2831	704	273	920	0	1897	365	178	105	0	648	8048
Apprch %	25.4	65.5	9.1	0.0		3.6	74.7	21.7	0.0		37.1	14.4	48.5	0.0		56.3	27.5	16.2	0.0		
Total %	8.4	21.7	3.0	0.0	33.2	1.3	26.3	7.6	0.0	35.2	8.7	3.4	11.4	0.0	23.6	4.5	2.2	1.3	0.0	8.1	
Cars, PU, Vans	671	1747	241	0	2659	102	2105	612	0	2819	704	269	919	0	1892	361	175	104	0	640	8010
% Cars, PU, Vans	99.0	99.8	98.8	0.0	99.5	####	99.5	99.8	0.0	99.6	####	98.5	99.9	0.0	99.7	98.9	98.3	99.0	0.0	98.8	99.5
Heavy Trucks	7	3	3		13	0	11	1		12	0	4	1		5	4	3	1		8	38
%Heavy Trucks	1.0	0.2	1.2	0.0	0.5	0.0	0.5	0.2	0.0	0.4	0.0	1.5	0.1	0.0	0.3	1.1	1.7	1.0	0.0	1.2	0.5

Project ID: 14-9059-009
Location: Main St & Catawba Ave
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Main St Northbound				Main St Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
7:30 AM	30	90	7	127	4	180	42	226	33	13	53	99	17	17	4	38	490
7:45 AM	44	129	25	198	3	152	43	198	48	24	68	140	33	21	3	57	593
8:00 AM	41	113	12	166	11	151	37	199	49	15	42	106	18	6	2	26	497
8:15 AM	28	98	8	134	3	159	51	213	34	13	45	92	26	12	6	44	483
Total Volume	143	430	52	625	21	642	173	836	164	65	208	437	94	56	15	165	2063
% App. Total	22.9	68.8	8.3	100	2.5	76.8	20.7	100	37.5	14.9	47.6	100	57.0	33.9	9.1	100	
PHF				0.789				0.925				0.780				0.724	
Cars, PU, Vans	141	429	51	621	21	636	172	829	164	63	207	434	93	54	15	162	2046
% Cars, PU, Vans	98.6	99.8	98.1	99.4	100.0	99.1	99.4	99.2	####	96.9	99.5	99.3	98.9	96.4	100.0	98.2	99.2
Heavy Trucks	2	1	1	4	0	6	1	7	0	2	1	3	1	2	0	3	17
%Heavy Trucks	1.4	0.2	1.9	0.6	0.0	0.9	0.6	0.8	0.0	3.1	0.5	0.7	1.1	3.6	0.0	1.8	0.8

PM

	Main St Northbound				Main St Southbound				Catawba Ave Eastbound				Catawba Ave Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	47	141	15	203	7	136	50	193	42	24	73	139	22	15	7	44	579
5:15 PM	55	129	19	203	7	148	29	184	44	16	49	109	23	5	6	34	530
5:30 PM	46	162	18	226	9	151	43	203	50	20	50	120	25	12	1	38	587
5:45 PM	53	130	25	208	6	141	51	198	60	27	50	137	17	11	3	31	574
Total Volume	201	562	77	840	29	576	173	778	196	87	222	505	87	43	17	147	2270
% App. Total	23.9	66.9	9.2	100	3.7	74.0	22.2	100	38.8	17.2	44.0	100	59.2	29.3	11.6	100	
PHF				0.929				0.958				0.908				0.835	
Cars, PU, Vans	201	561	75	837	29	574	173	776	196	87	222	505	87	43	17	147	2265
% Cars, PU, Vans	####	99.8	97.4	99.6	100.0	99.7	####	99.7	####	100.0	####	100.0	####	####	100.0	100.0	99.8
Heavy Trucks	0	1	2	3	0	2	0	2	0	0	0	0	0	0	0	0	5
%Heavy Trucks	0.0	0.2	2.6	0.4	0.0	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2

Project ID: 14-9059-010
Location: Old Statesville Rd (NC 115) & Bailey Rd
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Old Statesville Rd (NC 115) Northbound					Old Statesville Rd (NC 115) Southbound					Bailey Rd Eastbound					Bailey Rd Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	11	63	28	0	102	20	135	7	0	162	3	7	14	0	24	54	34	70	0	158	446
7:15 AM	27	86	17	0	130	14	180	15	0	209	3	7	20	0	30	18	13	22	0	53	422
7:30 AM	22	105	24	0	151	21	178	15	0	214	7	12	25	0	44	20	14	12	0	46	455
7:45 AM	33	108	37	0	178	46	171	13	0	230	3	21	20	0	44	28	28	26	0	82	534
Total	93	362	106	0	561	101	664	50	0	815	16	47	79	0	142	120	89	130	0	339	1857
8:00 AM	20	130	38	0	188	28	206	15	0	249	10	15	22	0	47	19	19	29	0	67	551
8:15 AM	25	115	33	0	173	21	176	9	0	206	4	10	27	0	41	22	18	19	0	59	479
8:30 AM	17	121	53	0	191	45	156	13	0	214	2	23	20	0	45	18	14	21	0	53	503
8:45 AM	25	101	74	0	200	41	110	9	0	160	2	44	15	0	61	38	17	37	0	92	513
Total	87	467	198	0	752	135	648	46	0	829	18	92	84	0	194	97	68	106	0	271	2046
BREAK																					
4:00 PM	26	107	30	0	163	26	139	11	0	176	14	17	20	0	51	26	18	26	0	70	460
4:15 PM	16	113	38	0	167	29	133	8	0	170	9	26	18	0	53	28	26	47	0	101	491
4:30 PM	30	124	34	0	188	36	122	9	0	167	15	22	22	0	59	52	25	53	0	130	544
4:45 PM	27	124	32	0	183	29	129	8	0	166	11	26	29	0	66	32	23	29	0	84	499
Total	99	468	134	0	701	120	523	36	0	679	49	91	89	0	229	138	92	155	0	385	1994
5:00 PM	30	156	31	0	217	25	128	9	0	162	25	34	36	0	95	34	16	22	0	72	546
5:15 PM	38	160	41	0	239	34	157	7	0	198	11	36	28	0	75	23	14	24	0	61	573
5:30 PM	34	163	40	0	237	33	148	5	0	186	6	18	17	0	41	30	31	26	0	87	551
5:45 PM	29	120	42	0	191	26	133	11	0	170	9	29	26	0	64	31	23	30	0	84	509
Total	131	599	154	0	884	118	566	32	0	716	51	117	107	0	275	118	84	102	0	304	2179
Grand Total	410	1896	592	0	2898	474	2401	164	0	3039	134	347	359	0	840	473	333	493	0	1299	8076
Apprch %	14.1	65.4	20.4	0.0		15.6	79.0	5.4	0.0		16.0	41.3	42.7	0.0		36.4	25.6	38.0	0.0		
Total %	5.1	23.5	7.3	0.0	35.9	5.9	29.7	2.0	0.0	37.6	1.7	4.3	4.4	0.0	10.4	5.9	4.1	6.1	0.0	16.1	
Cars, PU, Vans	404	1882	591	0	2877	474	2385	163	0	3022	132	347	349	0	828	471	333	491	0	1295	8022
% Cars, PU, Vans	98.5	99.3	99.8	0.0	99.3	####	99.3	99.4	0.0	99.4	98.5	100.0	97.2	0.0	98.6	99.6	100.0	99.6	0.0	99.7	99.3
Heavy Trucks	6	14	1		21	0	16	1		17	2	0	10		12	2	0	2		4	54
%Heavy Trucks	1.5	0.7	0.2	0.0	0.7	0.0	0.7	0.6	0.0	0.6	1.5	0.0	2.8	0.0	1.4	0.4	0.0	0.4	0.0	0.3	0.7

Project ID: 14-9059-010
Location: Old Statesville Rd (NC 1
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Old Statesville Rd (NC 115) Northbound				Old Statesville Rd (NC 115) Southbound				Bailey Rd Eastbound				Bailey Rd Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
7:45 AM	33	108	37	178	46	171	13	230	3	21	20	44	28	28	26	82	534
8:00 AM	20	130	38	188	28	206	15	249	10	15	22	47	19	19	29	67	551
8:15 AM	25	115	33	173	21	176	9	206	4	10	27	41	22	18	19	59	479
8:30 AM	17	121	53	191	45	156	13	214	2	23	20	45	18	14	21	53	503
Total Volume	95	474	161	730	140	709	50	899	19	69	89	177	87	79	95	261	2067
% App. Total	13.0	64.9	22.1	100	15.6	78.9	5.6	100	10.7	39.0	50.3	100	33.3	30.3	36.4	100	
PHF				0.955				0.903				0.941				0.796	
Cars, PU, Vans	94	465	161	720	140	701	50	891	19	69	88	176	87	79	95	261	2048
% Cars, PU, Vans	98.9	98.1	####	98.6	100.0	98.9	####	99.1	####	100.0	98.9	99.4	####	####	100.0	100.0	99.1
Heavy Trucks	1	9	0	10	0	8	0	8	0	0	1	1	0	0	0	0	19
%Heavy Trucks	1.1	1.9	0.0	1.4	0.0	1.1	0.0	0.9	0.0	0.0	1.1	0.6	0.0	0.0	0.0	0.0	0.9

PM

	Old Statesville Rd (NC 115) Northbound				Old Statesville Rd (NC 115) Southbound				Bailey Rd Eastbound				Bailey Rd Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	30	156	31	217	25	128	9	162	25	34	36	95	34	16	22	72	546
5:15 PM	38	160	41	239	34	157	7	198	11	36	28	75	23	14	24	61	573
5:30 PM	34	163	40	237	33	148	5	186	6	18	17	41	30	31	26	87	551
5:45 PM	29	120	42	191	26	133	11	170	9	29	26	64	31	23	30	84	509
Total Volume	131	599	154	884	118	566	32	716	51	117	107	275	118	84	102	304	2179
% App. Total	14.8	67.8	17.4	100	16.5	79.1	4.5	100	18.5	42.5	38.9	100	38.8	27.6	33.6	100	
PHF				0.925				0.904				0.724				0.874	
Cars, PU, Vans	129	597	154	880	118	564	32	714	51	117	106	274	118	84	101	303	2171
% Cars, PU, Vans	98.5	99.7	####	99.5	100.0	99.6	####	99.7	####	100.0	99.1	99.6	####	####	99.0	99.7	99.6
Heavy Trucks	2	2	0	4	0	2	0	2	0	0	1	1	0	0	1	1	8
%Heavy Trucks	1.5	0.3	0.0	0.5	0.0	0.4	0.0	0.3	0.0	0.0	0.9	0.4	0.0	0.0	1.0	0.3	0.4

Project ID: 14-9059-011
Location: Old Statesville Rd (NC 115) & Hickory St
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Old Statesville Rd (NC 115) Northbound					Old Statesville Rd (NC 115) Southbound					Hickory St Eastbound					Hickory St Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	0	115	4	0	119	3	162	2	0	167	1	1	4	0	6	0	1	1	0	2	294
7:15 AM	1	117	4	0	122	0	205	3	0	208	1	0	3	0	4	0	0	2	0	2	336
7:30 AM	0	122	1	0	123	5	226	6	0	237	3	1	2	0	6	1	0	0	0	1	367
7:45 AM	3	179	5	0	187	5	250	4	0	259	3	0	5	0	8	1	0	1	0	2	456
Total	4	533	14	0	551	13	843	15	0	871	8	2	14	0	24	2	1	4	0	7	1453
8:00 AM	0	201	8	0	209	4	230	1	0	235	2	0	3	0	5	2	0	1	0	3	452
8:15 AM	1	159	4	0	164	2	226	2	0	230	5	0	3	0	8	0	1	4	0	5	407
8:30 AM	1	142	9	0	152	5	238	2	0	245	1	0	3	0	4	2	0	2	0	4	405
8:45 AM	0	150	18	0	168	9	174	2	0	185	1	1	1	0	3	0	0	3	0	3	359
Total	2	652	39	0	693	20	868	7	0	895	9	1	10	0	20	4	1	10	0	15	1623
BREAK																					
4:00 PM	1	156	4	0	161	2	219	9	0	230	2	0	2	0	4	10	0	6	0	16	411
4:15 PM	3	148	5	0	156	1	197	3	0	201	3	0	2	0	5	1	0	3	0	4	366
4:30 PM	1	200	3	0	204	2	201	7	0	210	3	0	2	0	5	2	0	2	0	4	423
4:45 PM	3	162	3	0	168	0	195	2	0	197	3	1	2	0	6	1	2	1	0	4	375
Total	8	666	15	0	689	5	812	21	0	838	11	1	8	0	20	14	2	12	0	28	1575
5:00 PM	4	201	7	0	212	1	200	9	0	210	2	2	3	0	7	2	0	2	0	4	433
5:15 PM	3	220	11	0	234	3	210	5	0	218	1	1	7	0	9	2	0	1	0	3	464
5:30 PM	9	190	2	0	201	3	212	3	0	218	3	0	3	0	6	1	0	4	0	5	430
5:45 PM	3	170	8	0	181	6	199	12	0	217	6	1	2	0	9	3	0	6	0	9	416
Total	19	781	28	0	828	13	821	29	0	863	12	4	15	0	31	8	0	13	0	21	1743
Grand Total	33	2632	96	0	2761	51	3344	72	0	3467	40	8	47	0	95	28	4	39	0	71	6394
Apprch %	1.2	95.3	3.5	0.0		1.5	96.5	2.1	0.0		42.1	8.4	49.5	0.0		39.4	5.6	54.9	0.0		
Total %	0.5	41.2	1.5	0.0	43.2	0.8	52.3	1.1	0.0	54.2	0.6	0.1	0.7	0.0	1.5	0.4	0.1	0.6	0.0	1.1	
Cars, PU, Vans	33	2615	96	0	2744	51	3326	72	0	3449	40	8	47	0	95	28	4	39	0	71	6359
% Cars, PU, Vans	####	99.4	####	0.0	99.4	####	99.5	100.0	0.0	99.5	####	100.0	####	0.0	100.0	100.0	100.0	####	0.0	100.0	99.5
Heavy Trucks	0	17	0		17	0	18	0		18	0	0	0		0	0	0	0		0	35
%Heavy Trucks	0.0	0.6	0.0	0.0	0.6	0.0	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5

Project ID: 14-9059-011
Location: Old Statesville Rd (NC 1
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Old Statesville Rd (NC 115 Northbound				Old Statesville Rd (NC 115) Southbound				Hickory St Eastbound				Hickory St Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
7:45 AM	3	179	5	187	5	250	4	259	3	0	5	8	1	0	1	2	456
8:00 AM	0	201	8	209	4	230	1	235	2	0	3	5	2	0	1	3	452
8:15 AM	1	159	4	164	2	226	2	230	5	0	3	8	0	1	4	5	407
8:30 AM	1	142	9	152	5	238	2	245	1	0	3	4	2	0	2	4	405
Total Volume	5	681	26	712	16	944	9	969	11	0	14	25	5	1	8	14	1720
% App. Total	0.7	95.6	3.7	100	1.7	97.4	0.9	100	44.0	0.0	56.0	100	35.7	7.1	57.1	100	
PHF				0.852				0.935				0.781				0.700	
Cars, PU, Vans	5	673	26	704	16	936	9	961	11	0	14	25	5	1	8	14	1704
% Cars, PU, Vans	####	98.8	####	98.9	100.0	99.2	####	99.2	####	0.0	####	100.0	####	####	100.0	100.0	99.1
Heavy Trucks	0	8	0	8	0	8	0	8	0	0	0	0	0	0	0	0	16
%Heavy Trucks	0.0	1.2	0.0	1.1	0.0	0.8	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9

PM

	Old Statesville Rd (NC 115 Northbound				Old Statesville Rd (NC 115) Southbound				Hickory St Eastbound				Hickory St Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	4	201	7	212	1	200	9	210	2	2	3	7	2	0	2	4	433
5:15 PM	3	220	11	234	3	210	5	218	1	1	7	9	2	0	1	3	464
5:30 PM	9	190	2	201	3	212	3	218	3	0	3	6	1	0	4	5	430
5:45 PM	3	170	8	181	6	199	12	217	6	1	2	9	3	0	6	9	416
Total Volume	19	781	28	828	13	821	29	863	12	4	15	31	8	0	13	21	1743
% App. Total	2.3	94.3	3.4	100	1.5	95.1	3.4	100	38.7	12.9	48.4	100	38.1	0.0	61.9	100	
PHF				0.885				0.990				0.861				0.583	
Cars, PU, Vans	19	777	28	824	13	818	29	860	12	4	15	31	8	0	13	21	1736
% Cars, PU, Vans	####	99.5	####	99.5	100.0	99.6	####	99.7	####	100.0	####	100.0	####	0.0	100.0	100.0	99.6
Heavy Trucks	0	4	0	4	0	3	0	3	0	0	0	0	0	0	0	0	7
%Heavy Trucks	0.0	0.5	0.0	0.5	0.0	0.4	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4

Project ID: 14-9059-012
Location: Statesville Rd (US 21) & Westmoreland Rd
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Statesville Rd (US 21) Northbound					Statesville Rd (US 21) Southbound					Westmoreland Rd Eastbound					Westmoreland Rd Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	29	32	31	0	92	15	154	4	0	173	8	35	76	0	119	14	30	12	0	56	440
7:15 AM	29	52	30	0	111	18	145	5	0	168	17	53	56	0	126	48	62	45	0	155	560
7:30 AM	39	73	25	0	137	16	166	7	0	189	19	27	52	0	98	57	68	29	0	154	578
7:45 AM	54	68	4	0	126	15	138	14	0	167	29	24	83	0	136	35	58	26	0	119	548
Total	151	225	90	0	466	64	603	30	0	697	73	139	267	0	479	154	218	112	0	484	2126
8:00 AM	63	85	4	0	152	19	168	19	0	206	20	22	80	0	122	15	29	17	0	61	541
8:15 AM	55	77	9	0	141	15	195	11	0	221	18	22	66	0	106	13	43	22	0	78	546
8:30 AM	61	69	11	0	141	21	171	17	0	209	24	28	78	0	130	16	47	21	0	84	564
8:45 AM	62	64	5	0	131	19	170	17	0	206	17	31	71	0	119	17	51	24	0	92	548
Total	241	295	29	0	565	74	704	64	0	842	79	103	295	0	477	61	170	84	0	315	2199
BREAK																					
4:00 PM	84	107	5	0	196	16	86	13	0	115	16	31	52	0	99	19	50	16	0	85	495
4:15 PM	109	101	6	0	216	20	92	19	0	131	14	33	50	0	97	15	35	14	0	64	508
4:30 PM	93	112	9	0	214	17	114	21	0	152	11	28	53	0	92	18	39	17	0	74	532
4:45 PM	85	118	5	0	208	29	92	19	0	140	21	30	55	0	106	17	43	13	0	73	527
Total	371	438	25	0	834	82	384	72	0	538	62	122	210	0	394	69	167	60	0	296	2062
5:00 PM	90	115	10	0	215	30	129	30	0	189	26	38	70	0	134	19	44	11	0	74	612
5:15 PM	111	93	6	0	210	31	98	30	0	159	5	37	77	0	119	20	54	13	0	87	575
5:30 PM	77	113	9	0	199	30	109	18	0	157	12	38	57	0	107	19	30	21	0	70	533
5:45 PM	98	97	12	0	207	22	122	20	0	164	12	43	67	0	122	23	40	23	0	86	579
Total	376	418	37	0	831	113	458	98	0	669	55	156	271	0	482	81	168	68	0	317	2299
Grand Total	1139	1376	181	0	2696	333	2149	264	0	2746	269	520	1043	0	1832	365	723	324	0	1412	8686
Apprch %	42.2	51.0	6.7	0.0		12.1	78.3	9.6	0.0		14.7	28.4	56.9	0.0		25.8	51.2	22.9	0.0		
Total %	13.1	15.8	2.1	0.0	31.0	3.8	24.7	3.0	0.0	31.6	3.1	6.0	12.0	0.0	21.1	4.2	8.3	3.7	0.0	16.3	
Cars, PU, Vans	1133	1366	181	0	2680	333	2138	263	0	2734	269	520	1041	0	1830	365	723	324	0	1412	8656
% Cars, PU, Vans	99.5	99.3	####	0.0	99.4	####	99.5	99.6	0.0	99.6	####	100.0	99.8	0.0	99.9	100.0	100.0	####	0.0	100.0	99.7
Heavy Trucks	6	10	0		16	0	11	1		12	0	0	2		2	0	0	0		0	30
%Heavy Trucks	0.5	0.7	0.0	0.0	0.6	0.0	0.5	0.4	0.0	0.4	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3

Project ID: 14-9059-012
Location: Statesville Rd (US 21) &
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Statesville Rd (US 21) Northbound				Statesville Rd (US 21) Southbound				Westmoreland Rd Eastbound				Westmoreland Rd Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
7:15 AM	29	52	30	111	18	145	5	168	17	53	56	126	48	62	45	155	560
7:30 AM	39	73	25	137	16	166	7	189	19	27	52	98	57	68	29	154	578
7:45 AM	54	68	4	126	15	138	14	167	29	24	83	136	35	58	26	119	548
8:00 AM	63	85	4	152	19	168	19	206	20	22	80	122	15	29	17	61	541
Total Volume	185	278	63	526	68	617	45	730	85	126	271	482	155	217	117	489	2227
% App. Total	35.2	52.9	12.0	100	9.3	84.5	6.2	100	17.6	26.1	56.2	100	31.7	44.4	23.9	100	
PHF				0.865				0.886				0.886				0.789	
Cars, PU, Vans	185	275	63	523	68	616	45	729	85	126	271	482	155	217	117	489	2223
% Cars, PU, Vans	####	98.9	####	99.4	100.0	99.8	####	99.9	####	100.0	####	100.0	####	####	100.0	100.0	99.8
Heavy Trucks	0	3	0	3	0	1	0	1	0	0	0	0	0	0	0	0	4
%Heavy Trucks	0.0	1.1	0.0	0.6	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2

PM

	Statesville Rd (US 21) Northbound				Statesville Rd (US 21) Southbound				Westmoreland Rd Eastbound				Westmoreland Rd Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	90	115	10	215	30	129	30	189	26	38	70	134	19	44	11	74	612
5:15 PM	111	93	6	210	31	98	30	159	5	37	77	119	20	54	13	87	575
5:30 PM	77	113	9	199	30	109	18	157	12	38	57	107	19	30	21	70	533
5:45 PM	98	97	12	207	22	122	20	164	12	43	67	122	23	40	23	86	579
Total Volume	376	418	37	831	113	458	98	669	55	156	271	482	81	168	68	317	2299
% App. Total	45.2	50.3	4.5	100	16.9	68.5	14.6	100	11.4	32.4	56.2	100	25.6	53.0	21.5	100	
PHF				0.966				0.885				0.899				0.911	
Cars, PU, Vans	376	416	37	829	113	457	98	668	55	156	270	481	81	168	68	317	2295
% Cars, PU, Vans	####	99.5	####	99.8	100.0	99.8	####	99.9	####	100.0	99.6	99.8	####	####	100.0	100.0	99.8
Heavy Trucks	0	2	0	2	0	1	0	1	0	0	1	1	0	0	0	0	4
%Heavy Trucks	0.0	0.5	0.0	0.2	0.0	0.2	0.0	0.1	0.0	0.0	0.4	0.2	0.0	0.0	0.0	0.0	0.2

Project ID: 14-9059-013
Location: Statesville Rd (US 21) & Bailey Rd
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Statesville Rd (US 21) Northbound					Statesville Rd (US 21) Southbound					Bailey Rd Eastbound					Bailey Rd Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	0	63	25	0	88	12	221	0	0	233	0	0	0	0	0	135	0	28	0	163	484
7:15 AM	0	87	36	0	123	32	219	0	0	251	0	0	0	0	0	128	0	39	0	167	541
7:30 AM	0	89	58	0	147	34	232	0	0	266	0	0	0	0	0	122	0	42	0	164	577
7:45 AM	0	82	60	0	142	46	222	0	0	268	0	0	0	0	0	110	0	40	0	150	560
Total	0	321	179	0	500	124	894	0	0	1018	0	0	0	0	0	495	0	149	0	644	2162
8:00 AM	0	117	52	0	169	25	235	0	0	260	0	0	0	0	0	96	0	38	0	134	563
8:15 AM	0	115	37	0	152	36	241	0	0	277	0	0	0	0	0	113	0	35	0	148	577
8:30 AM	0	100	53	0	153	40	227	0	0	267	0	0	0	0	0	81	0	26	0	107	527
8:45 AM	0	94	59	0	153	54	220	0	0	274	0	0	0	0	0	93	0	42	0	135	562
Total	0	426	201	0	627	155	923	0	0	1078	0	0	0	0	0	383	0	141	0	524	2229
BREAK																					
4:00 PM	0	153	78	0	231	40	131	0	0	171	0	0	0	0	0	65	0	47	0	112	514
4:15 PM	0	179	79	0	258	37	123	0	0	160	0	0	0	0	0	60	0	39	0	99	517
4:30 PM	0	155	86	0	241	49	137	0	0	186	0	0	0	0	0	76	0	52	0	128	555
4:45 PM	0	167	88	0	255	44	133	0	0	177	0	0	0	0	0	79	0	54	0	133	565
Total	0	654	331	0	985	170	524	0	0	694	0	0	0	0	0	280	0	192	0	472	2151
5:00 PM	0	157	124	0	281	67	170	0	0	237	0	0	0	0	0	85	0	58	0	143	661
5:15 PM	0	177	131	0	308	49	155	0	0	204	0	0	0	0	0	78	0	52	0	130	642
5:30 PM	0	163	114	0	277	40	144	0	0	184	0	0	0	0	0	78	0	53	0	131	592
5:45 PM	0	158	114	0	272	48	168	0	0	216	0	0	0	0	0	69	0	42	0	111	599
Total	0	655	483	0	1138	204	637	0	0	841	0	0	0	0	0	310	0	205	0	515	2494
Grand Total	0	2056	1194	0	3250	653	2978	0	0	3631	0	0	0	0	0	1468	0	687	0	2155	9036
Apprch %	0.0	63.3	36.7	0.0		18.0	82.0	0.0	0.0		0.0	0.0	0.0	0.0		68.1	0.0	31.9	0.0		
Total %	0.0	22.8	13.2	0.0	36.0	7.2	33.0	0.0	0.0	40.2	0.0	0.0	0.0	0.0	0.0	16.2	0.0	7.6	0.0	23.8	
Cars, PU, Vans	0	2040	1192	0	3232	650	2967	0	0	3617	0	0	0	0	0	1464	0	685	0	2149	8998
% Cars, PU, Vans	0.0	99.2	99.8	0.0	99.4	99.5	99.6	0.0	0.0	99.6	0.0	0.0	0.0	0.0	0.0	99.7	0.0	99.7	0.0	99.7	99.6
Heavy Trucks	0	16	2		18	3	11	0		14	0	0	0		0	4	0	2		6	38
%Heavy Trucks	0.0	0.8	0.2	0.0	0.6	0.5	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.3	0.4

Project ID: 14-9059-013
Location: Statesville Rd (US 21) &
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Statesville Rd (US 21) Northbound				Statesville Rd (US 21) Southbound				Bailey Rd Eastbound				Bailey Rd Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 12:00 AM																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
7:30 AM	0	89	58	147	34	232	0	266	0	0	0	0	122	0	42	164	577
7:45 AM	0	82	60	142	46	222	0	268	0	0	0	0	110	0	40	150	560
8:00 AM	0	117	52	169	25	235	0	260	0	0	0	0	96	0	38	134	563
8:15 AM	0	115	37	152	36	241	0	277	0	0	0	0	113	0	35	148	577
Total Volume	0	403	207	610	141	930	0	1071	0	0	0	0	441	0	155	596	2277
% App. Total	0.0	66.1	33.9	100	13.2	86.8	0.0	100	0.0	0.0	0.0	0	74.0	0.0	26.0	100	
PHF				0.902				0.967				0.000				0.909	
Cars, PU, Vans	0	400	207	607	141	926	0	1067	0	0	0	0	441	0	155	596	2270
% Cars, PU, Vans	0.0	99.3	####	99.5	100.0	99.6	0.0	99.6	0.0	0.0	0.0	0.0	####	0.0	100.0	100.0	99.7
Heavy Trucks	0	3	0	3	0	4	0	4	0	0	0	0	0	0	0	0	7
%Heavy Trucks	0.0	0.7	0.0	0.5	0.0	0.4	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3

PM

	Statesville Rd (US 21) Northbound				Statesville Rd (US 21) Southbound				Bailey Rd Eastbound				Bailey Rd Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 12:00 AM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	0	157	124	281	67	170	0	237	0	0	0	0	85	0	58	143	661
5:15 PM	0	177	131	308	49	155	0	204	0	0	0	0	78	0	52	130	642
5:30 PM	0	163	114	277	40	144	0	184	0	0	0	0	78	0	53	131	592
5:45 PM	0	158	114	272	48	168	0	216	0	0	0	0	69	0	42	111	599
Total Volume	0	655	483	1138	204	637	0	841	0	0	0	0	310	0	205	515	2494
% App. Total	0.0	57.6	42.4	100	24.3	75.7	0.0	100	0.0	0.0	0.0	0	60.2	0.0	39.8	100	
PHF				0.924				0.887				0.000				0.900	
Cars, PU, Vans	0	653	483	1136	203	636	0	839	0	0	0	0	310	0	205	515	2490
% Cars, PU, Vans	0.0	99.7	####	99.8	99.5	99.8	0.0	99.8	0.0	0.0	0.0	0.0	####	0.0	100.0	100.0	99.8
Heavy Trucks	0	2	0	2	1	1	0	2	0	0	0	0	0	0	0	0	4
%Heavy Trucks	0.0	0.3	0.0	0.2	0.5	0.2	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2

Project ID: 14-9059-014
Location: Poole Place Dr & Bailey Rd
City: Cornelius

Day: Wednesday
Date: 2/26/2014

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Poole Place Dr Northbound					Poole Place Dr Southbound					Bailey Rd Eastbound					Bailey Rd Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	1	0	2	0	3	0	0	0	0	0	0	30	0	0	30	0	51	0	0	51	84
7:15 AM	4	0	1	0	5	0	0	0	0	0	0	44	3	0	47	1	47	0	0	48	100
7:30 AM	3	0	2	0	5	0	0	0	0	0	0	64	1	0	65	2	43	0	0	45	115
7:45 AM	3	0	0	0	3	0	0	0	0	0	0	94	0	0	94	0	49	0	0	49	146
Total	11	0	5	0	16	0	0	0	0	0	0	232	4	0	236	3	190	0	0	193	445
8:00 AM	6	0	3	0	9	0	0	0	0	0	0	64	0	0	64	1	48	0	0	49	122
8:15 AM	1	0	0	0	1	0	0	0	0	0	0	55	0	0	55	0	45	0	0	45	101
8:30 AM	1	0	1	0	2	0	0	0	0	0	0	66	0	0	66	0	45	0	0	45	113
8:45 AM	0	0	1	0	1	0	0	0	0	0	0	72	1	0	73	1	49	0	0	50	124
Total	8	0	5	0	13	0	0	0	0	0	0	257	1	0	258	2	187	0	0	189	460
BREAK																					
4:00 PM	2	0	2	0	4	0	0	0	0	0	0	39	3	0	42	5	58	0	0	63	109
4:15 PM	3	0	1	0	4	0	0	0	0	0	0	50	1	0	51	2	58	0	0	60	115
4:30 PM	1	0	2	0	3	0	0	0	0	0	0	43	0	0	43	2	65	0	0	67	113
4:45 PM	3	0	2	0	5	0	0	0	0	0	0	72	2	0	74	1	81	0	0	82	161
Total	9	0	7	0	16	0	0	0	0	0	0	204	6	0	210	10	262	0	0	272	498
5:00 PM	3	0	0	0	3	0	0	0	0	0	0	73	6	0	79	1	86	0	0	87	169
5:15 PM	1	0	1	0	2	0	0	0	0	0	0	64	4	0	68	2	74	0	0	76	146
5:30 PM	2	0	0	0	2	0	0	0	0	0	0	45	1	0	46	0	79	0	0	79	127
5:45 PM	1	0	0	0	1	0	0	0	0	0	0	59	2	0	61	1	78	0	0	79	141
Total	7	0	1	0	8	0	0	0	0	0	0	241	13	0	254	4	317	0	0	321	583
Grand Total	35	0	18	0	53	0	0	0	0	0	0	934	24	0	958	19	956	0	0	975	1986
Apprch %	66.0	0.0	34.0	0.0		0.0	0.0	0.0	0.0		0.0	97.5	2.5	0.0		1.9	98.1	0.0	0.0		
Total %	1.8	0.0	0.9	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	47.0	1.2	0.0	48.2	1.0	48.1	0.0	0.0	49.1	
Cars, PU, Vans	35	0	18	0	53	0	0	0	0	0	0	930	24	0	954	19	951	0	0	970	1977
% Cars, PU, Vans	####	0.0	####	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	99.6	####	0.0	99.6	100.0	99.5	0.0	0.0	99.5	99.5
Heavy Trucks	0	0	0		0	0	0	0		0	0	4	0		4	0	5	0		5	9
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.5	0.0	0.0	0.5	0.5

Project ID: 14-9059-014
Location: Poole Place Dr & Bailey
City: Cornelius

PEAK HOURS

Day: Wednesday
Date: 2/26/2014

AM

	Poole Place Dr Northbound				Poole Place Dr Southbound				Bailey Rd Eastbound				Bailey Rd Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
7:30 AM	3	0	2	5	0	0	0	0	0	64	1	65	2	43	0	45	115
7:45 AM	3	0	0	3	0	0	0	0	0	94	0	94	0	49	0	49	146
8:00 AM	6	0	3	9	0	0	0	0	0	64	0	64	1	48	0	49	122
8:15 AM	1	0	0	1	0	0	0	0	0	55	0	55	0	45	0	45	101
Total Volume	13	0	5	18	0	0	0	0	0	277	1	278	3	185	0	188	484
% App. Total	72.2	0.0	27.8	100	0.0	0.0	0.0	0	0.0	99.6	0.4	100	1.6	98.4	0.0	100	
PHF				0.500				0.000				0.739				0.959	
Cars, PU, Vans	13	0	5	18	0	0	0	0	0	277	1	278	3	185	0	188	484
% Cars, PU, Vans	####	0.0	####	100.0	0.0	0.0	0.0	0.0	0.0	100.0	####	100.0	####	####	0.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PM

	Poole Place Dr Northbound				Poole Place Dr Southbound				Bailey Rd Eastbound				Bailey Rd Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
4:45 PM	3	0	2	5	0	0	0	0	0	72	2	74	1	81	0	82	161
5:00 PM	3	0	0	3	0	0	0	0	0	73	6	79	1	86	0	87	169
5:15 PM	1	0	1	2	0	0	0	0	0	64	4	68	2	74	0	76	146
5:30 PM	2	0	0	2	0	0	0	0	0	45	1	46	0	79	0	79	127
Total Volume	9	0	3	12	0	0	0	0	0	254	13	267	4	320	0	324	603
% App. Total	75.0	0.0	25.0	100	0.0	0.0	0.0	0	0.0	95.1	4.9	100	1.2	98.8	0.0	100	
PHF				0.600				0.000				0.845				0.931	
Cars, PU, Vans	9	0	3	12	0	0	0	0	0	253	13	266	4	319	0	323	601
% Cars, PU, Vans	####	0.0	####	100.0	0.0	0.0	0.0	0.0	0.0	99.6	####	99.6	####	99.7	0.0	99.7	99.7
Heavy Trucks	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	2
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.3	0.0	0.3	0.3

APPENDIX B

SYNCHRO Reports:
Catawba Avenue Turn Lanes

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	481	127	6	364	98	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972				0.976	
Flt Protected				0.999	0.961	
Satd. Flow (prot)	1811	0	0	1861	1747	0
Flt Permitted				0.990	0.961	
Satd. Flow (perm)	1811	0	0	1844	1747	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	25	
Link Distance (ft)	303			1419	803	
Travel Time (s)	5.9			27.6	21.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	534	141	7	404	109	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	675	0	0	411	133	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	15.0		15.0	15.0	13.0	
Total Split (s)	70.0		70.0	70.0	20.0	
Total Split (%)	77.8%		77.8%	77.8%	22.2%	
Maximum Green (s)	65.0		65.0	65.0	15.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Min		Min	Min	None	
Walk Time (s)	4.0		4.0	4.0	4.0	
Flash Dont Walk (s)	4.0		4.0	4.0	4.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	27.1			27.1	8.9	
Actuated g/C Ratio	0.65			0.65	0.21	
v/c Ratio	0.57			0.34	0.36	
Control Delay	8.9			6.2	18.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	8.9			6.2	18.6	
LOS	A			A	B	
Approach Delay	8.9			6.2	18.6	
Approach LOS	A			A	B	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 41.7	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 9.1	Intersection LOS: A
Intersection Capacity Utilization 48.1%	ICU Level of Service A
Analysis Period (min) 15	

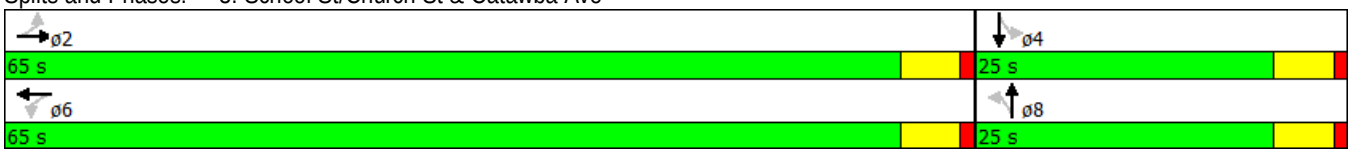
Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	445	23	9	404	1	26	9	28	26	3	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993						0.940			0.965	
Flt Protected		0.999			0.999			0.980			0.967	
Satd. Flow (prot)	0	1848	0	0	1861	0	0	1716	0	0	1738	0
Flt Permitted		0.994			0.988			0.846			0.755	
Satd. Flow (perm)	0	1839	0	0	1840	0	0	1481	0	0	1357	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	494	26	10	449	1	29	10	31	29	3	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	527	0	0	460	0	0	70	0	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		25.6			25.6			7.7			7.7	
Actuated g/C Ratio		0.72			0.72			0.22			0.22	
v/c Ratio		0.40			0.35			0.22			0.15	
Control Delay		6.0			5.6			14.7			14.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.0			5.6			14.7			14.0	
LOS		A			A			B			B	
Approach Delay		6.0			5.6			14.7			14.0	
Approach LOS		A			A			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 35.7	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 41.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave



Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	610	3	3	477	1	4	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	678	3	3	530	1	4	1	10

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	531	0	0	681	0	0	1225	1222	679
Stage 1	-	-	-	-	-	-	684	684	-
Stage 2	-	-	-	-	-	-	541	538	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1036	-	-	912	-	-	156	180	452
Stage 1	-	-	-	-	-	-	439	449	-
Stage 2	-	-	-	-	-	-	525	522	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1036	-	-	912	-	-	153	179	452
Mov Cap-2 Maneuver	-	-	-	-	-	-	153	179	-
Stage 1	-	-	-	-	-	-	438	448	-
Stage 2	-	-	-	-	-	-	516	519	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	271	1036	-	-	912	-	-	548
HCM Lane V/C Ratio	0.057	0.002	-	-	0.004	-	-	0.012
HCM Control Delay (s)	19.1	8.5	0	-	9	0	-	11.7
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	7

Major/Minor	Minor2		
Conflicting Flow All	1226	1223	531
Stage 1	537	537	-
Stage 2	689	686	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	155	179	548
Stage 1	528	523	-
Stage 2	436	448	-
Platoon blocked, %			
Mov Cap-1 Maneuver	150	178	548
Mov Cap-2 Maneuver	150	178	-
Stage 1	526	520	-
Stage 2	424	447	-

Approach	SB
HCM Control Delay, s	11.7
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	11	595	425	7	4	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	661	472	8	4	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	480	0	-	0	1162	476
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	686	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1082	-	-	-	216	589
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	500	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1082	-	-	-	212	589
Mov Cap-2 Maneuver	-	-	-	-	212	-
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	491	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1082	-	-	-	517
HCM Lane V/C Ratio	0.011	-	-	-	0.11
HCM Control Delay (s)	8.4	0	-	-	12.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	513	49	7	314	36	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.954	
Flt Protected				0.999	0.968	
Satd. Flow (prot)	1840	0	0	1861	1720	0
Flt Permitted				0.988	0.968	
Satd. Flow (perm)	1840	0	0	1840	1720	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			25	25	
Link Distance (ft)	303			1419	1215	
Travel Time (s)	5.9			38.7	33.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	570	54	8	349	40	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	624	0	0	357	61	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	15.0		15.0	15.0	13.0	
Total Split (s)	77.0		77.0	77.0	13.0	
Total Split (%)	85.6%		85.6%	85.6%	14.4%	
Maximum Green (s)	72.0		72.0	72.0	8.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Min		Min	Min	None	
Walk Time (s)	4.0		4.0	4.0	4.0	
Flash Dont Walk (s)	4.0		4.0	4.0	4.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	31.6			31.6	7.5	
Actuated g/C Ratio	0.84			0.84	0.20	
v/c Ratio	0.40			0.23	0.18	
Control Delay	4.3			3.2	16.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.3			3.2	16.3	
LOS	A			A	B	
Approach Delay	4.3			3.2	16.3	
Approach LOS	A			A	B	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 37.5	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay: 4.6	Intersection LOS: A
Intersection Capacity Utilization 44.1%	ICU Level of Service A
Analysis Period (min) 15	

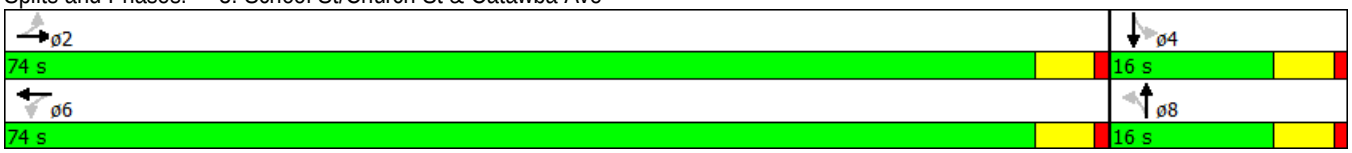
Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	473	20	14	274	14	15	11	45	22	13	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994			0.915			0.964	
Flt Protected		0.999			0.998			0.989			0.977	
Satd. Flow (prot)	0	1852	0	0	1848	0	0	1686	0	0	1754	0
Flt Permitted		0.992			0.971			0.911			0.814	
Satd. Flow (perm)	0	1839	0	0	1798	0	0	1553	0	0	1462	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	526	22	16	304	16	17	12	50	24	14	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	559	0	0	336	0	0	79	0	0	52	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	74.0	74.0		74.0	74.0		16.0	16.0		16.0	16.0	
Total Split (%)	82.2%	82.2%		82.2%	82.2%		17.8%	17.8%		17.8%	17.8%	
Maximum Green (s)	69.0	69.0		69.0	69.0		11.0	11.0		11.0	11.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			7.5			7.3	
Actuated g/C Ratio		0.72			0.72			0.21			0.20	
v/c Ratio		0.42			0.26			0.25			0.18	
Control Delay		6.1			4.9			15.5			14.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.1			4.9			15.5			14.9	
LOS		A			A			B			B	
Approach Delay		6.1			4.9			15.5			14.9	
Approach LOS		A			A			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 36	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 6.9	Intersection LOS: A
Intersection Capacity Utilization 43.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave



Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	596	8	7	393	0	6	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	662	9	8	437	0	7	1	11

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	437	0	0	671	0	0	1126	1121	667
Stage 1	-	-	-	-	-	-	669	669	-
Stage 2	-	-	-	-	-	-	457	452	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1123	-	-	919	-	-	182	206	459
Stage 1	-	-	-	-	-	-	447	456	-
Stage 2	-	-	-	-	-	-	583	570	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1123	-	-	919	-	-	177	204	459
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	204	-
Stage 1	-	-	-	-	-	-	447	456	-
Stage 2	-	-	-	-	-	-	567	564	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	281	1123	-	-	919	-	-	338
HCM Lane V/C Ratio	0.067	0.001	-	-	0.008	-	-	0.036
HCM Control Delay (s)	18.7	8.2	0	-	9	0	-	16.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	2	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	2	8

Major/Minor	Minor2		
Conflicting Flow All	1127	1125	437
Stage 1	452	452	-
Stage 2	675	673	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	182	205	620
Stage 1	587	570	-
Stage 2	444	454	-
Platoon blocked, %			
Mov Cap-1 Maneuver	175	203	620
Mov Cap-2 Maneuver	175	203	-
Stage 1	586	564	-
Stage 2	432	454	-

Approach	SB
HCM Control Delay, s	16.1
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	34	565	349	1	3	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	628	388	1	3	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	389	0	-	0	1091	388
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	703	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1170	-	-	-	238	660
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	491	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1170	-	-	-	226	660
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	466	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1170	-	-	-	591
HCM Lane V/C Ratio	0.032	-	-	-	0.092
HCM Control Delay (s)	8.2	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	659	174	8	499	134	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972				0.976	
Flt Protected				0.999	0.961	
Satd. Flow (prot)	1811	0	0	1861	1747	0
Flt Permitted				0.987	0.961	
Satd. Flow (perm)	1811	0	0	1839	1747	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	25	
Link Distance (ft)	303			1419	803	
Travel Time (s)	5.9			27.6	21.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	732	193	9	554	149	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	925	0	0	563	182	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	15.0		15.0	15.0	13.0	
Total Split (s)	58.0		58.0	58.0	17.0	
Total Split (%)	77.3%		77.3%	77.3%	22.7%	
Maximum Green (s)	53.0		53.0	53.0	12.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		Min	Min	None	
Walk Time (s)	4.0		4.0	4.0	4.0	
Flash Dont Walk (s)	4.0		4.0	4.0	4.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	53.0			53.0	12.0	
Actuated g/C Ratio	0.71			0.71	0.16	
v/c Ratio	0.72			0.43	0.65	
Control Delay	13.1			4.2	41.5	
Queue Delay	0.0			0.0	0.0	
Total Delay	13.1			4.2	41.5	
LOS	B			A	D	
Approach Delay	13.1			4.2	41.5	
Approach LOS	B			A	D	

Intersection Summary	
Area Type: Other	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 19 (25%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 13.2	Intersection LOS: B
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	610	32	12	553	1	36	12	38	36	4	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993						0.940			0.964	
Flt Protected		0.999			0.999			0.979			0.968	
Satd. Flow (prot)	0	1848	0	0	1861	0	0	1714	0	0	1738	0
Flt Permitted		0.993			0.985			0.847			0.792	
Satd. Flow (perm)	0	1837	0	0	1835	0	0	1483	0	0	1422	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	678	36	13	614	1	40	13	42	40	4	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	723	0	0	628	0	0	95	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	58.0	58.0		58.0	58.0		17.0	17.0		17.0	17.0	
Total Split (%)	77.3%	77.3%		77.3%	77.3%		22.7%	22.7%		22.7%	22.7%	
Maximum Green (s)	53.0	53.0		53.0	53.0		12.0	12.0		12.0	12.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		58.1			58.1			10.3			10.3	
Actuated g/C Ratio		0.77			0.77			0.14			0.14	
v/c Ratio		0.51			0.44			0.47			0.31	
Control Delay		2.5			4.5			36.6			32.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		2.5			4.5			36.6			32.2	
LOS		A			A			D			C	
Approach Delay		2.5			4.5			36.6			32.2	
Approach LOS		A			A			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 52.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	3	836	4	4	653	1	5	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	929	4	4	726	1	6	1	13

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	727	0	0	933	0	0	1677	1674	931
Stage 1	-	-	-	-	-	-	938	938	-
Stage 2	-	-	-	-	-	-	739	736	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	876	-	-	734	-	-	75	95	324
Stage 1	-	-	-	-	-	-	317	343	-
Stage 2	-	-	-	-	-	-	409	425	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	876	-	-	734	-	-	73	93	324
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	93	-
Stage 1	-	-	-	-	-	-	315	341	-
Stage 2	-	-	-	-	-	-	397	421	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	31.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	155	876	-	-	734	-	-	425
HCM Lane V/C Ratio	0.129	0.004	-	-	0.006	-	-	0.021
HCM Control Delay (s)	31.6	9.1	0	-	9.9	0	-	13.7
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	8
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	9

Major/Minor	Minor2		
Conflicting Flow All	1680	1675	726
Stage 1	735	735	-
Stage 2	945	940	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	75	95	425
Stage 1	411	425	-
Stage 2	314	342	-
Platoon blocked, %			
Mov Cap-1 Maneuver	70	93	425
Mov Cap-2 Maneuver	70	93	-
Stage 1	408	421	-
Stage 2	298	340	-

Approach	SB
HCM Control Delay, s	13.7
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	15	815	582	10	5	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	906	647	11	6	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	658	0	-	0	1591	652
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	939	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	930	-	-	-	118	468
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	380	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	930	-	-	-	114	468
Mov Cap-2 Maneuver	-	-	-	-	114	-
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	366	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	930	-	-	-	382
HCM Lane V/C Ratio	0.018	-	-	-	0.201
HCM Control Delay (s)	8.9	0	-	-	16.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	703	67	10	430	49	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.953	
Flt Protected				0.999	0.968	
Satd. Flow (prot)	1840	0	0	1861	1718	0
Flt Permitted				0.982	0.968	
Satd. Flow (perm)	1840	0	0	1829	1718	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			25	25	
Link Distance (ft)	303			1419	1215	
Travel Time (s)	5.9			38.7	33.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	781	74	11	478	54	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	855	0	0	489	83	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	15.0		15.0	15.0	13.0	
Total Split (s)	57.0		57.0	57.0	13.0	
Total Split (%)	81.4%		81.4%	81.4%	18.6%	
Maximum Green (s)	52.0		52.0	52.0	8.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		Min	Min	None	
Walk Time (s)	4.0		4.0	4.0	4.0	
Flash Dont Walk (s)	4.0		4.0	4.0	4.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	54.4			54.4	9.0	
Actuated g/C Ratio	0.78			0.78	0.13	
v/c Ratio	0.60			0.34	0.38	
Control Delay	10.9			2.1	32.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	10.9			2.1	32.3	
LOS	B			A	C	
Approach Delay	10.9			2.1	32.3	
Approach LOS	B			A	C	

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 41 (59%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 9.1	Intersection LOS: A
Intersection Capacity Utilization 55.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	648	27	19	375	19	21	15	62	30	18	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994			0.915			0.963	
Flt Protected		0.999			0.998			0.990			0.978	
Satd. Flow (prot)	0	1852	0	0	1848	0	0	1687	0	0	1754	0
Flt Permitted		0.989			0.960			0.920			0.830	
Satd. Flow (perm)	0	1833	0	0	1778	0	0	1568	0	0	1489	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	720	30	21	417	21	23	17	69	33	20	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	766	0	0	459	0	0	109	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	53.0	53.0		53.0	53.0		17.0	17.0		17.0	17.0	
Total Split (%)	75.7%	75.7%		75.7%	75.7%		24.3%	24.3%		24.3%	24.3%	
Maximum Green (s)	48.0	48.0		48.0	48.0		12.0	12.0		12.0	12.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		53.1			53.1			10.1			10.1	
Actuated g/C Ratio		0.76			0.76			0.14			0.14	
v/c Ratio		0.55			0.34			0.48			0.34	
Control Delay		3.3			4.7			34.0			30.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.3			4.7			34.0			30.2	
LOS		A			A			C			C	
Approach Delay		3.3			4.7			34.0			30.2	
Approach LOS		A			A			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 7.5	Intersection LOS: A
Intersection Capacity Utilization 56.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	817	11	10	538	0	8	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	908	12	11	598	0	9	1	16

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	598	0	0	920	0	0	1543	1536	914
Stage 1	-	-	-	-	-	-	916	916	-
Stage 2	-	-	-	-	-	-	627	620	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	979	-	-	742	-	-	94	116	331
Stage 1	-	-	-	-	-	-	326	351	-
Stage 2	-	-	-	-	-	-	471	480	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	979	-	-	742	-	-	88	113	331
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	113	-
Stage 1	-	-	-	-	-	-	325	350	-
Stage 2	-	-	-	-	-	-	447	469	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	31.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	162	979	-	-	742	-	-	197
HCM Lane V/C Ratio	0.158	0.001	-	-	0.015	-	-	0.09
HCM Control Delay (s)	31.3	8.7	0	-	9.9	0	-	25.1
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	3	3	10
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	3	3	11

Major/Minor	Minor2		
Conflicting Flow All	1544	1542	598
Stage 1	620	620	-
Stage 2	924	922	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	94	115	502
Stage 1	476	480	-
Stage 2	323	349	-
Platoon blocked, %			
Mov Cap-1 Maneuver	87	112	502
Mov Cap-2 Maneuver	87	112	-
Stage 1	475	469	-
Stage 2	306	348	-

Approach	SB
HCM Control Delay, s	25.1
HCM LOS	D

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	47	774	478	1	4	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	860	531	1	4	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	532	0	-	0	1496	532
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	964	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1036	-	-	-	135	547
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	370	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1036	-	-	-	122	547
Mov Cap-2 Maneuver	-	-	-	-	122	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	334	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1036	-	-	-	453
HCM Lane V/C Ratio	0.05	-	-	-	0.164
HCM Control Delay (s)	8.7	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	659	174	8	499	134	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972				0.976	
Flt Protected			0.950		0.961	
Satd. Flow (prot)	1811	0	1770	1863	1747	0
Flt Permitted			0.195		0.961	
Satd. Flow (perm)	1811	0	363	1863	1747	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	25	
Link Distance (ft)	303			1419	803	
Travel Time (s)	5.9			27.6	21.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	732	193	9	554	149	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	925	0	9	554	182	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	4	
Permitted Phases			6			
Detector Phase	2		6	6	4	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	4.0	
Minimum Split (s)	17.0		17.0	17.0	11.0	
Total Split (s)	45.0		45.0	45.0	15.0	
Total Split (%)	75.0%		75.0%	75.0%	25.0%	
Maximum Green (s)	38.0		38.0	38.0	8.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Max		None	None	None	
Walk Time (s)	4.0		4.0	4.0		
Flash Dont Walk (s)	4.0		4.0	4.0		
Pedestrian Calls (#/hr)	0		0	0		
Act Effct Green (s)	40.2		40.2	40.2	9.8	
Actuated g/C Ratio	0.67		0.67	0.67	0.16	
v/c Ratio	0.76		0.04	0.44	0.64	
Control Delay	12.3		2.5	3.7	35.2	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	12.3		2.5	3.7	35.2	
LOS	B		A	A	D	
Approach Delay	12.3			3.7	35.2	
Approach LOS	B			A	D	

Intersection Summary	
Area Type: Other	
Cycle Length: 60	
Actuated Cycle Length: 60	
Offset: 21 (35%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.76	
Intersection Signal Delay: 11.9	Intersection LOS: B
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	610	32	12	553	1	36	12	38	36	4	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.992						0.940			0.964	
Flt Protected	0.950			0.950				0.979			0.968	
Satd. Flow (prot)	1770	1848	0	1770	1863	0	0	1714	0	0	1738	0
Flt Permitted	0.385			0.327				0.836			0.822	
Satd. Flow (perm)	717	1848	0	609	1863	0	0	1464	0	0	1476	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	678	36	13	614	1	40	13	42	40	4	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	9	714	0	13	615	0	0	95	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Total Split (s)	45.0	45.0		45.0	45.0		15.0	15.0		15.0	15.0	
Total Split (%)	75.0%	75.0%		75.0%	75.0%		25.0%	25.0%		25.0%	25.0%	
Maximum Green (s)	38.0	38.0		38.0	38.0		8.0	8.0		8.0	8.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0			-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Max	C-Max		None	None		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	44.1	44.1		44.1	44.1			9.7			9.7	
Actuated g/C Ratio	0.74	0.74		0.74	0.74			0.16			0.16	
v/c Ratio	0.02	0.53		0.03	0.45			0.40			0.25	
Control Delay	0.5	1.5		3.7	5.8			28.1			24.9	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	0.5	1.5		3.7	5.8			28.1			24.9	
LOS	A	A		A	A			C			C	
Approach Delay		1.5			5.7			28.1			24.9	
Approach LOS		A			A			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 5.9 — Intersection LOS: A
Intersection Capacity Utilization 48.2% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: School St/Church St & Catawba Ave

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	3	836	4	4	653	1	5	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	929	4	4	726	1	6	1	13

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	727	0	0	933	0	0	1677	1674	931
Stage 1	-	-	-	-	-	-	938	938	-
Stage 2	-	-	-	-	-	-	739	736	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	876	-	-	734	-	-	75	95	324
Stage 1	-	-	-	-	-	-	317	343	-
Stage 2	-	-	-	-	-	-	409	425	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	876	-	-	734	-	-	73	94	324
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	94	-
Stage 1	-	-	-	-	-	-	316	342	-
Stage 2	-	-	-	-	-	-	398	423	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	31.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	155	876	-	-	734	-	-	425
HCM Lane V/C Ratio	0.129	0.004	-	-	0.006	-	-	0.021
HCM Control Delay (s)	31.6	9.1	-	-	9.9	-	-	13.7
HCM Lane LOS	D	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	8
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	9

Major/Minor	Minor2		
Conflicting Flow All	1680	1675	726
Stage 1	735	735	-
Stage 2	945	940	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	75	95	425
Stage 1	411	425	-
Stage 2	314	342	-
Platoon blocked, %			
Mov Cap-1 Maneuver	71	94	425
Mov Cap-2 Maneuver	71	94	-
Stage 1	410	423	-
Stage 2	299	341	-

Approach	SB
HCM Control Delay, s	13.7
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	15	815	582	10	5	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	906	647	11	6	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	658	0	-	0	1591	652
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	939	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	930	-	-	-	118	468
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	380	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	930	-	-	-	116	468
Mov Cap-2 Maneuver	-	-	-	-	249	-
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	373	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	930	-	-	-	440
HCM Lane V/C Ratio	0.018	-	-	-	0.174
HCM Control Delay (s)	8.9	-	-	-	14.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	703	67	10	430	49	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	100		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.953	
Flt Protected			0.950		0.968	
Satd. Flow (prot)	1840	0	1770	1863	1718	0
Flt Permitted			0.264		0.968	
Satd. Flow (perm)	1840	0	492	1863	1718	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			25	25	
Link Distance (ft)	303			1419	1215	
Travel Time (s)	5.9			38.7	33.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	781	74	11	478	54	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	855	0	11	478	83	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane	Yes					
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	17.0		17.0	17.0	15.0	
Total Split (s)	55.0		55.0	55.0	15.0	
Total Split (%)	78.6%		78.6%	78.6%	21.4%	
Maximum Green (s)	48.0		48.0	48.0	8.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0		-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0		5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		Min	Min	None	
Walk Time (s)	4.0		4.0	4.0	4.0	
Flash Dont Walk (s)	4.0		4.0	4.0	4.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	53.6		53.6	53.6	10.2	
Actuated g/C Ratio	0.77		0.77	0.77	0.15	
v/c Ratio	0.61		0.03	0.34	0.33	
Control Delay	10.5		1.4	1.9	30.6	
Queue Delay	0.0		0.0	0.0	0.0	
Total Delay	10.5		1.4	1.9	30.6	
LOS	B		A	A	C	
Approach Delay	10.5			1.8	30.6	
Approach LOS	B			A	C	

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 2 (3%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 55	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.61	
Intersection Signal Delay: 8.7	Intersection LOS: A
Intersection Capacity Utilization 55.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	648	27	19	375	19	21	15	62	30	18	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.994			0.993			0.915			0.963	
Flt Protected	0.950			0.950				0.990			0.978	
Satd. Flow (prot)	1770	1852	0	1770	1850	0	0	1687	0	0	1754	0
Flt Permitted	0.493			0.309				0.919			0.831	
Satd. Flow (perm)	918	1852	0	576	1850	0	0	1566	0	0	1491	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	720	30	21	417	21	23	17	69	33	20	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	750	0	21	438	0	0	109	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	
Total Split (s)	53.0	53.0		53.0	53.0		17.0	17.0		17.0	17.0	
Total Split (%)	75.7%	75.7%		75.7%	75.7%		24.3%	24.3%		24.3%	24.3%	
Maximum Green (s)	46.0	46.0		46.0	46.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0		-2.0	-2.0			-2.0			-2.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)	52.3	52.3		52.3	52.3			11.5			11.5	
Actuated g/C Ratio	0.75	0.75		0.75	0.75			0.16			0.16	
v/c Ratio	0.02	0.54		0.05	0.32			0.43			0.30	
Control Delay	2.4	3.5		2.7	3.4			31.4			28.8	
Queue Delay	0.0	0.0		0.0	0.0			0.0			0.0	
Total Delay	2.4	3.5		2.7	3.4			31.4			28.8	
LOS	A	A		A	A			C			C	
Approach Delay		3.5			3.4			31.4			28.8	
Approach LOS		A			A			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 35 (50%), Referenced to phase 2:EBTL, Start of Yellow
Natural Cycle: 45
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.54
Intersection Signal Delay: 6.9 Intersection LOS: A
Intersection Capacity Utilization 51.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: School St/Church St & Catawba Ave

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	817	11	10	538	0	8	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	908	12	11	598	0	9	1	16

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	598	0	0	920	0	0	1543	1536	914
Stage 1	-	-	-	-	-	-	916	916	-
Stage 2	-	-	-	-	-	-	627	620	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	979	-	-	742	-	-	94	116	331
Stage 1	-	-	-	-	-	-	326	351	-
Stage 2	-	-	-	-	-	-	471	480	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	979	-	-	742	-	-	89	114	331
Mov Cap-2 Maneuver	-	-	-	-	-	-	89	114	-
Stage 1	-	-	-	-	-	-	326	351	-
Stage 2	-	-	-	-	-	-	451	473	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	31.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	163	979	-	-	742	-	-	199
HCM Lane V/C Ratio	0.157	0.001	-	-	0.015	-	-	0.089
HCM Control Delay (s)	31.1	8.7	-	-	9.9	-	-	24.9
HCM Lane LOS	D	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	3	3	10
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	3	3	11

Major/Minor	Minor2		
Conflicting Flow All	1544	1542	598
Stage 1	620	620	-
Stage 2	924	922	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	94	115	502
Stage 1	476	480	-
Stage 2	323	349	-
Platoon blocked, %			
Mov Cap-1 Maneuver	88	113	502
Mov Cap-2 Maneuver	88	113	-
Stage 1	476	473	-
Stage 2	307	349	-

Approach	SB
HCM Control Delay, s	24.9
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	47	774	478	1	4	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	860	531	1	4	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	532	0	-	0	1496	532
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	964	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1036	-	-	-	135	547
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	370	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1036	-	-	-	128	547
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	351	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	13.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1036	-	-	-	512
HCM Lane V/C Ratio	0.05	-	-	-	0.145
HCM Control Delay (s)	8.7	-	-	-	13.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5

APPENDIX C

SYNCHRO Reports:
Floral Lane Extension

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	481	127	6	364	98	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972				0.976	
Flt Protected				0.999	0.961	
Satd. Flow (prot)	1811	0	0	1861	1747	0
Flt Permitted				0.990	0.961	
Satd. Flow (perm)	1811	0	0	1844	1747	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	25	
Link Distance (ft)	303			1419	803	
Travel Time (s)	5.9			27.6	21.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	534	141	7	404	109	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	675	0	0	411	133	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	15.0		15.0	15.0	13.0	
Total Split (s)	70.0		70.0	70.0	20.0	
Total Split (%)	77.8%		77.8%	77.8%	22.2%	
Maximum Green (s)	65.0		65.0	65.0	15.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Min		Min	Min	None	
Walk Time (s)	4.0		4.0	4.0	4.0	
Flash Dont Walk (s)	4.0		4.0	4.0	4.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	27.1			27.1	8.9	
Actuated g/C Ratio	0.65			0.65	0.21	
v/c Ratio	0.57			0.34	0.36	
Control Delay	8.9			6.2	18.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	8.9			6.2	18.6	
LOS	A			A	B	
Approach Delay	8.9			6.2	18.6	
Approach LOS	A			A	B	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 41.7	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 9.1	Intersection LOS: A
Intersection Capacity Utilization 48.1%	ICU Level of Service A
Analysis Period (min) 15	

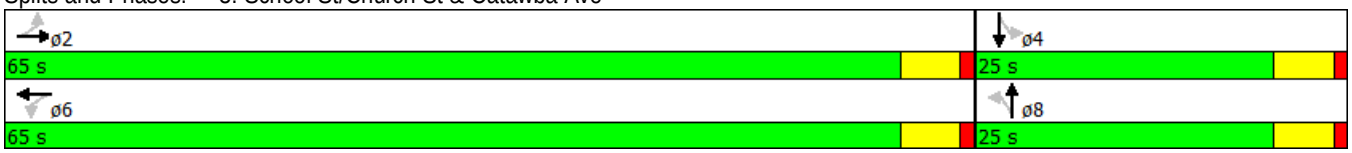
Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	445	23	9	404	1	26	9	28	26	3	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993						0.940			0.965	
Flt Protected		0.999			0.999			0.980			0.967	
Satd. Flow (prot)	0	1848	0	0	1861	0	0	1716	0	0	1738	0
Flt Permitted		0.994			0.988			0.846			0.755	
Satd. Flow (perm)	0	1839	0	0	1840	0	0	1481	0	0	1357	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	494	26	10	449	1	29	10	31	29	3	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	527	0	0	460	0	0	70	0	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		25.6			25.6			7.7			7.7	
Actuated g/C Ratio		0.72			0.72			0.22			0.22	
v/c Ratio		0.40			0.35			0.22			0.15	
Control Delay		6.0			5.6			14.7			14.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.0			5.6			14.7			14.0	
LOS		A			A			B			B	
Approach Delay		6.0			5.6			14.7			14.0	
Approach LOS		A			A			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 35.7	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 41.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	493	629	98	389	7	327	15	79	24	19	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00	0.98	0.99	0.98	
Frt			0.850		0.997				0.850		0.881	
Flt Protected	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (prot)	1593	1676	1425	1593	1671	0	1513	1523	1425	1593	1451	0
Flt Permitted	0.220			0.227			0.950	0.956		0.950		
Satd. Flow (perm)	369	1676	1425	381	1671	0	1506	1516	1391	1578	1451	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		401			359			1264			435	
Travel Time (s)		7.8			7.0			24.6			8.5	
Confl. Peds. (#/hr)							3		2	2		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	182	548	699	109	432	8	363	17	88	27	21	81
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	182	548	699	109	440	0	189	191	88	27	102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases	2		2	6					3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	

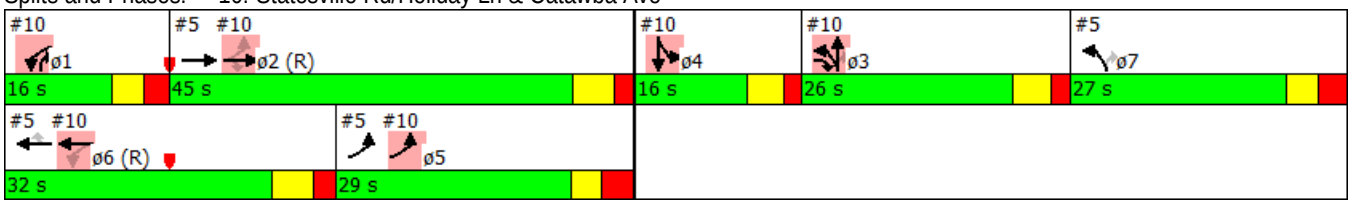
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	29.0	45.0	26.0	16.0	32.0		26.0	26.0	16.0	16.0	16.0	
Total Split (%)	22.3%	34.6%	20.0%	12.3%	24.6%		20.0%	20.0%	12.3%	12.3%	12.3%	
Maximum Green (s)	22.8	38.9	20.5	10.4	25.9		20.5	20.5	10.4	10.8	10.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	42.1	42.1	64.4	28.8	28.8		21.1	21.1	31.6	10.9	10.9	
Actuated g/C Ratio	0.32	0.32	0.50	0.22	0.22		0.16	0.16	0.24	0.08	0.08	
v/c Ratio	0.53	1.01	0.99	0.59	1.19		0.77	0.77	0.26	0.20	0.84	
Control Delay	21.0	36.8	28.2	57.2	152.5		73.3	73.4	24.6	59.5	106.8	
Queue Delay	0.0	20.2	0.0	0.0	2.9		0.4	0.4	0.0	0.0	0.0	
Total Delay	21.0	57.0	28.2	57.2	155.4		73.8	73.8	24.6	59.5	106.8	
LOS	C	E	C	E	F		E	E	C	E	F	
Approach Delay		38.3			135.9			64.5			96.9	
Approach LOS		D			F			E			F	

Intersection Summary

Area Type: CBD
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 66.8 Intersection LOS: E
Intersection Capacity Utilization 67.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Total Split (s)	27.0
Total Split (%)	21%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	513	49	7	314	36	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.954	
Flt Protected				0.999	0.968	
Satd. Flow (prot)	1840	0	0	1861	1720	0
Flt Permitted				0.988	0.968	
Satd. Flow (perm)	1840	0	0	1840	1720	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			25	25	
Link Distance (ft)	303			1419	1215	
Travel Time (s)	5.9			38.7	33.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	570	54	8	349	40	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	624	0	0	357	61	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	15.0		15.0	15.0	13.0	
Total Split (s)	77.0		77.0	77.0	13.0	
Total Split (%)	85.6%		85.6%	85.6%	14.4%	
Maximum Green (s)	72.0		72.0	72.0	8.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	Min		Min	Min	None	
Walk Time (s)	4.0		4.0	4.0	4.0	
Flash Dont Walk (s)	4.0		4.0	4.0	4.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	31.6			31.6	7.5	
Actuated g/C Ratio	0.84			0.84	0.20	
v/c Ratio	0.40			0.23	0.18	
Control Delay	4.3			3.2	16.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	4.3			3.2	16.3	
LOS	A			A	B	
Approach Delay	4.3			3.2	16.3	
Approach LOS	A			A	B	

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 37.5	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay: 4.6	Intersection LOS: A
Intersection Capacity Utilization 44.1%	ICU Level of Service A
Analysis Period (min) 15	

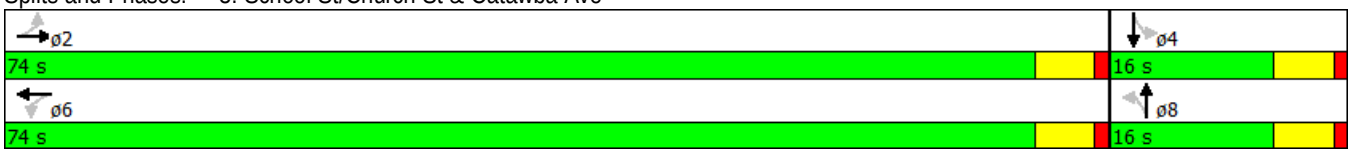
Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	473	20	14	274	14	15	11	45	22	13	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994			0.915			0.964	
Flt Protected		0.999			0.998			0.989			0.977	
Satd. Flow (prot)	0	1852	0	0	1848	0	0	1686	0	0	1754	0
Flt Permitted		0.992			0.971			0.911			0.814	
Satd. Flow (perm)	0	1839	0	0	1798	0	0	1553	0	0	1462	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	526	22	16	304	16	17	12	50	24	14	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	559	0	0	336	0	0	79	0	0	52	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	74.0	74.0		74.0	74.0		16.0	16.0		16.0	16.0	
Total Split (%)	82.2%	82.2%		82.2%	82.2%		17.8%	17.8%		17.8%	17.8%	
Maximum Green (s)	69.0	69.0		69.0	69.0		11.0	11.0		11.0	11.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			7.5			7.3	
Actuated g/C Ratio		0.72			0.72			0.21			0.20	
v/c Ratio		0.42			0.26			0.25			0.18	
Control Delay		6.1			4.9			15.5			14.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.1			4.9			15.5			14.9	
LOS		A			A			B			B	
Approach Delay		6.1			4.9			15.5			14.9	
Approach LOS		A			A			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 36	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 6.9	Intersection LOS: A
Intersection Capacity Utilization 43.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave



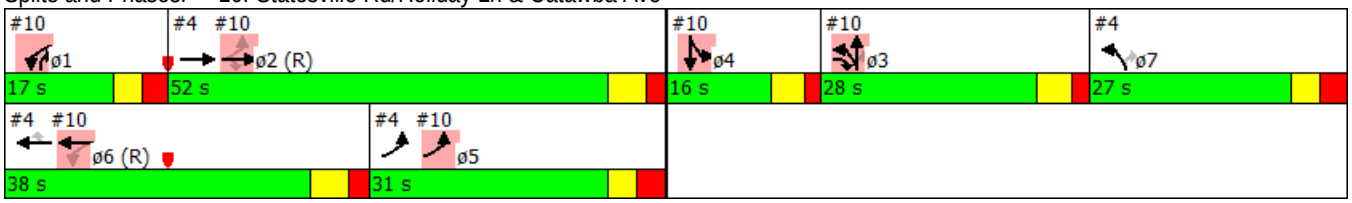
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	497	504	53	343	16	350	25	92	15	20	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.885	
Flt Protected	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Flt Permitted	0.319			0.159			0.950	0.958		0.950		
Satd. Flow (perm)	594	1863	1583	296	1850	0	1681	1695	1583	1770	1649	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		388			359			1264			435	
Travel Time (s)		7.6			7.0			24.6			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	149	552	560	59	381	18	389	28	102	17	22	73
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	149	552	560	59	399	0	206	211	102	17	95	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases	2		2	6					3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	31.0	52.0	28.0	17.0	38.0		28.0	28.0	17.0	16.0	16.0	
Total Split (%)	22.1%	37.1%	20.0%	12.1%	27.1%		20.0%	20.0%	12.1%	11.4%	11.4%	

Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0
Total Split (s)	27.0
Total Split (%)	19%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	24.8	45.9	22.5	11.4	31.9		22.5	22.5	11.4	10.8	10.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	51.6	51.6	74.5	35.3	35.3		21.7	21.7	31.2	10.6	10.6	
Actuated g/C Ratio	0.37	0.37	0.53	0.25	0.25		0.16	0.16	0.22	0.08	0.08	
v/c Ratio	0.34	0.80	0.67	0.33	0.85		0.79	0.81	0.29	0.13	0.77	
Control Delay	14.4	19.3	9.2	47.5	68.7		78.5	79.8	28.0	62.5	98.5	
Queue Delay	0.0	2.1	0.0	0.0	1.6		0.0	0.0	0.0	0.0	0.0	
Total Delay	14.4	21.4	9.2	47.5	70.3		78.5	79.8	28.0	62.5	98.5	
LOS	B	C	A	D	E		E	E	C	E	F	
Approach Delay		15.2			67.4			69.1			93.0	
Approach LOS		B			E			E			F	

Intersection Summary	
Area Type: Other	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 41.0	Intersection LOS: D
Intersection Capacity Utilization 61.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	659	174	8	499	134	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.972				0.976	
Flt Protected				0.999	0.961	
Satd. Flow (prot)	1811	0	0	1861	1747	0
Flt Permitted				0.987	0.961	
Satd. Flow (perm)	1811	0	0	1839	1747	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			35	25	
Link Distance (ft)	303			1419	803	
Travel Time (s)	5.9			27.6	21.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	732	193	9	554	149	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	925	0	0	563	182	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	15.0		15.0	15.0	13.0	
Total Split (s)	58.0		58.0	58.0	17.0	
Total Split (%)	77.3%		77.3%	77.3%	22.7%	
Maximum Green (s)	53.0		53.0	53.0	12.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		Min	Min	None	
Walk Time (s)	4.0		4.0	4.0	4.0	
Flash Dont Walk (s)	4.0		4.0	4.0	4.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	53.0			53.0	12.0	
Actuated g/C Ratio	0.71			0.71	0.16	
v/c Ratio	0.72			0.43	0.65	
Control Delay	13.4			4.8	41.5	
Queue Delay	0.0			0.0	0.0	
Total Delay	13.4			4.8	41.5	
LOS	B			A	D	
Approach Delay	13.4			4.8	41.5	
Approach LOS	B			A	D	

Intersection Summary	
Area Type: Other	
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 17 (23%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.72	
Intersection Signal Delay: 13.6	Intersection LOS: B
Intersection Capacity Utilization 62.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	610	32	12	553	1	36	12	38	36	4	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993						0.940			0.964	
Flt Protected		0.999			0.999			0.979			0.968	
Satd. Flow (prot)	0	1848	0	0	1861	0	0	1714	0	0	1738	0
Flt Permitted		0.993			0.985			0.847			0.792	
Satd. Flow (perm)	0	1837	0	0	1835	0	0	1483	0	0	1422	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	678	36	13	614	1	40	13	42	40	4	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	723	0	0	628	0	0	95	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	58.0	58.0		58.0	58.0		17.0	17.0		17.0	17.0	
Total Split (%)	77.3%	77.3%		77.3%	77.3%		22.7%	22.7%		22.7%	22.7%	
Maximum Green (s)	53.0	53.0		53.0	53.0		12.0	12.0		12.0	12.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		58.1			58.1			10.3			10.3	
Actuated g/C Ratio		0.77			0.77			0.14			0.14	
v/c Ratio		0.51			0.44			0.47			0.31	
Control Delay		2.5			5.5			36.6			32.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		2.5			5.5			36.6			32.2	
LOS		A			A			D			C	
Approach Delay		2.5			5.5			36.6			32.2	
Approach LOS		A			A			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 73 (97%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 52.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	675	862	134	533	10	448	21	108	33	26	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00	0.98	0.99	0.98	
Frt			0.850		0.997				0.850		0.881	
Flt Protected	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (prot)	1593	1676	1425	1593	1671	0	1513	1523	1425	1593	1450	0
Flt Permitted	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (perm)	1593	1676	1425	1593	1671	0	1506	1516	1390	1579	1450	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		401			359			1264			435	
Travel Time (s)		7.8			7.0			24.6			8.5	
Confl. Peds. (#/hr)							3		2	2		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	750	958	149	592	11	498	23	120	37	29	111
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	250	750	958	149	603	0	259	262	120	37	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	

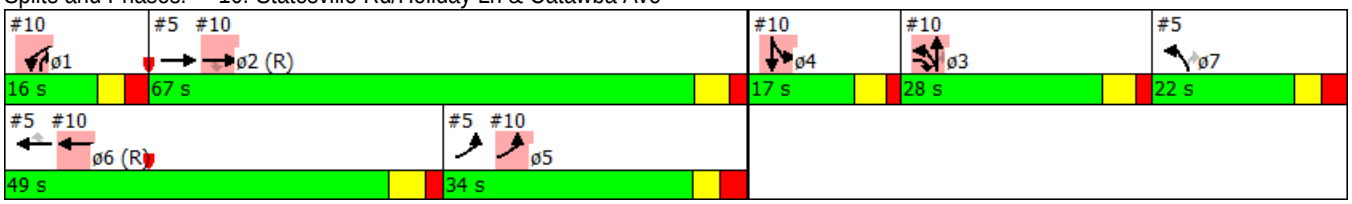
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	34.0	67.0	28.0	16.0	49.0		28.0	28.0	16.0	17.0	17.0	
Total Split (%)	22.7%	44.7%	18.7%	10.7%	32.7%		18.7%	18.7%	10.7%	11.3%	11.3%	
Maximum Green (s)	27.8	60.9	22.5	10.4	42.9		22.5	22.5	10.4	11.8	11.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	29.0	62.0	86.2	11.0	44.0		23.0	23.0	33.8	12.0	12.0	
Actuated g/C Ratio	0.19	0.41	0.57	0.07	0.29		0.15	0.15	0.23	0.08	0.08	
v/c Ratio	0.81	1.08	1.17	1.28	1.23		1.12	1.12	0.38	0.29	1.21	
Control Delay	32.8	58.6	97.3	226.8	164.1		151.2	151.9	35.6	71.5	204.5	
Queue Delay	2.3	7.1	0.0	0.0	2.3		2.0	2.0	0.0	0.0	0.0	
Total Delay	35.0	65.7	97.3	226.8	166.4		153.2	153.9	35.6	71.5	204.5	
LOS	D	E	F	F	F		F	F	D	E	F	
Approach Delay		77.3			178.4			131.5			176.7	
Approach LOS		E			F			F			F	

Intersection Summary

Area Type: CBD
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 86 (57%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.40
Intersection Signal Delay: 113.7 — Intersection LOS: F
Intersection Capacity Utilization 88.2% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Total Split (s)	22.0
Total Split (%)	15%
Maximum Green (s)	16.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	703	67	10	430	49	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.988				0.953	
Flt Protected				0.999	0.968	
Satd. Flow (prot)	1840	0	0	1861	1718	0
Flt Permitted				0.982	0.968	
Satd. Flow (perm)	1840	0	0	1829	1718	0
Right Turn on Red		No				No
Satd. Flow (RTOR)						
Link Speed (mph)	35			25	25	
Link Distance (ft)	303			1419	1215	
Travel Time (s)	5.9			38.7	33.1	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	781	74	11	478	54	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	855	0	0	489	83	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	1		1	1	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	76		20	76	40	
Trailing Detector (ft)	70		0	70	0	
Detector 1 Position(ft)	70		0	70	0	
Detector 1 Size(ft)	6		20	6	40	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Turn Type	NA		Perm	NA	Prot	
Protected Phases	2			6	8	
Permitted Phases			6			
Detector Phase	2		6	6	8	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	15.0		15.0	15.0	13.0	
Total Split (s)	57.0		57.0	57.0	13.0	
Total Split (%)	81.4%		81.4%	81.4%	18.6%	
Maximum Green (s)	52.0		52.0	52.0	8.0	
Yellow Time (s)	4.0		4.0	4.0	4.0	
All-Red Time (s)	1.0		1.0	1.0	1.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lost Time Adjust (s)	0.0			0.0	0.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Min		Min	Min	None	
Walk Time (s)	4.0		4.0	4.0	4.0	
Flash Dont Walk (s)	4.0		4.0	4.0	4.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	54.4			54.4	9.0	
Actuated g/C Ratio	0.78			0.78	0.13	
v/c Ratio	0.60			0.34	0.38	
Control Delay	9.2			2.8	32.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	9.2			2.8	32.3	
LOS	A			A	C	
Approach Delay	9.2			2.8	32.3	
Approach LOS	A			A	C	

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 36 (51%), Referenced to phase 2:EBT, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.60	
Intersection Signal Delay: 8.3	Intersection LOS: A
Intersection Capacity Utilization 55.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	648	27	19	375	19	21	15	62	30	18	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994			0.915			0.963	
Flt Protected		0.999			0.998			0.990			0.978	
Satd. Flow (prot)	0	1852	0	0	1848	0	0	1687	0	0	1754	0
Flt Permitted		0.989			0.960			0.920			0.830	
Satd. Flow (perm)	0	1833	0	0	1778	0	0	1568	0	0	1489	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	720	30	21	417	21	23	17	69	33	20	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	766	0	0	459	0	0	109	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	53.0	53.0		53.0	53.0		17.0	17.0		17.0	17.0	
Total Split (%)	75.7%	75.7%		75.7%	75.7%		24.3%	24.3%		24.3%	24.3%	
Maximum Green (s)	48.0	48.0		48.0	48.0		12.0	12.0		12.0	12.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		53.1			53.1			10.1			10.1	
Actuated g/C Ratio		0.76			0.76			0.14			0.14	
v/c Ratio		0.55			0.34			0.48			0.34	
Control Delay		2.3			5.0			34.0			30.2	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		2.3			5.0			34.0			30.2	
LOS		A			A			C			C	
Approach Delay		2.3			5.0			34.0			30.2	
Approach LOS		A			A			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 7.1	Intersection LOS: A
Intersection Capacity Utilization 56.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	675	862	100	533	10	448	21	66	33	26	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	125		0	400		200	0		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.997				0.850		0.881	
Flt Protected	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1857	0	1681	1692	1583	1770	1641	0
Flt Permitted	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1857	0	1681	1692	1583	1770	1641	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		385			359			2210			435	
Travel Time (s)		7.5			7.0			43.1			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	750	958	111	592	11	498	23	73	37	29	111
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	250	750	958	111	603	0	259	262	73	37	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.2	17.1	15.0	15.0	17.1		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	37.0	72.0	33.0	15.0	50.0		33.0	33.0	15.0	15.0	15.0	
Total Split (%)	24.7%	48.0%	22.0%	10.0%	33.3%		22.0%	22.0%	10.0%	10.0%	10.0%	

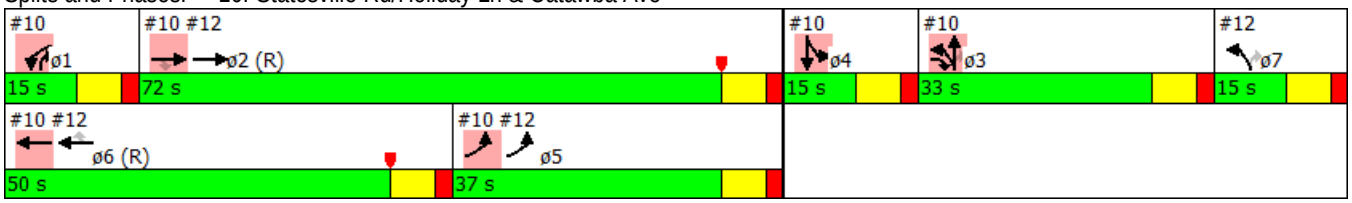
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	10%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	30.0	65.0	26.0	8.0	43.0		26.0	26.0	8.0	8.0	8.0	
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	Max	Max	
Act Effct Green (s)	32.0	67.0	95.0	10.0	45.0		28.0	28.0	38.0	10.0	10.0	
Actuated g/C Ratio	0.21	0.45	0.63	0.07	0.30		0.19	0.19	0.25	0.07	0.07	
v/c Ratio	0.66	0.90	0.96	0.94	1.08		0.83	0.83	0.18	0.31	1.28	
Control Delay	27.4	14.3	18.4	131.9	109.7		80.5	80.8	32.3	74.2	232.9	
Queue Delay	3.7	39.5	1.0	0.0	8.8		23.1	23.8	0.0	0.0	0.0	
Total Delay	31.2	53.8	19.3	131.9	118.5		103.6	104.6	32.3	74.2	232.9	
LOS	C	D	B	F	F		F	F	C	E	F	
Approach Delay		34.0			120.6			95.3			199.7	
Approach LOS		C			F			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 80 (53%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.39
Intersection Signal Delay: 71.1 Intersection LOS: E
Intersection Capacity Utilization 79.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Maximum Green (s)	8.0
Yellow Time (s)	5.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	652	139	8	492	107	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.976				0.971	
Flt Protected				0.999	0.962	
Satd. Flow (prot)	1818	0	0	1861	1740	0
Flt Permitted				0.986	0.962	
Satd. Flow (perm)	1818	0	0	1837	1740	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	27				18	
Link Speed (mph)	35			25	30	
Link Distance (ft)	303			1419	1260	
Travel Time (s)	5.9			38.7	28.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	724	154	9	547	119	33
Shared Lane Traffic (%)						
Lane Group Flow (vph)	878	0	0	556	152	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	23.0		23.0	23.0	23.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	52.0		52.0	52.0	23.0	
Total Split (%)	69.3%		69.3%	69.3%	30.7%	
Maximum Green (s)	45.0		45.0	45.0	16.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0			-2.0	-2.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	51.8			51.8	13.2	
Actuated g/C Ratio	0.69			0.69	0.18	
v/c Ratio	0.69			0.44	0.47	
Control Delay	10.4			4.6	28.6	
Queue Delay	0.0			0.0	0.0	
Total Delay	10.4			4.6	28.6	
LOS	B			A	C	
Approach Delay	10.4			4.6	28.6	
Approach LOS	B			A	C	

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 51 (68%), Referenced to phase 4:EBT and 8:WBTL, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 58.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	610	25	12	553	1	29	12	38	36	4	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995						0.935			0.964	
Flt Protected		0.999			0.999			0.982			0.968	
Satd. Flow (prot)	0	1852	0	0	1861	0	0	1710	0	0	1738	0
Flt Permitted		0.992			0.984			0.854			0.804	
Satd. Flow (perm)	0	1839	0	0	1833	0	0	1487	0	0	1444	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			1962			896			513	
Travel Time (s)		38.7			53.5			24.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	678	28	13	614	1	32	13	42	40	4	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	715	0	0	628	0	0	87	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	59.0	59.0		59.0	59.0		16.0	16.0		16.0	16.0	
Total Split (%)	78.7%	78.7%		78.7%	78.7%		21.3%	21.3%		21.3%	21.3%	
Maximum Green (s)	52.0	52.0		52.0	52.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		56.9			56.9			11.9			11.9	
Actuated g/C Ratio		0.76			0.76			0.16			0.16	
v/c Ratio		0.51			0.45			0.37			0.26	
Control Delay		3.5			6.2			31.9			29.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.5			6.2			31.9			29.6	
LOS		A			A			C			C	
Approach Delay		3.5			6.2			31.9			29.6	
Approach LOS		A			A			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 38 (51%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.51	
Intersection Signal Delay: 7.4	Intersection LOS: A
Intersection Capacity Utilization 51.7%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	34	10	535	42	10	988
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	11	594	47	11	1098

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1738	618	0	0	641	0
Stage 1	618	-	-	-	-	-
Stage 2	1120	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	96	489	-	-	943	-
Stage 1	538	-	-	-	-	-
Stage 2	312	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	95	489	-	-	943	-
Mov Cap-2 Maneuver	95	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	308	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	57	0	0.1
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	116	943	-
HCM Lane V/C Ratio	-	-	0.421	0.012	-
HCM Control Delay (s)	-	-	57	8.9	-
HCM Lane LOS	-	-	F	A	-
HCM 95th %tile Q(veh)	-	-	1.8	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	681	690	59	470	22	480	34	106	21	27	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.885	
Flt Protected	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Flt Permitted	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		375			359			2210			435	
Travel Time (s)		7.3			7.0			43.1			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	204	757	767	66	522	24	533	38	118	23	30	100
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	204	757	767	66	546	0	282	289	118	23	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	32.0	59.0	36.0	15.0	42.0		36.0	36.0	15.0	15.0	15.0	
Total Split (%)	22.9%	42.1%	25.7%	10.7%	30.0%		25.7%	25.7%	10.7%	10.7%	10.7%	

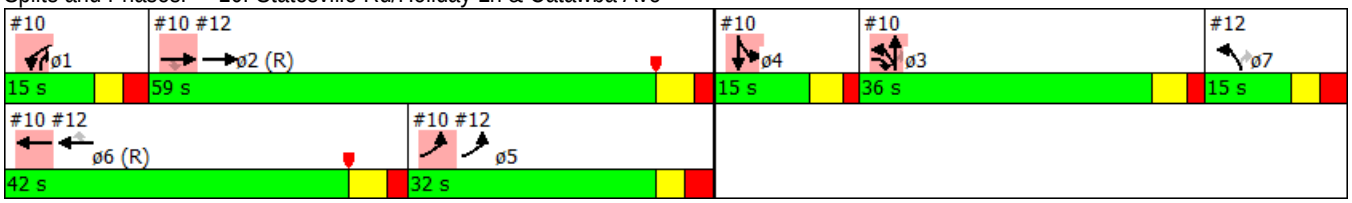
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	11%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	25.8	52.9	30.5	9.4	35.9		30.5	30.5	9.4	9.8	9.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	
Total Lost Time (s)	4.2	4.1	3.5	3.6	4.1		3.5	3.5	3.6	3.2	3.2	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	27.8	55.5	86.6	10.8	37.9		30.5	30.5	41.2	11.8	11.8	
Actuated g/C Ratio	0.20	0.40	0.62	0.08	0.27		0.22	0.22	0.29	0.08	0.08	
v/c Ratio	0.58	1.03	0.78	0.49	1.09		0.77	0.78	0.25	0.15	0.94	
Control Delay	25.3	34.7	11.5	73.0	113.5		66.1	67.0	26.5	62.2	125.4	
Queue Delay	1.6	27.5	1.2	0.0	6.2		0.7	0.8	0.0	0.0	0.0	
Total Delay	26.9	62.3	12.7	73.0	119.7		66.8	67.8	26.5	62.2	125.4	
LOS	C	E	B	E	F		E	E	C	E	F	
Approach Delay		36.1			114.6			60.4			115.9	
Approach LOS		D			F			E			F	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 4 (3%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.84
Intersection Signal Delay: 60.3 Intersection LOS: E
Intersection Capacity Utilization 72.6% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Maximum Green (s)	9.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	697	53	10	426	39	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.990				0.946	
Flt Protected				0.999	0.971	
Satd. Flow (prot)	1844	0	0	1861	1711	0
Flt Permitted				0.981	0.971	
Satd. Flow (perm)	1844	0	0	1827	1711	0
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)	10				29	
Link Speed (mph)	35			25	30	
Link Distance (ft)	303			1419	1260	
Travel Time (s)	5.9			38.7	28.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	774	59	11	473	43	29
Shared Lane Traffic (%)						
Lane Group Flow (vph)	833	0	0	484	72	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Number of Detectors	2		1	2	1	
Detector Template	Thru		Left	Thru	Left	
Leading Detector (ft)	100		20	100	20	
Trailing Detector (ft)	0		0	0	0	
Detector 1 Position(ft)	0		0	0	0	
Detector 1 Size(ft)	6		20	6	20	
Detector 1 Type	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel						
Detector 1 Extend (s)	0.0		0.0	0.0	0.0	
Detector 1 Queue (s)	0.0		0.0	0.0	0.0	
Detector 1 Delay (s)	0.0		0.0	0.0	0.0	
Detector 2 Position(ft)	94			94		
Detector 2 Size(ft)	6			6		
Detector 2 Type	Cl+Ex			Cl+Ex		
Detector 2 Channel						
Detector 2 Extend (s)	0.0			0.0		
Turn Type	NA		Perm	NA	Prot	
Protected Phases	4			8	2	
Permitted Phases			8			
Detector Phase	4		8	8	2	
Switch Phase						
Minimum Initial (s)	10.0		10.0	10.0	7.0	
Minimum Split (s)	23.0		23.0	23.0	23.0	

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Total Split (s)	47.0		47.0	47.0	23.0	
Total Split (%)	67.1%		67.1%	67.1%	32.9%	
Maximum Green (s)	40.0		40.0	40.0	16.0	
Yellow Time (s)	5.0		5.0	5.0	5.0	
All-Red Time (s)	2.0		2.0	2.0	2.0	
Lost Time Adjust (s)	-2.0			-2.0	-2.0	
Total Lost Time (s)	5.0			5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0		3.0	3.0	3.0	
Recall Mode	C-Max		C-Max	C-Max	None	
Walk Time (s)	5.0		5.0	5.0	5.0	
Flash Dont Walk (s)	11.0		11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0		0	0	0	
Act Effct Green (s)	53.8			53.8	10.0	
Actuated g/C Ratio	0.77			0.77	0.14	
v/c Ratio	0.59			0.34	0.27	
Control Delay	6.1			6.5	20.3	
Queue Delay	0.0			0.0	0.0	
Total Delay	6.1			6.5	20.3	
LOS	A			A	C	
Approach Delay	6.1			6.5	20.3	
Approach LOS	A			A	C	

Intersection Summary	
Area Type: Other	
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 56 (80%), Referenced to phase 4:EBT and 8:WBTL, Start of Yellow	
Natural Cycle: 60	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 54.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 2: Smith Cir & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	648	21	19	375	19	17	15	62	30	18	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996			0.994			0.911			0.963	
Flt Protected		0.999			0.998			0.991			0.978	
Satd. Flow (prot)	0	1853	0	0	1848	0	0	1682	0	0	1754	0
Flt Permitted		0.988			0.958			0.930			0.838	
Satd. Flow (perm)	0	1833	0	0	1774	0	0	1578	0	0	1503	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			2164			896			513	
Travel Time (s)		38.7			59.0			24.4			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	720	23	21	417	21	19	17	69	33	20	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	759	0	0	459	0	0	105	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	17.0	17.0		17.0	17.0		15.0	15.0		15.0	15.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	54.0	54.0		54.0	54.0		16.0	16.0		16.0	16.0	
Total Split (%)	77.1%	77.1%		77.1%	77.1%		22.9%	22.9%		22.9%	22.9%	
Maximum Green (s)	47.0	47.0		47.0	47.0		9.0	9.0		9.0	9.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0			-2.0			-2.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		52.6			52.6			11.2			11.2	
Actuated g/C Ratio		0.75			0.75			0.16			0.16	
v/c Ratio		0.55			0.34			0.42			0.31	
Control Delay		11.9			5.0			31.8			29.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		11.9			5.0			31.8			29.4	
LOS		B			A			C			C	
Approach Delay		11.9			5.0			31.8			29.4	
Approach LOS		B			A			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.55	
Intersection Signal Delay: 12.1	Intersection LOS: B
Intersection Capacity Utilization 56.4%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	14	10	620	20	10	776
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	11	689	22	11	862

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1584	700	0	0	711	0
Stage 1	700	-	-	-	-	-
Stage 2	884	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	119	439	-	-	888	-
Stage 1	493	-	-	-	-	-
Stage 2	404	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	118	439	-	-	888	-
Mov Cap-2 Maneuver	118	-	-	-	-	-
Stage 1	493	-	-	-	-	-
Stage 2	399	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	30.1	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	170	888	-
HCM Lane V/C Ratio	-	-	0.157	0.013	-
HCM Control Delay (s)	-	-	30.1	9.1	-
HCM Lane LOS	-	-	D	A	-
HCM 95th %tile Q(veh)	-	-	0.5	0	-

APPENDIX D

SYNCHRO Reports:
Smithville Lane Extension

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	493	629	98	389	7	327	15	79	24	19	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00	0.98	0.99	0.98	
Frt			0.850		0.997				0.850		0.881	
Flt Protected	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (prot)	1593	1676	1425	1593	1671	0	1513	1523	1425	1593	1451	0
Flt Permitted	0.220			0.227			0.950	0.956		0.950		
Satd. Flow (perm)	369	1676	1425	381	1671	0	1506	1516	1391	1578	1451	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		401			359			1264			435	
Travel Time (s)		7.8			7.0			24.6			8.5	
Confl. Peds. (#/hr)							3		2	2		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	182	548	699	109	432	8	363	17	88	27	21	81
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	182	548	699	109	440	0	189	191	88	27	102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases	2		2	6					3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	

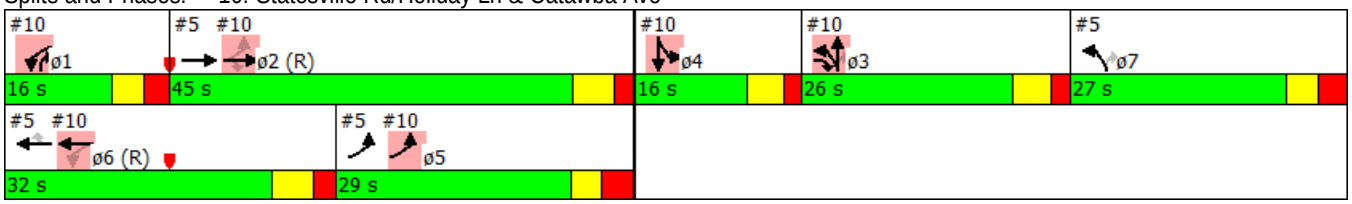
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	29.0	45.0	26.0	16.0	32.0		26.0	26.0	16.0	16.0	16.0	
Total Split (%)	22.3%	34.6%	20.0%	12.3%	24.6%		20.0%	20.0%	12.3%	12.3%	12.3%	
Maximum Green (s)	22.8	38.9	20.5	10.4	25.9		20.5	20.5	10.4	10.8	10.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	42.1	42.1	64.4	28.8	28.8		21.1	21.1	31.6	10.9	10.9	
Actuated g/C Ratio	0.32	0.32	0.50	0.22	0.22		0.16	0.16	0.24	0.08	0.08	
v/c Ratio	0.53	1.01	0.99	0.59	1.19		0.77	0.77	0.26	0.20	0.84	
Control Delay	21.0	36.8	28.2	57.2	152.5		73.3	73.4	24.6	59.5	106.8	
Queue Delay	0.0	20.2	0.0	0.0	2.9		0.4	0.4	0.0	0.0	0.0	
Total Delay	21.0	57.0	28.2	57.2	155.4		73.8	73.8	24.6	59.5	106.8	
LOS	C	E	C	E	F		E	E	C	E	F	
Approach Delay		38.3			135.9			64.5			96.9	
Approach LOS		D			F			E			F	

Intersection Summary

Area Type: CBD
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 66.8 Intersection LOS: E
Intersection Capacity Utilization 67.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Total Split (s)	27.0
Total Split (%)	21%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	608	3	1	481	1	3	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	676	3	1	534	1	3	0	3

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	536	0	0	679	0	0	1218	1217	677
Stage 1	-	-	-	-	-	-	679	679	-
Stage 2	-	-	-	-	-	-	539	538	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1032	-	-	913	-	-	157	181	453
Stage 1	-	-	-	-	-	-	441	451	-
Stage 2	-	-	-	-	-	-	527	522	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1032	-	-	913	-	-	155	180	453
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	180	-
Stage 1	-	-	-	-	-	-	440	450	-
Stage 2	-	-	-	-	-	-	522	521	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	231	1032	-	-	913	-	-	545
HCM Lane V/C Ratio	0.029	0.001	-	-	0.001	-	-	0.008
HCM Control Delay (s)	21	8.5	0	-	8.9	0	-	11.7
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	7

Major/Minor	Minor2		
Conflicting Flow All	1226	1223	531
Stage 1	537	537	-
Stage 2	689	686	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	155	179	548
Stage 1	528	523	-
Stage 2	436	448	-
Platoon blocked, %			
Mov Cap-1 Maneuver	150	178	548
Mov Cap-2 Maneuver	150	178	-
Stage 1	526	520	-
Stage 2	424	447	-

Approach	SB
HCM Control Delay, s	11.7
HCM LOS	B

Minor Lane/Major Mvmt

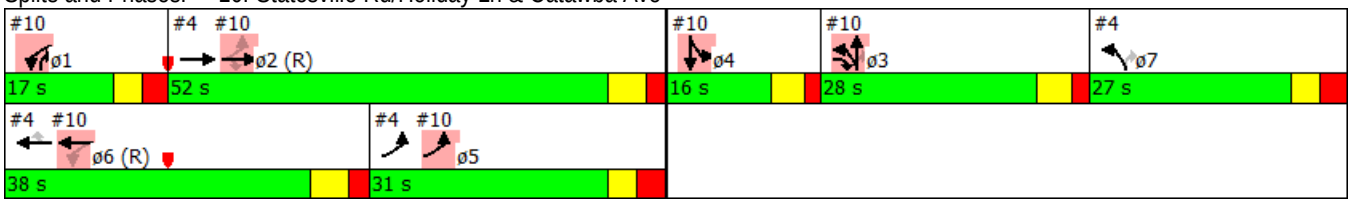
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	497	504	53	343	16	350	25	92	15	20	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.885	
Flt Protected	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Flt Permitted	0.319			0.159			0.950	0.958		0.950		
Satd. Flow (perm)	594	1863	1583	296	1850	0	1681	1695	1583	1770	1649	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		388			359			1264			435	
Travel Time (s)		7.6			7.0			24.6			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	149	552	560	59	381	18	389	28	102	17	22	73
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	149	552	560	59	399	0	206	211	102	17	95	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases	2		2	6					3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	31.0	52.0	28.0	17.0	38.0		28.0	28.0	17.0	16.0	16.0	
Total Split (%)	22.1%	37.1%	20.0%	12.1%	27.1%		20.0%	20.0%	12.1%	11.4%	11.4%	

Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0
Total Split (s)	27.0
Total Split (%)	19%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	24.8	45.9	22.5	11.4	31.9		22.5	22.5	11.4	10.8	10.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	51.6	51.6	74.5	35.3	35.3		21.7	21.7	31.2	10.6	10.6	
Actuated g/C Ratio	0.37	0.37	0.53	0.25	0.25		0.16	0.16	0.22	0.08	0.08	
v/c Ratio	0.34	0.80	0.67	0.33	0.85		0.79	0.81	0.29	0.13	0.77	
Control Delay	14.4	19.3	9.2	47.5	68.7		78.5	79.8	28.0	62.5	98.5	
Queue Delay	0.0	2.1	0.0	0.0	1.6		0.0	0.0	0.0	0.0	0.0	
Total Delay	14.4	21.4	9.2	47.5	70.3		78.5	79.8	28.0	62.5	98.5	
LOS	B	C	A	D	E		E	E	C	E	F	
Approach Delay		15.2			67.4			69.1			93.0	
Approach LOS		B			E			E			F	

Intersection Summary	
Area Type: Other	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 41.0	Intersection LOS: D
Intersection Capacity Utilization 61.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	602	8	0	398	2	3	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	669	9	0	442	2	3	1	2

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	444	0	0	678	0	0	1136	1131	673
Stage 1	-	-	-	-	-	-	687	687	-
Stage 2	-	-	-	-	-	-	449	444	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1116	-	-	914	-	-	179	203	455
Stage 1	-	-	-	-	-	-	437	447	-
Stage 2	-	-	-	-	-	-	589	575	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1116	-	-	914	-	-	174	201	455
Mov Cap-2 Maneuver	-	-	-	-	-	-	174	201	-
Stage 1	-	-	-	-	-	-	433	443	-
Stage 2	-	-	-	-	-	-	578	575	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	21.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	225	1116	-	-	914	-	-	436
HCM Lane V/C Ratio	0.03	0.006	-	-	-	-	-	0.028
HCM Control Delay (s)	21.5	8.2	0	-	0	-	-	13.5
HCM Lane LOS	C	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	1	1	9
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	1	1	10

Major/Minor	Minor2		
Conflicting Flow All	1131	1134	443
Stage 1	443	443	-
Stage 2	688	691	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	181	203	615
Stage 1	594	576	-
Stage 2	436	446	-
Platoon blocked, %			
Mov Cap-1 Maneuver	178	201	615
Mov Cap-2 Maneuver	178	201	-
Stage 1	588	576	-
Stage 2	428	442	-

Approach	SB
HCM Control Delay, s	13.5
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	596	8	7	393	0	6	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	662	9	8	437	0	7	1	11

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	437	0	0	671	0	0	1126	1121	667
Stage 1	-	-	-	-	-	-	669	669	-
Stage 2	-	-	-	-	-	-	457	452	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1123	-	-	919	-	-	182	206	459
Stage 1	-	-	-	-	-	-	447	456	-
Stage 2	-	-	-	-	-	-	583	570	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1123	-	-	919	-	-	177	204	459
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	204	-
Stage 1	-	-	-	-	-	-	447	456	-
Stage 2	-	-	-	-	-	-	567	564	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	281	1123	-	-	919	-	-	338
HCM Lane V/C Ratio	0.067	0.001	-	-	0.008	-	-	0.036
HCM Control Delay (s)	18.7	8.2	0	-	9	0	-	16.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	2	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	2	8

Major/Minor	Minor2		
Conflicting Flow All	1127	1125	437
Stage 1	452	452	-
Stage 2	675	673	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	182	205	620
Stage 1	587	570	-
Stage 2	444	454	-
Platoon blocked, %			
Mov Cap-1 Maneuver	175	203	620
Mov Cap-2 Maneuver	175	203	-
Stage 1	586	564	-
Stage 2	432	454	-

Approach	SB
HCM Control Delay, s	16.1
HCM LOS	C

Minor Lane/Major Mvmt

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	675	862	134	533	10	448	21	108	33	26	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00	0.98	0.99	0.98	
Frt			0.850		0.997				0.850		0.881	
Flt Protected	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (prot)	1593	1676	1425	1593	1671	0	1513	1523	1425	1593	1450	0
Flt Permitted	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (perm)	1593	1676	1425	1593	1671	0	1506	1516	1390	1579	1450	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		401			359			1264			435	
Travel Time (s)		7.8			7.0			24.6			8.5	
Confl. Peds. (#/hr)							3		2	2		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	750	958	149	592	11	498	23	120	37	29	111
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	250	750	958	149	603	0	259	262	120	37	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	

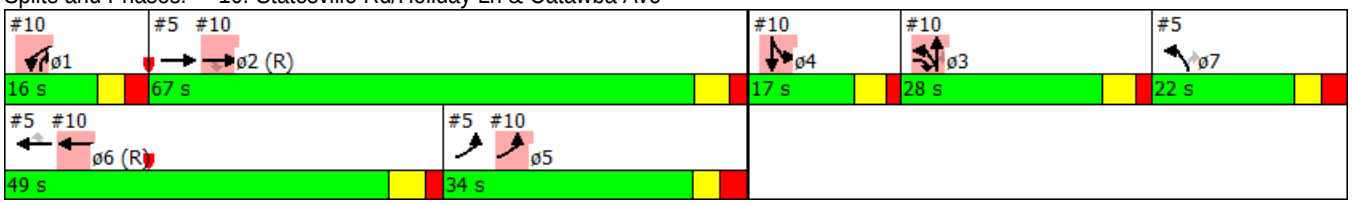
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	34.0	67.0	28.0	16.0	49.0		28.0	28.0	16.0	17.0	17.0	
Total Split (%)	22.7%	44.7%	18.7%	10.7%	32.7%		18.7%	18.7%	10.7%	11.3%	11.3%	
Maximum Green (s)	27.8	60.9	22.5	10.4	42.9		22.5	22.5	10.4	11.8	11.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	29.0	62.0	86.2	11.0	44.0		23.0	23.0	33.8	12.0	12.0	
Actuated g/C Ratio	0.19	0.41	0.57	0.07	0.29		0.15	0.15	0.23	0.08	0.08	
v/c Ratio	0.81	1.08	1.17	1.28	1.23		1.12	1.12	0.38	0.29	1.21	
Control Delay	32.8	58.6	97.3	228.0	160.1		151.2	151.9	35.6	71.5	204.5	
Queue Delay	2.3	7.1	0.0	0.0	2.3		2.1	2.0	0.0	0.0	0.0	
Total Delay	35.0	65.7	97.3	228.0	162.4		153.3	154.0	35.6	71.5	204.5	
LOS	D	E	F	F	F		F	F	D	E	F	
Approach Delay		77.3			175.4			131.5			176.7	
Approach LOS		E			F			F			F	

Intersection Summary

Area Type: CBD
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 12 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.40
Intersection Signal Delay: 113.0 — Intersection LOS: F
Intersection Capacity Utilization 88.2% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Total Split (s)	22.0
Total Split (%)	15%
Maximum Green (s)	16.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	833	4	1	659	1	4	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	926	4	1	732	1	4	0	4

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	733	0	0	930	0	0	1668	1666	928
Stage 1	-	-	-	-	-	-	930	930	-
Stage 2	-	-	-	-	-	-	738	736	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	872	-	-	736	-	-	77	97	325
Stage 1	-	-	-	-	-	-	321	346	-
Stage 2	-	-	-	-	-	-	410	425	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	872	-	-	736	-	-	76	97	325
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	97	-
Stage 1	-	-	-	-	-	-	320	345	-
Stage 2	-	-	-	-	-	-	404	424	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	36.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	123	872	-	-	736	-	-	421
HCM Lane V/C Ratio	0.072	0.001	-	-	0.002	-	-	0.013
HCM Control Delay (s)	36.5	9.1	0	-	9.9	0	-	13.7
HCM Lane LOS	E	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	5
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	6

Major/Minor	Minor2		
Conflicting Flow All	1667	1667	733
Stage 1	735	735	-
Stage 2	932	932	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	77	96	421
Stage 1	411	425	-
Stage 2	320	345	-
Platoon blocked, %			
Mov Cap-1 Maneuver	76	96	421
Mov Cap-2 Maneuver	76	96	-
Stage 1	410	424	-
Stage 2	315	344	-

Approach	SB
HCM Control Delay, s	13.7
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	3	836	4	4	653	1	5	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	929	4	4	726	1	6	1	13

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	727	0	0	933	0	0	1677	1674	931
Stage 1	-	-	-	-	-	-	938	938	-
Stage 2	-	-	-	-	-	-	739	736	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	876	-	-	734	-	-	75	95	324
Stage 1	-	-	-	-	-	-	317	343	-
Stage 2	-	-	-	-	-	-	409	425	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	876	-	-	734	-	-	73	93	324
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	93	-
Stage 1	-	-	-	-	-	-	315	341	-
Stage 2	-	-	-	-	-	-	397	421	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	31.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	155	876	-	-	734	-	-	425
HCM Lane V/C Ratio	0.129	0.004	-	-	0.006	-	-	0.021
HCM Control Delay (s)	31.6	9.1	0	-	9.9	0	-	13.7
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	8
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	9

Major/Minor	Minor2		
Conflicting Flow All	1680	1675	726
Stage 1	735	735	-
Stage 2	945	940	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	75	95	425
Stage 1	411	425	-
Stage 2	314	342	-
Platoon blocked, %			
Mov Cap-1 Maneuver	70	93	425
Mov Cap-2 Maneuver	70	93	-
Stage 1	408	421	-
Stage 2	298	340	-

Approach	SB
HCM Control Delay, s	13.7
HCM LOS	B

Minor Lane/Major Mvmt

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	681	690	73	470	22	480	34	126	21	27	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.885	
Flt Protected	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Flt Permitted	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		388			359			1264			435	
Travel Time (s)		7.6			7.0			24.6			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	204	757	767	81	522	24	533	38	140	23	30	100
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	204	757	767	81	546	0	282	289	140	23	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	34.0	66.0	27.0	15.0	47.0		27.0	27.0	15.0	15.0	15.0	
Total Split (%)	22.7%	44.0%	18.0%	10.0%	31.3%		18.0%	18.0%	10.0%	10.0%	10.0%	

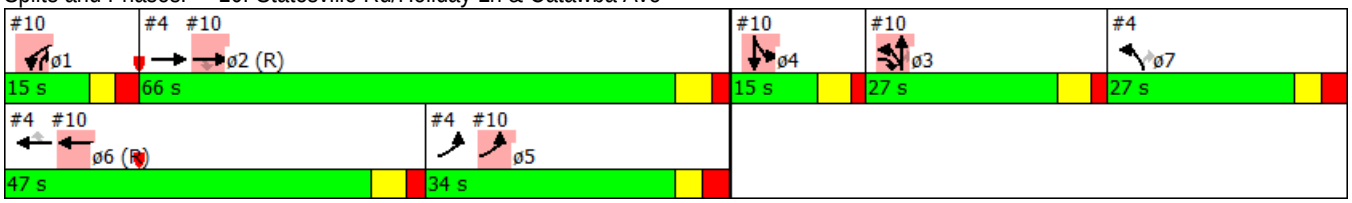
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0
Total Split (s)	27.0
Total Split (%)	18%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	27.8	59.9	21.5	9.4	40.9		21.5	21.5	9.4	9.8	9.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	29.0	61.3	84.5	9.7	42.0		22.0	22.0	31.5	10.0	10.0	
Actuated g/C Ratio	0.19	0.41	0.56	0.06	0.28		0.15	0.15	0.21	0.07	0.07	
v/c Ratio	0.60	0.99	0.86	0.71	1.05		1.15	1.17	0.42	0.19	1.19	
Control Delay	28.2	25.9	12.0	99.4	105.5		157.4	163.2	35.3	70.4	203.3	
Queue Delay	1.4	34.6	0.0	0.0	19.7		0.3	0.3	0.0	0.0	0.0	
Total Delay	29.6	60.5	12.1	99.4	125.3		157.8	163.5	35.3	70.4	203.3	
LOS	C	E	B	F	F		F	F	D	E	F	
Approach Delay		35.4			121.9			136.0			183.3	
Approach LOS		D			F			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 81.5 Intersection LOS: F
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	8	825	11	0	545	3	4	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	917	12	0	606	3	4	1	3

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	609	0	0	929	0	0	1555	1550	923
Stage 1	-	-	-	-	-	-	941	941	-
Stage 2	-	-	-	-	-	-	614	609	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	970	-	-	736	-	-	92	114	327
Stage 1	-	-	-	-	-	-	316	342	-
Stage 2	-	-	-	-	-	-	479	485	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	970	-	-	736	-	-	88	112	327
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	112	-
Stage 1	-	-	-	-	-	-	310	336	-
Stage 2	-	-	-	-	-	-	465	485	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	35.7
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	126	970	-	-	736	-	-	316
HCM Lane V/C Ratio	0.071	0.009	-	-	-	-	-	0.049
HCM Control Delay (s)	35.7	8.7	0	-	0	-	-	17
HCM Lane LOS	E	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	1	1	12
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	1	1	13

Major/Minor	Minor2		
Conflicting Flow All	1550	1554	607
Stage 1	607	607	-
Stage 2	943	947	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	93	113	496
Stage 1	483	486	-
Stage 2	315	340	-
Platoon blocked, %			
Mov Cap-1 Maneuver	90	111	496
Mov Cap-2 Maneuver	90	111	-
Stage 1	474	486	-
Stage 2	305	334	-

Approach	SB
HCM Control Delay, s	17
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	817	11	10	538	0	8	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	908	12	11	598	0	9	1	16

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	598	0	0	920	0	0	1543	1536	914
Stage 1	-	-	-	-	-	-	916	916	-
Stage 2	-	-	-	-	-	-	627	620	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	979	-	-	742	-	-	94	116	331
Stage 1	-	-	-	-	-	-	326	351	-
Stage 2	-	-	-	-	-	-	471	480	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	979	-	-	742	-	-	88	113	331
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	113	-
Stage 1	-	-	-	-	-	-	325	350	-
Stage 2	-	-	-	-	-	-	447	469	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	31.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	162	979	-	-	742	-	-	197
HCM Lane V/C Ratio	0.158	0.001	-	-	0.015	-	-	0.09
HCM Control Delay (s)	31.3	8.7	0	-	9.9	0	-	25.1
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	3	3	10
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	3	3	11

Major/Minor	Minor2		
Conflicting Flow All	1544	1542	598
Stage 1	620	620	-
Stage 2	924	922	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	94	115	502
Stage 1	476	480	-
Stage 2	323	349	-
Platoon blocked, %			
Mov Cap-1 Maneuver	87	112	502
Mov Cap-2 Maneuver	87	112	-
Stage 1	475	469	-
Stage 2	306	348	-

Approach	SB
HCM Control Delay, s	25.1
HCM LOS	D

Minor Lane/Major Mvmt

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	675	862	132	533	10	448	21	106	33	26	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00	0.98	0.99	0.98	
Frt			0.850		0.997				0.850		0.881	
Flt Protected	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (prot)	1593	1676	1425	1593	1671	0	1513	1523	1425	1593	1447	0
Flt Permitted	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (perm)	1593	1676	1425	1593	1671	0	1507	1517	1391	1576	1447	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		401			359			2544			435	
Travel Time (s)		7.8			7.0			49.6			8.5	
Confl. Peds. (#/hr)							3		2	2		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	750	958	147	592	11	498	23	118	37	29	111
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	250	750	958	147	603	0	259	262	118	37	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	

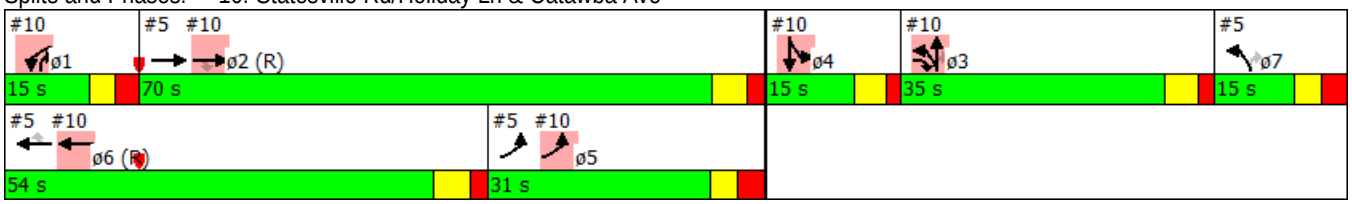
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	31.0	70.0	35.0	15.0	54.0		35.0	35.0	15.0	15.0	15.0	
Total Split (%)	20.7%	46.7%	23.3%	10.0%	36.0%		23.3%	23.3%	10.0%	10.0%	10.0%	
Maximum Green (s)	24.8	63.9	29.5	9.4	47.9		29.5	29.5	9.4	9.8	9.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	26.0	65.0	96.2	10.0	49.0		30.0	30.0	39.8	10.0	10.0	
Actuated g/C Ratio	0.17	0.43	0.64	0.07	0.33		0.20	0.20	0.27	0.07	0.07	
v/c Ratio	0.91	1.03	1.05	1.39	1.11		0.86	0.86	0.32	0.35	1.46	
Control Delay	38.9	36.5	45.3	267.5	112.2		83.7	84.2	33.8	76.5	300.0	
Queue Delay	0.0	25.3	1.3	0.0	1.9		26.6	27.3	0.0	0.0	0.0	
Total Delay	38.9	61.8	46.6	267.5	114.1		110.3	111.5	33.8	76.5	300.0	
LOS	D	E	D	F	F		F	F	C	E	F	
Approach Delay		51.4			144.1			96.6			253.3	
Approach LOS		D			F			F			F	

Intersection Summary

Area Type: CBD
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 12 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.39
Intersection Signal Delay: 89.5 Intersection LOS: F
Intersection Capacity Utilization 88.1% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Total Split (s)	15.0
Total Split (%)	10%
Maximum Green (s)	9.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	832	3	1	658	1	3	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	924	3	1	731	1	3	0	4

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	732	0	0	928	0	0	1665	1662	926
Stage 1	-	-	-	-	-	-	928	928	-
Stage 2	-	-	-	-	-	-	737	734	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	873	-	-	737	-	-	77	97	326
Stage 1	-	-	-	-	-	-	321	347	-
Stage 2	-	-	-	-	-	-	410	426	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	873	-	-	737	-	-	76	97	326
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	97	-
Stage 1	-	-	-	-	-	-	320	346	-
Stage 2	-	-	-	-	-	-	404	425	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	33.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	135	873	-	-	737	-	-	421
HCM Lane V/C Ratio	0.058	0.001	-	-	0.002	-	-	0.013
HCM Control Delay (s)	33.3	9.1	0	-	9.9	0	-	13.7
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	5
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	6

Major/Minor	Minor2		
Conflicting Flow All	1665	1664	732
Stage 1	734	734	-
Stage 2	931	930	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	77	97	421
Stage 1	412	426	-
Stage 2	320	346	-
Platoon blocked, %			
Mov Cap-1 Maneuver	76	97	421
Mov Cap-2 Maneuver	76	97	-
Stage 1	411	425	-
Stage 2	315	345	-

Approach	SB
HCM Control Delay, s	13.7
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	3	836	3	4	653	1	4	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	929	3	4	726	1	4	1	13

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	727	0	0	932	0	0	1676	1673	931
Stage 1	-	-	-	-	-	-	937	937	-
Stage 2	-	-	-	-	-	-	739	736	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	876	-	-	734	-	-	76	96	324
Stage 1	-	-	-	-	-	-	318	343	-
Stage 2	-	-	-	-	-	-	409	425	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	876	-	-	734	-	-	74	94	324
Mov Cap-2 Maneuver	-	-	-	-	-	-	74	94	-
Stage 1	-	-	-	-	-	-	316	341	-
Stage 2	-	-	-	-	-	-	397	421	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	29.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	167	876	-	-	734	-	-	425
HCM Lane V/C Ratio	0.113	0.004	-	-	0.006	-	-	0.021
HCM Control Delay (s)	29.3	9.1	0	-	9.9	0	-	13.7
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	8
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	9

Major/Minor	Minor2		
Conflicting Flow All	1679	1674	726
Stage 1	735	735	-
Stage 2	944	939	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	75	95	425
Stage 1	411	425	-
Stage 2	315	343	-
Platoon blocked, %			
Mov Cap-1 Maneuver	70	93	425
Mov Cap-2 Maneuver	70	93	-
Stage 1	408	421	-
Stage 2	299	341	-

Approach	SB
HCM Control Delay, s	13.7
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	2	10	575	2	10	1020
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	11	639	2	11	1133

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1796	640	0	0	641	0
Stage 1	640	-	-	-	-	-
Stage 2	1156	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	88	475	-	-	943	-
Stage 1	525	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	87	475	-	-	943	-
Mov Cap-2 Maneuver	87	-	-	-	-	-
Stage 1	525	-	-	-	-	-
Stage 2	297	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.9	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	272	943	-
HCM Lane V/C Ratio	-	-	0.049	0.012	-
HCM Control Delay (s)	-	-	18.9	8.9	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	681	690	70	470	22	480	34	120	21	27	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.885	
Flt Protected	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Flt Permitted	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		388			359			2544			435	
Travel Time (s)		7.6			7.0			49.6			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	204	757	767	78	522	24	533	38	133	23	30	100
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	204	757	767	78	546	0	282	289	133	23	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	29.0	60.0	44.0	15.0	46.0		44.0	44.0	15.0	16.0	16.0	
Total Split (%)	19.3%	40.0%	29.3%	10.0%	30.7%		29.3%	29.3%	10.0%	10.7%	10.7%	

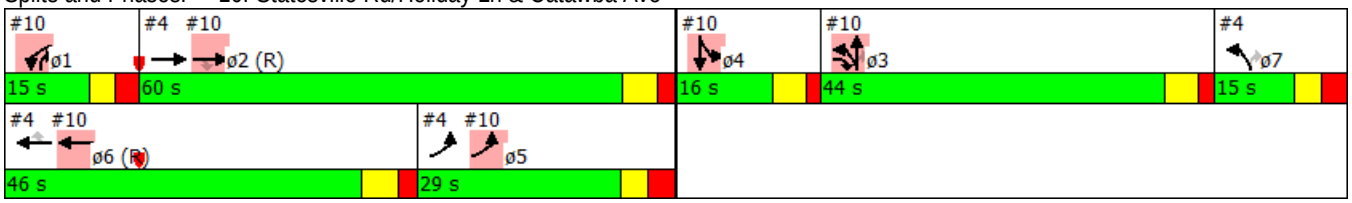
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0
Total Split (s)	15.0
Total Split (%)	10%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	22.8	53.9	38.5	9.4	39.9		38.5	38.5	9.4	10.8	10.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	24.0	55.3	90.2	9.7	41.0		33.6	33.6	43.1	11.0	11.0	
Actuated g/C Ratio	0.16	0.37	0.60	0.06	0.27		0.22	0.22	0.29	0.07	0.07	
v/c Ratio	0.72	1.10	0.81	0.68	1.08		0.75	0.76	0.29	0.18	1.08	
Control Delay	31.9	67.8	14.9	97.2	114.1		66.5	67.3	28.1	68.8	168.3	
Queue Delay	0.0	0.6	1.6	0.0	10.3		0.6	0.7	0.0	0.0	0.0	
Total Delay	31.9	68.4	16.5	97.2	124.3		67.1	68.0	28.1	68.8	168.3	
LOS	C	E	B	F	F		E	E	C	E	F	
Approach Delay		41.1			120.9			60.1			153.3	
Approach LOS		D			F			E			F	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.71
Intersection Signal Delay: 66.1 Intersection LOS: E
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Maximum Green (s)	9.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	3	10	634	6	10	787
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	150	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	11	704	7	11	874

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1605	708	0	0	711	0
Stage 1	708	-	-	-	-	-
Stage 2	897	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	116	435	-	-	888	-
Stage 1	488	-	-	-	-	-
Stage 2	398	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	115	435	-	-	888	-
Mov Cap-2 Maneuver	115	-	-	-	-	-
Stage 1	488	-	-	-	-	-
Stage 2	393	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.4	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	265	888	-
HCM Lane V/C Ratio	-	-	0.055	0.013	-
HCM Control Delay (s)	-	-	19.4	9.1	-
HCM Lane LOS	-	-	C	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	8	822	8	0	543	3	3	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	913	9	0	603	3	3	1	3

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	607	0	0	922	0	0	1548	1543	918
Stage 1	-	-	-	-	-	-	936	936	-
Stage 2	-	-	-	-	-	-	612	607	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	971	-	-	741	-	-	93	115	329
Stage 1	-	-	-	-	-	-	318	344	-
Stage 2	-	-	-	-	-	-	480	486	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	971	-	-	741	-	-	89	113	329
Mov Cap-2 Maneuver	-	-	-	-	-	-	89	113	-
Stage 1	-	-	-	-	-	-	312	337	-
Stage 2	-	-	-	-	-	-	466	486	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	33.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	135	971	-	-	741	-	-	319
HCM Lane V/C Ratio	0.058	0.009	-	-	-	-	-	0.049
HCM Control Delay (s)	33.3	8.7	0	-	0	-	-	16.9
HCM Lane LOS	D	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	1	1	12
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	1	1	13

Major/Minor	Minor2		
Conflicting Flow All	1543	1545	605
Stage 1	605	605	-
Stage 2	938	940	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	94	115	498
Stage 1	485	487	-
Stage 2	317	342	-
Platoon blocked, %			
Mov Cap-1 Maneuver	91	113	498
Mov Cap-2 Maneuver	91	113	-
Stage 1	476	487	-
Stage 2	307	336	-

Approach	SB
HCM Control Delay, s	16.9
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	817	8	10	538	0	6	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	908	9	11	598	0	7	1	16

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	598	0	0	917	0	0	1541	1534	912
Stage 1	-	-	-	-	-	-	914	914	-
Stage 2	-	-	-	-	-	-	627	620	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	979	-	-	744	-	-	94	116	332
Stage 1	-	-	-	-	-	-	327	352	-
Stage 2	-	-	-	-	-	-	471	480	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	979	-	-	744	-	-	88	113	332
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	113	-
Stage 1	-	-	-	-	-	-	326	351	-
Stage 2	-	-	-	-	-	-	447	469	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	28.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	176	979	-	-	744	-	-	198
HCM Lane V/C Ratio	0.133	0.001	-	-	0.015	-	-	0.09
HCM Control Delay (s)	28.6	8.7	0	-	9.9	0	-	25
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.3

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	3	3	10
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	3	3	11

Major/Minor	Minor2		
Conflicting Flow All	1543	1539	598
Stage 1	620	620	-
Stage 2	923	919	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	94	116	502
Stage 1	476	480	-
Stage 2	323	350	-
Platoon blocked, %			
Mov Cap-1 Maneuver	87	113	502
Mov Cap-2 Maneuver	87	113	-
Stage 1	475	469	-
Stage 2	306	349	-

Approach	SB
HCM Control Delay, s	25
HCM LOS	D

Minor Lane/Major Mvmt

APPENDIX E

SYNCHRO Reports:
Bailey Road Re-alignment

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	441	155	403	207	141	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	350		225	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.299	
Satd. Flow (perm)	1770	1583	1863	1583	557	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	25		45			45
Link Distance (ft)	2060		2424			1522
Travel Time (s)	56.2		36.7			23.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	490	172	448	230	157	1033
Shared Lane Traffic (%)						
Lane Group Flow (vph)	490	172	448	230	157	1033
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	1	0	1	1
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	10	10	306	0	40	306
Trailing Detector (ft)	-10	-10	300	0	0	300
Detector 1 Position(ft)	-10	-10	300	0	0	300
Detector 1 Size(ft)	20	20	6	20	40	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2	6	
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	12.0
Minimum Split (s)	12.0	12.0	19.0	12.0	12.0	19.0
Total Split (s)	30.0	14.0	46.0	30.0	14.0	60.0
Total Split (%)	33.3%	15.6%	51.1%	33.3%	15.6%	66.7%

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Maximum Green (s)	25.0	9.0	39.6	25.0	9.0	53.6
Yellow Time (s)	3.0	3.0	4.4	3.0	3.0	4.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	-1.4	0.0	0.0	-1.4
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	25.2	38.6	36.1	66.3	49.5	49.5
Actuated g/C Ratio	0.30	0.46	0.43	0.78	0.58	0.58
v/c Ratio	0.93	0.24	0.57	0.19	0.35	0.95
Control Delay	58.0	16.7	21.4	2.7	10.0	35.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	16.7	21.4	2.7	10.0	35.1
LOS	E	B	C	A	B	D
Approach Delay	47.3		15.0			31.8
Approach LOS	D		B			C

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 84.8	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 31.4	Intersection LOS: C
Intersection Capacity Utilization 81.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Statesville Rd & Bailey Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	277	1	3	185	13	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.959	
Flt Protected			0.950		0.966	
Satd. Flow (prot)	1863	0	1770	1863	1726	0
Flt Permitted			0.950		0.966	
Satd. Flow (perm)	1863	0	1770	1863	1726	0
Link Speed (mph)	25			35	25	
Link Distance (ft)	1030			887	295	
Travel Time (s)	28.1			17.3	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	308	1	3	206	14	6
Shared Lane Traffic (%)						
Lane Group Flow (vph)	309	0	3	206	20	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.6%		ICU Level of Service A	
Analysis Period (min) 15			

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	310	205	655	483	204	637
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	350		225	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.106	
Satd. Flow (perm)	1770	1583	1863	1583	197	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	25		45			45
Link Distance (ft)	2060		2424			1627
Travel Time (s)	56.2		36.7			24.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	344	228	728	537	227	708
Shared Lane Traffic (%)						
Lane Group Flow (vph)	344	228	728	537	227	708
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	1	0	1	1
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	10	10	306	0	40	306
Trailing Detector (ft)	-10	-10	300	0	0	300
Detector 1 Position(ft)	-10	-10	300	0	0	300
Detector 1 Size(ft)	20	20	6	20	40	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2	6	
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	12.0
Minimum Split (s)	12.0	12.0	19.0	12.0	12.0	19.0
Total Split (s)	29.0	13.0	48.0	29.0	13.0	61.0
Total Split (%)	32.2%	14.4%	53.3%	32.2%	14.4%	67.8%

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Maximum Green (s)	24.0	8.0	41.6	24.0	8.0	54.6
Yellow Time (s)	3.0	3.0	4.4	3.0	3.0	4.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	-1.4	0.0	0.0	-1.4
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	Min	None	None	Min
Act Effct Green (s)	19.7	33.2	34.0	58.9	47.4	47.4
Actuated g/C Ratio	0.25	0.43	0.44	0.76	0.61	0.61
v/c Ratio	0.76	0.34	0.89	0.45	0.79	0.62
Control Delay	40.5	18.3	35.1	4.4	36.2	12.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.5	18.3	35.1	4.4	36.2	12.7
LOS	D	B	D	A	D	B
Approach Delay	31.6		22.0			18.4
Approach LOS	C		C			B

Intersection Summary	
Area Type: Other	
Cycle Length: 90	
Actuated Cycle Length: 77.5	
Natural Cycle: 65	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.89	
Intersection Signal Delay: 22.8	Intersection LOS: C
Intersection Capacity Utilization 75.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 3: Statesville Rd & Bailey Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	254	13	4	320	9	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.994				0.969	
Flt Protected			0.950		0.963	
Satd. Flow (prot)	1852	0	1770	1863	1738	0
Flt Permitted			0.950		0.963	
Satd. Flow (perm)	1852	0	1770	1863	1738	0
Link Speed (mph)	25			35	25	
Link Distance (ft)	1024			887	295	
Travel Time (s)	27.9			17.3	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	282	14	4	356	10	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	296	0	4	356	13	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 26.8%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	604	212	552	284	193	1274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	350		225	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	25		45			45
Link Distance (ft)	2060		2424			1522
Travel Time (s)	56.2		36.7			23.1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	671	236	613	316	214	1416
Shared Lane Traffic (%)						
Lane Group Flow (vph)	671	236	613	316	214	1416
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	1	0	1	1
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	10	10	306	0	40	306
Trailing Detector (ft)	-10	-10	300	0	0	300
Detector 1 Position(ft)	-10	-10	300	0	0	300
Detector 1 Size(ft)	20	20	6	20	40	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	12.0
Minimum Split (s)	12.0	12.0	19.0	12.0	12.0	19.0
Total Split (s)	47.0	26.0	67.0	47.0	26.0	93.0
Total Split (%)	33.6%	18.6%	47.9%	33.6%	18.6%	66.4%

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Maximum Green (s)	42.0	21.0	60.6	42.0	21.0	86.6
Yellow Time (s)	3.0	3.0	4.4	3.0	3.0	4.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	-1.4	0.0	0.0	-1.4
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	None	None	C-Min
Act Effct Green (s)	42.0	66.7	63.3	110.3	19.7	88.0
Actuated g/C Ratio	0.30	0.48	0.45	0.79	0.14	0.63
v/c Ratio	1.26	0.31	0.73	0.25	0.86	1.21
Control Delay	173.7	23.7	37.9	4.7	88.8	128.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	173.7	23.7	37.9	4.7	88.8	128.7
LOS	F	C	D	A	F	F
Approach Delay	134.6		26.6			123.4
Approach LOS	F		C			F

Intersection Summary	
Area Type: Other	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.26	
Intersection Signal Delay: 100.4	Intersection LOS: F
Intersection Capacity Utilization 108.8%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Statesville Rd & Bailey Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	379	1	4	253	18	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.961	
Flt Protected			0.950		0.966	
Satd. Flow (prot)	1863	0	1770	1863	1729	0
Flt Permitted			0.950		0.966	
Satd. Flow (perm)	1863	0	1770	1863	1729	0
Link Speed (mph)	25			35	25	
Link Distance (ft)	1030			887	295	
Travel Time (s)	28.1			17.3	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	421	1	4	281	20	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	422	0	4	281	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 30.0%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	425	281	897	662	279	873
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	350		225	125	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	25		45			45
Link Distance (ft)	2060		2424			1627
Travel Time (s)	56.2		36.7			24.7
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	472	312	997	736	310	970
Shared Lane Traffic (%)						
Lane Group Flow (vph)	472	312	997	736	310	970
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	1	0	1	1
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	10	10	306	0	40	306
Trailing Detector (ft)	-10	-10	300	0	0	300
Detector 1 Position(ft)	-10	-10	300	0	0	300
Detector 1 Size(ft)	20	20	6	20	40	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	12.0
Minimum Split (s)	12.0	12.0	19.0	12.0	12.0	19.0
Total Split (s)	36.0	25.0	69.0	36.0	25.0	94.0
Total Split (%)	27.7%	19.2%	53.1%	27.7%	19.2%	72.3%

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Maximum Green (s)	31.0	20.0	62.6	31.0	20.0	87.6
Yellow Time (s)	3.0	3.0	4.4	3.0	3.0	4.4
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	-1.4	0.0	0.0	-1.4
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Min	None	None	C-Min
Act Effct Green (s)	31.0	56.0	64.0	100.0	20.0	89.0
Actuated g/C Ratio	0.24	0.43	0.49	0.77	0.15	0.68
v/c Ratio	1.12	0.46	1.09	0.60	1.14	0.76
Control Delay	125.3	29.0	88.7	9.0	146.3	18.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	125.3	29.0	88.7	9.0	146.3	18.5
LOS	F	C	F	A	F	B
Approach Delay	87.0		54.9			49.5
Approach LOS	F		D			D

Intersection Summary	
Area Type: Other	
Cycle Length: 130	
Actuated Cycle Length: 130	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 130	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.14	
Intersection Signal Delay: 59.7	Intersection LOS: E
Intersection Capacity Utilization 98.7%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 3: Statesville Rd & Bailey Rd

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	348	18	5	438	12	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	150		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			100		100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.993				0.968	
Flt Protected			0.950		0.963	
Satd. Flow (prot)	1850	0	1770	1863	1736	0
Flt Permitted			0.950		0.963	
Satd. Flow (perm)	1850	0	1770	1863	1736	0
Link Speed (mph)	25			35	25	
Link Distance (ft)	1033			887	295	
Travel Time (s)	28.2			17.3	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	387	20	6	487	13	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	407	0	6	487	17	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

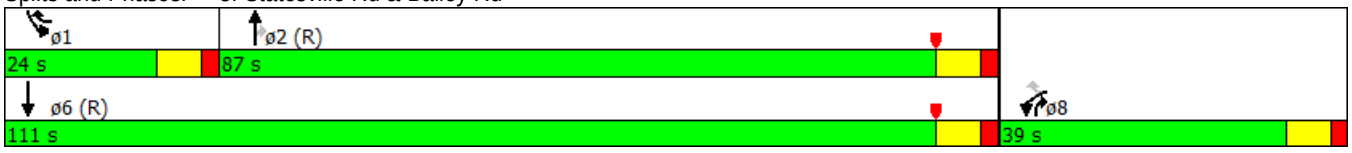
Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	
Intersection Capacity Utilization 33.1%	ICU Level of Service A
Analysis Period (min) 15	

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	449	104	660	170	116	1351
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	350		225	500	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	25		45			45
Link Distance (ft)	1667		1516			2189
Travel Time (s)	45.5		23.0			33.2
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	499	116	733	189	129	1501
Shared Lane Traffic (%)						
Lane Group Flow (vph)	499	116	733	189	129	1501
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	1	0	1	1
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	10	10	306	0	40	306
Trailing Detector (ft)	-10	-10	300	0	0	300
Detector 1 Position(ft)	-10	-10	300	0	0	300
Detector 1 Size(ft)	20	20	6	20	40	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	12.0
Minimum Split (s)	23.0	14.0	23.0	23.0	14.0	23.0
Total Split (s)	39.0	24.0	87.0	39.0	24.0	111.0
Total Split (%)	26.0%	16.0%	58.0%	26.0%	16.0%	74.0%

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Maximum Green (s)	32.0	17.0	80.0	32.0	17.0	104.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	None	None	C-Max
Walk Time (s)	5.0		5.0	5.0		5.0
Flash Dont Walk (s)	11.0		11.0	11.0		11.0
Pedestrian Calls (#/hr)	0		0	0		0
Act Effct Green (s)	34.0	55.9	84.1	123.1	16.9	106.0
Actuated g/C Ratio	0.23	0.37	0.56	0.82	0.11	0.71
v/c Ratio	1.24	0.20	0.70	0.15	0.65	1.14
Control Delay	173.1	31.3	21.8	2.6	78.9	96.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	1.3
Total Delay	173.1	31.3	21.8	2.6	78.9	97.5
LOS	F	C	C	A	E	F
Approach Delay	146.3		17.9			96.0
Approach LOS	F		B			F

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 90 (60%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.24	
Intersection Signal Delay: 83.0	Intersection LOS: F
Intersection Capacity Utilization 104.3%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 3: Statesville Rd & Bailey Rd

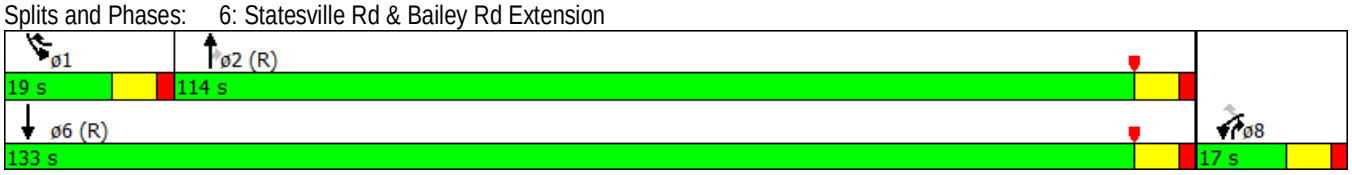


Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	155	108	722	114	77	1723
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		250	400	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	1286		2321			1516
Travel Time (s)	25.1		35.2			23.0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	172	120	802	127	86	1914
Shared Lane Traffic (%)						
Lane Group Flow (vph)	172	120	802	127	86	1914
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	12.0
Minimum Split (s)	14.0	14.0	23.0	14.0	14.0	23.0
Total Split (s)	17.0	19.0	114.0	17.0	19.0	133.0
Total Split (%)	11.3%	12.7%	76.0%	11.3%	12.7%	88.7%
Maximum Green (s)	10.0	12.0	107.0	10.0	12.0	126.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	12.0	29.9	110.1	127.1	12.9	128.0
Actuated g/C Ratio	0.08	0.20	0.73	0.85	0.09	0.85
v/c Ratio	1.22	0.38	0.59	0.09	0.57	1.20
Control Delay	190.1	45.3	11.6	2.2	66.0	106.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	190.1	45.3	11.6	2.2	66.0	106.7
LOS	F	D	B	A	E	F
Approach Delay	130.6		10.3			105.0
Approach LOS	F		B			F

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 113 (75%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.22	
Intersection Signal Delay: 80.0	Intersection LOS: F
Intersection Capacity Utilization 107.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 6: Statesville Rd & Bailey Rd Extension



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	379	1	4	253	18	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt					0.961	
Flt Protected				0.999	0.966	
Satd. Flow (prot)	3539	0	0	3536	1729	0
Flt Permitted				0.999	0.966	
Satd. Flow (perm)	3539	0	0	3536	1729	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	634			842	294	
Travel Time (s)	12.4			16.4	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	421	1	4	281	20	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	422	0	0	285	28	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 20.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	11.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	71	120	203	68	260	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	79	133	226	76	289	67

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	301	0	-	0	487	151
Stage 1	-	-	-	-	263	-
Stage 2	-	-	-	-	224	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1257	-	-	-	510	868
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1257	-	-	-	478	868
Mov Cap-2 Maneuver	-	-	-	-	478	-
Stage 1	-	-	-	-	757	-
Stage 2	-	-	-	-	742	-

Approach	EB	WB	SB
HCM Control Delay, s	3	0	25.4
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1257	-	-	-	522
HCM Lane V/C Ratio	0.063	-	-	-	0.681
HCM Control Delay (s)	8.1	-	-	-	25.4
HCM Lane LOS	A	-	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	5.1

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	225	101	1077	397	167	985
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	350		225	500	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	25		45			45
Link Distance (ft)	1667		1516			2676
Travel Time (s)	45.5		23.0			40.5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	112	1197	441	186	1094
Shared Lane Traffic (%)						
Lane Group Flow (vph)	250	112	1197	441	186	1094
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	1	0	1	1
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	10	10	306	0	40	306
Trailing Detector (ft)	-10	-10	300	0	0	300
Detector 1 Position(ft)	-10	-10	300	0	0	300
Detector 1 Size(ft)	20	20	6	20	40	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	12.0
Minimum Split (s)	23.0	14.0	23.0	23.0	14.0	23.0
Total Split (s)	24.0	20.0	96.0	24.0	20.0	116.0
Total Split (%)	17.1%	14.3%	68.6%	17.1%	14.3%	82.9%

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Maximum Green (s)	17.0	13.0	89.0	17.0	13.0	109.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	19.0	39.0	91.0	115.0	15.0	111.0
Actuated g/C Ratio	0.14	0.28	0.65	0.82	0.11	0.79
v/c Ratio	1.04	0.25	0.99	0.34	0.98	0.74
Control Delay	117.7	28.6	20.5	1.0	123.0	11.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	117.7	28.6	20.5	1.0	123.0	11.1
LOS	F	C	C	A	F	B
Approach Delay	90.2		15.2			27.4
Approach LOS	F		B			C

Intersection Summary	
Area Type: Other	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 23 (16%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.04	
Intersection Signal Delay: 28.3	Intersection LOS: C
Intersection Capacity Utilization 90.9%	ICU Level of Service E
Analysis Period (min) 15	

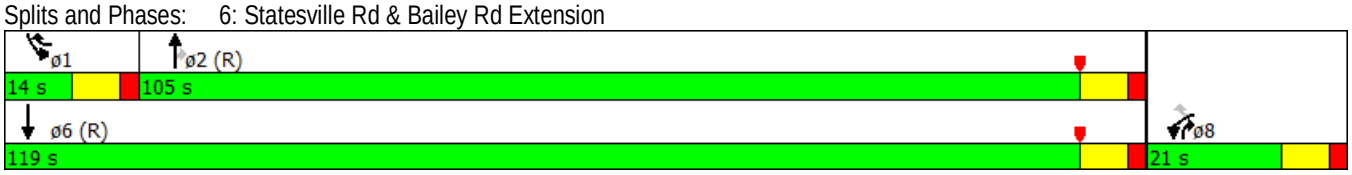
Splits and Phases: 3: Statesville Rd & Bailey Rd

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	200	180	1294	265	112	1098
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		250	400	
Storage Lanes	1	1		1	1	
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850		0.850		
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1770	1583	1863	1583	1770	1863
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1770	1583	1863	1583	1770	1863
Right Turn on Red		No		No		
Satd. Flow (RTOR)						
Link Speed (mph)	35		45			45
Link Distance (ft)	1280		2628			1516
Travel Time (s)	24.9		39.8			23.0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	222	200	1438	294	124	1220
Shared Lane Traffic (%)						
Lane Group Flow (vph)	222	200	1438	294	124	1220
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	24		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Number of Detectors	1	1	2	1	1	2
Detector Template	Left	Right	Thru	Right	Left	Thru
Leading Detector (ft)	20	20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0
Detector 1 Size(ft)	20	20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel						
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)			94			94
Detector 2 Size(ft)			6			6
Detector 2 Type			Cl+Ex			Cl+Ex
Detector 2 Channel						
Detector 2 Extend (s)			0.0			0.0
Turn Type	Prot	pm+ov	NA	pm+ov	Prot	NA
Protected Phases	8	1	2	8	1	6
Permitted Phases		8		2		
Detector Phase	8	1	2	8	1	6

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Switch Phase						
Minimum Initial (s)	7.0	7.0	12.0	7.0	7.0	12.0
Minimum Split (s)	14.0	14.0	23.0	14.0	14.0	23.0
Total Split (s)	21.0	14.0	105.0	21.0	14.0	119.0
Total Split (%)	15.0%	10.0%	75.0%	15.0%	10.0%	85.0%
Maximum Green (s)	14.0	7.0	98.0	14.0	7.0	112.0
Yellow Time (s)	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
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag		Lead	Lag		Lead	
Lead-Lag Optimize?		Yes	Yes		Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	C-Max	None	None	C-Max
Act Effct Green (s)	16.0	30.0	100.0	121.0	9.0	114.0
Actuated g/C Ratio	0.11	0.21	0.71	0.86	0.06	0.81
v/c Ratio	1.10	0.59	1.08	0.21	1.10	0.80
Control Delay	136.5	49.7	71.1	2.0	152.8	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	136.5	49.7	71.1	2.0	152.8	7.3
LOS	F	D	E	A	F	A
Approach Delay	95.3		59.4			20.8
Approach LOS	F		E			C

Intersection Summary	
Area Type: Other	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.10	
Intersection Signal Delay: 48.9	Intersection LOS: D
Intersection Capacity Utilization 97.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 6: Statesville Rd & Bailey Rd Extension



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (vph)	348	18	5	438	12	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.95	0.95	0.95	0.95	1.00	1.00
Frt	0.993				0.968	
Flt Protected				0.999	0.963	
Satd. Flow (prot)	3514	0	0	3536	1736	0
Flt Permitted				0.999	0.963	
Satd. Flow (perm)	3514	0	0	3536	1736	0
Link Speed (mph)	35			35	25	
Link Distance (ft)	635			842	294	
Travel Time (s)	12.4			16.4	8.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	387	20	6	487	13	4
Shared Lane Traffic (%)						
Lane Group Flow (vph)	407	0	0	493	17	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 25.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	13.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	165	212	338	112	154	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	150	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	183	236	376	124	171	47

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	500	0	-	0	922	250
Stage 1	-	-	-	-	438	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	1060	-	-	-	269	750
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	585	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1060	-	-	-	223	750
Mov Cap-2 Maneuver	-	-	-	-	223	-
Stage 1	-	-	-	-	618	-
Stage 2	-	-	-	-	484	-

Approach	EB	WB	SB
HCM Control Delay, s	4	0	61.2
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1060	-	-	-	263
HCM Lane V/C Ratio	0.173	-	-	-	0.828
HCM Control Delay (s)	9.1	-	-	-	61.2
HCM Lane LOS	A	-	-	-	F
HCM 95th %tile Q(veh)	0.6	-	-	-	6.6

APPENDIX F

SYNCHRO Reports:
Old Statesville Road & Bailey Road

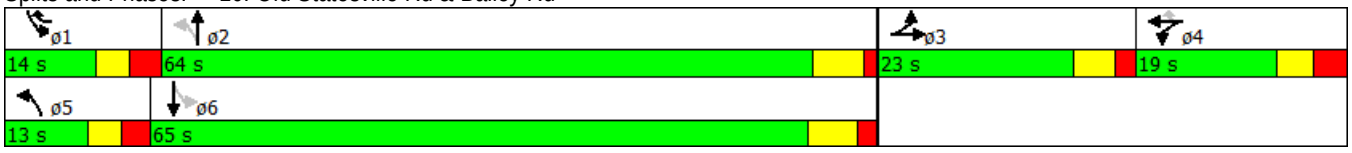
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	19	69	89	87	79	95	95	474	161	140	709	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			8%			0%			0%	
Storage Length (ft)	50		0	0		175	250		0	150		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.916				0.850		0.962			0.990	
Flt Protected	0.950				0.974		0.950			0.950		
Satd. Flow (prot)	1743	1681	0	0	1742	1520	1770	1792	0	1770	1844	0
Flt Permitted	0.950				0.974		0.076			0.146		
Satd. Flow (perm)	1743	1681	0	0	1742	1520	142	1792	0	272	1844	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2487			2449			2491			2098	
Travel Time (s)		48.4			47.7			37.7			31.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	21	77	99	97	88	106	106	527	179	156	788	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	21	176	0	0	185	106	106	706	0	156	844	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		20	40	40	40	306		40	306	
Trailing Detector (ft)	0	0		0	0	0	0	300		0	300	
Detector 1 Position(ft)	0	0		0	0	0	0	300		0	300	
Detector 1 Size(ft)	40	40		20	40	40	40	6		40	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4	1	5	2		1	6	
Permitted Phases						4	2			6		
Detector Phase	3	3		4	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	12.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		14.0	14.0	14.0	13.0	18.0		14.0	18.0	
Total Split (s)	23.0	23.0		19.0	19.0	14.0	13.0	64.0		14.0	65.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	19.2%	19.2%		15.8%	15.8%	11.7%	10.8%	53.3%		11.7%	54.2%	
Maximum Green (s)	17.4	17.4		12.5	12.5	8.1	7.4	58.2		8.1	58.7	
Yellow Time (s)	3.7	3.7		3.4	3.4	3.0	3.0	4.5		3.0	4.5	
All-Red Time (s)	1.9	1.9		3.1	3.1	2.9	2.6	1.3		2.9	1.8	
Lost Time Adjust (s)	-0.6	-0.6			-1.5	-0.9	-0.6	-0.8		-0.9	-1.3	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Walk Time (s)	4.0	4.0									4.0	
Flash Dont Walk (s)	8.0	8.0									7.0	
Pedestrian Calls (#/hr)	0	0									0	
Act Effct Green (s)	15.9	15.9			14.2	28.1	60.8	52.8		62.6	53.7	
Actuated g/C Ratio	0.14	0.14			0.13	0.25	0.54	0.47		0.56	0.48	
v/c Ratio	0.09	0.74			0.84	0.28	0.55	0.84		0.58	0.95	
Control Delay	44.8	66.5			81.1	39.0	26.7	36.0		19.2	49.7	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	44.8	66.5			81.1	39.0	26.7	36.0		19.2	49.7	
LOS	D	E			F	D	C	D		B	D	
Approach Delay		64.2			65.8			34.8			45.0	
Approach LOS		E			E			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 112
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.95
Intersection Signal Delay: 45.7 Intersection LOS: D
Intersection Capacity Utilization 80.9% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Old Statesville Rd & Bailey Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	117	107	118	84	102	131	599	154	118	566	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			8%			0%			0%	
Storage Length (ft)	50		0	0		175	250		0	150		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99			1.00				
Frt		0.928				0.850		0.969			0.992	
Flt Protected	0.950				0.972		0.950			0.950		
Satd. Flow (prot)	1743	1670	0	0	1738	1520	1770	1797	0	1770	1848	0
Flt Permitted	0.950				0.972		0.188			0.071		
Satd. Flow (perm)	1743	1670	0	0	1724	1520	350	1797	0	132	1848	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2557			2791			2514			4321	
Travel Time (s)		49.8			54.4			38.1			65.5	
Confl. Peds. (#/hr)			4	4					2	2		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	57	130	119	131	93	113	146	666	171	131	629	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	57	249	0	0	224	113	146	837	0	131	665	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.02	1.02	1.02	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		20	40	40	40	306		40	306	
Trailing Detector (ft)	0	0		0	0	0	0	300		0	300	
Detector 1 Position(ft)	0	0		0	0	0	0	300		0	300	
Detector 1 Size(ft)	40	40		20	40	40	40	6		40	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Split	NA		Split	NA	pm+ov	pm+pt	NA		pm+pt	NA	
Protected Phases	3	3		4	4	1	5	2		1	6	
Permitted Phases						4	2			6		
Detector Phase	3	3		4	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	12.0		7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	18.0	18.0		14.0	14.0	14.0	13.0	18.0		14.0	18.0	
Total Split (s)	23.0	23.0		21.0	21.0	14.0	13.0	62.0		14.0	63.0	
Total Split (%)	19.2%	19.2%		17.5%	17.5%	11.7%	10.8%	51.7%		11.7%	52.5%	
Maximum Green (s)	17.4	17.4		14.5	14.5	8.1	7.4	56.2		8.1	56.7	
Yellow Time (s)	3.7	3.7		3.4	3.4	3.0	3.0	4.5		3.0	4.5	
All-Red Time (s)	1.9	1.9		3.1	3.1	2.9	2.6	1.3		2.9	1.8	
Lost Time Adjust (s)	-0.6	-0.6			-1.5	-0.9	-0.6	-0.8		-0.9	-1.3	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min		None	Min	
Walk Time (s)	4.0	4.0									4.0	
Flash Dont Walk (s)	8.0	8.0									7.0	
Pedestrian Calls (#/hr)	0	0									0	
Act Effct Green (s)	18.0	18.0			16.0	29.8	64.1	56.2		65.9	57.0	
Actuated g/C Ratio	0.15	0.15			0.13	0.25	0.54	0.47		0.55	0.48	
v/c Ratio	0.22	0.99			0.96	0.30	0.52	0.99		0.68	0.75	
Control Delay	47.3	104.9			101.7	39.0	18.0	59.6		38.3	31.7	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	47.3	104.9			101.7	39.0	18.0	59.6		38.3	31.7	
LOS	D	F			F	D	B	E		D	C	
Approach Delay		94.1			80.7			53.4			32.8	
Approach LOS		F			F			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 119
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.99
Intersection Signal Delay: 55.6 Intersection LOS: E
Intersection Capacity Utilization 88.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 10: Old Statesville Rd & Bailey Rd

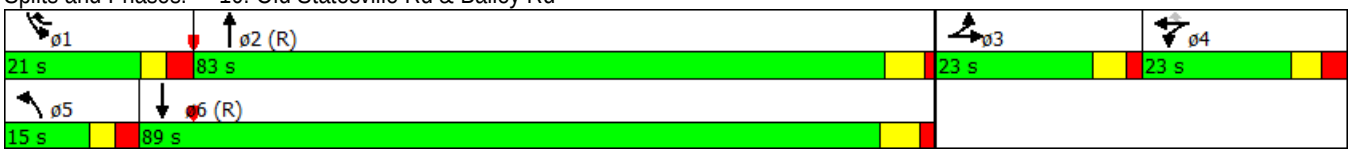
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	95	122	119	108	130	130	649	221	192	971	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			8%			0%			0%	
Storage Length (ft)	50		0	0		175	250		0	150		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.916				0.850		0.962			0.990	
Flt Protected	0.950				0.974		0.950			0.950		
Satd. Flow (prot)	1743	1681	0	0	1742	1520	1770	1792	0	1770	1844	0
Flt Permitted	0.950				0.974		0.950			0.950		
Satd. Flow (perm)	1743	1681	0	0	1742	1520	1770	1792	0	1770	1844	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2717			2831			2551			4321	
Travel Time (s)		52.9			55.1			38.7			65.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	106	136	132	120	144	144	721	246	213	1079	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	242	0	0	252	144	144	967	0	213	1156	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.02	1.02	1.02	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		20	40	40	40	306		40	306	
Trailing Detector (ft)	0	0		0	0	0	0	300		0	300	
Detector 1 Position(ft)	0	0		0	0	0	0	300		0	300	
Detector 1 Size(ft)	40	40		20	40	40	40	6		40	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	3	3		4	4	1	5	2		1	6	
Permitted Phases						4						
Detector Phase	3	3		4	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	12.0		7.0	7.0	
Minimum Split (s)	18.0	18.0		14.0	14.0	14.0	13.0	18.0		14.0	18.0	
Total Split (s)	23.0	23.0		23.0	23.0	21.0	15.0	83.0		21.0	89.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	15.3%	15.3%		15.3%	15.3%	14.0%	10.0%	55.3%		14.0%	59.3%	
Maximum Green (s)	17.4	17.4		16.5	16.5	15.1	9.4	77.2		15.1	82.7	
Yellow Time (s)	3.7	3.7		3.4	3.4	3.0	3.0	4.5		3.0	4.5	
All-Red Time (s)	1.9	1.9		3.1	3.1	2.9	2.6	1.3		2.9	1.8	
Lost Time Adjust (s)	-0.6	-0.6			-1.5	-0.9	-0.6	-0.8		-0.9	-1.3	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	4.0	4.0									4.0	
Flash Dont Walk (s)	8.0	8.0									7.0	
Pedestrian Calls (#/hr)	0	0									0	
Act Effct Green (s)	18.0	18.0			18.0	39.0	10.0	78.0		16.0	84.0	
Actuated g/C Ratio	0.12	0.12			0.12	0.26	0.07	0.52		0.11	0.56	
v/c Ratio	0.14	1.20			1.21	0.36	1.22	1.04		1.13	1.12	
Control Delay	61.0	182.8			182.3	48.6	208.7	75.3		163.5	99.1	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	61.0	182.8			182.3	48.6	208.7	75.3		163.5	99.1	
LOS	E	F			F	D	F	E		F	F	
Approach Delay		169.7			133.7			92.6			109.1	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.22
Intersection Signal Delay: 111.6 Intersection LOS: F
Intersection Capacity Utilization 103.9% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 10: Old Statesville Rd & Bailey Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	160	147	162	115	140	179	821	211	162	775	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			8%			0%			0%	
Storage Length (ft)	50		0	0		175	250		0	150		0
Storage Lanes	1		0	0		1	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		0.98			0.99			1.00		1.00		
Frt		0.928				0.850		0.969			0.992	
Flt Protected	0.950				0.972		0.950			0.950		
Satd. Flow (prot)	1743	1666	0	0	1738	1520	1770	1797	0	1770	1848	0
Flt Permitted	0.950				0.972		0.950			0.950		
Satd. Flow (perm)	1743	1666	0	0	1722	1520	1770	1797	0	1765	1848	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		2375			2133			2266			4321	
Travel Time (s)		46.3			41.6			34.3			65.5	
Confl. Peds. (#/hr)			4	4					2	2		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	178	163	180	128	156	199	912	234	180	861	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	341	0	0	308	156	199	1146	0	180	910	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.02	1.02	1.02	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1		1	1	1	1	1		1	1	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	40	40		20	40	40	40	306		40	306	
Trailing Detector (ft)	0	0		0	0	0	0	300		0	300	
Detector 1 Position(ft)	0	0		0	0	0	0	300		0	300	
Detector 1 Size(ft)	40	40		20	40	40	40	6		40	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Split	NA		Split	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	3	3		4	4	1	5	2		1	6	
Permitted Phases						4						
Detector Phase	3	3		4	4	1	5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0	7.0	7.0	12.0		7.0	7.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	18.0	18.0		14.0	14.0	14.0	13.0	18.0		14.0	18.0	
Total Split (s)	29.0	29.0		25.0	25.0	17.0	21.0	79.0		17.0	75.0	
Total Split (%)	19.3%	19.3%		16.7%	16.7%	11.3%	14.0%	52.7%		11.3%	50.0%	
Maximum Green (s)	23.4	23.4		18.5	18.5	11.1	15.4	73.2		11.1	68.7	
Yellow Time (s)	3.7	3.7		3.4	3.4	3.0	3.0	4.5		3.0	4.5	
All-Red Time (s)	1.9	1.9		3.1	3.1	2.9	2.6	1.3		2.9	1.8	
Lost Time Adjust (s)	-0.6	-0.6			-1.5	-0.9	-0.6	-0.8		-0.9	-1.3	
Total Lost Time (s)	5.0	5.0			5.0	5.0	5.0	5.0		5.0	5.0	
Lead/Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None	None	None	C-Min		None	C-Min	
Walk Time (s)	4.0	4.0									4.0	
Flash Dont Walk (s)	8.0	8.0									7.0	
Pedestrian Calls (#/hr)	0	0									0	
Act Effct Green (s)	24.0	24.0			20.0	37.0	16.0	74.0		12.0	70.0	
Actuated g/C Ratio	0.16	0.16			0.13	0.25	0.11	0.49		0.08	0.47	
v/c Ratio	0.28	1.28			1.33	0.42	1.06	1.29		1.28	1.06	
Control Delay	58.5	200.8			224.1	51.5	143.7	173.7		220.1	85.0	
Queue Delay	0.0	0.0			0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	58.5	200.8			224.1	51.5	143.7	173.7		220.1	85.0	
LOS	E	F			F	D	F	F		F	F	
Approach Delay		174.4			166.1			169.3			107.3	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.33
Intersection Signal Delay: 149.1 Intersection LOS: F
Intersection Capacity Utilization 114.4% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 10: Old Statesville Rd & Bailey Rd

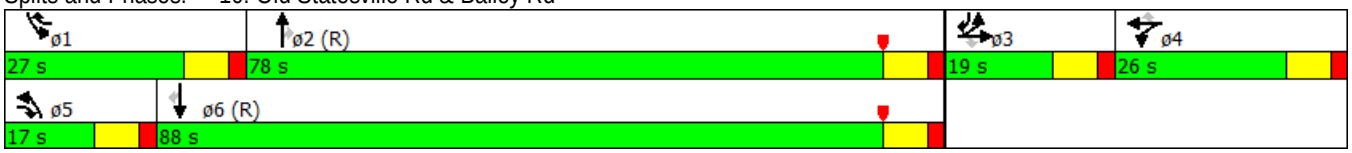
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	95	122	119	108	130	130	649	221	192	971	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			8%			0%			0%	
Storage Length (ft)	175		250	0		250	500		250	500		150
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.974		0.950			0.950		
Satd. Flow (prot)	1743	1835	1560	0	1742	1520	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950				0.974		0.950			0.950		
Satd. Flow (perm)	1743	1835	1560	0	1742	1520	1770	1863	1583	1770	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		8267			6705			6339			6139	
Travel Time (s)		161.0			130.6			96.0			93.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	29	106	136	132	120	144	144	721	246	213	1079	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	29	106	136	0	252	144	144	721	246	213	1079	77
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.02	1.02	1.02	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	3	3	5	4	4	1	5	2		1	6	3
Permitted Phases			3			4			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	3	3	5	4	4	1	5	2	2	1	6	3
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0	12.0	7.0	12.0	7.0
Minimum Split (s)	19.0	19.0	14.0	15.0	15.0	15.0	14.0	19.0	19.0	15.0	19.0	19.0
Total Split (s)	19.0	19.0	17.0	26.0	26.0	27.0	17.0	78.0	78.0	27.0	88.0	19.0
Total Split (%)	12.7%	12.7%	11.3%	17.3%	17.3%	18.0%	11.3%	52.0%	52.0%	18.0%	58.7%	12.7%
Maximum Green (s)	12.0	12.0	10.0	19.0	19.0	20.0	10.0	71.0	71.0	20.0	81.0	12.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min	None
Walk Time (s)	4.0	4.0									4.0	4.0
Flash Dont Walk (s)	8.0	8.0									7.0	8.0
Pedestrian Calls (#/hr)	0	0									0	0
Act Effct Green (s)	13.3	13.3	25.3		21.7	48.0	12.0	73.7	73.7	21.3	83.0	101.3
Actuated g/C Ratio	0.09	0.09	0.17		0.14	0.32	0.08	0.49	0.49	0.14	0.55	0.68
v/c Ratio	0.19	0.65	0.52		1.00	0.30	1.02	0.79	0.32	0.85	1.05	0.07
Control Delay	66.0	84.9	42.9		120.2	40.4	147.2	39.6	24.6	90.9	74.3	8.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	66.0	84.9	42.9		120.2	40.4	147.2	39.6	24.6	90.9	74.3	8.4
LOS	E	F	D		F	D	F	D	C	F	E	A
Approach Delay		61.8			91.2			50.2			73.2	
Approach LOS		E			F			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 81 (54%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 66.3 Intersection LOS: E
Intersection Capacity Utilization 89.7% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 10: Old Statesville Rd & Bailey Rd



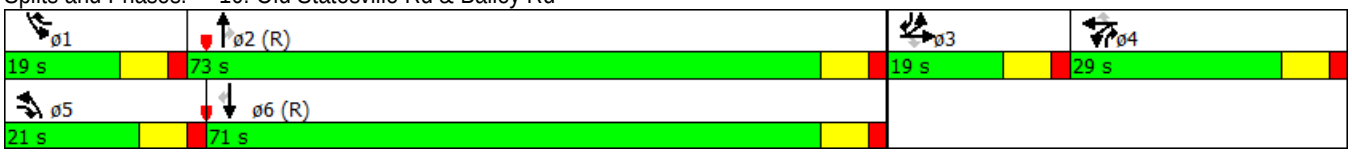
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	70	160	147	162	115	140	179	821	211	162	775	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			8%			0%			0%	
Storage Length (ft)	175		250	0		250	500		250	500		150
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor			0.96		0.99				0.98	1.00		
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950				0.972		0.950			0.950		
Satd. Flow (prot)	1743	1835	1560	0	1738	1520	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950				0.972		0.950			0.950		
Satd. Flow (perm)	1743	1835	1493	0	1720	1520	1770	1863	1549	1765	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			45			45	
Link Distance (ft)		3773			2444			3945			4321	
Travel Time (s)		73.5			47.6			59.8			65.5	
Confl. Peds. (#/hr)			4	4					2	2		
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	78	178	163	180	128	156	199	912	234	180	861	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	178	163	0	308	156	199	912	234	180	861	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane								Yes				
Headway Factor	1.02	1.02	1.02	1.05	1.05	1.05	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split	NA	pm+ov	Split	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	3	3	5	4	4	1	5	2	4	1	6	3
Permitted Phases			3			4			2			6
Detector Phase	3	3	5	4	4	1	5	2	4	1	6	3
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	19.0	19.0	15.0	15.0	15.0	15.0	15.0	19.0	15.0	15.0	19.0	19.0
Total Split (s)	19.0	19.0	21.0	29.0	29.0	19.0	21.0	73.0	29.0	19.0	71.0	19.0
Total Split (%)	13.6%	13.6%	15.0%	20.7%	20.7%	13.6%	15.0%	52.1%	20.7%	13.6%	50.7%	13.6%
Maximum Green (s)	12.0	12.0	14.0	22.0	22.0	12.0	14.0	66.0	22.0	12.0	64.0	12.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0		-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lead	Lead	Lag	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)	4.0	4.0									4.0	4.0
Flash Dont Walk (s)	8.0	8.0									7.0	8.0
Pedestrian Calls (#/hr)	0	0									0	0
Act Effct Green (s)	14.0	14.0	30.0		24.0	43.0	16.0	68.0	92.0	14.0	66.0	85.0
Actuated g/C Ratio	0.10	0.10	0.21		0.17	0.31	0.11	0.49	0.66	0.10	0.47	0.61
v/c Ratio	0.45	0.97	0.50		1.04	0.33	0.99	1.01	0.23	1.02	0.98	0.05
Control Delay	68.2	121.7	34.0		117.6	40.0	120.7	68.0	5.4	133.1	62.5	11.4
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	68.2	121.7	34.0		117.6	40.0	120.7	68.0	5.4	133.1	62.5	11.4
LOS	E	F	C		F	D	F	E	A	F	E	B
Approach Delay		77.6			91.5			64.9			71.9	
Approach LOS		E			F			E			E	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 21 (15%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.04
Intersection Signal Delay: 72.5 Intersection LOS: E
Intersection Capacity Utilization 92.5% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 10: Old Statesville Rd & Bailey Rd



APPENDIX G

SYNCHRO Reports:
Westmoreland Road & Statesville Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	126	271	155	217	117	185	278	63	68	617	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			1%			1%	
Storage Length (ft)	0		100	300		0	150		0	125		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.947			0.972			0.990	
Flt Protected		0.980		0.950			0.950			0.950		
Satd. Flow (prot)	0	1798	1560	1770	1764	0	1761	1802	0	1761	1835	0
Flt Permitted		0.653		0.336			0.075			0.505		
Satd. Flow (perm)	0	1198	1560	626	1764	0	139	1802	0	936	1835	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			45			45	
Link Distance (ft)		2682			1519			1179			1046	
Travel Time (s)		40.6			29.6			17.9			15.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	94	140	301	172	241	130	206	309	70	76	686	50
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	234	301	172	371	0	206	379	0	76	736	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.02	1.02	1.02	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	60	0	40	40		40	306		55	306	
Trailing Detector (ft)	0	0	0	0	0		0	300		-5	300	
Detector 1 Position(ft)	0	0	0	0	0		0	300		-5	300	
Detector 1 Size(ft)	20	60	20	40	40		40	6		60	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		13.0	18.0		12.4	18.0	
Total Split (s)	31.0	31.0	31.0	13.0	44.0		19.0	63.6		12.4	57.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	25.8%	25.8%	25.8%	10.8%	36.7%		15.8%	53.0%		10.3%	47.5%	
Maximum Green (s)	26.1	26.1	26.1	7.9	38.7		13.4	58.0		7.0	51.6	
Yellow Time (s)	3.7	3.7	3.7	3.0	3.8		3.0	4.4		3.0	4.4	
All-Red Time (s)	1.2	1.2	1.2	2.1	1.5		2.6	1.2		2.4	1.0	
Lost Time Adjust (s)		0.1	0.1	-0.1	-0.3		-0.6	-0.6		-0.4	-0.4	
Total Lost Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Act Effct Green (s)		25.1	25.1	38.2	38.2		66.0	56.5		54.8	47.3	
Actuated g/C Ratio		0.22	0.22	0.33	0.33		0.58	0.49		0.48	0.41	
v/c Ratio		0.89	0.88	0.60	0.63		0.75	0.43		0.15	0.97	
Control Delay		78.9	70.9	39.6	38.9		43.9	21.2		11.9	59.3	
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		78.9	70.9	39.6	38.9		43.9	21.2		11.9	59.3	
LOS		E	E	D	D		D	C		B	E	
Approach Delay		74.4			39.1			29.2			54.9	
Approach LOS		E			D			C			D	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 114.3	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.97	
Intersection Signal Delay: 49.6	Intersection LOS: D
Intersection Capacity Utilization 92.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Statesville Rd & Westmoreland Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	55	156	271	81	168	68	376	418	37	113	458	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			1%			1%	
Storage Length (ft)	0		100	300		0	150		0	125		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.957			0.988			0.974	
Flt Protected		0.987		0.950			0.950			0.950		
Satd. Flow (prot)	0	1811	1560	1770	1783	0	1761	1831	0	1761	1805	0
Flt Permitted		0.836		0.321			0.090			0.478		
Satd. Flow (perm)	0	1534	1560	598	1783	0	167	1831	0	886	1805	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			45			45	
Link Distance (ft)		2682			1965			1700			1046	
Travel Time (s)		40.6			38.3			25.8			15.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	61	173	301	90	187	76	418	464	41	126	509	109
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	234	301	90	263	0	418	505	0	126	618	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.02	1.02	1.02	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	60	0	40	40		40	306		55	306	
Trailing Detector (ft)	0	0	0	0	0		0	300		-5	300	
Detector 1 Position(ft)	0	0	0	0	0		0	300		-5	300	
Detector 1 Size(ft)	20	60	20	40	40		40	6		60	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4	8			2			6		
Detector Phase	4	4	4	3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		13.0	18.0		12.4	18.0	
Total Split (s)	30.0	30.0	30.0	13.0	43.0		33.0	64.2		12.8	44.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	25.0%	25.0%	25.0%	10.8%	35.8%		27.5%	53.5%		10.7%	36.7%	
Maximum Green (s)	25.1	25.1	25.1	7.9	37.7		27.4	58.6		7.4	38.6	
Yellow Time (s)	3.7	3.7	3.7	3.0	3.8		3.0	4.4		3.0	4.4	
All-Red Time (s)	1.2	1.2	1.2	2.1	1.5		2.6	1.2		2.4	1.0	
Lost Time Adjust (s)		0.1	0.1	-0.1	-0.3		-0.6	-0.6		-0.4	-0.4	
Total Lost Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	Min		None	Min	
Act Effct Green (s)		24.3	24.3	34.3	34.3		71.5	58.7		47.0	39.2	
Actuated g/C Ratio		0.21	0.21	0.30	0.30		0.62	0.51		0.41	0.34	
v/c Ratio		0.73	0.92	0.35	0.50		0.87	0.54		0.30	1.01	
Control Delay		58.1	79.6	33.8	37.1		51.7	23.1		15.2	79.2	
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		58.1	79.6	33.8	37.1		51.7	23.1		15.2	79.2	
LOS		E	E	C	D		D	C		B	E	
Approach Delay		70.2			36.3			36.0			68.4	
Approach LOS		E			D			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 115.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.01
Intersection Signal Delay: 52.6 Intersection LOS: D
Intersection Capacity Utilization 91.8% ICU Level of Service F
Analysis Period (min) 15

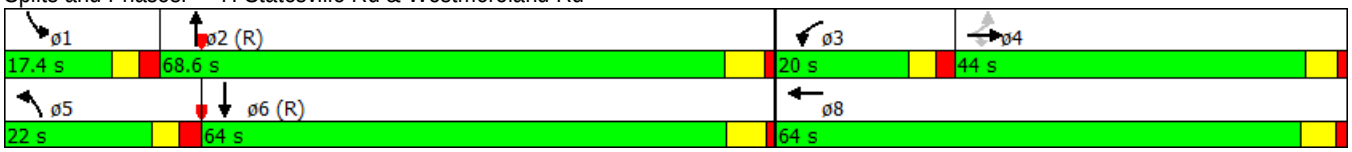
Splits and Phases: 7: Statesville Rd & Westmoreland Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	173	371	212	297	160	253	381	86	93	845	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			1%			1%	
Storage Length (ft)	0		100	300		0	150		0	125		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.947			0.972			0.990	
Flt Protected		0.980		0.950			0.950			0.950		
Satd. Flow (prot)	0	1798	1560	1770	1764	0	1761	1802	0	1761	1835	0
Flt Permitted		0.473		0.950			0.950			0.950		
Satd. Flow (perm)	0	868	1560	1770	1764	0	1761	1802	0	1761	1835	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			45			45	
Link Distance (ft)		2682			1313			1179			1046	
Travel Time (s)		40.6			25.6			17.9			15.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	192	412	236	330	178	281	423	96	103	939	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	321	412	236	508	0	281	519	0	103	1008	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.02	1.02	1.02	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	60	0	40	40		40	306		55	306	
Trailing Detector (ft)	0	0	0	0	0		0	300		-5	300	
Detector 1 Position(ft)	0	0	0	0	0		0	300		-5	300	
Detector 1 Size(ft)	20	60	20	40	40		40	6		60	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4									
Detector Phase	4	4	4	3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		13.0	18.0		12.4	18.0	
Total Split (s)	44.0	44.0	44.0	20.0	64.0		22.0	68.6		17.4	64.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	29.3%	29.3%	29.3%	13.3%	42.7%		14.7%	45.7%		11.6%	42.7%	
Maximum Green (s)	39.1	39.1	39.1	14.9	58.7		16.4	63.0		12.0	58.6	
Yellow Time (s)	3.7	3.7	3.7	3.0	3.8		3.0	4.4		3.0	4.4	
All-Red Time (s)	1.2	1.2	1.2	2.1	1.5		2.6	1.2		2.4	1.0	
Lost Time Adjust (s)		0.1	0.1	-0.1	-0.3		-0.6	-0.6		-0.4	-0.4	
Total Lost Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Min		None	C-Min	
Act Effct Green (s)		39.0	39.0	15.0	59.0		17.0	64.1		11.9	59.0	
Actuated g/C Ratio		0.26	0.26	0.10	0.39		0.11	0.43		0.08	0.39	
v/c Ratio		1.43	1.02	1.33	0.73		1.41	0.67		0.74	1.40	
Control Delay		255.5	103.1	232.2	46.3		258.0	40.0		97.2	223.0	
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		255.5	103.1	232.2	46.3		258.0	40.0		97.2	223.0	
LOS		F	F	F	D		F	D		F	F	
Approach Delay		169.8			105.3			116.6			211.3	
Approach LOS		F			F			F			F	

Intersection Summary	
Area Type: Other	
Cycle Length: 150	
Actuated Cycle Length: 150	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.43	
Intersection Signal Delay: 156.7	Intersection LOS: F
Intersection Capacity Utilization 119.8%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 7: Statesville Rd & Westmoreland Rd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	214	371	111	230	93	515	573	51	155	627	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			1%			1%	
Storage Length (ft)	0		100	300		0	150		0	125		0
Storage Lanes	0		1	1		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.957			0.988			0.974	
Flt Protected		0.987		0.950			0.950			0.950		
Satd. Flow (prot)	0	1811	1560	1770	1783	0	1761	1831	0	1761	1805	0
Flt Permitted		0.592		0.950			0.950			0.950		
Satd. Flow (perm)	0	1086	1560	1770	1783	0	1761	1831	0	1761	1805	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			45			45	
Link Distance (ft)		2682			1313			1179			1046	
Travel Time (s)		40.6			25.6			17.9			15.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	83	238	412	123	256	103	572	637	57	172	697	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	321	412	123	359	0	572	694	0	172	846	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane					Yes							
Headway Factor	1.02	1.02	1.02	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1		1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	60	0	40	40		40	306		55	306	
Trailing Detector (ft)	0	0	0	0	0		0	300		-5	300	
Detector 1 Position(ft)	0	0	0	0	0		0	300		-5	300	
Detector 1 Size(ft)	20	60	20	40	40		40	6		60	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA	Perm	Prot	NA		Prot	NA		Prot	NA	
Protected Phases		4		3	8		5	2		1	6	
Permitted Phases	4		4									
Detector Phase	4	4	4	3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0		7.0	12.0		7.0	12.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		13.0	18.0		12.4	18.0	
Total Split (s)	37.0	37.0	37.0	13.0	50.0		40.0	76.2		23.8	60.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	24.7%	24.7%	24.7%	8.7%	33.3%		26.7%	50.8%		15.9%	40.0%	
Maximum Green (s)	32.1	32.1	32.1	7.9	44.7		34.4	70.6		18.4	54.6	
Yellow Time (s)	3.7	3.7	3.7	3.0	3.8		3.0	4.4		3.0	4.4	
All-Red Time (s)	1.2	1.2	1.2	2.1	1.5		2.6	1.2		2.4	1.0	
Lost Time Adjust (s)		0.1	0.1	-0.1	-0.3		-0.6	-0.6		-0.4	-0.4	
Total Lost Time (s)		5.0	5.0	5.0	5.0		5.0	5.0		5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			Yes	Yes		Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None	None	None	None		None	C-Min		None	C-Min	
Act Effct Green (s)		32.0	32.0	8.0	45.0		35.0	72.2		17.8	55.0	
Actuated g/C Ratio		0.21	0.21	0.05	0.30		0.23	0.48		0.12	0.37	
v/c Ratio		1.39	1.24	1.31	0.67		1.40	0.79		0.83	1.28	
Control Delay		242.2	178.9	247.9	53.4		233.9	40.6		94.3	176.6	
Queue Delay		0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay		242.2	178.9	247.9	53.4		233.9	40.6		94.3	176.6	
LOS		F	F	F	D		F	D		F	F	
Approach Delay		206.6			103.0			127.9			162.7	
Approach LOS		F			F			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.40
Intersection Signal Delay: 151.1 Intersection LOS: F
Intersection Capacity Utilization 119.5% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 7: Statesville Rd & Westmoreland Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	116	173	371	212	297	160	253	381	86	93	845	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			1%			1%	
Storage Length (ft)	425		350	500		250	500		150	500		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1743	1835	1560	1770	1863	1583	1761	1853	1575	1761	1853	1575
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1743	1835	1560	1770	1863	1583	1761	1853	1575	1761	1853	1575
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			45			45	
Link Distance (ft)		2682			1724			3449			3734	
Travel Time (s)		40.6			33.6			52.3			56.6	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	129	192	412	236	330	178	281	423	96	103	939	69
Shared Lane Traffic (%)												
Lane Group Flow (vph)	129	192	412	236	330	178	281	423	96	103	939	69
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	60	20	40	40	20	40	306	20	55	306	20
Trailing Detector (ft)	0	0	0	0	0	0	0	300	0	-5	300	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	300	0	-5	300	0
Detector 1 Size(ft)	20	60	20	40	40	20	40	6	20	60	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	14.0	14.0	19.0	14.0	14.0	19.0	14.0
Total Split (s)	15.0	20.0	26.0	23.0	28.0	20.0	26.0	77.0	23.0	20.0	71.0	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	10.7%	14.3%	18.6%	16.4%	20.0%	14.3%	18.6%	55.0%	16.4%	14.3%	50.7%	10.7%
Maximum Green (s)	8.0	13.0	19.0	16.0	21.0	13.0	19.0	70.0	16.0	13.0	64.0	8.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	10.0	15.0	41.0	18.0	23.0	41.8	21.0	73.2	96.2	13.8	66.0	81.0
Actuated g/C Ratio	0.07	0.11	0.29	0.13	0.16	0.30	0.15	0.52	0.69	0.10	0.47	0.58
v/c Ratio	1.04	0.98	0.90	1.04	1.08	0.38	1.06	0.44	0.09	0.60	1.08	0.08
Control Delay	153.2	120.7	71.8	128.4	127.8	41.3	128.8	22.7	7.8	74.8	88.7	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	153.2	120.7	71.8	128.4	127.8	41.3	128.8	22.7	7.8	74.8	88.7	13.3
LOS	F	F	E	F	F	D	F	C	A	E	F	B
Approach Delay		98.9			107.3			58.2			82.7	
Approach LOS		F			F			E			F	

Intersection Summary	
Area Type: Other	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green	
Natural Cycle: 140	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.08	
Intersection Signal Delay: 85.8	Intersection LOS: F
Intersection Capacity Utilization 97.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 7: Statesville Rd & Westmoreland Rd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	214	371	111	230	93	515	573	51	155	627	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		3%			0%			1%			1%	
Storage Length (ft)	425		350	500		250	500		150	500		250
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1743	1835	1560	1770	1863	1583	1761	1853	1575	1761	1853	1575
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1743	1835	1560	1770	1863	1583	1761	1853	1575	1761	1853	1575
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		45			35			45			45	
Link Distance (ft)		2682			3389			3059			3949	
Travel Time (s)		40.6			66.0			46.3			59.8	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	83	238	412	123	256	103	572	637	57	172	697	149
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	238	412	123	256	103	572	637	57	172	697	149
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.02	1.02	1.02	1.00	1.00	1.00	1.01	1.01	1.01	1.01	1.01	1.01
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	60	20	40	40	20	40	306	20	55	306	20
Trailing Detector (ft)	0	0	0	0	0	0	0	300	0	-5	300	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	300	0	-5	300	0
Detector 1 Size(ft)	20	60	20	40	40	20	40	6	20	60	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.0	14.0	14.0	14.0	14.0	14.0	14.0	19.0	14.0	14.0	19.0	14.0
Total Split (s)	14.0	22.0	44.0	14.0	22.0	26.0	44.0	68.0	14.0	26.0	50.0	14.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	10.8%	16.9%	33.8%	10.8%	16.9%	20.0%	33.8%	52.3%	10.8%	20.0%	38.5%	10.8%
Maximum Green (s)	7.0	15.0	37.0	7.0	15.0	19.0	37.0	61.0	7.0	19.0	43.0	7.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Act Effct Green (s)	9.0	17.0	61.0	9.0	17.0	40.6	39.0	65.4	79.4	18.6	45.0	59.0
Actuated g/C Ratio	0.07	0.13	0.47	0.07	0.13	0.31	0.30	0.50	0.61	0.14	0.35	0.45
v/c Ratio	0.69	1.00	0.56	1.01	1.05	0.21	1.08	0.68	0.06	0.69	1.09	0.21
Control Delay	87.5	113.4	28.6	143.2	126.1	33.4	106.6	29.7	11.2	66.8	102.0	22.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	87.5	113.4	28.6	143.2	126.1	33.4	106.6	29.7	11.2	66.8	102.0	22.4
LOS	F	F	C	F	F	C	F	C	B	E	F	C
Approach Delay		62.8			110.7			63.6			84.4	
Approach LOS		E			F			E			F	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Green
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 76.0 — Intersection LOS: E
Intersection Capacity Utilization 96.1% — ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 7: Statesville Rd & Westmoreland Rd

APPENDIX H

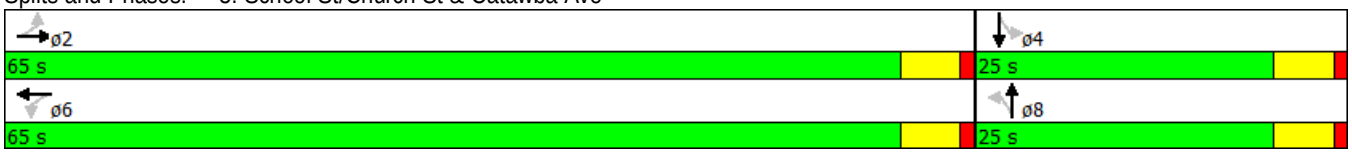
SYNCHRO Reports:
Gem Street Extension

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	6	445	23	9	404	1	26	9	28	26	3	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993						0.940			0.965	
Flt Protected		0.999			0.999			0.980			0.967	
Satd. Flow (prot)	0	1848	0	0	1861	0	0	1716	0	0	1738	0
Flt Permitted		0.994			0.988			0.846			0.755	
Satd. Flow (perm)	0	1839	0	0	1840	0	0	1481	0	0	1357	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	7	494	26	10	449	1	29	10	31	29	3	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	527	0	0	460	0	0	70	0	0	43	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	65.0	65.0		65.0	65.0		25.0	25.0		25.0	25.0	
Total Split (%)	72.2%	72.2%		72.2%	72.2%		27.8%	27.8%		27.8%	27.8%	
Maximum Green (s)	60.0	60.0		60.0	60.0		20.0	20.0		20.0	20.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		25.6			25.6			7.7			7.7	
Actuated g/C Ratio		0.72			0.72			0.22			0.22	
v/c Ratio		0.40			0.35			0.22			0.15	
Control Delay		6.0			5.6			14.7			14.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.0			5.6			14.7			14.0	
LOS		A			A			B			B	
Approach Delay		6.0			5.6			14.7			14.0	
Approach LOS		A			A			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 35.7	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.40	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 41.9%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave



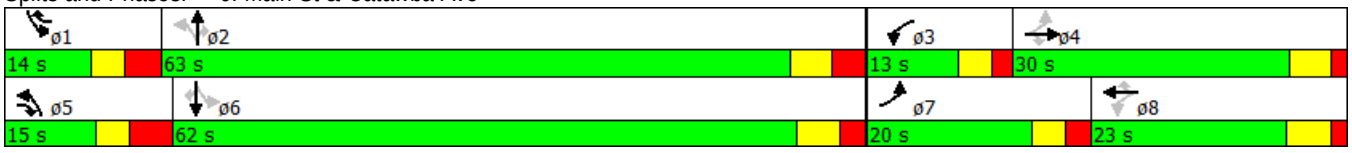
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	65	208	94	56	15	143	430	52	21	642	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	175		200	125		200	250		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1881	1599	1761	1853	1575	1778	1872	1591
Flt Permitted	0.430			0.710			0.117			0.424		
Satd. Flow (perm)	793	1844	1567	1336	1881	1599	217	1853	1575	794	1872	1591
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		250			1037			896			1267	
Travel Time (s)		6.8			35.4			17.5			24.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	182	72	231	104	62	17	159	478	58	23	713	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	72	231	104	62	17	159	478	58	23	713	192
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	0	1	1	0
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	30	30	30	40	76	0	40	76	0
Trailing Detector (ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Size(ft)	40	40	40	30	30	30	40	6	20	40	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	13.0	20.0	14.0	13.0	23.0	14.0	14.0	26.0	26.0	14.0	27.0	27.0
Total Split (s)	20.0	30.0	15.0	13.0	23.0	14.0	15.0	63.0	63.0	14.0	62.0	62.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	16.7%	25.0%	12.5%	10.8%	19.2%	11.7%	12.5%	52.5%	52.5%	11.7%	51.7%	51.7%
Maximum Green (s)	14.7	24.7	8.1	8.1	17.4	7.7	8.1	56.1	56.1	7.7	55.7	55.7
Yellow Time (s)	3.0	3.7	3.0	3.0	4.0	3.0	3.0	3.8	3.8	3.0	3.9	3.9
All-Red Time (s)	2.3	1.6	3.9	1.9	1.6	3.3	3.9	3.1	3.1	3.3	2.4	2.4
Lost Time Adjust (s)	-0.3	-0.3	-1.9	0.1	-0.6	-1.3	-1.9	-1.9	-1.9	-1.3	-1.3	-1.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		7.0			9.0			12.0	12.0		13.0	13.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	24.2	14.8	30.9	15.6	9.9	20.0	54.0	48.8	48.8	48.5	39.6	39.6
Actuated g/C Ratio	0.27	0.16	0.34	0.17	0.11	0.22	0.59	0.54	0.54	0.53	0.44	0.44
v/c Ratio	0.52	0.24	0.43	0.39	0.30	0.05	0.51	0.48	0.07	0.04	0.87	0.28
Control Delay	34.5	40.2	30.8	33.5	47.9	33.0	17.5	18.1	14.1	8.5	36.6	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	40.2	30.8	33.5	47.9	33.0	17.5	18.1	14.1	8.5	36.6	18.0
LOS	C	D	C	C	D	C	B	B	B	A	D	B
Approach Delay		33.6			38.3			17.6			32.1	
Approach LOS		C			D			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 90.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 28.5 — Intersection LOS: C
Intersection Capacity Utilization 70.0% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: Main St & Catawba Ave



Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	11	460	27	37	371	11	7	7	74
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	511	30	41	412	12	8	8	82

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	424	0	0	541	0	0	1062	1058	526
Stage 1	-	-	-	-	-	-	551	551	-
Stage 2	-	-	-	-	-	-	511	507	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1135	-	-	1028	-	-	201	225	552
Stage 1	-	-	-	-	-	-	519	515	-
Stage 2	-	-	-	-	-	-	545	539	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1135	-	-	1028	-	-	183	210	552
Mov Cap-2 Maneuver	-	-	-	-	-	-	183	210	-
Stage 1	-	-	-	-	-	-	511	507	-
Stage 2	-	-	-	-	-	-	499	511	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0.8	15.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	428	1135	-	-	1028	-	-	295
HCM Lane V/C Ratio	0.228	0.011	-	-	0.04	-	-	0.087
HCM Control Delay (s)	15.9	8.2	0	-	8.6	0	-	18.4
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.9	0	-	-	0.1	-	-	0.3

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	5	5	13
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	6	6	14

Major/Minor	Minor2		
Conflicting Flow All	1097	1067	418
Stage 1	501	501	-
Stage 2	596	566	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	191	222	635
Stage 1	552	543	-
Stage 2	490	507	-
Platoon blocked, %			
Mov Cap-1 Maneuver	150	207	635
Mov Cap-2 Maneuver	150	207	-
Stage 1	544	515	-
Stage 2	404	499	-

Approach	SB
HCM Control Delay, s	18.4
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	11	0	14	5	1	8	5	681	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	16	6	1	9	6	757	29

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1876	1886	1054	1879	1876	771	1059	0	0
Stage 1	1089	1089	-	782	782	-	-	-	-
Stage 2	787	797	-	1097	1094	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	55	71	275	54	72	400	658	-	-
Stage 1	261	291	-	387	405	-	-	-	-
Stage 2	385	399	-	258	290	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	50	66	275	48	67	400	658	-	-
Mov Cap-2 Maneuver	50	66	-	48	67	-	-	-	-
Stage 1	257	276	-	381	399	-	-	-	-
Stage 2	369	393	-	231	275	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	60.2	47	0.1
HCM LOS	F	E	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	658	-	-	92	101	833	-	-
HCM Lane V/C Ratio	0.008	-	-	0.302	0.154	0.021	-	-
HCM Control Delay (s)	10.5	0	-	60.2	47	9.4	0	-
HCM Lane LOS	B	A	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.5	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	16	944	9
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	18	1049	10

Major/Minor	Major2		
Conflicting Flow All	786	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	833	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	833	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.2
HCM LOS	

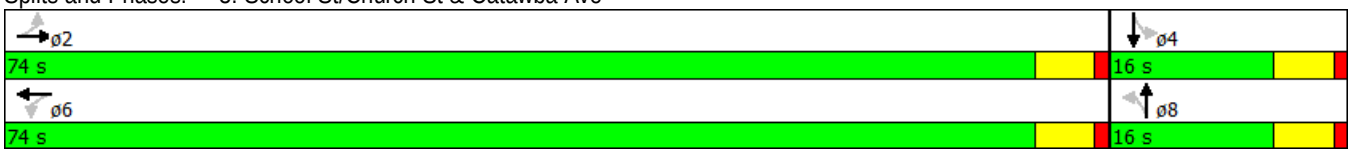
Minor Lane/Major Mvmt

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	10	473	20	14	274	14	15	11	45	22	13	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994			0.915			0.964	
Flt Protected		0.999			0.998			0.989			0.977	
Satd. Flow (prot)	0	1852	0	0	1848	0	0	1686	0	0	1754	0
Flt Permitted		0.992			0.971			0.911			0.814	
Satd. Flow (perm)	0	1839	0	0	1798	0	0	1553	0	0	1462	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	526	22	16	304	16	17	12	50	24	14	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	559	0	0	336	0	0	79	0	0	52	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	74.0	74.0		74.0	74.0		16.0	16.0		16.0	16.0	
Total Split (%)	82.2%	82.2%		82.2%	82.2%		17.8%	17.8%		17.8%	17.8%	
Maximum Green (s)	69.0	69.0		69.0	69.0		11.0	11.0		11.0	11.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		26.0			26.0			7.5			7.3	
Actuated g/C Ratio		0.72			0.72			0.21			0.20	
v/c Ratio		0.42			0.26			0.25			0.18	
Control Delay		6.1			4.9			15.5			14.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.1			4.9			15.5			14.9	
LOS		A			A			B			B	
Approach Delay		6.1			4.9			15.5			14.9	
Approach LOS		A			A			B			B	

Intersection Summary	
Area Type:	Other
Cycle Length: 90	
Actuated Cycle Length: 36	
Natural Cycle: 40	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.42	
Intersection Signal Delay: 6.9	Intersection LOS: A
Intersection Capacity Utilization 43.1%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

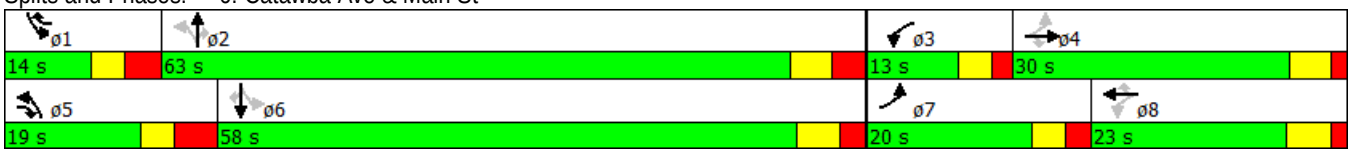


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	87	222	87	43	17	201	562	77	29	576	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		200	125		200	250		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.381			0.833			0.139			0.316		
Satd. Flow (perm)	710	1863	1583	1552	1863	1583	259	1863	1583	589	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		250			1037			921			1267	
Travel Time (s)		6.8			28.3			17.9			24.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	218	97	247	97	48	19	223	624	86	32	640	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	97	247	97	48	19	223	624	86	32	640	192
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	0	1	1	0
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	30	30	30	40	76	0	40	76	0
Trailing Detector (ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Size(ft)	40	40	40	30	30	30	40	6	20	40	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	13.0	20.0	14.0	13.0	23.0	14.0	14.0	26.0	26.0	14.0	27.0	27.0
Total Split (s)	20.0	30.0	19.0	13.0	23.0	14.0	19.0	63.0	63.0	14.0	58.0	58.0
Total Split (%)	16.7%	25.0%	15.8%	10.8%	19.2%	11.7%	15.8%	52.5%	52.5%	11.7%	48.3%	48.3%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	14.7	24.7	12.1	8.1	17.4	7.7	12.1	56.1	56.1	7.7	51.7	51.7
Yellow Time (s)	3.0	3.7	3.0	3.0	4.0	3.0	3.0	3.8	3.8	3.0	3.9	3.9
All-Red Time (s)	2.3	1.6	3.9	1.9	1.6	3.3	3.9	3.1	3.1	3.3	2.4	2.4
Lost Time Adjust (s)	-0.3	-0.3	-1.9	0.1	-0.6	-1.3	-1.9	-1.9	-1.9	-1.3	-1.3	-1.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		7.0			9.0			12.0	12.0		13.0	13.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	23.5	13.9	33.2	13.3	9.3	16.6	56.4	49.4	49.4	45.9	37.1	37.1
Actuated g/C Ratio	0.26	0.15	0.37	0.15	0.10	0.18	0.62	0.55	0.55	0.51	0.41	0.41
v/c Ratio	0.59	0.34	0.43	0.39	0.25	0.07	0.56	0.61	0.10	0.08	0.84	0.30
Control Delay	37.1	42.4	27.9	35.6	47.3	33.6	17.3	20.4	13.9	8.8	35.8	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	42.4	27.9	35.6	47.3	33.6	17.3	20.4	13.9	8.8	35.8	20.1
LOS	D	D	C	D	D	C	B	C	B	A	D	C
Approach Delay		34.0			38.8			19.1			31.3	
Approach LOS		C			D			B			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 90.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 27.8	Intersection LOS: C
Intersection Capacity Utilization 71.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Catawba Ave & Main St



Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	8	519	9	52	301	34	3	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	577	10	58	334	38	3	0	39

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	372	0	0	587	0	0	1072	1087	582
Stage 1	-	-	-	-	-	-	599	599	-
Stage 2	-	-	-	-	-	-	473	488	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1186	-	-	988	-	-	198	216	513
Stage 1	-	-	-	-	-	-	488	490	-
Stage 2	-	-	-	-	-	-	572	550	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1186	-	-	988	-	-	182	198	513
Mov Cap-2 Maneuver	-	-	-	-	-	-	182	198	-
Stage 1	-	-	-	-	-	-	483	485	-
Stage 2	-	-	-	-	-	-	523	509	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	1.2	13.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	449	1186	-	-	988	-	-	237
HCM Lane V/C Ratio	0.094	0.007	-	-	0.058	-	-	0.056
HCM Control Delay (s)	13.8	8.1	0	-	8.9	0	-	21.1
HCM Lane LOS	B	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.3	0	-	-	0.2	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	5	3	4
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	6	3	4

Major/Minor	Minor2		
Conflicting Flow All	1088	1073	353
Stage 1	469	469	-
Stage 2	619	604	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	193	220	691
Stage 1	575	561	-
Stage 2	476	488	-
Platoon blocked, %			
Mov Cap-1 Maneuver	167	201	691
Mov Cap-2 Maneuver	167	201	-
Stage 1	569	519	-
Stage 2	435	483	-

Approach	SB
HCM Control Delay, s	21.1
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER
Vol, veh/h	12	4	15	8	0	13	13	821	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	4	17	9	0	14	14	912	32

Major/Minor	Minor1			Minor2			Major1		
Conflicting Flow All	1890	1898	928	1894	1899	883	899	0	0
Stage 1	957	957	-	926	926	-	-	-	-
Stage 2	933	941	-	968	973	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	53	69	325	53	69	345	756	-	-
Stage 1	310	336	-	322	347	-	-	-	-
Stage 2	319	342	-	305	330	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	47	62	325	44	62	345	756	-	-
Mov Cap-2 Maneuver	47	62	-	44	62	-	-	-	-
Stage 1	298	323	-	309	327	-	-	-	-
Stage 2	288	322	-	274	317	-	-	-	-

Approach	EB	WB	SE
HCM Control Delay, s	73.6	54.1	0.1
HCM LOS	F	F	

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	727	-	-	85	96	756	-	-
HCM Lane V/C Ratio	0.029	-	-	0.405	0.243	0.019	-	-
HCM Control Delay (s)	10.1	0	-	73.6	54.1	9.9	0	-
HCM Lane LOS	B	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.6	0.9	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	NWL	NWT	NWR
Vol, veh/h	19	781	28
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	21	868	31

Major/Minor	Major2		
Conflicting Flow All	944	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	727	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	727	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	NW
HCM Control Delay, s	0.2
HCM LOS	

Minor Lane/Major Mvmt

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	610	32	12	553	1	36	12	38	36	4	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993						0.940			0.964	
Flt Protected		0.999			0.999			0.979			0.968	
Satd. Flow (prot)	0	1848	0	0	1861	0	0	1714	0	0	1738	0
Flt Permitted		0.993			0.985			0.836			0.806	
Satd. Flow (perm)	0	1837	0	0	1835	0	0	1464	0	0	1447	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	678	36	13	614	1	40	13	42	40	4	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	723	0	0	628	0	0	95	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	53.0	53.0		53.0	53.0		17.0	17.0		17.0	17.0	
Total Split (%)	75.7%	75.7%		75.7%	75.7%		24.3%	24.3%		24.3%	24.3%	
Maximum Green (s)	48.0	48.0		48.0	48.0		12.0	12.0		12.0	12.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		53.4			53.4			10.0			10.0	
Actuated g/C Ratio		0.76			0.76			0.14			0.14	
v/c Ratio		0.52			0.45			0.45			0.29	
Control Delay		6.5			6.8			33.8			29.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.5			6.8			33.8			29.4	
LOS		A			A			C			C	
Approach Delay		6.5			6.8			33.8			29.4	
Approach LOS		A			A			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.52	
Intersection Signal Delay: 9.3	Intersection LOS: A
Intersection Capacity Utilization 52.2%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

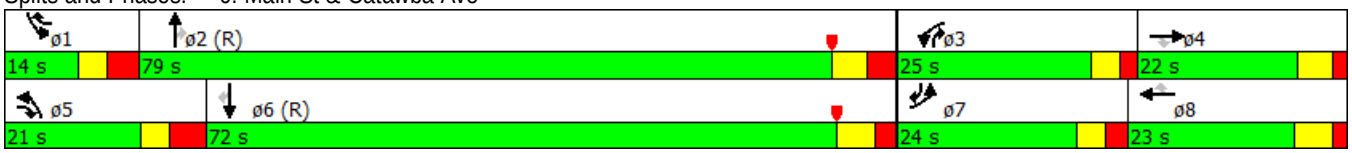
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	89	285	129	77	21	196	589	71	29	880	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	175		200	125		200	250		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1881	1599	1761	1853	1575	1778	1872	1591
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	1844	1567	1787	1881	1599	1761	1853	1575	1778	1872	1591
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		250			1037			896			1267	
Travel Time (s)		6.8			35.4			17.5			24.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	99	317	143	86	23	218	654	79	32	978	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	250	99	317	143	86	23	218	654	79	32	978	263
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	0	1	1	0
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	30	30	30	40	76	0	40	76	0
Trailing Detector (ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Size(ft)	40	40	40	30	30	30	40	6	20	40	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	7.0
Minimum Split (s)	13.0	20.0	14.0	13.0	23.0	14.0	14.0	26.0	13.0	14.0	27.0	13.0
Total Split (s)	24.0	22.0	21.0	25.0	23.0	14.0	21.0	79.0	25.0	14.0	72.0	24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	17.1%	15.7%	15.0%	17.9%	16.4%	10.0%	15.0%	56.4%	17.9%	10.0%	51.4%	17.1%
Maximum Green (s)	18.7	16.7	14.1	20.1	17.4	7.7	14.1	72.1	20.1	7.7	65.7	18.7
Yellow Time (s)	3.0	3.7	3.0	3.0	4.0	3.0	3.0	3.8	3.0	3.0	3.9	3.0
All-Red Time (s)	2.3	1.6	3.9	1.9	1.6	3.3	3.9	3.1	1.9	3.3	2.4	2.3
Lost Time Adjust (s)	-0.3	-0.3	-1.9	0.1	-0.6	-1.3	-1.9	-1.9	-1.9	-1.3	-1.3	-1.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		7.0			9.0			12.0			13.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	19.0	15.9	42.1	15.9	12.7	26.8	21.3	81.9	104.8	9.0	67.0	92.0
Actuated g/C Ratio	0.14	0.11	0.30	0.11	0.09	0.19	0.15	0.58	0.75	0.06	0.48	0.66
v/c Ratio	1.05	0.48	0.67	0.71	0.50	0.08	0.82	0.60	0.07	0.28	1.09	0.25
Control Delay	130.0	66.0	49.7	78.2	69.9	45.0	81.0	23.3	5.5	68.7	93.7	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.0	66.0	49.7	78.2	69.9	45.0	81.0	23.3	5.5	68.7	93.7	10.6
LOS	F	E	D	E	E	D	F	C	A	E	F	B
Approach Delay		82.2			72.3			35.0			75.9	
Approach LOS		F			E			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 86.1 (62%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 64.6 — Intersection LOS: E
Intersection Capacity Utilization 88.8% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: Main St & Catawba Ave



Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	15	630	37	51	508	15	10	10	101
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	700	41	57	564	17	11	11	112

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	581	0	0	741	0	0	1454	1448	721
Stage 1	-	-	-	-	-	-	754	754	-
Stage 2	-	-	-	-	-	-	700	694	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	993	-	-	866	-	-	108	131	427
Stage 1	-	-	-	-	-	-	401	417	-
Stage 2	-	-	-	-	-	-	430	444	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	993	-	-	866	-	-	89	115	427
Mov Cap-2 Maneuver	-	-	-	-	-	-	89	115	-
Stage 1	-	-	-	-	-	-	389	405	-
Stage 2	-	-	-	-	-	-	366	401	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0.8	29.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	278	993	-	-	866	-	-	153
HCM Lane V/C Ratio	0.484	0.017	-	-	0.065	-	-	0.232
HCM Control Delay (s)	29.5	8.7	0	-	9.4	0	-	35.5
HCM Lane LOS	D	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	2.5	0.1	-	-	0.2	-	-	0.9

Intersection	
Int Delay, s/veh	

Movement	SBL	SBT	SBR
Vol, veh/h	7	7	18
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	8	8	20

Major/Minor	Minor2		
Conflicting Flow All	1502	1460	573
Stage 1	686	686	-
Stage 2	816	774	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	100	129	519
Stage 1	438	448	-
Stage 2	371	408	-
Platoon blocked, %			
Mov Cap-1 Maneuver	62	113	519
Mov Cap-2 Maneuver	62	113	-
Stage 1	425	405	-
Stage 2	258	396	-

Approach	SB
HCM Control Delay, s	35.5
HCM LOS	E

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	10.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	15	0	19	7	1	11	7	933	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	21	8	1	12	8	1037	40

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	2571	2584	1443	2575	2571	1057	1450	0	0
Stage 1	1492	1492	-	1072	1072	-	-	-	-
Stage 2	1079	1092	-	1503	1499	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	17	25	162	17	26	273	467	-	-
Stage 1	154	187	-	267	297	-	-	-	-
Stage 2	264	291	-	152	185	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	~ 13	19	162	12	20	273	467	-	-
Mov Cap-2 Maneuver	~ 13	19	-	12	20	-	-	-	-
Stage 1	147	151	-	256	284	-	-	-	-
Stage 2	240	278	-	107	149	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	$ 531.5	294.3	0.1
HCM LOS	F	F	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	467	-	-	27	28	647	-	-
HCM Lane V/C Ratio	0.017	-	-	1.399	0.754	0.038	-	-
HCM Control Delay (s)	12.8	0	-	$ 531.5	294.3	10.8	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	4.5	2.4	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	22	1293	12
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	24	1437	13

Major/Minor	Major2		
Conflicting Flow All	1077	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	647	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	647	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.2
HCM LOS	

Minor Lane/Major Mvmt

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	648	27	19	375	19	21	15	62	30	18	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994			0.915			0.963	
Flt Protected		0.999			0.998			0.990			0.978	
Satd. Flow (prot)	0	1852	0	0	1848	0	0	1687	0	0	1754	0
Flt Permitted		0.989			0.959			0.926			0.814	
Satd. Flow (perm)	0	1833	0	0	1776	0	0	1578	0	0	1460	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	720	30	21	417	21	23	17	69	33	20	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	766	0	0	459	0	0	109	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	58.0	58.0		58.0	58.0		17.0	17.0		17.0	17.0	
Total Split (%)	77.3%	77.3%		77.3%	77.3%		22.7%	22.7%		22.7%	22.7%	
Maximum Green (s)	53.0	53.0		53.0	53.0		12.0	12.0		12.0	12.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		57.8			57.8			10.5			10.4	
Actuated g/C Ratio		0.77			0.77			0.14			0.14	
v/c Ratio		0.54			0.34			0.50			0.36	
Control Delay		6.9			5.6			36.8			33.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		6.9			5.6			36.8			33.1	
LOS		A			A			D			C	
Approach Delay		6.9			5.6			36.8			33.1	
Approach LOS		A			A			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 56.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	269	119	304	119	59	23	275	770	105	40	789	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		200	125		200	250		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		250			1037			921			1267	
Travel Time (s)		6.8			28.3			17.9			24.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	299	132	338	132	66	26	306	856	117	44	877	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	299	132	338	132	66	26	306	856	117	44	877	263
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	0	1	1	0
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	30	30	30	40	76	0	40	76	0
Trailing Detector (ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Size(ft)	40	40	40	30	30	30	40	6	20	40	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	7.0
Minimum Split (s)	13.0	20.0	14.0	13.0	23.6	14.0	14.0	26.0	13.0	14.0	27.0	13.0
Total Split (s)	28.0	27.0	29.0	25.0	24.0	14.0	29.0	84.0	25.0	14.0	69.0	28.0
Total Split (%)	18.7%	18.0%	19.3%	16.7%	16.0%	9.3%	19.3%	56.0%	16.7%	9.3%	46.0%	18.7%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	22.7	21.7	22.1	20.1	18.4	7.7	22.1	77.1	20.1	7.7	62.7	22.7
Yellow Time (s)	3.0	3.7	3.0	3.0	4.0	3.0	3.0	3.8	3.0	3.0	3.9	3.0
All-Red Time (s)	2.3	1.6	3.9	1.9	1.6	3.3	3.9	3.1	1.9	3.3	2.4	2.3
Lost Time Adjust (s)	-0.3	-0.3	-1.9	0.1	-0.6	-1.3	-1.9	-1.9	-1.9	-1.3	-1.3	-1.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		7.0			9.0			12.0			13.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	23.6	17.5	54.2	15.9	12.4	24.6	31.7	89.5	112.4	9.7	64.9	94.5
Actuated g/C Ratio	0.16	0.12	0.36	0.11	0.08	0.16	0.21	0.60	0.75	0.06	0.43	0.63
v/c Ratio	1.08	0.61	0.59	0.71	0.43	0.10	0.82	0.77	0.10	0.39	1.09	0.26
Control Delay	131.9	72.9	43.8	84.4	72.8	49.8	74.8	31.2	6.4	77.2	98.6	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	131.9	72.9	43.8	84.4	72.8	49.8	74.8	31.2	6.4	77.2	98.6	13.5
LOS	F	E	D	F	E	D	E	C	A	E	F	B
Approach Delay		83.1			77.0			39.4			78.9	
Approach LOS		F			E			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 91.5 (61%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 65.1 — Intersection LOS: E
Intersection Capacity Utilization 90.8% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: Catawba Ave & Main St

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	11	711	12	71	412	47	4	0	48
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	790	13	79	458	52	4	0	53

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	510	0	0	803	0	0	1468	1489	797
Stage 1	-	-	-	-	-	-	821	821	-
Stage 2	-	-	-	-	-	-	647	668	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1055	-	-	821	-	-	106	124	387
Stage 1	-	-	-	-	-	-	369	389	-
Stage 2	-	-	-	-	-	-	460	456	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1055	-	-	821	-	-	90	105	387
Mov Cap-2 Maneuver	-	-	-	-	-	-	90	105	-
Stage 1	-	-	-	-	-	-	361	381	-
Stage 2	-	-	-	-	-	-	390	394	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	1.3	19.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	309	1055	-	-	821	-	-	118
HCM Lane V/C Ratio	0.187	0.012	-	-	0.096	-	-	0.151
HCM Control Delay (s)	19.3	8.5	0	-	9.8	0	-	40.8
HCM Lane LOS	C	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	0.7	0	-	-	0.3	-	-	0.5

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	7	4	5
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	8	4	6

Major/Minor	Minor2		
Conflicting Flow All	1490	1470	484
Stage 1	642	642	-
Stage 2	848	828	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	102	127	583
Stage 1	463	469	-
Stage 2	356	386	-
Platoon blocked, %			
Mov Cap-1 Maneuver	78	108	583
Mov Cap-2 Maneuver	78	108	-
Stage 1	453	406	-
Stage 2	300	378	-

Approach	SB
HCM Control Delay, s	40.8
HCM LOS	E

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	20.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER
Vol, veh/h	16	5	21	11	0	18	18	1125	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	6	23	12	0	20	20	1250	44

Major/Minor	Minor1			Minor2			Major1		
Conflicting Flow All	2590	2601	1272	2595	2602	1210	1231	0	0
Stage 1	1312	1312	-	1268	1268	-	-	-	-
Stage 2	1278	1289	-	1327	1334	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	~ 17	25	205	17	25	223	566	-	-
Stage 1	195	228	-	207	240	-	-	-	-
Stage 2	204	234	-	191	223	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	~ 12	18	205	~ 9	18	223	566	-	-
Mov Cap-2 Maneuver	~ 12	18	-	~ 9	18	-	-	-	-
Stage 1	170	199	-	181	198	-	-	-	-
Stage 2	153	193	-	143	194	-	-	-	-

Approach	EB	WB	SE
HCM Control Delay, s	$ 742.7	$ 617.8	0.2
HCM LOS	F	F	

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	536	-	-	25	22	566	-	-
HCM Lane V/C Ratio	0.054	-	-	1.867	1.465	0.035	-	-
HCM Control Delay (s)	12.1	0	-	$ 742.7	$ 617.8	11.6	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	5.8	4.2	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection			
Int Delay, s/veh			

Movement	NWL	NWT	NWR
Vol, veh/h	26	1070	38
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	29	1189	42

Major/Minor	Major2		
Conflicting Flow All	1294	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	536	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	536	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	NW
HCM Control Delay, s	0.3
HCM LOS	

Minor Lane/Major Mvmt

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	8	610	32	10	553	1	36	12	26	36	4	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.993						0.952			0.964	
Flt Protected		0.999			0.999			0.976			0.968	
Satd. Flow (prot)	0	1848	0	0	1861	0	0	1731	0	0	1738	0
Flt Permitted		0.993			0.988			0.833			0.819	
Satd. Flow (perm)	0	1837	0	0	1840	0	0	1477	0	0	1471	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	9	678	36	11	614	1	40	13	29	40	4	16
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	723	0	0	626	0	0	82	0	0	60	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	59.0	59.0		59.0	59.0		16.0	16.0		16.0	16.0	
Total Split (%)	78.7%	78.7%		78.7%	78.7%		21.3%	21.3%		21.3%	21.3%	
Maximum Green (s)	54.0	54.0		54.0	54.0		11.0	11.0		11.0	11.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		58.6			58.6			9.8			9.8	
Actuated g/C Ratio		0.78			0.78			0.13			0.13	
v/c Ratio		0.50			0.44			0.42			0.31	
Control Delay		2.4			6.1			36.1			32.9	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		2.4			6.1			36.1			32.9	
LOS		A			A			D			C	
Approach Delay		2.4			6.1			36.1			32.9	
Approach LOS		A			A			D			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 75	
Actuated Cycle Length: 75	
Offset: 70 (93%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 40	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.50	
Intersection Signal Delay: 7.0	Intersection LOS: A
Intersection Capacity Utilization 52.4%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

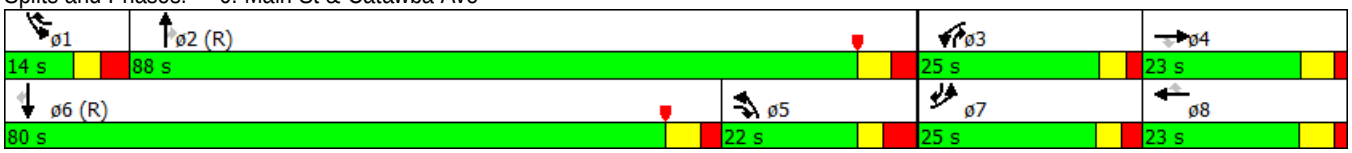
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	213	89	245	129	77	21	179	601	71	29	880	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	175		200	125		200	250		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1881	1599	1761	1853	1575	1778	1872	1591
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	1844	1567	1787	1881	1599	1761	1853	1575	1778	1872	1591
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		250			1037			896			1267	
Travel Time (s)		6.8			35.4			17.5			24.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	237	99	272	143	86	23	199	668	79	32	978	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	237	99	272	143	86	23	199	668	79	32	978	263
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	0	1	1	0
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	30	30	30	40	76	0	40	76	0
Trailing Detector (ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Size(ft)	40	40	40	30	30	30	40	6	20	40	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	7.0
Minimum Split (s)	13.0	20.0	14.0	13.0	23.0	14.0	14.0	26.0	13.0	14.0	27.0	13.0
Total Split (s)	25.0	23.0	22.0	25.0	23.0	14.0	22.0	88.0	25.0	14.0	80.0	25.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	16.7%	15.3%	14.7%	16.7%	15.3%	9.3%	14.7%	58.7%	16.7%	9.3%	53.3%	16.7%
Maximum Green (s)	19.7	17.7	15.1	20.1	17.4	7.7	15.1	81.1	20.1	7.7	73.7	19.7
Yellow Time (s)	3.0	3.7	3.0	3.0	4.0	3.0	3.0	3.8	3.0	3.0	3.9	3.0
All-Red Time (s)	2.3	1.6	3.9	1.9	1.6	3.3	3.9	3.1	1.9	3.3	2.4	2.3
Lost Time Adjust (s)	-0.3	-0.3	-1.9	0.1	-0.6	-1.3	-1.9	-1.9	-1.9	-1.3	-1.3	-1.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		7.0			9.0			12.0			13.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	20.0	16.6	33.6	16.5	13.1	27.2	17.0	90.5	114.0	9.1	79.9	101.9
Actuated g/C Ratio	0.13	0.11	0.22	0.11	0.09	0.18	0.11	0.60	0.76	0.06	0.53	0.68
v/c Ratio	1.02	0.49	0.78	0.73	0.53	0.08	1.00	0.60	0.07	0.30	0.98	0.24
Control Delay	115.0	63.5	46.2	85.4	76.3	49.6	112.4	16.7	3.4	74.6	58.7	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
Total Delay	115.0	63.5	46.2	85.4	76.3	49.6	112.4	17.1	3.4	74.6	58.7	5.5
LOS	F	E	D	F	E	D	F	B	A	E	E	A
Approach Delay		75.8			79.0			36.0			48.1	
Approach LOS		E			E			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 88 (59%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.02
Intersection Signal Delay: 52.4 — Intersection LOS: D
Intersection Capacity Utilization 87.2% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: Main St & Catawba Ave



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	0	59	7	1	11	24	916	36	22	1253	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		0%			0%			1%			0%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.907			0.923			0.995			0.999	
Flt Protected		0.985			0.981			0.999			0.999	
Satd. Flow (prot)	0	1664	0	0	1687	0	0	1842	0	0	1859	0
Flt Permitted		0.887			0.739			0.932			0.969	
Satd. Flow (perm)	0	1499	0	0	1271	0	0	1719	0	0	1803	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		59			12			5			1	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		913			122			856			896	
Travel Time (s)		20.8			2.8			16.7			17.5	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	30	0	66	8	1	12	27	1018	40	24	1392	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	0	0	21	0	0	1085	0	0	1429	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.01	1.01	1.01	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	23.0	23.0		23.0	23.0		127.0	127.0		127.0	127.0	
Total Split (%)	15.3%	15.3%		15.3%	15.3%		84.7%	84.7%		84.7%	84.7%	
Maximum Green (s)	16.0	16.0		16.0	16.0		120.0	120.0		120.0	120.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		9.8			9.8			126.2			126.2	
Actuated g/C Ratio		0.07			0.07			0.84			0.84	
v/c Ratio		0.63			0.22			0.75			0.94	
Control Delay		47.1			43.7			9.9			16.6	
Queue Delay		0.0			0.0			0.0			0.7	
Total Delay		47.1			43.7			9.9			17.3	
LOS		D			D			A			B	
Approach Delay		47.1			43.7			9.9			17.3	
Approach LOS		D			D			A			B	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 108 (72%), Referenced to phase 2:NBTL and 6:SBTL, Start of Yellow
Natural Cycle: 130
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 15.5 Intersection LOS: B
Intersection Capacity Utilization 94.9% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 32: Main St & Hickory St

Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	15	618	37	36	506	15	10	10	61
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	687	41	40	562	17	11	11	68

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	579	0	0	728	0	0	1405	1400	707
Stage 1	-	-	-	-	-	-	741	741	-
Stage 2	-	-	-	-	-	-	664	659	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	995	-	-	876	-	-	117	140	435
Stage 1	-	-	-	-	-	-	408	423	-
Stage 2	-	-	-	-	-	-	450	461	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	995	-	-	876	-	-	100	127	435
Mov Cap-2 Maneuver	-	-	-	-	-	-	100	127	-
Stage 1	-	-	-	-	-	-	396	411	-
Stage 2	-	-	-	-	-	-	396	430	-

Approach	EB	WB	NB
HCM Control Delay, s	0.2	0.6	26.8
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	254	995	-	-	876	-	-	182
HCM Lane V/C Ratio	0.354	0.017	-	-	0.046	-	-	0.195
HCM Control Delay (s)	26.8	8.7	0	-	9.3	0	-	29.5
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	1.5	0.1	-	-	0.1	-	-	0.7

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	7	7	18
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	8	8	20

Major/Minor	Minor2		
Conflicting Flow All	1431	1412	571
Stage 1	651	651	-
Stage 2	780	761	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	112	138	520
Stage 1	457	465	-
Stage 2	388	414	-
Platoon blocked, %			
Mov Cap-1 Maneuver	82	125	520
Mov Cap-2 Maneuver	82	125	-
Stage 1	444	434	-
Stage 2	309	402	-

Approach	SB
HCM Control Delay, s	29.5
HCM LOS	D

Minor Lane/Major Mvmt

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	648	27	15	375	19	21	15	42	30	18	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.995			0.994			0.927			0.963	
Flt Protected		0.999			0.998			0.987			0.978	
Satd. Flow (prot)	0	1852	0	0	1848	0	0	1704	0	0	1754	0
Flt Permitted		0.989			0.969			0.911			0.869	
Satd. Flow (perm)	0	1833	0	0	1794	0	0	1573	0	0	1559	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		1419			489			530			513	
Travel Time (s)		38.7			13.3			14.5			14.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	16	720	30	17	417	21	23	17	47	33	20	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	766	0	0	455	0	0	87	0	0	73	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	8.0	8.0		8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	15.0	15.0		15.0	15.0		13.0	13.0		13.0	13.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	55.0	55.0		55.0	55.0		15.0	15.0		15.0	15.0	
Total Split (%)	78.6%	78.6%		78.6%	78.6%		21.4%	21.4%		21.4%	21.4%	
Maximum Green (s)	50.0	50.0		50.0	50.0		10.0	10.0		10.0	10.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	C-Min	C-Min		Min	Min		None	None		None	None	
Walk Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Flash Dont Walk (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		53.9			53.9			9.3			9.3	
Actuated g/C Ratio		0.77			0.77			0.13			0.13	
v/c Ratio		0.54			0.33			0.42			0.35	
Control Delay		3.2			3.4			33.2			31.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		3.2			3.4			33.2			31.4	
LOS		A			A			C			C	
Approach Delay		3.2			3.4			33.2			31.4	
Approach LOS		A			A			C			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 70	
Actuated Cycle Length: 70	
Offset: 2 (3%), Referenced to phase 2:EBTL, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 6.7	Intersection LOS: A
Intersection Capacity Utilization 55.8%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 3: School St/Church St & Catawba Ave

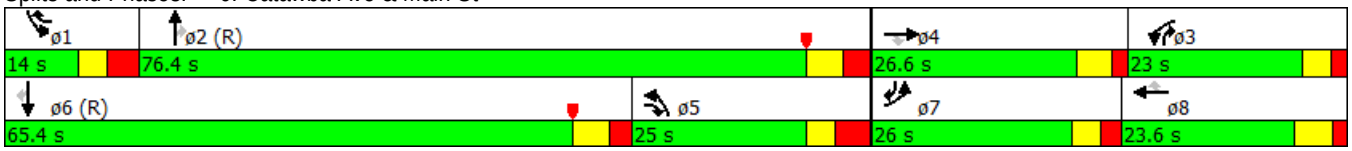
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	119	273	119	59	23	250	779	105	40	789	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		200	125		200	250		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		250			1037			921			1267	
Travel Time (s)		6.8			28.3			17.9			24.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	289	132	303	132	66	26	278	866	117	44	877	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	289	132	303	132	66	26	278	866	117	44	877	263
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	0	1	1	0
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	30	30	30	40	76	0	40	76	0
Trailing Detector (ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Size(ft)	40	40	40	30	30	30	40	6	20	40	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	7.0
Minimum Split (s)	13.0	20.0	14.0	13.0	23.6	14.0	14.0	26.0	13.0	14.0	27.0	13.0
Total Split (s)	26.0	26.6	25.0	23.0	23.6	14.0	25.0	76.4	23.0	14.0	65.4	26.0
Total Split (%)	18.6%	19.0%	17.9%	16.4%	16.9%	10.0%	17.9%	54.6%	16.4%	10.0%	46.7%	18.6%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	20.7	21.3	18.1	18.1	18.0	7.7	18.1	69.5	18.1	7.7	59.1	20.7
Yellow Time (s)	3.0	3.7	3.0	3.0	4.0	3.0	3.0	3.8	3.0	3.0	3.9	3.0
All-Red Time (s)	2.3	1.6	3.9	1.9	1.6	3.3	3.9	3.1	1.9	3.3	2.4	2.3
Lost Time Adjust (s)	-0.3	-0.3	-1.9	0.1	-0.6	-1.3	-1.9	-1.9	-1.9	-1.3	-1.3	-1.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	4.0
Lead/Lag	Lead	Lead	Lag	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		7.0			9.0			12.0			13.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	21.8	15.5	40.5	16.0	12.2	24.3	20.0	81.6	102.2	9.6	68.5	93.1
Actuated g/C Ratio	0.16	0.11	0.29	0.11	0.09	0.17	0.14	0.58	0.73	0.07	0.49	0.66
v/c Ratio	1.05	0.64	0.66	0.65	0.41	0.09	1.10	0.80	0.10	0.37	0.96	0.25
Control Delay	113.8	59.6	37.6	74.5	66.5	45.0	118.5	22.4	3.2	71.1	57.4	6.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0
Total Delay	113.8	59.6	37.6	74.5	66.5	45.0	118.5	23.3	3.2	71.1	57.4	6.4
LOS	F	E	D	E	E	D	F	C	A	E	E	A
Approach Delay		72.1			68.7			42.4			46.6	
Approach LOS		E			E			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 120 (86%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 51.9 Intersection LOS: D
Intersection Capacity Utilization 88.9% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: Catawba Ave & Main St



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	25	5	52	11	0	18	18	1094	40	51	1045	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.915			0.916			0.995			0.995	
Flt Protected		0.985			0.982			0.999			0.998	
Satd. Flow (prot)	0	1679	0	0	1676	0	0	1852	0	0	1850	0
Flt Permitted		0.886			0.782			0.968			0.878	
Satd. Flow (perm)	0	1510	0	0	1334	0	0	1794	0	0	1627	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		50			31			4			4	
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		854			109			921			840	
Travel Time (s)		19.4			2.5			17.9			16.4	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	28	6	58	12	0	20	20	1216	44	57	1161	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	92	0	0	32	0	0	1280	0	0	1260	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Total Split (s)	23.0	23.0		23.0	23.0		117.0	117.0		117.0	117.0	
Total Split (%)	16.4%	16.4%		16.4%	16.4%		83.6%	83.6%		83.6%	83.6%	
Maximum Green (s)	16.0	16.0		16.0	16.0		110.0	110.0		110.0	110.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		7.0			7.0			7.0			7.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Max	C-Max		C-Max	C-Max	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		9.8			9.8			116.2			116.2	
Actuated g/C Ratio		0.07			0.07			0.83			0.83	
v/c Ratio		0.61			0.26			0.86			0.93	
Control Delay		47.2			24.5			12.4			24.2	
Queue Delay		0.0			0.0			0.0			4.2	
Total Delay		47.3			24.5			12.5			28.3	
LOS		D			C			B			C	
Approach Delay		47.3			24.5			12.5			28.3	
Approach LOS		D			C			B			C	

Intersection Summary	
Area Type:	Other
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 139 (99%), Referenced to phase 2:NWTL and 6:SETL, Start of Yellow	
Natural Cycle: 120	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.93	
Intersection Signal Delay: 21.3	Intersection LOS: C
Intersection Capacity Utilization 103.6%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 32: Main St & Hickory St

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	11	691	12	50	408	47	4	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	768	13	56	453	52	4	0	31

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	506	0	0	781	0	0	1395	1416	774
Stage 1	-	-	-	-	-	-	799	799	-
Stage 2	-	-	-	-	-	-	596	617	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1059	-	-	837	-	-	119	137	398
Stage 1	-	-	-	-	-	-	379	398	-
Stage 2	-	-	-	-	-	-	490	481	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1059	-	-	837	-	-	105	122	398
Mov Cap-2 Maneuver	-	-	-	-	-	-	105	122	-
Stage 1	-	-	-	-	-	-	371	390	-
Stage 2	-	-	-	-	-	-	435	436	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	1	18.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	295	1059	-	-	837	-	-	144
HCM Lane V/C Ratio	0.121	0.012	-	-	0.066	-	-	0.123
HCM Control Delay (s)	18.9	8.4	0	-	9.6	0	-	33.5
HCM Lane LOS	C	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.4	0	-	-	0.2	-	-	0.4

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	7	4	5
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	8	4	6

Major/Minor	Minor2		
Conflicting Flow All	1405	1397	479
Stage 1	591	591	-
Stage 2	814	806	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	117	141	587
Stage 1	493	494	-
Stage 2	372	395	-
Platoon blocked, %			
Mov Cap-1 Maneuver	99	125	587
Mov Cap-2 Maneuver	99	125	-
Stage 1	483	448	-
Stage 2	336	387	-

Approach	SB
HCM Control Delay, s	33.5
HCM LOS	D

Minor Lane/Major Mvmt

APPENDIX I

SYNCHRO Reports:
Hickory Street Extension

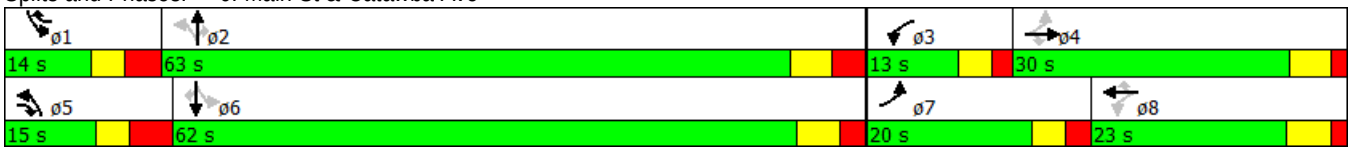
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	65	208	94	56	15	143	430	52	21	642	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	175		200	125		200	250		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1881	1599	1761	1853	1575	1778	1872	1591
Flt Permitted	0.430			0.710			0.117			0.424		
Satd. Flow (perm)	793	1844	1567	1336	1881	1599	217	1853	1575	794	1872	1591
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		250			1037			896			1267	
Travel Time (s)		6.8			35.4			17.5			24.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	182	72	231	104	62	17	159	478	58	23	713	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	182	72	231	104	62	17	159	478	58	23	713	192
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	0	1	1	0
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	30	30	30	40	76	0	40	76	0
Trailing Detector (ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Size(ft)	40	40	40	30	30	30	40	6	20	40	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	13.0	20.0	14.0	13.0	23.0	14.0	14.0	26.0	26.0	14.0	27.0	27.0
Total Split (s)	20.0	30.0	15.0	13.0	23.0	14.0	15.0	63.0	63.0	14.0	62.0	62.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	16.7%	25.0%	12.5%	10.8%	19.2%	11.7%	12.5%	52.5%	52.5%	11.7%	51.7%	51.7%
Maximum Green (s)	14.7	24.7	8.1	8.1	17.4	7.7	8.1	56.1	56.1	7.7	55.7	55.7
Yellow Time (s)	3.0	3.7	3.0	3.0	4.0	3.0	3.0	3.8	3.8	3.0	3.9	3.9
All-Red Time (s)	2.3	1.6	3.9	1.9	1.6	3.3	3.9	3.1	3.1	3.3	2.4	2.4
Lost Time Adjust (s)	-0.3	-0.3	-1.9	0.1	-0.6	-1.3	-1.9	-1.9	-1.9	-1.3	-1.3	-1.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		7.0			9.0			12.0	12.0		13.0	13.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	24.2	14.8	30.9	15.6	9.9	20.0	54.0	48.8	48.8	48.5	39.6	39.6
Actuated g/C Ratio	0.27	0.16	0.34	0.17	0.11	0.22	0.59	0.54	0.54	0.53	0.44	0.44
v/c Ratio	0.52	0.24	0.43	0.39	0.30	0.05	0.51	0.48	0.07	0.04	0.87	0.28
Control Delay	34.5	40.2	30.8	33.5	47.9	33.0	17.5	18.1	14.1	8.5	36.6	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.5	40.2	30.8	33.5	47.9	33.0	17.5	18.1	14.1	8.5	36.6	18.0
LOS	C	D	C	C	D	C	B	B	B	A	D	B
Approach Delay		33.6			38.3			17.6			32.1	
Approach LOS		C			D			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 90.8
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.87
Intersection Signal Delay: 28.5 — Intersection LOS: C
Intersection Capacity Utilization 70.0% — ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 6: Main St & Catawba Ave



Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	11	0	14	5	1	8	5	681	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	16	6	1	9	6	757	29

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	1876	1886	1054	1879	1876	771	1059	0	0
Stage 1	1089	1089	-	782	782	-	-	-	-
Stage 2	787	797	-	1097	1094	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	55	71	275	54	72	400	658	-	-
Stage 1	261	291	-	387	405	-	-	-	-
Stage 2	385	399	-	258	290	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	50	66	275	48	67	400	658	-	-
Mov Cap-2 Maneuver	50	66	-	48	67	-	-	-	-
Stage 1	257	276	-	381	399	-	-	-	-
Stage 2	369	393	-	231	275	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	60.2	47	0.1
HCM LOS	F	E	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	658	-	-	92	101	833	-	-
HCM Lane V/C Ratio	0.008	-	-	0.302	0.154	0.021	-	-
HCM Control Delay (s)	10.5	0	-	60.2	47	9.4	0	-
HCM Lane LOS	B	A	-	F	E	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.1	0.5	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	16	944	9
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	18	1049	10

Major/Minor	Major2		
Conflicting Flow All	786	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	833	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	833	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.2
HCM LOS	

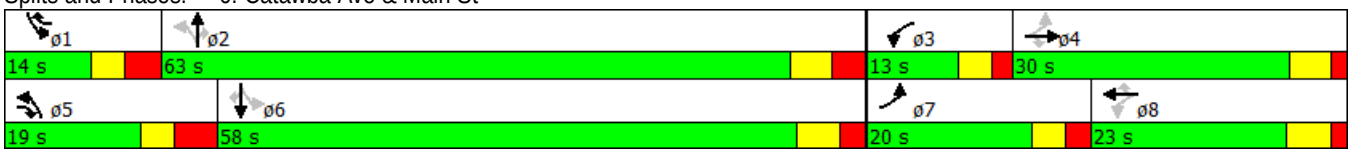
Minor Lane/Major Mvmt

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	196	87	222	87	43	17	201	562	77	29	576	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		200	125		200	250		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.381			0.833			0.139			0.316		
Satd. Flow (perm)	710	1863	1583	1552	1863	1583	259	1863	1583	589	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		250			1037			921			1267	
Travel Time (s)		6.8			28.3			17.9			24.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	218	97	247	97	48	19	223	624	86	32	640	192
Shared Lane Traffic (%)												
Lane Group Flow (vph)	218	97	247	97	48	19	223	624	86	32	640	192
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	0	1	1	0
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	30	30	30	40	76	0	40	76	0
Trailing Detector (ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Size(ft)	40	40	40	30	30	30	40	6	20	40	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4	5	3	8	1	5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	5	3	8	1	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	13.0	20.0	14.0	13.0	23.0	14.0	14.0	26.0	26.0	14.0	27.0	27.0
Total Split (s)	20.0	30.0	19.0	13.0	23.0	14.0	19.0	63.0	63.0	14.0	58.0	58.0
Total Split (%)	16.7%	25.0%	15.8%	10.8%	19.2%	11.7%	15.8%	52.5%	52.5%	11.7%	48.3%	48.3%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	14.7	24.7	12.1	8.1	17.4	7.7	12.1	56.1	56.1	7.7	51.7	51.7
Yellow Time (s)	3.0	3.7	3.0	3.0	4.0	3.0	3.0	3.8	3.8	3.0	3.9	3.9
All-Red Time (s)	2.3	1.6	3.9	1.9	1.6	3.3	3.9	3.1	3.1	3.3	2.4	2.4
Lost Time Adjust (s)	-0.3	-0.3	-1.9	0.1	-0.6	-1.3	-1.9	-1.9	-1.9	-1.3	-1.3	-1.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	Min	Min	None	Min	Min
Walk Time (s)		7.0			7.0			7.0	7.0		7.0	7.0
Flash Dont Walk (s)		7.0			9.0			12.0	12.0		13.0	13.0
Pedestrian Calls (#/hr)		0			0			0	0		0	0
Act Effct Green (s)	23.5	13.9	33.2	13.3	9.3	16.6	56.4	49.4	49.4	45.9	37.1	37.1
Actuated g/C Ratio	0.26	0.15	0.37	0.15	0.10	0.18	0.62	0.55	0.55	0.51	0.41	0.41
v/c Ratio	0.59	0.34	0.43	0.39	0.25	0.07	0.56	0.61	0.10	0.08	0.84	0.30
Control Delay	37.1	42.4	27.9	35.6	47.3	33.6	17.3	20.4	13.9	8.8	35.8	20.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.1	42.4	27.9	35.6	47.3	33.6	17.3	20.4	13.9	8.8	35.8	20.1
LOS	D	D	C	D	D	C	B	C	B	A	D	C
Approach Delay		34.0			38.8			19.1			31.3	
Approach LOS		C			D			B			C	

Intersection Summary	
Area Type: Other	
Cycle Length: 120	
Actuated Cycle Length: 90.5	
Natural Cycle: 90	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 27.8	Intersection LOS: C
Intersection Capacity Utilization 71.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 6: Catawba Ave & Main St



Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER
Vol, veh/h	12	4	15	8	0	13	13	821	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	13	4	17	9	0	14	14	912	32

Major/Minor	Minor1			Minor2			Major1		
Conflicting Flow All	1890	1898	928	1894	1899	883	899	0	0
Stage 1	957	957	-	926	926	-	-	-	-
Stage 2	933	941	-	968	973	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	53	69	325	53	69	345	756	-	-
Stage 1	310	336	-	322	347	-	-	-	-
Stage 2	319	342	-	305	330	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	47	62	325	44	62	345	756	-	-
Mov Cap-2 Maneuver	47	62	-	44	62	-	-	-	-
Stage 1	298	323	-	309	327	-	-	-	-
Stage 2	288	322	-	274	317	-	-	-	-

Approach	EB	WB	SE
HCM Control Delay, s	73.6	54.1	0.1
HCM LOS	F	F	

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	727	-	-	85	96	756	-	-
HCM Lane V/C Ratio	0.029	-	-	0.405	0.243	0.019	-	-
HCM Control Delay (s)	10.1	0	-	73.6	54.1	9.9	0	-
HCM Lane LOS	B	A	-	F	F	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.6	0.9	0.1	-	-

Intersection			
Int Delay, s/veh			

Movement	NWL	NWT	NWR
Vol, veh/h	19	781	28
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	21	868	31

Major/Minor	Major2		
Conflicting Flow All	944	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	727	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	727	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	NW
HCM Control Delay, s	0.2
HCM LOS	

Minor Lane/Major Mvmt

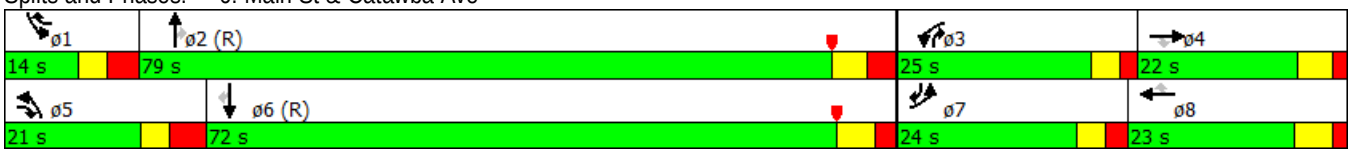
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	111	285	143	86	24	196	589	89	36	880	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Grade (%)		2%			-2%			1%			-1%	
Storage Length (ft)	175		200	125		200	250		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1752	1844	1567	1787	1881	1599	1761	1853	1575	1778	1872	1591
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1752	1844	1567	1787	1881	1599	1761	1853	1575	1778	1872	1591
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			20			35			35	
Link Distance (ft)		250			1037			896			1267	
Travel Time (s)		6.8			35.4			17.5			24.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	123	317	159	96	27	218	654	99	40	978	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	250	123	317	159	96	27	218	654	99	40	978	263
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.01	1.01	1.01	0.99	0.99	0.99	1.01	1.01	1.01	0.99	0.99	0.99
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	0	1	1	0
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	30	30	30	40	76	0	40	76	0
Trailing Detector (ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Size(ft)	40	40	40	30	30	30	40	6	20	40	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	7.0
Minimum Split (s)	13.0	20.0	14.0	13.0	23.0	14.0	14.0	26.0	13.0	14.0	27.0	13.0
Total Split (s)	24.0	22.0	21.0	25.0	23.0	14.0	21.0	79.0	25.0	14.0	72.0	24.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (%)	17.1%	15.7%	15.0%	17.9%	16.4%	10.0%	15.0%	56.4%	17.9%	10.0%	51.4%	17.1%
Maximum Green (s)	18.7	16.7	14.1	20.1	17.4	7.7	14.1	72.1	20.1	7.7	65.7	18.7
Yellow Time (s)	3.0	3.7	3.0	3.0	4.0	3.0	3.0	3.8	3.0	3.0	3.9	3.0
All-Red Time (s)	2.3	1.6	3.9	1.9	1.6	3.3	3.9	3.1	1.9	3.3	2.4	2.3
Lost Time Adjust (s)	-0.3	-0.3	-1.9	0.1	-0.6	-1.3	-1.9	-1.9	-1.9	-1.3	-1.3	-1.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		7.0			9.0			12.0			13.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	19.0	16.0	41.2	16.8	13.8	27.7	20.2	80.9	104.7	8.9	67.0	92.0
Actuated g/C Ratio	0.14	0.11	0.29	0.12	0.10	0.20	0.14	0.58	0.75	0.06	0.48	0.66
v/c Ratio	1.05	0.58	0.69	0.74	0.52	0.09	0.86	0.61	0.08	0.35	1.09	0.25
Control Delay	130.3	70.6	53.5	79.9	69.0	44.5	88.1	24.0	5.6	71.8	93.7	10.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	130.3	70.6	53.5	79.9	69.0	44.5	88.1	24.0	5.6	71.8	93.7	10.6
LOS	F	E	D	E	E	D	F	C	A	E	F	B
Approach Delay		84.4			72.8			36.5			76.0	
Approach LOS		F			E			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 140
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.09
Intersection Signal Delay: 65.6 — Intersection LOS: E
Intersection Capacity Utilization 88.8% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: Main St & Catawba Ave



Intersection	
Int Delay, s/veh	10.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	15	0	19	7	1	11	7	933	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	1	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	17	0	21	8	1	12	8	1037	40

Major/Minor	Minor2			Minor1			Major1		
Conflicting Flow All	2571	2584	1443	2575	2571	1057	1450	0	0
Stage 1	1492	1492	-	1072	1072	-	-	-	-
Stage 2	1079	1092	-	1503	1499	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	17	25	162	17	26	273	467	-	-
Stage 1	154	187	-	267	297	-	-	-	-
Stage 2	264	291	-	152	185	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	~ 13	19	162	12	20	273	467	-	-
Mov Cap-2 Maneuver	~ 13	19	-	12	20	-	-	-	-
Stage 1	147	151	-	256	284	-	-	-	-
Stage 2	240	278	-	107	149	-	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	$ 531.5	294.3	0.1
HCM LOS	F	F	

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	467	-	-	27	28	647	-	-
HCM Lane V/C Ratio	0.017	-	-	1.399	0.754	0.038	-	-
HCM Control Delay (s)	12.8	0	-	$ 531.5	294.3	10.8	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	4.5	2.4	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	22	1293	12
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	24	1437	13

Major/Minor	Major2		
Conflicting Flow All	1077	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	647	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	647	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	SB
HCM Control Delay, s	0.2
HCM LOS	

Minor Lane/Major Mvmt

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	269	166	304	179	89	35	275	770	146	56	789	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	175		200	125		200	250		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		250			1037			921			1267	
Travel Time (s)		6.8			28.3			17.9			24.7	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	299	184	338	199	99	39	306	856	162	62	877	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	299	184	338	199	99	39	306	856	162	62	877	263
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	0	1	1	0
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	40	40	40	30	30	30	40	76	0	40	76	0
Trailing Detector (ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	70	0	0	70	0
Detector 1 Size(ft)	40	40	40	30	30	30	40	6	20	40	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	10.0	7.0	7.0	10.0	7.0
Minimum Split (s)	13.0	20.0	14.0	13.0	23.0	14.0	14.0	26.0	13.0	14.0	27.0	13.0
Total Split (s)	28.0	25.0	29.0	26.0	23.0	14.0	29.0	85.0	26.0	14.0	70.0	28.0
Total Split (%)	18.7%	16.7%	19.3%	17.3%	15.3%	9.3%	19.3%	56.7%	17.3%	9.3%	46.7%	18.7%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	22.7	19.7	22.1	21.1	17.4	7.7	22.1	78.1	21.1	7.7	63.7	22.7
Yellow Time (s)	3.0	3.7	3.0	3.0	4.0	3.0	3.0	3.8	3.0	3.0	3.9	3.0
All-Red Time (s)	2.3	1.6	3.9	1.9	1.6	3.3	3.9	3.1	1.9	3.3	2.4	2.3
Lost Time Adjust (s)	-0.3	-0.3	-1.9	0.1	-0.6	-1.3	-1.9	-1.9	-1.9	-1.3	-1.3	-1.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	3.0	5.0	5.0	4.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Min	None	None	C-Min	None
Walk Time (s)		7.0			7.0			7.0			7.0	
Flash Dont Walk (s)		7.0			9.0			12.0			13.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	23.0	18.9	50.4	19.6	15.5	29.7	26.5	85.0	111.6	9.1	65.0	94.0
Actuated g/C Ratio	0.15	0.13	0.34	0.13	0.10	0.20	0.18	0.57	0.74	0.06	0.43	0.63
v/c Ratio	1.10	0.79	0.64	0.86	0.52	0.12	0.98	0.81	0.14	0.58	1.09	0.27
Control Delay	141.7	86.2	49.0	95.4	72.6	49.2	106.6	35.3	6.4	89.8	98.1	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	141.7	86.2	49.0	95.4	72.6	49.2	106.6	35.3	6.4	89.8	98.1	13.4
LOS	F	F	D	F	E	D	F	D	A	F	F	B
Approach Delay		91.1			83.3			48.3			79.1	
Approach LOS		F			F			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 71.1 Intersection LOS: E
Intersection Capacity Utilization 94.2% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 6: Catawba Ave & Main St

Intersection	
Int Delay, s/veh	20.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER
Vol, veh/h	16	5	21	11	0	18	18	1125	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	6	23	12	0	20	20	1250	44

Major/Minor	Minor1			Minor2			Major1		
Conflicting Flow All	2590	2601	1272	2595	2602	1210	1231	0	0
Stage 1	1312	1312	-	1268	1268	-	-	-	-
Stage 2	1278	1289	-	1327	1334	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-
Pot Cap-1 Maneuver	~ 17	25	205	17	25	223	566	-	-
Stage 1	195	228	-	207	240	-	-	-	-
Stage 2	204	234	-	191	223	-	-	-	-
Platoon blocked, %								-	-
Mov Cap-1 Maneuver	~ 12	18	205	~ 9	18	223	566	-	-
Mov Cap-2 Maneuver	~ 12	18	-	~ 9	18	-	-	-	-
Stage 1	170	199	-	181	198	-	-	-	-
Stage 2	153	193	-	143	194	-	-	-	-

Approach	EB	WB	SE
HCM Control Delay, s	$ 742.7	$ 617.8	0.2
HCM LOS	F	F	

Minor Lane/Major Mvmt	NWL	NWT	NWR	EBLn1	WBLn1	SEL	SET	SER
Capacity (veh/h)	536	-	-	25	22	566	-	-
HCM Lane V/C Ratio	0.054	-	-	1.867	1.465	0.035	-	-
HCM Control Delay (s)	12.1	0	-	$ 742.7	$ 617.8	11.6	0	-
HCM Lane LOS	B	A	-	F	F	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	5.8	4.2	0.1	-	-

Notes

~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection			
Int Delay, s/veh			

Movement	NWL	NWT	NWR
Vol, veh/h	26	1070	38
Conflicting Peds, #/hr	0	0	0
Sign Control	Free	Free	Free
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	29	1189	42

Major/Minor	Major2		
Conflicting Flow All	1294	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	536	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	536	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	NW
HCM Control Delay, s	0.3
HCM LOS	

Minor Lane/Major Mvmt

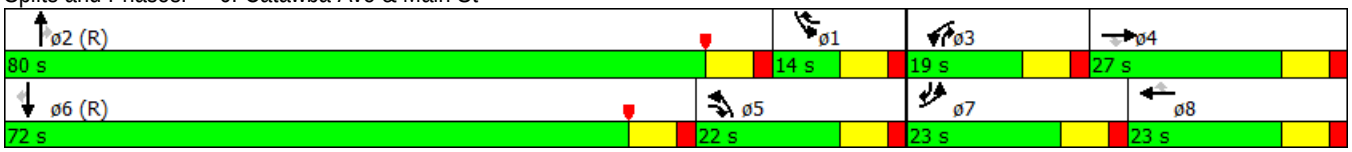
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	111	285	129	86	22	196	591	76	31	885	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		100	120		200	300		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1644			1062			909			1188	
Travel Time (s)		44.8			29.0			20.7			27.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	123	317	143	96	24	218	657	84	34	983	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	250	123	317	143	96	24	218	657	84	34	983	263
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.0	23.0	14.0	14.0	23.0	14.0	14.0	23.0	14.0	14.0	23.0	14.0
Total Split (s)	23.0	27.0	22.0	19.0	23.0	14.0	22.0	80.0	19.0	14.0	72.0	23.0
Total Split (%)	16.4%	19.3%	15.7%	13.6%	16.4%	10.0%	15.7%	57.1%	13.6%	10.0%	51.4%	16.4%
Maximum Green (s)	16.0	20.0	15.0	12.0	16.0	7.0	15.0	73.0	12.0	7.0	65.0	16.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	18.0	18.3	35.3	13.9	14.3	23.3	17.0	81.5	96.5	9.0	70.7	88.7
Actuated g/C Ratio	0.13	0.13	0.25	0.10	0.10	0.17	0.12	0.58	0.69	0.06	0.50	0.63
v/c Ratio	1.10	0.51	0.79	0.81	0.51	0.09	1.02	0.61	0.08	0.30	1.04	0.26
Control Delay	144.3	63.5	50.4	94.0	68.3	31.0	115.4	19.2	2.5	69.9	76.0	6.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0
Total Delay	144.3	63.5	50.4	94.0	68.3	31.0	115.4	19.5	2.5	69.9	76.0	6.6
LOS	F	E	D	F	E	C	F	B	A	E	E	A
Approach Delay		86.8			78.9			39.8			61.5	
Approach LOS		F			E			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 119 (85%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 61.9 — Intersection LOS: E
Intersection Capacity Utilization 89.1% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 6: Catawba Ave & Main St



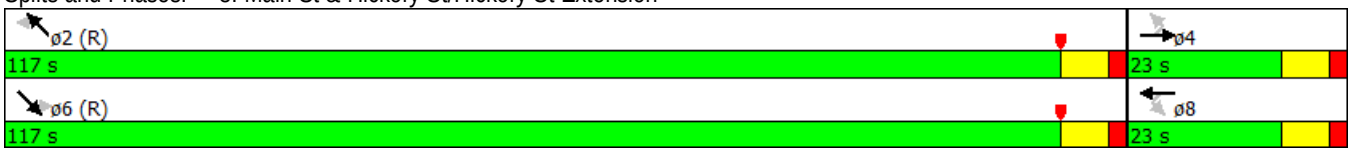
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	15	0	19	21	1	13	27	1279	12	7	920	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	225		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.925			0.950			0.999			0.992	
Flt Protected		0.978			0.971		0.950			0.950		
Satd. Flow (prot)	0	1685	0	0	1718	0	1770	1861	0	1770	1848	0
Flt Permitted		0.876			0.848		0.223			0.077		
Satd. Flow (perm)	0	1509	0	0	1501	0	415	1861	0	143	1848	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		929			812			909			1055	
Travel Time (s)		25.3			22.1			20.7			24.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	17	0	21	23	1	14	30	1421	13	8	1022	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	38	0	30	1434	0	8	1076	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	23.0	23.0		23.0	23.0		117.0	117.0		117.0	117.0	
Total Split (%)	16.4%	16.4%		16.4%	16.4%		83.6%	83.6%		83.6%	83.6%	
Maximum Green (s)	16.0	16.0		16.0	16.0		110.0	110.0		110.0	110.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		11.4			11.4		122.4	122.4		122.4	122.4	
Actuated g/C Ratio		0.08			0.08		0.87	0.87		0.87	0.87	
v/c Ratio		0.31			0.31		0.08	0.88		0.06	0.67	
Control Delay		66.5			66.6		1.4	10.4		3.3	6.3	
Queue Delay		0.0			0.0		0.0	0.2		0.0	0.0	
Total Delay		66.5			66.6		1.4	10.6		3.3	6.3	
LOS		E			E		A	B		A	A	
Approach Delay		66.5			66.6			10.4			6.3	
Approach LOS		E			E			B			A	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.88
Intersection Signal Delay: 10.3 Intersection LOS: B
Intersection Capacity Utilization 82.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 8: Main St & Hickory St/Hickory St Extension



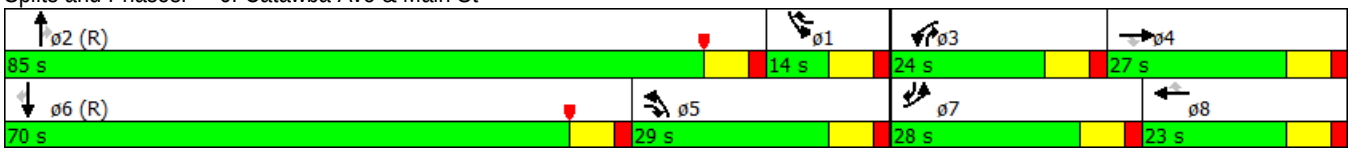
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	269	166	304	161	89	31	275	774	124	48	797	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		100	120		200	300		125	175		100
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1863	1583	1770	1863	1583	1770	1863	1583
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		1644			1062			909			1188	
Travel Time (s)		44.8			29.0			20.7			27.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	299	184	338	179	99	34	306	860	138	53	886	263
Shared Lane Traffic (%)												
Lane Group Flow (vph)	299	184	338	179	99	34	306	860	138	53	886	263
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	7	4	5	3	8	1	5	2	3	1	6	7
Permitted Phases			4			8			2			6
Detector Phase	7	4	5	3	8	1	5	2	3	1	6	7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Switch Phase												
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	12.0	7.0	7.0	12.0	7.0
Minimum Split (s)	14.0	23.0	14.0	14.0	23.0	14.0	14.0	23.0	14.0	14.0	23.0	14.0
Total Split (s)	28.0	27.0	29.0	24.0	23.0	14.0	29.0	85.0	24.0	14.0	70.0	28.0
Total Split (%)	18.7%	18.0%	19.3%	16.0%	15.3%	9.3%	19.3%	56.7%	16.0%	9.3%	46.7%	18.7%
Maximum Green (s)	21.0	20.0	22.0	17.0	16.0	7.0	22.0	78.0	17.0	7.0	63.0	21.0
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0	-2.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lag	Lead	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Walk Time (s)		5.0			5.0			5.0			5.0	
Flash Dont Walk (s)		11.0			11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0			0			0			0	
Act Effct Green (s)	23.0	20.5	44.5	18.4	15.9	24.9	24.0	84.9	104.3	9.0	67.1	90.1
Actuated g/C Ratio	0.15	0.14	0.30	0.12	0.11	0.17	0.16	0.57	0.70	0.06	0.45	0.60
v/c Ratio	1.10	0.72	0.72	0.82	0.50	0.13	1.08	0.82	0.13	0.50	1.06	0.28
Control Delay	141.7	78.7	39.1	92.4	71.7	32.9	126.5	31.5	4.9	84.9	89.4	8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0
Total Delay	141.7	78.7	39.1	92.4	71.7	32.9	126.5	32.8	4.9	84.9	89.4	8.3
LOS	F	E	D	F	E	C	F	C	A	F	F	A
Approach Delay		85.3			79.4			51.9			71.4	
Approach LOS		F			E			D			E	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 101 (67%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.10
Intersection Signal Delay: 68.2 Intersection LOS: E
Intersection Capacity Utilization 94.6% ICU Level of Service F
Analysis Period (min) 15

Splits and Phases: 6: Catawba Ave & Main St



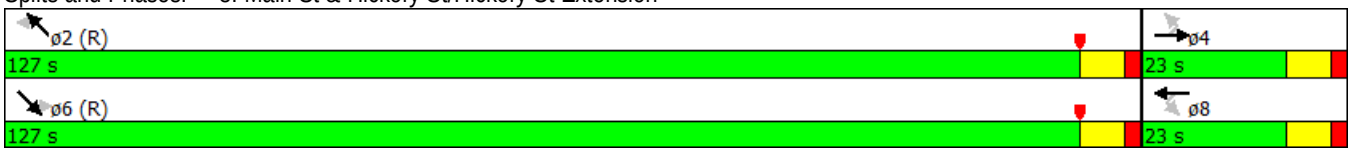
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	16	5	21	29	0	22	26	1107	40	26	1048	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		0	225		0
Storage Lanes	0		0	0		0	1		0	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.934			0.942			0.995			0.992	
Flt Protected		0.981			0.972		0.950			0.950		
Satd. Flow (prot)	0	1707	0	0	1706	0	1770	1853	0	1770	1848	0
Flt Permitted		0.858			0.818		0.162			0.146		
Satd. Flow (perm)	0	1493	0	0	1435	0	302	1853	0	272	1848	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		929			812			909			1055	
Travel Time (s)		25.3			22.1			20.7			24.0	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	18	6	23	32	0	24	29	1230	44	29	1164	67
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	56	0	29	1274	0	29	1231	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			6			2	
Permitted Phases	4			8			6			2		
Detector Phase	4	4		8	8		6	6		2	2	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		12.0	12.0		12.0	12.0	
Minimum Split (s)	23.0	23.0		23.0	23.0		23.0	23.0		23.0	23.0	
Total Split (s)	23.0	23.0		23.0	23.0		127.0	127.0		127.0	127.0	
Total Split (%)	15.3%	15.3%		15.3%	15.3%		84.7%	84.7%		84.7%	84.7%	
Maximum Green (s)	16.0	16.0		16.0	16.0		120.0	120.0		120.0	120.0	
Yellow Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0		-2.0	-2.0	
Total Lost Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	None		None	None		C-Min	C-Min		C-Min	C-Min	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effct Green (s)		13.2			13.2		130.6	130.6		130.6	130.6	
Actuated g/C Ratio		0.09			0.09		0.87	0.87		0.87	0.87	
v/c Ratio		0.36			0.44		0.11	0.79		0.12	0.77	
Control Delay		70.9			75.0		2.3	7.1		3.7	9.7	
Queue Delay		0.0			0.0		0.0	1.3		0.0	0.2	
Total Delay		70.9			75.0		2.3	8.4		3.7	9.9	
LOS		E			E		A	A		A	A	
Approach Delay		70.9			75.0			8.3			9.8	
Approach LOS		E			E			A			A	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:NWTL and 6:SETL, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 11.5 Intersection LOS: B
Intersection Capacity Utilization 74.9% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Main St & Hickory St/Hickory St Extension



APPENDIX J

SYNCHRO Reports:
Holiday Lane - Ferry Street Connector

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	164	493	629	98	389	7	327	15	79	24	19	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00	0.98	0.99	0.98	
Frt			0.850		0.997				0.850		0.881	
Flt Protected	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (prot)	1593	1676	1425	1593	1671	0	1513	1523	1425	1593	1451	0
Flt Permitted	0.220			0.227			0.950	0.956		0.950		
Satd. Flow (perm)	369	1676	1425	381	1671	0	1506	1516	1391	1578	1451	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		401			359			1264			435	
Travel Time (s)		7.8			7.0			24.6			8.5	
Confl. Peds. (#/hr)							3		2	2		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	182	548	699	109	432	8	363	17	88	27	21	81
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	182	548	699	109	440	0	189	191	88	27	102	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases	2		2	6					3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	

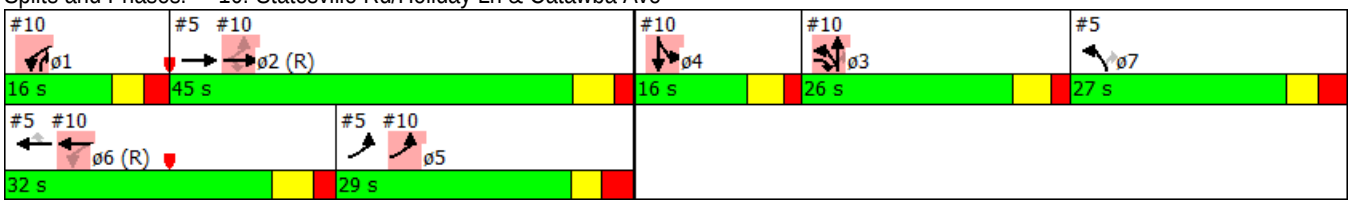
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	29.0	45.0	26.0	16.0	32.0		26.0	26.0	16.0	16.0	16.0	
Total Split (%)	22.3%	34.6%	20.0%	12.3%	24.6%		20.0%	20.0%	12.3%	12.3%	12.3%	
Maximum Green (s)	22.8	38.9	20.5	10.4	25.9		20.5	20.5	10.4	10.8	10.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	42.1	42.1	64.4	28.8	28.8		21.1	21.1	31.6	10.9	10.9	
Actuated g/C Ratio	0.32	0.32	0.50	0.22	0.22		0.16	0.16	0.24	0.08	0.08	
v/c Ratio	0.53	1.01	0.99	0.59	1.19		0.77	0.77	0.26	0.20	0.84	
Control Delay	21.0	36.8	28.2	57.2	152.5		73.3	73.4	24.6	59.5	106.8	
Queue Delay	0.0	20.2	0.0	0.0	2.9		0.4	0.4	0.0	0.0	0.0	
Total Delay	21.0	57.0	28.2	57.2	155.4		73.8	73.8	24.6	59.5	106.8	
LOS	C	E	C	E	F		E	E	C	E	F	
Approach Delay		38.3			135.9			64.5			96.9	
Approach LOS		D			F			E			F	

Intersection Summary

Area Type: CBD
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 120
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 66.8 Intersection LOS: E
Intersection Capacity Utilization 67.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Total Split (s)	27.0
Total Split (%)	21%
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	608	3	1	481	1	3	0	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	676	3	1	534	1	3	0	3

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	536	0	0	679	0	0	1218	1217	677
Stage 1	-	-	-	-	-	-	679	679	-
Stage 2	-	-	-	-	-	-	539	538	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1032	-	-	913	-	-	157	181	453
Stage 1	-	-	-	-	-	-	441	451	-
Stage 2	-	-	-	-	-	-	527	522	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1032	-	-	913	-	-	155	180	453
Mov Cap-2 Maneuver	-	-	-	-	-	-	155	180	-
Stage 1	-	-	-	-	-	-	440	450	-
Stage 2	-	-	-	-	-	-	522	521	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	21
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	231	1032	-	-	913	-	-	545
HCM Lane V/C Ratio	0.029	0.001	-	-	0.001	-	-	0.008
HCM Control Delay (s)	21	8.5	0	-	8.9	0	-	11.7
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	4
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	4

Major/Minor	Minor2		
Conflicting Flow All	1218	1218	535
Stage 1	537	537	-
Stage 2	681	681	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	157	181	545
Stage 1	528	523	-
Stage 2	440	450	-
Platoon blocked, %			
Mov Cap-1 Maneuver	155	180	545
Mov Cap-2 Maneuver	155	180	-
Stage 1	527	522	-
Stage 2	436	449	-

Approach	SB
HCM Control Delay, s	11.7
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	2	610	3	3	477	1	4	1	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	678	3	3	530	1	4	1	10

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	531	0	0	681	0	0	1225	1222	679
Stage 1	-	-	-	-	-	-	684	684	-
Stage 2	-	-	-	-	-	-	541	538	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1036	-	-	912	-	-	156	180	452
Stage 1	-	-	-	-	-	-	439	449	-
Stage 2	-	-	-	-	-	-	525	522	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1036	-	-	912	-	-	153	179	452
Mov Cap-2 Maneuver	-	-	-	-	-	-	153	179	-
Stage 1	-	-	-	-	-	-	438	448	-
Stage 2	-	-	-	-	-	-	516	519	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	19.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	271	1036	-	-	912	-	-	548
HCM Lane V/C Ratio	0.057	0.002	-	-	0.004	-	-	0.012
HCM Control Delay (s)	19.1	8.5	0	-	9	0	-	11.7
HCM Lane LOS	C	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	6
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	7

Major/Minor	Minor2		
Conflicting Flow All	1226	1223	531
Stage 1	537	537	-
Stage 2	689	686	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	155	179	548
Stage 1	528	523	-
Stage 2	436	448	-
Platoon blocked, %			
Mov Cap-1 Maneuver	150	178	548
Mov Cap-2 Maneuver	150	178	-
Stage 1	526	520	-
Stage 2	424	447	-

Approach	SB
HCM Control Delay, s	11.7
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	11	595	425	7	4	47
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	661	472	8	4	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	480	0	-	0	1162	476
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	686	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1082	-	-	-	216	589
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	500	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1082	-	-	-	212	589
Mov Cap-2 Maneuver	-	-	-	-	212	-
Stage 1	-	-	-	-	625	-
Stage 2	-	-	-	-	491	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	12.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1082	-	-	-	517
HCM Lane V/C Ratio	0.011	-	-	-	0.11
HCM Control Delay (s)	8.4	0	-	-	12.8
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.4

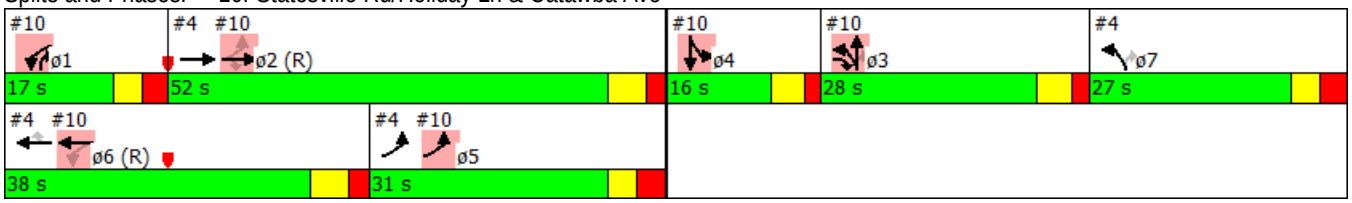
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	134	497	504	53	343	16	350	25	92	15	20	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.885	
Flt Protected	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Flt Permitted	0.319			0.159			0.950	0.958		0.950		
Satd. Flow (perm)	594	1863	1583	296	1850	0	1681	1695	1583	1770	1649	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		388			359			1264			435	
Travel Time (s)		7.6			7.0			24.6			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	149	552	560	59	381	18	389	28	102	17	22	73
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	149	552	560	59	399	0	206	211	102	17	95	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	pm+pt	NA	pm+ov	pm+pt	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases	2		2	6					3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	31.0	52.0	28.0	17.0	38.0		28.0	28.0	17.0	16.0	16.0	
Total Split (%)	22.1%	37.1%	20.0%	12.1%	27.1%		20.0%	20.0%	12.1%	11.4%	11.4%	

Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0
Total Split (s)	27.0
Total Split (%)	19%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	24.8	45.9	22.5	11.4	31.9		22.5	22.5	11.4	10.8	10.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	51.6	51.6	74.5	35.3	35.3		21.7	21.7	31.2	10.6	10.6	
Actuated g/C Ratio	0.37	0.37	0.53	0.25	0.25		0.16	0.16	0.22	0.08	0.08	
v/c Ratio	0.34	0.80	0.67	0.33	0.85		0.79	0.81	0.29	0.13	0.77	
Control Delay	14.4	19.3	9.2	47.5	68.7		78.5	79.8	28.0	62.5	98.5	
Queue Delay	0.0	2.1	0.0	0.0	1.6		0.0	0.0	0.0	0.0	0.0	
Total Delay	14.4	21.4	9.2	47.5	70.3		78.5	79.8	28.0	62.5	98.5	
LOS	B	C	A	D	E		E	E	C	E	F	
Approach Delay		15.2			67.4			69.1			93.0	
Approach LOS		B			E			E			F	

Intersection Summary	
Area Type: Other	
Cycle Length: 140	
Actuated Cycle Length: 140	
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.88	
Intersection Signal Delay: 41.0	Intersection LOS: D
Intersection Capacity Utilization 61.5%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	6	602	8	0	398	2	3	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	669	9	0	442	2	3	1	2

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	444	0	0	678	0	0	1136	1131	673
Stage 1	-	-	-	-	-	-	687	687	-
Stage 2	-	-	-	-	-	-	449	444	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1116	-	-	914	-	-	179	203	455
Stage 1	-	-	-	-	-	-	437	447	-
Stage 2	-	-	-	-	-	-	589	575	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1116	-	-	914	-	-	174	201	455
Mov Cap-2 Maneuver	-	-	-	-	-	-	174	201	-
Stage 1	-	-	-	-	-	-	433	443	-
Stage 2	-	-	-	-	-	-	578	575	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	21.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	225	1116	-	-	914	-	-	436
HCM Lane V/C Ratio	0.03	0.006	-	-	-	-	-	0.028
HCM Control Delay (s)	21.5	8.2	0	-	0	-	-	13.5
HCM Lane LOS	C	A	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	1	1	9
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	1	1	10

Major/Minor	Minor2		
Conflicting Flow All	1131	1134	443
Stage 1	443	443	-
Stage 2	688	691	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	181	203	615
Stage 1	594	576	-
Stage 2	436	446	-
Platoon blocked, %			
Mov Cap-1 Maneuver	178	201	615
Mov Cap-2 Maneuver	178	201	-
Stage 1	588	576	-
Stage 2	428	442	-

Approach	SB
HCM Control Delay, s	13.5
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	596	8	7	393	0	6	1	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	662	9	8	437	0	7	1	11

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	437	0	0	671	0	0	1126	1121	667
Stage 1	-	-	-	-	-	-	669	669	-
Stage 2	-	-	-	-	-	-	457	452	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	1123	-	-	919	-	-	182	206	459
Stage 1	-	-	-	-	-	-	447	456	-
Stage 2	-	-	-	-	-	-	583	570	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1123	-	-	919	-	-	177	204	459
Mov Cap-2 Maneuver	-	-	-	-	-	-	177	204	-
Stage 1	-	-	-	-	-	-	447	456	-
Stage 2	-	-	-	-	-	-	567	564	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	281	1123	-	-	919	-	-	338
HCM Lane V/C Ratio	0.067	0.001	-	-	0.008	-	-	0.036
HCM Control Delay (s)	18.7	8.2	0	-	9	0	-	16.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	2	2	7
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	2	2	8

Major/Minor	Minor2		
Conflicting Flow All	1127	1125	437
Stage 1	452	452	-
Stage 2	675	673	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	182	205	620
Stage 1	587	570	-
Stage 2	444	454	-
Platoon blocked, %			
Mov Cap-1 Maneuver	175	203	620
Mov Cap-2 Maneuver	175	203	-
Stage 1	586	564	-
Stage 2	432	454	-

Approach	SB
HCM Control Delay, s	16.1
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	34	565	349	1	3	46
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	628	388	1	3	51

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	389	0	-	0	1091	388
Stage 1	-	-	-	-	388	-
Stage 2	-	-	-	-	703	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1170	-	-	-	238	660
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	491	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1170	-	-	-	226	660
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	466	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	11.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1170	-	-	-	591
HCM Lane V/C Ratio	0.032	-	-	-	0.092
HCM Control Delay (s)	8.2	0	-	-	11.7
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	225	675	862	134	533	10	448	21	108	33	26	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00	0.98	0.99	0.98	
Frt			0.850		0.997				0.850		0.881	
Flt Protected	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (prot)	1593	1676	1425	1593	1671	0	1513	1523	1425	1593	1450	0
Flt Permitted	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (perm)	1593	1676	1425	1593	1671	0	1506	1516	1390	1579	1450	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		401			359			1264			435	
Travel Time (s)		7.8			7.0			24.6			8.5	
Confl. Peds. (#/hr)							3		2	2		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	250	750	958	149	592	11	498	23	120	37	29	111
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	250	750	958	149	603	0	259	262	120	37	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	

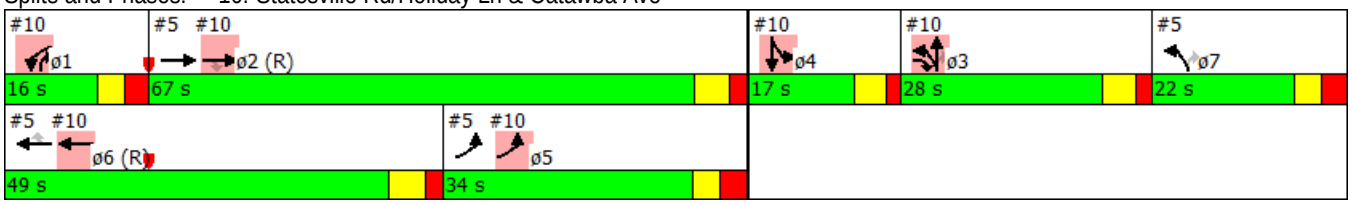
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	34.0	67.0	28.0	16.0	49.0		28.0	28.0	16.0	17.0	17.0	
Total Split (%)	22.7%	44.7%	18.7%	10.7%	32.7%		18.7%	18.7%	10.7%	11.3%	11.3%	
Maximum Green (s)	27.8	60.9	22.5	10.4	42.9		22.5	22.5	10.4	11.8	11.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	29.0	62.0	86.2	11.0	44.0		23.0	23.0	33.8	12.0	12.0	
Actuated g/C Ratio	0.19	0.41	0.57	0.07	0.29		0.15	0.15	0.23	0.08	0.08	
v/c Ratio	0.81	1.08	1.17	1.28	1.23		1.12	1.12	0.38	0.29	1.21	
Control Delay	32.8	58.6	97.3	228.0	160.1		151.2	151.9	35.6	71.5	204.5	
Queue Delay	2.3	7.1	0.0	0.0	2.3		2.1	2.0	0.0	0.0	0.0	
Total Delay	35.0	65.7	97.3	228.0	162.4		153.3	154.0	35.6	71.5	204.5	
LOS	D	E	F	F	F		F	F	D	E	F	
Approach Delay		77.3			175.4			131.5			176.7	
Approach LOS		E			F			F			F	

Intersection Summary

Area Type: CBD
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 12 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.40
Intersection Signal Delay: 113.0 — Intersection LOS: F
Intersection Capacity Utilization 88.2% — ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Total Split (s)	22.0
Total Split (%)	15%
Maximum Green (s)	16.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	833	4	1	659	1	4	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	926	4	1	732	1	4	0	4

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	733	0	0	930	0	0	1668	1666	928
Stage 1	-	-	-	-	-	-	930	930	-
Stage 2	-	-	-	-	-	-	738	736	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	872	-	-	736	-	-	77	97	325
Stage 1	-	-	-	-	-	-	321	346	-
Stage 2	-	-	-	-	-	-	410	425	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	872	-	-	736	-	-	76	97	325
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	97	-
Stage 1	-	-	-	-	-	-	320	345	-
Stage 2	-	-	-	-	-	-	404	424	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	36.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	123	872	-	-	736	-	-	421
HCM Lane V/C Ratio	0.072	0.001	-	-	0.002	-	-	0.013
HCM Control Delay (s)	36.5	9.1	0	-	9.9	0	-	13.7
HCM Lane LOS	E	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	5
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	6

Major/Minor	Minor2		
Conflicting Flow All	1667	1667	733
Stage 1	735	735	-
Stage 2	932	932	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	77	96	421
Stage 1	411	425	-
Stage 2	320	345	-
Platoon blocked, %			
Mov Cap-1 Maneuver	76	96	421
Mov Cap-2 Maneuver	76	96	-
Stage 1	410	424	-
Stage 2	315	344	-

Approach	SB
HCM Control Delay, s	13.7
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	3	836	4	4	653	1	5	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	929	4	4	726	1	6	1	13

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	727	0	0	933	0	0	1677	1674	931
Stage 1	-	-	-	-	-	-	938	938	-
Stage 2	-	-	-	-	-	-	739	736	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	876	-	-	734	-	-	75	95	324
Stage 1	-	-	-	-	-	-	317	343	-
Stage 2	-	-	-	-	-	-	409	425	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	876	-	-	734	-	-	73	93	324
Mov Cap-2 Maneuver	-	-	-	-	-	-	73	93	-
Stage 1	-	-	-	-	-	-	315	341	-
Stage 2	-	-	-	-	-	-	397	421	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	31.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	155	876	-	-	734	-	-	425
HCM Lane V/C Ratio	0.129	0.004	-	-	0.006	-	-	0.021
HCM Control Delay (s)	31.6	9.1	0	-	9.9	0	-	13.7
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	8
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	9

Major/Minor	Minor2		
Conflicting Flow All	1680	1675	726
Stage 1	735	735	-
Stage 2	945	940	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	75	95	425
Stage 1	411	425	-
Stage 2	314	342	-
Platoon blocked, %			
Mov Cap-1 Maneuver	70	93	425
Mov Cap-2 Maneuver	70	93	-
Stage 1	408	421	-
Stage 2	298	340	-

Approach	SB
HCM Control Delay, s	13.7
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	15	815	582	10	5	64
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	17	906	647	11	6	71

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	658	0	-	0	1591	652
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	939	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	930	-	-	-	118	468
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	380	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	930	-	-	-	114	468
Mov Cap-2 Maneuver	-	-	-	-	114	-
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	366	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	930	-	-	-	382
HCM Lane V/C Ratio	0.018	-	-	-	0.201
HCM Control Delay (s)	8.9	0	-	-	16.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.7

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	184	681	690	73	470	22	480	34	126	21	27	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.885	
Flt Protected	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Flt Permitted	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1649	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		388			359			1264			435	
Travel Time (s)		7.6			7.0			24.6			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	204	757	767	81	522	24	533	38	140	23	30	100
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	204	757	767	81	546	0	282	289	140	23	130	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	34.0	66.0	27.0	15.0	47.0		27.0	27.0	15.0	15.0	15.0	
Total Split (%)	22.7%	44.0%	18.0%	10.0%	31.3%		18.0%	18.0%	10.0%	10.0%	10.0%	

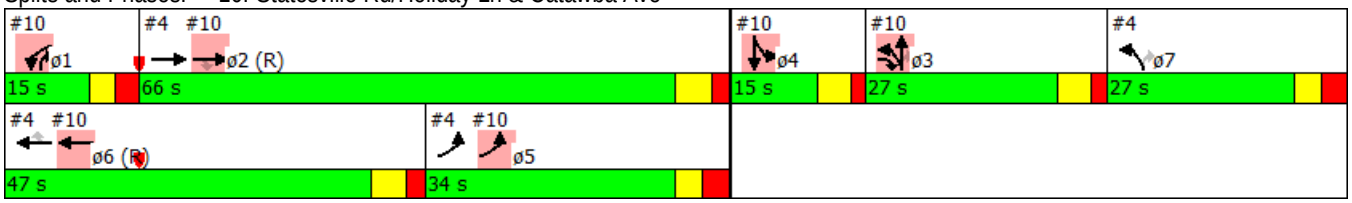
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0
Total Split (s)	27.0
Total Split (%)	18%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	27.8	59.9	21.5	9.4	40.9		21.5	21.5	9.4	9.8	9.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	29.0	61.3	84.5	9.7	42.0		22.0	22.0	31.5	10.0	10.0	
Actuated g/C Ratio	0.19	0.41	0.56	0.06	0.28		0.15	0.15	0.21	0.07	0.07	
v/c Ratio	0.60	0.99	0.86	0.71	1.05		1.15	1.17	0.42	0.19	1.19	
Control Delay	28.2	25.9	12.0	99.4	105.5		157.4	163.2	35.3	70.4	203.3	
Queue Delay	1.4	34.6	0.0	0.0	19.7		0.3	0.3	0.0	0.0	0.0	
Total Delay	29.6	60.5	12.1	99.4	125.3		157.8	163.5	35.3	70.4	203.3	
LOS	C	E	B	F	F		F	F	D	E	F	
Approach Delay		35.4			121.9			136.0			183.3	
Approach LOS		D			F			F			F	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.19
Intersection Signal Delay: 81.5 Intersection LOS: F
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Maximum Green (s)	21.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	8	825	11	0	545	3	4	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	917	12	0	606	3	4	1	3

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	609	0	0	929	0	0	1555	1550	923
Stage 1	-	-	-	-	-	-	941	941	-
Stage 2	-	-	-	-	-	-	614	609	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	970	-	-	736	-	-	92	114	327
Stage 1	-	-	-	-	-	-	316	342	-
Stage 2	-	-	-	-	-	-	479	485	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	970	-	-	736	-	-	88	112	327
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	112	-
Stage 1	-	-	-	-	-	-	310	336	-
Stage 2	-	-	-	-	-	-	465	485	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	35.7
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	126	970	-	-	736	-	-	316
HCM Lane V/C Ratio	0.071	0.009	-	-	-	-	-	0.049
HCM Control Delay (s)	35.7	8.7	0	-	0	-	-	17
HCM Lane LOS	E	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.2

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	1	1	12
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	1	1	13

Major/Minor	Minor2		
Conflicting Flow All	1550	1554	607
Stage 1	607	607	-
Stage 2	943	947	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	93	113	496
Stage 1	483	486	-
Stage 2	315	340	-
Platoon blocked, %			
Mov Cap-1 Maneuver	90	111	496
Mov Cap-2 Maneuver	90	111	-
Stage 1	474	486	-
Stage 2	305	334	-

Approach	SB
HCM Control Delay, s	17
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	817	11	10	538	0	8	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	908	12	11	598	0	9	1	16

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	598	0	0	920	0	0	1543	1536	914
Stage 1	-	-	-	-	-	-	916	916	-
Stage 2	-	-	-	-	-	-	627	620	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	979	-	-	742	-	-	94	116	331
Stage 1	-	-	-	-	-	-	326	351	-
Stage 2	-	-	-	-	-	-	471	480	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	979	-	-	742	-	-	88	113	331
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	113	-
Stage 1	-	-	-	-	-	-	325	350	-
Stage 2	-	-	-	-	-	-	447	469	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	31.3
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	162	979	-	-	742	-	-	197
HCM Lane V/C Ratio	0.158	0.001	-	-	0.015	-	-	0.09
HCM Control Delay (s)	31.3	8.7	0	-	9.9	0	-	25.1
HCM Lane LOS	D	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	3	3	10
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	3	3	11

Major/Minor	Minor2		
Conflicting Flow All	1544	1542	598
Stage 1	620	620	-
Stage 2	924	922	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	94	115	502
Stage 1	476	480	-
Stage 2	323	349	-
Platoon blocked, %			
Mov Cap-1 Maneuver	87	112	502
Mov Cap-2 Maneuver	87	112	-
Stage 1	475	469	-
Stage 2	306	348	-

Approach	SB
HCM Control Delay, s	25.1
HCM LOS	D

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	47	774	478	1	4	63
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	860	531	1	4	70

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	532	0	-	0	1496	532
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	964	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1036	-	-	-	135	547
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	370	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1036	-	-	-	122	547
Mov Cap-2 Maneuver	-	-	-	-	122	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	334	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1036	-	-	-	453
HCM Lane V/C Ratio	0.05	-	-	-	0.164
HCM Control Delay (s)	8.7	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	227	673	862	134	533	10	448	21	108	30	26	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00	1.00	0.98	0.99	0.98	
Frt			0.850		0.997				0.850		0.881	
Flt Protected	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (prot)	1593	1676	1425	1593	1671	0	1513	1523	1425	1593	1447	0
Flt Permitted	0.950			0.950			0.950	0.956		0.950		
Satd. Flow (perm)	1593	1676	1425	1593	1671	0	1507	1517	1391	1576	1447	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		401			359			1264			435	
Travel Time (s)		7.8			7.0			24.6			8.5	
Confl. Peds. (#/hr)							3		2	2		3
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	252	748	958	149	592	11	498	23	120	33	29	111
Shared Lane Traffic (%)							48%					
Lane Group Flow (vph)	252	748	958	149	603	0	259	262	120	33	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	

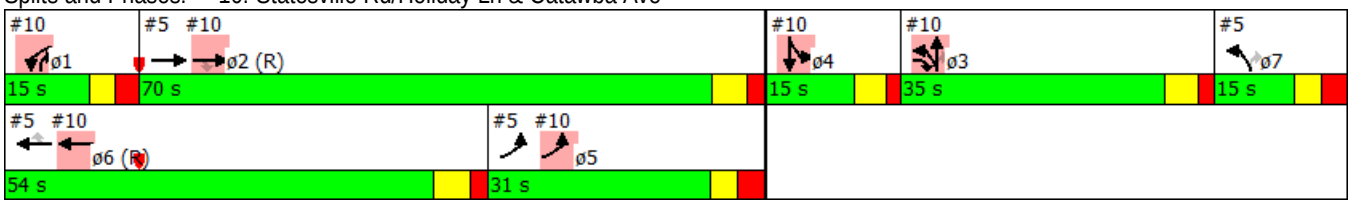
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Split (s)	31.0	70.0	35.0	15.0	54.0		35.0	35.0	15.0	15.0	15.0	
Total Split (%)	20.7%	46.7%	23.3%	10.0%	36.0%		23.3%	23.3%	10.0%	10.0%	10.0%	
Maximum Green (s)	24.8	63.9	29.5	9.4	47.9		29.5	29.5	9.4	9.8	9.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	26.0	65.0	96.2	10.0	49.0		30.0	30.0	39.8	10.0	10.0	
Actuated g/C Ratio	0.17	0.43	0.64	0.07	0.33		0.20	0.20	0.27	0.07	0.07	
v/c Ratio	0.91	1.03	1.05	1.41	1.11		0.86	0.86	0.32	0.31	1.46	
Control Delay	39.4	35.5	45.3	274.4	112.2		83.7	84.2	33.9	75.0	300.0	
Queue Delay	0.0	26.2	1.3	0.0	1.9		26.6	27.3	0.0	0.0	0.0	
Total Delay	39.4	61.7	46.6	274.4	114.1		110.3	111.5	33.9	75.0	300.0	
LOS	D	E	D	F	F		F	F	C	E	F	
Approach Delay		51.4			145.9			96.5			257.1	
Approach LOS		D			F			F			F	

Intersection Summary

Area Type: CBD
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 12 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 2.39
Intersection Signal Delay: 89.9 Intersection LOS: F
Intersection Capacity Utilization 88.2% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Total Split (s)	15.0
Total Split (%)	10%
Maximum Green (s)	9.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	828	4	1	649	1	4	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	920	4	1	721	1	4	0	4

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	722	0	0	924	0	0	1656	1648	922
Stage 1	-	-	-	-	-	-	924	924	-
Stage 2	-	-	-	-	-	-	732	724	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	880	-	-	739	-	-	78	99	327
Stage 1	-	-	-	-	-	-	323	348	-
Stage 2	-	-	-	-	-	-	413	430	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	880	-	-	739	-	-	75	99	327
Mov Cap-2 Maneuver	-	-	-	-	-	-	75	99	-
Stage 1	-	-	-	-	-	-	322	347	-
Stage 2	-	-	-	-	-	-	396	429	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	36.8
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	122	880	-	-	739	-	-	245
HCM Lane V/C Ratio	0.073	0.001	-	-	0.002	-	-	0.082
HCM Control Delay (s)	36.8	9.1	0	-	9.9	0	-	21
HCM Lane LOS	E	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	3	0	15
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	3	0	17

Major/Minor	Minor2		
Conflicting Flow All	1651	1651	722
Stage 1	724	724	-
Stage 2	927	927	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	79	99	427
Stage 1	417	430	-
Stage 2	322	347	-
Platoon blocked, %			
Mov Cap-1 Maneuver	78	99	427
Mov Cap-2 Maneuver	78	99	-
Stage 1	416	429	-
Stage 2	317	346	-

Approach	SB
HCM Control Delay, s	21
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	3	834	4	4	643	1	5	1	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	927	4	4	714	1	6	1	13

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	716	0	0	931	0	0	1664	1660	929
Stage 1	-	-	-	-	-	-	936	936	-
Stage 2	-	-	-	-	-	-	728	724	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	885	-	-	735	-	-	77	97	324
Stage 1	-	-	-	-	-	-	318	344	-
Stage 2	-	-	-	-	-	-	415	430	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	885	-	-	735	-	-	74	95	324
Mov Cap-2 Maneuver	-	-	-	-	-	-	74	95	-
Stage 1	-	-	-	-	-	-	316	342	-
Stage 2	-	-	-	-	-	-	403	426	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	31.4
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	156	885	-	-	735	-	-	431
HCM Lane V/C Ratio	0.128	0.004	-	-	0.006	-	-	0.021
HCM Control Delay (s)	31.4	9.1	0	-	9.9	0	-	13.5
HCM Lane LOS	D	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.4	0	-	-	0	-	-	0.1

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	0	0	8
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	0	0	9

Major/Minor	Minor2		
Conflicting Flow All	1667	1662	715
Stage 1	724	724	-
Stage 2	943	938	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	77	97	431
Stage 1	417	430	-
Stage 2	315	343	-
Platoon blocked, %			
Mov Cap-1 Maneuver	72	95	431
Mov Cap-2 Maneuver	72	95	-
Stage 1	414	426	-
Stage 2	299	341	-

Approach	SB
HCM Control Delay, s	13.5
HCM LOS	B

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	13	815	582	10	5	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	906	647	11	6	60

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	658	0	-	0	1586	652
Stage 1	-	-	-	-	652	-
Stage 2	-	-	-	-	934	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	930	-	-	-	119	468
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	382	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	930	-	-	-	115	468
Mov Cap-2 Maneuver	-	-	-	-	115	-
Stage 1	-	-	-	-	518	-
Stage 2	-	-	-	-	371	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	930	-	-	-	371
HCM Lane V/C Ratio	0.016	-	-	-	0.177
HCM Control Delay (s)	8.9	0	-	-	16.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	191	674	690	73	469	22	480	34	126	19	27	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	100		0	225		225	150		0
Storage Lanes	1		1	1		0	1		1	1		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850		0.993				0.850		0.884	
Flt Protected	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1647	0
Flt Permitted	0.950			0.950			0.950	0.958		0.950		
Satd. Flow (perm)	1770	1863	1583	1770	1850	0	1681	1695	1583	1770	1647	0
Right Turn on Red			No			No			No			No
Satd. Flow (RTOR)												
Link Speed (mph)		35			35			35			25	
Link Distance (ft)		388			359			1264			435	
Travel Time (s)		7.6			7.0			24.6			11.9	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	212	749	767	81	521	24	533	38	140	21	30	101
Shared Lane Traffic (%)							47%					
Lane Group Flow (vph)	212	749	767	81	545	0	282	289	140	21	131	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	0	1	1		1	1	1	1	1	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	
Leading Detector (ft)	60	76	0	60	76		55	55	55	55	55	
Trailing Detector (ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Position(ft)	0	70	0	0	70		-5	-5	-5	-5	-5	
Detector 1 Size(ft)	60	6	20	60	6		60	60	60	60	60	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	
Turn Type	Prot	NA	pm+ov	Prot	NA		Split	NA	pm+ov	Split	NA	
Protected Phases	5	2	3	1	6		3	3	1	4	4	
Permitted Phases			2						3			
Detector Phase	5	2	3	1	6		3	3	1	4	4	
Switch Phase												
Minimum Initial (s)	7.0	10.0	7.0	7.0	10.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	15.0	17.0	15.0	15.0	17.0		15.0	15.0	15.0	15.0	15.0	
Total Split (s)	29.0	60.0	41.0	15.0	46.0		41.0	41.0	15.0	15.0	15.0	
Total Split (%)	19.3%	40.0%	27.3%	10.0%	30.7%		27.3%	27.3%	10.0%	10.0%	10.0%	

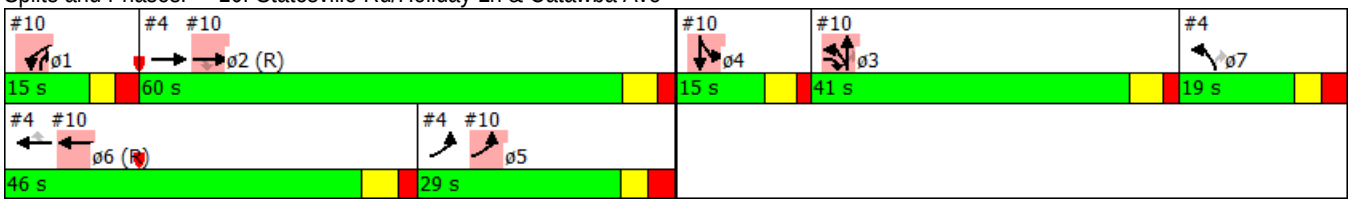
Lane Group	ø7
Lane Configurations	
Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Enter Blocked Intersection	
Lane Alignment	
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	
Turning Speed (mph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Turn Type	
Protected Phases	7
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	7.0
Minimum Split (s)	15.0
Total Split (s)	19.0
Total Split (%)	13%

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	22.8	53.9	35.5	9.4	39.9		35.5	35.5	9.4	9.8	9.8	
Yellow Time (s)	3.0	4.0	3.7	3.0	4.0		3.7	3.7	3.0	3.6	3.6	
All-Red Time (s)	3.2	2.1	1.8	2.6	2.1		1.8	1.8	2.6	1.6	1.6	
Lost Time Adjust (s)	-1.2	-1.1	-1.1	-0.6	-1.1		-0.5	-0.5	-0.5	-0.2	-0.2	
Total Lost Time (s)	5.0	5.0	4.4	5.0	5.0		5.0	5.0	5.1	5.0	5.0	
Lead/Lag	Lag	Lag	Lag	Lead	Lead		Lag	Lag	Lead	Lead	Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	C-Max	None	None	C-Max		None	None	None	None	None	
Act Effct Green (s)	24.0	55.3	88.9	9.7	41.0		32.4	32.4	41.9	10.0	10.0	
Actuated g/C Ratio	0.16	0.37	0.59	0.06	0.27		0.22	0.22	0.28	0.07	0.07	
v/c Ratio	0.75	1.09	0.82	0.71	1.08		0.78	0.79	0.32	0.18	1.20	
Control Delay	32.7	63.3	14.9	99.4	113.5		70.2	71.3	28.3	69.9	206.2	
Queue Delay	0.0	4.5	1.8	0.0	11.0		0.6	0.6	0.0	0.0	0.0	
Total Delay	32.7	67.8	16.8	99.4	124.5		70.8	71.9	28.3	69.9	206.2	
LOS	C	E	B	F	F		E	E	C	E	F	
Approach Delay		40.8			121.2			62.9			187.3	
Approach LOS		D			F			E			F	

Intersection Summary

Area Type: Other
Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.49
Intersection Signal Delay: 68.3 Intersection LOS: E
Intersection Capacity Utilization 74.7% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 10: Statesville Rd/Holiday Ln & Catawba Ave



Lane Group	ø7
Maximum Green (s)	13.0
Yellow Time (s)	3.0
All-Red Time (s)	3.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	

Intersection Summary

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	8	816	11	0	535	3	4	1	3
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	907	12	0	594	3	4	1	3

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	598	0	0	919	0	0	1539	1529	913
Stage 1	-	-	-	-	-	-	931	931	-
Stage 2	-	-	-	-	-	-	608	598	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	979	-	-	743	-	-	94	117	331
Stage 1	-	-	-	-	-	-	320	346	-
Stage 2	-	-	-	-	-	-	483	491	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	979	-	-	743	-	-	88	115	331
Mov Cap-2 Maneuver	-	-	-	-	-	-	88	115	-
Stage 1	-	-	-	-	-	-	314	339	-
Stage 2	-	-	-	-	-	-	460	491	-

Approach	EB	WB	NB
HCM Control Delay, s	0.1	0	35.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	127	979	-	-	743	-	-	302
HCM Lane V/C Ratio	0.07	0.009	-	-	-	-	-	0.092
HCM Control Delay (s)	35.5	8.7	0	-	0	-	-	18.1
HCM Lane LOS	E	A	A	-	A	-	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.3

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	3	1	21
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	3	1	23

Major/Minor	Minor2		
Conflicting Flow All	1529	1533	596
Stage 1	596	596	-
Stage 2	933	937	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	96	116	504
Stage 1	490	492	-
Stage 2	319	343	-
Platoon blocked, %			
Mov Cap-1 Maneuver	93	114	504
Mov Cap-2 Maneuver	93	114	-
Stage 1	481	492	-
Stage 2	309	336	-

Approach	SB
HCM Control Delay, s	18.1
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR
Vol, veh/h	1	810	11	10	528	0	8	1	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	900	12	11	587	0	9	1	16

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	587	0	0	912	0	0	1524	1517	906
Stage 1	-	-	-	-	-	-	908	908	-
Stage 2	-	-	-	-	-	-	616	609	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318
Pot Cap-1 Maneuver	988	-	-	747	-	-	97	119	334
Stage 1	-	-	-	-	-	-	330	354	-
Stage 2	-	-	-	-	-	-	478	485	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	988	-	-	747	-	-	91	116	334
Mov Cap-2 Maneuver	-	-	-	-	-	-	91	116	-
Stage 1	-	-	-	-	-	-	329	353	-
Stage 2	-	-	-	-	-	-	454	474	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	30.6
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	166	988	-	-	747	-	-	202
HCM Lane V/C Ratio	0.154	0.001	-	-	0.015	-	-	0.088
HCM Control Delay (s)	30.6	8.6	0	-	9.9	0	-	24.5
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	0.3

Intersection			
Int Delay, s/veh			

Movement	SBL	SBT	SBR
Vol, veh/h	3	3	10
Conflicting Peds, #/hr	0	0	0
Sign Control	Stop	Stop	Stop
RT Channelized	-	-	None
Storage Length	-	-	-
Veh in Median Storage, #	-	0	-
Grade, %	-	0	-
Peak Hour Factor	90	90	90
Heavy Vehicles, %	2	2	2
Mvmt Flow	3	3	11

Major/Minor	Minor2		
Conflicting Flow All	1526	1523	587
Stage 1	609	609	-
Stage 2	917	914	-
Critical Hdwy	7.12	6.52	6.22
Critical Hdwy Stg 1	6.12	5.52	-
Critical Hdwy Stg 2	6.12	5.52	-
Follow-up Hdwy	3.518	4.018	3.318
Pot Cap-1 Maneuver	96	118	510
Stage 1	482	485	-
Stage 2	326	352	-
Platoon blocked, %			
Mov Cap-1 Maneuver	89	115	510
Mov Cap-2 Maneuver	89	115	-
Stage 1	481	474	-
Stage 2	309	351	-

Approach	SB
HCM Control Delay, s	24.5
HCM LOS	C

Minor Lane/Major Mvmt

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Vol, veh/h	40	774	478	1	4	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	860	531	1	4	59

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	532	0	-	0	1481	532
Stage 1	-	-	-	-	532	-
Stage 2	-	-	-	-	949	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1036	-	-	-	138	547
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	376	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1036	-	-	-	127	547
Mov Cap-2 Maneuver	-	-	-	-	127	-
Stage 1	-	-	-	-	589	-
Stage 2	-	-	-	-	346	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1036	-	-	-	444
HCM Lane V/C Ratio	0.043	-	-	-	0.143
HCM Control Delay (s)	8.6	0	-	-	14.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

APPENDIX K

SimTraffic Reports

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	247	304	190
Average Queue (ft)	115	109	71
95th Queue (ft)	234	357	200
Link Distance (ft)	235	1366	774
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	3		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	199	191	64	60
Average Queue (ft)	74	72	30	21
95th Queue (ft)	163	137	53	51
Link Distance (ft)	1366	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	278	51	56
Average Queue (ft)	96	14	10
95th Queue (ft)	311	43	44
Link Distance (ft)	294	630	729
Upstream Blk Time (%)	14		
Queuing Penalty (veh)	66		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Lake Village Blvd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	144	168	196
Average Queue (ft)	16	61	65
95th Queue (ft)	87	232	233
Link Distance (ft)	294	235	444
Upstream Blk Time (%)	0	9	1
Queuing Penalty (veh)	0	40	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 109

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	247	304	190
Average Queue (ft)	115	109	71
95th Queue (ft)	234	357	200
Link Distance (ft)	235	1366	774
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	3		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	199	191	64	60
Average Queue (ft)	74	72	30	21
95th Queue (ft)	163	137	53	51
Link Distance (ft)	1366	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	274	298	200	301	276	335	171	54	179
Average Queue (ft)	80	156	202	141	283	147	205	41	21	87
95th Queue (ft)	163	237	279	258	303	245	299	101	50	158
Link Distance (ft)		322	322		265		1219			388
Upstream Blk Time (%)		0	0		58					
Queuing Penalty (veh)		0	2		282					
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	22	60		17	76	0	6			2
Queuing Penalty (veh)	108	99		66	75	1	15			1

Zone Summary

Zone wide Queuing Penalty: 652

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	274	298	200	301	276	335	171	54	179
Average Queue (ft)	80	156	202	141	283	147	205	41	21	87
95th Queue (ft)	163	237	279	258	303	245	299	101	50	158
Link Distance (ft)		322	322		265		1219			388
Upstream Blk Time (%)		0	0		58					
Queuing Penalty (veh)		0	2		282					
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	22	60		17	76	0	6			2
Queuing Penalty (veh)	108	99		66	75	1	15			1

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	498	47	14
Average Queue (ft)	331	9	1
95th Queue (ft)	613	33	8
Link Distance (ft)	479	642	662
Upstream Blk Time (%)	22		
Queuing Penalty (veh)	106		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: Ferry St

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	278	51	56
Average Queue (ft)	96	14	10
95th Queue (ft)	311	43	44
Link Distance (ft)	294	630	729
Upstream Blk Time (%)	14		
Queuing Penalty (veh)	66		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 822

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2250	2300	2236	2263
Vehs Exited	2246	2303	2260	2269
Starting Vehs	68	76	81	75
Ending Vehs	72	73	57	69
Travel Distance (mi)	1827	1844	1807	1826
Travel Time (hr)	72.1	74.3	70.3	72.2
Total Delay (hr)	21.7	23.7	20.8	22.1
Total Stops	1611	1715	1574	1633
Fuel Used (gal)	60.8	62.2	60.2	61.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2250	2300	2236	2263
Vehs Exited	2246	2303	2260	2269
Starting Vehs	68	76	81	75
Ending Vehs	72	73	57	69
Travel Distance (mi)	1827	1844	1807	1826
Travel Time (hr)	72.1	74.3	70.3	72.2
Total Delay (hr)	21.7	23.7	20.8	22.1
Total Stops	1611	1715	1574	1633
Fuel Used (gal)	60.8	62.2	60.2	61.1

Intersection: 3: Statesville Rd & Bailey Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	484	222	264	87	225	690
Average Queue (ft)	221	68	124	32	121	357
95th Queue (ft)	398	209	217	67	265	588
Link Distance (ft)	1984		2389			1487
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		350		225	125	
Storage Blk Time (%)	4		1		0	33
Queuing Penalty (veh)	5		2		2	46

Intersection: 6: Poole Place Dr & Bailey Rd

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	20	36
Average Queue (ft)	1	14
95th Queue (ft)	8	37
Link Distance (ft)		249
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 56

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2057	2150	2075	2095
Vehs Exited	2076	2125	2069	2091
Starting Vehs	91	72	65	76
Ending Vehs	72	97	71	79
Travel Distance (mi)	1830	1893	1840	1854
Travel Time (hr)	75.8	85.4	76.7	79.3
Total Delay (hr)	29.5	37.7	30.3	32.5
Total Stops	1878	2088	1853	1940
Fuel Used (gal)	60.1	63.9	60.5	61.5

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2057	2150	2075	2095
Vehs Exited	2076	2125	2069	2091
Starting Vehs	91	72	65	76
Ending Vehs	72	97	71	79
Travel Distance (mi)	1830	1893	1840	1854
Travel Time (hr)	75.8	85.4	76.7	79.3
Total Delay (hr)	29.5	37.7	30.3	32.5
Total Stops	1878	2088	1853	1940
Fuel Used (gal)	60.1	63.9	60.5	61.5

Intersection: 10: Old Statesville Rd & Bailey Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	R	L	TR	L	TR
Maximum Queue (ft)	119	200	242	135	350	598	250	841
Average Queue (ft)	20	111	118	60	108	328	148	514
95th Queue (ft)	64	185	210	113	292	531	301	855
Link Distance (ft)		2452	2413			2455		2052
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50			175	250		150	
Storage Blk Time (%)	3	48	5			23	2	40
Queuing Penalty (veh)	5	9	5			22	15	56

Network Summary

Network wide Queuing Penalty: 113

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2244	2349	2240	2279
Vehs Exited	2206	2227	2117	2183
Starting Vehs	64	50	68	59
Ending Vehs	102	172	191	154
Travel Distance (mi)	1265	1287	1218	1256
Travel Time (hr)	110.1	115.2	164.8	130.0
Total Delay (hr)	77.8	82.3	134.0	98.0
Total Stops	2732	2901	2628	2754
Fuel Used (gal)	61.6	63.6	72.5	65.9

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2244	2349	2240	2279
Vehs Exited	2206	2227	2117	2183
Starting Vehs	64	50	68	59
Ending Vehs	102	172	191	154
Travel Distance (mi)	1265	1287	1218	1256
Travel Time (hr)	110.1	115.2	164.8	130.0
Total Delay (hr)	77.8	82.3	134.0	98.0
Total Stops	2732	2901	2628	2754
Fuel Used (gal)	61.6	63.6	72.5	65.9

Intersection: 7: Statesville Rd & Westmoreland Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	2155	200	203	284	207	252	225	1044
Average Queue (ft)	1430	192	100	179	97	136	104	802
95th Queue (ft)	2733	242	182	275	163	226	263	1183
Link Distance (ft)	2646			1469		1132		1010
Upstream Blk Time (%)	12							18
Queuing Penalty (veh)	0							0
Storage Bay Dist (ft)		100	300		150		125	
Storage Blk Time (%)	71	51		0	3	7	0	61
Queuing Penalty (veh)	193	108		0	9	12	0	42

Network Summary

Network wide Queuing Penalty: 365

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	199	191	64	60
Average Queue (ft)	74	72	30	21
95th Queue (ft)	163	137	53	51
Link Distance (ft)	1366	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Main St & Catawba Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	139	184	143	141	99	33	150	279	147	274	547	200
Average Queue (ft)	67	51	82	55	39	11	66	132	7	21	283	80
95th Queue (ft)	118	133	143	109	83	31	117	240	73	101	476	240
Link Distance (ft)		164			995			818			1214	
Upstream Blk Time (%)	0	1	0									
Queuing Penalty (veh)	0	7	0									
Storage Bay Dist (ft)	175		200	125		200	250		125	175		100
Storage Blk Time (%)	0	1	0	1	0			7			37	
Queuing Penalty (veh)	0	6	0	1	0			15			72	

Intersection: 24: Meridian St/Mulberry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	107	90	73	38
Average Queue (ft)	7	17	36	18
95th Queue (ft)	47	58	60	44
Link Distance (ft)	427	772	524	492
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 32: Main St & Hickory St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	62	55	128	194
Average Queue (ft)	17	12	8	17
95th Queue (ft)	45	38	60	86
Link Distance (ft)	872	84	823	818
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 101

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Intersection: 6: Main St & Catawba Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	139	184	143	141	99	33	150	279	147	274	547	200
Average Queue (ft)	67	51	82	55	39	11	66	132	7	21	283	80
95th Queue (ft)	118	133	143	109	83	31	117	240	73	101	476	240
Link Distance (ft)		164			995			818			1214	
Upstream Blk Time (%)	0	1	0									
Queuing Penalty (veh)	0	7	0									
Storage Bay Dist (ft)	175		200	125		200	250		125	175		100
Storage Blk Time (%)	0	1	0	1	0			7			37	
Queuing Penalty (veh)	0	6	0	1	0			15			72	

Intersection: 32: Main St & Hickory St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	62	55	128	194
Average Queue (ft)	17	12	8	17
95th Queue (ft)	45	38	60	86
Link Distance (ft)	872	84	823	818
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 101

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5184	5002	5063	5078
Vehs Exited	4940	4811	4952	4899
Starting Vehs	226	200	268	228
Ending Vehs	470	391	379	412
Travel Distance (mi)	3372	3284	3338	3331
Travel Time (hr)	322.7	343.9	312.1	326.2
Total Delay (hr)	211.7	236.1	202.3	216.7
Total Stops	9872	8819	9521	9405
Fuel Used (gal)	161.2	164.7	157.4	161.1

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	274	298	200	301	276	335	171	54	179
Average Queue (ft)	80	156	202	141	283	147	205	41	21	87
95th Queue (ft)	163	237	279	258	303	245	299	101	50	158
Link Distance (ft)		322	322		265		1219			388
Upstream Blk Time (%)		0	0		58					
Queuing Penalty (veh)		0	2		282					
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	22	60		17	76	0	6			2
Queuing Penalty (veh)	108	99		66	75	1	15			1

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	498	47	14
Average Queue (ft)	331	9	1
95th Queue (ft)	613	33	8
Link Distance (ft)	479	642	662
Upstream Blk Time (%)	22		
Queuing Penalty (veh)	106		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: Ferry St

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	278	51	56
Average Queue (ft)	96	14	10
95th Queue (ft)	311	43	44
Link Distance (ft)	294	630	729
Upstream Blk Time (%)	14		
Queuing Penalty (veh)	66		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Lake Village Blvd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	144	168	196
Average Queue (ft)	16	61	65
95th Queue (ft)	87	232	233
Link Distance (ft)	294	235	444
Upstream Blk Time (%)	0	9	1
Queuing Penalty (veh)	0	40	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 862

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	206	166	78
Average Queue (ft)	77	55	32
95th Queue (ft)	178	132	60
Link Distance (ft)	235	1367	1187
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	250	130	79	50
Average Queue (ft)	91	54	31	23
95th Queue (ft)	200	104	62	47
Link Distance (ft)	1367	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	74	23	36
Average Queue (ft)	5	9	10
95th Queue (ft)	33	26	32
Link Distance (ft)	294	630	729
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Lake Village Blvd

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	142	62
Average Queue (ft)	17	28
95th Queue (ft)	73	55
Link Distance (ft)	294	444
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 0

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	206	166	78
Average Queue (ft)	77	55	32
95th Queue (ft)	178	132	60
Link Distance (ft)	235	1367	1187
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	250	130	79	50
Average Queue (ft)	91	54	31	23
95th Queue (ft)	200	104	62	47
Link Distance (ft)	1367	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	222	239	200	299	324	342	200	63	169
Average Queue (ft)	70	128	111	68	248	169	213	51	15	78
95th Queue (ft)	155	213	206	171	328	270	300	121	49	145
Link Distance (ft)		310	310		265		1217			390
Upstream Blk Time (%)					13					
Queuing Penalty (veh)					54					
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	13	38		2	51	0	8			2
Queuing Penalty (veh)	65	50		9	27	1	22			0

Zone Summary

Zone wide Queuing Penalty: 228

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	222	239	200	299	324	342	200	63	169
Average Queue (ft)	70	128	111	68	248	169	213	51	15	78
95th Queue (ft)	155	213	206	171	328	270	300	121	49	145
Link Distance (ft)		310	310		265		1217			390
Upstream Blk Time (%)					13					
Queuing Penalty (veh)					54					
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	13	38		2	51	0	8			2
Queuing Penalty (veh)	65	50		9	27	1	22			0

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	152	190	18	28
Average Queue (ft)	7	34	4	5
95th Queue (ft)	59	121	16	18
Link Distance (ft)	265	479	642	662
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	74	23	36
Average Queue (ft)	5	9	10
95th Queue (ft)	33	26	32
Link Distance (ft)	294	630	729
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 228

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2490	2515	2466	2490
Vehs Exited	2483	2528	2484	2497
Starting Vehs	70	73	91	78
Ending Vehs	77	60	73	71
Travel Distance (mi)	2149	2180	2139	2156
Travel Time (hr)	82.0	84.1	80.4	82.2
Total Delay (hr)	20.2	21.6	19.1	20.3
Total Stops	1493	1570	1433	1498
Fuel Used (gal)	68.0	69.3	67.9	68.4

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2490	2515	2466	2490
Vehs Exited	2483	2528	2484	2497
Starting Vehs	70	73	91	78
Ending Vehs	77	60	73	71
Travel Distance (mi)	2149	2180	2139	2156
Travel Time (hr)	82.0	84.1	80.4	82.2
Total Delay (hr)	20.2	21.6	19.1	20.3
Total Stops	1493	1570	1433	1498
Fuel Used (gal)	68.0	69.3	67.9	68.4

Intersection: 3: Statesville Rd & Bailey Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	273	156	577	325	224	317
Average Queue (ft)	141	67	257	134	88	138
95th Queue (ft)	223	124	453	314	167	248
Link Distance (ft)	1984		2389			1592
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		350		225	125	
Storage Blk Time (%)			13		2	7
Queuing Penalty (veh)			63		14	15

Intersection: 6: Poole Place Dr & Bailey Rd

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	20	28
Average Queue (ft)	1	7
95th Queue (ft)	9	27
Link Distance (ft)		249
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 93

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2174	2228	2198	2202
Vehs Exited	2164	2164	2199	2176
Starting Vehs	132	106	118	118
Ending Vehs	142	170	117	143
Travel Distance (mi)	2590	2622	2648	2620
Travel Time (hr)	136.1	152.7	118.9	135.9
Total Delay (hr)	69.5	85.5	51.1	68.7
Total Stops	3097	3134	2547	2926
Fuel Used (gal)	88.6	93.1	86.1	89.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2174	2228	2198	2202
Vehs Exited	2164	2164	2199	2176
Starting Vehs	132	106	118	118
Ending Vehs	142	170	117	143
Travel Distance (mi)	2590	2622	2648	2620
Travel Time (hr)	136.1	152.7	118.9	135.9
Total Delay (hr)	69.5	85.5	51.1	68.7
Total Stops	3097	3134	2547	2926
Fuel Used (gal)	88.6	93.1	86.1	89.3

Intersection: 10: Old Statesville Rd & Bailey Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	R	L	TR	L	TR
Maximum Queue (ft)	150	496	357	275	350	1920	250	467
Average Queue (ft)	68	260	190	94	244	1318	103	259
95th Queue (ft)	166	484	326	225	467	2237	232	413
Link Distance (ft)		2520	2755			2477		4272
Upstream Blk Time (%)						3		
Queuing Penalty (veh)						0		
Storage Bay Dist (ft)	50			175	250		150	
Storage Blk Time (%)	15	76	21			54	0	25
Queuing Penalty (veh)	34	39	22			71	0	30

Network Summary

Network wide Queuing Penalty: 195

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2219	2342	2280	2280
Vehs Exited	2217	2268	2254	2246
Starting Vehs	78	64	92	79
Ending Vehs	80	138	118	113
Travel Distance (mi)	1513	1578	1545	1546
Travel Time (hr)	142.6	156.2	126.8	141.9
Total Delay (hr)	104.6	116.5	88.1	103.1
Total Stops	1970	2606	2293	2289
Fuel Used (gal)	72.5	77.4	70.2	73.4

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2219	2342	2280	2280
Vehs Exited	2217	2268	2254	2246
Starting Vehs	78	64	92	79
Ending Vehs	80	138	118	113
Travel Distance (mi)	1513	1578	1545	1546
Travel Time (hr)	142.6	156.2	126.8	141.9
Total Delay (hr)	104.6	116.5	88.1	103.1
Total Stops	1970	2606	2293	2289
Fuel Used (gal)	72.5	77.4	70.2	73.4

Intersection: 7: Statesville Rd & Westmoreland Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	1045	200	153	241	250	450	225	1061
Average Queue (ft)	622	184	49	122	182	202	174	990
95th Queue (ft)	1381	241	106	201	273	363	313	1201
Link Distance (ft)	2646			1911		1649		1010
Upstream Blk Time (%)								76
Queuing Penalty (veh)								0
Storage Bay Dist (ft)		100	300		150		125	
Storage Blk Time (%)	49	56			15	12	0	77
Queuing Penalty (veh)	134	118			70	44	2	86

Network Summary

Network wide Queuing Penalty: 454

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	250	130	79	50
Average Queue (ft)	91	54	31	23
95th Queue (ft)	200	104	62	47
Link Distance (ft)	1367	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Catawba Ave & Main St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	163	196	162	133	95	40	229	355	149	274	529	200
Average Queue (ft)	97	83	92	50	39	10	81	170	7	33	298	113
95th Queue (ft)	158	185	161	101	82	33	153	296	74	133	491	276
Link Distance (ft)		164			994			835			1214	
Upstream Blk Time (%)	0	2	0									
Queuing Penalty (veh)	0	13	0									
Storage Bay Dist (ft)	175		200	125		200	250		125	175		100
Storage Blk Time (%)	0	2	0	0	0			14			40	
Queuing Penalty (veh)	1	10	1	0	0			39			82	

Intersection: 24: Meridian St/Mulberry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	60	150	73	31
Average Queue (ft)	5	31	23	11
95th Queue (ft)	31	97	55	35
Link Distance (ft)	427	772	524	492
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 32: Main St & Hickory St

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	57	59	249	250
Average Queue (ft)	20	13	29	38
95th Queue (ft)	51	39	138	153
Link Distance (ft)	806	64	835	800
Upstream Blk Time (%)		1		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 147

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Intersection: 6: Catawba Ave & Main St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	163	196	162	133	95	40	229	355	149	274	529	200
Average Queue (ft)	97	83	92	50	39	10	81	170	7	33	298	113
95th Queue (ft)	158	185	161	101	82	33	153	296	74	133	491	276
Link Distance (ft)		164			994			835			1214	
Upstream Blk Time (%)	0	2	0									
Queuing Penalty (veh)	0	13	0									
Storage Bay Dist (ft)	175		200	125		200	250		125	175		100
Storage Blk Time (%)	0	2	0	0	0			14			40	
Queuing Penalty (veh)	1	10	1	0	0			39			82	

Intersection: 32: Main St & Hickory St

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	57	59	249	250
Average Queue (ft)	20	13	29	38
95th Queue (ft)	51	39	138	153
Link Distance (ft)	806	64	835	800
Upstream Blk Time (%)		1		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 147

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	4893	4776	4885	4852
Vehs Exited	4896	4776	4911	4860
Starting Vehs	205	177	203	191
Ending Vehs	202	177	177	184
Travel Distance (mi)	3250	3177	3246	3224
Travel Time (hr)	200.1	192.1	197.3	196.5
Total Delay (hr)	91.3	85.9	89.1	88.8
Total Stops	6442	6130	6383	6316
Fuel Used (gal)	128.8	125.3	128.6	127.6

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	222	239	200	299	324	342	200	63	169
Average Queue (ft)	70	128	111	68	248	169	213	51	15	78
95th Queue (ft)	155	213	206	171	328	270	300	121	49	145
Link Distance (ft)		310	310		265		1217			390
Upstream Blk Time (%)					13					
Queuing Penalty (veh)					54					
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	13	38		2	51	0	8			2
Queuing Penalty (veh)	65	50		9	27	1	22			0

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	152	190	18	28
Average Queue (ft)	7	34	4	5
95th Queue (ft)	59	121	16	18
Link Distance (ft)	265	479	642	662
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	74	23	36
Average Queue (ft)	5	9	10
95th Queue (ft)	33	26	32
Link Distance (ft)	294	630	729
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Lake Village Blvd

Movement	EB	SB
Directions Served	LT	LR
Maximum Queue (ft)	142	62
Average Queue (ft)	17	28
95th Queue (ft)	73	55
Link Distance (ft)	294	444
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Zone Summary

Zone wide Queuing Penalty: 228

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6324	6280	6256	6289
Vehs Exited	6104	6077	6065	6082
Starting Vehs	371	403	335	367
Ending Vehs	591	606	526	574
Travel Distance (mi)	4143	4132	4096	4124
Travel Time (hr)	765.6	864.6	841.9	824.0
Total Delay (hr)	628.8	728.0	706.9	687.9
Total Stops	15214	15309	15003	15176
Fuel Used (gal)	283.4	307.3	301.1	297.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6324	6280	6256	6289
Vehs Exited	6104	6077	6065	6082
Starting Vehs	371	403	335	367
Ending Vehs	591	606	526	574
Travel Distance (mi)	4143	4132	4096	4124
Travel Time (hr)	765.6	864.6	841.9	824.0
Total Delay (hr)	628.8	728.0	706.9	687.9
Total Stops	15214	15309	15003	15176
Fuel Used (gal)	283.4	307.3	301.1	297.3

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	249	726	428
Average Queue (ft)	165	277	150
95th Queue (ft)	262	640	371
Link Distance (ft)	235	1366	774
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	9		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	234	214	100	61
Average Queue (ft)	99	101	43	25
95th Queue (ft)	198	192	82	52
Link Distance (ft)	1366	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	264	309	151	69
Average Queue (ft)	33	248	59	17
95th Queue (ft)	177	411	186	52
Link Distance (ft)	479	294	630	729
Upstream Blk Time (%)	0	32		
Queuing Penalty (veh)	2	208		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 20: Lake Village Blvd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	246	255	412
Average Queue (ft)	47	160	165
95th Queue (ft)	187	336	419
Link Distance (ft)	294	235	444
Upstream Blk Time (%)	1	22	14
Queuing Penalty (veh)	7	142	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 369

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6317	6387	6433	6381
Vehs Exited	6107	6168	6165	6145
Starting Vehs	385	429	406	402
Ending Vehs	595	648	674	637
Travel Distance (mi)	4125	4159	4194	4159
Travel Time (hr)	764.2	907.0	857.9	843.1
Total Delay (hr)	628.3	769.9	719.5	705.9
Total Stops	14897	16145	16350	15796
Fuel Used (gal)	284.9	318.7	306.3	303.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6317	6387	6433	6381
Vehs Exited	6107	6168	6165	6145
Starting Vehs	385	429	406	402
Ending Vehs	595	648	674	637
Travel Distance (mi)	4125	4159	4194	4159
Travel Time (hr)	764.2	907.0	857.9	843.1
Total Delay (hr)	628.3	769.9	719.5	705.9
Total Stops	14897	16145	16350	15796
Fuel Used (gal)	284.9	318.7	306.3	303.3

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	249	723	407
Average Queue (ft)	154	321	146
95th Queue (ft)	257	957	452
Link Distance (ft)	235	1366	774
Upstream Blk Time (%)	1		2
Queuing Penalty (veh)	8		0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	278	183	95	67
Average Queue (ft)	109	98	41	28
95th Queue (ft)	210	167	77	59
Link Distance (ft)	1366	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	343	260	200	301	325	1038	325	250	390
Average Queue (ft)	117	196	216	158	285	285	691	176	87	280
95th Queue (ft)	192	294	287	245	299	383	1232	407	253	444
Link Distance (ft)		322	322		266		1219			388
Upstream Blk Time (%)		1			56		4			19
Queuing Penalty (veh)		6			375		0			0
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	31	54		54	66	19	69			72
Queuing Penalty (veh)	208	122		294	88	67	228			24

Zone Summary

Zone wide Queuing Penalty: 1419

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6193	6224	6318	6243
Vehs Exited	6036	6055	6122	6072
Starting Vehs	404	393	426	407
Ending Vehs	561	562	622	578
Travel Distance (mi)	4080	4102	4107	4096
Travel Time (hr)	877.6	917.4	885.5	893.5
Total Delay (hr)	742.5	781.7	750.2	758.1
Total Stops	14895	15256	15082	15075
Fuel Used (gal)	309.1	318.9	311.2	313.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6193	6224	6318	6243
Vehs Exited	6036	6055	6122	6072
Starting Vehs	404	393	426	407
Ending Vehs	561	562	622	578
Travel Distance (mi)	4080	4102	4107	4096
Travel Time (hr)	877.6	917.4	885.5	893.5
Total Delay (hr)	742.5	781.7	750.2	758.1
Total Stops	14895	15256	15082	15075
Fuel Used (gal)	309.1	318.9	311.2	313.1

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	320	256	200	300	325	907	325	196	326
Average Queue (ft)	105	176	218	156	283	287	672	185	50	197
95th Queue (ft)	186	266	270	242	296	377	1223	414	165	325
Link Distance (ft)		322	322		265		1219			388
Upstream Blk Time (%)		0			60		6			
Queuing Penalty (veh)		4			402		0			
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	23	52		48	66	22	68			46
Queuing Penalty (veh)	158	117		261	89	78	224			15

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	145	502	74	57
Average Queue (ft)	8	458	11	15
95th Queue (ft)	70	597	43	54
Link Distance (ft)	265	479	642	662
Upstream Blk Time (%)	0	42		
Queuing Penalty (veh)	0	278		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	193	312	225	57
Average Queue (ft)	9	223	74	15
95th Queue (ft)	91	413	209	50
Link Distance (ft)	479	294	630	729
Upstream Blk Time (%)		28		
Queuing Penalty (veh)		180		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 1808

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2792	2744	2754	2765
Vehs Exited	2741	2719	2734	2731
Starting Vehs	116	140	149	136
Ending Vehs	167	165	169	167
Travel Distance (mi)	2247	2254	2238	2246
Travel Time (hr)	351.3	356.2	360.1	355.9
Total Delay (hr)	289.2	293.9	298.5	293.8
Total Stops	3797	3793	3833	3808
Fuel Used (gal)	137.0	138.2	138.8	138.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2792	2744	2754	2765
Vehs Exited	2741	2719	2734	2731
Starting Vehs	116	140	149	136
Ending Vehs	167	165	169	167
Travel Distance (mi)	2247	2254	2238	2246
Travel Time (hr)	351.3	356.2	360.1	355.9
Total Delay (hr)	289.2	293.9	298.5	293.8
Total Stops	3797	3793	3833	3808
Fuel Used (gal)	137.0	138.2	138.8	138.0

Intersection: 3: Statesville Rd & Bailey Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	1228	450	555	325	225	1538
Average Queue (ft)	1107	382	288	117	177	1507
95th Queue (ft)	1199	630	451	316	265	1526
Link Distance (ft)	1984		2389			1487
Upstream Blk Time (%)						46
Queuing Penalty (veh)						0
Storage Bay Dist (ft)		350		225	125	
Storage Blk Time (%)	68		18		28	35
Queuing Penalty (veh)	144		51		361	67

Intersection: 6: Poole Place Dr & Bailey Rd

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	20	42
Average Queue (ft)	1	16
95th Queue (ft)	8	40
Link Distance (ft)		249
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 623

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2707	2799	2740	2747
Vehs Exited	2509	2516	2557	2528
Starting Vehs	171	173	154	164
Ending Vehs	369	456	337	388
Travel Distance (mi)	3137	3173	3205	3172
Travel Time (hr)	335.6	415.4	318.8	356.6
Total Delay (hr)	256.3	335.1	237.8	276.4
Total Stops	5087	5334	4827	5083
Fuel Used (gal)	146.7	166.6	143.7	152.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2707	2799	2740	2747
Vehs Exited	2509	2516	2557	2528
Starting Vehs	171	173	154	164
Ending Vehs	369	456	337	388
Travel Distance (mi)	3137	3173	3205	3172
Travel Time (hr)	335.6	415.4	318.8	356.6
Total Delay (hr)	256.3	335.1	237.8	276.4
Total Stops	5087	5334	4827	5083
Fuel Used (gal)	146.7	166.6	143.7	152.3

Intersection: 10: Old Statesville Rd & Bailey Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	R	L	TR	L	TR
Maximum Queue (ft)	148	1083	1375	275	350	2370	250	4320
Average Queue (ft)	41	604	914	217	273	1602	201	3610
95th Queue (ft)	129	1161	1515	384	430	2825	292	5323
Link Distance (ft)		2680	2795			2514		4272
Upstream Blk Time (%)						18		49
Queuing Penalty (veh)						0		0
Storage Bay Dist (ft)	50			175	250		150	
Storage Blk Time (%)	14	88	87	1	26	47	33	39
Queuing Penalty (veh)	30	23	113	2	223	61	344	75

Network Summary

Network wide Queuing Penalty: 870

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6247	6285	6147	6223
Vehs Exited	6101	6086	5919	6038
Starting Vehs	414	433	423	421
Ending Vehs	560	632	651	613
Travel Distance (mi)	4118	4142	4017	4092
Travel Time (hr)	881.1	924.7	912.1	906.0
Total Delay (hr)	744.8	787.7	779.4	770.6
Total Stops	15447	15731	15026	15402
Fuel Used (gal)	310.4	321.5	315.1	315.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6247	6285	6147	6223
Vehs Exited	6101	6086	5919	6038
Starting Vehs	414	433	423	421
Ending Vehs	560	632	651	613
Travel Distance (mi)	4118	4142	4017	4092
Travel Time (hr)	881.1	924.7	912.1	906.0
Total Delay (hr)	744.8	787.7	779.4	770.6
Total Stops	15447	15731	15026	15402
Fuel Used (gal)	310.4	321.5	315.1	315.7

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	265	210	100	89
Average Queue (ft)	119	99	40	31
95th Queue (ft)	229	186	76	69
Link Distance (ft)	1366	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Main St & Catawba Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	163	223	164	199	226	69	349	588	225	212	1264	200
Average Queue (ft)	136	160	130	99	82	20	165	239	30	36	1225	104
95th Queue (ft)	178	250	199	177	168	53	292	427	156	138	1320	268
Link Distance (ft)		164			995			818			1214	
Upstream Blk Time (%)	9	24	5								62	
Queuing Penalty (veh)	0	163	0								0	
Storage Bay Dist (ft)	175		200	125		200	250		125	175		100
Storage Blk Time (%)	9	24	5	9	2		1	20			54	
Queuing Penalty (veh)	34	122	16	9	3		9	52			143	

Intersection: 24: Meridian St/Mulberry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	86	257	110	53
Average Queue (ft)	8	46	44	22
95th Queue (ft)	42	148	79	48
Link Distance (ft)	427	772	524	492
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 32: Main St & Hickory St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	123	57	443	378
Average Queue (ft)	36	16	34	71
95th Queue (ft)	95	41	206	258
Link Distance (ft)	872	84	823	818
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 550

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6271	6196	6239	6236
Vehs Exited	6059	5989	6021	6025
Starting Vehs	367	376	362	363
Ending Vehs	579	583	580	580
Travel Distance (mi)	4117	4058	4101	4092
Travel Time (hr)	907.1	965.5	890.2	920.9
Total Delay (hr)	770.6	831.0	754.7	785.4
Total Stops	15793	14885	14899	15195
Fuel Used (gal)	316.7	328.3	311.8	319.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6271	6196	6239	6236
Vehs Exited	6059	5989	6021	6025
Starting Vehs	367	376	362	363
Ending Vehs	579	583	580	580
Travel Distance (mi)	4117	4058	4101	4092
Travel Time (hr)	907.1	965.5	890.2	920.9
Total Delay (hr)	770.6	831.0	754.7	785.4
Total Stops	15793	14885	14899	15195
Fuel Used (gal)	316.7	328.3	311.8	319.0

Intersection: 6: Main St & Catawba Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	163	212	164	211	244	67	349	535	225	274	1269	200
Average Queue (ft)	132	157	123	113	85	18	179	246	32	64	1228	115
95th Queue (ft)	183	235	200	185	175	49	302	480	162	221	1329	277
Link Distance (ft)		164			995			818			1214	
Upstream Blk Time (%)	5	20	4					0			62	
Queuing Penalty (veh)	0	133	0					0			0	
Storage Bay Dist (ft)	175		200	125		200	250		125	175		100
Storage Blk Time (%)	5	20	4	10	2		3	21			54	
Queuing Penalty (veh)	19	100	11	9	3		22	55			143	

Intersection: 32: Main St & Hickory St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	134	57	609	639
Average Queue (ft)	41	20	81	118
95th Queue (ft)	107	55	426	501
Link Distance (ft)	872	84	823	818
Upstream Blk Time (%)		2	2	1
Queuing Penalty (veh)		0	0	8
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 504

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6324	6280	6256	6289
Vehs Exited	6104	6077	6065	6082
Starting Vehs	371	403	335	367
Ending Vehs	591	606	526	574
Travel Distance (mi)	4143	4132	4096	4124
Travel Time (hr)	765.6	864.6	841.9	824.0
Total Delay (hr)	628.8	728.0	706.9	687.9
Total Stops	15214	15309	15003	15176
Fuel Used (gal)	283.4	307.3	301.1	297.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6324	6280	6256	6289
Vehs Exited	6104	6077	6065	6082
Starting Vehs	371	403	335	367
Ending Vehs	591	606	526	574
Travel Distance (mi)	4143	4132	4096	4124
Travel Time (hr)	765.6	864.6	841.9	824.0
Total Delay (hr)	628.8	728.0	706.9	687.9
Total Stops	15214	15309	15003	15176
Fuel Used (gal)	283.4	307.3	301.1	297.3

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	352	323	200	296	325	843	325	249	394
Average Queue (ft)	106	182	233	146	283	283	483	187	59	241
95th Queue (ft)	190	286	307	247	295	384	802	411	198	426
Link Distance (ft)		322	322		265		1219			388
Upstream Blk Time (%)		1	2		62					17
Queuing Penalty (veh)		5	19		413					0
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	21	49		36	69	13	59			57
Queuing Penalty (veh)	141	111		198	92	46	195			19

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	227	503	105	84
Average Queue (ft)	11	479	20	31
95th Queue (ft)	89	553	74	93
Link Distance (ft)	265	479	642	662
Upstream Blk Time (%)	0	46		
Queuing Penalty (veh)	3	306		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	264	309	151	69
Average Queue (ft)	33	248	59	17
95th Queue (ft)	177	411	186	52
Link Distance (ft)	479	294	630	729
Upstream Blk Time (%)	0	32		
Queuing Penalty (veh)	2	208		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 20: Lake Village Blvd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	246	255	412
Average Queue (ft)	47	160	165
95th Queue (ft)	187	336	419
Link Distance (ft)	294	235	444
Upstream Blk Time (%)	1	22	14
Queuing Penalty (veh)	7	142	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 1907

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6285	6184	6144	6206
Vehs Exited	6063	5968	6010	6013
Starting Vehs	339	369	419	370
Ending Vehs	561	585	553	565
Travel Distance (mi)	4038	3980	3954	3991
Travel Time (hr)	568.3	687.9	726.9	661.1
Total Delay (hr)	433.9	554.9	595.1	527.9
Total Stops	13937	14810	14756	14506
Fuel Used (gal)	236.9	264.2	272.7	258.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6285	6184	6144	6206
Vehs Exited	6063	5968	6010	6013
Starting Vehs	339	369	419	370
Ending Vehs	561	585	553	565
Travel Distance (mi)	4038	3980	3954	3991
Travel Time (hr)	568.3	687.9	726.9	661.1
Total Delay (hr)	433.9	554.9	595.1	527.9
Total Stops	13937	14810	14756	14506
Fuel Used (gal)	236.9	264.2	272.7	258.0

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	241	181	81
Average Queue (ft)	114	70	40
95th Queue (ft)	238	148	67
Link Distance (ft)	235	1367	1187
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	2		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	322	182	127	92
Average Queue (ft)	143	69	48	29
95th Queue (ft)	302	140	86	66
Link Distance (ft)	1367	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	267	50	36
Average Queue (ft)	47	12	15
95th Queue (ft)	187	36	40
Link Distance (ft)	294	630	729
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	5		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Lake Village Blvd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	182	82	74
Average Queue (ft)	41	4	34
95th Queue (ft)	120	53	56
Link Distance (ft)	294	235	444
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		0	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 7

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6131	6216	6321	6226
Vehs Exited	5930	5950	6062	5981
Starting Vehs	365	343	330	338
Ending Vehs	566	609	589	585
Travel Distance (mi)	3966	4004	4033	4001
Travel Time (hr)	798.8	768.1	678.1	748.3
Total Delay (hr)	666.6	635.2	543.5	615.1
Total Stops	15348	15965	16323	15881
Fuel Used (gal)	289.0	282.9	262.6	278.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6131	6216	6321	6226
Vehs Exited	5930	5950	6062	5981
Starting Vehs	365	343	330	338
Ending Vehs	566	609	589	585
Travel Distance (mi)	3966	4004	4033	4001
Travel Time (hr)	798.8	768.1	678.1	748.3
Total Delay (hr)	666.6	635.2	543.5	615.1
Total Stops	15348	15965	16323	15881
Fuel Used (gal)	289.0	282.9	262.6	278.2

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	232	179	89
Average Queue (ft)	98	55	38
95th Queue (ft)	218	127	70
Link Distance (ft)	235	1367	1187
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	2		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	649	181	144	106
Average Queue (ft)	200	78	53	35
95th Queue (ft)	510	157	106	78
Link Distance (ft)	1367	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	341	411	200	302	325	1245	325	250	307
Average Queue (ft)	105	214	192	97	279	317	972	208	32	164
95th Queue (ft)	192	305	348	213	319	351	1421	428	124	287
Link Distance (ft)		305	305		267		1209			390
Upstream Blk Time (%)		1	1		38		27			
Queuing Penalty (veh)		7	5		215		0			
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	14	59		7	63	58	82			34
Queuing Penalty (veh)	94	109		37	46	233	299			7

Zone Summary

Zone wide Queuing Penalty: 1054

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6098	6182	6126	6135
Vehs Exited	5921	6039	5883	5950
Starting Vehs	352	343	347	340
Ending Vehs	529	486	590	533
Travel Distance (mi)	3941	3997	3940	3959
Travel Time (hr)	651.1	665.4	710.0	675.5
Total Delay (hr)	519.4	532.0	578.2	543.2
Total Stops	13793	14575	14369	14244
Fuel Used (gal)	253.8	259.5	268.3	260.5

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6098	6182	6126	6135
Vehs Exited	5921	6039	5883	5950
Starting Vehs	352	343	347	340
Ending Vehs	529	486	590	533
Travel Distance (mi)	3941	3997	3940	3959
Travel Time (hr)	651.1	665.4	710.0	675.5
Total Delay (hr)	519.4	532.0	578.2	543.2
Total Stops	13793	14575	14369	14244
Fuel Used (gal)	253.8	259.5	268.3	260.5

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	352	416	200	300	325	1130	325	249	404
Average Queue (ft)	125	236	209	95	273	304	905	220	52	273
95th Queue (ft)	215	335	407	204	332	371	1434	426	189	474
Link Distance (ft)		310	310		265		1217			390
Upstream Blk Time (%)		3	1		43		24			33
Queuing Penalty (veh)		27	7		241		0			0
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	14	58		3	61	51	77	0		63
Queuing Penalty (veh)	98	106		15	45	204	283	2		13

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	244	442	46	43
Average Queue (ft)	24	275	11	12
95th Queue (ft)	132	589	50	40
Link Distance (ft)	265	479	642	662
Upstream Blk Time (%)	1	6		
Queuing Penalty (veh)	4	32		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	17	199	44	36
Average Queue (ft)	1	41	14	11
95th Queue (ft)	9	154	37	35
Link Distance (ft)	479	294	630	729
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		1		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 1077

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3055	3221	3143	3139
Vehs Exited	2969	3163	3069	3067
Starting Vehs	147	163	161	158
Ending Vehs	233	221	235	228
Travel Distance (mi)	2590	2754	2676	2674
Travel Time (hr)	348.9	302.7	337.0	329.6
Total Delay (hr)	273.7	223.7	260.4	252.6
Total Stops	6042	5513	5156	5570
Fuel Used (gal)	145.3	137.7	143.0	142.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	3055	3221	3143	3139
Vehs Exited	2969	3163	3069	3067
Starting Vehs	147	163	161	158
Ending Vehs	233	221	235	228
Travel Distance (mi)	2590	2754	2676	2674
Travel Time (hr)	348.9	302.7	337.0	329.6
Total Delay (hr)	273.7	223.7	260.4	252.6
Total Stops	6042	5513	5156	5570
Fuel Used (gal)	145.3	137.7	143.0	142.0

Intersection: 3: Statesville Rd & Bailey Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	1337	450	2444	325	225	1530
Average Queue (ft)	887	390	2230	296	215	846
95th Queue (ft)	1488	588	2825	424	252	1742
Link Distance (ft)	1984		2389			1592
Upstream Blk Time (%)			30			16
Queuing Penalty (veh)			0			0
Storage Bay Dist (ft)		350		225	125	
Storage Blk Time (%)	58		36	0	56	15
Queuing Penalty (veh)	162		241	2	487	41

Intersection: 6: Poole Place Dr & Bailey Rd

Movement	WB	NB
Directions Served	L	LR
Maximum Queue (ft)	36	35
Average Queue (ft)	2	10
95th Queue (ft)	15	33
Link Distance (ft)		249
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	150	
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 932

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2669	2726	2634	2678
Vehs Exited	2402	2459	2455	2439
Starting Vehs	179	195	209	194
Ending Vehs	446	462	388	432
Travel Distance (mi)	2771	2827	2801	2800
Travel Time (hr)	497.7	500.2	432.0	476.6
Total Delay (hr)	426.5	427.0	360.2	404.6
Total Stops	4980	5159	5492	5212
Fuel Used (gal)	176.6	178.5	162.4	172.5

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2669	2726	2634	2678
Vehs Exited	2402	2459	2455	2439
Starting Vehs	179	195	209	194
Ending Vehs	446	462	388	432
Travel Distance (mi)	2771	2827	2801	2800
Travel Time (hr)	497.7	500.2	432.0	476.6
Total Delay (hr)	426.5	427.0	360.2	404.6
Total Stops	4980	5159	5492	5212
Fuel Used (gal)	176.6	178.5	162.4	172.5

Intersection: 10: Old Statesville Rd & Bailey Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	LT	R	L	TR	L	TR
Maximum Queue (ft)	150	2245	1859	275	350	2292	250	3145
Average Queue (ft)	85	1468	1289	217	254	2247	214	2178
95th Queue (ft)	190	2572	2479	377	428	2305	304	3859
Link Distance (ft)		2338	2096			2229		4273
Upstream Blk Time (%)		15	30			71		5
Queuing Penalty (veh)		0	0			0		0
Storage Bay Dist (ft)	50			175	250		150	
Storage Blk Time (%)	32	85	83	1	5	51	51	42
Queuing Penalty (veh)	98	59	117	2	50	91	416	68

Network Summary

Network wide Queuing Penalty: 901

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2969	3031	2992	2998
Vehs Exited	2967	2954	2941	2953
Starting Vehs	257	190	195	214
Ending Vehs	259	267	246	257
Travel Distance (mi)	1991	2005	1978	1992
Travel Time (hr)	668.7	622.7	624.0	638.5
Total Delay (hr)	614.7	568.3	570.6	584.5
Total Stops	3735	3720	3840	3765
Fuel Used (gal)	208.0	196.7	196.8	200.5

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2969	3031	2992	2998
Vehs Exited	2967	2954	2941	2953
Starting Vehs	257	190	195	214
Ending Vehs	259	267	246	257
Travel Distance (mi)	1991	2005	1978	1992
Travel Time (hr)	668.7	622.7	624.0	638.5
Total Delay (hr)	614.7	568.3	570.6	584.5
Total Stops	3735	3720	3840	3765
Fuel Used (gal)	208.0	196.7	196.8	200.5

Intersection: 7: Statesville Rd & Westmoreland Rd

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	LT	R	L	TR	L	TR	L	TR
Maximum Queue (ft)	2702	200	340	451	250	1180	225	1045
Average Queue (ft)	2521	191	178	236	248	1153	166	1028
95th Queue (ft)	3089	246	324	389	251	1169	280	1042
Link Distance (ft)	2646			1216		1135		1010
Upstream Blk Time (%)	80					65		71
Queuing Penalty (veh)	0					0		0
Storage Bay Dist (ft)		100	300		150		125	
Storage Blk Time (%)	68	58	5	4	66	2	16	62
Queuing Penalty (veh)	252	168	17	4	409	8	122	96

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6090	6142	6114	6115
Vehs Exited	5917	5921	5867	5902
Starting Vehs	364	404	389	379
Ending Vehs	537	625	636	593
Travel Distance (mi)	3928	3940	3863	3910
Travel Time (hr)	760.1	741.5	777.9	759.8
Total Delay (hr)	629.0	609.4	649.4	629.3
Total Stops	14475	14849	14584	14636
Fuel Used (gal)	278.5	274.7	282.1	278.5

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6090	6142	6114	6115
Vehs Exited	5917	5921	5867	5902
Starting Vehs	364	404	389	379
Ending Vehs	537	625	636	593
Travel Distance (mi)	3928	3940	3863	3910
Travel Time (hr)	760.1	741.5	777.9	759.8
Total Delay (hr)	629.0	609.4	649.4	629.3
Total Stops	14475	14849	14584	14636
Fuel Used (gal)	278.5	274.7	282.1	278.5

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	364	233	94	70
Average Queue (ft)	133	71	45	28
95th Queue (ft)	266	163	80	60
Link Distance (ft)	1367	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Catawba Ave & Main St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	163	228	164	216	243	62	350	864	225	274	1261	200
Average Queue (ft)	144	185	110	110	71	21	286	538	52	51	1231	132
95th Queue (ft)	193	233	213	196	178	52	420	984	209	193	1278	287
Link Distance (ft)		164			994			835			1214	
Upstream Blk Time (%)	18	45	3					7			70	
Queuing Penalty (veh)	0	324	0					78			0	
Storage Bay Dist (ft)	175		200	125		200	250		125	175		100
Storage Blk Time (%)	18	45	3	12	1		23	25			62	1
Queuing Penalty (veh)	75	255	13	10	1		201	93			172	6

Intersection: 24: Meridian St/Mulberry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	294	200	66	46
Average Queue (ft)	43	41	33	15
95th Queue (ft)	221	121	57	41
Link Distance (ft)	427	772	524	492
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	2			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 32: Main St & Hickory St

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	696	79	850	852
Average Queue (ft)	378	50	223	485
95th Queue (ft)	758	91	747	1018
Link Distance (ft)	806	64	835	800
Upstream Blk Time (%)	5	57	4	18
Queuing Penalty (veh)	0	0	52	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 1281

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6151	6055	6058	6087
Vehs Exited	5970	5942	5780	5895
Starting Vehs	337	371	306	336
Ending Vehs	518	484	584	525
Travel Distance (mi)	3957	3970	3921	3950
Travel Time (hr)	669.9	707.1	712.2	696.4
Total Delay (hr)	537.8	574.7	581.4	564.6
Total Stops	14641	15149	14553	14779
Fuel Used (gal)	259.7	269.8	267.7	265.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6151	6055	6058	6087
Vehs Exited	5970	5942	5780	5895
Starting Vehs	337	371	306	336
Ending Vehs	518	484	584	525
Travel Distance (mi)	3957	3970	3921	3950
Travel Time (hr)	669.9	707.1	712.2	696.4
Total Delay (hr)	537.8	574.7	581.4	564.6
Total Stops	14641	15149	14553	14779
Fuel Used (gal)	259.7	269.8	267.7	265.7

Intersection: 6: Catawba Ave & Main St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	163	223	164	197	181	69	350	861	225	274	1262	200
Average Queue (ft)	149	185	119	100	71	22	280	504	52	60	1160	130
95th Queue (ft)	176	228	214	168	155	52	410	972	209	196	1497	285
Link Distance (ft)		164			994			835			1214	
Upstream Blk Time (%)	21	44	5					5			59	
Queuing Penalty (veh)	0	321	0					52			0	
Storage Bay Dist (ft)	175		200	125		200	250		125	175		100
Storage Blk Time (%)	21	44	5	8	2		18	25			60	0
Queuing Penalty (veh)	90	252	20	6	3		161	95			165	0

Intersection: 32: Main St & Hickory St

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	300	79	700	840
Average Queue (ft)	161	40	145	380
95th Queue (ft)	443	85	533	943
Link Distance (ft)	806	64	835	800
Upstream Blk Time (%)		36	1	13
Queuing Penalty (veh)		0	14	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 1181

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6098	6182	6126	6135
Vehs Exited	5921	6039	5883	5950
Starting Vehs	352	343	347	340
Ending Vehs	529	486	590	533
Travel Distance (mi)	3941	3997	3940	3959
Travel Time (hr)	651.1	665.4	710.0	675.5
Total Delay (hr)	519.4	532.0	578.2	543.2
Total Stops	13793	14575	14369	14244
Fuel Used (gal)	253.8	259.5	268.3	260.5

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6098	6182	6126	6135
Vehs Exited	5921	6039	5883	5950
Starting Vehs	352	343	347	340
Ending Vehs	529	486	590	533
Travel Distance (mi)	3941	3997	3940	3959
Travel Time (hr)	651.1	665.4	710.0	675.5
Total Delay (hr)	519.4	532.0	578.2	543.2
Total Stops	13793	14575	14369	14244
Fuel Used (gal)	253.8	259.5	268.3	260.5

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	352	416	200	300	325	1130	325	249	404
Average Queue (ft)	125	236	209	95	273	304	905	220	52	273
95th Queue (ft)	215	335	407	204	332	371	1434	426	189	474
Link Distance (ft)		310	310		265		1217			390
Upstream Blk Time (%)		3	1		43		24			33
Queuing Penalty (veh)		27	7		241		0			0
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	14	58		3	61	51	77	0		63
Queuing Penalty (veh)	98	106		15	45	204	283	2		13

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	244	442	46	43
Average Queue (ft)	24	275	11	12
95th Queue (ft)	132	589	50	40
Link Distance (ft)	265	479	642	662
Upstream Blk Time (%)	1	6		
Queuing Penalty (veh)	4	32		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	17	199	44	36
Average Queue (ft)	1	41	14	11
95th Queue (ft)	9	154	37	35
Link Distance (ft)	479	294	630	729
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		1		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 20: Lake Village Blvd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	210	24	74
Average Queue (ft)	28	1	34
95th Queue (ft)	107	13	62
Link Distance (ft)	294	235	444
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 1077

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6071	6078	6112	6086
Vehs Exited	5913	5865	5886	5889
Starting Vehs	404	403	345	381
Ending Vehs	562	616	571	578
Travel Distance (mi)	3872	3847	3842	3854
Travel Time (hr)	846.9	840.1	851.1	846.0
Total Delay (hr)	718.1	712.0	723.1	717.7
Total Stops	15223	16231	15755	15742
Fuel Used (gal)	297.7	297.4	298.9	298.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6071	6078	6112	6086
Vehs Exited	5913	5865	5886	5889
Starting Vehs	404	403	345	381
Ending Vehs	562	616	571	578
Travel Distance (mi)	3872	3847	3842	3854
Travel Time (hr)	846.9	840.1	851.1	846.0
Total Delay (hr)	718.1	712.0	723.1	717.7
Total Stops	15223	16231	15755	15742
Fuel Used (gal)	297.7	297.4	298.9	298.0

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	WB	NB
Directions Served	TR	L	T	LR
Maximum Queue (ft)	249	199	595	333
Average Queue (ft)	177	26	265	165
95th Queue (ft)	279	118	547	343
Link Distance (ft)	236		1366	768
Upstream Blk Time (%)	2			
Queuing Penalty (veh)	15			
Storage Bay Dist (ft)		100		
Storage Blk Time (%)			38	
Queuing Penalty (veh)			3	

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	30	261	98	434	122	79
Average Queue (ft)	2	89	10	161	52	34
95th Queue (ft)	14	207	51	353	99	65
Link Distance (ft)		1366		427	494	476
Upstream Blk Time (%)				1		
Queuing Penalty (veh)				7		
Storage Bay Dist (ft)	100		100			
Storage Blk Time (%)		4		15		
Queuing Penalty (veh)		0		2		

Intersection: 16: Ferry St

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	TR	LTR	LTR
Maximum Queue (ft)	26	42	311	147	73
Average Queue (ft)	2	2	234	55	32
95th Queue (ft)	11	15	419	205	99
Link Distance (ft)			294	625	724
Upstream Blk Time (%)			30		
Queuing Penalty (veh)			193		
Storage Bay Dist (ft)	50	50			
Storage Blk Time (%)		0	52		
Queuing Penalty (veh)		0	2		

Intersection: 20: Lake Village Blvd

Movement	EB	EB	WB	SB
Directions Served	L	T	TR	LR
Maximum Queue (ft)	37	150	252	355
Average Queue (ft)	7	21	163	175
95th Queue (ft)	28	85	337	442
Link Distance (ft)		294	236	438
Upstream Blk Time (%)			18	21
Queuing Penalty (veh)			114	0
Storage Bay Dist (ft)	50			
Storage Blk Time (%)	0	2		
Queuing Penalty (veh)	1	0		

Zone Summary

Zone wide Queuing Penalty: 338

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	4016	4171	4012	4066
Vehs Exited	3927	4067	3992	3995
Starting Vehs	291	322	298	305
Ending Vehs	380	426	318	370
Travel Distance (mi)	3525	3686	3503	3571
Travel Time (hr)	737.0	675.4	832.1	748.1
Total Delay (hr)	618.2	552.0	714.2	628.1
Total Stops	8802	9840	8587	9077
Fuel Used (gal)	255.3	245.6	276.1	259.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	4016	4171	4012	4066
Vehs Exited	3927	4067	3992	3995
Starting Vehs	291	322	298	305
Ending Vehs	380	426	318	370
Travel Distance (mi)	3525	3686	3503	3571
Travel Time (hr)	737.0	675.4	832.1	748.1
Total Delay (hr)	618.2	552.0	714.2	628.1
Total Stops	8802	9840	8587	9077
Fuel Used (gal)	255.3	245.6	276.1	259.0

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	249	810	280
Average Queue (ft)	144	276	110
95th Queue (ft)	288	682	216
Link Distance (ft)	235	1366	
Upstream Blk Time (%)	2		
Queuing Penalty (veh)	16		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	250	292	93	84
Average Queue (ft)	105	126	39	34
95th Queue (ft)	221	229	73	65
Link Distance (ft)	1366	1934		485
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Statesville Rd & Floral Ln Extension

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	83	31
Average Queue (ft)	24	3
95th Queue (ft)	55	17
Link Distance (ft)		
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	149	320	253	225	301	263	386	300	416	439
Average Queue (ft)	108	165	176	156	284	152	248	65	111	363
95th Queue (ft)	167	283	305	263	298	236	359	207	367	499
Link Distance (ft)		300	300		264		2136		390	390
Upstream Blk Time (%)		0			59				10	66
Queuing Penalty (veh)		3			397				0	0
Storage Bay Dist (ft)	50			125		400		200		
Storage Blk Time (%)	42	47		34	67		27			
Queuing Penalty (veh)	281	105		185	67		79			

Zone Summary

Zone wide Queuing Penalty: 1133

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5971	5800	5862	5876
Vehs Exited	5836	5722	5791	5784
Starting Vehs	436	449	399	422
Ending Vehs	571	527	470	516
Travel Distance (mi)	4557	4507	4550	4538
Travel Time (hr)	1041.2	1094.2	994.5	1043.3
Total Delay (hr)	892.0	946.0	845.1	894.3
Total Stops	13358	13587	12682	13205
Fuel Used (gal)	355.6	366.3	345.6	355.8

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5971	5800	5862	5876
Vehs Exited	5836	5722	5791	5784
Starting Vehs	436	449	399	422
Ending Vehs	571	527	470	516
Travel Distance (mi)	4557	4507	4550	4538
Travel Time (hr)	1041.2	1094.2	994.5	1043.3
Total Delay (hr)	892.0	946.0	845.1	894.3
Total Stops	13358	13587	12682	13205
Fuel Used (gal)	355.6	366.3	345.6	355.8

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	285	300	200	300	261	373	273	197	359
Average Queue (ft)	96	138	182	158	284	156	227	66	70	250
95th Queue (ft)	182	252	317	239	300	242	331	161	218	476
Link Distance (ft)		322	322		265		2465			388
Upstream Blk Time (%)		0	1		53					32
Queuing Penalty (veh)		0	9		354					0
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	20	36		56	57	1	13		0	50
Queuing Penalty (veh)	138	80		305	75	4	42		0	17

Intersection: 12: Smithville Ln Extension & Statesville Rd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	36	31
Average Queue (ft)	8	4
95th Queue (ft)	30	21
Link Distance (ft)	1056	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	502	46	20
Average Queue (ft)	395	10	2
95th Queue (ft)	624	33	10
Link Distance (ft)	479	642	662
Upstream Blk Time (%)	29		
Queuing Penalty (veh)	192		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 16: Ferry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	143	261	63	51
Average Queue (ft)	10	155	21	10
95th Queue (ft)	76	386	65	34
Link Distance (ft)	479	294	630	729
Upstream Blk Time (%)		21		
Queuing Penalty (veh)		134		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 1349

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2808	2796	2777	2793
Vehs Exited	2741	2728	2692	2719
Starting Vehs	165	196	177	177
Ending Vehs	232	264	262	253
Travel Distance (mi)	3136	3125	3103	3121
Travel Time (hr)	301.5	370.3	364.5	345.4
Total Delay (hr)	222.0	290.9	286.2	266.4
Total Stops	5480	5735	5464	5562
Fuel Used (gal)	145.8	161.3	158.5	155.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2808	2796	2777	2793
Vehs Exited	2741	2728	2692	2719
Starting Vehs	165	196	177	177
Ending Vehs	232	264	262	253
Travel Distance (mi)	3136	3125	3103	3121
Travel Time (hr)	301.5	370.3	364.5	345.4
Total Delay (hr)	222.0	290.9	286.2	266.4
Total Stops	5480	5735	5464	5562
Fuel Used (gal)	145.8	161.3	158.5	155.2

Intersection: 3: Statesville Rd & Bailey Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	992	450	451	325	600	2203
Average Queue (ft)	881	325	234	48	302	2046
95th Queue (ft)	959	638	389	203	725	2576
Link Distance (ft)	1590		1439			2156
Upstream Blk Time (%)						36
Queuing Penalty (veh)						0
Storage Bay Dist (ft)		350		225	500	
Storage Blk Time (%)	81		11			33
Queuing Penalty (veh)	84		18			39

Intersection: 6: Statesville Rd & Bailey Rd Extension

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	1046	714	346	257	499	984
Average Queue (ft)	618	129	170	31	158	706
95th Queue (ft)	1096	454	301	147	462	1032
Link Distance (ft)	1209	1209	2270			1439
Upstream Blk Time (%)	0					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)				250	400	
Storage Blk Time (%)			2			14
Queuing Penalty (veh)			3			11

Intersection: 8: Poole Place Dr & Bailey Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	28	28
Average Queue (ft)	3	17
95th Queue (ft)	19	38
Link Distance (ft)	805	242
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Bailey Rd Extension & Bailey Rd

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	105	45	58	96	122	258
Average Queue (ft)	43	9	17	48	54	133
95th Queue (ft)	88	34	45	92	100	225
Link Distance (ft)		1209	1209	586	586	978
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150					
Storage Blk Time (%)						
Queuing Penalty (veh)						

Network Summary

Network wide Queuing Penalty: 155

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2813	2968	2865	2881
Vehs Exited	2792	2858	2776	2809
Starting Vehs	246	240	228	236
Ending Vehs	267	350	317	312
Travel Distance (mi)	6918	7126	6895	6980
Travel Time (hr)	261.8	295.9	282.3	280.0
Total Delay (hr)	89.8	118.3	111.3	106.4
Total Stops	3007	4389	3927	3773
Fuel Used (gal)	200.7	212.2	204.2	205.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2813	2968	2865	2881
Vehs Exited	2792	2858	2776	2809
Starting Vehs	246	240	228	236
Ending Vehs	267	350	317	312
Travel Distance (mi)	6918	7126	6895	6980
Travel Time (hr)	261.8	295.9	282.3	280.0
Total Delay (hr)	89.8	118.3	111.3	106.4
Total Stops	3007	4389	3927	3773
Fuel Used (gal)	200.7	212.2	204.2	205.7

Intersection: 10: Old Statesville Rd & Bailey Rd

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	64	186	163	672	350	493	790	350	600	2944	250
Average Queue (ft)	25	88	79	376	190	259	369	168	454	1793	66
95th Queue (ft)	57	155	133	695	427	488	618	369	782	3211	229
Link Distance (ft)		8223		6656			6289			6093	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	175		250		250	500		250	500		150
Storage Blk Time (%)		1		45	0	1	19			43	
Queuing Penalty (veh)		1		59	0	10	65			111	

Network Summary

Network wide Queuing Penalty: 247

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2975	3135	3054	3055
Vehs Exited	2862	2971	2972	2935
Starting Vehs	158	157	166	160
Ending Vehs	271	321	248	281
Travel Distance (mi)	3366	3481	3447	3431
Travel Time (hr)	252.6	292.3	230.7	258.5
Total Delay (hr)	171.6	208.4	148.0	176.0
Total Stops	3748	4210	4071	4009
Fuel Used (gal)	134.2	146.3	131.3	137.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2975	3135	3054	3055
Vehs Exited	2862	2971	2972	2935
Starting Vehs	158	157	166	160
Ending Vehs	271	321	248	281
Travel Distance (mi)	3366	3481	3447	3431
Travel Time (hr)	252.6	292.3	230.7	258.5
Total Delay (hr)	171.6	208.4	148.0	176.0
Total Stops	3748	4210	4071	4009
Fuel Used (gal)	134.2	146.3	131.3	137.3

Intersection: 7: Statesville Rd & Westmoreland Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	270	273	328	537	653	285	493	592	250	600	3749	350
Average Queue (ft)	142	157	175	305	309	126	338	257	42	346	3045	78
95th Queue (ft)	272	260	322	543	628	317	574	646	153	793	4449	317
Link Distance (ft)		2646			1658			3391			3693	
Upstream Blk Time (%)											44	
Queuing Penalty (veh)											0	
Storage Bay Dist (ft)	425		350	500		250	500		150	500		250
Storage Blk Time (%)			0	7	18		12	12			57	
Queuing Penalty (veh)			0	31	68		55	42			89	

Network Summary

Network wide Queuing Penalty: 286

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6131	6032	6266	6141
Vehs Exited	5876	5840	6073	5928
Starting Vehs	422	448	464	438
Ending Vehs	677	640	657	656
Travel Distance (mi)	3995	3926	4068	3996
Travel Time (hr)	1028.0	1099.4	906.2	1011.2
Total Delay (hr)	896.4	969.8	772.1	879.5
Total Stops	16281	15558	16102	15977
Fuel Used (gal)	341.7	357.6	315.5	338.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6131	6032	6266	6141
Vehs Exited	5876	5840	6073	5928
Starting Vehs	422	448	464	438
Ending Vehs	677	640	657	656
Travel Distance (mi)	3995	3926	4068	3996
Travel Time (hr)	1028.0	1099.4	906.2	1011.2
Total Delay (hr)	896.4	969.8	772.1	879.5
Total Stops	16281	15558	16102	15977
Fuel Used (gal)	341.7	357.6	315.5	338.3

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	279	251	93	71
Average Queue (ft)	89	86	34	28
95th Queue (ft)	203	188	70	60
Link Distance (ft)	1366	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Main St & Catawba Ave

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	163	234	164	224	291	90	349	730	225	274	1261	200
Average Queue (ft)	131	158	125	130	86	19	201	259	35	39	1228	110
95th Queue (ft)	183	257	185	216	200	59	361	548	169	149	1290	273
Link Distance (ft)		164			995			818			1214	
Upstream Blk Time (%)	4	32	3					1			64	
Queuing Penalty (veh)	0	215	0					7			0	
Storage Bay Dist (ft)	175		200	125		200	250		125	175		100
Storage Blk Time (%)	4	32	3	18	5		10	15			57	0
Queuing Penalty (veh)	14	145	9	18	8		66	38			152	0

Intersection: 24: Meridian St/Mulberry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	184	222	88	59
Average Queue (ft)	41	31	41	25
95th Queue (ft)	183	136	73	52
Link Distance (ft)	427	772	524	492
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 32: Main St & Hickory St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	154	64	863	830
Average Queue (ft)	64	17	370	463
95th Queue (ft)	124	51	856	955
Link Distance (ft)	872	84	823	818
Upstream Blk Time (%)		0	9	7
Queuing Penalty (veh)		0	0	87
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 759

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2879	2933	2853	2888
Vehs Exited	2789	2882	2794	2822
Starting Vehs	141	147	123	137
Ending Vehs	231	198	182	203
Travel Distance (mi)	1601	1659	1608	1622
Travel Time (hr)	194.9	258.8	277.3	243.6
Total Delay (hr)	139.0	200.9	221.2	187.0
Total Stops	4219	5214	4897	4775
Fuel Used (gal)	85.7	102.7	104.9	97.8

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2879	2933	2853	2888
Vehs Exited	2789	2882	2794	2822
Starting Vehs	141	147	123	137
Ending Vehs	231	198	182	203
Travel Distance (mi)	1601	1659	1608	1622
Travel Time (hr)	194.9	258.8	277.3	243.6
Total Delay (hr)	139.0	200.9	221.2	187.0
Total Stops	4219	5214	4897	4775
Fuel Used (gal)	85.7	102.7	104.9	97.8

Intersection: 6: Catawba Ave & Main St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	250	1608	200	219	446	211	400	845	225	274	1171	200
Average Queue (ft)	235	1072	148	155	164	22	365	671	63	32	1093	133
95th Queue (ft)	298	1866	246	251	416	134	470	1063	208	151	1300	262
Link Distance (ft)		1567			1001			816			1120	
Upstream Blk Time (%)		24						23			40	
Queuing Penalty (veh)		0						221			0	
Storage Bay Dist (ft)	150		100	120		200	300		125	175		100
Storage Blk Time (%)	70	6	47	56	6		70	21			43	2
Queuing Penalty (veh)	261	31	148	53	8		457	55			113	14

Intersection: 8: Main St & Hickory St/Hickory St Extension

Movement	EB	WB	SE	SE	NW	NW
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	102	86	72	495	324	1054
Average Queue (ft)	32	25	13	149	21	682
95th Queue (ft)	77	62	46	356	143	1388
Link Distance (ft)	860	737		816		1015
Upstream Blk Time (%)						33
Queuing Penalty (veh)						0
Storage Bay Dist (ft)			150		225	
Storage Blk Time (%)				4		35
Queuing Penalty (veh)				1		2

Network Summary

Network wide Queuing Penalty: 1365

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5961	5829	5897	5891
Vehs Exited	5699	5701	5690	5697
Starting Vehs	382	430	377	395
Ending Vehs	644	558	584	593
Travel Distance (mi)	3877	3927	3895	3899
Travel Time (hr)	968.4	1134.1	955.8	1019.4
Total Delay (hr)	840.5	1004.2	827.1	890.6
Total Stops	14048	13898	13449	13798
Fuel Used (gal)	322.7	363.8	322.4	336.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5961	5829	5897	5891
Vehs Exited	5699	5701	5690	5697
Starting Vehs	382	430	377	395
Ending Vehs	644	558	584	593
Travel Distance (mi)	3877	3927	3895	3899
Travel Time (hr)	968.4	1134.1	955.8	1019.4
Total Delay (hr)	840.5	1004.2	827.1	890.6
Total Stops	14048	13898	13449	13798
Fuel Used (gal)	322.7	363.8	322.4	336.3

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	175	295	257	200	300	324	428	325	250	422
Average Queue (ft)	95	139	181	176	285	220	278	88	133	342
95th Queue (ft)	174	244	310	242	298	333	392	228	322	480
Link Distance (ft)		322	322		265		1219			388
Upstream Blk Time (%)		0			61					41
Queuing Penalty (veh)		2			410					0
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	25	39		71	54	2	25			89
Queuing Penalty (veh)	170	89		386	73	5	84			27

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	9	501	82	255
Average Queue (ft)	0	470	24	102
95th Queue (ft)	5	581	65	305
Link Distance (ft)	265	479	642	662
Upstream Blk Time (%)		48		
Queuing Penalty (veh)		316		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	216	310	166	94
Average Queue (ft)	9	255	63	27
95th Queue (ft)	99	425	200	72
Link Distance (ft)	479	294	630	729
Upstream Blk Time (%)	0	40		
Queuing Penalty (veh)	2	255		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 20: Lake Village Blvd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	296	256	418
Average Queue (ft)	41	195	170
95th Queue (ft)	178	345	410
Link Distance (ft)	294	235	444
Upstream Blk Time (%)	0	28	8
Queuing Penalty (veh)	1	176	0
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 1996

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6025	6024	6200	6084
Vehs Exited	5797	5895	6019	5904
Starting Vehs	337	389	335	352
Ending Vehs	565	518	516	528
Travel Distance (mi)	3670	3747	3789	3735
Travel Time (hr)	764.0	761.7	650.9	725.6
Total Delay (hr)	640.7	635.6	524.1	600.1
Total Stops	14823	15214	14649	14889
Fuel Used (gal)	275.1	276.6	251.6	267.8

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6025	6024	6200	6084
Vehs Exited	5797	5895	6019	5904
Starting Vehs	337	389	335	352
Ending Vehs	565	518	516	528
Travel Distance (mi)	3670	3747	3789	3735
Travel Time (hr)	764.0	761.7	650.9	725.6
Total Delay (hr)	640.7	635.6	524.1	600.1
Total Stops	14823	15214	14649	14889
Fuel Used (gal)	275.1	276.6	251.6	267.8

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	WB	NB
Directions Served	TR	L	T	LR
Maximum Queue (ft)	249	38	199	96
Average Queue (ft)	113	5	80	45
95th Queue (ft)	253	25	186	90
Link Distance (ft)	235		1366	1181
Upstream Blk Time (%)	1			
Queuing Penalty (veh)	6			
Storage Bay Dist (ft)		100		
Storage Blk Time (%)			4	
Queuing Penalty (veh)			0	

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	EB	WB	WB	NB	SB
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	37	370	44	179	118	92
Average Queue (ft)	5	167	11	80	46	33
95th Queue (ft)	24	321	34	159	83	72
Link Distance (ft)		1366		427	494	476
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	100		100			
Storage Blk Time (%)		10		3		
Queuing Penalty (veh)		1		1		

Intersection: 16: Ferry St

Movement	EB	WB	WB	NB	SB
Directions Served	L	L	TR	LTR	LTR
Maximum Queue (ft)	9	35	30	45	36
Average Queue (ft)	0	4	1	13	12
95th Queue (ft)	5	21	18	35	36
Link Distance (ft)			293	625	723
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)	50	50			
Storage Blk Time (%)		0	0		
Queuing Penalty (veh)		2	0		

Intersection: 20: Lake Village Blvd

Movement	EB	EB	SB
Directions Served	L	T	LR
Maximum Queue (ft)	39	175	83
Average Queue (ft)	7	14	32
95th Queue (ft)	29	75	60
Link Distance (ft)		293	438
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)	50		
Storage Blk Time (%)	0	1	
Queuing Penalty (veh)	0	0	

Zone Summary

Zone wide Queuing Penalty: 11

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	4027	4082	3934	4014
Vehs Exited	3867	3915	3818	3869
Starting Vehs	325	283	308	302
Ending Vehs	485	450	424	453
Travel Distance (mi)	3914	3862	3769	3848
Travel Time (hr)	686.4	542.6	538.4	589.1
Total Delay (hr)	557.2	414.9	413.4	461.8
Total Stops	10646	9921	9460	10009
Fuel Used (gal)	251.9	218.3	214.8	228.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	4027	4082	3934	4014
Vehs Exited	3867	3915	3818	3869
Starting Vehs	325	283	308	302
Ending Vehs	485	450	424	453
Travel Distance (mi)	3914	3862	3769	3848
Travel Time (hr)	686.4	542.6	538.4	589.1
Total Delay (hr)	557.2	414.9	413.4	461.8
Total Stops	10646	9921	9460	10009
Fuel Used (gal)	251.9	218.3	214.8	228.3

Intersection: 2: Smith Cir & Catawba Ave

Movement	EB	WB	NB
Directions Served	TR	LT	LR
Maximum Queue (ft)	242	360	111
Average Queue (ft)	96	138	43
95th Queue (ft)	249	435	85
Link Distance (ft)	235	1366	
Upstream Blk Time (%)	1		
Queuing Penalty (veh)	4		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	358	238	109	88
Average Queue (ft)	149	105	48	39
95th Queue (ft)	286	192	87	73
Link Distance (ft)	1366	2136		485
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 5: Statesville Rd & Floral Ln Extension

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	41	31
Average Queue (ft)	17	3
95th Queue (ft)	39	19
Link Distance (ft)		
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	310	337	200	298	273	331	208	183	284
Average Queue (ft)	91	175	168	98	280	170	212	66	26	160
95th Queue (ft)	174	245	289	226	304	255	301	143	100	276
Link Distance (ft)		291	291		264		2136			390
Upstream Blk Time (%)		0	0		58					
Queuing Penalty (veh)		2	1		327					
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	13	58		5	72	3	9			29
Queuing Penalty (veh)	91	106		27	42	10	33			6

Zone Summary

Zone wide Queuing Penalty: 650

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5646	5876	6014	5844
Vehs Exited	5355	5711	5839	5637
Starting Vehs	363	381	390	375
Ending Vehs	654	546	565	589
Travel Distance (mi)	4164	4377	4533	4358
Travel Time (hr)	1005.0	886.0	849.3	913.4
Total Delay (hr)	867.1	740.6	699.2	769.0
Total Stops	13441	13361	14305	13703
Fuel Used (gal)	338.4	315.5	312.5	322.1

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5646	5876	6014	5844
Vehs Exited	5355	5711	5839	5637
Starting Vehs	363	381	390	375
Ending Vehs	654	546	565	589
Travel Distance (mi)	4164	4377	4533	4358
Travel Time (hr)	1005.0	886.0	849.3	913.4
Total Delay (hr)	867.1	740.6	699.2	769.0
Total Stops	13441	13361	14305	13703
Fuel Used (gal)	338.4	315.5	312.5	322.1

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	340	420	200	299	312	411	325	189	274
Average Queue (ft)	97	220	212	105	269	161	215	67	36	154
95th Queue (ft)	186	311	420	222	336	266	348	164	135	269
Link Distance (ft)		310	310		265		2467			390
Upstream Blk Time (%)		2	1		48					
Queuing Penalty (veh)		15	7		265					
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	14	62		9	65	1	8			24
Queuing Penalty (veh)	97	114		45	45	6	31			5

Intersection: 12: Smithville Ln Extension & Statesville Rd

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	30	31
Average Queue (ft)	12	4
95th Queue (ft)	35	20
Link Distance (ft)	1467	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	268	502	39	180
Average Queue (ft)	21	308	11	85
95th Queue (ft)	126	639	34	228
Link Distance (ft)	265	479	642	662
Upstream Blk Time (%)	1	10		
Queuing Penalty (veh)	4	57		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	168	258	52	36
Average Queue (ft)	24	57	14	12
95th Queue (ft)	186	187	39	35
Link Distance (ft)	479	294	630	729
Upstream Blk Time (%)	1	0		
Queuing Penalty (veh)	12	0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 704

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3115	3096	3095	3102
Vehs Exited	3057	3041	3043	3047
Starting Vehs	174	170	177	171
Ending Vehs	232	225	229	228
Travel Distance (mi)	3975	3940	3945	3954
Travel Time (hr)	267.8	309.5	313.9	297.1
Total Delay (hr)	165.7	207.6	212.5	195.3
Total Stops	4922	5124	5296	5114
Fuel Used (gal)	156.7	164.3	166.4	162.5

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	3115	3096	3095	3102
Vehs Exited	3057	3041	3043	3047
Starting Vehs	174	170	177	171
Ending Vehs	232	225	229	228
Travel Distance (mi)	3975	3940	3945	3954
Travel Time (hr)	267.8	309.5	313.9	297.1
Total Delay (hr)	165.7	207.6	212.5	195.3
Total Stops	4922	5124	5296	5114
Fuel Used (gal)	156.7	164.3	166.4	162.5

Intersection: 3: Statesville Rd & Bailey Rd

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	481	254	506	325	530	568
Average Queue (ft)	293	99	260	83	335	254
95th Queue (ft)	552	323	443	257	596	564
Link Distance (ft)	1590		1440			2643
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		350		225	500	
Storage Blk Time (%)	17		12		10	0
Queuing Penalty (veh)	17		47		97	1

Intersection: 6: Statesville Rd & Bailey Rd Extension

Movement	WB	WB	NB	NB	SB	SB
Directions Served	L	R	T	R	L	T
Maximum Queue (ft)	632	220	2606	350	351	396
Average Queue (ft)	430	108	1963	211	215	169
95th Queue (ft)	731	199	2917	467	377	352
Link Distance (ft)	1202	1202	2576			1440
Upstream Blk Time (%)			6			
Queuing Penalty (veh)			0			
Storage Bay Dist (ft)				250	400	
Storage Blk Time (%)			24		3	0
Queuing Penalty (veh)			63		32	0

Intersection: 8: Poole Place Dr & Bailey Rd

Movement	WB	NB
Directions Served	LT	LR
Maximum Queue (ft)	28	28
Average Queue (ft)	2	10
95th Queue (ft)	16	31
Link Distance (ft)	805	242
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 9: Bailey Rd Extension & Bailey Rd

Movement	EB	EB	EB	WB	WB	SB
Directions Served	L	T	T	T	TR	LR
Maximum Queue (ft)	158	54	67	131	154	201
Average Queue (ft)	85	8	21	65	83	93
95th Queue (ft)	137	35	55	116	136	155
Link Distance (ft)		1202	1202	586	586	978
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	150					
Storage Blk Time (%)	0					
Queuing Penalty (veh)	0					

Network Summary

Network wide Queuing Penalty: 258

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2989	3049	2955	2997
Vehs Exited	2956	2927	2916	2933
Starting Vehs	180	170	183	178
Ending Vehs	213	292	222	244
Travel Distance (mi)	4286	4302	4231	4273
Travel Time (hr)	206.9	240.4	186.8	211.4
Total Delay (hr)	98.3	131.1	79.8	103.1
Total Stops	4001	4968	3347	4105
Fuel Used (gal)	139.2	148.4	133.3	140.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2989	3049	2955	2997
Vehs Exited	2956	2927	2916	2933
Starting Vehs	180	170	183	178
Ending Vehs	213	292	222	244
Travel Distance (mi)	4286	4302	4231	4273
Travel Time (hr)	206.9	240.4	186.8	211.4
Total Delay (hr)	98.3	131.1	79.8	103.1
Total Stops	4001	4968	3347	4105
Fuel Used (gal)	139.2	148.4	133.3	140.3

Intersection: 10: Old Statesville Rd & Bailey Rd

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	LT	R	L	T	R	L	T	R
Maximum Queue (ft)	196	295	258	509	350	600	2514	350	600	1059	250
Average Queue (ft)	70	154	88	281	133	466	1608	229	313	664	40
95th Queue (ft)	145	261	174	444	332	775	3039	474	672	1065	182
Link Distance (ft)		3729		2395			3897			4273	
Upstream Blk Time (%)											
Queuing Penalty (veh)											
Storage Bay Dist (ft)	175		250		250	500		250	500		150
Storage Blk Time (%)	0	13		22	0	7	45			48	
Queuing Penalty (veh)	1	28		31	0	72	175			99	

Network Summary

Network wide Queuing Penalty: 405

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3136	3174	3144	3152
Vehs Exited	3027	2983	2980	2997
Starting Vehs	172	192	160	174
Ending Vehs	281	383	324	330
Travel Distance (mi)	3745	3704	3709	3719
Travel Time (hr)	235.8	367.3	254.1	285.7
Total Delay (hr)	144.6	277.0	164.3	195.3
Total Stops	5236	6233	4977	5481
Fuel Used (gal)	137.8	169.3	141.2	149.5

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	3136	3174	3144	3152
Vehs Exited	3027	2983	2980	2997
Starting Vehs	172	192	160	174
Ending Vehs	281	383	324	330
Travel Distance (mi)	3745	3704	3709	3719
Travel Time (hr)	235.8	367.3	254.1	285.7
Total Delay (hr)	144.6	277.0	164.3	195.3
Total Stops	5236	6233	4977	5481
Fuel Used (gal)	137.8	169.3	141.2	149.5

Intersection: 7: Statesville Rd & Westmoreland Rd

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	407	563	393	600	859	350	600	2340	189	600	3723	350
Average Queue (ft)	73	244	115	180	396	156	571	1485	26	488	2677	233
95th Queue (ft)	199	444	308	489	813	409	667	3042	118	843	4363	505
Link Distance (ft)		2646			3325			3003			3908	
Upstream Blk Time (%)								7			22	
Queuing Penalty (veh)								0			0	
Storage Bay Dist (ft)	425		350	500		250	500		150	500		250
Storage Blk Time (%)		5			44		49	19			67	
Queuing Penalty (veh)		24			89		304	107			193	

Network Summary

Network wide Queuing Penalty: 717

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	6027	5953	6030	6003
Vehs Exited	5860	5860	5858	5859
Starting Vehs	401	398	402	397
Ending Vehs	568	491	574	543
Travel Distance (mi)	3878	3837	3885	3867
Travel Time (hr)	937.7	818.0	814.9	856.9
Total Delay (hr)	807.8	689.7	685.4	727.6
Total Stops	15407	14848	15708	15317
Fuel Used (gal)	319.4	291.7	292.5	301.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	6027	5953	6030	6003
Vehs Exited	5860	5860	5858	5859
Starting Vehs	401	398	402	397
Ending Vehs	568	491	574	543
Travel Distance (mi)	3878	3837	3885	3867
Travel Time (hr)	937.7	818.0	814.9	856.9
Total Delay (hr)	807.8	689.7	685.4	727.6
Total Stops	15407	14848	15708	15317
Fuel Used (gal)	319.4	291.7	292.5	301.2

Intersection: 3: School St/Church St & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	349	161	118	108
Average Queue (ft)	130	63	37	34
95th Queue (ft)	275	131	81	71
Link Distance (ft)	1367	427	500	482
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 6: Catawba Ave & Main St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	163	226	163	220	283	152	350	853	225	274	1273	200
Average Queue (ft)	146	188	136	102	82	25	226	429	57	48	1234	130
95th Queue (ft)	179	224	188	188	195	84	407	871	218	170	1257	285
Link Distance (ft)		164			994			835			1214	
Upstream Blk Time (%)	10	42	7					2			72	
Queuing Penalty (veh)	0	304	0					27			0	
Storage Bay Dist (ft)	175		200	125		200	250		125	175		100
Storage Blk Time (%)	10	42	7	15	2		6	27			62	0
Queuing Penalty (veh)	39	222	25	12	3		57	94			171	0

Intersection: 24: Meridian St/Mulberry St

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	196	225	113	37
Average Queue (ft)	35	42	29	15
95th Queue (ft)	188	136	83	40
Link Distance (ft)	427	772	524	492
Upstream Blk Time (%)	1			
Queuing Penalty (veh)	9			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 32: Main St & Hickory St

Movement	EB	WB	SE	NW
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	122	72	851	850
Average Queue (ft)	48	19	328	793
95th Queue (ft)	103	51	842	976
Link Distance (ft)	806	64	835	800
Upstream Blk Time (%)		2	4	54
Queuing Penalty (veh)		0	49	0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Zone Summary

Zone wide Queuing Penalty: 1012

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	2958	2979	2939	2960
Vehs Exited	2915	2889	2855	2887
Starting Vehs	149	134	148	143
Ending Vehs	192	224	232	216
Travel Distance (mi)	1693	1678	1653	1675
Travel Time (hr)	281.5	298.0	326.3	301.9
Total Delay (hr)	221.8	238.7	268.3	243.0
Total Stops	5839	5134	5654	5542
Fuel Used (gal)	109.0	111.3	117.8	112.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	2958	2979	2939	2960
Vehs Exited	2915	2889	2855	2887
Starting Vehs	149	134	148	143
Ending Vehs	192	224	232	216
Travel Distance (mi)	1693	1678	1653	1675
Travel Time (hr)	281.5	298.0	326.3	301.9
Total Delay (hr)	221.8	238.7	268.3	243.0
Total Stops	5839	5134	5654	5542
Fuel Used (gal)	109.0	111.3	117.8	112.7

Intersection: 6: Catawba Ave & Main St

Movement	EB	EB	EB	WB	WB	WB	NB	NB	NB	SB	SB	SB
Directions Served	L	T	R	L	T	R	L	T	R	L	T	R
Maximum Queue (ft)	250	1532	200	171	152	41	400	844	225	274	1171	200
Average Queue (ft)	240	1023	135	88	54	8	382	760	87	46	1139	134
95th Queue (ft)	276	1910	246	149	112	30	466	994	256	175	1157	256
Link Distance (ft)		1567			1001			816			1120	
Upstream Blk Time (%)		23						16			55	
Queuing Penalty (veh)		0						180			0	
Storage Bay Dist (ft)	150		100	120		200	300		125	175		100
Storage Blk Time (%)	70	7	32	9	0		55	32			50	2
Queuing Penalty (veh)	296	41	123	7	1		470	115			136	20

Intersection: 8: Main St & Hickory St/Hickory St Extension

Movement	EB	WB	SE	SE	NW	NW
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	93	116	112	294	324	1071
Average Queue (ft)	35	37	12	128	43	829
95th Queue (ft)	73	87	58	257	199	1443
Link Distance (ft)	860	737		816		1015
Upstream Blk Time (%)						44
Queuing Penalty (veh)						0
Storage Bay Dist (ft)			150		225	
Storage Blk Time (%)				3		40
Queuing Penalty (veh)				1		10

Network Summary

Network wide Queuing Penalty: 1400

Summary of All Intervals

Run Number	1	2	3	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:07	8:07	8:07	8:07
Total Time (min)	70	70	70	70
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	5739	5971	5738	5814
Vehs Exited	5558	5718	5596	5623
Starting Vehs	364	309	388	349
Ending Vehs	545	562	530	542
Travel Distance (mi)	3736	3827	3724	3762
Travel Time (hr)	939.8	781.4	871.8	864.4
Total Delay (hr)	815.3	653.4	747.1	738.6
Total Stops	13018	13780	13496	13430
Fuel Used (gal)	314.7	282.0	299.4	298.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:07
Total Time (min)	10

Volumes adjusted by Growth Factors.

No data recorded this interval.

Interval #1 Information Recording

Start Time	7:07
End Time	8:07
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	Avg
Vehs Entered	5739	5971	5738	5814
Vehs Exited	5558	5718	5596	5623
Starting Vehs	364	309	388	349
Ending Vehs	545	562	530	542
Travel Distance (mi)	3736	3827	3724	3762
Travel Time (hr)	939.8	781.4	871.8	864.4
Total Delay (hr)	815.3	653.4	747.1	738.6
Total Stops	13018	13780	13496	13430
Fuel Used (gal)	314.7	282.0	299.4	298.7

Intersection: 10: Statesville Rd/Holiday Ln & Catawba Ave

Movement	EB	EB	EB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	R	L	TR	L	LT	R	L	TR
Maximum Queue (ft)	174	343	422	200	299	322	474	325	196	378
Average Queue (ft)	115	208	173	103	280	208	260	85	41	230
95th Queue (ft)	194	320	350	207	308	313	375	218	159	405
Link Distance (ft)		310	310		265		1217			390
Upstream Blk Time (%)		2	0		45					6
Queuing Penalty (veh)		17	2		252					0
Storage Bay Dist (ft)	75			100		225		225	150	
Storage Blk Time (%)	29	59		16	66	1	18			59
Queuing Penalty (veh)	194	112		80	48	4	67			11

Intersection: 13: Hill St/Burton Ln & Catawba Ave

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	230	486	33	195
Average Queue (ft)	25	260	5	58
95th Queue (ft)	138	530	20	201
Link Distance (ft)	265	479	642	662
Upstream Blk Time (%)	1	11		
Queuing Penalty (veh)	4	60		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 16: Ferry St

Movement	WB	NB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	268	44	64
Average Queue (ft)	65	13	14
95th Queue (ft)	246	33	45
Link Distance (ft)	294	630	729
Upstream Blk Time (%)	5		
Queuing Penalty (veh)	29		
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 20: Lake Village Blvd

Movement	EB	WB	SB
Directions Served	LT	TR	LR
Maximum Queue (ft)	136	143	83
Average Queue (ft)	22	23	30
95th Queue (ft)	87	123	62
Link Distance (ft)	294	235	444
Upstream Blk Time (%)		0	
Queuing Penalty (veh)		2	
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Zone Summary

Zone wide Queuing Penalty: 882

APPENDIX L

SIDRA Report

MOVEMENT SUMMARY

Site: 2035 No-Build - W. Catawba & US 21 AM

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: US 21 (Statesville Rd)											
3	L	554	2.0	0.476	13.8	LOS B	1.8	46.0	0.62	0.89	18.2
8	T	10	2.0	0.476	13.6	LOS B	1.7	44.3	0.61	0.68	18.9
18	R	130	2.0	0.202	8.0	LOS A	0.5	13.9	0.48	0.58	20.9
Approach		694	2.0	0.476	12.8	LOS B	1.8	46.0	0.59	0.83	18.7
East: Catawba Ave											
1	L	173	2.0	0.595	15.8	LOS C	2.8	72.0	0.65	1.02	18.0
6	T	633	2.0	0.595	15.6	LOS C	2.8	72.0	0.64	0.73	18.7
16	R	9	2.0	0.595	15.4	LOS C	2.7	69.2	0.63	0.82	18.7
Approach		816	2.0	0.595	15.6	LOS C	2.8	72.0	0.64	0.79	18.5
North: Holiday Ln											
7	L	24	2.0	0.350	14.9	LOS B	1.0	26.1	0.71	0.99	18.3
4	T	29	2.0	0.350	14.9	LOS B	1.0	26.1	0.71	0.77	18.7
14	R	93	2.0	0.350	14.9	LOS B	1.0	26.1	0.71	0.82	18.7
Approach		147	2.0	0.350	14.9	LOS B	1.0	26.1	0.71	0.84	18.6
West: Catawba Ave											
5	L	84	2.0	0.438	9.0	LOS A	1.7	43.7	0.38	0.90	19.8
2	T	737	2.0	0.438	9.0	LOS A	1.7	43.7	0.37	0.32	20.9
12	R	911	2.0	0.574	0.1	X	X	X	X	0.18	24.2
Approach		1732	2.0	0.574	4.3	LOS A	1.7	43.7	0.18	0.27	22.5
All Vehicles		3389	2.0	0.595	9.2	LOS A	2.8	72.0	0.40	0.54	20.4

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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MOVEMENT SUMMARY

Site: 2035 No-Build - W. Catawba & US 21 PM

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: US 21 (Statesville Rd)											
3	L	691	2.0	0.764	31.9	LOS D	3.9	100.3	0.84	1.16	14.6
8	T	38	2.0	0.764	31.1	LOS D	3.9	97.9	0.83	1.06	14.7
18	R	252	2.0	0.453	14.0	LOS B	1.6	40.0	0.64	0.77	18.9
Approach		981	2.0	0.764	27.3	LOS D	3.9	100.3	0.79	1.05	15.5
East: Catawba Ave											
1	L	128	2.0	0.889	42.6	LOS E	7.2	182.6	0.89	1.41	13.3
6	T	850	2.0	0.889	41.9	LOS E	7.2	182.6	0.88	1.29	13.3
16	R	31	2.0	0.889	41.3	LOS E	7.0	178.0	0.88	1.31	13.4
Approach		1009	2.0	0.889	42.0	LOS E	7.2	182.6	0.88	1.31	13.3
North: Holiday Ln											
7	L	27	2.0	0.499	23.4	LOS C	1.6	40.1	0.82	1.06	16.4
4	T	27	2.0	0.499	23.4	LOS C	1.6	40.1	0.82	0.92	16.5
14	R	114	2.0	0.499	23.4	LOS C	1.6	40.1	0.82	0.95	16.5
Approach		168	2.0	0.499	23.4	LOS C	1.6	40.1	0.82	0.96	16.5
West: Catawba Ave											
5	L	176	2.0	0.574	11.5	LOS B	2.9	72.8	0.42	0.83	19.1
2	T	938	2.0	0.574	11.5	LOS B	2.9	72.8	0.41	0.33	20.1
12	R	661	2.0	0.416	0.1	X	X	X	X	0.19	24.3
Approach		1774	2.0	0.574	7.2	LOS A	2.9	72.8	0.26	0.33	21.3
All Vehicles		3932	2.0	0.889	21.8	LOS C	7.2	182.6	0.57	0.79	16.9

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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MOVEMENT SUMMARY

Site: 2035 Build - W. Catawba & US 21 AM

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: US 21 (Statesville Rd)											
3	L	554	2.0	0.476	13.9	LOS B	1.8	46.0	0.62	0.89	18.2
8	T	10	2.0	0.476	13.6	LOS B	1.7	44.3	0.61	0.68	18.9
18	R	130	2.0	0.202	8.0	LOS A	0.5	13.9	0.48	0.58	20.9
Approach		694	2.0	0.476	12.8	LOS B	1.8	46.0	0.59	0.83	18.7
East: Catawba Ave											
1	L	173	2.0	0.596	15.9	LOS C	2.8	72.2	0.65	1.02	18.0
6	T	633	2.0	0.596	15.6	LOS C	2.8	72.2	0.64	0.73	18.7
16	R	9	2.0	0.596	15.5	LOS C	2.7	69.3	0.63	0.83	18.7
Approach		816	2.0	0.596	15.7	LOS C	2.8	72.2	0.64	0.79	18.5
North: Holiday Ln											
7	L	21	2.0	0.342	14.7	LOS B	1.0	25.4	0.71	0.99	18.3
4	T	29	2.0	0.342	14.7	LOS B	1.0	25.4	0.71	0.76	18.8
14	R	93	2.0	0.342	14.7	LOS B	1.0	25.4	0.71	0.81	18.7
Approach		143	2.0	0.342	14.7	LOS B	1.0	25.4	0.71	0.83	18.7
West: Catawba Ave											
5	L	87	2.0	0.439	9.0	LOS A	1.7	44.0	0.38	0.89	19.8
2	T	739	2.0	0.439	9.0	LOS A	1.7	44.0	0.37	0.31	20.9
12	R	911	2.0	0.574	0.1	X	X	X	X	0.18	24.2
Approach		1737	2.0	0.574	4.4	LOS A	1.7	44.0	0.18	0.27	22.5
All Vehicles		3390	2.0	0.596	9.2	LOS A	2.8	72.2	0.40	0.54	20.4

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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MOVEMENT SUMMARY

Site: 2035 Build - W. Catawba & US 21 PM

New Site
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance ft	Prop. Queued	Effective Stop Rate per veh	Average Speed mph
South: US 21 (Statesville Rd)											
3	L	691	2.0	0.763	31.7	LOS D	3.9	100.0	0.84	1.16	14.6
8	T	38	2.0	0.763	31.0	LOS D	3.8	97.6	0.83	1.05	14.7
18	R	252	2.0	0.450	13.8	LOS B	1.6	39.7	0.64	0.77	19.0
Approach		981	2.0	0.763	27.1	LOS D	3.9	100.0	0.79	1.05	15.5
East: Catawba Ave											
1	L	128	2.0	0.893	43.5	LOS E	7.3	185.5	0.89	1.43	13.2
6	T	849	2.0	0.893	42.7	LOS E	7.3	185.5	0.88	1.31	13.1
16	R	31	2.0	0.893	42.1	LOS E	7.1	180.9	0.88	1.33	13.3
Approach		1008	2.0	0.893	42.8	LOS E	7.3	185.5	0.89	1.33	13.2
North: Holiday Ln											
7	L	24	2.0	0.492	23.1	LOS C	1.5	39.3	0.82	1.06	16.4
4	T	27	2.0	0.492	23.1	LOS C	1.5	39.3	0.82	0.92	16.6
14	R	114	2.0	0.492	23.1	LOS C	1.5	39.3	0.82	0.95	16.6
Approach		166	2.0	0.492	23.1	LOS C	1.5	39.3	0.82	0.96	16.5
West: Catawba Ave											
5	L	183	2.0	0.574	11.5	LOS B	2.8	72.3	0.42	0.82	19.1
2	T	930	2.0	0.574	11.4	LOS B	2.8	72.3	0.41	0.33	20.1
12	R	661	2.0	0.416	0.1	X	X	X	X	0.19	24.3
Approach		1774	2.0	0.574	7.2	LOS A	2.8	72.3	0.26	0.32	21.3
All Vehicles		3929	2.0	0.893	22.0	LOS C	7.3	185.5	0.57	0.79	16.8

X: Not applicable for Continuous movement.

Level of Service (LOS) Method: Delay & v/c (HCM 2010).
Roundabout LOS Method: Same as Sign Control.
Vehicle movement LOS values are based on average delay and v/c ratio (degree of saturation) per movement
LOS F will result if v/c > 1 irrespective of movement delay value (does not apply for approaches and intersection).
Intersection and Approach LOS values are based on average delay for all movements (v/c not used as specified in HCM 2010).
Roundabout Capacity Model: US HCM 2010.
HCM Delay Model used. Geometric Delay not included.

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APPENDIX M

Cost Estimates

Cornelius Bond Package

Estimate Criteria

Roadway and Drainage Assumptions

Mobilization

Per NCDOT specification, mobilization assumed to be 5% of the total construction costs.

Surveying

Assume construction surveying to be done under separate contract.

Comprehensive Grading

Assume 30% of total construction costs.

The following line items are incorporated under "Comprehensive Grading:"

- Clearing and Grubbing
- Supplemental Clearing and Grubbing
- Roadway Excavation
- Unclassified Excavation
- Borrow Excavation
- Embankments
- Drainage Ditch Excavation
- Removal of Existing Pavement
- Proof Rolling
- Pipe Removal
- Box Culvert Excavation
- Channel Excavation
- Fine Grading, Sub-grade, Shoulders and Ditches
- Incidental Stone Base
- Shoulder Construction
- Unclassified Structure Excavation

Pavement Schedule

The following pavement schedule was used to calculate asphalt quantities:

- Asphalt Concrete Surface Course –3 inches
- Asphalt Concrete Intermediate Course – 4 inches
- Asphalt Concrete Base Course –5 inches
- Milling – 1.5 inches

Drainage

15” R.C. Pipe was assumed to be 25% the total curb and gutter length.

24” R.C. Pipe was assumed to be 25% the total curb and gutter length.

Foundation Conditioning Material

Per NCDOT specification, Foundation Conditioning Material is determined by the total amount of pipe length.

Masonry Drainage Structures

Masonry Drainage Structures was assumed to have one structure every 200 linear feet of curb and gutter.

Frame with Grate and Hood

Frame with Grate and Hood was assumed to have one per catch basin.

Erosion Control

Erosion Control was assumed to be 5% of total construction costs.

Traffic Control

Traffic Control was assumed to be 10% of total construction costs.

Contingency

Assume 30% contingency for conceptual plans.

Right of Way

Assume 60’ Right of Way width for all street extensions and for Catawba Ave improvements.

Right of way areas for intersection improvements were measured from aerials based on proposed turn lane extensions/additions.

All unit costs for real estate costs were taken from Mecklenburg County POLARIS website based on latest tax evaluation price per sq ft of total property.

Floral Ln extension Right of Way already acquired therefore no cost estimate provided.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Bailey Road Re-alignment**
NUMBER:
ESTIMATE: $ 3,300,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RESULTS
TOTAL PROJECT COST ESTIMATE

Roadway Construction		**$**
Roadway Sub-Total:		$1,860,000
Structures Sub-Total:	$	-
Construction Sub-Total:	$	1,860,000.00
Construction Administration (5%):	$	93,000.00
Total Construction Cost:	$	1,953,000.00

Planning & Design		**$**
Planning (10%)	$	186,000.00
Design (15%)	$	279,000.00
Total Planning & Design Cost:	$	465,000.00

Right-of-Way		**$**
Right-of-Way Sub-Total:	$	596,800.00
Inflation (0% for 0years)	$	-
Contingency (10%)	$	59,680.00
Total Right-of-Way Cost:	$	657,000.00

Special Items (Ped Countdowns, Utilities, Landscaping, etc.)		**$**
Special Items Subtotal Cost:	$	150,750.00
Contingency (10%):	$	15,075.00
Total Special Items Cost:	$	166,000.00

TOTAL PROJECT COST:	***$***	***3,241,000.00***
SAY	**$**	**3,300,000.00**

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE WORKSHEET

PROJECT: **Bailey Road Re-alignment**
NUMBER:
Fund/Cntr.:
ESTIMATE: **$1,860,000**

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

Item#	Sect.#	ITEM DESCRIPTION	Quantity	Unit	Unit Price	Amount
1	800	Mobilization	1	LS	$68,000.00	$68,000.00
2	SP	Comprehensive Grading	1	LS	$314,000.00	$314,000.00
3	SP	Foundation Conditioning Material, Minor Structures	0	TN	$40.00	$0.00
4	SP	Foundation Conditioning Geotextile	0	SY	$5.00	$0.00
5	SP	15" RC Pipe Culverts, Class III	0	LF	$34.00	$0.00
6	SP	24" RC Pipe Culverts, Class III	0	LF	$46.00	$0.00
7	610	Asphalt Concrete Base Course, Type B 25.0C	3,795	TN	$61.00	$231,495.00
8	610	Asphalt Concrete Interm. Course,Type I 19.0C	2,895	TN	$57.00	$165,015.00
9	610	Asphalt Concrete Surface Course, Type S 9.5 C	2,885	TN	$54.00	$155,790.00
10	612	Milling Bituminous Pavement, 1.5"	520	SY	$3.00	$1,560.00
11	620	Asphalt Binder for Plant Mix (Type PG 64-22)	480	TN	$575.00	$276,000.00
12	840	Masonry Drainage Structures, NCDOT STD 840.01	0	EA	$1,320.00	$0.00
13	840	Frame with Grate & Hood, NCDOT STD 840.03	0	EA	$570.00	$0.00
14	846	1'-6" Curb & Gutter	2,500	LF	$18.00	$45,000.00
15	848	4" Concrete Sidewalk	0	SY	$25.00	$0.00
16	848	Concrete Wheelchair Ramps	0	EA	$800.00	$0.00
17	848	6" Concrete Driveway	0	SY	$38.00	$0.00
18	852	5" Monolithic Concrete Island	290	SY	$45.00	$13,050.00
19	SP	Erosion Control	1	LS	$45,500.00	$45,500.00
20	SP	Traffic Control	1	LS	$91,000.00	$91,000.00
21	1250	Thermoplastic Pavement Marking Lines (4", 120 mils)	23,775	LF	$0.75	$17,831.25
22	1250	Thermoplastic Pavement Marking Lines (6", 120 mils)	0	LF	$1.10	$0.00
23	1250	Thermoplastic Pavement Marking Lines (8",120 mils)	240	LF	$2.00	$480.00
24	1250	Thermoplastic Pavement Marking Lines (24",120 mils)	130	LF	$5.50	$715.00
25	1250	Thermoplastic Pavement Marking Symbols	21	EA	$105.00	$2,205.00

Unit prices from 2014 City of Charlotte Bid Tabs

SUBTOTAL	$1,427,641.25
30% CONTINGENCY	$428,292
ENGINEER'S ESTIMATE	$1,855,934.00
SAY	$1,860,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Bailey Road Re-alignment**
NUMBER:
ESTIMATE: $ 596,800.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RIGHT-OF-WAY

	Property To Acquire:	**SF**	**$/SF**	**Cost**
	503206	92,300.00	$ 2.00	$ 184,600.00
	503210	13,000.00	$ 2.00	$ 26,000.00
	503209	32,500.00	$ 2.00	$ 65,000.00
	503201	27,300.00	$ 2.00	$ 54,600.00
	503211	20,150.00	$ 2.00	$ 40,300.00
	503214	18,200.00	$ 2.00	$ 36,400.00
				$ -

	Proximity Damages Dist. from structure(s) to new right-of-way line	**Property Cost**	**% Damage**	**Cost**
	40 ft (12 m) to 50 ft (15 m)		5%	$ -
	30 ft (9 m) to 40 ft (12 m)		10%	$ -
	20 ft (6 m) to 30 ft (9 m)		25%	$ -
	10 ft (3 m) to 20 ft (6 m)		35%	$ -
	less than 10 ft (3 m)		50%	$ -

	Structures (total takes)	**No.**	**Property Cost (Lots +Structures)**	**Cost**
PID 00503208	residential	1	$ 123,700.00	$ 123,700.00
	commercial			$ -
	industrial			$ -
	office			$ -

	Parcels w/o Structures (total takes):	**No.**	**Property Cost**	**Cost**
	farmland / wooded			$ -
	commercial / office			$ -
	residential			$ -
	industrial			$ -

Temporary Construction Easement:	**SF**	**$/SF**	**Cost**
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
			$ -

Right-of-way Sub-Total: $ 530,600.00

Administration:	**No.**	**Cost**	**Cost**
Admin. / Acquisition:	6	$ 5,000.00	$ 30,000.00
Total Take of Property:			
			$ -
			$ -
			$ -
			$ -
Relocation Costs (5% of Total Take):		$ 6,200.00	$ 6,200.00
Condemnations (50% of parcels)	3	$ 10,000.00	$ 30,000.00

Adjusted Right-of-Way: $ 596,800.00

SAY: $ 596,800.00

PLEASE NOTE THE ABOVE INFORMATION IS FOR CONCEPTUAL USE ONLY AND NOT TO BE CONSIDERED FINAL.
FURTHER REVIEW WILL BE NEEDED DURING PLANNING AND DESIGN FOR THE TOTAL TAKE PROPERTIES.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Bailey Road Re-alignment**
NUMBER:
ESTIMATE: $ 150,750.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

SPECIAL ITEMS

Major Intersections

	# intersections	$/int.	Cost
RR Signal Coordination		$ 50,000	$ -
Mast Arms - Signalization		$ 100,000	$ -
Signal Modification		$ 60,000	$ -
New Signal	1	$ 100,000	$ 100,000.00
Pedestrian Level Lighting	**# Of Poles**	**$/Unit**	**Cost**
(Length of Project X 2 / 50' Spacing)		$ 10,000	$ -
Street Lighting (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -
Utility Relocation (Length of Project X 2 / 200' Spacing)	1	$ 10,000	$ 10,000.00
Wetland Mitigation	**Acres**	**$/Acre**	**Cost**
	0.00	$ 100,000.00	$ -
CMU Utility Relocation	**Lin. Ft.**	**$/Lin. Ft.**	**Cost**
Water Line	0.00	$ 35.00	$ -
Sewer Line	0.00	$ 47.00	$ -
Overhead Utility Relocation	**Miles**	**$/Mile**	**Cost**
For widening projects, enter length of widening (both sides):	0.10	$ 300,000	$ 30,000.00
Landscaping/Streetscape (Trees @ 40' On Center)	**Miles**	**$/Mile**	**Cost**
Planting Strips	0.00	$ 54,000	$ -
Median			$ -
Miscellaneous			
Other	*Unit*	*$/Unit*	*Cost*
Fire Hydrant Relocation	1.00	$ 4,500.00	$ 4,500.00
Cable Pedestal Relocation	3.00	$ 750.00	$ 2,250.00
Communication Cabinet Relocation	1.00	$ 4,000.00	$ 4,000.00
			$ -
		Special Sub-Total:	$ 150,750.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Bailey Rd & Old Statesville Rd**
NUMBER:
ESTIMATE: $ 900,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RESULTS
TOTAL PROJECT COST ESTIMATE

Roadway Construction		**$**
Roadway Sub-Total:		$470,000
Structures Sub-Total:	$	-
Construction Sub-Total:	$	470,000.00
Construction Administration (5%):	$	23,500.00
Total Construction Cost:	$	494,000.00

Planning & Design		**$**
Planning (10%)	$	47,000.00
Design (15%)	$	70,500.00
Total Planning & Design Cost:	$	118,000.00

Right-of-Way		**$**
Right-of-Way Sub-Total:	$	67,900.00
Inflation (0% for 0years)	$	-
Contingency (10%)	$	6,790.00
Total Right-of-Way Cost:	$	75,000.00

Special Items (Ped Countdowns, Utilities, Landscaping, etc.)		**$**
Special Items Subtotal Cost:	$	188,250.00
Contingency (10%):	$	18,825.00
Total Special Items Cost:	$	208,000.00

TOTAL PROJECT COST:	***$***	***895,000.00***
SAY	**$**	**900,000.00**

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE WORKSHEET

PROJECT: **Bailey Rd & Old Statesville Rd**
NUMBER:
Fund/Cntr.:
ESTIMATE: **$470,000**

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

Item#	Sect.#	ITEM DESCRIPTION	Quantity	Unit	Unit Price	Amount
1	800	Mobilization	1	LS	$17,200.00	$17,200.00
2	SP	Comprehensive Grading	1	LS	$80,000.00	$80,000.00
3	SP	Foundation Conditioning Material, Minor Structures	10	TN	$40.00	$400.00
4	SP	Foundation Conditioning Geotextile	30	SY	$5.00	$150.00
5	SP	15" RC Pipe Culverts, Class III	80	LF	$34.00	$2,720.00
6	SP	24" RC Pipe Culverts, Class III	0	LF	$46.00	$0.00
7	610	Asphalt Concrete Base Course, Type B 25.0C	620	TN	$61.00	$37,820.00
8	610	Asphalt Concrete Interm. Course,Type I 19.0C	485	TN	$57.00	$27,645.00
9	610	Asphalt Concrete Surface Course, Type S 9.5 C	1,180	TN	$54.00	$63,720.00
10	612	Milling Bituminous Pavement, 1.5"	980	SY	$3.00	$2,940.00
11	620	Asphalt Binder for Plant Mix (Type PG 64-22)	125	TN	$575.00	$71,875.00
12	840	Masonry Drainage Structures, NCDOT STD 840.01	0	EA	$1,320.00	$0.00
13	840	Frame with Grate & Hood, NCDOT STD 840.03	0	EA	$570.00	$0.00
14	846	2'-6" Concrete Curb and Gutter	150	LF	$14.00	$2,100.00
15	848	4" Concrete Sidewalk	0	SY	$25.00	$0.00
16	848	Concrete Wheelchair Ramps	3	EA	$800.00	$2,400.00
17	848	6" Concrete Driveway	40	SY	$38.00	$1,520.00
18	852	5" Monolithic Concrete Island	0	SY	$45.00	$0.00
19	SP	Erosion Control	1	LS	$11,500.00	$11,500.00
20	SP	Traffic Control	1	LS	$22,900.00	$22,900.00
21	1250	Thermoplastic Pavement Marking Lines (4", 120 mils)	12,760	LF	$0.75	$9,570.00
22	1250	Thermoplastic Pavement Marking Lines (6", 120 mils)	0	LF	$1.10	$0.00
23	1250	Thermoplastic Pavement Marking Lines (8",120 mils)	450	LF	$2.00	$900.00
24	1250	Thermoplastic Pavement Marking Lines (24",120 mils)	205	LF	$5.50	$1,127.50
25	1250	Thermoplastic Pavement Marking Symbols	39	EA	$105.00	$4,095.00

Unit prices from 2014 City of Charlotte Bid Tabs

SUBTOTAL	$360,582.50
30% CONTINGENCY	$108,175
ENGINEER'S ESTIMATE	$468,758.00
SAY	$470,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Bailey Rd & Old Statesville Rd**
NUMBER:
ESTIMATE: $ 67,900.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RIGHT-OF-WAY

Property To Acquire:	**SF**	**$/SF**	**Cost**
533104	2,160.00	$ 2.00	$ 4,320.00
533124	5,520.00	$ 3.00	$ 16,560.00
539102	6,000.00	$ 2.00	$ 12,000.00
			$ -
			$ -
			$ -
			$ -

Proximity Damages Dist. from structure(s) to new right-of-way line	**Property Cost**	**% Damage**	**Cost**
40 ft (12 m) to 50 ft (15 m)		5%	$ -
30 ft (9 m) to 40 ft (12 m)		10%	$ -
20 ft (6 m) to 30 ft (9 m)		25%	$ -
10 ft (3 m) to 20 ft (6 m)		35%	$ -
less than 10 ft (3 m)		50%	$ -

Structures (total takes)	**No.**	**Property Cost (Lots +Structures)**	**Cost**
residential			$ -
commercial			$ -
industrial			$ -
office			$ -

Parcels w/o Structures (total takes):	**No.**	**Property Cost**	**Cost**
farmland / wooded			$ -
commercial / office			$ -
residential			$ -
industrial			$ -

Temporary Construction Easement:	**SF**	**$/SF**	**Cost**
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
			$ -

Right-of-way Sub-Total: $ 32,880.00

Administration:	**No.**	**Cost**	**Cost**
Admin. / Acquisition:	3	$ 5,000.00	$ 15,000.00
Total Take of Property:		$ 750.00	$ -
			$ -
			$ -
			$ -
			$ -
Relocation Costs (5% of Total Take):			$ -
Condemnations (50% of parcels)	2	$ 10,000.00	$ 20,000.00

Adjusted Right-of-Way: $ 67,880.00

SAY: $ 67,900.00

PLEASE NOTE THE ABOVE INFORMATION IS FOR CONCEPTUAL USE ONLY AND NOT TO BE CONSIDERED FINAL.
FURTHER REVIEW WILL BE NEEDED DURING PLANNING AND DESIGN FOR THE TOTAL TAKE PROPERTIES.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Bailey Rd & Old Statesville Rd**
NUMBER:
ESTIMATE: $ 188,250.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

SPECIAL ITEMS

Major Intersections

	# intersections	$/int.	Cost
RR Signal Coordination		$ 50,000	$ -
Mast Arms - Signalization	1	$ 100,000	$ 100,000.00
Signal Modification		$ 60,000	$ -
New Signal		$ 75,000	$ -
Pedestrian Level Lighting	**# Of Poles**	**$/Unit**	**Cost**
(Length of Project X 2 / 50' Spacing)		$ 10,000	$ -
Street Lighting (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -
Utility Relocation (Length of Project X 2 / 200' Spacing)	2	$ 10,000	$ 20,000.00
Wetland Mitigation	**Acres**	**$/Acre**	**Cost**
	0.00	$ 100,000.00	$ -
CMU Utility Relocation	**Lin. Ft.**	**$/Lin. Ft.**	**Cost**
Water Line	0.00	$ 35.00	$ -
Sewer Line	0.00	$ 47.00	$ -
Overhead Utility Relocation	**Miles**	**$/Mile**	**Cost**
For widening projects, enter length of widening (both sides):	0.21	$ 300,000	$ 63,000.00
Landscaping/Streetscape (Trees @ 40' On Center)	**Miles**	**$/Mile**	**Cost**
Planting Strips	0.00	$ 54,000	$ -
Median			$ -
Miscellaneous			
Other	*Unit*	*$/Unit*	*Cost*
Fire Hydrant Relocation	1.00	$ 4,500.00	$ 4,500.00
Cable Pedastal Relocation	1.00	$ 750.00	$ 750.00
			$ -
			$ -

Special Sub-Total: $ 188,250.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Catawba Ave Center Lane**
NUMBER:
ESTIMATE: $ 6,000,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RESULTS
TOTAL PROJECT COST ESTIMATE

Roadway Construction		**$**
Roadway Sub-Total:		$2,930,000
Structures Sub-Total:	$	-
Construction Sub-Total:	$	2,930,000.00
Construction Administration (5%):	$	146,500.00
Total Construction Cost:	$	3,077,000.00

Planning & Design		**$**
Planning (10%)	$	293,000.00
Design (15%)	$	439,500.00
Total Planning & Design Cost:	$	733,000.00

Right-of-Way		**$**
Right-of-Way Sub-Total:	$	802,700.00
Inflation (0% for 0years)	$	-
Contingency (10%)	$	80,270.00
Total Right-of-Way Cost:	$	883,000.00

Special Items (Ped Countdowns, Utilities, Landscaping, etc.)		**$**
Special Items Subtotal Cost:	$	1,148,850.00
Contingency (10%):	$	114,885.00
Total Special Items Cost:	$	1,264,000.00

TOTAL PROJECT COST:	***$***	***5,957,000.00***
SAY	**$**	**6,000,000.00**

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE WORKSHEET

PROJECT: **Catawba Ave Center Lane**
NUMBER:
Fund/Cntr.:
ESTIMATE: **$2,930,000**

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

Item#	Sect.#	ITEM DESCRIPTION	Quantity	Unit	Unit Price	Amount
1	800	Mobilization	1	LS	$107,100.00	$107,100.00
2	SP	Comprehensive Grading	1	LS	$494,000.00	$494,000.00
3	SP	Foundation Conditioning Material, Minor Structures	430	TN	$40.00	$17,200.00
4	SP	Foundation Conditioning Geotextile	1,340	SY	$5.00	$6,700.00
5	SP	15" RC Pipe Culverts, Class III	2,000	LF	$34.00	$68,000.00
6	SP	24" RC Pipe Culverts, Class III	2,000	LF	$46.00	$92,000.00
7	610	Asphalt Concrete Base Course, Type B 25.0C	1,250	TN	$61.00	$76,250.00
8	610	Asphalt Concrete Interm. Course,Type I 19.0C	865	TN	$57.00	$49,305.00
9	610	Asphalt Concrete Surface Course, Type S 9.5C	1,690	TN	$54.00	$91,260.00
10	612	Milling Bituminous Pavement, 1.5"	4,880	SY	$3.00	$14,640.00
11	620	Asphalt Binder for Plant Mix (Type PG 64-22)	200	TN	$575.00	$115,000.00
12	840	Masonry Drainage Structures, NCDOT STD 840.01	40	EA	$1,320.00	$52,800.00
13	840	Frame with Grate & Hood, NCDOT STD 840.03	40	EA	$570.00	$22,800.00
14	846	2'-6" Concrete Curb and Gutter	1,630	LF	$14.00	$22,820.00
15	SP	6" Granite Curb	6,370	LF	$35.00	$222,950.00
16	SP	Brick Paver Sidewalk	42,180	SF	$12.00	$506,160.00
17	848	Concrete Wheelchair Ramps	24	EA	$800.00	$19,200.00
18	848	6" Concrete Driveway	860	SY	$38.00	$32,680.00
19	852	5" Monolithic Concrete Island	0	SY	$45.00	$0.00
20	SP	Erosion Control	1	LS	$71,600.00	$71,600.00
21	SP	Traffic Control	1	LS	$143,200.00	$143,200.00
22	1250	Thermoplastic Pavement Marking Lines (4", 120 mils)	17,775	LF	$0.75	$13,331.25
23	1250	Thermoplastic Pavement Marking Lines (6", 120 mils)	0	LF	$1.10	$0.00
24	1250	Thermoplastic Pavement Marking Lines (8",120 mils)	635	LF	$2.00	$1,270.00
25	1250	Thermoplastic Pavement Marking Lines (24",120 mils)	285	LF	$5.50	$1,567.50
26	1250	Thermoplastic Pavement Marking Symbols	52	EA	$105.00	$5,460.00

Unit prices from 2014 City of Charlotte Bid Tabs

SUBTOTAL	$2,247,293.75
30% CONTINGENCY	$674,188
ENGINEER'S ESTIMATE	$2,921,482.00
SAY	$2,930,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Catawba Ave Center Lane**
NUMBER:
ESTIMATE: $ 802,700.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RIGHT-OF-WAY

Property To Acquire:	**SF**	**$/SF**	**Cost**
519102	1,450.00	$ 20.00	$ 29,000.00
00520114 - 00520102	8,560.00	$ 20.00	$ 171,200.00
520101	565.00	$ 20.00	$ 11,300.00
00319408 - 00319409	1,900.00	$ 20.00	$ 38,000.00
00317201 - 00317205	3,650.00	$ 20.00	$ 73,000.00
00317402 - 00317403	2,360.00	$ 20.00	$ 47,200.00
00317601 - 00317605	2,250.00	$ 20.00	$ 45,000.00
00520401 - 00520419	1,650.00	$ 20.00	$ 33,000.00

Proximity Damages Dist. from structure(s) to new right-of-way line	**Property Cost**	**% Damage**	**Cost**
40 ft (12 m) to 50 ft (15 m)		5%	$ -
30 ft (9 m) to 40 ft (12 m)		10%	$ -
20 ft (6 m) to 30 ft (9 m)		25%	$ -
10 ft (3 m) to 20 ft (6 m)		35%	$ -
less than 10 ft (3 m)		50%	$ -

Structures (total takes)	**No.**	**Property Cost (Lots +Structures)**	**Cost**
residential			$ -
commercial			$ -
industrial			$ -
office			$ -

Parcels w/o Structures (total takes):	**No.**	**Property Cost**	**Cost**
farmland / wooded			$ -
commercial / office			$ -
residential			$ -
industrial			$ -

Temporary Construction Easement:	**SF**	**$/SF**	**Cost**
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
			$ -

Right-of-way Sub-Total: $ 447,700.00

Administration:	**No.**	**Cost**	**Cost**
Admin. / Acquisition:	35	$ 5,000.00	$ 175,000.00
Total Take of Property:			
			$ -
			$ -
			$ -
			$ -
Relocation Costs (5% of Total Take):			$ -
Condemnations (50% of parcels)	18	$ 10,000.00	$ 180,000.00

Adjusted Right-of-Way: $ 802,700.00

SAY: $ 802,700.00

PLEASE NOTE THE ABOVE INFORMATION IS FOR CONCEPTUAL USE ONLY AND NOT TO BE CONSIDERED FINAL.
FURTHER REVIEW WILL BE NEEDED DURING PLANNING AND DESIGN FOR THE TOTAL TAKE PROPERTIES.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Catawba Ave Center Lane**
NUMBER:
ESTIMATE: $ 1,148,850.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

SPECIAL ITEMS

Major Intersections

	# intersections	$/int.	Cost
RR Signal Coordination		$ 50,000	$ -
Mast Arms - Signalization	2	$ 120,000	$ 240,000.00
Signal Modification		$ 60,000	$ -
New Signal		$ 75,000	$ -

Pedestrian Level Lighting	**# Of Poles**	**$/Unit**	**Cost**
(Length of Project X 2 / 50' Spacing)	79	$ 10,000	$ 790,000.00
Street Lighting (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -
Utility Relocation (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -

Wetland Mitigation	**Acres**	**$/Acre**	**Cost**
	0.00	$ 100,000.00	$ -

CMU Utility Relocation	**Lin. Ft.**	**$/Lin. Ft.**	**Cost**
Water Line	0.00	$ 35.00	$ -
Sewer Line	0.00	$ 47.00	$ -

Overhead Utility Relocation	**Miles**	**$/Mile**	**Cost**
For widening projects, enter length of widening (both sides):		$ 300,000	$ -

Landscaping/Streetscape (Trees @ 40' On Center)	**Miles**	**$/Mile**	**Cost**
Planting Strips	1.10	$ 54,000	$ 59,400.00
Median			$ -

Miscellaneous

Other	*Unit*	*$/Unit*	*Cost*
Manhole Adjustment	18.00	$ 400.00	$ 7,200.00
Valve/Meter Box Relocation	20.00	$ 550.00	$ 11,000.00
Fire Hydrant Relocation	7.00	$ 4,500.00	$ 31,500.00
Cable Pedastal Relocation	13.00	$ 750.00	$ 9,750.00

Special Sub-Total: $ 1,148,850.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Catawba Ave Turn Lanes**
NUMBER:
ESTIMATE: $ 3,000,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RESULTS
TOTAL PROJECT COST ESTIMATE

Roadway Construction		**$**
Roadway Sub-Total:		$1,080,000
Structures Sub-Total:	$	-
Construction Sub-Total:	$	1,080,000.00
Construction Administration (5%):	$	54,000.00
Total Construction Cost:	$	1,134,000.00

Planning & Design		**$**
Planning (10%)	$	108,000.00
Design (15%)	$	162,000.00
Total Planning & Design Cost:	$	270,000.00

Right-of-Way		**$**
Right-of-Way Sub-Total:	$	699,700.00
Inflation (0% for 0years)	$	-
Contingency (10%)	$	69,970.00
Total Right-of-Way Cost:	$	770,000.00

Special Items (Ped Countdowns, Utilities, Landscaping, etc.)		**$**
Special Items Subtotal Cost:	$	723,600.00
Contingency (10%):	$	72,360.00
Total Special Items Cost:	$	796,000.00

TOTAL PROJECT COST:	***$***	***2,970,000.00***
SAY	**$**	**3,000,000.00**

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE WORKSHEET

PROJECT: **Catawba Ave Turn Lanes**
NUMBER:
Fund/Cntr.:
ESTIMATE: **$1,080,000**

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

Item#	Sect.#	ITEM DESCRIPTION	Quantity	Unit	Unit Price	Amount
1	800	Mobilization	1	LS	$39,300.00	$39,300.00
2	SP	Comprehensive Grading	1	LS	$181,000.00	$181,000.00
3	SP	Foundation Conditioning Material, Minor Structures	150	TN	$40.00	$6,000.00
4	SP	Foundation Conditioning Geotextile	460	SY	$5.00	$2,300.00
5	SP	15" RC Pipe Culverts, Class III	690	LF	$34.00	$23,460.00
6	SP	24" RC Pipe Culverts, Class III	690	LF	$46.00	$31,740.00
7	610	Asphalt Concrete Base Course, Type B 25.0C	515	TN	$61.00	$31,415.00
8	610	Asphalt Concrete Interm. Course,Type I 19.0C	335	TN	$57.00	$19,095.00
9	610	Asphalt Concrete Surface Course, Type S 9.5C	610	TN	$54.00	$32,940.00
10	612	Milling Bituminous Pavement, 1.5"	960	SY	$3.00	$2,880.00
11	620	Asphalt Binder for Plant Mix (Type PG 64-22)	80	TN	$575.00	$46,000.00
12	840	Masonry Drainage Structures, NCDOT STD 840.01	14	EA	$1,320.00	$18,480.00
13	840	Frame with Grate & Hood, NCDOT STD 840.03	14	EA	$570.00	$7,980.00
14	846	2'-6" Concrete Curb and Gutter	960	LF	$14.00	$13,440.00
15	SP	6" Granite Curb	1,790	LF	$35.00	$62,650.00
16	SP	Brick Paver Sidewalk	15,640	SF	$12.00	$187,680.00
17	848	Concrete Wheelchair Ramps	16	EA	$800.00	$12,800.00
18	848	6" Concrete Driveway	430	SY	$38.00	$16,340.00
19	852	5" Monolithic Concrete Island	0	SY	$45.00	$0.00
20	SP	Erosion Control	1	LS	$26,300.00	$26,300.00
21	SP	Traffic Control	1	LS	$52,500.00	$52,500.00
22	1250	Thermoplastic Pavement Marking Lines (4", 120 mils)	6,590	LF	$0.75	$4,942.50
23	1250	Thermoplastic Pavement Marking Lines (6", 120 mils)	0	LF	$1.10	$0.00
24	1250	Thermoplastic Pavement Marking Lines (8",120 mils)	315	LF	$2.00	$630.00
25	1250	Thermoplastic Pavement Marking Lines (24",120 mils)	180	LF	$5.50	$990.00
26	1250	Thermoplastic Pavement Marking Symbols	25	EA	$105.00	$2,625.00

Unit prices from 2014 City of Charlotte Bid Tabs

SUBTOTAL	$823,487.50
30% CONTINGENCY	$247,046
ENGINEER'S ESTIMATE	$1,070,534.00
SAY	$1,080,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Catawba Ave Turn Lanes**
NUMBER:
ESTIMATE: $ 699,700.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RIGHT-OF-WAY

Property To Acquire:	**SF**	**$/SF**	**Cost**
519102	1,450.00	$ 20.00	$ 29,000.00
00520114 - 00520102	8,560.00	$ 20.00	$ 171,200.00
520101	565.00	$ 20.00	$ 11,300.00
00319408 - 00319409	1,900.00	$ 20.00	$ 38,000.00
00317201 - 00317205	3,650.00	$ 20.00	$ 73,000.00
00317402 - 00317403	2,360.00	$ 20.00	$ 47,200.00
00317601, 00520401 - 00520421	1,750.00	$ 20.00	$ 35,000.00
		$ 20.00	$ -

Proximity Damages Dist. from structure(s) to new right-of-way line	**Property Cost**	**% Damage**	**Cost**
40 ft (12 m) to 50 ft (15 m)		5%	$ -
30 ft (9 m) to 40 ft (12 m)		10%	$ -
20 ft (6 m) to 30 ft (9 m)		25%	$ -
10 ft (3 m) to 20 ft (6 m)		35%	$ -
less than 10 ft (3 m)		50%	$ -

Structures (total takes)	**No.**	**Property Cost (Lots +Structures)**	**Cost**
residential			$ -
commercial		$ -	$ -
industrial			$ -
office			$ -

Parcels w/o Structures (total takes):	**No.**	**Property Cost**	**Cost**
farmland / wooded			$ -
commercial / office			$ -
residential			$ -
industrial			$ -

Temporary Construction Easement:	**SF**	**$/SF**	**Cost**
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
			$ -

Right-of-way Sub-Total: $ 404,700.00

Administration:	**No.**	**Cost**	**Cost**
Admin. / Acquisition:	29	$ 5,000.00	$ 145,000.00
Total Take of Property:			
			$ -
			$ -
			$ -
			$ -
Relocation Costs (5% of Total Take):			$ -
Condemnations (50% of parcels)	15	$ 10,000.00	$ 150,000.00

Adjusted Right-of-Way: $ 699,700.00

SAY: $ 699,700.00

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FURTHER REVIEW WILL BE NEEDED DURING PLANNING AND DESIGN FOR THE TOTAL TAKE PROPERTIES.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Catawba Ave Turn Lanes**
NUMBER:
ESTIMATE: $ 723,600.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

SPECIAL ITEMS

Major Intersections

	# intersections	$/int.	Cost
RR Signal Coordination		$ 50,000	$ -
Mast Arms - Signalization	2	$ 120,000	$ 240,000.00
Signal Modification		$ 60,000	$ -
New Signal		$ 75,000	$ -
Pedestrian Level Lighting	**# Of Poles**	**$/Unit**	**Cost**
(Length of Project X 2 / 50' Spacing)	42	$ 10,000	$ 420,000.00
Street Lighting (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -
Utility Relocation (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -

Wetland Mitigation	**Acres**	**$/Acre**	**Cost**
	0.00	$ 100,000.00	$ -

CMU Utility Relocation	**Lin. Ft.**	**$/Lin. Ft.**	**Cost**
Water Line	0.00	$ 35.00	$ -
Sewer Line	0.00	$ 47.00	$ -

Overhead Utility Relocation	**Miles**	**$/Mile**	**Cost**
For widening projects, enter length of widening (both sides):		$ 300,000	$ -

Landscaping/Streetscape (Trees @ 40' On Center)	**Miles**	**$/Mile**	**Cost**
Planting Strips	0.60	$ 54,000	$ 32,400.00
Median			$ -

Miscellaneous

Other	*Unit*	*$/Unit*	*Cost*
Manhole Adjustment	14.00	$ 400.00	$ 5,600.00
Valve/Meter Box Relocation	7.00	$ 550.00	$ 3,850.00
Fire Hydrant Relocation	4.00	$ 4,500.00	$ 18,000.00
Cable Pedastal Relocation	5.00	$ 750.00	$ 3,750.00

Special Sub-Total: $ 723,600.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Floral Lane Extension**
NUMBER:
ESTIMATE: $ 900,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RESULTS
TOTAL PROJECT COST ESTIMATE

Roadway Construction		**$**
Roadway Sub-Total:		$600,000
Structures Sub-Total:	$	-
Construction Sub-Total:	$	600,000.00
Construction Administration (5%):	$	30,000.00
Total Construction Cost:	$	630,000.00

Planning & Design		**$**
Planning (10%)	$	60,000.00
Design (15%)	$	90,000.00
Total Planning & Design Cost:	$	150,000.00

Right-of-Way		**$**
Right-of-Way Sub-Total:	$	-
Inflation (0% for 0years)	$	-
Contingency (10%)	$	-
Total Right-of-Way Cost:	$	-

Special Items (Ped Countdowns, Utilities, Landscaping, etc.)		**$**
Special Items Subtotal Cost:	$	32,900.00
Contingency (10%):	$	3,290.00
Total Special Items Cost:	$	37,000.00

TOTAL PROJECT COST:	***$***	***817,000.00***
SAY	**$**	**900,000.00**

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE WORKSHEET

PROJECT: **Floral Lane Extension**
NUMBER:
Fund/Cntr.:
ESTIMATE: **$600,000**

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

Item#	Sect.#	ITEM DESCRIPTION	Quantity	Unit	Unit Price	Amount
1	800	Mobilization	1	LS	$21,700.00	$21,700.00
2	SP	Comprehensive Grading	1	LS	$100,000.00	$100,000.00
3	SP	Foundation Conditioning Material, Minor Structures	100	TN	$40.00	$4,000.00
4	SP	Foundation Conditioning Geotextile	310	TN	$5.00	$1,550.00
5	SP	15" RC Pipe Culverts, Class III	460	TN	$34.00	$15,640.00
6	SP	24" RC Pipe Culverts, Class III	460	LF	$46.00	$21,160.00
7	610	Asphalt Concrete Base Course, Type B 25.0C	945	TN	$61.00	$57,645.00
8	610	Asphalt Concrete Interm. Course,Type I 19.0C	635	TN	$57.00	$36,195.00
9	610	Asphalt Concrete Surface Course, Type S 9.5C	665	TN	$54.00	$35,910.00
10	612	Milling Bituminous Pavement, 1.5"	460	SY	$3.00	$1,380.00
11	620	Asphalt Binder for Plant Mix (Type PG 64-22)	115	TN	$575.00	$66,125.00
12	840	Masonry Drainage Structures, NCDOT STD 840.01	9	EA	$1,320.00	$11,880.00
13	840	Frame with Grate & Hood, NCDOT STD 840.03	9	EA	$570.00	$5,130.00
14	846	Valley Gutter	1,840	LF	$14.00	$25,760.00
15	848	4" Concrete Sidewalk	0	SY	$25.00	$0.00
16	848	Concrete Wheelchair Ramps	0	EA	$800.00	$0.00
17	848	6" Concrete Driveway	70	SY	$38.00	$2,660.00
18	852	5" Monolithic Concrete Island	0	SY	$45.00	$0.00
19	SP	Erosion Control	1	LS	$14,500.00	$14,500.00
20	SP	Traffic Control	1	LS	$28,900.00	$28,900.00
21	1250	Thermoplastic Pavement Marking Lines (4", 120 mils)	4,100	LF	$0.75	$3,075.00
22	1250	Thermoplastic Pavement Marking Lines (6", 120 mils)	0	LF	$1.10	$0.00
23	1250	Thermoplastic Pavement Marking Lines (8",120 mils)	120	LF	$2.00	$240.00
24	1250	Thermoplastic Pavement Marking Lines (24",120 mils)	15	LF	$5.50	$82.50
25	1250	Thermoplastic Pavement Marking Symbols	3	EA	$105.00	$315.00

Unit prices from 2014 City of Charlotte Bid Tabs

SUBTOTAL	$453,847.50
30% CONTINGENCY	$136,154
ENGINEER'S ESTIMATE	$590,002.00
SAY	$600,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Floral Lane Extension**
NUMBER:
ESTIMATE: $ -

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RIGHT-OF-WAY

Property To Acquire:	**SF**	**$/SF**	**Cost**
516678 (Meck County)	3,450	$ -	$ -
516679 (Town)	15,000	$ -	$ -
517183 (Town)	17,525	$ -	$ -
517145	4,200	$ -	$ -
517184	4,375	$ -	$ -
			$ -
			$ -

Proximity Damages Dist. from structure(s) to new right-of-way line	**Property Cost**	**% Damage**	**Cost**
40 ft (12 m) to 50 ft (15 m)		5%	$ -
30 ft (9 m) to 40 ft (12 m)		10%	$ -
20 ft (6 m) to 30 ft (9 m)		25%	$ -
10 ft (3 m) to 20 ft (6 m)		35%	$ -
less than 10 ft (3 m)		50%	$ -

Structures (total takes)	**No.**	**Property Cost (Lots +Structures)**	**Cost**
residential			$ -
commercial			$ -
industrial			$ -
office			$ -

Parcels w/o Structures (total takes):	**No.**	**Property Cost**	**Cost**
farmland / wooded			$ -
commercial / office			$ -
residential			$ -
industrial			$ -

Temporary Construction Easement:	**SF**	**$/SF**	**Cost**
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
			$ -

Right-of-way Sub-Total: $ -

Administration:	**No.**	**Cost**	**Cost**
Admin. / Acquisition:		$ 5,000.00	$ -
Total Take of Property:			
			$ -
			$ -
			$ -
			$ -
Relocation Costs (5% of Total Take):			$ -
Condemnations (50% of parcels)		$ 10,000.00	$ -

Adjusted Right-of-Way: $ -

SAY: $ -

PLEASE NOTE THE ABOVE INFORMATION IS FOR CONCEPTUAL USE ONLY AND NOT TO BE CONSIDERED FINAL.
FURTHER REVIEW WILL BE NEEDED DURING PLANNING AND DESIGN FOR THE TOTAL TAKE PROPERTIES.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Floral Lane Extension**
NUMBER:
ESTIMATE: $ 32,900.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

SPECIAL ITEMS

Major Intersections

	# intersections	$/int.	Cost
RR Signal Coordination		$ 50,000	$ -
		$ 50,000	
Mast Arms - Signalization		$ 50,000	$ -
Signal Modification		$ 60,000	$ -
New Signal		$ 75,000	$ -
Pedestrian Level Lighting	**# Of Poles**	**$/Unit**	**Cost**
(Length of Project X 2 / 50' Spacing)		$ 10,000	$ -
Street Lighting (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -
Utility Relocation (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -
Wetland Mitigation	**Acres**	**$/Acre**	**Cost**
	0.00	$ 100,000.00	$ -
CMU Utility Relocation	**Lin. Ft.**	**$/Lin. Ft.**	**Cost**
Water Line	0.00	$ 35.00	$ -
Sewer Line	700.00	$ 47.00	$ 32,900.00
Overhead Utility Relocation	**Miles**	**$/Mile**	**Cost**
For widening projects, enter length of widening (both sides):	0.00	$ 300,000	$ -
Landscaping/Streetscape	**Miles**	**$/Mile**	**Cost**
(Trees @ 40' On Center)			
Planting Strips	0.00	$ 54,000	$ -
Median			$ -
Miscellaneous			
Other	*Unit*	*$/Unit*	*Cost*
SS Manhole Relocation		$ 2,000.00	$ -
			$ -
			$ -
			$ -

Special Sub-Total: $ 32,900.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Gem Street Extension**
NUMBER:
ESTIMATE: $ 1,100,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RESULTS
TOTAL PROJECT COST ESTIMATE

Roadway Construction		**$**
Roadway Sub-Total:		$150,000
Structures Sub-Total:	$	-
Construction Sub-Total:		$150,000
Construction Administration (5%):	$	7,500.00
Total Construction Cost:	$	158,000.00

Planning & Design		**$**
Planning (10%)	$	15,000.00
Design (15%)	$	22,500.00
Total Planning & Design Cost:	$	38,000.00

Right-of-Way		**$**
Right-of-Way Sub-Total:	$	168,000.00
Inflation (0% for 0years)	$	-
Contingency (10%)	$	16,800.00
Total Right-of-Way Cost:	$	185,000.00

Special Items (Ped Countdowns, Utilities, Landscaping, etc.)		**$**
Special Items Subtotal Cost:	$	570,000.00
Contingency (10%):	$	57,000.00
Total Special Items Cost:	$	627,000.00

TOTAL PROJECT COST:	***$***	***1,008,000.00***
SAY	**$**	**1,100,000.00**

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE WORKSHEET

PROJECT: **Gem Street Extension**
NUMBER:
Fund/Cntr.:
ESTIMATE: **$150,000**

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

Item#	Sect.#	ITEM DESCRIPTION	Quantity	Unit	Unit Price	Amount
1	800	Mobilization	1	LS	$5,200.00	$5,200.00
2	SP	Comprehensive Grading	1	LS	$24,000.00	$24,000.00
3	SP	Foundation Conditioning Material, Minor Structures	0	TN	$40.00	$0.00
4	SP	Foundation Conditioning Geotextile	0	SY	$5.00	$0.00
5	SP	15" RC Pipe Culverts, Class III	0	LF	$34.00	$0.00
6	SP	24" RC Pipe Culverts, Class III	0	LF	$46.00	$0.00
7	610	Asphalt Concrete Base Course, Type B 25.0C	330	TN	$61.00	$20,130.00
8	610	Asphalt Concrete Interm. Course,Type I 19.0C	265	TN	$57.00	$15,105.00
9	610	Asphalt Concrete Surface Course, Type S 9.5C	195	TN	$54.00	$10,530.00
10	612	Milling Bituminous Pavement, 1.5"	0	SY	$3.00	$0.00
11	620	Asphalt Binder for Plant Mix (Type PG 64-22)	40	TN	$575.00	$23,000.00
12	840	Masonry Drainage Structures, NCDOT STD 840.01	0	EA	$1,320.00	$0.00
13	840	Frame with Grate & Hood, NCDOT STD 840.03	0	EA	$570.00	$0.00
14	846	2'-6" Concrete Curb and Gutter	0	LF	$14.00	$0.00
15	848	4" Concrete Sidewalk	0	SY	$25.00	$0.00
16	848	Concrete Wheelchair Ramps	0	EA	$800.00	$0.00
17	848	6" Concrete Driveway	0	SY	$38.00	$0.00
18	852	5" Monolithic Concrete Island	0	SY	$45.00	$0.00
19	SP	Erosion Control	1	LS	$3,500.00	$3,500.00
20	SP	Traffic Control	1	LS	$6,900.00	$6,900.00
21	1250	Thermoplastic Pavement Marking Lines (4", 120 mils)	0	LF	$0.75	$0.00
22	1250	Thermoplastic Pavement Marking Lines (6", 120 mils)	0	LF	$1.10	$0.00
23	1250	Thermoplastic Pavement Marking Lines (8",120 mils)	0	LF	$2.00	$0.00
24	1250	Thermoplastic Pavement Marking Lines (24",120 mils)	0	LF	$5.50	$0.00
25	1250	Thermoplastic Pavement Marking Symbols	0	EA	$105.00	$0.00

Unit prices from 2014 City of Charlotte Bid Tabs

SUBTOTAL	$108,365.00
30% CONTINGENCY	$32,510
ENGINEER'S ESTIMATE	$140,875.00
195	$150,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Gem Street Extension**
NUMBER:
ESTIMATE: $ 168,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RIGHT-OF-WAY

Property To Acquire:	**SF**	**$/SF**	**Cost**
521210	30,600.00	$ 5.00	$ 153,000.00
			$ -
			$ -
			$ -
			$ -
			$ -
			$ -

Proximity Damages Dist. from structure(s) to new right-of-way line	**Property Cost**	**% Damage**	**Cost**
40 ft (12 m) to 50 ft (15 m)		5%	$ -
30 ft (9 m) to 40 ft (12 m)		10%	$ -
20 ft (6 m) to 30 ft (9 m)		25%	$ -
10 ft (3 m) to 20 ft (6 m)		35%	$ -
less than 10 ft (3 m)		50%	$ -

Structures (total takes)	**No.**	**Property Cost (Lots +Structures)**	**Cost**
residential			$ -
commercial			$ -
industrial			$ -
office			$ -

Parcels w/o Structures (total takes):	**No.**	**Property Cost**	**Cost**
farmland / wooded			$ -
commercial / office			$ -
residential			$ -
industrial			$ -

$ -

Temporary Construction Easement:	**SF**	**$/SF**	**Cost**
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
			$ -

Right-of-way Sub-Total: $ 153,000.00

Administration:	**No.**	**Cost**	**Cost**
Admin. / Acquisition:	1	$ 5,000.00	$ 5,000.00
Total Take of Property:			
			$ -
			$ -
			$ -
			$ -
Relocation Costs (5% of Total Take):			$ -
Condemnations (50% of parcels)	1	$ 10,000.00	$ 10,000.00

Adjusted Right-of-Way: $ 168,000.00

SAY: $ 168,000.00

PLEASE NOTE THE ABOVE INFORMATION IS FOR CONCEPTUAL USE ONLY AND NOT TO BE CONSIDERED FINAL.
FURTHER REVIEW WILL BE NEEDED DURING PLANNING AND DESIGN FOR THE TOTAL TAKE PROPERTIES.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Gem Street Extension**
NUMBER:
ESTIMATE: $ 570,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

SPECIAL ITEMS

Major Intersections

	# intersections	$/int.	Cost
RR Signal Coordination	1	$ 250,000	$ 250,000.00
Mast Arms - Signalization	1	$ 100,000	$ 100,000.00
Signal Modification		$ 60,000	$ -
New Signal	1	$ 120,000	$ 120,000.00
Pedestrian Level Lighting (Length of Project X 2 / 50' Spacing)	**# Of Poles**	**$/Unit**	**Cost**
		$ 10,000	$ -
Street Lighting (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -
Utility Relocation (Length of Project X 2 / 200' Spacing)	4	$ 10,000	$ 40,000.00

Wetland Mitigation	**Acres**	**$/Acre**	**Cost**
	0.00	$ 100,000.00	$ -

CMU Utility Relocation	**Lin. Ft.**	**$/Lin. Ft.**	**Cost**
Water Line	0.00	$ 35.00	$ -
Sewer Line	0.00	$ 47.00	$ -

Overhead Utility Relocation	**Miles**	**$/Mile**	**Cost**
For widening projects, enter length of widening (both sides):	1.00 0.20	$ 300,000	$ 60,000.00

Landscaping/Streetscape (Trees @ 40' On Center)	**Miles**	**$/Mile**	**Cost**
Planting Strips	0.00	$ 54,000	$ -
Median			$ -

Miscellaneous

Other	*Unit*	*$/Unit*	*Cost*
			$ -
			$ -
			$ -
			$ -

Special Sub-Total: $ 570,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Hickory St Extension**
NUMBER:
ESTIMATE: $ 1,700,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RESULTS
TOTAL PROJECT COST ESTIMATE

Roadway Construction		**$**
Roadway Sub-Total:		$510,000
Structures Sub-Total:	$	-
Construction Sub-Total:		$510,000
Construction Administration (5%):	$	25,500.00
Total Construction Cost:	$	536,000.00

Planning & Design		**$**
Planning (10%)	$	51,000.00
Design (15%)	$	76,500.00
Total Planning & Design Cost:	$	128,000.00

Right-of-Way		**$**
Right-of-Way Sub-Total:	$	283,200.00
Inflation (0% for 0years)	$	-
Contingency (10%)	$	28,320.00
Total Right-of-Way Cost:	$	312,000.00

Special Items (Ped Countdowns, Utilities, Landscaping, etc.)		**$**
Special Items Subtotal Cost:	$	591,200.00
Contingency (10%):	$	59,120.00
Total Special Items Cost:	$	651,000.00

TOTAL PROJECT COST:	***$***	***1,627,000.00***
SAY	**$**	**1,700,000.00**

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE WORKSHEET

PROJECT: **Hickory St Extension**
NUMBER:
Fund/Cntr.:
ESTIMATE: **$510,000**

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

Item#	Sect.#	ITEM DESCRIPTION	Quantity	Unit	Unit Price	Amount
1	800	Mobilization	1	LS	$18,600.00	$18,600.00
2	SP	Comprehensive Grading	1	LS	$86,000.00	$86,000.00
3	SP	Foundation Conditioning Material, Minor Structures	90	TN	$40.00	$3,600.00
4	SP	Foundation Conditioning Geotextile	270	SY	$5.00	$1,350.00
5	SP	15" RC Pipe Culverts, Class III	405	LF	$34.00	$13,770.00
6	SP	24" RC Pipe Culverts, Class III	405	LF	$46.00	$18,630.00
7	610	Asphalt Concrete Base Course, Type B 25.0C	690	TN	$61.00	$42,090.00
8	610	Asphalt Concrete Interm. Course,Type I 19.0C	420	TN	$57.00	$23,940.00
9	610	Asphalt Concrete Surface Course, Type S 9.5C	450	TN	$54.00	$24,300.00
10	612	Milling Bituminous Pavement, 1.5"	390	SY	$3.00	$1,170.00
11	620	Asphalt Binder for Plant Mix (Type PG 64-22)	80	TN	$575.00	$46,000.00
12	840	Masonry Drainage Structures, NCDOT STD 840.01	9	EA	$1,320.00	$11,880.00
13	840	Frame with Grate & Hood, NCDOT STD 840.03	9	EA	$570.00	$5,130.00
14	846	2'-6" Curb & Gutter	1,620	LF	$14.00	$22,680.00
15	848	4" Concrete Sidewalk	625	SY	$25.00	$15,625.00
16	848	Concrete Wheelchair Ramps	4	EA	$800.00	$3,200.00
17	848	6" Concrete Driveway	280	SY	$38.00	$10,640.00
18	852	5" Monolithic Concrete Island	0	SY	$45.00	$0.00
19	SP	Erosion Control	1	LS	$12,400.00	$12,400.00
20	SP	Traffic Control	1	LS	$24,800.00	$24,800.00
21	1250	Thermoplastic Pavement Marking Lines (4", 120 mils)	2,850	LF	$0.75	$2,137.50
22	1250	Thermoplastic Pavement Marking Lines (6", 120 mils)	0	LF	$1.10	$0.00
23	1250	Thermoplastic Pavement Marking Lines (8",120 mils)	220	LF	$2.00	$440.00
24	1250	Thermoplastic Pavement Marking Lines (24",120 mils)	85	LF	$5.50	$467.50
25	1250	Thermoplastic Pavement Marking Symbols	8	EA	$105.00	$840.00

Unit prices from 2014 City of Charlotte Bid Tabs

SUBTOTAL	$389,690.00
30% CONTINGENCY	$116,907
ENGINEER'S ESTIMATE	$506,597.00
SAY	$510,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Hickory St Extension**
NUMBER:
ESTIMATE: $ 283,200.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RIGHT-OF-WAY

	Property To Acquire:	**SF**	**$/SF**		**Cost**
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-
				$	-

	Proximity Damages Dist. from structure(s) to new right-of-way line	**Property Cost**	**% Damage**		**Cost**
	40 ft (12 m) to 50 ft (15 m)		5%	$	-
	30 ft (9 m) to 40 ft (12 m)		10%	$	-
	20 ft (6 m) to 30 ft (9 m)		25%	$	-
	10 ft (3 m) to 20 ft (6 m)		35%	$	-
	less than 10 ft (3 m)		50%	$	-

	Structures (total takes)	**No.**	**Property Cost (Lots +Structures)**		**Cost**
PID 00751118	residential	1.00	$ 121,200.00	$	121,200.00
PID 00751119	commercial	1.00	$ 123,000.00	$	123,000.00
	industrial			$	-
	office			$	-

	Parcels w/o Structures (total takes):	**No.**	**Property Cost**		**Cost**
	farmland / wooded			$	-
	commercial / office			$	-
	residential			$	-
	industrial			$	-

	Temporary Construction Easement:	**SF**	**$/SF**		**Cost**
			$ 1.00	$	-
			$ 1.00	$	-
			$ 1.00	$	-
			$ 1.00	$	-
			$ 1.00	$	-
			$ 1.00	$	-
				$	-

Right-of-way Sub-Total: $ 244,200.00

	Administration:	**No.**	**Cost**		**Cost**
	Admin. / Acquisition:	2	$ 5,000.00	$	10,000.00
	Total Take of Property:				
				$	-
				$	-
				$	-
				$	-
	Relocation Costs (5% of Total Take):		$ 19,000.00	$	19,000.00
	Condemnations (50% of parcels)	1	$ 10,000.00	$	10,000.00

Adjusted Right-of-Way: $ 283,200.00

SAY: $ 283,200.00

PLEASE NOTE THE ABOVE INFORMATION IS FOR CONCEPTUAL USE ONLY AND NOT TO BE CONSIDERED FINAL.
FURTHER REVIEW WILL BE NEEDED DURING PLANNING AND DESIGN FOR THE TOTAL TAKE PROPERTIES.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Hickory St Extension**
NUMBER:
ESTIMATE: $ 591,200.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

SPECIAL ITEMS

Major Intersections

	# intersections	$/int.	Cost
RR Signal Coordination	1	$ 250,000	$ 250,000.00
Mast Arms - Signalization	1	$ 100,000	$ 100,000.00
Signal Modification		$ 60,000	$ -
New Signal	1	$ 120,000	$ 120,000.00
Pedestrian Level Lighting	**# Of Poles**	**$/Unit**	**Cost**
(Length of Project X 2 / 50' Spacing)	3	$ 10,000	$ 30,000.00
Street Lighting (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -
Utility Relocation (Length of Project X 2 / 200' Spacing)	3	$ 10,000	$ 30,000.00

Wetland Mitigation	**Acres**	**$/Acre**	**Cost**
	0.00	$ 100,000.00	$ -

CMU Utility Relocation	**Lin. Ft.**	**$/Lin. Ft.**	**Cost**
Water Line	0.00	$ 35.00	$ -
Sewer Line	0.00	$ 47.00	$ -

Overhead Utility Relocation	**Miles**	**$/Mile**	**Cost**
For widening projects, enter length of widening (both sides):	0.17	$ 300,000	$ 51,000.00

Landscaping/Streetscape	**Miles**	**$/Mile**	**Cost**
(Trees @ 40' On Center)			
Planting Strips	0.00	$ 54,000	$ -
Median			$ -

Miscellaneous

Other	*Unit*	*$/Unit*	*Cost*
Fire Hydrant Relocation	2.00	$ 4,500.00	$ 9,000.00
Manhole Adjustment	3.00	$ 400.00	$ 1,200.00
			$ -
			$ -

Special Sub-Total: $ 591,200.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Holiday Ln-Ferry St Connector**
NUMBER:
ESTIMATE: $ 1,100,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RESULTS
TOTAL PROJECT COST ESTIMATE

Roadway Construction		**$**
Roadway Sub-Total:		$540,000
Structures Sub-Total:	$	-
Construction Sub-Total:	$	540,000.00
Construction Administration (5%):	$	27,000.00
Total Construction Cost:	$	567,000.00

Planning & Design		**$**
Planning (10%)	$	54,000.00
Design (15%)	$	81,000.00
Total Planning & Design Cost:	$	135,000.00

Right-of-Way		**$**
Right-of-Way Sub-Total:	$	296,600.00
Inflation (0% for 0years)	$	-
Contingency (10%)	$	29,660.00
Total Right-of-Way Cost:	$	327,000.00

Special Items (Ped Countdowns, Utilities, Landscaping, etc.)		**$**
Special Items Subtotal Cost:	$	400.00
Contingency (10%):	$	40.00
Total Special Items Cost:	$	1,000.00

TOTAL PROJECT COST:	***$***	***1,030,000.00***
SAY	**$**	**1,100,000.00**

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE WORKSHEET

PROJECT: **Holiday Ln-Ferry St Connector**
NUMBER:
Fund/Cntr.:
ESTIMATE: **$540,000**

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

Item#	Sect.#	ITEM DESCRIPTION	Quantity	Unit	Unit Price	Amount
1	800	Mobilization	1	LS	$19,600.00	$19,600.00
2	SP	Comprehensive Grading	1	LS	$91,000.00	$91,000.00
3	SP	Foundation Conditioning Material, Minor Structures	110	TN	$40.00	$4,400.00
4	SP	Foundation Conditioning Geotextile	320	SY	$5.00	$1,600.00
5	SP	15" RC Pipe Culverts, Class III	475	LF	$34.00	$16,150.00
6	SP	24" RC Pipe Culverts, Class III	475	LF	$46.00	$21,850.00
7	610	Asphalt Concrete Base Course, Type B 25.0C	775	TN	$61.00	$47,275.00
8	610	Asphalt Concrete Interm. Course,Type I 19.0C	490	TN	$57.00	$27,930.00
9	610	Asphalt Concrete Surface Course, Type S 9.5C	410	TN	$54.00	$22,140.00
10	612	Milling Bituminous Pavement, 1.5"	560	SY	$3.00	$1,680.00
11	620	Asphalt Binder for Plant Mix (Type PG 64-22)	85	TN	$575.00	$48,875.00
12	840	Masonry Drainage Structures, NCDOT STD 840.01	10	EA	$1,320.00	$13,200.00
13	840	Frame with Grate & Hood, NCDOT STD 840.03	10	EA	$570.00	$5,700.00
14	846	1'-6" Curb and Gutter	300	LF	$18.00	$5,400.00
15	846	Valley Gutter	1,600	LF	$14.00	$22,400.00
16	848	4" Concrete Sidewalk	890	SY	$25.00	$22,250.00
17	848	Concrete Wheelchair Ramps	0	EA	$800.00	$0.00
18	848	6" Concrete Driveway	0	SY	$38.00	$0.00
19	852	5" Monolithic Concrete Island	0	SY	$45.00	$0.00
20	SP	Erosion Control	1	LS	$13,100.00	$13,100.00
21	SP	Traffic Control	1	LS	$26,100.00	$26,100.00
22	1250	Thermoplastic Pavement Marking Lines (4", 120 mils)	0	LF	$0.75	$0.00
23	1250	Thermoplastic Pavement Marking Lines (6", 120 mils)	0	LF	$1.10	$0.00
24	1250	Thermoplastic Pavement Marking Lines (8",120 mils)	0	LF	$2.00	$0.00
25	1250	Thermoplastic Pavement Marking Lines (24",120 mils)	0	LF	$5.50	$0.00
26	1250	Thermoplastic Pavement Marking Symbols	0	EA	$105.00	$0.00

Unit prices from 2014 City of Charlotte Bid Tabs

SUBTOTAL	$410,650.00
30% CONTINGENCY	$123,195
ENGINEER'S ESTIMATE	$533,845.00
SAY	$540,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Holiday Ln-Ferry St Connector**
NUMBER:
ESTIMATE: $ 296,600.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RIGHT-OF-WAY

Property To Acquire:	**SF**	**$/SF**	**Cost**
319311	3,150	$ 4.00	$ 12,600.00
338102	22,000	$ 12.00	$ 264,000.00
			$ -
			$ -
			$ -
			$ -
			$ -

Proximity Damages Dist. from structure(s) to new right-of-way line	**Property Cost**	**% Damage**	**Cost**
40 ft (12 m) to 50 ft (15 m)		5%	$ -
30 ft (9 m) to 40 ft (12 m)		10%	$ -
20 ft (6 m) to 30 ft (9 m)		25%	$ -
10 ft (3 m) to 20 ft (6 m)		35%	$ -
less than 10 ft (3 m)		50%	$ -

Structures (total takes)	**No.**	**Property Cost (Lots +Structures)**	**Cost**
residential			$ -
commercial			$ -
industrial			$ -
office			$ -

Parcels w/o Structures (total takes):	**No.**	**Property Cost**	**Cost**
farmland / wooded			$ -
commercial / office			$ -
residential			$ -
industrial			$ -

Temporary Construction Easement:	**SF**	**$/SF**	**Cost**
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
			$ -

Right-of-way Sub-Total: $ 276,600.00

Administration:	**No.**	**Cost**	**Cost**
Admin. / Acquisition:	2	$ 5,000.00	$ 10,000.00
Total Take of Property:			
			$ -
			$ -
			$ -
			$ -
Relocation Costs (5% of Total Take):			$ -
Condemnations (50% of parcels)	1	$ 10,000.00	$ 10,000.00

Adjusted Right-of-Way: $ 296,600.00

SAY: $ 296,600.00

PLEASE NOTE THE ABOVE INFORMATION IS FOR CONCEPTUAL USE ONLY AND NOT TO BE CONSIDERED FINAL.
FURTHER REVIEW WILL BE NEEDED DURING PLANNING AND DESIGN FOR THE TOTAL TAKE PROPERTIES.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Holiday Ln-Ferry St Connector**
NUMBER:
ESTIMATE: $ 400.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

SPECIAL ITEMS

Major Intersections

	# intersections	$/int.	Cost
RR Signal Coordination		$ 50,000	$ -
Mast Arms - Signalization		$ 100,000	$ -
Signal Modification		$ 60,000	$ -
New Signal		$ 75,000	$ -

Pedestrian Level Lighting	**# Of Poles**	**$/Unit**	**Cost**
(Length of Project X 2 / 50' Spacing)		$ 10,000	$ -
Street Lighting (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -
Utility Relocation (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -

Wetland Mitigation	**Acres**	**$/Acre**	**Cost**
	0.00	$ 100,000.00	$ -

CMU Utility Relocation	**Lin. Ft.**	**$/Lin. Ft.**	**Cost**
Water Line	0.00	$ 35.00	$ -
Sewer Line	0.00	$ 47.00	$ -

Overhead Utility Relocation	**Miles**	**$/Mile**	**Cost**
For widening projects, enter length of widening (both sides):		$ 300,000	$ -

Landscaping/Streetscape (Trees @ 40' On Center)	**Miles**	**$/Mile**	**Cost**
Planting Strips	0.00	$ 54,000	$ -
Median			$ -

Miscellaneous

Other	*Unit*	*$/Unit*	*Cost*
Manhole Adjustment	1.00	$ 400.00	$ 400.00
			$ -
			$ -
			$ -

Special Sub-Total: $ 400.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Smithville Lane Extension**
NUMBER:
ESTIMATE: $ 1,100,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RESULTS
TOTAL PROJECT COST ESTIMATE

Roadway Construction		**$**
Roadway Sub-Total:		$640,000
Structures Sub-Total:	$	-
Construction Sub-Total:	$	640,000.00
Construction Administration (5%):	$	32,000.00
Total Construction Cost:	$	672,000.00

Planning & Design		**$**
Planning (10%)	$	64,000.00
Design (15%)	$	96,000.00
Total Planning & Design Cost:	$	160,000.00

Right-of-Way		**$**
Right-of-Way Sub-Total:	$	220,000.00
Inflation (0% for 0years)	$	-
Contingency (10%)	$	22,000.00
Total Right-of-Way Cost:	$	242,000.00

Special Items (Ped Countdowns, Utilities, Landscaping, etc.)		**$**
Special Items Subtotal Cost:	$	-
Contingency (10%):	$	-
Total Special Items Cost:	$	-

TOTAL PROJECT COST:	***$***	***1,074,000.00***
SAY	**$**	**1,100,000.00**

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE WORKSHEET

PROJECT: **Smithville Lane Extension**
NUMBER:
Fund/Cntr.:
ESTIMATE: **$640,000**

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

Item#	Sect.#	ITEM DESCRIPTION	Quantity	Unit	Unit Price	Amount
1	800	Mobilization	1	LS	$23,100.00	$23,100.00
2	SP	Comprehensive Grading	1	LS	$107,000.00	$107,000.00
3	SP	Foundation Conditioning Material, Minor Structures	80	TN	$40.00	$3,200.00
4	SP	Foundation Conditioning Geotextile	250	SY	$5.00	$1,250.00
5	SP	15" RC Pipe Culverts, Class III	364	LF	$34.00	$12,376.00
6	SP	24" RC Pipe Culverts, Class III	364	LF	$46.00	$16,744.00
7	610	Asphalt Concrete Base Course, Type B 25.0C	1,060	TN	$61.00	$64,660.00
8	610	Asphalt Concrete Interm. Course,Type I 19.0C	725	TN	$57.00	$41,325.00
9	610	Asphalt Concrete Surface Course, Type S 9.5C	665	TN	$54.00	$35,910.00
10	612	Milling Bituminous Pavement, 1.5"	460	SY	$3.00	$1,380.00
11	620	Asphalt Binder for Plant Mix (Type PG 64-22)	125	TN	$575.00	$71,875.00
12	840	Masonry Drainage Structures, NCDOT STD 840.01	8	EA	$1,320.00	$10,560.00
13	840	Frame with Grate & Hood, NCDOT STD 840.03	8	EA	$570.00	$4,560.00
14	846	2'-6" Concrete Curb and Gutter	1,450	LF	$14.00	$20,300.00
15	848	4" Concrete Sidewalk	810	SY	$25.00	$20,250.00
16	848	Concrete Wheelchair Ramps	2	EA	$800.00	$1,600.00
17	848	6" Concrete Driveway	0	SY	$38.00	$0.00
18	852	5" Monolithic Concrete Island	0	SY	$45.00	$0.00
19	SP	Erosion Control	1	LS	$15,500.00	$15,500.00
20	SP	Traffic Control	1	LS	$30,900.00	$30,900.00
21	1250	Thermoplastic Pavement Marking Lines (4", 120 mils)	2,600	LF	$0.75	$1,950.00
22	1250	Thermoplastic Pavement Marking Lines (6", 120 mils)	0	LF	$1.10	$0.00
23	1250	Thermoplastic Pavement Marking Lines (8",120 mils)	120	LF	$2.00	$240.00
24	1250	Thermoplastic Pavement Marking Lines (24",120 mils)	15	LF	$5.50	$82.50
25	1250	Thermoplastic Pavement Marking Symbols	3	EA	$105.00	$315.00

Unit prices from 2014 City of Charlotte Bid Tabs

SUBTOTAL	$485,077.50
30% CONTINGENCY	$145,523
ENGINEER'S ESTIMATE	$630,601.00
SAY	$640,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Smithville Lane Extension**
NUMBER:
ESTIMATE: $ 220,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RIGHT-OF-WAY

	Property To Acquire:	**SF**	**$/SF**	**Cost**
	517118	27,000	$ 2.00	$ 54,000.00
	517185	24,000	$ 2.00	$ 48,000.00
	517117	2,250	$ 2.00	$ 4,500.00
				$ -
				$ -
				$ -
				$ -

	Proximity Damages Dist. from structure(s) to new right-of-way line	**Property Cost**	**% Damage**	**Cost**
	40 ft (12 m) to 50 ft (15 m)		5%	$ -
	30 ft (9 m) to 40 ft (12 m)		10%	$ -
	20 ft (6 m) to 30 ft (9 m)		25%	$ -
	10 ft (3 m) to 20 ft (6 m)		35%	$ -
	less than 10 ft (3 m)		50%	$ -

	Structures (total takes)	**No.**	**Property Cost (Lots +Structures)**	**Cost**
PID 00519211	residential	1	$ 70,000.00	$ 70,000.00
	commercial			$ -
	industrial			$ -
	office			$ -

	Parcels w/o Structures (total takes):	**No.**	**Property Cost**	**Cost**
	farmland / wooded			$ -
	commercial / office			$ -
	residential			$ -
	industrial			$ -

	Temporary Construction Easement:	**SF**	**$/SF**	**Cost**
			$ 1.00	$ -
			$ 1.00	$ -
			$ 1.00	$ -
			$ 1.00	$ -
			$ 1.00	$ -
			$ 1.00	$ -
				$ -

Right-of-way Sub-Total: $ 176,500.00

	Administration:	**No.**	**Cost**	**Cost**
	Admin. / Acquisition:	4	$ 5,000.00	$ 20,000.00
	Total Take of Property:			
				$ -
				$ -
				$ -
				$ -
	Relocation Costs (5% of Total Take):		$ 3,500.00	$ 3,500.00
	Condemnations (50% of parcels)	2	$ 10,000.00	$ 20,000.00

Adjusted Right-of-Way: $ 220,000.00

SAY: $ 220,000.00

PLEASE NOTE THE ABOVE INFORMATION IS FOR CONCEPTUAL USE ONLY AND NOT TO BE CONSIDERED FINAL.
FURTHER REVIEW WILL BE NEEDED DURING PLANNING AND DESIGN FOR THE TOTAL TAKE PROPERTIES.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Smithville Lane Extension**
NUMBER:
ESTIMATE: $ -

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

SPECIAL ITEMS

Major Intersections

	# intersections	$/int.	Cost
RR Signal Coordination		$ 50,000	$ -
Mast Arms - Signalization		$ 100,000	$ -
Signal Modification		$ 60,000	$ -
New Signal		$ 75,000	$ -

Pedestrian Level Lighting	**# Of Poles**	**$/Unit**	**Cost**
(Length of Project X 2 / 50' Spacing)		$ 10,000	$ -
Street Lighting (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -
Utility Relocation (Length of Project X 2 / 200' Spacing)		$ 10,000	$ -

Wetland Mitigation	**Acres**	**$/Acre**	**Cost**
	0.00	$ 100,000.00	$ -

CMU Utility Relocation	**Lin. Ft.**	**$/Lin. Ft.**	**Cost**
Water Line	0.00	$ 35.00	$ -
Sewer Line	0.00	$ 47.00	$ -

Overhead Utility Relocation	**Miles**	**$/Mile**	**Cost**
For widening projects, enter length of widening (both sides):	0.00	$ 300,000	$ -

Landscaping/Streetscape (Trees @ 40' On Center)	**Miles**	**$/Mile**	**Cost**
Planting Strips	0.00	$ 54,000	$ -
Median			$ -

Miscellaneous

Other	*Unit*	*$/Unit*	*Cost*
			$ -
			$ -
			$ -
			$ -

Special Sub-Total: $ -

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Westmoreland Rd & Statesville Rd**
NUMBER:
ESTIMATE: $ 1,300,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RESULTS
TOTAL PROJECT COST ESTIMATE

Roadway Construction		**$**
Roadway Sub-Total:		$660,000
Structures Sub-Total:	$	-
Construction Sub-Total:	$	660,000.00
Construction Administration (5%):	$	33,000.00
Total Construction Cost:	$	693,000.00

Planning & Design		**$**
Planning (10%)	$	66,000.00
Design (15%)	$	99,000.00
Total Planning & Design Cost:	$	165,000.00

Right-of-Way		**$**
Right-of-Way Sub-Total:	$	39,500.00
Inflation (0% for 0years)	$	-
Contingency (10%)	$	3,950.00
Total Right-of-Way Cost:	$	44,000.00

Special Items (Ped Countdowns, Utilities, Landscaping, etc.)		**$**
Special Items Subtotal Cost:	$	313,000.00
Contingency (10%):	$	31,300.00
Total Special Items Cost:	$	345,000.00

TOTAL PROJECT COST:	***$***	***1,247,000.00***
SAY	**$**	**1,300,000.00**

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE WORKSHEET

PROJECT: **Westmoreland Rd & Statesville Rd**
NUMBER:
Fund/Cntr.:
ESTIMATE: **$660,000**

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

Item#	Sect.#	ITEM DESCRIPTION	Quantity	Unit	Unit Price	Amount
1	800	Mobilization	1	LS	$24,200.00	$24,200.00
2	SP	Comprehensive Grading	1	LS	$112,000.00	$112,000.00
3	SP	Foundation Conditioning Material, Minor Structures	30	TN	$40.00	$1,200.00
4	SP	Foundation Conditioning Geotextile	70	SY	$5.00	$350.00
5	SP	15" RC Pipe Culverts, Class III	200	LF	$34.00	$6,800.00
6	SP	24" RC Pipe Culverts, Class III	0	LF	$46.00	$0.00
7	610	Asphalt Concrete Base Course, Type B 25.0C	985	TN	$61.00	$60,085.00
8	610	Asphalt Concrete Interm. Course,Type I 19.0C	745	TN	$57.00	$42,465.00
9	610	Asphalt Concrete Surface Course, Type S 9.5C	1,320	TN	$54.00	$71,280.00
10	612	Milling Bituminous Pavement, 1.5"	535	SY	$3.00	$1,605.00
11	620	Asphalt Binder for Plant Mix (Type PG 64-22)	160	TN	$575.00	$92,000.00
12	840	Masonry Drainage Structures, NCDOT STD 840.01	2	EA	$1,320.00	$2,640.00
13	840	Frame with Grate & Hood, NCDOT STD 840.03	2	EA	$570.00	$1,140.00
14	846	2'-6" Concrete Curb and Gutter	510	LF	$14.00	$7,140.00
15	848	4" Concrete Sidewalk	235	SY	$25.00	$5,875.00
16	848	Concrete Wheelchair Ramps	4	EA	$800.00	$3,200.00
17	848	6" Concrete Driveway	290	SY	$38.00	$11,020.00
18	852	5" Monolithic Concrete Island	0	SY	$45.00	$0.00
19	SP	Erosion Control	1	LS	$16,200.00	$16,200.00
20	SP	Traffic Control	1	LS	$32,300.00	$32,300.00
21	1250	Thermoplastic Pavement Marking Lines (4", 120 mils)	13,125	LF	$0.75	$9,843.75
22	1250	Thermoplastic Pavement Marking Lines (6", 120 mils)	0	LF	$1.10	$0.00
23	1250	Thermoplastic Pavement Marking Lines (8",120 mils)	240	LF	$2.00	$480.00
24	1250	Thermoplastic Pavement Marking Lines (24",120 mils)	170	LF	$5.50	$935.00
25	1250	Thermoplastic Pavement Marking Symbols	38	EA	$105.00	$3,990.00

***Unit prices from 2014 City of Charlotte Bid Tabs**

SUBTOTAL	$506,748.75
30% CONTINGENCY	$152,025
ENGINEER'S ESTIMATE	$658,774.00
SAY	$660,000.00

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Westmoreland Rd & Statesville Rd**
NUMBER:
ESTIMATE: $ 39,500.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

RIGHT-OF-WAY

Property To Acquire:	**SF**	**$/SF**	**Cost**
514212	1,440.00	$ 12.00	$ 17,280.00
514108	180.00	$ 12.00	$ 2,160.00
			$ -
			$ -
			$ -
			$ -
			$ -

Proximity Damages Dist. from structure(s) to new right-of-way line	**Property Cost**	**% Damage**	**Cost**
40 ft (12 m) to 50 ft (15 m)		5%	$ -
30 ft (9 m) to 40 ft (12 m)		10%	$ -
20 ft (6 m) to 30 ft (9 m)		25%	$ -
10 ft (3 m) to 20 ft (6 m)		35%	$ -
less than 10 ft (3 m)		50%	$ -

Structures (total takes)	**No.**	**Property Cost (Lots +Structures)**	**Cost**
residential			$ -
commercial			$ -
industrial			$ -
office			$ -

Parcels w/o Structures (total takes):	**No.**	**Property Cost**	**Cost**
farmland / wooded			$ -
commercial / office			$ -
residential			$ -
industrial			$ -

Temporary Construction Easement:	**SF**	**$/SF**	**Cost**
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
		$ 1.00	$ -
			$ -

Right-of-way Sub-Total: $ 19,440.00

Administration:	**No.**	**Cost**	**Cost**
Admin. / Acquisition:	2	$ 5,000.00	$ 10,000.00
Total Take of Property:			
			$ -
			$ -
			$ -
			$ -
Relocation Costs (5% of Total Take):			$ -
Condemnations (50% of parcels)	1	$ 10,000.00	$ 10,000.00

Adjusted Right-of-Way: $ 39,440.00

SAY: $ 39,500.00

PLEASE NOTE THE ABOVE INFORMATION IS FOR CONCEPTUAL USE ONLY AND NOT TO BE CONSIDERED FINAL.
FURTHER REVIEW WILL BE NEEDED DURING PLANNING AND DESIGN FOR THE TOTAL TAKE PROPERTIES.

PARSONS BRINCKERHOFF
CONCEPTUAL PLANNING
ENGINEER'S ESTIMATE

PROJECT: **Westmoreland Rd & Statesville Rd**
NUMBER:
ESTIMATE: $ 313,000.00

EST. BY: RAO DATE: 6/2/14
CHECK BY: JAF DATE: 6/2/14

SPECIAL ITEMS

Major Intersections

	# intersections	$/int.	Cost
RR Signal Coordination		$ 50,000	$ -
Mast Arms - Signalization	1	$ 100,000	$ 100,000.00
Signal Modification	1	$ 100,000	$ 100,000.00
New Signal		$ 75,000	$ -
Pedestrian Level Lighting	**# Of Poles**	**$/Unit**	**Cost**
(Length of Project X 2 / 50' Spacing)	1	$ 10,000	$ 10,000.00
Street Lighting (Length of Project X 2 / 200' Spacing)	1	$ 10,000	$ 10,000.00
Utility Relocation (Length of Project X 2 / 200' Spacing)	3	$ 10,000	$ 30,000.00
Wetland Mitigation	**Acres**	**$/Acre**	**Cost**
	0.00	$ 100,000.00	$ -
CMU Utility Relocation	**Lin. Ft.**	**$/Lin. Ft.**	**Cost**
Water Line	0.00	$ 35.00	$ -
Sewer Line	0.00	$ 47.00	$ -
Overhead Utility Relocation	**Miles**	**$/Mile**	**Cost**
For widening projects, enter length of widening (both sides):	0.21	$ 300,000	$ 63,000.00
Landscaping/Streetscape (Trees @ 40' On Center)	**Miles**	**$/Mile**	**Cost**
Planting Strips	0.00	$ 54,000	$ -
Median			$ -
Miscellaneous			
Other	*Unit*	*$/Unit*	*Cost*
			$ -
			$ -
			$ -
			$ -
		Special Sub-Total:	$ 313,000.00