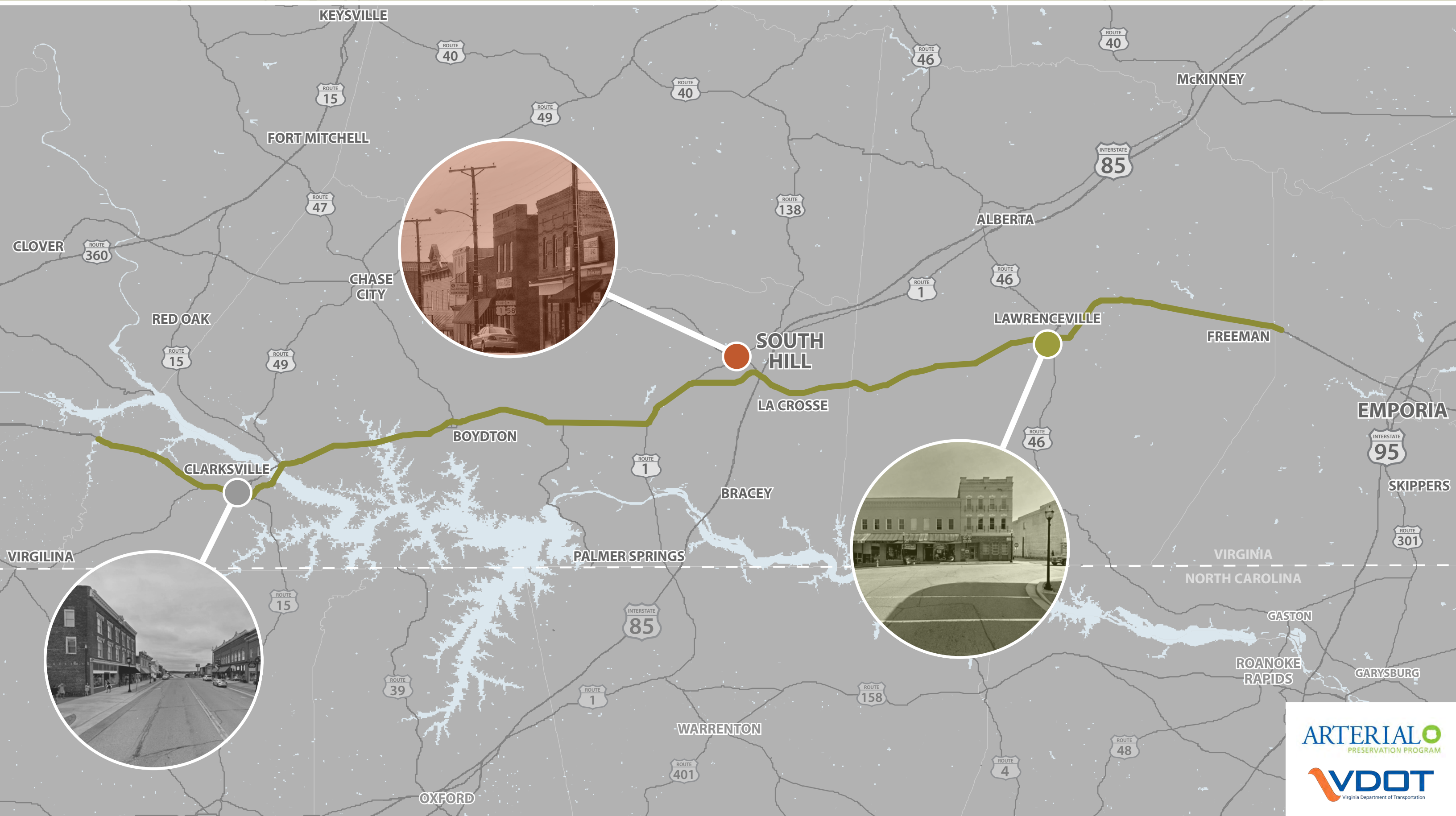


US 58 ARTERIAL PRESERVATION



US 58 Arterial Preservation Plan

Brunswick and Mecklenburg Counties

November 1st, 2019

Prepared for:



Virginia Department of Transportation

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LIST OF ACRONYMS

| | |
|------------|---|
| ADT | Average Daily Traffic |
| HCM | Highway Capacity Manual |
| LOS | Level of Service |
| PDC | Planning District Commission |
| PSI | Potential for Safety Improvement |
| TAZ | Traffic Analysis Zone |
| TMPD..... | Transportation and Mobility Planning Division |
| TOSAM..... | Traffic Operations and Safety Analysis Manual |
| TTR | Travel Time Ratio |
| VDOT | Virginia Department of Transportation |

CHAPTER 1: INTRODUCTION

1.1 Study Purpose

The purpose of the US 58 Arterial Preservation Plan is to develop a holistic approach that identifies ways to ensure the safety and preserve the capacity of the US 58 study corridor without wide-scale roadway widenings or increased signal proliferation. This Arterial Preservation Plan has been requested to identify investment recommendations that will help preserve and enhance this key transportation corridor due to the important role it plays in the region as a key freight corridor serving the Port of Virginia, a vital link within the Commonwealth, and a key facility for connections to North Carolina and points south.

1.2 What is the Arterial Preservation Program?

The Virginia Department of Transportation’s (VDOT) Arterial Preservation Program is designed to preserve and enhance the capacity and safety of the critical transportation highways in Virginia. These major highways accommodate the long-distance mobility of people and goods throughout the Commonwealth. Preserving mobility on these corridors is critical to the current and future economy.

Within the framework of the Arterial Preservation Program, VDOT is developing methodologies to consistently and programmatically evaluate the corridors, creating a toolbox of preservation and

enhancement strategies and identifying opportunities to implement these strategies. As an alternative to widening major highways to add capacity, preservation and enhancement strategies promote the use of innovative transportation solutions, minimizing delays for through traffic and improving safety, while incorporating local economic development goals. Developed in partnership with localities, the strategies are used as tools to plan for infrastructure that supports future land use and development.

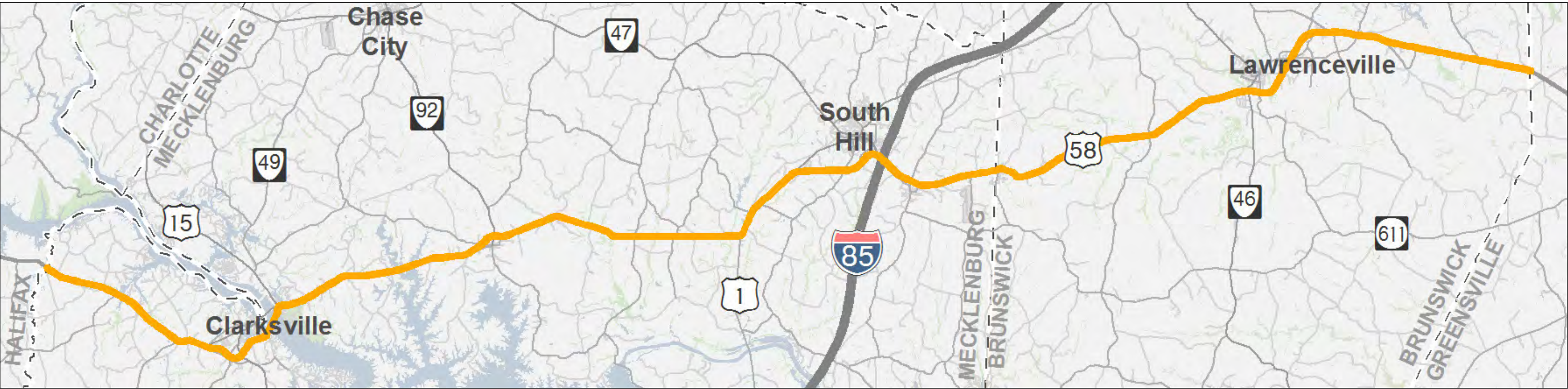
1.3 Study Area

The study area, located in VDOT’s Richmond construction district, traverses Brunswick and Mecklenburg Counties and extends from the Hampton Roads construction district boundary at the Greenville / Brunswick corporate limits to the western termini at the Lynchburg construction district boundary at the Mecklenburg / Halifax corporate limits. The study area is 65.7 miles in length. Figure 1 depicts the study area for the US 58 Arterial Preservation Plan.

1.4 Review of Existing Studies and Documents

A literature review gathered data and documented any proposed developments or projects for the US 58 corridor within the study area. These documents assisted in the development of land use assumptions

Figure 1. Study Area





and growth patterns and helped identify potential problem areas along the US 58 corridor. The literature review included the comprehensive plans for each locality in the study area, the Six-Year Improvement Plan, long range transportation plans, and corridor studies as noted below:

- VTrans2040
- Southside Planning District Commission (PDC) 2035 Regional Long Range Transportation Plan
- Brunswick County Comprehensive Plan
- Mecklenburg County Long Range Plan
- Town of Boydton Comprehensive Plan
- Town of Clarksville Comprehensive Plan
- Town of South Hill Comprehensive Plan
- US 58 Corridor Study South Hill, VA – La Crosse, VA (VDOT)

1.5 Public Involvement Process

The public involvement process began with the April 17th, 2018 project kick-off/scoping meeting and subsequent discussion with the core study team. Project stakeholders involved in the development of the study included:

- Brunswick County
- Mecklenburg County
- Town of Boydton
- Town of Brodnax
- Town of Clarksville
- Town of LaCrosse
- Town of Lawrenceville
- Town of South Hill
- Southside PDC
- VDOT at the Residency, District, and Central Office level

This stakeholder group consisted of staff-level representatives from each of the identified organizations. This group met at key milestones throughout the study to review progress and results. These meetings were held at the Southside PDC offices located at 200 S. Mecklenburg Avenue in the Town of South Hill. Table 1 lists the dates and topics of these meetings.

Table 1. Core Study Team Meetings

| Meeting Date | Meeting Topic |
|--------------------|---|
| April 17, 2018 | Study Kick-Off/Orientation |
| September 18, 2018 | Existing Conditions/Opportunities for Improvement |
| May 20, 2019 | Preliminary Study Recommendations |
| August 7, 2019 | Final Study Recommendations |

1.5.1 Stakeholder Surveys

As part of the outreach process, a web-based survey was conducted with study stakeholders in the summer of 2018 to understand current issues along the corridor and possible changes to the land use and local plans in the study area. Respondents also ranked highly-needed improvements in the corridor. Table 2 presents a summary of responses received.

Table 2. Stakeholder Survey Responses

| Current Issues Along the Study Corridor (Not Ranked) |
|--|
| Safety |
| Allow easier access to businesses |
| Corridor needs updating to current standards |
| Need improved / additional turning lanes |
| Highly Needed Improvements (Ranked) |
| 1. Access improvements |
| 2. Safety improvements |
| 3. Operational improvements |
| 4. Geometric improvements |

1.5.2 Public Outreach

A public meeting was held on January 29, 2019 at Southside PDC to review the existing conditions assessment and opportunities for improvements along the US 58 corridor. Eighteen citizens and stakeholders attended this meeting.

Members of the public were invited to provide comments on the preliminary findings and to suggest additional locations where improvements should be considered. Feedback received from the public was further reviewed during the recommendations’ development process.

General comments received at the public meetings included:

- Concerns with truck traffic
- Concerns with vehicle speeds
- Need to improve median crossovers and add turn lanes
- Need to update corridor to current design standards
- Poor visibility at crossovers

Specific areas of concern from the public meeting included:

- Cattail Drive and Twin Ponds – No turn lanes and dangerous crossing maneuver
- Crashes from Totaro Creek to US 46
- Dangerous turning movements around Brunswick Square
- Speed limit not observed in Brodnax
- I-85 in South Hill to La Crosse needs attention
- Turn lane improvements and acceleration lanes on US 58 in Boydton

A second and final public meeting was held on September 4, 2019 at Southside PDC to present the final corridor recommendations. The meeting included a formal presentation from the study team, various displays describing the study results, recommendations, and a citizen comment area. Twenty citizens and stakeholders attended the second public meeting. No written comments were submitted by the public in response to the final study recommendations.

CHAPTER 2: EXISTING CONDITIONS

2.1 Existing Land Use

The study area traverses miles of rural land, occasionally passing by the edge of a small town or serving as a major corridor for larger population centers' suburbs. The landscape is primarily agricultural or wooded in land use. The rural portions of the corridor feature large lot residential uses, large-scale industrial uses, and institutional uses. At major crossroads, low-density small-town development is likely and includes smaller lot residential uses as well as small-scale commercial and industrial. Further East, approaching Lawrenceville and South Hill, the study area becomes suburban in character, becoming the primary access route for regionally-significant commercial centers.

Existing Land Use Key Findings:

- Clusters of single-family homes with direct access to US 58:
 - In the Town of Brodnax;
 - In the Town of La Crosse;
 - Between Park View Circle and US 1 in Mecklenburg County; and
 - Between Carters Point Road and Buffalo Springs Road in Mecklenburg County.
- Retail development with direct access to US 58:
 - Brunswick Square in Lawrenceville;
 - In the Town of La Crosse; and
 - In the Town of South Hill.
- Industrial development with direct access to US 58:
 - Dominion Power, Brunswick County;
 - Redland Brick, Brunswick County;
 - Scotts, Brunswick County;
 - Brodnax Lumber, Brunswick County; and
 - Microsoft Data Center, Town of Boynton.
- Institutional uses with direct access to US 58:
 - Park View High School, Mecklenburg County; and
 - Park View Middle School, Mecklenburg County.
- Other relevant development with direct access to US 58:
 - Lawrenceville-Brunswick Municipal Airport.

2.2 Existing Infrastructure

A field review was conducted on June 12, 2018 at the outset of the study to review roadway and intersection configurations, identify deficiencies and areas of concern including sight distances or grade issues, identify unique roadway features, and observe traffic operations. US 58 is primarily a four-lane roadway running east-west and includes an interchange with Interstate 85 (I-85). The US 58 study corridor intersects with US 1 and US 15 in Mecklenburg County. Access along US 58 is primarily uncontrolled within the study area. The only sections along the corridor where access is fully or partially controlled are between US 58 Bus and US 15 in Mecklenburg, around Clarksville, and between Route 46 (Christanna Highway) and Route 641 (Bright Leaf Road). A full description of the field review for the corridor is available in Appendix B.

The corridor has several roadway segments with design features that may reduce capacity, level of service or safety. The western end of the corridor is characterized by numerous intersections and crossovers with sub-standard turn lanes. Often, significant grade differentials exist between the eastbound and westbound lanes of US 58 at intersections and crossovers. At Route 92 (Washington Street) and Route 4 (Buggs Island Road), limited sight distance impairs turning movements. Between the western US 1 intersection and Route 780 (Theater Road), US 58 has a two-way left turn lane accompanied by a noted increase in direct access points to US 58.

The highest intensity of development along the corridor is located in South Hill due to the presence of the I-85 interchange. The interchange suffers from adjacent roadways in close proximity, improper pavement markings for the southbound I-85 to the westbound US 58 through movement, and no turn lane or taper for westbound US 58 to northbound I-85. On the eastern side of the interchange, motorists were observed cutting across eastbound US 58 from the northbound I-85 off-ramp to turn left in a distance of less than 600 feet. Numerous access points and median crossovers accompanied by significant grade differences between lanes complicate maneuvers in this area.

East along the corridor, heading toward Brodnax, shoulder widths and shoulder types become inconsistent and crossovers lack turning lanes. US 58 in Brodnax is characterized by a continuous two-way left turn lane with frequent access points and narrow shoulders. The raised median resumes east of Brodnax, but several crossovers lack turn lanes and have poor sight distance. From Route 46 (Christanna Highway) to Route 641 (Bright Leaf Road), US 58 is primarily limited access. Route 641 is a skewed intersection that may be difficult for trucks to navigate. The pattern of frequent crossovers with insufficient turn lanes continues across the rolling terrain to the eastern termini of the study corridor. The results of the full inventory field review are available in Appendix C.

Figure 2. The Intersection of Route 58 and I-85 in South Hill





2.3 Existing Access

The number of crossovers such as intersections and median crossovers, points along the US 58 corridor were inventoried and the distance between each point measured and reviewed for compliance with VDOT’s Access Management Spacing Standards which takes into account functional classification, roadway speed, and access type.

As identified in Table 3 and Figure 3, the evaluation of crossovers shows that only 54% percent (2.8 mi) of westbound segments and 32% percent (2.4 mi) of eastbound segments in the study corridor are non-compliant. The most significant areas of non compliance are in the Town of South Hill, and near the Town of Lawrenceville.

Figures 4 through 7 present a comprehensive inventory of access points and crossovers along the study corridor.

Table 3. Crossover Points Findings*

| | Crossover Points | | |
|-----------|------------------|---------------|-------|
| | Compliant | Non-Compliant | Total |
| Eastbound | 39 | 18 | 57 |
| Westbound | 25 | 29 | 54 |
| Total | 64 | 47 | 111 |

*Compliance was calculated based on VDOT design standards, Table 2-2 of the Virginia Road Design Manual Appendix E, for access management of entrances and intersections.

Figure 3. Crossover Locations: Of 111 total crossover locations, 64 meet VDOT spacing requirements

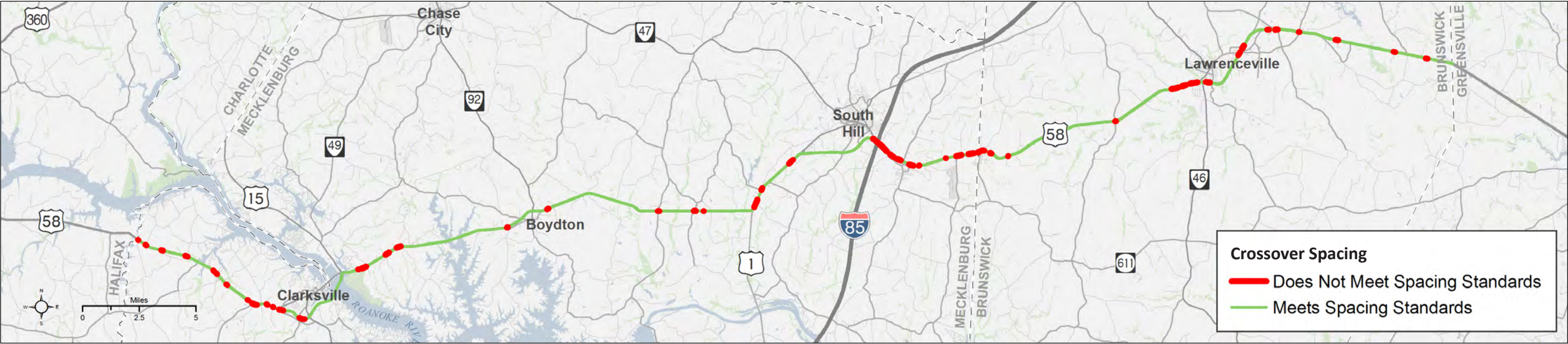




Figure 4. Eastbound Access Points, Western Half of Study Area

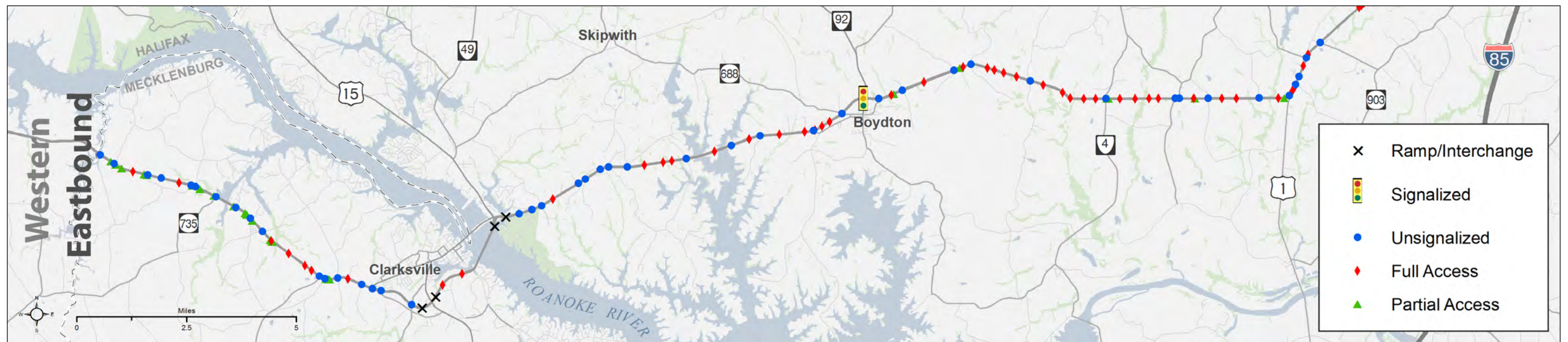


Figure 5. Westbound Access Points, Western Half of Study Area

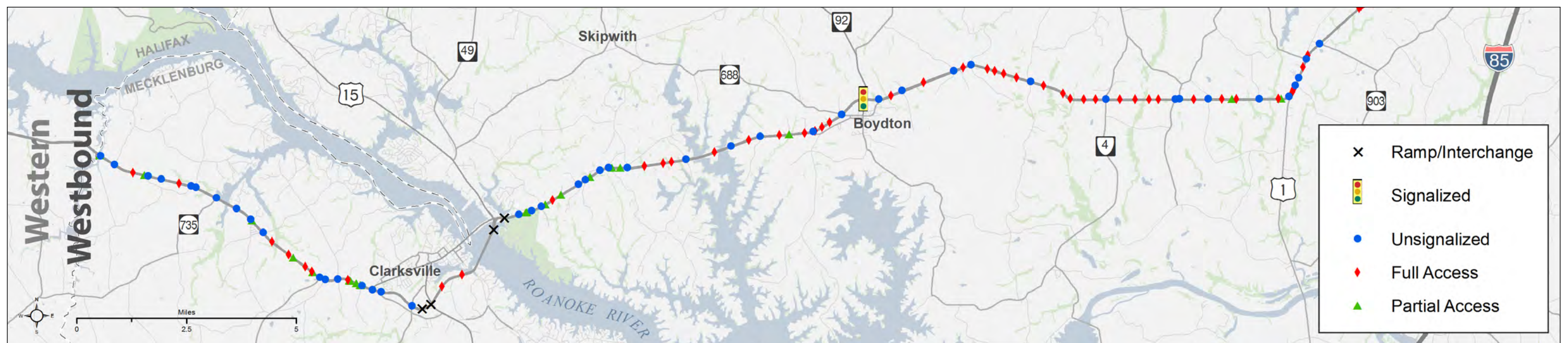




Figure 6. Eastbound Access Points, Eastern Half of Study Area



Figure 7. Westbound Access Points, Eastern Half of Study Area



2.4 Crash Analysis

An evaluation of corridor safety was conducted based on an analysis of crash information. The latest five years of available crash data (2013 to 2018) was obtained from VDOT’s Roadway Network System to identify potential locations for safety improvements.

Analysis of existing conditions found that the crash rate for over 80% of the corridor is at or below the statewide average for a rural arterial. Portions of the corridor with crash rates that are greater than 100% above the statewide average are near or within the Towns of Lawrenceville and South Hill as well as near the western Mecklenburg County Line. Figure 10 illustrates the crash rate within the study area, Figure 11 illustrates the crash density within the study area, and Figure 12 illustrates the crash severity within the study area.

Crash Analysis Key Findings:

- 845 total crashes were reported between 2013 and 2018 along the study corridor. In 69% of crashes only property damage occurred with no injuries or fatalities. 2% of crashes resulted in fatal injury.
- The greatest number of crashes were fixed-object, off-road collisions, which accounted for 32.0% of crashes. This is followed closely by angle collisions, which accounted for 21.5% of crashes.
- The crash rate is highest in the Town of South Hill near the I-85 interchange.

In accordance with VDOT’s Arterial Preservation Program, innovative intersections and access management techniques were evaluated where applicable during the recommendations development of this study. Innovative intersections and access management inherently provide safety benefits by removing and separating conflict points that may exist in traditional intersection designs.

The most common method for determining the potential safety benefits of a roadway improvement is the calculation of expected crash reduction. This is done using crash reduction percentages from the Federal Highway Administration’s (FHWA) Crash Modification Factors (CMF) Clearinghouse website, related safety research, and Virginia crash rate summaries and models. A CMF is an indicator of how crash occurrence will change as a result of a project based on evidence from similar improvements. A CMF less than 1.0 indicates a treatment that has a potential to reduce crashes. For example, a treatment with a CMF of 0.86 indicates that there is an expected 14 percent reduction in total estimated crash frequency. Table 4 displays fatal and injury crash CMFs used by VDOT for typical innovative intersections and access management treatments. Those in bold have been recommended at one or more areas along the corridor as part of this study.

Table 4. Crash Modification Factors

| Improvement Type / Features | Fatal + Injury CMF |
|--|--------------------|
| Intersections | |
| Roundabout: Convert signal to roundabout | 0.40 |
| Roundabout: Convert stop/yield control to roundabout | 0.20 |
| Access Management: Close median opening (allow right-in right-out only) | 0.40 |
| Two-way Stop Control to Restricted Crossing U-Turn | 0.65 |
| Signal Control to Signalized Restricted Crossing U-Turn | 0.80 |
| Signal Control to Continuous Green T Signal | 0.85 |
| Stop Control to Continous Green T | 0.85 |
| Displaced Left Turn | 0.80 |
| Median U-Turn | 0.70 |
| Interchanges | |
| Non-Freeway Segment: Convert Diamond to Diverging Diamond Interchange | 0.30 |
| Non-Freeway Segment: Convert Diamond to Single Point Urban Interchange | 0.60 |
| Segments | |
| Access Management: Reduce Driveway Density (eliminate/close) | 0.70 |
| Access Management: Provide Median (allow right-in right-out only) | 0.40 |



Figure 8. Crashes by Type

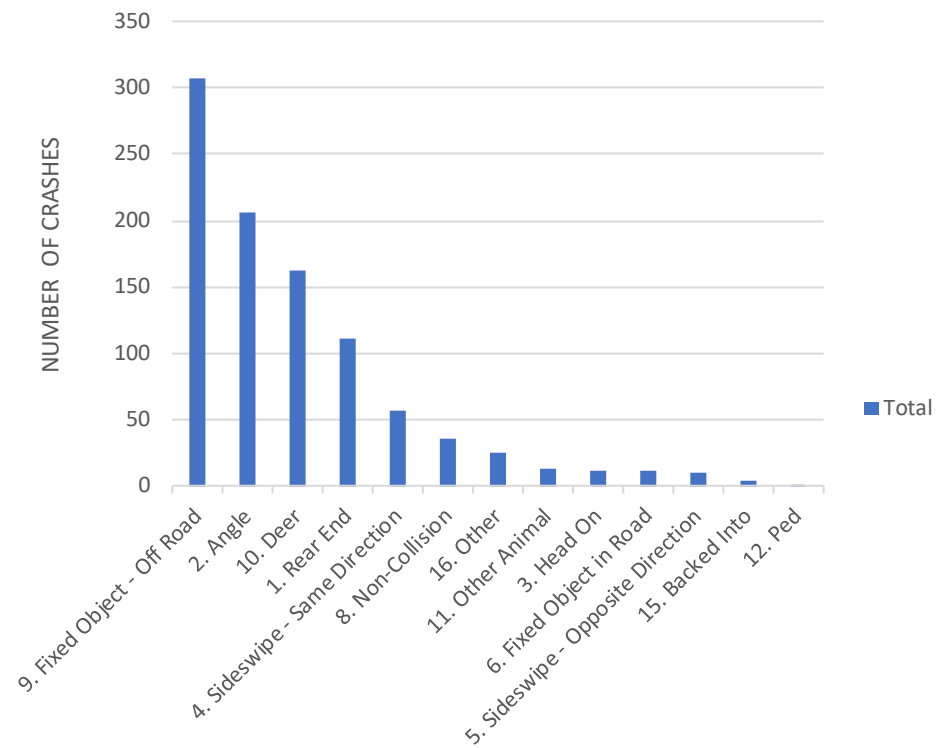


Figure 9. Crashes by Severity

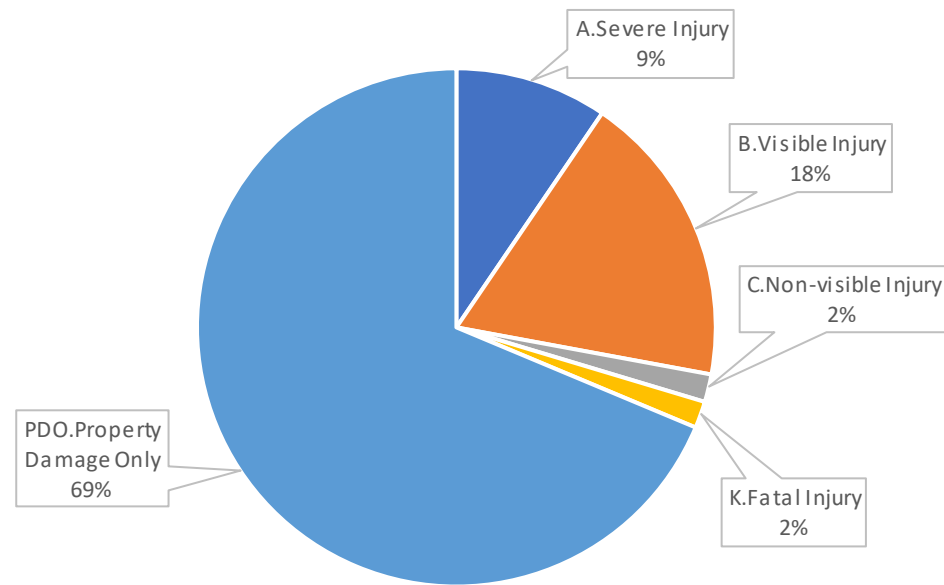


Figure 10. Corridor Crash Rates

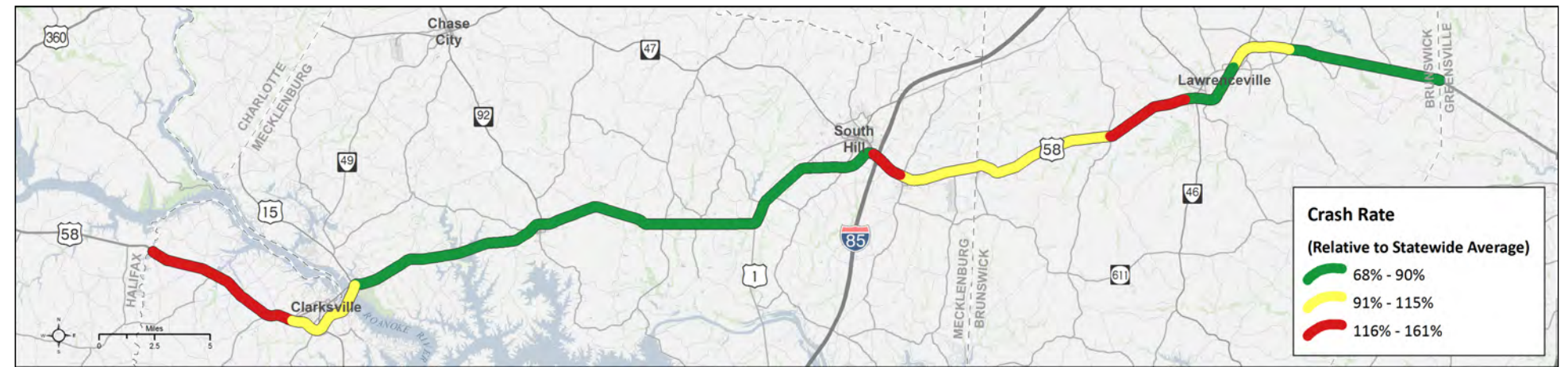


Figure 11. Corridor Crash Density

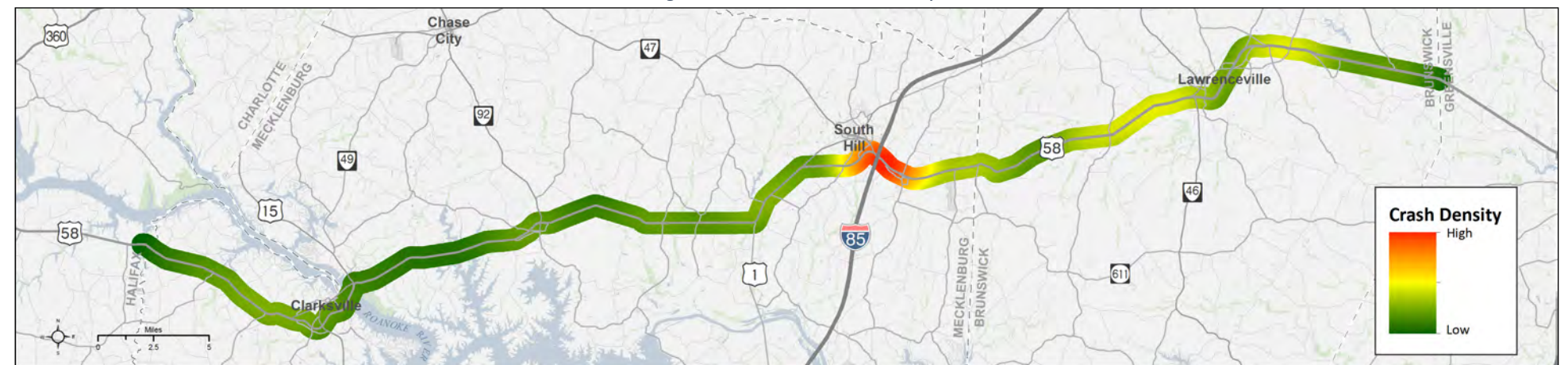


Figure 12. Corridor Crash Severity



2.5 Existing Traffic Volumes

Existing peak hour traffic volumes were developed using turn movement counts collected on May 16th, 2018 at the intersections listed below.

- US 58 / Business US 58 (Virginia Avenue) – Town of Clarksville
- US 58 / US 15 North – Town of Clarksville
- US 58 / VA 92 (Washington Street) – Mecklenburg County
- US 58 / VA 4 (Buggs Island Road) – Mecklenburg County
- US 58 / US 1 (Big Fork) – Mecklenburg County
- US 58 / VA 780 (Theater Road) – Town of South Hill
- US 58 / VA 641 (Bright Leaf Road) – Brunswick County

A full list of 2018 intersection volumes by AM and PM peak hour is found in Appendix D. The AM and PM peak hours are the times with the highest traffic volumes in the study area. The AM peak hour for analysis is 7:15 to 8:15. The PM peak hour for analysis is 4:45 to 5:45.

2.6 Existing Traffic Operations

The peak hour intersection turning movement counts developed in the previous section were analyzed in Synchro using the Highway Capacity Manual (HCM) module for both the AM and PM peak hours. Level of Service (LOS) is a qualitative measure used to relate the quality of traffic operations using letters A through F, where A represents free flow conditions and F represents extreme congestion. The operational analysis results for the study intersections are presented in Table 5. As shown in the table, all study intersections operate at LOS A for both peak hours, however congestion and delay increase as vehicles approach the Town of South Hill. Appendix

E contains more detailed results of intersection operations for each intersection analyzed along the corridor.

Existing heavy vehicle percentages vary throughout the corridor. Heavy vehicle percentages are highest east of VA 92 (Washington Street). Further information about heavy vehicle percentages and volumes along specific segments of the study corridor is presented in Figure 13.

Figure 14 and Figure 15 represent the Travel Time Ratio (TTR) across the corridor, where TTR is defined as the ratio of commuting travel time to free-flow travel time. For example, a TTR of 1.10 indicates that the peak-period travel time is 10% greater than free-flow travel time.

Table 5. Existing Level of Service

| 2018 Existing Conditions | | |
|-----------------------------------|--------|--------|
| Intersection | AM LOS | PM LOS |
| Virginia Avenue & Route 58 | A | A |
| VA 92 & Route 58 | A | A |
| Kingdom Hall/US 1 & Route 58 | A | A |
| Theater Road & Route 58 | A | A |
| Main St(LaCrosse) & Route 58 | A | B |
| VA 641 (BrightLeaf Rd) & Route 58 | A | A |

Figure 13. Heavy Vehicle Percentages

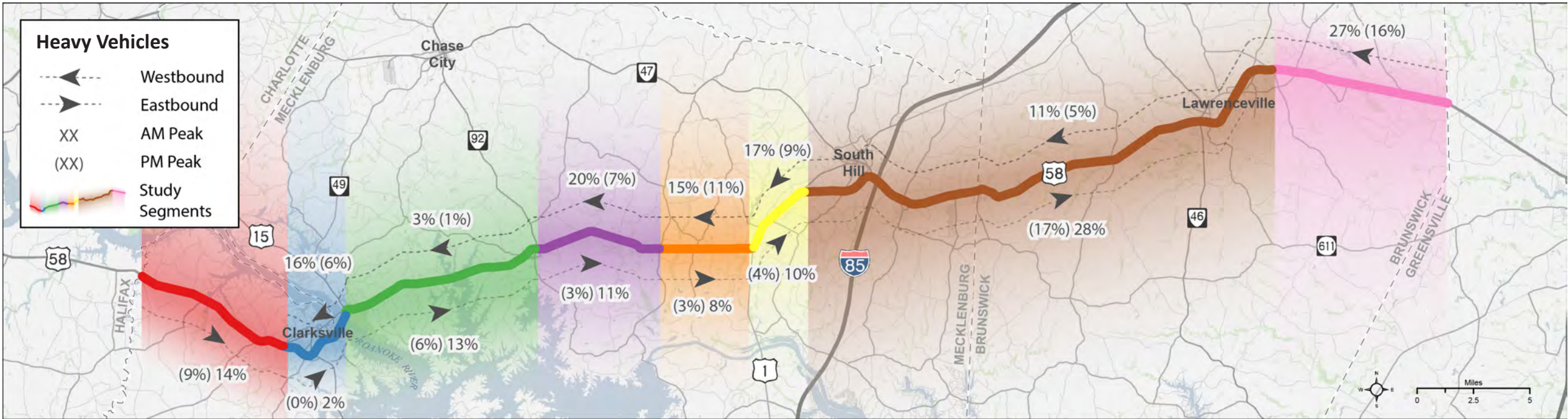
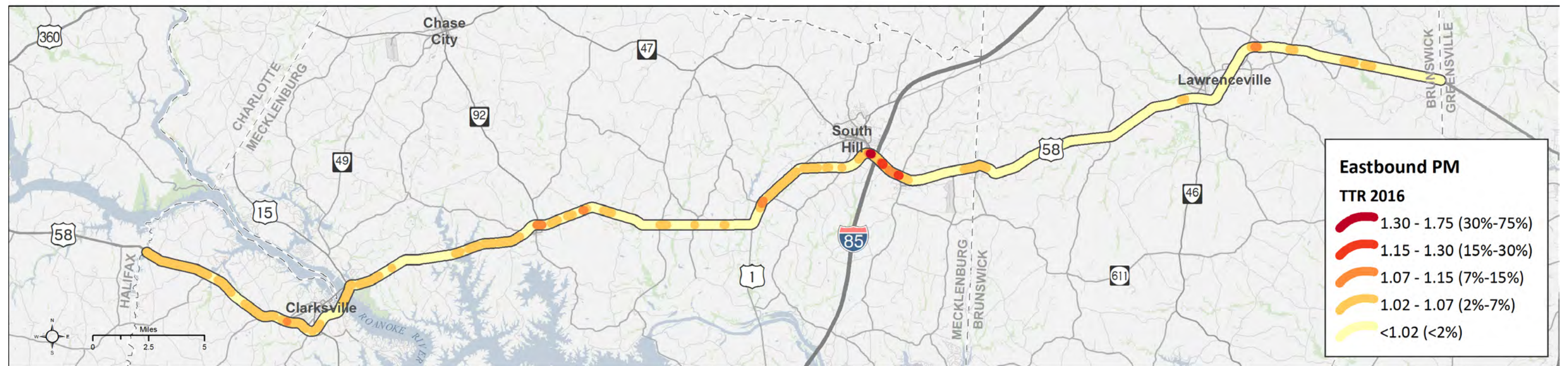
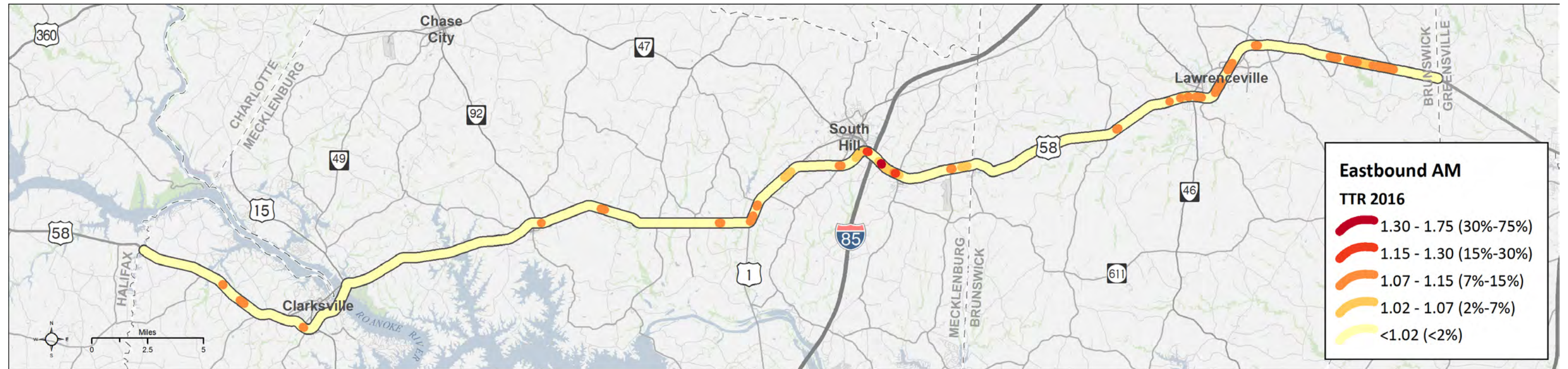




Figure 14. AM Travel Time Ratio



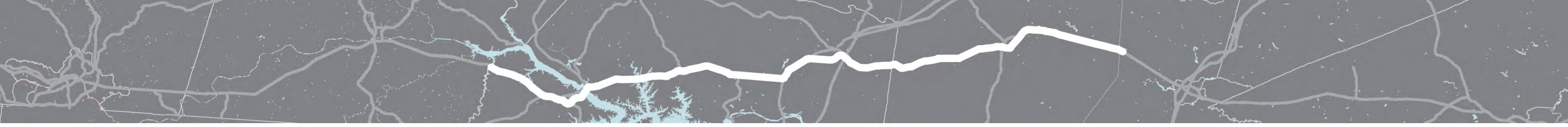
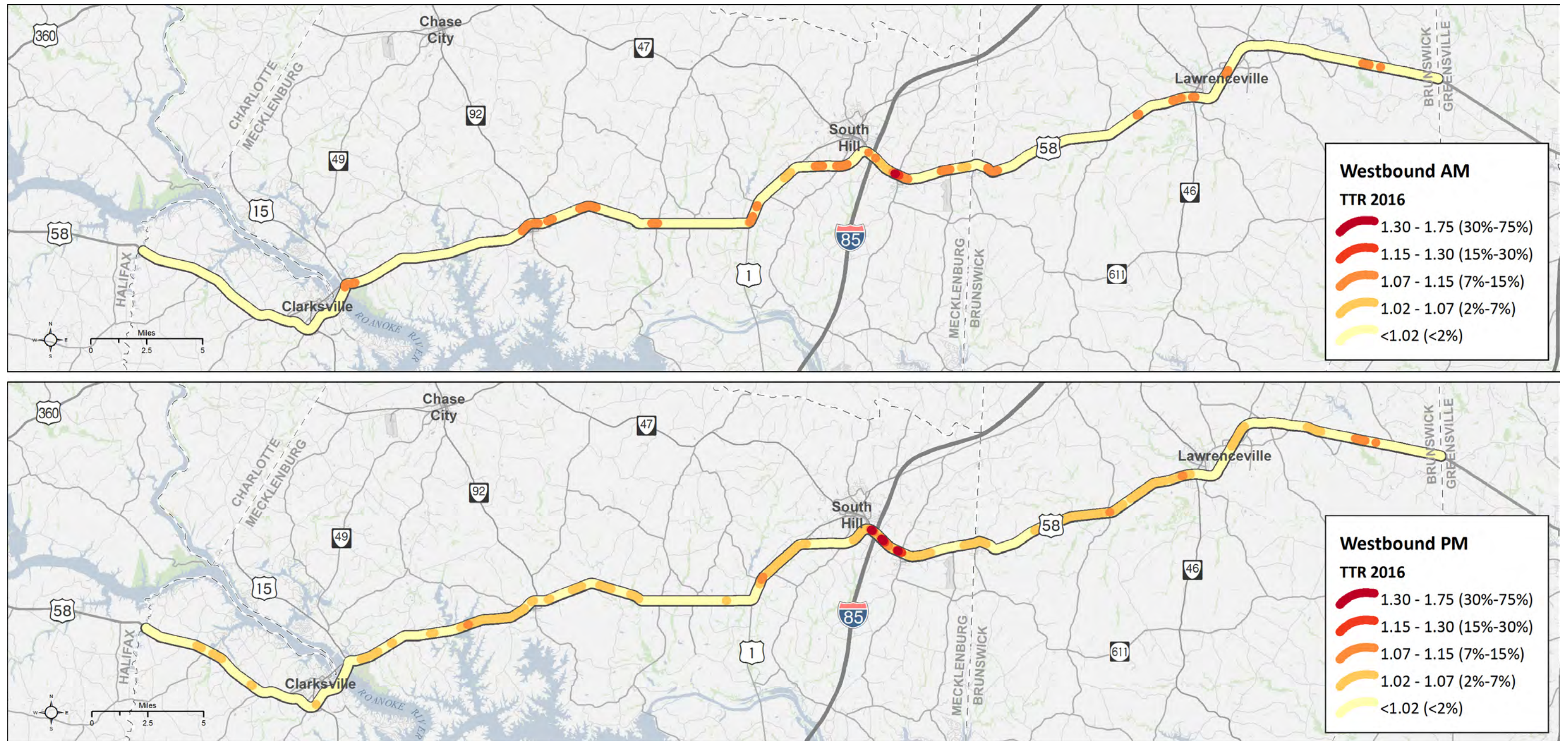


Figure 15. PM Travel Time Ratio



CHAPTER 3: FUTURE CONDITIONS

3.1 Development of Growth Rates

Traffic volumes along the US 58 Corridor are anticipated to continue growing. Both Brunswick and Mecklenburg Counties note the US 58 corridor as appropriate for industrial development and commercial development along the roadway in their comprehensive plans. Future development, including proposed industrial parks near the Town of La Crosse, increased commercial development near the I-85 interchange, and the continued development of facilities such as the Microsoft Data Center, will contribute to traffic growth.

In addition to local growth, US 58 is the second busiest east-west corridor that connects the Port of Virginia to critical markets and that commercial growth is anticipated to continue. Updated traffic growth rates for the US 58 corridor were developed collaboratively using previous studies, historic traffic counts, the statewide travel demand model, and stakeholder input. The following sections outline the steps taken to develop the future 2040 traffic volumes.

3.1.1 Historical Average Annual Traffic Volumes and Travel Patterns

Historical average annual traffic volumes help establish a trend along the corridor and highlight segments where traffic volume may increase. The study team used VDOT historic traffic counts for fifteen segments in the corridor. For the historic data, VDOT collects traffic counts from sensors in average daily traffic (ADT) volume. Table 5 outlines these historic traffic volumes from 2010 to 2018.

3.1.2 Socio-Economic Data

This corridor plan derived estimated changes in population, households, and employment for the study area from the Statewide Travel Demand Model. Employment and population estimates are for the traffic analysis zones (TAZs) along the study corridor as shown in Figure 16. Table 6 summarizes the 2015 and 2040 estimates for population, household, and employment data from the Statewide Travel Demand Model for Brunswick and Mecklenburg Counties.

The socio-economic data from the Statewide Travel Demand Model shows an anticipated overall percent change for population, households, and employment in the study corridor TAZs. The corridor is anticipated to see modest growth with a 6% increase in population in Brunswick County and a 4% increase in population in Mecklenburg County. Employment along the corridor is anticipated to grow at a quicker pace with a 20% increase in employment for Brunswick County and a 9% increase in employment for Mecklenburg County.

3.1.3 Annualized Background Growth Rate

A one percent non-compounded annual background growth rate was developed using the historic traffic counts, statewide traffic model, existing documentation, and coordination with VDOT and the local communities. This background growth rate represents the expected increase in traffic volumes that travel through the entire US 58 study area and do not have an origin or destination along the route

Table 6. Historical Average Daily Traffic

| Historical ADT | | | | | | | | | | |
|----------------------------------|----------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| From | To | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| East Brunswick County Line | Old Stage Rd | 6,900 | 9,200 | 9,100 | 8,900 | 9,100 | 9,700 | 9,300 | 9,400 | 9,200 |
| Old Stage Rd | US 58 BUS/Lawrenceville Plank Rd | 12,000 | 11,000 | 11,000 | 10,000 | 10,000 | 11,000 | 9,400 | 9,500 | 9,300 |
| US 58 BUS/Lawrenceville Plank Rd | Cattail Rd | 9,700 | 9,300 | 9,200 | 8,700 | 8,800 | 9,500 | 8,500 | 8,600 | 8,400 |
| Cattail Rd | Grandy Rd | 8,600 | 8,200 | 8,100 | 8,200 | 8,400 | 9,000 | 8,900 | 9,000 | 8,800 |
| Grandy Rd | Mecklenburg County Line | 9,800 | 9,400 | 9,300 | 9,100 | 9,300 | 10,000 | 10,000 | 10,000 | 10,000 |
| Mecklenburg County Line | Country Club Rd | 11,000 | 10,000 | 10,000 | 11,000 | 11,000 | 12,000 | 11,000 | 11,000 | 11,000 |
| Country Club Rd | Country Lane | 14,000 | 16,500 | 17,000 | 17,500 | 17,500 | 16,000 | 21,000 | 23,500 | 25,000 |
| Country Lane | Theater Rd | 6,400 | 6,100 | 6,000 | 6,100 | 6,200 | 6,700 | 7,000 | 7,200 | 7,100 |
| Theater Rd | US 1 | 9,000 | 8,800 | 8,600 | 8,900 | 9,000 | 9,500 | 10,000 | 11,000 | 11,000 |
| US 1 | Buggs Island Rd | 6,200 | 6,100 | 5,900 | 5,900 | 6,100 | 6,900 | 7,400 | 7,700 | 7,700 |
| Buggs Island Rd | VA 92 | 5,800 | 6,000 | 5,600 | 5,500 | 5,500 | 5,900 | 6,500 | 6,800 | 6,700 |
| VA 92 | US 15 | 4,600 | 4,600 | 4,400 | 4,600 | 4,600 | 5,200 | 5,600 | 5,600 | 5,500 |
| US 15 | Virginia Ave | 5,100 | 5,000 | 4,900 | 4,800 | 4,800 | 4,900 | 5,200 | 5,300 | 5,100 |
| Virginia Ave | West Mecklenburg County Line | 6,500 | 6,000 | 6,500 | 6,500 | 6,500 | 6,000 | 6,500 | 6,900 | 6,900 |



within the study area. The trip generation for the study area (discussed in the following section) and this background growth rate will be added to the existing traffic volumes to develop the future 2040 traffic volumes.

3.2 Projected Future Growth (2040) and Traffic Volumes

3.2.1 Future Land Use and Approved Development

Future land use was based on the socio-economic data in the travel demand model and stakeholder input. The study team looked at the projected population, household, and employment growth in the statewide travel demand model between 2015 and 2040 in TAZs within the study corridor. Figure 16 shows the TAZ growth along the corridor. Stakeholders reviewed these findings to assess the accuracy and provided feedback to the study team if adjustments to the assumed growth in certain TAZs were needed. These adjusted socio-economic datasets were used to estimate future traffic volumes in the study corridor and develop future traffic volumes at key intersections along the corridor.

Table 7. Employment and Population Growth Estimates

| Jurisdiction (TAZs) | 2015 | | | 2040 | | | % Change (2015 - 2040) | | |
|---------------------|------------|------------|------------|------------|------------|------------|------------------------|------------|------------|
| | Population | Households | Employment | Population | Households | Employment | Population | Households | Employment |
| Brunswick County | 10,621 | 3,641 | 4,669 | 11,278 | 3,848 | 5,584 | 6.2% | 5.7% | 19.6% |
| Mecklenburg County | 19,679 | 8,396 | 12,612 | 20,431 | 8,567 | 13,756 | 3.8% | 2.0% | 9.1% |
| Total | 30,300 | 12,037 | 17,281 | 31,709 | 12,415 | 19,340 | 4.7% | 3.1% | 11.9% |

3.2.2 Trip Generation and Distribution

The study team evaluated the TAZs along the study corridor that have a direct effect on the turning movement counts used for the existing and future analyses. Traffic was then distributed at the study intersections based on the existing turning movement counts. With consideration for location, potential growth areas, and infrastructure off US 58, engineering judgement was used to make reasonable adjustments to the trip distribution. The future trip generation traffic volumes were added to the calculated background growth for the corridor and then used in the year 2040 analyses. The future turning movement volumes, trip generation, and background growth are outlined in Appendix D.

3.2.3 Future (2040) Traffic Volumes

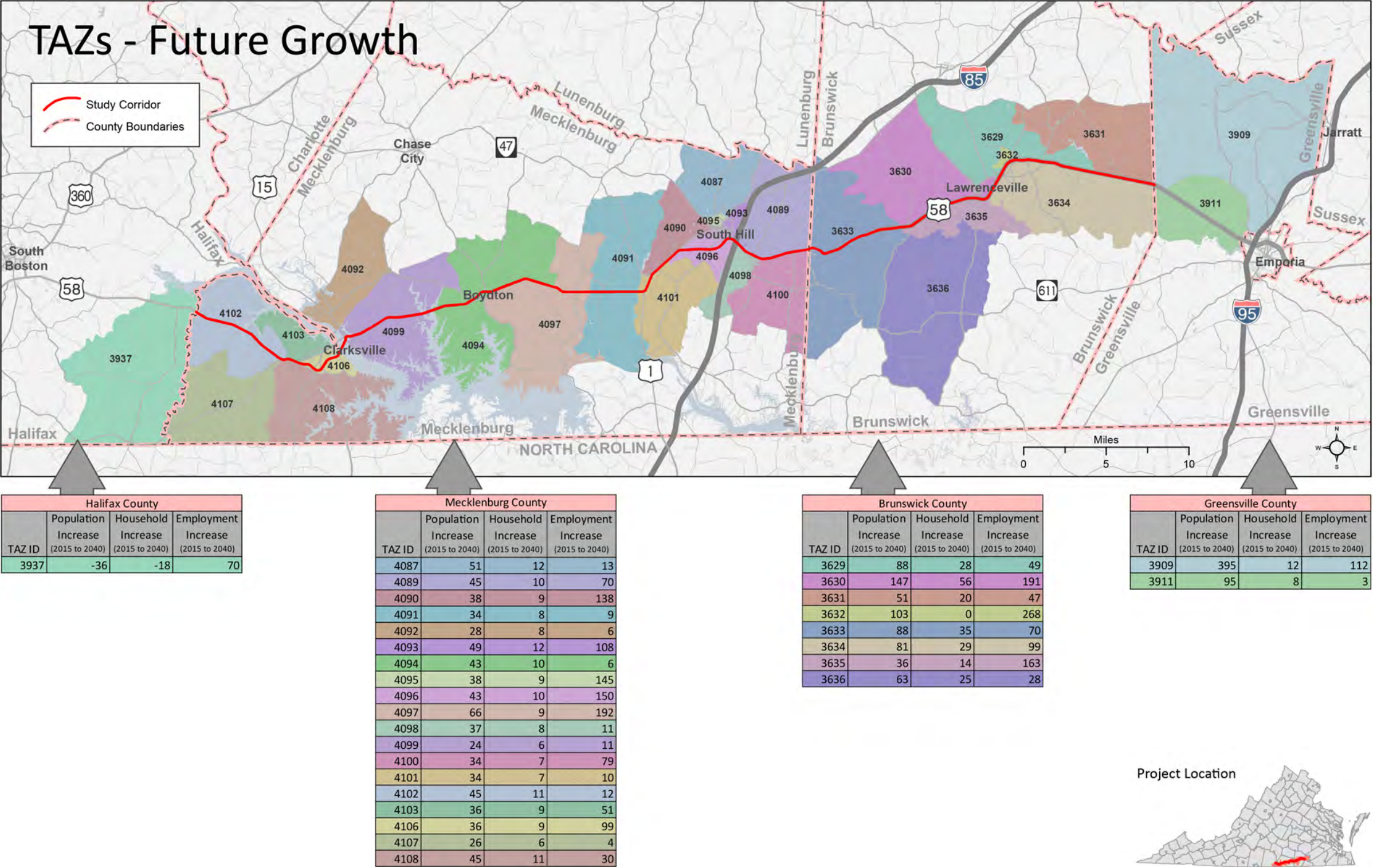
Traffic volumes for the year 2040 were developed based on the trip generation discussed in the previous section and the background growth of one percent for the through traffic along the US 58 corridor. The projected 2040 volumes at various points within the study area are listed in Figure 16.

Table 8. Future Traffic Voumes

| Future Traffic Volumes | | | |
|----------------------------------|----------------------------------|--------|--------|
| From | To | 2018 | 2040 |
| East Brunswick County Line | Old Stage Rd | 9,400 | 11,500 |
| Old Stage Rd | US 58 BUS/Lawrenceville Plank Rd | 9,500 | 11,600 |
| US 58 BUS/Lawrenceville Plank Rd | Cattail Rd | 8,600 | 10,500 |
| Cattail Rd | Grandy Rd | 9,000 | 11,000 |
| Grandy Rd | Mecklenburg County Line | 10,000 | 12,200 |
| Mecklenburg County Line | Country Club Rd | 11,000 | 13,400 |
| Country Club Rd | Country Lane | 23,500 | 28,700 |
| Country Lane | Theater Rd | 7,200 | 8,800 |
| Theater Rd | US 1 | 11,000 | 13,400 |
| US 1 | Buggs Island Rd | 7,700 | 9,400 |
| Buggs Island Rd | VA 92 | 6,800 | 8,300 |
| VA 92 | US 15 | 5,600 | 6,800 |
| US 15 | Virginia Ave | 5,300 | 6,500 |
| Virginia Ave | West Mecklenburg County Line | 6,900 | 8,400 |



Figure 16. Traffic Analysis Zone Growth



CHAPTER 4: FUTURE (2040) TRAFFIC CONDITIONS

4.1 Future Traffic Operations

The 2040 future year operational analyses for the US 58 study intersections were performed using Synchro in accordance with VDOT’s Traffic Operations and Safety Manual (TOSAM). Additional analysis was conducted in the Town of South Hill which included recommendations for the I-85 interchange. A summary of the additional analysis in the Town of South Hill is included in Appendix F. Although it is not known when the full build-out of the future land use will occur, the operational analysis for the 2040 scenarios includes the future traffic volumes for the full build-out of development to maximize the project life span for the recommended improvements. Two future traffic condition scenarios were analyzed. First, the no-build scenario assumes that US 58 will remain as is. Second, the build scenario assumes improvements will be made along US 58 as described further in Chapter 5. Tables 8 through 13 compare the analysis results of the existing, future no-build, and build conditions.

4.2 Future No-Build Traffic Operations and Deficiencies

Future traffic volumes, along with the background growth for through-vehicles, would have minimal impacts on most of the corridor based on the 2040 No-Build scenario. However, the Town of South Hill and La Crosse will experience delays up to LOS C in the AM and PM peak hours. Conventional signalized intersections do not have enough capacity to operate efficiently with extremely large traffic volumes and at unsignalized intersections, the through-movements along US 58 would not allow large enough gaps in traffic for turning movements to occur. Crashes would increase due to queue lengths extending into mainline traffic and the increases in stop-and-go traffic due to more congestion.

4.3 Results of Operational Analyses for Recommended Improvements

Chapter 5 details the recommended improvements, operations, and safety benefits of the recommendations. Although all the study intersections operated well in the future, recommendations were developed that focused focused on improving the safety of these intersections. The analysis was conducted to ensure that both safety and capacity would be satisfactory.

Recommendations consist mainly of innovative intersections concepts. Some of the recommendations include two or three intersections that function together as one system. Synchro does not currently have a method to analyze innovative intersections; however, Chapter 23 of the Highway Capacity Manual outlines a methodology for calculating delays and LOS by using travel time and the appropriate delay(s) through the innovative intersections. The HCM method provides a better way of comparing innovative intersections with the traditional intersection configurations that occupy the corridor today. All recommended improvements maintain an acceptable level of service of LOS C or better.

Table 9. Future Traffic Operations: Virginia Avenue and Route 58

| Intersection | Scenario | Overall Delay (LOS) | Delay per Lane Group by Approach (sec/veh) (Level of Service) | | | | | | | | | | | |
|----------------------------|---------------|---------------------|--|-----|---------|-----------|-----|-----|------------|----------|------|------------|----|----|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| Virginia Avenue & Route 58 | AM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 2.7 | 8.1 | 0.0 | N/A | 0.0 | 0.0 | 0.0 | N/A | 13.3 | N/A | 9.4 | | |
| | | | A | A | | A | A | B | | A | | | | |
| | | A | 2.4 (A) | | | 0.0 (A) | | | | 10.3(B) | | | | |
| | 2040 No Build | 2.5 | 8.4 | 0.0 | N/A | 0.0 | 0.0 | 0.0 | N/A | 14.6 | N/A | 9.7 | | |
| | | | A | A | | A | A | B | | A | | | | |
| | | A | 2.2 (A) | | | 0.0 (A) | | | | 10.9 (B) | | | | |
| | 2040 Build | 4.2 | 8.4 | 0.0 | N/A | 0.0 | 0.0 | 0.0 | N/A | 12.8 | N/A | 9.7 | | |
| | | | A | A | | A | A | B | | A | | | | |
| | | A | 8.4 (A) | | | 0.0 (A) | | | | 10.4 (B) | | | | |
| | PM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 4.3 | 8.3 | 0.0 | N/A | 0.0 | 0.0 | 0.0 | N/A | 14.3 | N/A | 9.9 | | |
| | | | A | A | | A | A | B | | B | | | | |
| | | A | 3.9 (A) | | | 0.0 (A) | | | | 10.8 (B) | | | | |
| | 2040 No Build | 3.9 | 8.6 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | N/A | 15.5 | N/A | 10.4 | | |
| | | | A | A | A | A | A | C | | B | | | | |
| | | A | 3.6 (A) | | | 0.0 (A) | | | | 11.5 (B) | | | | |
| 2040 Build | 5.2 | 8.8 | 0.0 | N/A | 0.0 | 0.0 | 0.0 | N/A | 14.5 | N/A | 10.6 | | | |
| | | A | A | | A | A | B | | B | | | | | |
| | A | 8.8 (A) | | | 0.0 (A) | | | | 11.4 (B) | | | | | |



Table 10. Future Traffic Operations: VA 92 and Route 58

| Intersection | Scenario | Overall Delay (LOS) | Delay per Lane Group by Approach (sec/veh) (Level of Service) | | | | | | | | | | | |
|------------------|---------------|---------------------|--|-----|---------|-----------|-----|---------|------------|------|----------|------------|------|------|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| VA 92 & Route 58 | AM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 3.3 | 7.9 | 0.0 | 0.0 | 7.7 | 0.0 | 0.0 | 11.1 | 11.1 | 11.1 | 11.8 | 11.8 | 11.8 |
| | | | A | A | A | A | A | A | B | B | B | B | B | B |
| | | A | 1.4 (A) | | | 0.3 (A) | | | 11.1 (B) | | | 11.8 (B) | | |
| | 2040 No Build | 3.0 | 8.1 | 0.0 | 0.0 | 7.9 | 0.0 | 0.0 | 11.8 | 11.8 | 11.8 | 12.8 | 12.8 | 12.8 |
| | | | A | A | A | A | A | A | B | B | B | B | B | B |
| | | A | 1.1 (A) | | | 0.4 (A) | | | 11.8 (B) | | | 12.8 (B) | | |
| | 2040 Build | 3.2 | 8.0 | 0.0 | 0.0 | 12.0 | 0.0 | 0.0 | N/A | N/A | 9.2 | 13.6 | 21.3 | 9.3 |
| | | | A | A | A | A | A | A | | | A | B | C | A |
| | | A | 1.1 (A) | | | 0.5 (A) | | | 9.2 (A) | | | 14.6 (B) | | |
| | PM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 4.3 | 8.0 | 0.0 | 0.0 | 7.5 | 0.0 | 0.0 | 11.0 | 11.0 | 11.0 | 11.4 | 11.4 | 11.4 |
| | | | A | A | A | A | A | A | B | B | B | B | B | B |
| | | A | 1.0 (A) | | | 0.1 (A) | | | 11.0 (B) | | | 11.4 (B) | | |
| | 2040 No Build | 3.9 | 8.3 | 0.0 | 0.0 | 7.7 | 0.0 | 0.0 | 11.7 | 11.7 | 11.7 | 12.4 | 12.4 | 12.4 |
| | | | A | A | A | A | A | A | B | B | B | B | B | B |
| | | A | 0.8 (A) | | | 0.1 (A) | | | 11.7 (B) | | | 12.4 (B) | | |
| 2040 Build | 3.6 | 8.8 | 0.0 | 0.0 | 12.0 | 0.0 | 0.0 | N/A | N/A | 9.0 | 13.0 | 22.3 | 10.3 | |
| | | A | A | A | A | A | A | | | A | B | C | B | |
| | A | 0.9 (A) | | | 0.2 (A) | | | 9.0 (A) | | | 12.8 (B) | | | |

Table 11. Future Traffic Operations: Kingdom Hall/US 1 and Route 58

| Intersection | Scenario | Overall Delay (LOS) | Delay per Lane Group by Approach (sec/veh) (Level of Service) | | | | | | | | | | | |
|------------------------------|---------------|---------------------|--|-----|---------|-----------|-----|----------|------------|------|---------|------------|-----|-----|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| Kingdom Hall/US 1 & Route 58 | AM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 2.7 | 0.0 | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 | 11.1 | 11.1 | 11.1 | 0.0 | 0.0 | 0.0 |
| | | | A | A | A | A | A | A | B | B | B | A | A | A |
| | | A | 0.0 (A) | | | 1.3 (A) | | | 11.1 (B) | | | 0.0 (A) | | |
| | 2040 No Build | 3.1 | 0.0 | 0.0 | 0.0 | 8.6 | 0.0 | 0.0 | 11.8 | 11.8 | 11.8 | 0.0 | 0.0 | 0.0 |
| | | | A | A | A | A | A | A | B | B | B | A | A | A |
| | | A | 0.0 (A) | | | 1.2 (A) | | | 11.8 (B) | | | 0.0 (A) | | |
| | 2040 Build | 3.0 | N/A | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 | 13.4 | N/A | 10.8 | N/A | N/A | 0.0 |
| | | | | A | A | A | A | A | B | | B | | | A |
| | | A | 0.0 (A) | | | 1.1 (A) | | | 11.3 (B) | | | 0.0 (A) | | |
| | PM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 2.2 | 0.0 | 0.0 | 0.0 | 8.6 | 0.0 | 0.0 | 11.2 | 11.2 | 11.2 | 0.0 | 0.0 | 0.0 |
| | | | A | A | A | A | A | A | B | B | B | A | A | A |
| | | A | 0.0 (A) | | | 0.0 (A) | | | 11.2 (A) | | | 0.0 (A) | | |
| | 2040 No Build | 2.6 | 0.0 | 0.0 | 0.0 | 8.9 | 0.0 | 0.0 | 11.7 | 11.7 | 11.7 | 0.0 | 0.0 | 0.0 |
| | | | A | A | A | A | A | A | B | B | B | A | A | A |
| | | A | 0.0 (A) | | | 2.1 (A) | | | 11.7 (B) | | | 0.0 (A) | | |
| 2040 Build | 2.6 | N/A | 0.0 | 0.0 | 8.8 | 0.0 | 0.0 | 16.5 | N/A | 10.6 | N/A | N/A | 0.0 | |
| | | | A | A | A | A | A | C | | B | | | A | |
| | A | 0.0 (A) | | | 2.1 (A) | | | 11.4 (B) | | | 0.0 (A) | | | |



Table 12. Future Traffic Operations: Theater Road and Route 58

| Intersection | Scenario | Overall Delay (LOS) | Delay per Lane Group by Approach (sec/veh) (Level of Service) | | | | | | | | | | | |
|-------------------------|---------------|---------------------|--|-----|---------|-----------|-----|----------|------------|------|----------|------------|------|------|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| Theater Road & Route 58 | AM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 3.4 | 9.8 | 0.0 | 0.0 | 7.8 | 0.0 | 0.0 | 19.2 | 19.2 | 19.2 | 24.1 | 24.1 | 24.1 |
| | | | A | A | A | A | A | A | C | C | C | C | C | C |
| | | A | 5.1 (A) | | | 0.0 (A) | | | 19.2 (C) | | | 24.1 (C) | | |
| | 2040 No Build | 3.0 | 10.3 | 0.0 | 0.0 | 8.2 | 0.0 | 0.0 | 22.9 | 22.9 | 22.9 | 28.4 | 28.4 | 28.4 |
| | | | B | B | B | A | A | A | C | C | C | D | D | D |
| | | A | 4.2 (B) | | | 0.0 (A) | | | 22.9 (C) | | | 28.4 (D) | | |
| | 2040 Build | 3.0 | 10.3 | 0.0 | 0.0 | 8.2 | 0.0 | 0.0 | 22.9 | 22.9 | 22.9 | 28.4 | 28.4 | 28.4 |
| | | | B | B | B | A | A | A | C | C | C | D | D | D |
| | | A | 4.2 (B) | | | 0.0 (A) | | | 22.9 (C) | | | 28.4 (D) | | |
| | PM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 3.0 | 8.4 | 0.0 | 0.0 | 8.3 | 0.0 | 0.0 | 15.9 | 15.9 | 15.9 | 18.2 | 18.2 | 18.2 |
| | | | A | A | A | A | A | A | C | C | C | C | C | C |
| | | A | 3.1 (A) | | | 0.1 (A) | | | 15.9 (C) | | | 18.2 (C) | | |
| 2040 No Build | 2.6 | 8.9 | 0.0 | 0.0 | 8.7 | 0.0 | 0.0 | 18.5 | 18.5 | 18.5 | 21.2 | 21.2 | 21.2 | |
| | | A | A | A | A | A | A | C | C | C | C | C | C | |
| | A | 2.7 (A) | | | 0.1 (A) | | | 18.5 (C) | | | 21.2 (C) | | | |
| 2040 Build | 2.6 | 8.9 | 0.0 | 0.0 | 8.7 | 0.0 | 0.0 | 18.5 | 18.5 | 18.5 | 21.2 | 21.2 | 21.2 | |
| | | A | A | A | A | A | A | C | C | C | C | C | C | |
| | A | 2.7 (A) | | | 0.1 (A) | | | 18.5 (C) | | | 21.2 (C) | | | |

Table 13. Future Traffic Operations: Main Street (LaCrosse) and Route 58

| Intersection | Scenario | Overall Delay (LOS) | Delay per Lane Group by Approach (sec/veh) (Level of Service) | | | | | | | | | | | |
|------------------------------|---------------|---------------------|--|-----|----------|-----------|------|----------|------------|------|----------|------------|------|------|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| Main St(LaCrosse) & Route 58 | AM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 8.7 | 36.0 | 5.2 | 4.7 | 26.5 | 5.6 | 4.5 | 25.3 | 25.3 | 25.3 | 21.0 | 21.0 | 21.0 |
| | | | D | A | A | C | A | A | C | C | C | C | C | C |
| | | A | 6.2 (A) | | | 5.8 (A) | | | 25.3 (C) | | | 21.0 (C) | | |
| | 2040 No Build | 14.1 | 157.7 | 8.5 | 7.5 | 44.1 | 10.2 | 6.9 | 27.6 | 27.6 | 27.6 | 18.3 | 18.3 | 18.3 |
| | | | F | A | A | D | B | A | C | C | C | B | B | B |
| | | B | 12.9 (B) | | | 10.6 (B) | | | 27.6 (C) | | | 18.3 (B) | | |
| | 2040 Build | 6.6 | 59.8 | 4.8 | 0.3 | 26.1 | 5.8 | 0.0 | 16.1 | 16.1 | 16.1 | 30.5 | 25.0 | 13.7 |
| | | | A | A | A | B | A | A | B | B | B | C | C | B |
| | | A | 5.4 (A) | | | 6.1 (A) | | | 16.1 (B) | | | 16.7 (B) | | |
| | PM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 12.5 | 64.0 | 7.3 | 6.5 | 28.8 | 7.9 | 6.6 | 26.0 | 26.0 | 26.0 | 18.9 | 18.9 | 18.9 |
| | | | E | A | A | C | A | A | C | C | C | B | B | B |
| | | B | 11.5 (B) | | | 8.1 (A) | | | 26.0 (C) | | | 18.9 (B) | | |
| 2040 No Build | 22.2 | 81.9 | 10.2 | 9.2 | 42.3 | 12.1 | 8.7 | 66.3 | 66.3 | 66.3 | 18.0 | 18.0 | 18.0 | |
| | | F | B | A | D | B | A | E | E | E | B | B | B | |
| | C | 14.1 (B) | | | 12.5 (B) | | | 66.3 (E) | | | 18.0 (B) | | | |
| 2040 Build | 10.9 | 62.1 | 7.1 | 0.3 | 27.4 | 7.1 | 0.0 | 25.1 | 25.1 | 25.1 | 27.0 | 20.2 | 8.9 | |
| | | F | A | A | B | A | A | C | C | C | C | C | B | |
| | B | 8.1 (A) | | | 7.3 (A) | | | 25.1 (C) | | | 12.6 (B) | | | |



Table 14. Future Traffic Operations: VA 641 (Bright Leaf Road) and Route 58

| Intersection | Scenario | Overall Delay (LOS) | Delay per Lane Group by Approach (sec/veh) (Level of Service) | | | | | | | | | | | |
|---|---------------|---------------------|--|-----|-----|-----------|-----|-----|------------|----------|-----|------------|----|----|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| VA 641 (BrightLeaf Rd) & Route 58 | AM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 1.7 | 8.6 | 0.0 | N/A | N/A | 0.0 | 0.0 | N/A | 10.8 | N/A | 10.8 | | |
| | | | A | A | | | A | A | | B | | B | | |
| | | A | 2.1 (A) | | | 0.0 (A) | | | | 10.8 (B) | | | | |
| | 2040 No Build | 1.8 | 9.1 | 0.0 | N/A | N/A | 0.0 | 0.0 | N/A | 11.7 | N/A | 11.7 | | |
| | | | A | A | | | A | A | | B | | B | | |
| | | A | 2.0 (A) | | | 0.0 (A) | | | | 11.7 (B) | | | | |
| | 2040 Build | 0.9 | 9.1 | 0.0 | N/A | N/A | 0.0 | 0.0 | N/A | 11.7 | N/A | 10.0 | | |
| | | | A | A | | | A | A | | B | | B | | |
| | | A | 0.3 (A) | | | 0.0 (A) | | | | 10.0 (B) | | | | |
| | PM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 1.4 | 8.8 | 0.0 | N/A | N/A | 0.0 | 0.0 | N/A | 11.2 | N/A | 11.2 | | |
| | | | A | A | | | A | A | | B | | B | | |
| | | A | 0.8 (A) | | | 0.0 (A) | | | | 11.2 (B) | | | | |
| | 2040 No Build | 1.6 | 9.4 | 0.0 | N/A | N/A | 0.0 | 0.0 | N/A | 12.5 | N/A | 12.5 | | |
| | | | A | A | | | A | A | | B | | B | | |
| | | A | 1.0 (A) | | | 0.0 (A) | | | | 12.5 (B) | | | | |
| | 2040 Build | 1.6 | 9.2 | 0.0 | N/A | N/A | 0.0 | 0.0 | N/A | 12.6 | N/A | 10.7 | | |
| | | | A | A | | | A | A | | B | | B | | |
| | | A | 0.9 (A) | | | 0.0 (A) | | | | 11.6 (B) | | | | |



CHAPTER 5: ALTERNATIVES AND RECOMMENDATIONS

5.1 US 58 Corridor Recommendations

Future traffic volumes show that the US 58 corridor needs improvements to maintain capacity and improve safety. The majority of these improvements are needed to maintain regional growth and improve roadway safety. Additional improvements such as crossover closings may be implemented immediately to increase safety through access management. Based on capacity analyses of current and future conditions and a review of current corridor infrastructure, a “toolbox” of improvements was developed for the US 58 study area. These include:

- Remove existing crossover (based on inadequate spacing/grade/etc.);
- Upgrade existing crossover to meet VDOT standards;
- Convert existing crossover to directional median to allow only certain movements;
- Install alternative intersection concepts; and
- Improve shoulder widths to meet VDOT requirements

Alternative intersections and access management techniques were evaluated during the development of recommendations. Below is a list of alternative intersection designs that are included in the VDOT Arterial Preservation Plan toolbox that were evaluated as potential recommendations. Some of the alternative designs were not suitable for certain locations due to the geometric constraints, concept’s principles, associated costs, and/or Right-of-Way limitations. The concepts listed below were evaluated to screen individual concepts at every location to determine the most effective options for analysis and recommendation.

- Median U-turn Intersection (MUT)
- Restricted Crossing U-turn Intersection (RCUT)
- Continuous Green-T (CGT)
- Quadrant Roadway (QR)

Detailed information on each of these concepts is available on VDOT’s Innovative Intersections website located at <http://www.virginiadot.org/innovativeintersections/>.

It is well documented that as the number of access points increase along a corridor, the running speed decreases and the number of crashes increase. Given that the study segments of US 58 are of vital importance to the state and region, it is important to ensure the safety and throughput capacity of the corridor.

Recommendations were developed using the crash evaluation and analysis of the future volumes from both planned and potential developments along the study corridor. Project stakeholders and the public were engaged throughout the project process to identify the most preferred recommendations. These recommendations are presented in Appendix A. Table 15 contains a suggested ranking of the recommendations based on crash history and the VDOT Potential for Safety Improvements (PSI) database. Recommendation locations are highlighted on corridor aerial photos, with the identification circle indicating the type of recommendation. A green circle indicates no recommendation, a red circle indicates a recommended crossover removal, a yellow circle indicates a minor improvement, and a blue circle indicates a major improvement. Recommendations are denoted with C# for crossovers and I# for intersections. The written recommendation description is available by finding the corresponding C# or I# in the right-hand information box. For complex recommendations, the description will refer to a

figure with a detailed project sketch. Cost estimates were developed using the VDOT Transportation and Mobility Planning Division (TMPD) Cost Estimate Spreadsheet tool and the figures include the range of costs in 2019 dollars for each recommendation.

It is intended that the recommendations presented in Appendix A will accommodate the full build-out of development identified in the future land use as well as the increased vehicular through-put on US 58. As part of this US 58 Arterial Preservation Plan, it is recommended that no additional traffic signals be installed other than those listed in the recommendations. As well, it is recommended that no additional crossovers be constructed within the US 58 median beyond the Preservation Plan recommendations.

Additional shoulder widths with safety edges, when applicable, are recommended to be constructed in areas that do not meet minimum design standards. All shoulders should be paved to the VDOT design standard of eight feet or better to accommodate disabled vehicles, vehicles entering and exiting residential and commercial driveways, and bicyclists. In areas where the existing grade does not support the minimum shoulder requirements, guardrail should be installed.

5.2 Possible Funding Sources

Implementation of the recommended improvements will require funding sources. The VDOT SMART SCALE Program is a process that invests in projects that meet the most critical transportation needs in the state. Projects are evaluated based on improvements in certain categories such as congestion and safety. At the corridor level, more specific strategies and operational improvements can be assessed in studies and implemented using a variety of funding sources, including Federal funding streams such as the Surface Transportation Program (STP), National Highway System (NHS) funds, the Congestion Mitigation and Air Quality Improvement (CMAQ) Program, Revenue Sharing, Highway Safety Improvement Program (HSIP), as well as through state or local funding or other discretionary funding sources. For larger projects, particularly capacity-adding projects, demand management, and operational strategies should also be analyzed for incorporation into the project as part of the project development process. The complex recommendations presented in Appendix A, Figures 5, 12, 13, 19, 23, 24, 25, 26, 28, 35, and 38 include improvement types that correspond with the categories required for specific funding sources.



Table 15. Suggested Priority for US 58 Recommendations

| Recommendation Figure | Intersecting US 58 Roadway | Jurisdiction | High Cost (\$ Millions) | Total Crashes (2013 - 2018) | VTrans Needs Met | Economic Development Support | Congestion (Existing LOS) | Crash Rank | Congestion Rank | ED Rank | Total Score | Cost/Score | Rank |
|-----------------------|---------------------------------------|-----------------------|-------------------------|-----------------------------|------------------|------------------------------|---------------------------|------------|-----------------|---------|-------------|------------|------|
| 24 | Country Ln | Town of South Hill | 3.1 | 19 | 2 | Y | C | 27 | 35 | 31 | 30.45 | 9.82 | 1 |
| 26 | Roundabout - Eastern Corporate Limits | Town of South Hill | 6 | 20 | 2 | Y | A | 28 | 1 | 31 | 27.35 | 4.56 | 2 |
| 26 | Cycle/Peebles - Eastern Corp | Town of South Hill | 2.3 | 43 | 2 | Y | B | 33 | 34 | 31 | 32.15 | 13.98 | 3 |
| 28 | N Main St | Town of La Crosse | 1.1 | 16 | 1 | N | A | 26 | 1 | 1 | 8.5 | 7.73 | 4 |
| 32 | Robinson Ferry Rd | Brunswick County | 1 | 10 | 1 | N | A | 21 | 1 | 1 | 7 | 7.00 | 5 |
| 29 | Regional Airport Rd | Mecklenburg County | 1 | 7 | 1 | N | A | 18 | 1 | 1 | 6.1 | 6.10 | 6 |
| 35 | Cattail Dr | Town of Lawrenceville | 3.4 | 13 | 1 | Y | A | 25 | 1 | 31 | 18.7 | 5.50 | 7 |
| 41 | Freemans Crossing Rd | Brunswick County | 1.3 | 10 | 1 | N | A | 21 | 1 | 1 | 7 | 5.38 | 8 |
| 5 | Virginia Ave | Town of Clarksville | 1.4 | 6 | 1 | N | A | 16 | 1 | 1 | 5.5 | 3.93 | 9 |
| 17 | Baskerville Rd | Mecklenburg County | 1.1 | 4 | 1 | N | A | 12 | 1 | 1 | 4.3 | 3.91 | 10 |
| 32 | Evans Creek Rd | Brunswick County | 2.2 | 12 | 1 | N | A | 23 | 1 | 1 | 7.6 | 3.45 | 11 |
| 10 | Skipwith Rd | Town of Boydton | 1.6 | 6 | 1 | N | A | 16 | 1 | 1 | 5.5 | 3.44 | 12 |
| 38 | Bright Leaf Rd/Airport Dr | Brunswick County | 2.3 | 12 | 1 | N | A | 23 | 1 | 1 | 7.6 | 3.30 | 13 |
| 33 | Pleasant Grove Rd | Brunswick County | 2.1 | 7 | 1 | N | A | 18 | 1 | 1 | 6.1 | 2.90 | 14 |
| 21 | Goods Ferry Rd | Mecklenburg County | 1.5 | 4 | 1 | N | A | 12 | 1 | 1 | 4.3 | 2.87 | 15 |
| 2 | Cherry Hill Church Rd | Mecklenburg County | 1 | 3 | 1 | N | A | 7 | 1 | 1 | 2.8 | 2.80 | 16 |
| 3 | Clarksville Rd | Mecklenburg County | 1 | 3 | 1 | N | A | 7 | 1 | 1 | 2.8 | 2.80 | 17 |
| 12 | Washington St | Town of Boydton | 1.9 | 5 | 1 | N | A | 15 | 1 | 1 | 5.2 | 2.74 | 18 |
| 2 | Buffalo Springs Rd | Mecklenburg County | 1 | 2 | 1 | N | A | 5 | 1 | 1 | 2.2 | 2.20 | 19 |
| Segment | Landfill Rd to Buggs Island Rd | Mecklenburg County | 5 | 24 | 1 | N | A | 30 | 1 | 1 | 9.7 | 1.94 | 20 |
| Segment | Union Woods Rd to Pleasant Grove Rd | Brunswick County | 5.7 | 50 | 1 | N | A | 34 | 1 | 1 | 10.9 | 1.91 | 21 |
| Segment | Evans Creek Rd to Grandy Rd | Brunswick County | 7.5 | 64 | 1 | N | A | 35 | 1 | 1 | 11.2 | 1.49 | 22 |
| Segment | Branch Rd to Gholson Rd | Brunswick County | 6.1 | 20 | 1 | N | A | 28 | 1 | 1 | 9.1 | 1.49 | 23 |
| Segment | Airport Dr to Old Stage Rd | Brunswick County | 7.2 | 35 | 1 | N | A | 32 | 1 | 1 | 10.3 | 1.43 | 24 |
| 14 | Hayes Mill Rd | Mecklenburg County | 1.7 | 2 | 1 | N | A | 5 | 1 | 1 | 2.2 | 1.29 | 25 |
| 30 | Dornia Ave | Brunswick County | 3.8 | 4 | 1 | N | A | 12 | 1 | 1 | 4.3 | 1.13 | 26 |
| 25 | I-85 | Town of South Hill | 28 | 30 | 2 | Y | A | 31 | 1 | 31 | 28.25 | 1.01 | 27 |
| 2 | Tabernacle Rd | Mecklenburg County | 1 | 1 | 1 | N | A | 1 | 1 | 1 | 1 | 1.00 | 28 |
| 6 | Shiney Rock Rd | Town of Clarksville | 1 | 1 | 1 | N | A | 1 | 1 | 1 | 1 | 1.00 | 29 |
| 10 | Jefferson St | Town of Boydton | 3.1 | 3 | 1 | N | A | 7 | 1 | 1 | 2.8 | 0.90 | 30 |
| 8 | Tower Rd | Mecklenburg County | 1.3 | 1 | 1 | N | A | 1 | 1 | 1 | 1 | 0.77 | 31 |
| 30 | Main St | Brunswick County | 3.8 | 3 | 1 | N | A | 7 | 1 | 1 | 2.8 | 0.74 | 32 |
| 13 | US 58 BUS | Town of Boydton | 1.4 | 1 | 1 | N | A | 1 | 1 | 1 | 1 | 0.71 | 33 |
| 19 | US 1 | Mecklenburg County | 9.7 | 9 | 1 | N | A | 20 | 1 | 1 | 6.7 | 0.69 | 34 |
| 10 | Mayfield Dr | Town of Boydton | 4.6 | 3 | 1 | N | A | 7 | 1 | 1 | 2.8 | 0.61 | 35 |

Scores reflect weighting by SMART SCALE area type categories.
Although the score of Cycle/Peebles - Eastern Corp Limits South Hill is higher, the roundabout must occur first before pursuing this option. This has been reflected in the recommended priority.

APPENDICES

Appendix A: US 58 Arterial Preservation Plan RecommendationsA-1

Appendix B: Field Review..... A-45

Appendix C: Infrastructure InventoryA-57

Appendix D: US 58 Intersection Volumes.....A-81

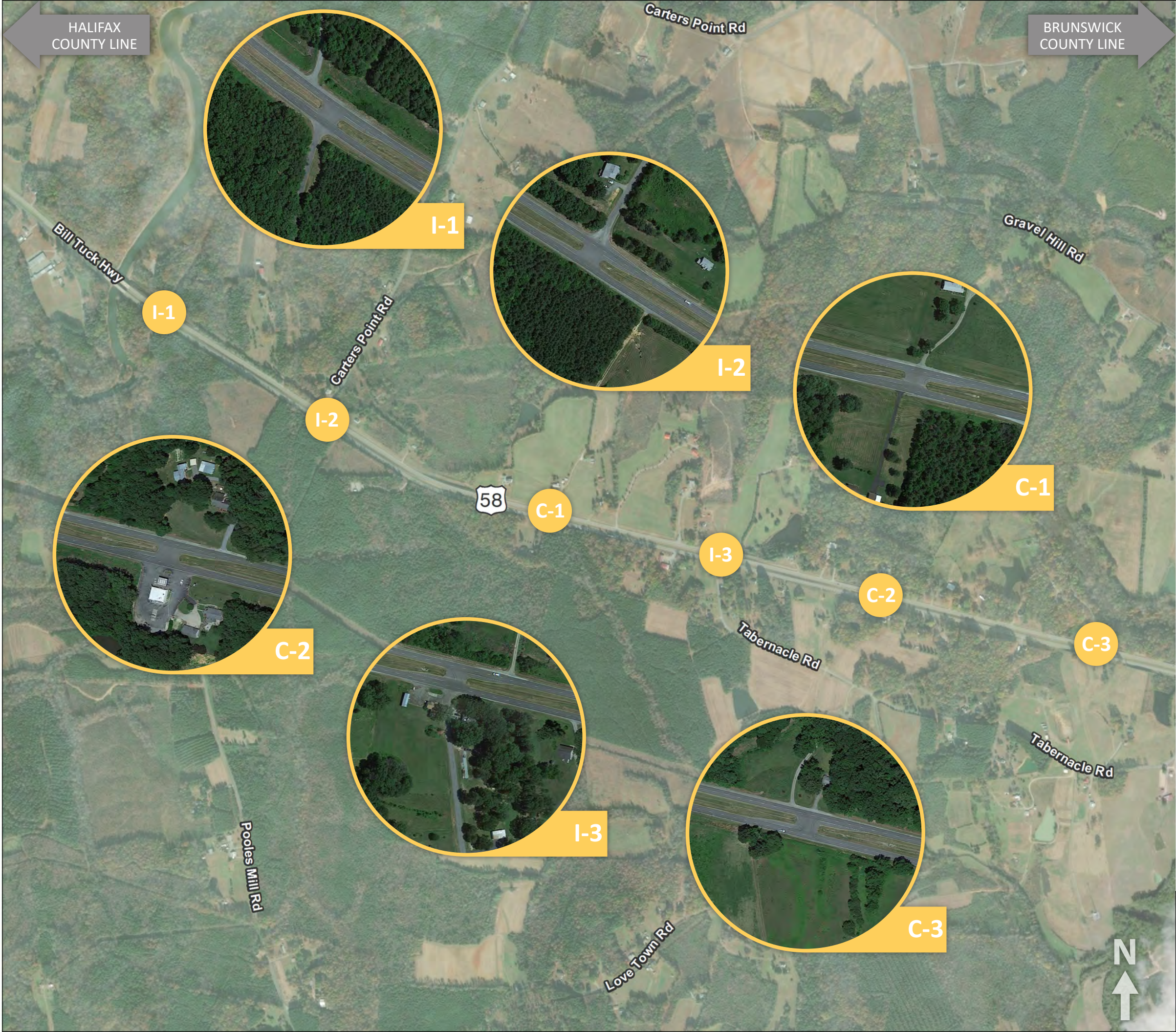
Appendix E: US 58 Intersection OperationsA-85

Appendix F: Town of South Hill MemorandumA-89

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APPENDIX A: US 58 ARTERIAL PRESERVATION PLAN RECOMMENDATIONS

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US 58 Arterial Preservation Plan

Figure 1

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Intersection 1: Pooles Mill Rd with US 58
Recommendation: Lengthen all existing turn lanes and construct eastbound right-turn lane on US 58.
Cost: \$0.5M to \$0.8M

Intersection 2: Carters Point Rd with US 58
Recommendation: Lengthen all existing turn lanes on US 58.
Cost: \$0.5M to \$0.8M

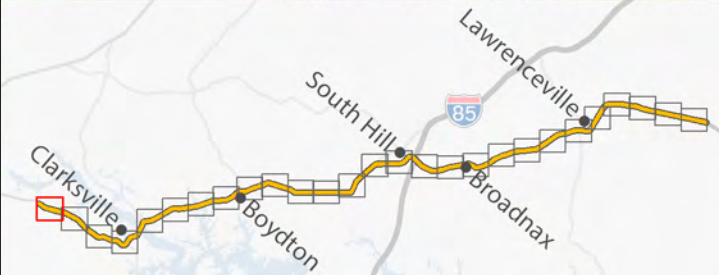
Crossover 1:
Recommendation: Lengthen all existing left-turn lanes on US 58.
Cost: \$0.4M to \$0.5M

Intersection 3: Tabernacle Rd with US 58
Recommendation: Lengthen all existing turn lanes on US 58. Construct eastbound right turn lane on US58.
Cost: \$0.5M to \$0.8M

Crossover 2:
Recommendation: Lengthen all existing left-turn lanes on US 58.
Cost: \$0.4M to \$0.5M

Crossover 3:
Recommendation: Lengthen all existing left-turn lanes on US 58.
Cost: \$0.4M to \$0.5M

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement





US 58 Arterial Preservation Plan

Figure 2

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Intersection 4: Tabernacle Rd with US 58
Recommendation: Reconfigure intersection to directional median permitting left turns and U-Turns from westbound US 58. Lengthen existing westbound left-turn lane and construct eastbound right-turn lane on US 58
Cost: \$0.4M to \$0.6M

Intersection 5: Buffalo Springs Rd with US 58
Recommendation: Reconfigure intersection to directional median permitting left turns and U-Turns from eastbound US 58. Lengthen existing eastbound left-turn and westbound right-turn lanes on US 58
Cost: \$0.4M to \$0.6M

Intersection 6: Hite Dr with US 58
Recommendation: Lengthen all existing turn lanes and construct eastbound right-turn lane on US 58.
Cost: \$0.5M to \$0.8M

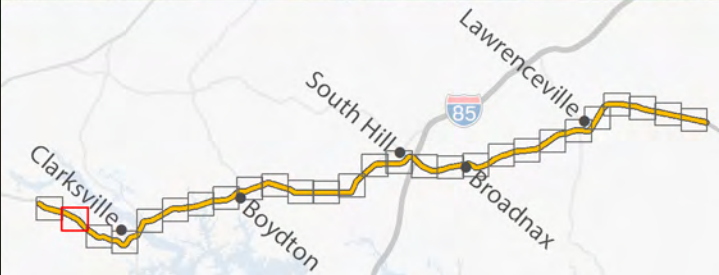
Intersection 7: Lake Ridge Dr with US 58
Recommendation: Lengthen all existing turn lanes and construct westbound right-turn lane on US 58.
Cost: \$0.5M to \$0.8M

Intersection 8: Cherry Hill Church Rd with US 58
Recommendation: Reconfigure intersection to directional median permitting left turns and U-Turns from westbound US 58. Lengthen existing westbound left-turn lane and construct eastbound right-turn lane on US 58
Cost: \$0.4M to \$0.6M

Intersection 9: Bull Rd with US 58
Recommendation: Lengthen all existing turn lanes and construct right-turn lanes on US 58.
Cost: \$0.6M to \$1.0M

Crossover 4:
Recommendation: Lengthen all existing turn lanes on US 58. Consolidate access along eastbound US 58.
Cost: \$0.5M to \$0.7M

No Recommendation
 Recommended Removal
 Minor Improvement
 Major Improvement



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 3

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Crossover 5:
Recommendation: Lengthen all existing left-turn lanes on US 58.
Cost: \$0.4M to \$0.5M

Crossover 6:
Recommendation: Lengthen all existing left-turn lanes on US 58.
Cost: \$0.4M to \$0.5M

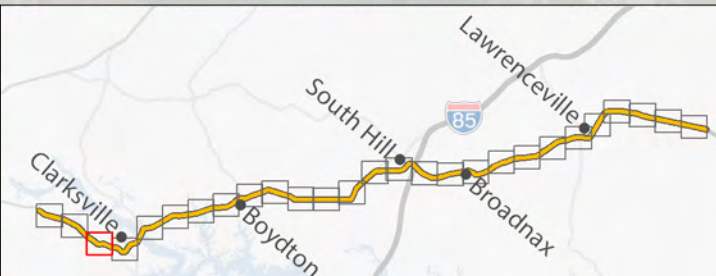
Crossover 7:
Recommendation: Reconfigure crossover to directional median to permit lefts in only from eastbound US 58. Construct westbound right-turn lane on US 58.
Cost: \$0.4M to \$0.5M

Intersection 10: Clarksville Rd with US 58
Recommendation: Lengthen all existing turn lanes and construct eastbound right-turn lane on US 58.
Cost: \$0.5M to \$0.8M

Intersection 11: Sandy Fork Rd with US 58
Recommendation: Reconfigure crossover to directional median to permit lefts in only from westbound US 58. Construct eastbound right-turn lane on US 58.
Cost: \$0.5M to \$0.7M

Intersection 12: Pen Rd with US 58
Recommendation: Lengthen existing eastbound left-turn lane and construct right-turn lane on US 58.
Cost: \$0.4M to \$0.7M

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 4

Intersections & Median Crossovers





Mecklenburg County

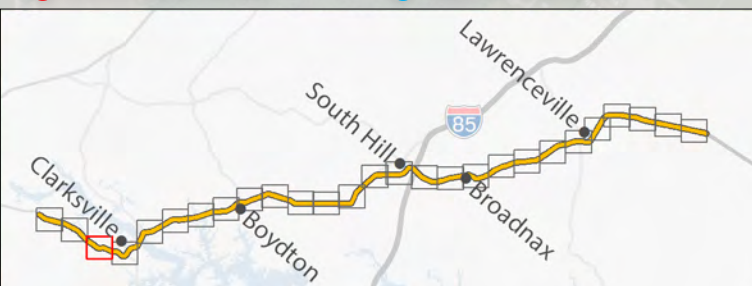
I-# - Intersection #
C-# - Crossover #

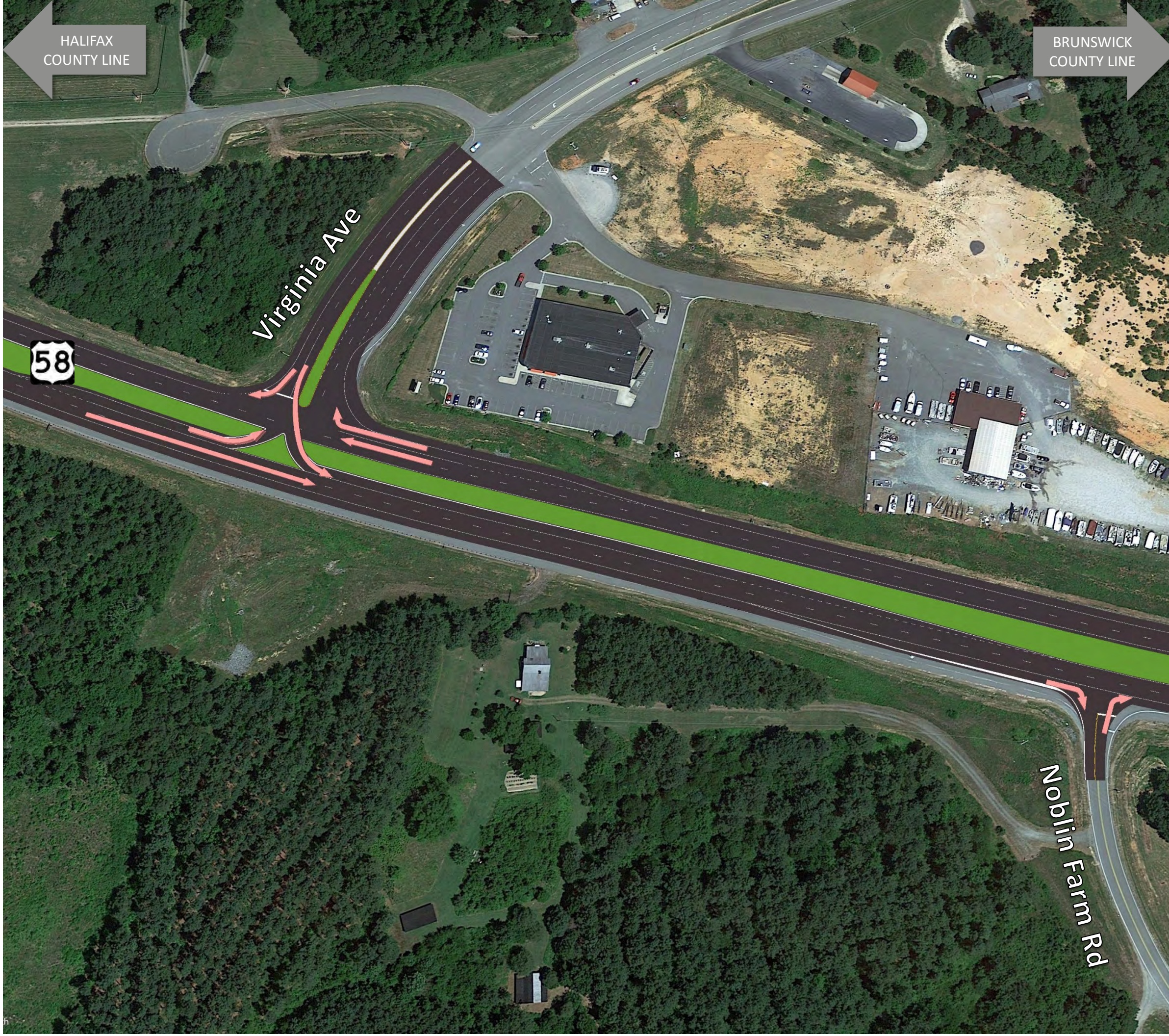
Crossover 8:
Recommendation: Remove crossover.
Cost: \$0.2M to \$0.3M

Intersection 13: Greenhouse Dr with US 58
Recommendation: No Recommendation
Cost: Not Applicable

Intersection 14: Virginia Ave with US 58
Recommendation: See Figure 5
Cost: \$1.1M to \$1.4M

 No Recommendation
 Recommended Removal
 Minor Improvement
 Major Improvement





Route 58 Arterial Management Plan

Figure 5

Intersection #14: US 58 and Virginia Ave

Mecklenburg County

Recommendation: Reconfigure main intersection of US 58 and Virginia Ave to Continuous Green-T (CGT). Reconstruct existing turn-lanes on US 58 to VDOT Design Standards. Improvements are required at Intersection 15, Noblin Farm Rd and US 58.


ROW Impacts: All improvements are within the ROW

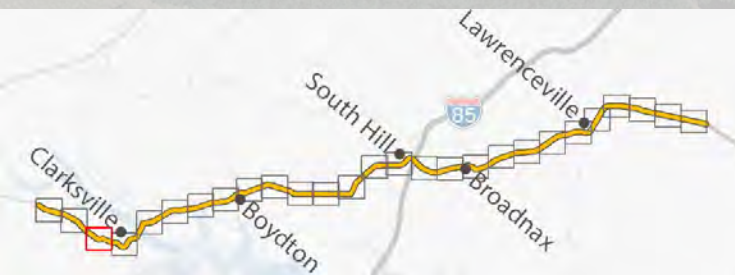
Improvement Type: Safety, Travel Time Preservation

Traffic Operations & Safety:

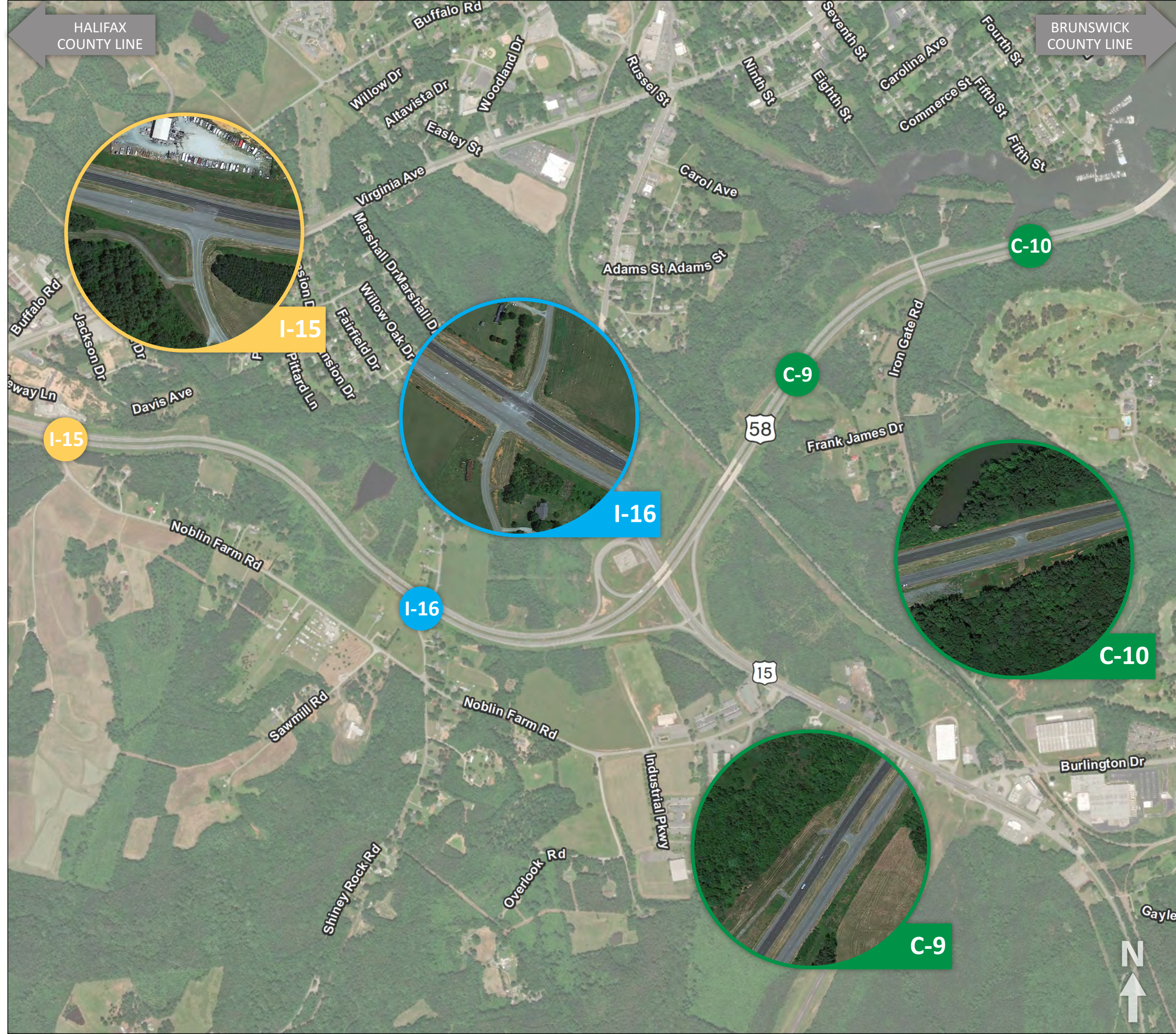
| Traffic Operations | Reduced delay times for vehicles traveling eastbound on US 58 from Virginia Ave |
|--------------------|--|
| Safety | Reduced conflict points where vehicles cross paths. Reduced risk of angle crashes from Virginia Ave onto US 58 |

Cost: \$1.1M to \$1.4M

 Standard Movements



A map of Route 58 showing the location of the intersection. The map includes labels for Clarksville, South Hill, Lawrenceville, Broadnax, and Boydton. A red box highlights the intersection area.



US 58 Arterial Preservation Plan

Figure 6

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

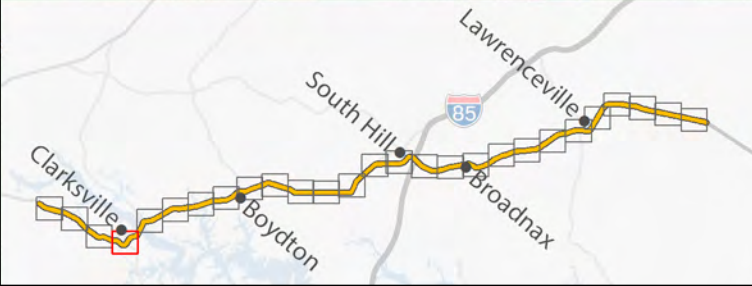
Intersection 15: Noblin Farm Rd with US 58
Recommendation: Reconfigure intersection to right-in/ right out only.
Cost: \$0.1M to \$0.2M

Intersection 16: Shiny Rock Rd with US 58
Recommendation: Reconfigure intersection to directional median to permit lefts in from eastbound and westbound US 58.
Cost: \$0.3M to \$0.4M

Crossover 9:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 10:
Recommendation: No recommendation
Cost: Not Applicable

- No Recommendation
- Recommended Removal
- Minor Improvement
- Major Improvement



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 7

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

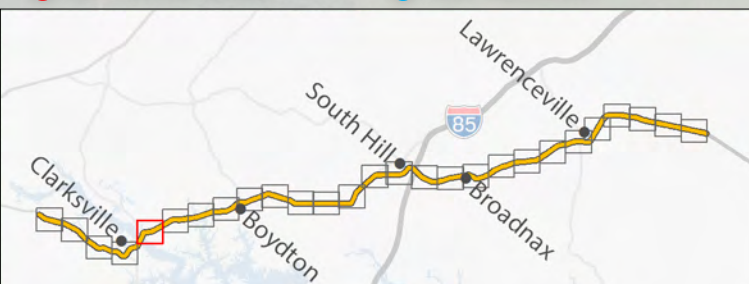
Intersection 17: Occonechee Park Rd with US 58
Recommendation: Lengthen existing eastbound right turn lane on US 58.
Cost: Not Applicable

Crossover 11:
Recommendation: Construct westbound right turn lane on US 58.
Cost: \$0.3M to \$0.4M

Intersection 18: Commerce Dr with US 58
Recommendation: No recommendation
Cost: Not Applicable

Crossover 12:
Recommendation: Remove Crossover
Cost: \$0.2M to \$0.3M

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



I-17



I-18

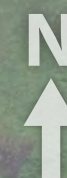


C-11

C-12



C-12



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 8

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Intersection 19: Tower Rd with US 58
Recommendation: Reconfigure crossover to directional median to permit lefts in only from westbound US 58. Construct westbound right-turn lane on US 58.
Cost: \$1.1M to \$1.3M

Intersection 20: Chandler Rd with US 58
Recommendation: No recommendation
Cost: Not Applicable

Intersection 21: New Liberty Church Rd with US 58
Recommendation: Reconfigure intersection to right-in/right-out only.
Cost: \$0.3M to \$0.4M

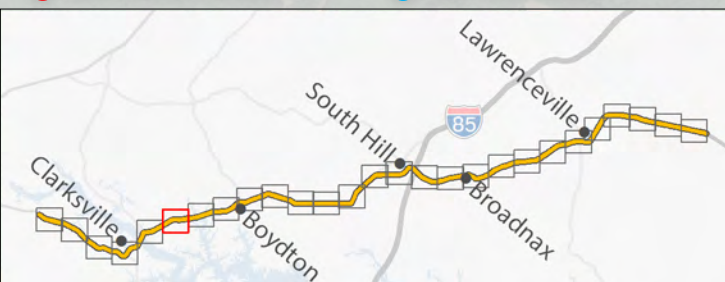
Intersection 22: Puryears Store Rd with US 58
Recommendation: No recommendation
Cost: Not Applicable

Intersection 23: Wilkerson Rd with US 58
Recommendation: No recommendation
Cost: Not Applicable

Crossover 13:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 14:
Recommendation: Remove crossover
Cost: Not Applicable

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



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COUNTY LINE

BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 9

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Crossover 15:
Recommendation: No recommendation
Cost: Not Applicable

Intersection 24: Rogers Rd with US 58
Recommendation: No recommendation
Cost: Not Applicable

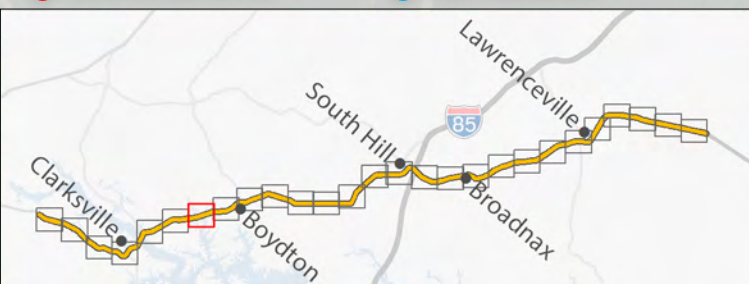
Crossover 16:
Recommendation: No recommendation
Cost: Not Applicable

Intersection 25: Rudds Creek Recreation Area
Recommendation: Lengthen existing westbound right-turn lane on US 58.
Cost: \$0.1M to \$0.2M

Crossover 17:
Recommendation: No recommendation
Cost: Not Applicable

Intersection 26: Rochichi Dr with US 58
Recommendation: No recommendation
Cost: Not Applicable

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



I-24

C-16

I-26

C-17

I-25

C-16

C-15

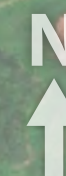
I-24

C-15

I-26

C-17

I-25



← HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE →

US 58 Arterial Preservation Plan Figure 10 Intersections & Median Crossovers Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Crossover 18:

Recommendation: No recommendation
Cost: Not Applicable

Intersection 27: Mayfield Dr with US 58

Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Construct U-turn area west of main intersection.
Cost: \$3.5M to \$4.6M

Intersection 28: Jefferson St with US 58

Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Reconfigure Crossover #19 to U-turn area.
Cost: \$2.2M to \$3.1M

Crossover 19:

Recommendation: Reconfigure crossover to U-turn area for Intersection #28. Permit eastbound US 58 left-turn movements.
Cost: See Intersection 28: Jefferson St with US 58

Crossover 20:

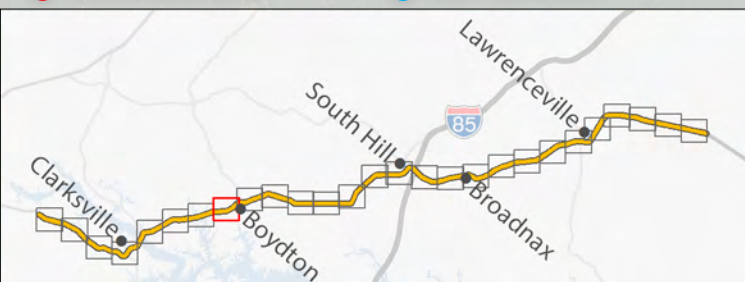
Recommendation: Reconfigure crossover to directional median to permit lefts in only from eastbound US 58.
Cost: \$0.3M to \$0.4M

Intersection 29: Skipwith Rd with US 58

Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Construct U-turn area east and west of main intersection.
Cost: \$1.1M to \$1.6M

● No Recommendation
● Recommended Removal

● Minor Improvement
● Major Improvement



C-18



I-27



I-28

Skipwith Rd

Tucker Ln

C-20

I-29

Park St

Hull St

Madison St

Jefferson St

Bank St

Maple Ct

Craddock Ct



I-29



C-20



C-19

Victors Pl

I-27

I-28

Jefferson St

Lambert Rd

Richardson Ln

Lambert Rd



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COUNTY LINE

US 58 Arterial Preservation Plan

Figure 11

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Intersection 30: Washington St with US 58
Recommendation: See Figure 12
Cost: \$1.2M to \$1.9M

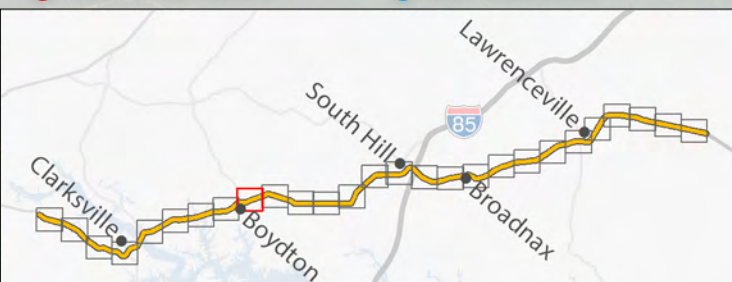
Intersection 31: US 58 BUS (Madison Street) with US 58
Recommendation: See Figure 13
Cost: \$1.1M to \$1.4M

Crossover 21:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

Intersection 32: Prison Rd with US 58
Recommendation: Lengthen all existing turn lanes on US 58. Smart Scale Application-UPS 113297
Cost: \$2.1M

Crossover 22:
Recommendation: No recommendations
Cost: Not Applicable

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



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COUNTY LINE

Route 58 Arterial Management Plan

Figure 12

Intersection #30: US 58 and Washington St Mecklenburg County

Recommendation: Reconfigure intersection of US 58 and Washington St to Continuous Green-T (CGT). Construct U-turn area west of main intersection to permit southbound movements from Washington St to cross US 58. Extend eastbound right-turn lane to U-turn area and reconstruct existing turn-lanes on US 58 to VDOT Design Standards.

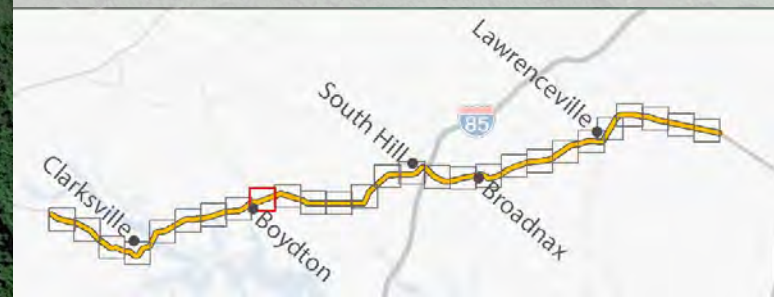
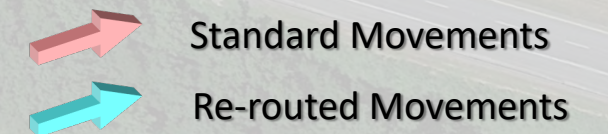
ROW Impacts: All improvements are within the ROW

Improvement Type: Safety, Travel Time Preservation

Traffic Operations & Safety:

| | |
|--------------------|---|
| Traffic Operations | Reduced delay times for vehicles traveling eastbound on US 58 from southbound Washington St |
| Safety | Reduced conflict points where vehicles cross paths. Reduced risk of angle crashes from Washington St onto US 58 |

Cost: \$1.2M to \$1.9M



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COUNTY LINE

Route 58 Arterial Management Plan

Figure 13

Intersection #31: US 58 and US 58 BUS Mecklenburg County

Recommendation: Reconfigure main intersection of US 58 and US 58 BUS to Continuous Green-T (CGT). Reconstruct existing turn-lanes on US 58 to meet VDOT Design Standards.

ROW Impacts: All improvements are within the ROW

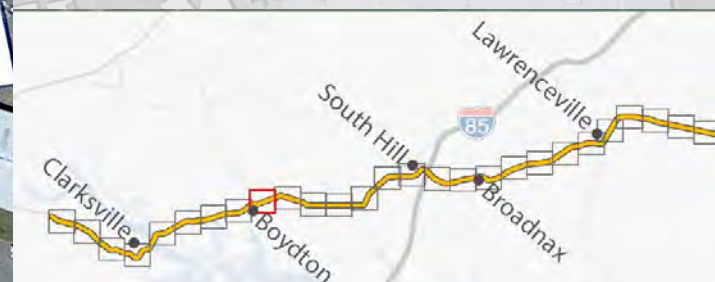
Improvement Type: Safety, Travel Time Preservation

Traffic Operations & Safety:

| | |
|--------------------|--|
| Traffic Operations | Reduced delay times for vehicles traveling westbound on US 58 from northbound Reese Ln |
| Safety | Reduced conflict points where vehicles cross paths. Reduced risk of angle crashes from Reese Ln onto westbound US 58 |

Cost: \$1.1M to \$1.4M

Standard Movements



HALIFAX
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BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 14

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Intersection 33: Ridge Rd with US 58
Recommendation: Lengthen all existing eastbound turn lanes on US 58.
Cost: \$0.3M to \$0.5M

Crossover 23:
Recommendation: Reconfigure crossover to U-turn area for Intersection #34. Permit westbound US 58 left-turn movements.
Cost: \$0.3M to \$0.4M

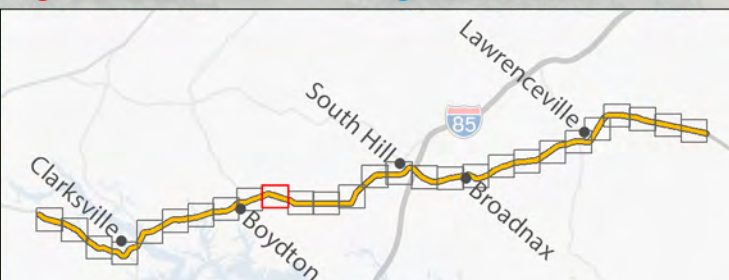
Intersection 34: Hayes Mill Rd with US 58
Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Reconfigure Crossover #23 to U-turn area and construct U-turn area east of main intersection.
Cost: \$0.8M to \$1.3M

Crossover 24:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 25:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

Crossover 26:
Recommendation: No recommendation
Cost: Not Applicable

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



I-34

I-34

C-23

C-24

C-25

C-26

58

Landfill Rd

Antlers Rd

C-24

C-25

C-26



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COUNTY LINE

US 58 Arterial Preservation Plan

Figure 15

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Crossover 27:

Recommendation: No recommendation
Cost: Not Applicable

Intersection 35: Landfill Rd with US 58

Recommendation: Lengthen existing right-turn lanes on US 58.
Cost: \$0.3M to \$0.7M

Crossover 28:

Recommendation: No recommendation
Cost: Not Applicable

C-27

I-35

C-27

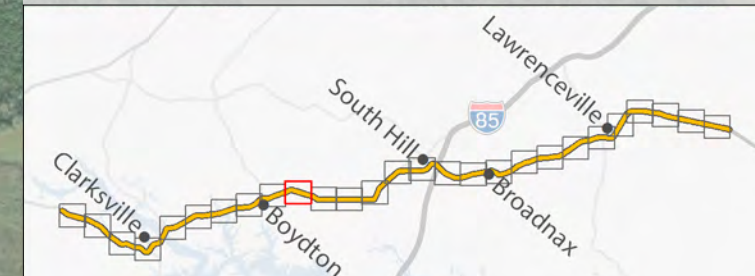
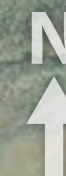
I-35

C-28

C-28

● No Recommendation
● Recommended Removal

● Minor Improvement
● Major Improvement



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 16

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Crossover 29:
Recommendation: No recommendations
Cost: Not Applicable

Crossover 30:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

Crossover 31:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

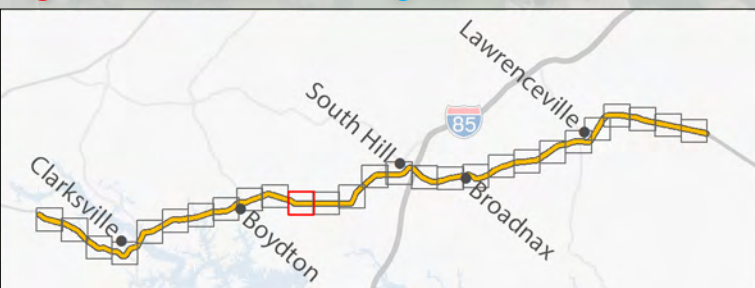
Crossover 32:
Recommendation: No Recommendation
Cost: Not Applicable

Intersection 36: Buggs Island Rd with US 58
Recommendation: No Recommendation
Cost: Not Applicable

Crossover 33:
Recommendation: No Recommendation
Cost: Not Applicable

Crossover 34:
Recommendation: No recommendation
Cost: Not Applicable

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



C-29

C-30

C-31

C-32

C-29

C-30

C-31

58

C-32

I-36

C-33

C-34

W Cross Rd

Wooden Bridge Rd

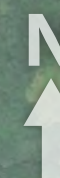
Buggs Island Rd

Iron Mill Rd

I-36

C-33

C-34



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 17

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Crossover 35:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

Crossover 36:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

Intersection 37: Baskerville Rd with US 58
Recommendation: Reconfigure intersection to directional median permitting left turns and U-Turns from westbound US 58. Construct eastbound right-turn lane on US 58
Cost: \$0.7M to \$1.1M

Intersection 38: Baskerville Rd with US 58
Recommendation: Reconfigure intersection to directional median permitting left turns and U-Turns from eastbound US 58.
Cost: \$0.7M to \$1.1M

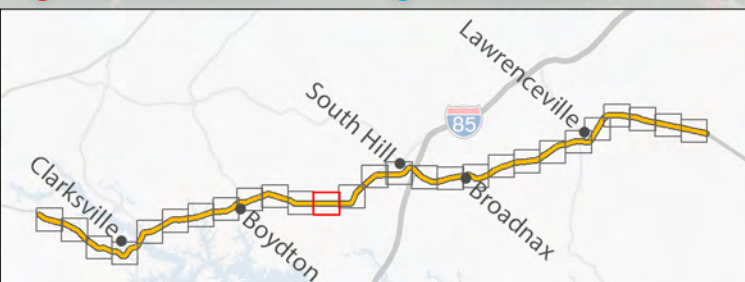
Crossover 37:
Recommendation: No Recommendations.
Cost: Not Applicable

Intersection 39: Cedar Grove Rd with US 58
Recommendation: Construct eastbound right-turn lane on US 58.
Cost: \$0.1M to \$0.2M

Crossover 38:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 39:
Recommendation: No recommendation
Cost: Not Applicable

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



C-35



C-36



I-37



I-38

C-35

C-36

I-37

I-38

C-37

I-39

58

C-38

C-39



I-39



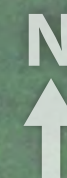
C-37



C-38



C-39



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 18

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Intersection 40: Camp Rd with US 58

Recommendation: Lengthen all existing turn lanes on US 58.

Cost: Not Applicable

Crossover 40:

Recommendation: No recommendation

Cost: Not Applicable

Intersection 41: US 1 with US 58

Recommendation: See Figure 19

Cost: \$6.9M to \$9.7M

Intersection 42: Smith Cross Rd with US 58

Recommendation: Construct westbound left-turn lane and eastbound right-turn lane.

Cost: \$2.2M to \$3.1M

Intersection 43: Union Level Rd with US 58

Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Construct U-turn area east and east of main intersection.

Cost: \$2.7M to \$3.9M

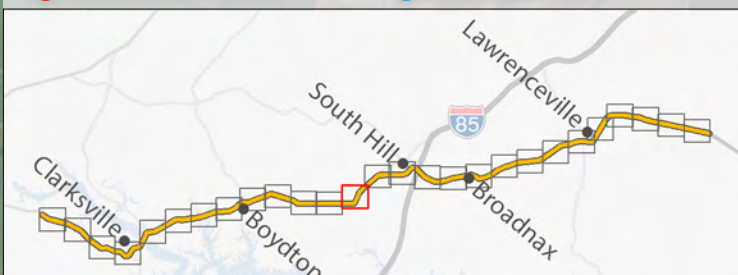
Intersection 44: Dockery Rd with US 58

Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Construct U-turn area east and east of main intersection.

Cost: \$2.7M to \$3.9M

● No Recommendation
● Recommended Removal

● Minor Improvement
● Major Improvement



I-43

I-44

I-44

I-42

I-41

C-40

I-40

C-40

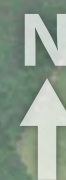
I-41

I-42

I-43

58

1



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

Route 58 Arterial Management Plan

Figure 19

Intersection #41: US 58 and US 1 Mecklenburg County

Recommendation: Realign US 1 north-east of existing intersection and reconfigure intersection of US 58 and US 1 to Continuous Green-T (CGT). Construct median between the eastbound and westbound lanes on US 58.

ROW Impacts: CGT is within existing ROW. Although VDOT owns some land east of existing US 58 alignment, the realignment may require additional ROW on the east side of US 58.

Improvement Type: Safety, Travel Time Preservation

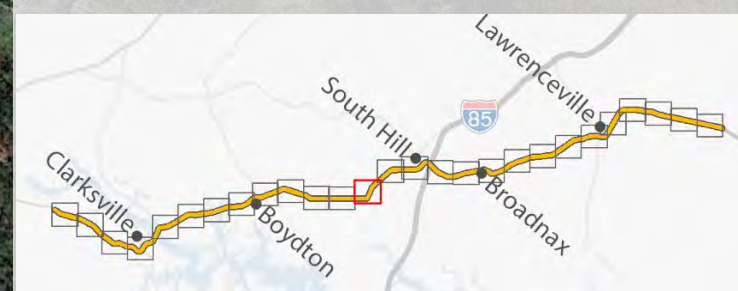
Traffic Operations & Safety:

| | |
|--------------------|--|
| Traffic Operations | Reduced delay times for vehicles traveling westbound on US 58 from northbound US 1 |
| Safety | Improved sight distance for all movements at the intersection. Reduced risk of angle crashes due to CGT and improved sight distance. |

Cost: \$6.9M to \$9.7M



Standard Movements



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 20

Intersections & Median Crossovers

Mecklenburg County

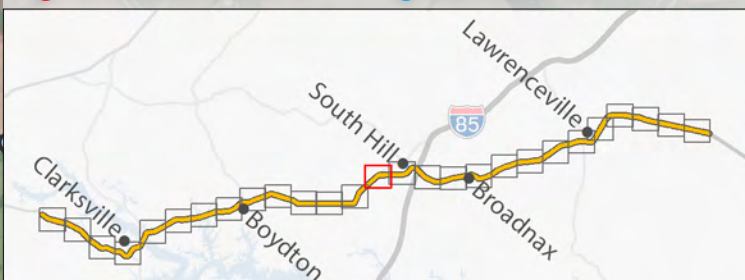
I-# - Intersection #
C-# - Crossover #

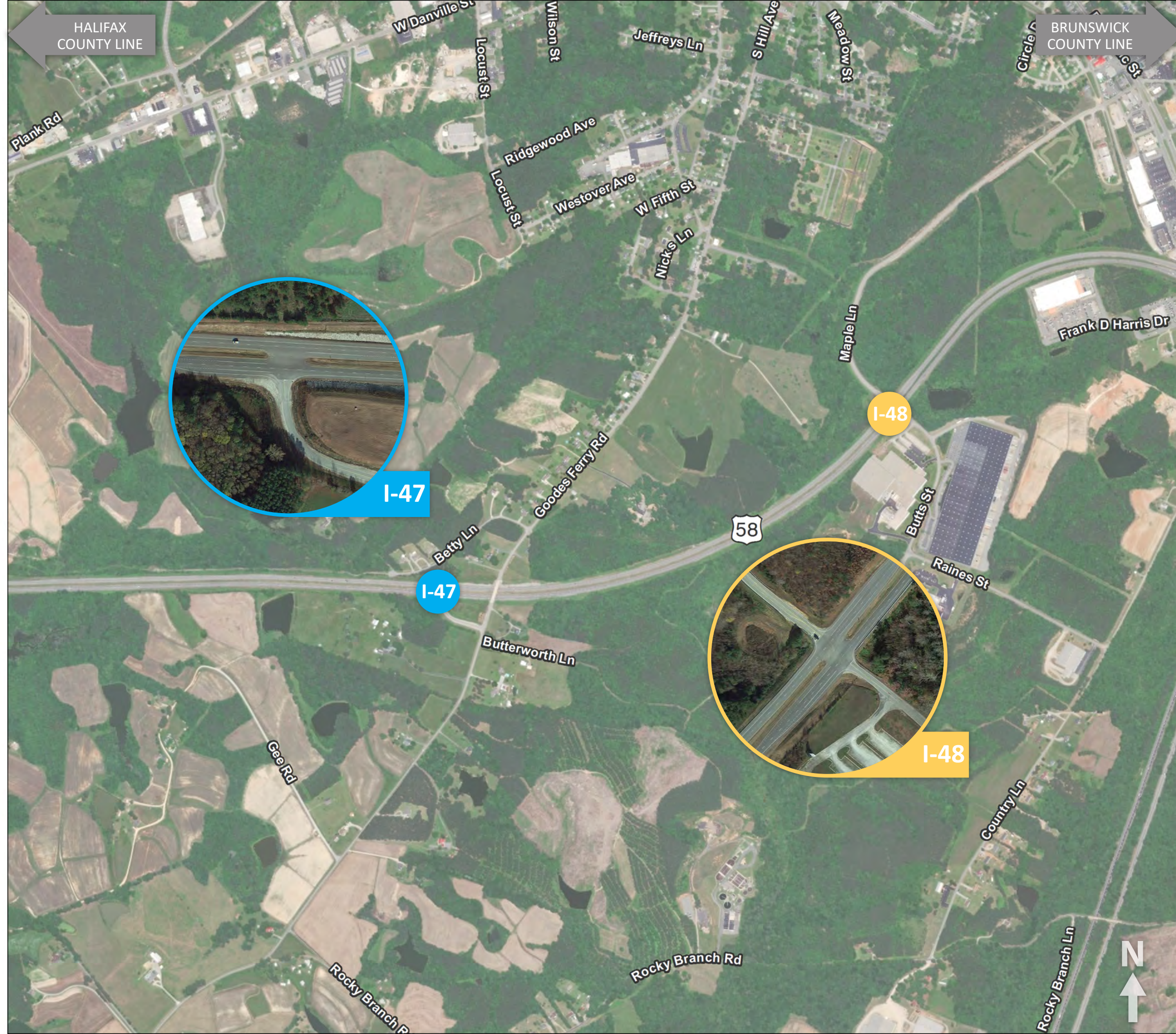
Intersection 45: Park View Ln with US 58
Recommendation: No recommendation
Cost: Not Applicable

Intersection 46: Theater Rd with US 58
Recommendation: Lengthen existing acceleration lane onto US 58 westbound. Lengthen existing eastbound turn lanes and westbound right-turn lane.
Cost: \$0.8M to \$1.2M

Crossover 41:
Recommendation: No recommendation
Cost: Not Applicable

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement





US 58 Arterial Preservation Plan

Figure 21

Intersections & Median Crossovers

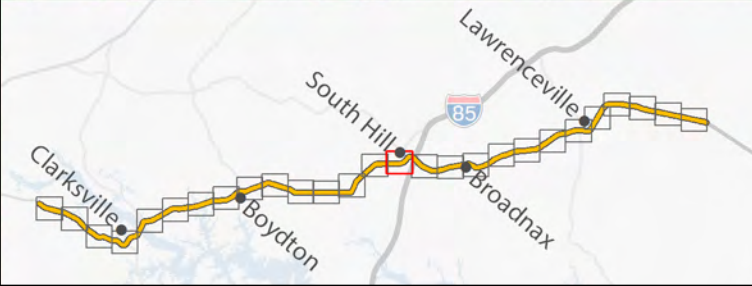
Mecklenburg County

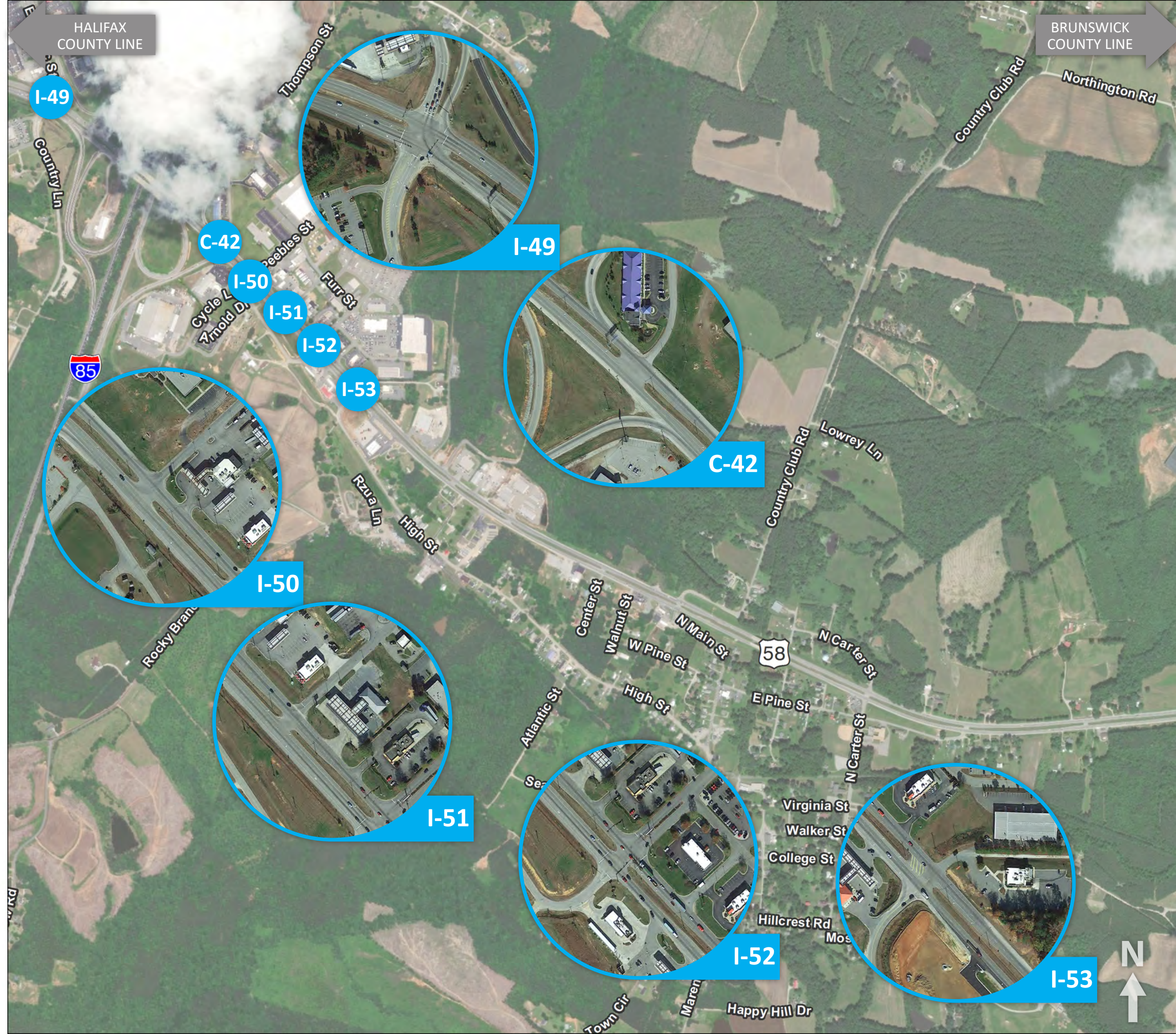
I-# - Intersection #
C-# - Crossover #

Intersection 47: Goods Ferry Rd with US 58
Recommendation: Reconfigure intersection to Continuous Green-T (CGT).
Cost: \$1.0M to \$1.5M

Intersection 48: Maple Ln with US 58
Recommendation: Construct turn right-turn lanes on Maple Lane
Cost: \$0.3M to \$0.6M

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement





US 58 Arterial Preservation Plan

Figure 22

Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Intersection 49: Country Ln with US 58
Recommendation: See Figure 23
Cost: \$1.9M to \$3.1M

Crossover 42: Crowder St with US 58
Recommendation: See Figure 23
Cost: Intersection 53: High St with US 58

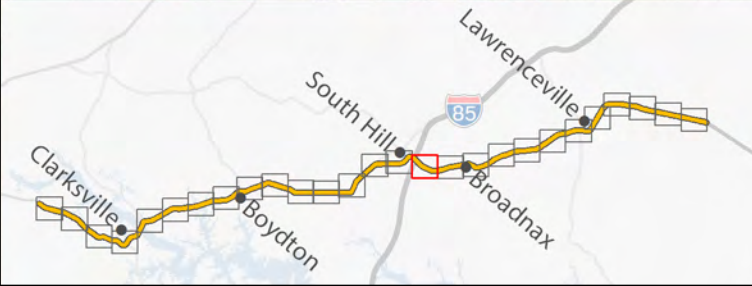
Intersection 50: Thompson St with US 58
Recommendation: See Figure 23
Cost: Intersection 53: High St with US 58

Intersection 51: Peebles St with US 58
Recommendation: See Figure 23
Cost: Intersection 53: High St with US 58

Intersection 52: Cycle Ln with US 58
Recommendation: See Figure 23
Cost: Intersection 53: High St with US 58

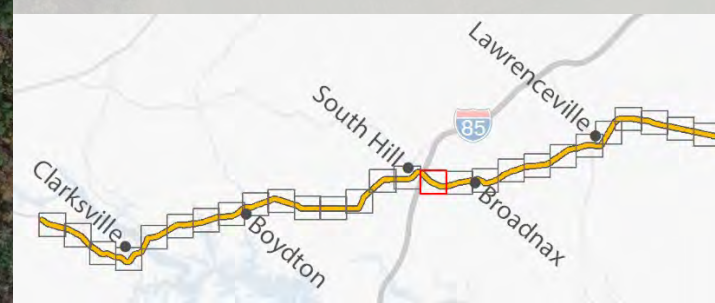
Intersection 53: High St with US 58
Recommendation: See Figure 23
Cost: \$6.4M to \$8.3M

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement





Route 58 Arterial Management Plan
Figure 23
South Hill Area Summary



HALIFX
COUNTY LINE

BRUNSWICK
COUNTY LINE

Route 58 Arterial Management Plan

Figure 24

Intersection #49: US 58 with Country Ln Town of South Hill

Recommendation: Reconfigure the existing intersection and traffic signal to a three-phase signal. Permit only through and right-turn movements on US 58. Permit only left and right-turn movements from US 58 BUS southbound onto US 58 and full movements from Country Ln northbound. Construct U-turn area west of existing intersection to permit movements destined to Country Ln from US 58 westbound or US 58 BUS southbound. Remove existing I-85 off ramp onto US 58 BUS and construct continuous flow right-turn lane from US 58 westbound onto US 58 BUS. Eastbound US 58 left-turns to be managed at Maple Lane or interchange (depending on interchange configuration).



ROW Impacts: All improvements are within the ROW

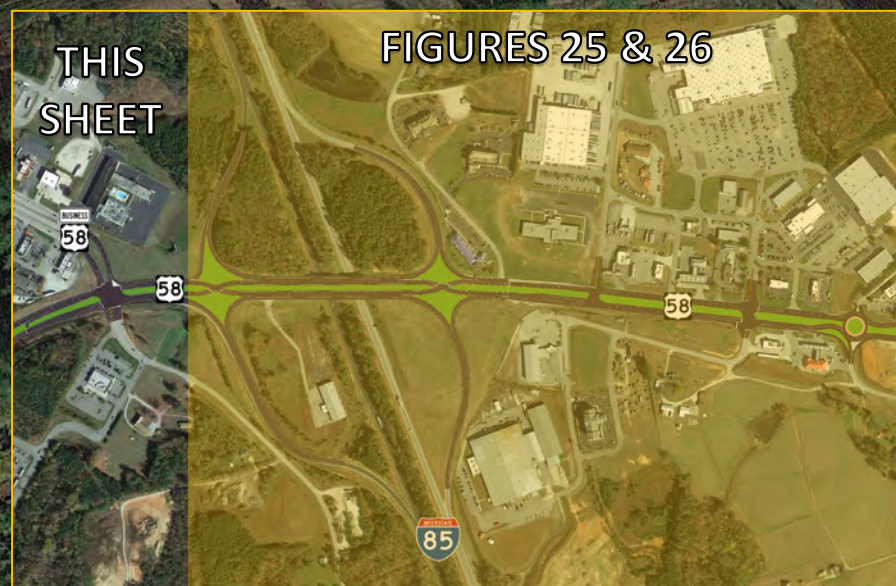
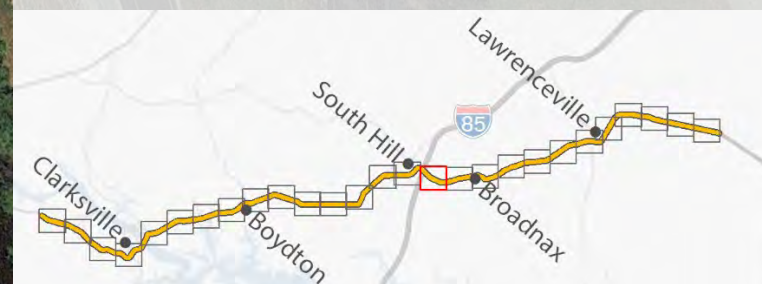
Improvement Type: Congestion Mitigation, Economic Development, Safety, Travel Time Preservation

Operations:

| 2040 Future Delay (sec - LOS) | No Build | Build |
|----------------------------------|----------|--------|
| AM | 24.6-C | 17.4-C |
| PM | 30.4-C | 20.4-C |

Cost: \$1.9M to \$3.1M

 Standard Movements
 Re-routed Movements



HALIFX
COUNTY LINE

BRUNSWICK
COUNTY LINE

Route 58 Arterial Management Plan

Figure 25

I-85 Interchange

Town of South Hill

Recommendation: Reconfigure interchange to Diverging Diamond Interchange or a Roundabout Interchange (Inset). Interchange will require an Interchange Modification Report (IMR) to be submitted to the FHWA to determine ultimate configuration.

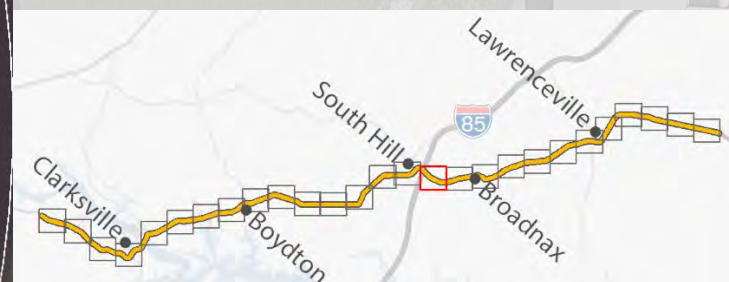
ROW Impacts: All improvements are within the ROW

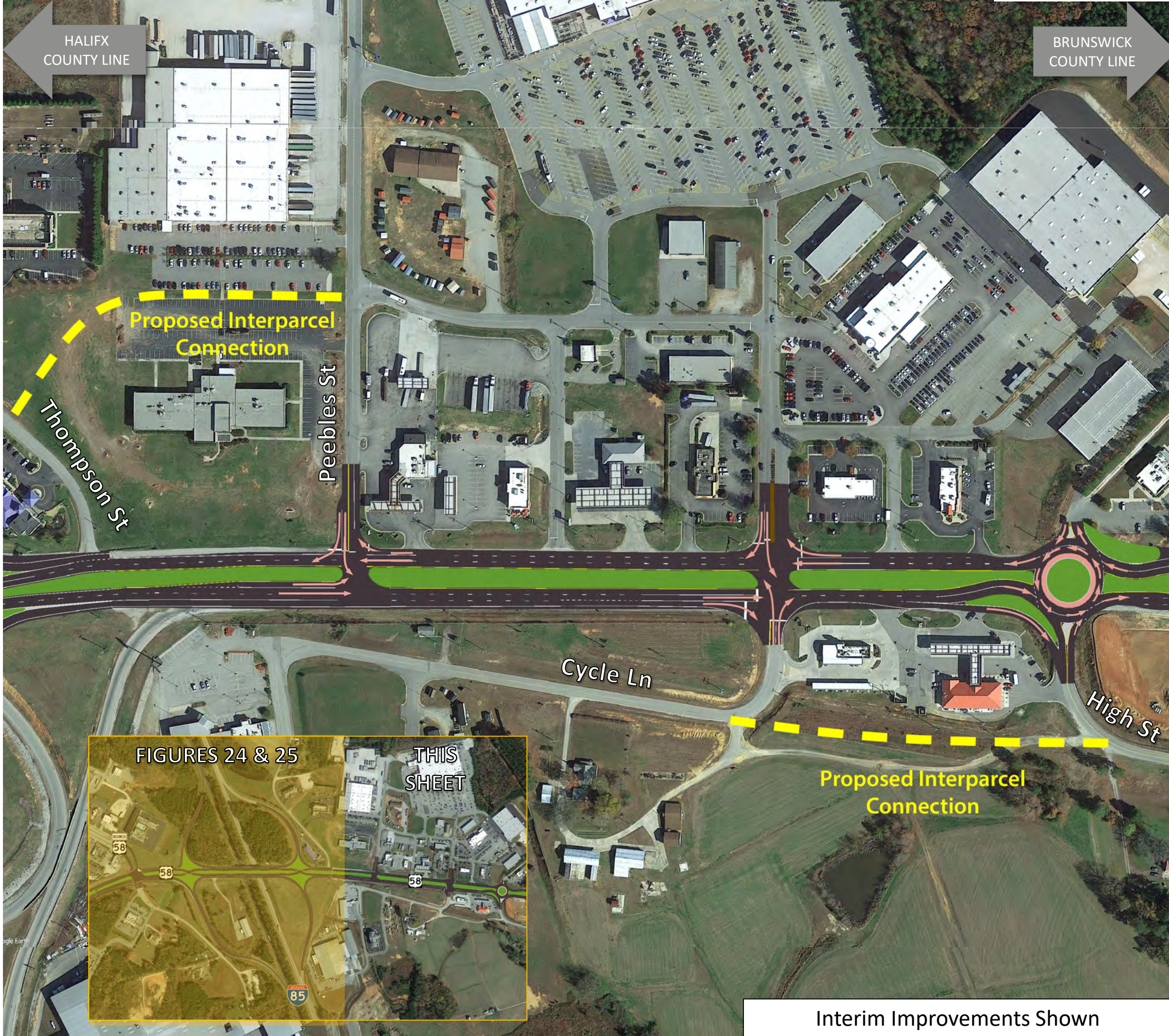
Improvement Type: Economic Development, Safety, Travel Time Preservation

Traffic Operations & Safety:

| | |
|--------------------|--|
| Traffic Operations | Reduced travel times for vehicles due to reduced weave and merge areas. |
| Safety | Decreased risk of side-swipes and rear end crashes on both I-85 and US 58. |

Cost: \$7.7M to \$28.0M





Route 58 Arterial Management Plan
Figure 26
US 58 Eastern Corporate Limits
Town of South Hill

Interim Recommendation: Reconfigure Thompson St intersection to right-in/right-out only, improve storage length of eastbound US 58 left-turn lane onto Peebles St, reconfigure Crowder St intersection to right-in/right out only, reconfigure Cycle Lane to a two-phase signal, and construct a roundabout at the intersection of High St. Construct inter-parcel connections to maintain access between Thompson St and Peebles St, and between Cycle Ln and High St. Town maintained streets should be investigated further to determine pavement condition and capacity improvements to maintain efficient traffic flow.

Long-term Recommendation: As development occurs, additional improvements will be needed at the intersection of Peebles St and US 58. These improvements may require reviews and approvals by district, state, and FHWA officials. The roundabout at High St will need to be reconfigured to remove northbound left and thru movements to maintain capacity of the corridor.

ROW Impacts: All improvements on US 58 are within the ROW. Inter-parcel connections and Town maintained street improvement may require significant ROW acquisition.

Improvement Type: Economic Development, Safety, Travel Time Preservation

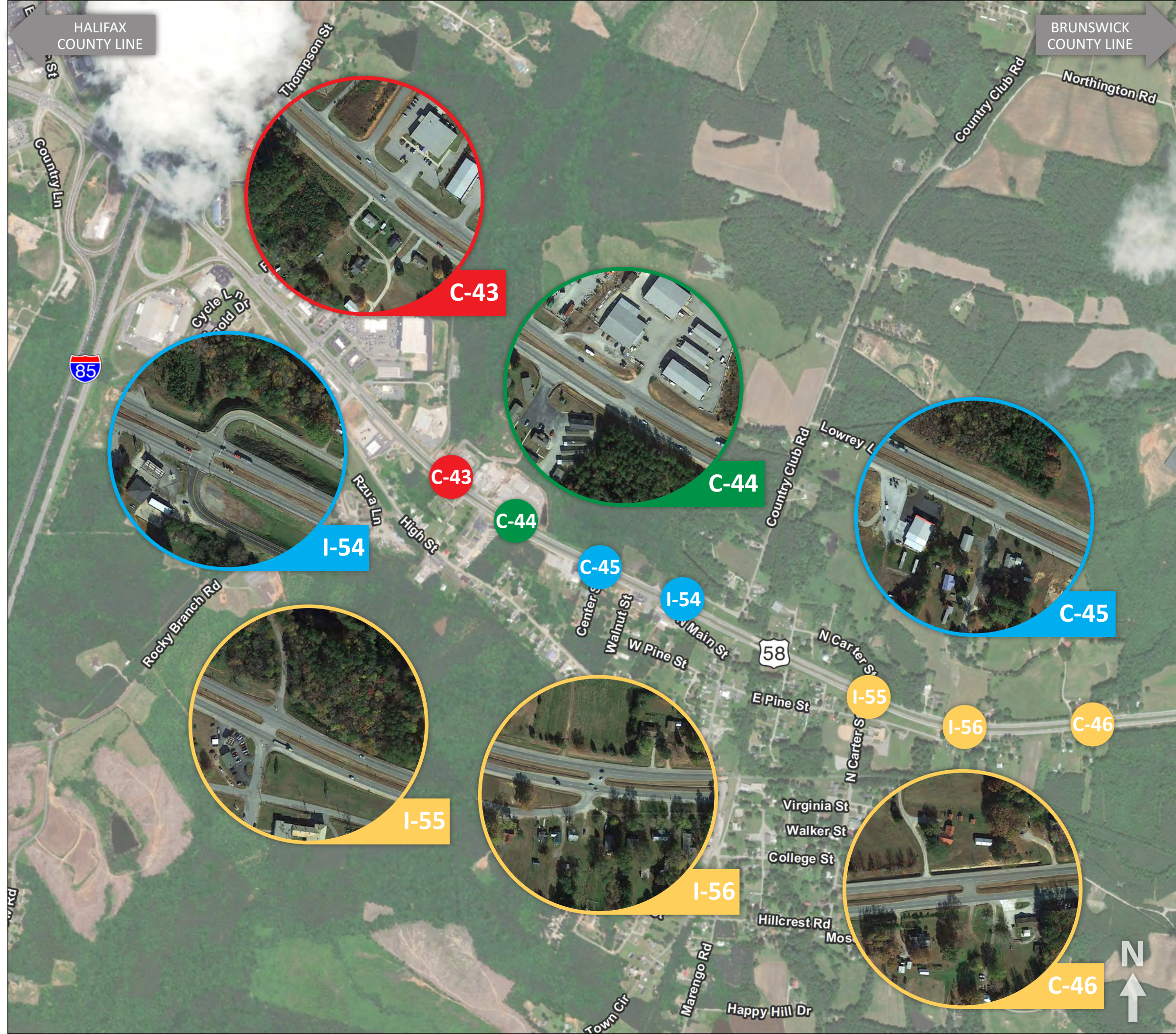
Traffic Operations:

| 2040 Travel Times (min) | Eastbound US 58 | | Westbound US 58 | |
|-------------------------|-----------------|-------|-----------------|-------|
| Condition | No Build | Build | No Build | Build |
| AM | 1:02 | 0:54 | 1:02 | 0:58 |
| PM | 1:32 | 1:17 | 1:38 | 1:26 |

US 58 Improvements: \$6.4M to \$8.3M
Town Street Improvements: \$1.6M to \$10.0M

Standard Movements

Interim Improvements Shown



US 58 Arterial Preservation Plan

Figure 27

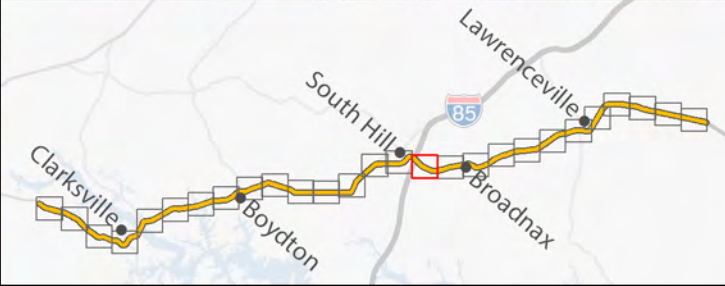
Intersections & Median Crossovers

Mecklenburg County

I-# - Intersection #
C-# - Crossover #

- Crossover 43:**
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M
- Crossover 44:**
Recommendation: No recommendation
Cost: \$0.3M to \$0.5M
- Crossover 45:**
Recommendation: See Figure 28
Cost: : Not Applicable
- Intersection 54:** N Main St with US 58
Recommendation: See Figure 28
Cost: \$0.7M to \$1.0M
- Intersection 55:** S Carter St with US 58
Recommendation: Reconfigure intersection to permit US 58 left-turn movements.
Cost: \$0.1M to \$0.2M
- Intersection 56:** E Pine St with US 58
Recommendation: Lengthen all existing turn lanes and construct eastbound right-turn lane on US 58.
Cost: \$0.7M to \$1.0M
- Crossover 46:**
Recommendation: Lengthen existing left-turn lanes on US 58
Cost: \$0.4M to \$0.5M

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

Route 58 Arterial Management Plan

Figure 28

Intersection #54: N Main St with US 58

Mecklenburg County

Recommendation: Reconfigure the existing intersection and traffic signal to a two-phase signal. Permit only through and right-turn movements on US 58. Permit only right-turn movements from Country Club Rd onto US 58 and full movements from northbound N Main St to US 58. Reconfigure Crossover #45 to U-turn area for vehicles destined eastbound US 58 or the Town of LaCrosse. Eastbound US 58 vehicles destined to Country Club Road can use existing Crossover #46.

ROW Impacts: All improvements are within the ROW

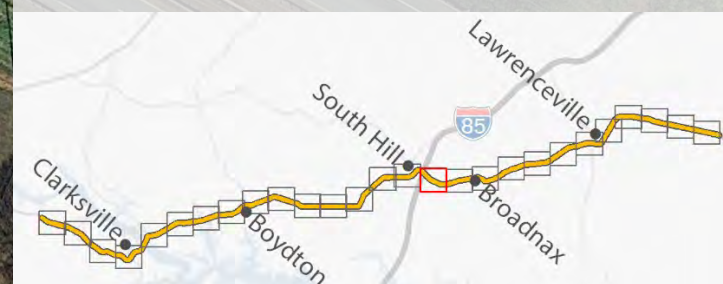
Improvement Type: Safety, Travel Time Preservation

Traffic Operations & Safety:

| | |
|--------------------|--|
| Traffic Operations | Reduced delay times for vehicles traveling on US 58 and N Main St. |
| Safety | Significant reduction in risk of angle crashes and reduced risk of rear end crashes. |

Cost: \$0.7M to \$1.1M

Standard Movements
Re-routed Movements



HALIFAX
COUNTY LINE

BRUNSWICK
COUNTY LINE

US 58 Arterial Preservation Plan Figure 29 Intersections & Median Crossovers Mecklenburg County

I-# - Intersection #
C-# - Crossover #

Crossover 47:
Recommendation: Lengthen existing westbound turn lane on US 58.
Cost: \$0.4M to \$0.6M

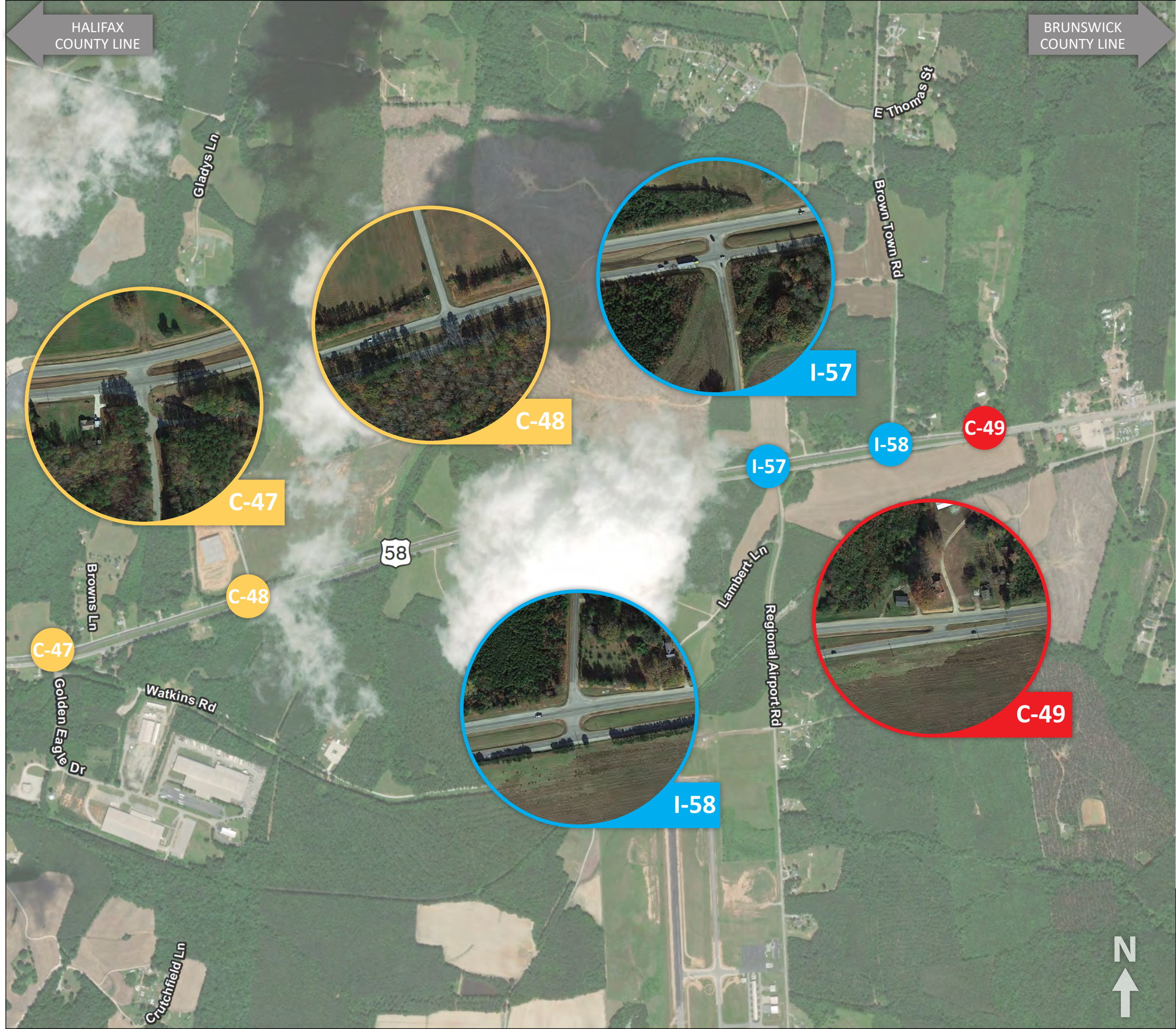
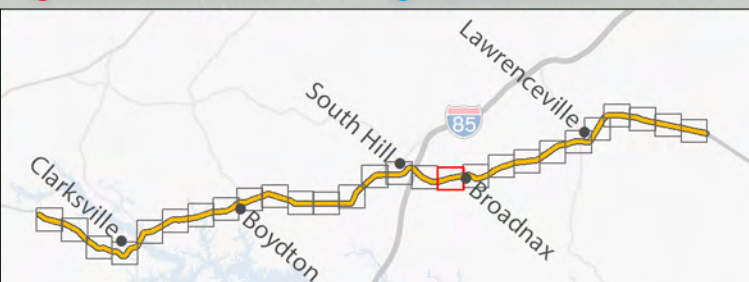
Crossover 48:
Recommendation: Lengthen all existing turn lanes on US 58.
Cost: \$0.4M to \$0.5M

Intersection 57: Regional Airport Rd with US 58
Recommendation: Reconfigure intersection to directional median permitting left turns and U-Turns from westbound US 58. Lengthen existing westbound left-turn lane and eastbound right-turn lane on US 58
Cost: \$0.5M to \$0.9M

Intersection 58: Brown Town Rd with US 58
Recommendation: Reconfigure intersection to directional median permitting left turns and U-Turns from eastbound US 58. Lengthen existing eastbound left-turn lane and westbound right-turn lane on US 58
Cost: \$0.5M to \$0.9M

Crossover 49:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



This aerial map illustrates the North Carolina Triangle region, highlighting major transportation corridors and specific project locations. The map is bounded by the Mecklenburg County Line to the west and the Greenville County Line to the east. Key features include:

- Major Highways:** I-59, I-60, I-77, I-85, I-95, and US-58 are shown.
- Local Roads:** Numerous roads are labeled, including Tanner Town Rd, North Ave, Dornia Ave, Branch Rd, Railroad St, Kerr Dr, High St, Cotton Ln, Richwood Dr, Virginia Rd, Dugger St, Marywood Dr, Main St, Woodland Dr, Jones Circle Rd, Rogers Rd, and Gholson Rd.
- Project Locations:** Specific project sites are marked with colored circles and labels:
 - I-59:** Two locations marked with blue circles.
 - I-60:** One location marked with a blue circle.
 - C-50:** Three locations marked with red circles.
 - C-51:** Three locations marked with green circles.
 - C-52:** Two locations marked with red circles.
 - C-53:** Two locations marked with green circles.
 - C-54:** Two locations marked with green circles.
- Geographic Features:** The map shows a mix of urban areas, agricultural fields, and forested land. A north arrow is located in the bottom right corner.

This aerial map illustrates the proposed transportation network in the North Carolina Triangle region, specifically focusing on the area around the intersection of Interstate 59 (I-59) and Interstate 60 (I-60). The map highlights several key project locations, each marked with a colored circle and a label:

- I-59:** Two blue circles indicate project locations along Interstate 59, one near the intersection with North Ave and another further north.
- I-60:** One blue circle indicates a project location along Interstate 60, near the intersection with Dornia Ave.
- C-50:** Three red circles indicate project locations along County Road 50, including one near the intersection with Branch Rd, one near the intersection with Railroad St, and one near the intersection with Main St.
- C-51:** Two green circles indicate project locations along County Road 51, including one near the intersection with Jones Circle Rd and another near the intersection with Rogers Rd.
- C-52:** Two red circles indicate project locations along County Road 52, including one near the intersection with Main St and another near the intersection with Rogers Rd.
- C-53:** Two green circles indicate project locations along County Road 53, including one near the intersection with Rogers Rd and another near the intersection with Main St.
- C-54:** Two green circles indicate project locations along County Road 54, including one near the intersection with Rogers Rd and another near the intersection with Main St.

The map also shows major highways (I-59, I-60, US-58) and local roads (North Ave, Dornia Ave, Branch Rd, Railroad St, Main St, Rogers Rd, Jones Circle Rd, Woodland Dr, Kerr Dr, High St, Cotton Ln, Richwood Dr, Virginia Rd, Dugger St, Marywood Dr). A north arrow is located in the bottom right corner.

I-# - Intersection #
C-# - Crossover #

Intersection 59: Main St with US 58

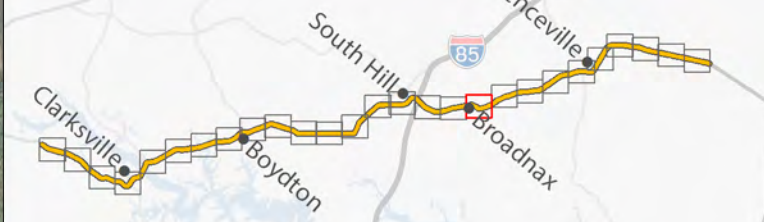
Recommendation: Construct eastbound right-turn lane and westbound left-turn lane on US 58.
Cost: \$2.6M to \$3.8M

Cost: \$2.6M to \$3.8M

Cost: \$2.6M to \$3.8M

Lawrence

Lawrence



US 58 Arterial Preservation Plan

Figure 31

Intersections & Median Crossovers

Brunswick County

I-# - Intersection #
C-# - Crossover #

Crossover 55:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 56:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

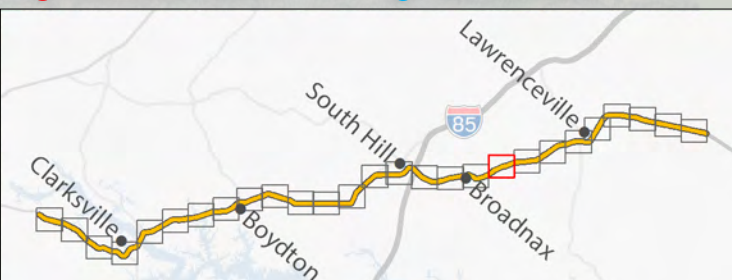
Crossover 57:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 58:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 59:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 60:
Recommendation: Reconfigure crossover to U-turn area for Intersection #61. Permit westbound US 58 left-turn movements.
Cost: Not Applicable

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



US 58 Arterial Preservation Plan

Figure 32

Intersections & Median Crossovers

Brunswick County

I-# - Intersection #
C-# - Crossover #



Intersection 61: Evans Creek Rd with US 58

Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Reconfigure Crossovers #60 & 61 to U-turn areas.

Cost: \$1.5M to \$2.2M

Crossover 61:

Recommendation: Reconfigure crossover to U-turn area for Intersection #61. Permit eastbound US 58 left-turn movements.

Cost: Not Applicable

Crossover 62:

Recommendation: No recommendation

Cost: Not Applicable

Crossover 63:

Recommendation: Reconfigure crossover to U-turn area for Intersection #62. Permit westbound US 58 left-turn movements.

Cost: Not Applicable

Intersection 62: Robinson Ferry Rd with US 58

Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Reconfigure Crossover #63 to U-turn area and construct east U-turn area.

Cost: \$1.3 to \$2.1

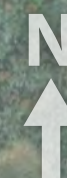
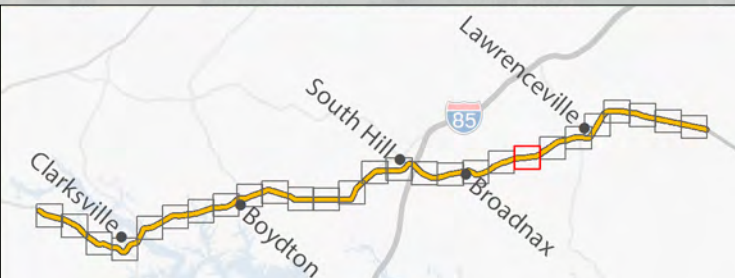
Crossover 64:

Recommendation: No recommendation

Cost: Not Applicable

● No Recommendation
● Recommended Removal

● Minor Improvement
● Major Improvement



MECKLENBURG
COUNTY LINE

GREENSVILLE
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 33

Intersections & Median Crossovers

Brunswick County

I-# - Intersection #
C-# - Crossover #

Crossover 65:
Recommendation: No recommendation
Cost: Not Applicable

Intersection 63: Union Woods Dr with US 58
Recommendation: Lengthen existing turn lanes on US 58.
Cost: \$0.6M to \$1.0M

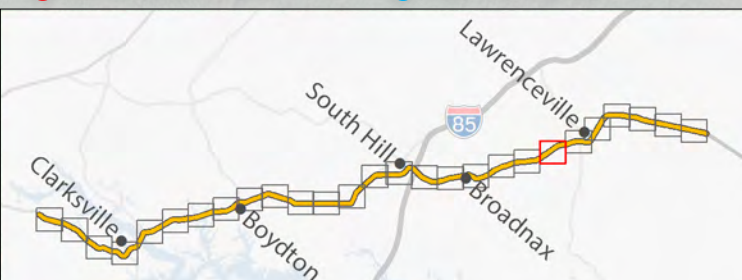
Crossover 66:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

Crossover 67:
Recommendation: Remove crossover.
Cost: \$0.2M to \$0.3M

Crossover 68:
Recommendation: Reconfigure crossover to U-turn area for Intersection #64. Permit westbound US 58 left-turn movements.
Cost: Not Applicable

Intersection 64: Pleasant Grove Rd with US 58
Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Reconfigure Crossovers #68 & 69 to U-turn areas.
Cost: \$0.4M to \$2.1M

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



I-63



C-65

I-63

C-66

Totaro Pl

Union Woods Dr

58



I-64



C-68



C-67



C-66

C-65



MECKLENBURG
COUNTY LINE

GREENSVILLE
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 34

Intersections & Median Crossovers

Brunswick County

I-# - Intersection #
C-# - Crossover #

Crossover 69:
Recommendation: Reconfigure crossover to U-turn area for Intersection #64.
Cost: See Intersection 68: Bright Leaf Rd with US 58

Crossover 70:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

Crossover 71:
Recommendation: Remove crossover
Cost: \$0.2M to \$0.3M

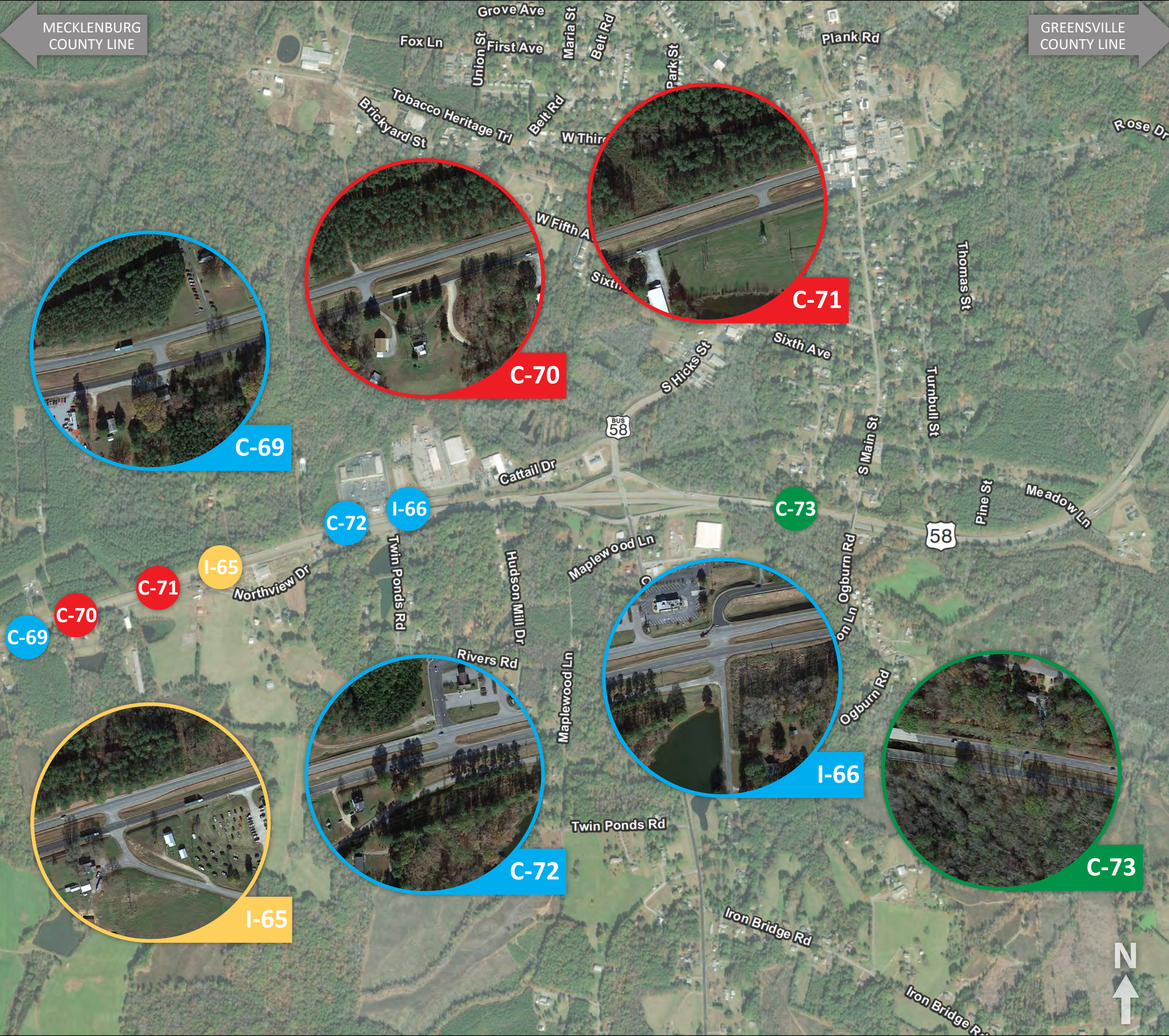
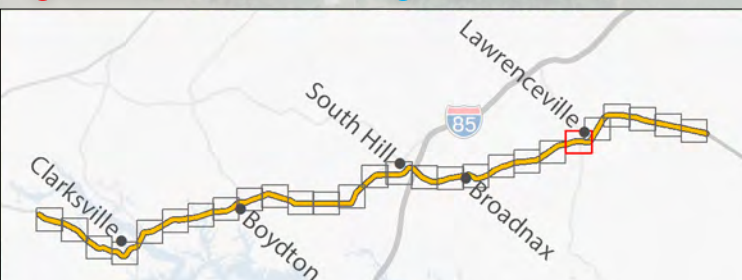
Intersection 65: Northview Dr with US 58
Recommendation: Lengthen existing westbound left-turn lane and construct eastbound right turn lane on US 58.
Cost: \$0.4M to \$0.6M

Crossover 72:
Recommendation: See Figure 35.
Cost: See Intersection 66: Cattail Dr with US 58

Intersection 66: Cattail Dr with US 58
Recommendation: See Figure 35
Cost: \$2.3M to \$3.4M

Crossover 73:
Recommendation: No recommendation
Cost: Not Applicable

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



MECKLENBURG
COUNTY LINE

GREENSVILLE
COUNTY LINE

Route 58 Arterial Management Plan

Figure 35

Intersection #66: US 58 and Cattail Dr Mecklenburg County

Recommendation: Reconfigure Crossover #72 with US 58 to a Continuous Green-T (CGT). Close north leg of Cattail Dr and permit right-in/right-out for the south leg. Improve Route 46/US 58 Interchange by extending westbound accelerations lanes and eastbound deceleration lanes.

ROW Impacts: Proposed interparcel connection may require ROW acquisition.

Improvement Type: Safety

Traffic Operations & Safety:

Traffic Operations

Reduced delay for vehicles entering and exiting Brunswick Square. Longer merge area for Route 46 Interchange permits merging at higher safer speeds

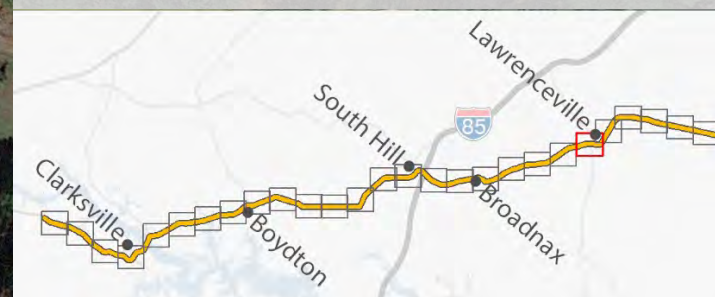
Safety

Reduced risk of angle crashes and conflicts with the Route 46 influence area. Longer acceleration and deceleration lanes at the Route 46 interchange reduces the risk of rear end and sideswipe crashes

Cost: \$2.3M to \$3.4M



Standard Movements



MECKLENBURG
COUNTY LINE

GREENSVILLE
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 36

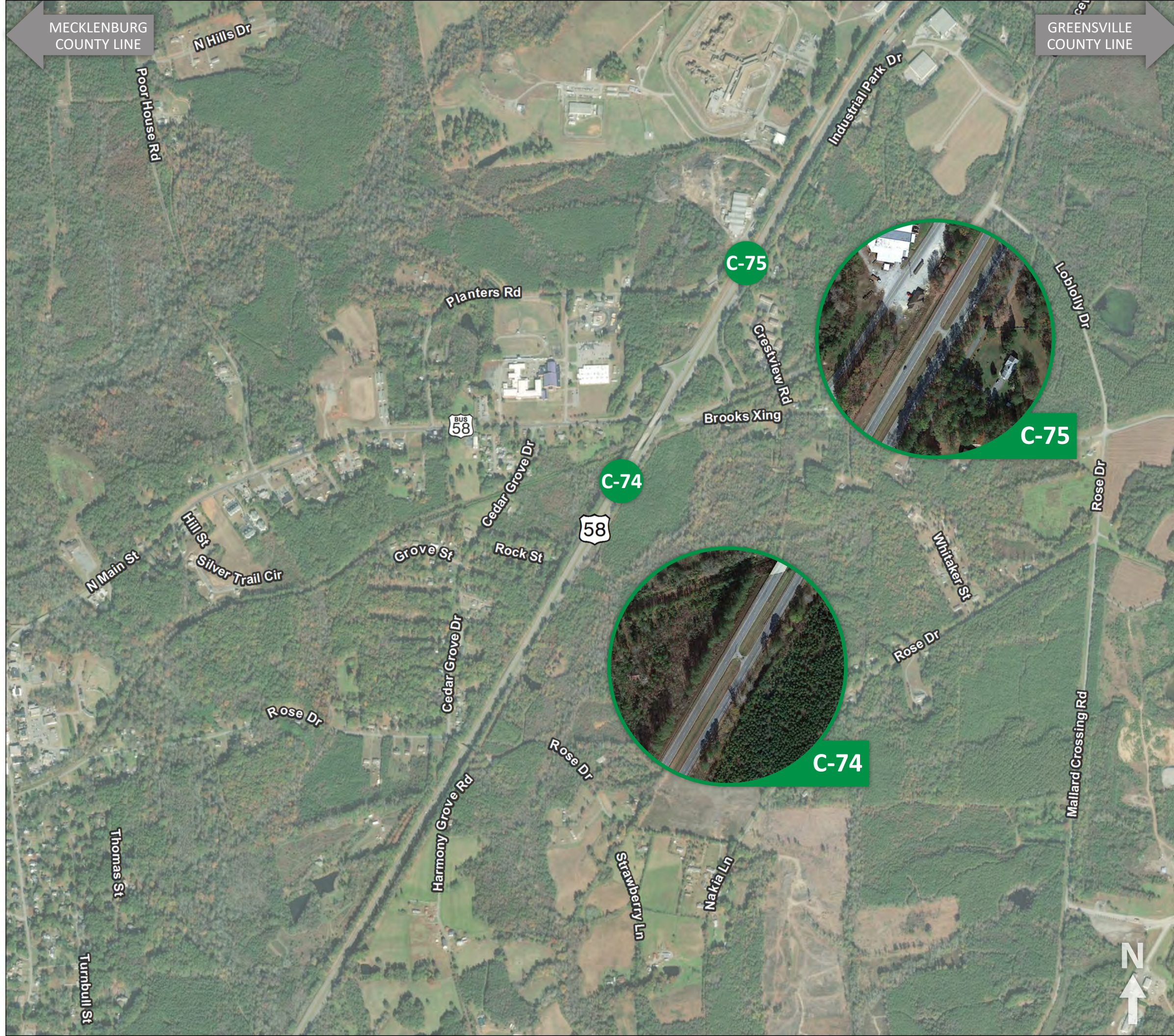
Intersections & Median Crossovers

Brunswick County

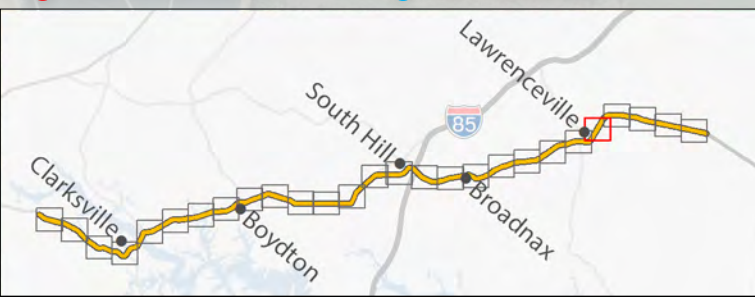
I-# - Intersection #
C-# - Crossover #

Crossover 74:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 75:
Recommendation: No recommendation
Cost: Not Applicable



● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



MECKLENBURG
COUNTY LINE

GREENSVILLE
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 37

Intersections & Median Crossovers

Brunswick County

I-# - Intersection #
C-# - Crossover #

Intersection 67: Lawrenceville Plank Rd with US 58
Recommendation: Lengthen all existing turn lanes on US 58.
Cost: \$0.5M to \$0.8M

Crossover 76:
Recommendation: Lengthen existing eastbound left-turn lane and construct westbound left-turn lane and eastbound right-turn lane on US 58.
Cost: \$0.7M to \$1.0M

Intersection 68: Bright Leaf Rd with US 58
Recommendation: See Figure 38
Cost: \$1.1M to \$1.7M

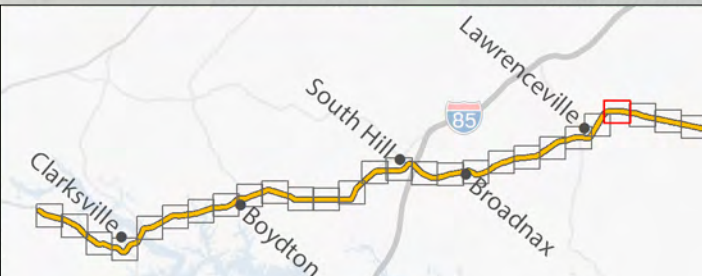
Intersection 69: Airport Dr with US 58
Recommendation: See Figure 38
Cost: \$0.3M to \$0.6M

Crossover 77:
Recommendation: Lengthen existing right-turn lane on US 58.
Cost: \$0.3M to \$0.4M

Crossover 78:
Recommendation: Lengthen existing right-turn lane on US 58.
Cost: \$0.1M to \$0.3M

Intersection 70: Brooks Crossing with US 58
Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Utilize Crossover #78 & Intersection #71 for U-turn areas.
Cost: \$1.1M to \$1.8M

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



I-67

C-76

I-68

I-67

C-76

I-68

I-69

58

C-77

C-78

I-70

C-77

C-78

I-70

I-69

Brooks Xing

Planters Rd

Blueberry Ct

Bright Leaf Rd

Circle Dr

Airport Dr

Brooks Xing

Lawrenceville Plank Rd



MECKLENBURG
COUNTY LINE

GREENSVILLE
COUNTY LINE

Bright Leaf Rd

Airport Dr

58

RCUT Alternative

Route 58 Arterial Management Plan

Figure 38

Intersection #68: US 58 and Bright Leaf Rd
Intersection #69: US 58 and Airport Dr
Mecklenburg County

Recommendation: Reconfigure intersection of Bright Leaf Rd with US 58 to a Continuous Green-T (CGT). Construct U-turn area west of main intersection to permit movements from Bright Leaf Rd or US 58 westbound to Airport Dr. Reconfigure the intersection of Airport Dr with US 58 to right-in/right-out. Construct U-turn area east of Airport Dr to permit movements from Airport Drive to Bright Leaf Rd or US 58 westbound. A restricted crossing U-turn (RCUT) alternative is also applicable for this location.

ROW Impacts: Most improvements are within the ROW. The extended eastbound right-turn lane may have little to no ROW impacts.

Improvement Type: Safety

Traffic Operations & Safety:

Traffic
Operations

Reduced delay for vehicles exiting
Bright Leaf Rd and Airport Drive.

Safety

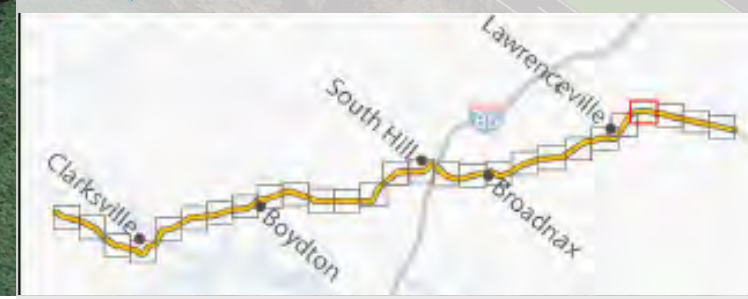
Reduced risk of angle crashes at
both the intersections of Bright
Leaf Rd and Airport Dr with US 58.
Increased sight-distance for
turning vehicles. Eliminates trucks
stopped in the median blocking
traffic.

Cost: \$1.4M to \$2.3M



Standard Movements

Re-routed Movements



MECKLENBURG
COUNTY LINE

GREENSVILLE
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 39

Intersections & Median Crossovers

Brunswick County

I-# - Intersection #

C-# - Crossover #

Intersection 71: County Pond Rd with US 58

Recommendation: Lengthen existing left turn lanes on US 58 and construct right turn lanes on US 58.

Cost: \$0.4M to \$0.6M

Crossover 79:

Recommendation: No recommendation

Cost: Not Applicable

Crossover 80:

Recommendation: No recommendation

Cost: Not Applicable

Intersection 72: Eastside Rd with US 58

Recommendation: Lengthen existing left-turn lanes and construct right-turn lanes on US 58. Consolidate access on westbound US 58.

Cost: \$1.1M to \$1.8M

Crossover 81:

Recommendation: No recommendation

Cost: Not Applicable

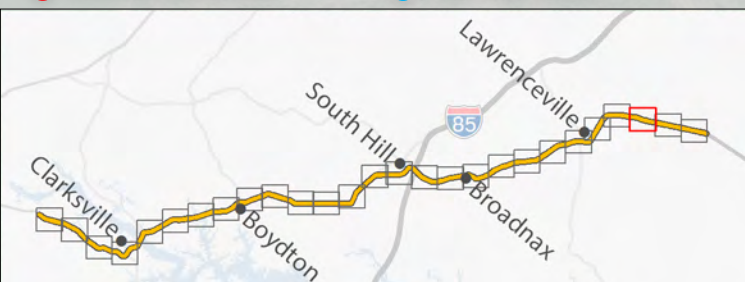
Intersection 73: Vulcan Quarry Ln with US 58

Recommendation: Lengthen existing westbound left-turn lane and construct eastbound right-turn lane on US 58.

Cost: \$0.4M to \$0.7M

● No Recommendation
● Recommended Removal

● Minor Improvement
● Major Improvement



MECKLENBURG
COUNTY LINE

GREENSVILLE
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 40

Intersections & Median Crossovers

Brunswick County





I-# - Intersection #
C-# - Crossover #

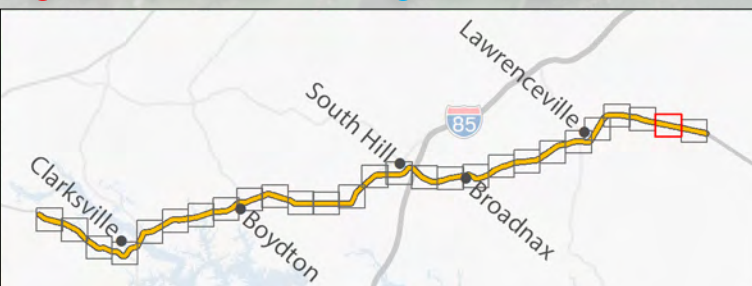
Crossover 82:
Recommendation: No recommendation
Cost: Not Applicable

Intersection 74: Dominion Power with US 58
Recommendation: No recommendation
Cost: Not Applicable

Crossover 83:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 84:
Recommendation: No recommendation
Cost: Not Applicable

 No Recommendation
 Recommended Removal
 Minor Improvement
 Major Improvement



C-82



I-74



C-83



C-84

58

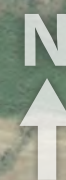
C-83

C-84

Walton Rd

Reedy Creek Rd

Reedy Creek Rd



MECKLENBURG
COUNTY LINE

GREENSVILLE
COUNTY LINE

US 58 Arterial Preservation Plan

Figure 41

Intersections & Median Crossovers

Brunswick County

I-# - Intersection #
C-# - Crossover #

Intersection 75: Freemans Cross Rd with US 58
Recommendation: Reconfigure intersection to restricted crossing U-turn (RCUT). Utilize Crossovers #84 & Intersection #85 for U-turn areas.
Cost: \$0.9M to \$1.3M

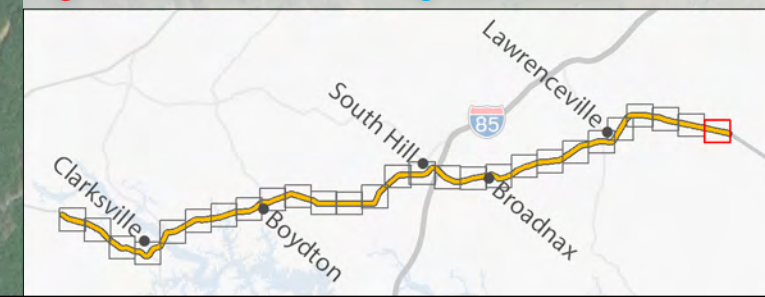
Crossover 85:
Recommendation: Construct left-turn lanes on US 58.
Cost: \$0.3M to \$0.4M

Crossover 86:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 87:
Recommendation: No recommendation
Cost: Not Applicable

Crossover 88:
Recommendation: No Recommendation.
Cost: Not Applicable

● No Recommendation
● Recommended Removal
● Minor Improvement
● Major Improvement



I-75

C-85

Markum Rd

C-85

C-86

Westward Rd

C-86

58

C-87

C-88

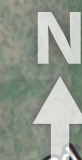
C-87

C-88

Belfield Rd

Belfield Rd

Belfield Rd



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APPENDIX B: FIELD REVIEW

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US 58 Field Review

Conducted: June 12, 2018

Objectives:

- Review roadway and intersection configurations
- Identify deficiencies and areas of concern
 - Sight distance or steep grades
- Identify unique roadway features
- Observe traffic operations





- **Halifax / Mecklenburg County Line to US 58 Business (Virginia Ave.)**

- Rolling terrain
- Intersection and crossovers with sub-standard turn lanes
- Mix of shoulder type
 - Portions without a paved shoulder
 - Widens to 4ft (EB) and 8ft (WB) gravel shoulders
- Grade differentials between EB and WB at intersections and crossovers



- **US 58 Business to US 15 Interchange**

- Partial controlled access
- Close proximity of Rte. 723 intersection to interchange
- 8ft paved shoulders





- **US 15 Interchange to Rte. 92 (Washington St.)**
 - Level terrain
 - 8ft paved shoulders
 - Limited access section around Clarksville
 - Some closely spaced intersections
 - Rte. 92 Intersection controlled with flashers
 - Limited sight distance for EB approach
 - WB right-turn lane is sub-standard
- **Rte. 92 (Washington St.) to Rte. 4 (Buggs Island Rd.)**
 - Numerous crossovers and increasing access on this segment
 - Rte. 4 intersection has steep inclines on both US 58 approaches. May limit sight distance on side streets





- **Rte. 4 (Buggs Island Rd.) to Western US 1 Intersection**
 - More rolling terrain – may be problematic for heavy vehicles
 - Minor intersections with sight distance concerns
 - Redundant crossovers
 - Cross slope at US 1 intersection not ideal for trucks
- **Western US 1 Intersection to Rte. 780 (Theater Rd.)**
 - TWLTL between US 1 intersections
 - Increase in direct access to US 58
 - Accel lane onto WB US 58 at eastern US 1 intersection appears short.
 - Some sight distance concerns at Rte. 780 intersection



- **Rte. 780 (Theater Rd.) to Rte. 643 (E. Atlantic St.)**
 - 8' – 10' paved shoulders
 - Minimal access and crossovers
 - Rte. 643 intersection in close proximity to I-85 interchange
- **I-85 / US 58 Interchange**
 - SB I-85 to WB US 58 has improper through movement pavement marking leading to a small gravel section in the median
 - T-intersection for SB I-85 to WB US 58 may be problematic for trucks entering the roadway
 - No turn lane or taper for WB US 58 to NB I-85



Source: Google



- **I-85 Interchange to Rte. 621 (N. Main St.)**
 - Motorists cutting across EB US 58 from NB I-85 off ramp to entrance of Shell gas station. (Less than 600')
 - Numerous access points and median crossovers
 - Shaw St. / Cycle Ln. has a significant grade disparity between EB and WB US 58
 - Rte. 621 intersection:
 - Side street approaches have steep grades and sharp curves
 - Lots of access points around intersection
- **Rte. 621 (N. Main St.) to Town of Brodnax**
 - Inconsistent shoulder width and type
 - Crossovers lacking turn lanes
 - Rolling terrain





- **Town of Brodnax**
 - TWLTL throughout
 - Lots of direct access
 - 4' grass / gravel shoulders
- **Town of Brodnax to Rte. 644 (Robinson Ferry Rd.)**
 - Variable shoulder width and type
 - Crossovers without turn lanes
 - Sight distance concerns to some crossovers due to rolling terrain
 - Sub-standard turn lanes and a cross slope through the intersection with Rte. 644



- **Rte. 644 (Robinson Ferry Rd.) to Rte. 46 (Christanna Hwy)**

- Crossovers without turn lanes
- Sight distance concerns to some crossovers due to rolling terrain
- 4' paved or gravel shoulders

- **Rte. 46 (Christanna Hwy) to Rte. 641 (Bright Leaf Rd.)**

- Limited Access until near Rte. 641
- Sub-standard turn lanes for crossovers on the eastern portion
- Rte. 641 intersection:
 - Skewed intersection
 - Wide median may make it difficult for trucks





- **Rte. 641 (Bright Leaf Rd.) to Eastside Rd.**
 - Lots of commercial activity
 - Redundant crossovers and many lack turn lanes
 - Rte. 712 intersection:
 - Controlled by overhead flashers
 - Grade differential between EB and WB US 58 may be difficult to cross
 - Decision making may be difficult due to width of median
- **Eastside Rd. to Brunswick Co. Line**
 - Rolling Terrain
 - Varying shoulder types and widths







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APPENDIX C: INFRASTRUCTURE INVENTORY

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Infrastructure Inventory



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards

339.1 Existing left turn lanes do not meet VDOT design requirements (storage length).

339.3 Existing left turn lanes do not meet VDOT design requirements. No US 58 right turn lanes. Grade differential.

339.7 Existing left turn lanes do not meet VDOT design requirements. Grade differential.

340.2 Existing left turn lanes do not meet VDOT design requirements. No US 58 right turn lanes.

340.5 Existing left turn lanes do not meet VDOT design requirements. No US 58 right turn lanes.

340.9 Existing left turn lanes do not meet VDOT design requirements.

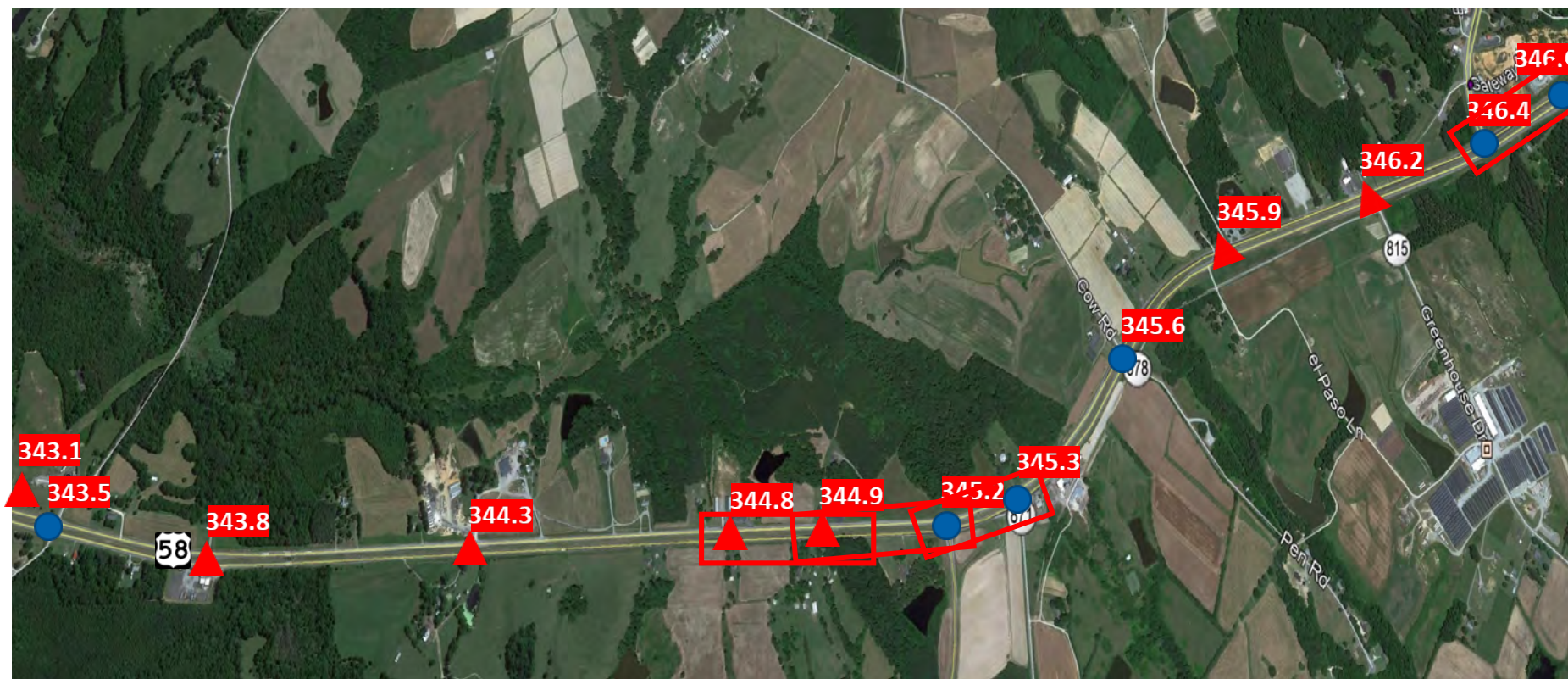
341.3 Existing left turn lanes do not meet VDOT design requirements. Truck U-Turn tire marks.





341.6 Existing left turn lanes do not meet VDOT design requirements. No eastbound US 58 right turn lane

341.7 Existing left turn lanes and southbound right turn lane do not meet VDOT design requirements. Ambulatory injury

342.2 Existing left turn lanes do not meet VDOT design requirements. Existing Eastbound US 58 Right turn lane does not meet VDOT design requirements. Ambulatory Injury

342.7 Existing left turn lanes do not meet VDOT design requirements.



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards



343.1 Existing turn lanes do not meet VDOT design requirements. Skewed intersection, Multiple street and driveway accesses. (High crash point Fatal and Ambulatory).

343.5 All existing turn lanes do not meet VDOT design requirements.

343.8 Existing left turn lanes do not meet VDOT design requirements. Visible injury

344.3 Existing left turn lanes do not meet VDOT design requirements. No US 58 Right turn lanes.

344.8 Existing left turn lanes do not meet VDOT design requirements.

344.9 Existing left turn lanes do not meet VDOT design requirements

345.2 Existing left turn lanes do not meet VDOT design requirements. Grade difference. Visible injury.

345.3 Existing left turn lanes do not meet VDOT design requirements. Ambulatory injury. Access management.

345.6 Existing left turn lanes do not meet VDOT design requirements. No US 58 Right turn lanes. Visible injury.





345.9 Existing left turn lanes do not meet VDOT design requirements.

346.2 Existing left turn lanes do not meet VDOT design requirements. No US 58 Right turn lanes.

346.4 Existing left turn lanes do not meet VDOT design requirements. (Ambulatory Injury)

346.6 Existing left turn lanes do not meet VDOT design requirements.



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards



347.4 All Existing turn lanes do meet VDOT design requirements. Some vertical curve sight issues.

348.4 No left turn lanes exist at this median crossover

349.0 No left turn lanes exist at this median crossover.

351.1 All existing turn lanes do meet VDOT design requirements.

351.3 Existing turn lanes do meet VDOT design requirements.





351.6 All existing turn lanes do meet VDOT design requirements. Ambulatory injury.

351.9 Existing turn lanes do meet VDOT design requirements. No US 58 right turn lanes.

352.6 Existing turn lanes do meet VDOT design requirements.

352.8 All Existing turn lanes do not meet VDOT design requirements. No southbound and northbound right lanes.



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards

353.1

All Existing left turn lanes do not meet VDOT design requirements. Ambulatory injury. No westbound left turn lane.

353.3

All exiting turn lanes do meet the VDOT requirements. Visible injury.

353.8

All existing turn lanes do meet the VDOT requirements.

354.2

Existing US 58 left turn lanes do meet VDOT design requirements.

354.6

Existing left turn lanes do meet VDOT design requirements.

354.8

Existing US 58 left turn lanes do not meet VDOT design requirements. Fatal injury.

355.1

All Existing US 58 turn lanes do meet VDOT design requirements, except for WB right turn lane is short



| | | | | | |
|--------------|--|--------------|---|--------------|---|
| 355.8 | Existing US 58 left turn lanes do meet VDOT design requirements. | 357.4 | Existing east bound US 58 left turn lanes do meet VDOT design requirements. | 358.3 | Existing westbound US 58 left turn lanes do meet VDOT design requirements. (storage length). |
| 356.2 | Existing US 58 left turn lanes do meet VDOT design requirements. Existing US 58 right turn lanes do meet VDOT design requirements. | 357.9 | Existing US 58 left turn lanes are TWLTL turn lanes.. | 358.5 | Existing US 58 left turn lanes do not meet VDOT design requirements. Fatal injury in short distance after the crossover |
| 356.7 | Existing US 58 left turn lanes do meet VDOT design requirements. | 358.0 | Existing US 58 left turn lanes do not meet VDOT design requirements. | 358.9 | Existing US 58 left turn lanes and eastbound right turn lane do meet VDOT design requirements. No westbound US 58 right lane. High crashes point in the intersection. |
| 356.9 | Existing east bound US 58 left turn lanes do meet VDOT design requirements. | | | | |



359.5 Existing US 58 left turn lanes and eastbound right turn lane do meet VDOT design requirements. Existing US 58 eastbound right turn lane does not meet VDOT design requirements. High rate of crashes. Sight distance issue on eastbound approach.

359.8 Existing US 58 left turn lanes do meet VDOT design requirements. Existing US 58 eastbound right turn lane does not meet VDOT design requirements. (Ambulatory injury crash reported)

360.2 Existing westbound US 58 left turn lane do meet VDOT design requirements. ((Extra wide median))

360.4 Existing eastbound US 58 left turn lane and right turn lanes do not meet VDOT design requirements. High rate of crashes.

361.0 Existing US 58 left turn lanes do meet VDOT design requirements. Ambulatory injury.

361.7 All existing US 58 left turn lanes do meet VDOT design requirements.

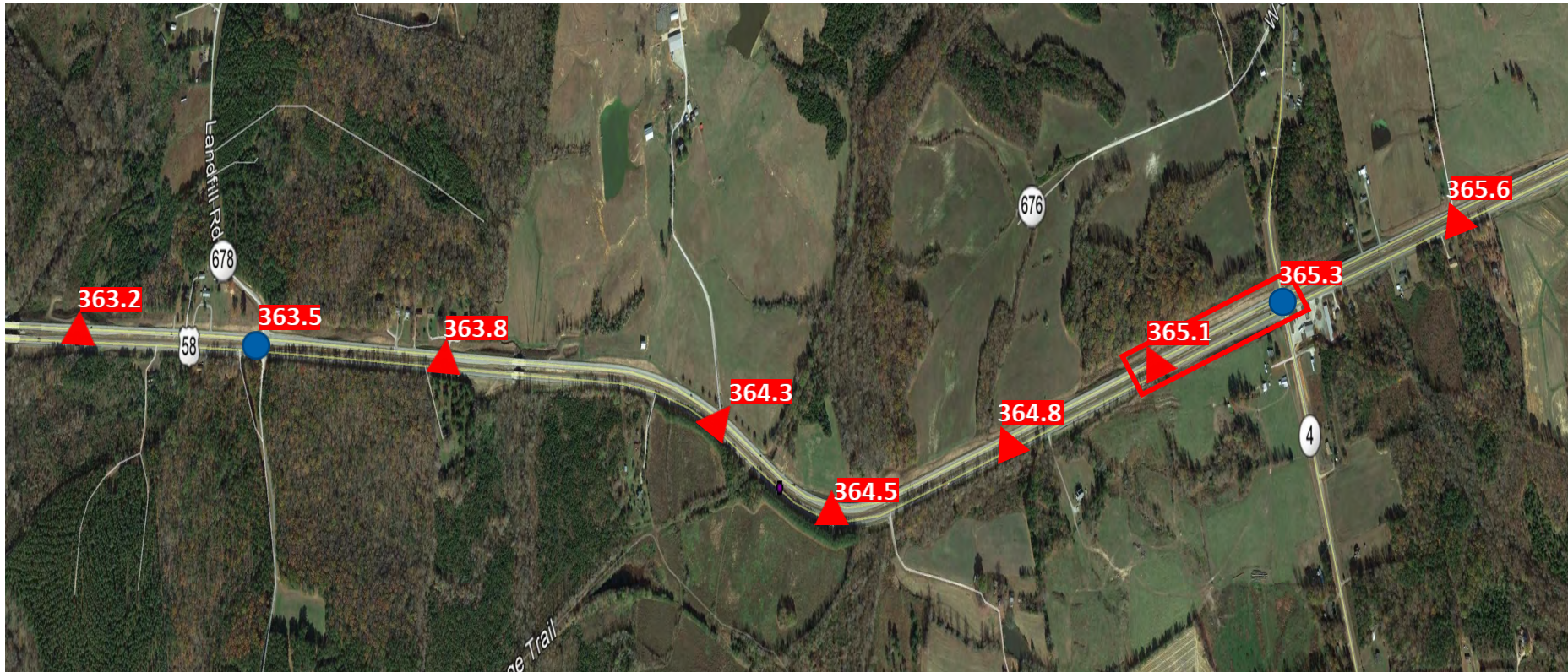
361.9 Existing US 58 left turn lanes do not meet VDOT design requirements. Ambulatory crashes.





362.1 All existing US 58 left turn lanes do meet VDOT design requirements. . High crashes access point. Spacing does not meet VDOT requirements.

362.5 Existing US 58 left turn lanes do meet VDOT design requirements.

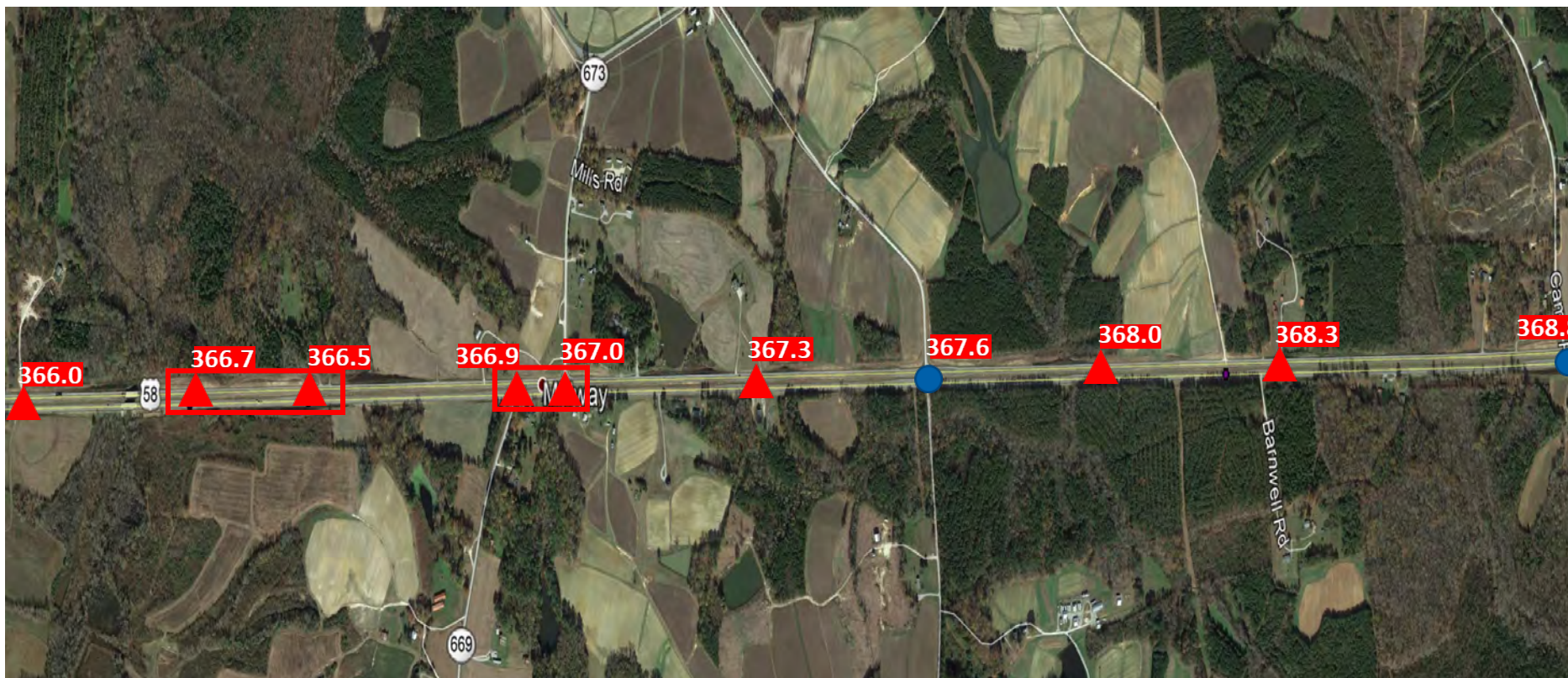
362.7 Existing US 58 left turn lanes do meet VDOT design requirements.





362.9 Existing US 58 left turn lanes do meet VDOT design requirements. No US 58 right turn lanes.



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards

| | | | | | |
|--------------|--|--------------|--|--------------|---|
| 363.2 | Existing US 58 left turn lanes do meet VDOT design requirements | 364.5 | Existing US 58 left turn lanes do meet VDOT design requirements. Visible injury. | 365.3 | Existing US 58 right turn lanes do not meet VDOT design requirements. Sight issue to see the intersection due to incline in both sides. High rate of visible injury crashes |
| 363.5 | All existing US 58 turn lanes do meet VDOT design requirements. | 364.8 | No US 58 left turn lanes. | 365.6 | Existing US 58 left turn lanes do meet VDOT design requirements |
| 363.8 | Existing US 58 left turn lanes do not meet VDOT design requirements | 365.1 | Existing US 58 left turn lanes do meet VDOT design requirements | | |
| 364.3 | Existing westbound US 58 left turn lanes does not meet VDOT design requirements. | | | | |



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards

| | | | | | |
|--------------|---|--------------|---|--------------|---|
| 366.0 | Existing US 58 left turn lanes do meet VDOT design requirements | 367.0 | Existing westbound US 58 left turn lane does not meet VDOT design requirements. | 368.3 | Existing US 58 left turn lanes do meet VDOT design requirements. Fatal crash |
| 366.3 | Existing US 58 left turn lanes do not meet VDOT design requirements | 367.3 | Existing US 58 left turn lanes do meet VDOT design requirements. Visible crash. | 368.8 | Existing US 58 left turn lanes do meet VDOT design requirements. Existing US 58 Westbound right turn lane does not meet VDOT design requirements. |
| 366.5 | Existing US 58 left turn lanes do not meet VDOT design requirements | 367.6 | Existing westbound US 58 left turn lane do meet VDOT design requirements | | |
| 366.9 | Existing eastbound US 58 left turn lane does not meet VDOT design requirements. | 368.0 | Existing US 58 left turn lanes do meet VDOT design requirements | | |



Signalized Intersection



Unsignalized Intersection



Median Crossovers



Inadequate intersection spacing per VDOT standards

369.2

Existing eastbound US 58 left turn lanes do meet VDOT design requirements

369.5

Existing eastbound US 58 left turn lane does meet VDOT design requirements. Begin TWLTL east of intersection.

369.8

Existing US 58 TWLTL left turn lanes.

370.5

Existing US 58 TWLTL left turn lanes. No US 58 right turn lanes. High rate of crashes.

370.9

Existing US 58 TWLTL left turn lanes. No US 58 right turn lanes. High rate of crashes. TWLTL inconsistent.

371.3

Existing US 58 TWLTL left turn lanes. Driveways only.



Flashers-Intersection



Signalized Intersection



Unsignalized Intersection



Median Crossovers



Inadequate intersection spacing per VDOT standards

372.2

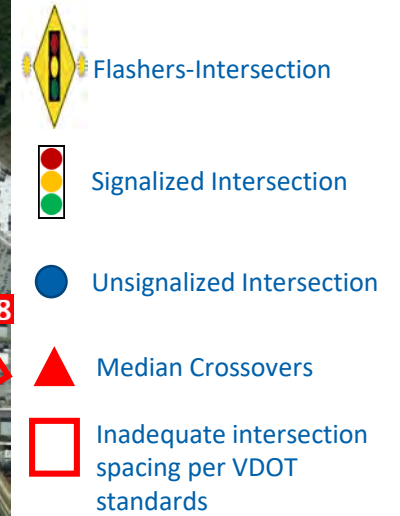
Existing US 58 left turn lanes TWLTL (inconsistent).

372.5

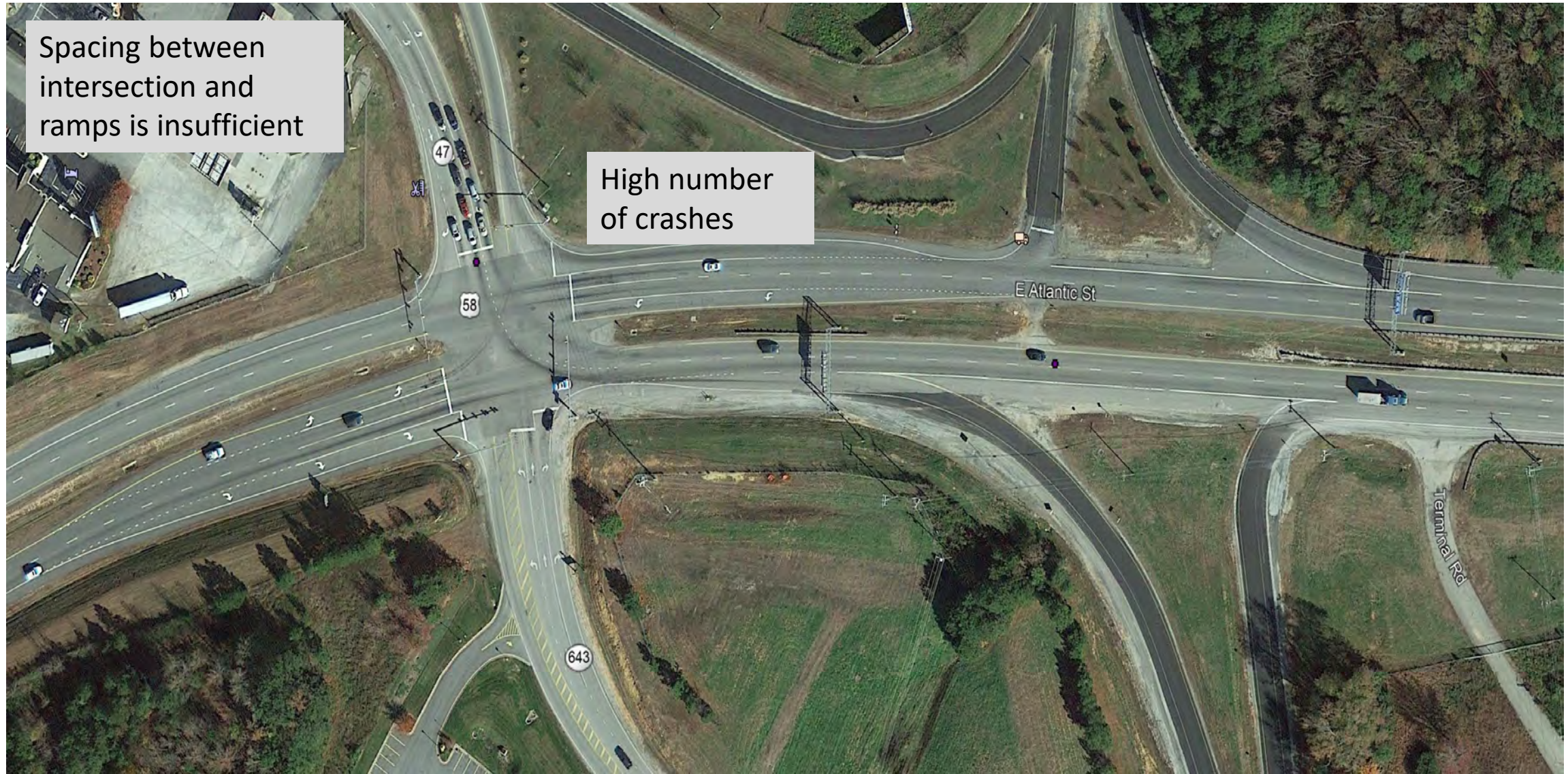
Existing US 58 left turn lanes TWLTL (inconsistent). This intersection has overhead flashers. Westbound on-ramp from US 1 (Eastern) acceleration lane too short. Ambulatory crashes.

372.7

Westbound Acceleration lane is short.

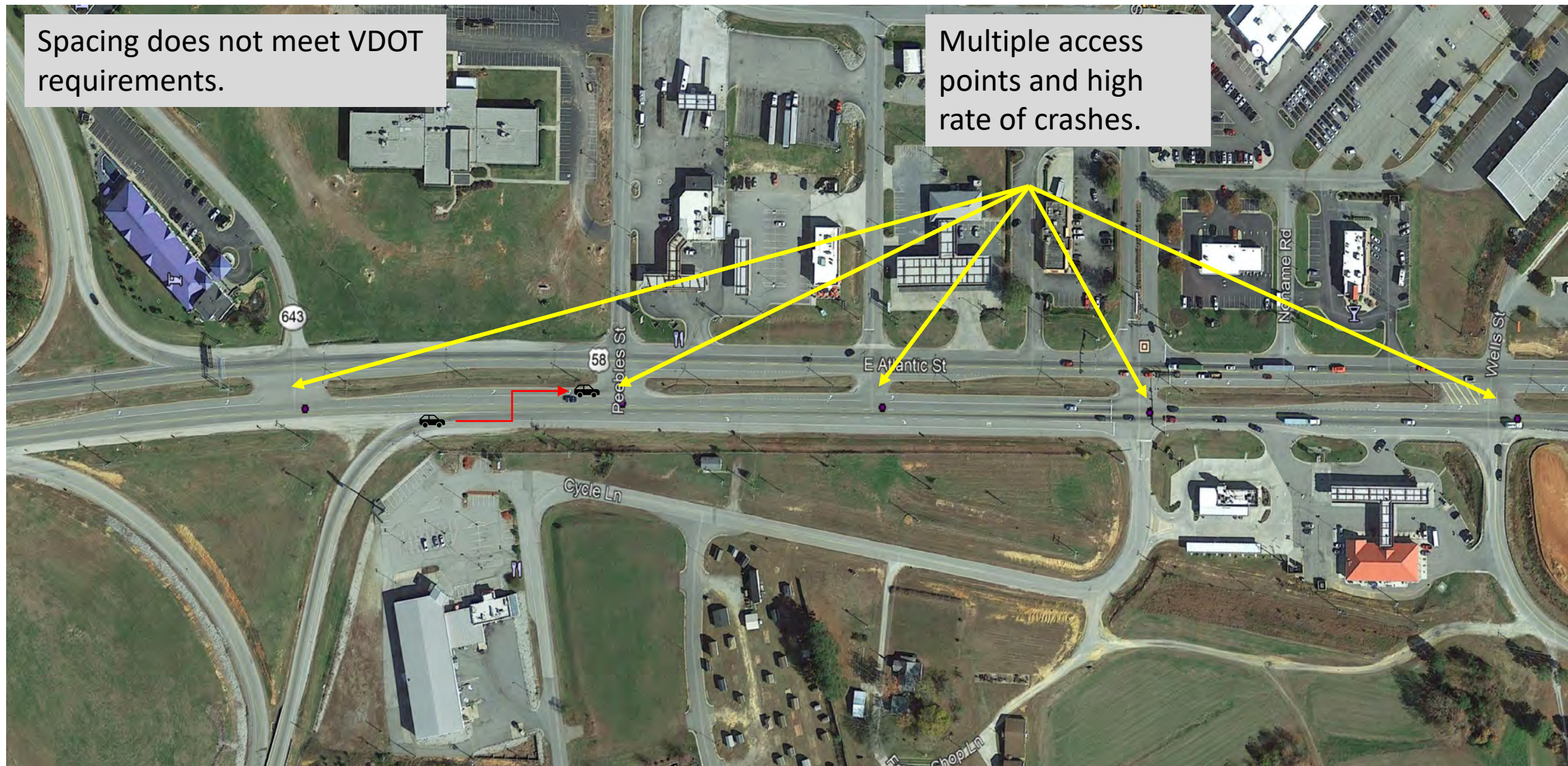


| | | | | | |
|--------------|---|--------------|--|--------------|---|
| 373.0 | Existing westbound US 58 left turn lane and all right turn lanes do not meet VDOT design requirements. Sight distance issue for north bound. High rate of crashes. | 376.2 | The intersection meets VDOT design requirements except for the distance between intersection and interchange ramp. High rate of visible injury crashes | 376.8 | Existing US 58 left turn lanes do meet VDOT design requirements. Multiple ambulatory crashes. Visible crash. |
| 373.4 | Existing US 58 left turn lanes do meet VDOT design requirements | 376.3 | No US 58 left lanes. Fatal crashes. | 376.9 | Existing US 58 left turn lanes do meet VDOT design requirements. Existing eastbound US 58 right turn lane does meet VDOT design requirements. Multiple access points. Multiple ambulatory crashes |
| 374.6 | Existing US 58 left turn lanes do meet VDOT design requirements. Existing eastbound US 58 right turn lane does not meet VDOT design requirements. | 376.6 | Existing US 58 left turn lanes do meet VDOT design requirements. No US 58 right turn lanes | 377.0 | All exiting US 58 do meet the VDOT design requirements. Multiple access points. High rate of crashes. |
| 375.6 | Existing US 58 left turn lanes do not meet VDOT design requirements. Existing US 58 eastbound right turn lane does not meet VDOT design requirements. High rate of crashes. | 376.7 | Existing US 58 left turn lanes do meet VDOT design requirements. Ambulatory injury crashes. Visible crash | | |



Spacing between intersection and ramps is insufficient

High number of crashes



Spacing does not meet VDOT requirements.

Multiple access points and high rate of crashes.



377.3

Existing US 58 left turn lanes do meet VDOT design requirements.

377.4

Existing westbound US 58 right turn lane does not meet VDOT design requirements

377.6

Existing US 58 left turn lanes do not meet VDOT design requirements. Existing eastbound US 58 right turn lane does not meet VDOT design requirements

377.8

All existing US 58 left turn lanes do meet VDOT design requirements.

378.2

All existing US 58 left and right turn lanes do not meet VDOT design requirements. ((Access points))

378.4

Existing US 58 left turn lanes do meet VDOT design requirements.

378.6

Existing US 58 left turn lanes do meet VDOT design requirements.





378.9

Existing eastbound US 58 left turn lane does not meet VDOT design requirements. Fatal crash

379.3

All Existing US 58 left and right turn lanes do meet VDOT design requirements.



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards

380.3

No US 58 left turn lanes. High rate of Crashes.

380.5

No US 58 left turn lanes exist.

380.7

No US 58 turn lanes exist. Is this for authorized vehicles?

381.4

Existing US 58 TWLTL left turn lanes.

381.5

Existing US 58 TWLTL left turn lanes. Multiple access points.

382.3

No US 58 left lanes exist

382.6

No US 58 left lanes exist.

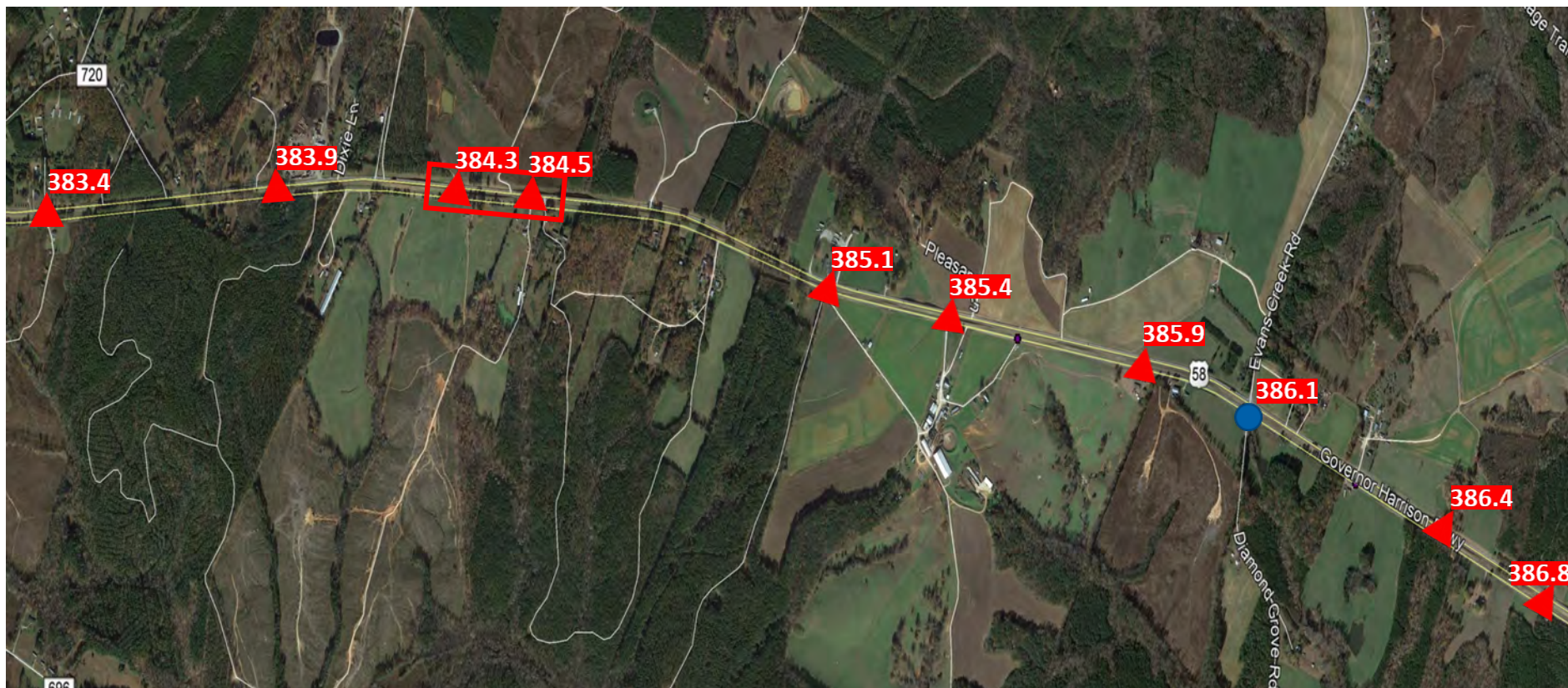
382.8





No US 58 left lanes exist

383.1

No US 58 left lanes exist.





-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards







- 383.4** No US 58 left turn lanes. Multiple driveways.
- 383.9** Existing US 58 westbound turn lane does not meet VDOT design requirements. No US 58 eastbound left turn lane. Fatal crash.
- 384.3** No US 58 left turn lanes
- 384.5** No US 58 Left turn lanes

- 385.1** Existing eastbound US 58 left turn lane does not meet VDOT requirements. No US 58 westbound left turn lane.((Access points))
- 385.4** No US 58 Left turn lane.
- 385.9** No US 58 Left turn lane.
- 386.1** Existing US 58 left turn lanes do not meet VDOT design requirements.
- 386.4** No US 58 Left turn lane. Ambulatory injury crashes in this access point.





- 386.8** No US 58 Left turn lane.



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards

| | | | | | |
|--------------|---|--------------|---|--------------|---------------------------|
| 387.4 | No US 58 left turn lanes. | 389.3 | Existing US 58 left and right turn lanes do not meet VDOT design requirements. Visible injury crashes. | 390.9 | No US 58 left turn lanes. |
| 387.8 | All exiting US 58 turn lanes do not meet VDOT requirements. High rate of crashes include fatal crashes. Grade difference. | 389.5 | No US 58 left turn lanes. | | |
| | | - | | | |
| 388.0 | No US 58 left turn lanes. Visible crash. | 390.5 | | | |
| | | - | | | |
| 388.4 | No US 58 left turn lanes. | 390.7 | | | |
| | | 390.8 | Exiting US 58 eastbound left turn lane does not meet VDOT requirements. No US 58 westbound left turn lane. Exiting US 58 westbound right turn lane does not meet VDOT requirements. No US 58 eastbound right turn lane. | | |



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards

390.9
-
391.0
-
391.2

No US 58 left turn lanes

391.3

Existing US 58 westbound left turn lane does not meet VDOT design requirements. No eastbound US 58 left turn lane

391.5

Existing US 58 eastbound left turn lane does not meet VDOT design requirements. No westbound US 58 left turn lane






391.6

Existing US 58 left turn lanes do not meet VDOT design requirements. No US 58 right turn lanes

392.4

No US 58 left turn lanes



-  Flashers-Intersection
-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards

394.5
-
394.8

No US 58 left turn lanes. . One Ambulatory injury crashes in this access point 394.5.

396.1

Exiting US 58 left turn lanes do not meet VDOT requirements. Exiting eastbound US 58 right turn lane does not meet VDOT requirements.

396.3

Existing westbound US 58 left turn lane does no meet VDOT requirements. No eastbound left turn lane.

396.6

Existing eastbound US 58 left turn lane does no meet VDOT requirements. No US 58 westbound left turn lane. Fatal crash

396.7

Existing westbound US 58 left turn lane does no meet VDOT requirements. No US 58 eastbound left turn lane

397.1

Existing westbound US 58 left turn lane does no meet VDOT requirements. No US 58 eastbound left turn lane

397.4

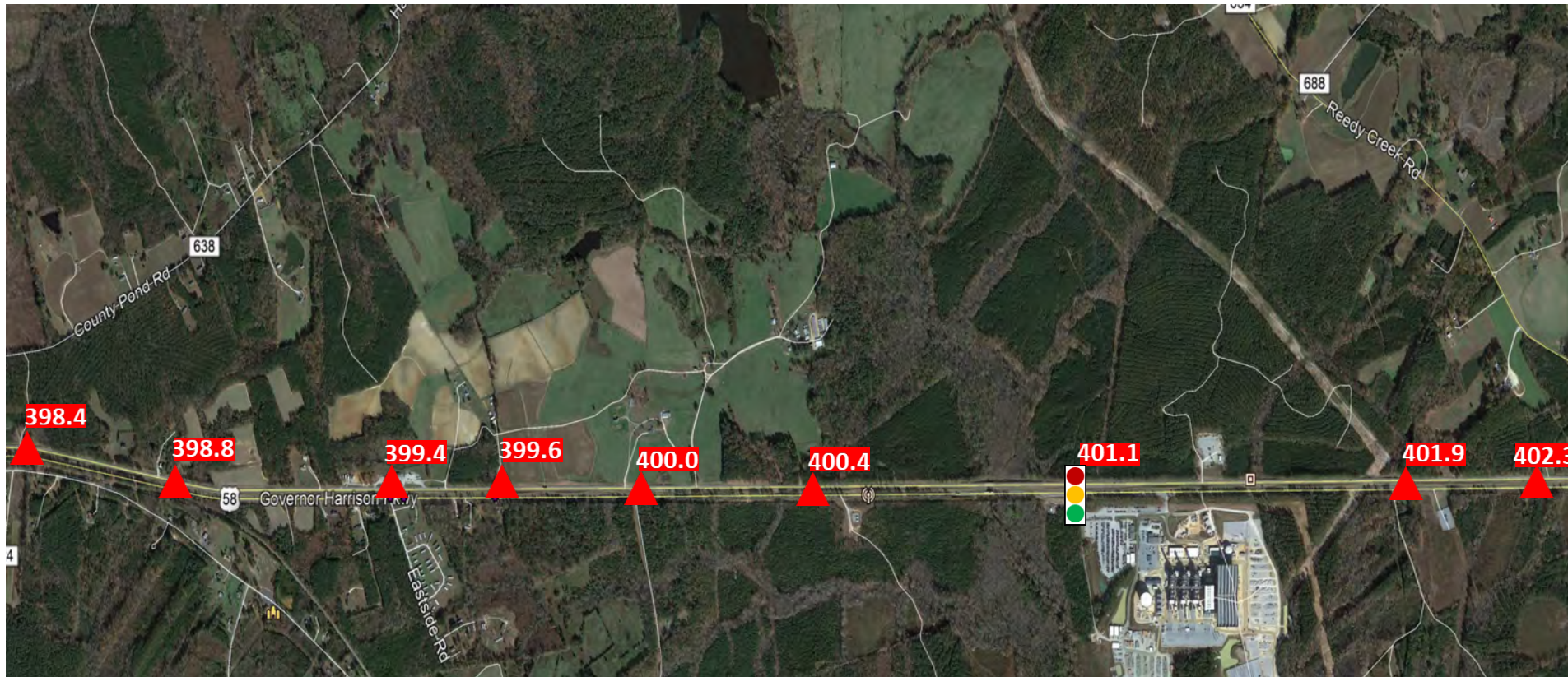
Existing westbound US 58 left turn lane does no meet VDOT requirements. No US 58 eastbound left turn lane.





397.6

Exiting US 58 left turn lanes do not meet VDOT requirements. No US 58 right turn lanes. No US 58 right turn lanes. Grade differential on US 58 eastbound and westbound. High rate of crashes.

398.0

Exiting US 58 left turn lanes do not meet VDOT requirements. No US 58 right turn lanes



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards

398.4
-
398.8 No US 58 left turn lanes. High rate of crashes at access point 398.4

399.4 Exiting US 58 left turn lanes do not meet VDOT requirements.

399.6 No US 58 left turn lanes.

400.0 Existing westbound US 58 left turn lane does not meet VDOT requirements. No US 58 eastbound left turn lane





400.4 No US 58 left turn lanes.

401.1 Existing westbound US 58 left turn lane DOES meet VDOT requirements. No US 58 eastbound left turn lane. Existing eastbound US 58 right turn lane DOES meet VDOT requirements.

401.9 Existing eastbound US 58 left turn lane does meet VDOT requirements. No US 58 westbound left turn lane

402.3 No US 58 left turn lanes.



-  Signalized Intersection
-  Unsignalized Intersection
-  Median Crossovers
-  Inadequate intersection spacing per VDOT standards

402.6

Exiting US 58 left turn lanes do not meet VDOT requirements. No US 58 right turn lanes.

404.4

No US 58 left turn lanes.

403.0

No US 58 left turn lanes.

401.1

Exiting US 58 left turn lanes do not meet VDOT requirements.

403.4

No US 58 left turn lanes.

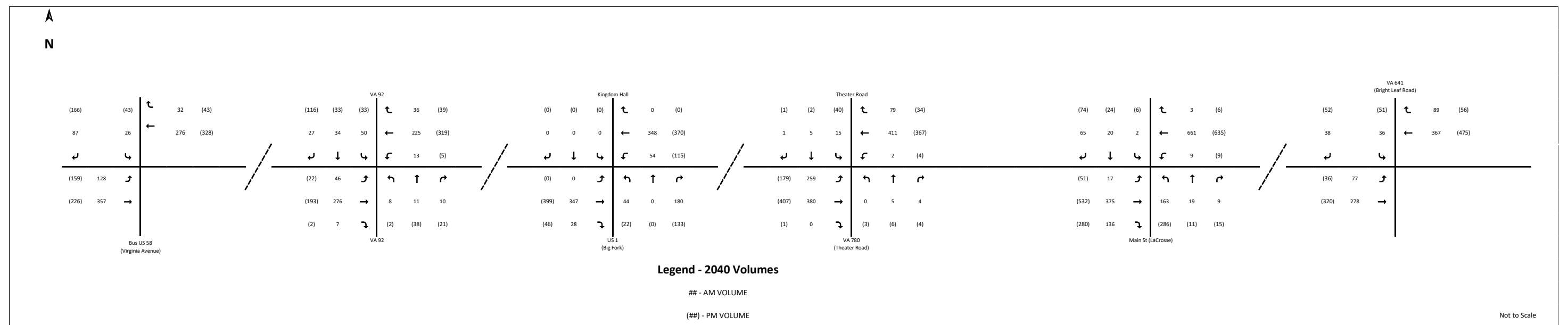
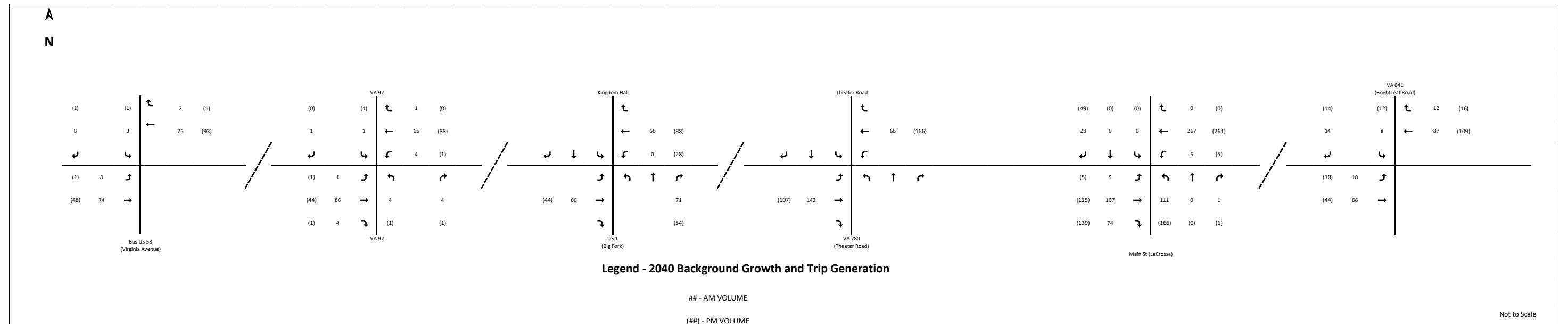
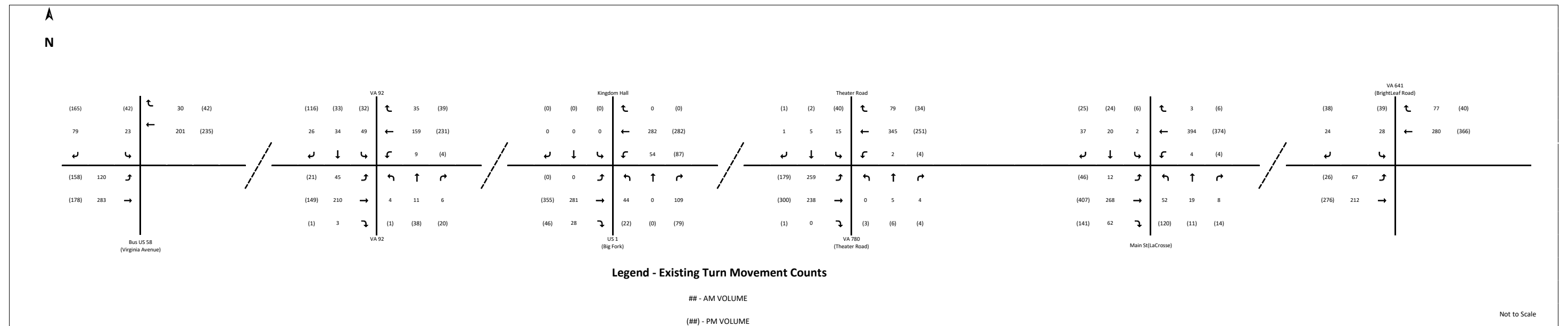
403.9

No US 58 left turn lanes.

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APPENDIX D: US 58 INTERSECTION VOLUMES

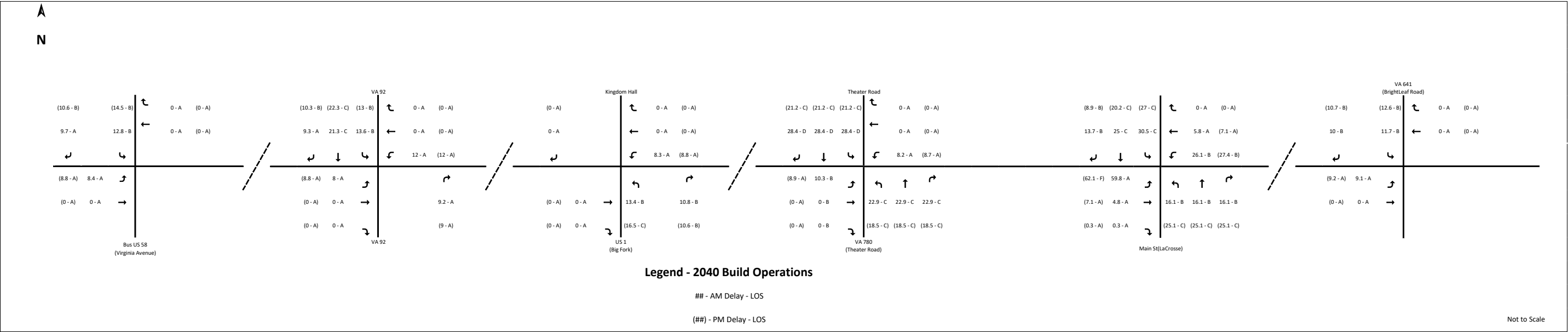
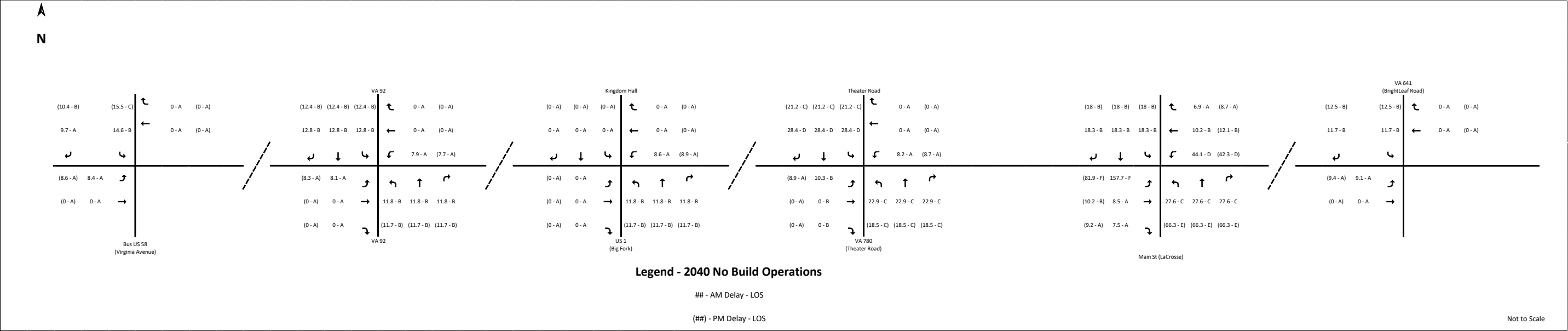
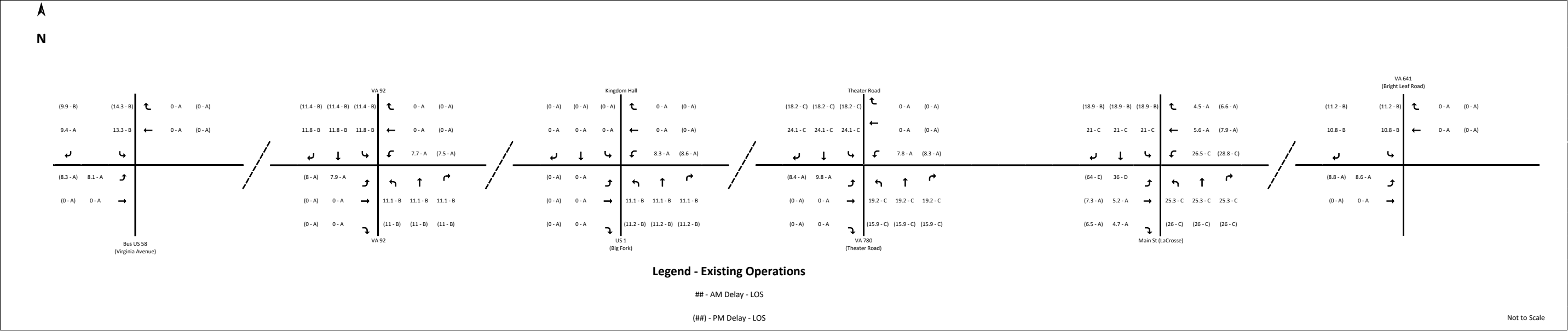
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APPENDIX E: US 58 INTERSECTION OPERATIONS

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APPENDIX F: TOWN OF SOUTH HILL MEMORANDUM

Memorandum

TO: Christopher Detmer, VDOT
FROM: Daniel Scolese, P.E.
DATE: October 8, 2019
SUBJECT: Town of South US 58 Corridor Study

The purpose of this memorandum is to present the results and recommendations for the additional analyses conducted to evaluate alternatives for the US 58 Arterial Preservation Plan within the Town of South Hill. The study area is focused between the intersection of US 58 and Maple Lane and the intersection of US 58 and High Street. An initial study was conducted in 2018, that focused on improving the safety between the I-85 northbound off-ramp onto US 58 eastbound as well as evaluating three intersection improvements within the Town of South Hill. The goals of this follow-up study within the Town of South Hill are to:

- Improve the safety of US 58;
- Improve and maintain the capacity of US 58; and
- Incorporate and support the Town of South Hill's Economic Development goals.

Traffic counts and the existing conditions analysis from the 2018 study were carried forward to this follow-up study. A detailed crash history is provided at the end of this memo that highlights the significant safety concerns within the study area. Alternative designs were analyzed and reviewed in meetings with the Town of South Hill on March 27, 2019, May 20, 2019 and June 20, 2019. The recommendations were presented to the Town of South Hill Council on July 31, 2019 and adopted by the Town Council on August 12, 2019. The final recommendations are attached and are a result from these forums.

Future Volumes

Future turn movements volumes were calculated using a background rate of one percent, trip generation for potential development along the corridor between Mecklenburg and Brunswick county, and the potential economic growth within the Town of South Hill. The US 58 Richmond Arterial Preservation Plan Report includes further discussion on the development of the future traffic volumes. The future land use and development within the Town of South Hill was determined using existing documentation as well as input from VDOT and the Town of South Hill. The assumed land uses can be found attached at the end of this memo. Future traffic volumes were developed for the following scenarios:

- 2040 No-Development within Town of South Hill: No Build Volumes;
- 2040 No-Development within Town of South Hill: Build Volumes;
- 2040 Development occurring within Town of South Hill: No Build Volumes; and
- 2040 Development occurring within Town of South Hill: Build Volumes.

Future Recommendations and Operations:

The final adopted recommendations for the corridor are:

Intersection of US 58 with Maple Lane

- Construct right-turn lanes on eastbound and westbound Maple Lane. Traffic conditions at this location should be monitored into the future to determine if any additional improvements are needed.

Intersection of US 58 with Country Lane

- Reconfigure the intersection to reduce traffic signal phasing by relocating the US 58 left-turn movements and southbound thru-movements from Country Lane.
- Reconstruct the westbound US 58 right-turn lane onto US BUS 58 as a continuous right-turn.

US 58 and I-85 Interchange

- Reconstruct the interchange as either a Diverging Diamond Interchange (DDI) or Roundabouts configuration.
- Conduct an Interchange Modification Report (IMR) for approval from FHWA and VDOT.

US 58 and Thompson Street

- Reconfigure intersection to right-in/right-out and re-route movements through interparcel connections between Thompson Street and Peebles Street.

US 58 and Peebles Street

- Maintain access and lengthen eastbound left-turn lane as determined by a traffic capacity analysis. As development occurs, additional improvements will be required and final determination of appropriate traffic control shall be determined through a traffic signal warrant analysis, signal justification report, and approvals by District, State, and Federal officials.

US 58 and Crowder Street

- Reconfigure intersection to right-in/right-out.

US 58 and Cycle Lane

- Reconfigure the intersection to reduce traffic signal phasing by relocating eastbound and westbound left-turn movements on US 58 and northbound and southbound thru-movements from Cycle Lane.

US 58 and High Street

- Reconstruct the intersection to a roundabout. As development occurs, the northbound approach on High Street may need to be reconfigured to permit only right-turn movements to maintain the capacity of the intersection. The northbound left-turns and through movements will use the Cycle Lane traffic signal via the interparcel connection between Cycle Lane and High Street.

Detailed configuration concepts and operational results are attached to this memo. Table 1 summarizes the delay and LOS for the US 58 at-grade intersections. Table 2 and Table 3 summarize the delay and travel times for the US 58 and I-85 interchange. It should be noted that the diverging diamond traffic signals are coordinated so that vehicles stop only once at a traffic light. Figures of the delay and LOS results are attached to this memo.

| Intersection | Scenario | Overall Delay (LOS) | Delay per Lane Group by Approach (sec/veh) (Level of Service) | | | | | | | | | | | |
|---------------------------|------------------------------|---------------------|--|--------|----------|-----------|--------|----------|------------|--------|----------|------------|--------|--------|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| Maple Ln & US 58 | AM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 2.0 | 8.1 A | 0.0 A | 0.0 A | 7.9 A | 0.0 A | 0.0 A | 12.7 B | 11.1 B | 11.1 B | 11.7 B | 11.7 B | 11.7 B |
| | | A | 1.1 (A) | | | 0.3 (A) | | | 11.1 (B) | | | 11.7 (B) | | |
| | 2040 No Development No Build | 2.3 | 8.0 B | 0.0 A | 0.0 A | 8.2 A | 0.0 A | 0.0 A | 14.6 B | 14.6 B | 9.7 A | 13.2 B | 12.0 A | 12.0 A |
| | | A | 0.8 (A) | | | 0.6 (A) | | | 11.9 (B) | | | 12.0 (B) | | |
| | 2040 No Development Build | 2.3 | 8.0 B | 0.0 A | 0.0 A | 8.2 A | 0.0 A | 0.0 A | 14.6 B | 14.6 B | 9.7 A | 13.2 B | 12.0 A | 12.0 A |
| | | A | 0.8 (A) | | | 0.6 (A) | | | 11.9 (B) | | | 12.0 (B) | | |
| | 2040 Development No Build | 8.7 | 8.3 A | 0.0 A | 0.0 A | 8.7 A | 0.0 A | 0.0 A | 27.4 D | 27.4 D | 9.9 A | 19.2 C | 42.2 E | 42.2 E |
| | | A | 0.7 (A) | | | 2.0 (A) | | | 17.3 (C) | | | 42.0 (E) | | |
| | 2040 Development Build | 8.7 | 8.3 A | 0.0 A | 0.0 A | 8.7 A | 0.0 A | 0.0 A | 27.4 D | 27.4 D | 9.9 A | 19.2 C | 42.2 E | 42.2 E |
| | | A | 0.7 (A) | | | 2.0 (A) | | | 17.3 (C) | | | 42.0 (E) | | |
| | PM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 1.9 | 7.7 A | 0.0 A | 0.0 A | 8.8 A | 0.0 A | 0.0 A | 11.5 B | 9.5 A | 9.5 A | 11.5 B | 11.5 B | 11.5 B |
| | | A | 0.7 (A) | | | 0.2 (A) | | | 9.6 (A) | | | 11.5 (B) | | |
| | 2040 No Development No Build | 1.9 | 7.6 A | 0.0 A | 0.0 A | 9.1 A | 0.0 A | 0.0 A | 13.0 B | 13.0 B | 9.7 A | 11.7 B | 9.4 A | 9.4 A |
| | | A | 0.6 (A) | | | 0.4 (A) | | | 11.6 (B) | | | 9.6 (A) | | |
| | 2040 No Development Build | 1.9 | 7.6 A | 0.0 A | 0.0 A | 9.1 A | 0.0 A | 0.0 A | 13.0 B | 13.0 B | 9.7 A | 11.7 B | 9.4 A | 9.4 A |
| | | A | 0.6 (A) | | | 0.4 (A) | | | 11.6 (B) | | | 9.6 (A) | | |
| 2040 Development No Build | 5.3 | 8.0 A | 0.0 A | 0.0 A | 9.8 A | 0.0 A | 0.0 A | 22.3 C | 22.3 C | 11.5 B | 22.0 C | 10.3 B | 10.3 B | |
| | A | 0.5 (A) | | | 1.5 (A) | | | 16.0 (C) | | | 11.0 (B) | | | |
| 2040 Development Build | 5.3 | 8.0 A | 0.0 A | 0.0 A | 9.8 A | 0.0 A | 0.0 A | 22.3 C | 22.3 C | 11.5 B | 22.0 C | 10.3 B | 10.3 B | |
| | A | 0.5 (A) | | | 1.5 (A) | | | 16.0 (C) | | | 11.0 (B) | | | |
| Country Ln & US 58 | AM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 22.4 | 40.3 D | 17.0 B | 15.8 B | 40.5 D | 17.6 B | 14.3 B | 45.4 D | 37.9 D | 38.4 D | 36.7 D | 26.8 C | 27.1 D |
| | | C | 19.4 (B) | | | 16.6 (B) | | | 38.8 (D) | | | 35.2 (D) | | |
| | 2040 No Development No Build | 23.4 | 46.3 D | 23.3 C | 15.7 B | 60.0 E | 22.7 C | 14.1 B | 36.2 D | 17.0 B | 16.7 B | 34.7 C | 10.9 B | 10.9 B |
| | | C | 24.8 (C) | | | 19.0 (B) | | | 18.1 (B) | | | 31.0 (C) | | |
| | 2040 No Development Build | 13.4 | NA B | 17.1 B | 0.1 A | 33.0 D | 17.0 B | 0.5 A | 25.4 C | 26.3 C | 25.4 C | 20.0 B | 33.2 D | 17.2 B |
| | | B | 15.9 (B) | | | 7.9 (A) | | | 25.8 (C) | | | 20.7 (C) | | |
| | 2040 Development No Build | 24.6 | 46.3 D | 24.2 C | 15.8 B | 60.0 E | 27.4 C | 14.5 B | 36.2 D | 17.0 B | 16.7 B | 35.5 D | 10.8 B | 10.8 B |
| | | C | 25.5 (C) | | | 21.7 (C) | | | 18.1 (B) | | | 31.8 (C) | | |
| | 2040 Development Build | 14.4 | NA B | 18.3 B | 0.0 A | 36.3 D | 20.3 C | 0.7 A | 25.4 C | 26.3 C | 25.4 C | 19.3 B | 32.5 D | 16.5 B |
| | | B | 16.6 (B) | | | 10.9 (B) | | | 25.8 (C) | | | 20.0 (C) | | |
| | PM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 32.3 | 53.7 D | 23.9 C | 22.2 C | 55.8 E | 23.9 C | 15.9 B | 55.9 E | 52.1 D | 57.5 E | 43.2 D | 27.1 C | 26.8 C |
| | | C | 27.6 (C) | | | 17.6 (B) | | | 55.1 (E) | | | 41.1 (D) | | |
| | 2040 No Development No Build | 25.4 | 45.8 D | 26.8 C | 21.7 B | 77.3 E | 26.6 C | 13.3 B | 43.3 D | 24.6 C | 23.3 C | 34.9 C | 10.7 B | 10.3 B |
| | | C | 28.7 (C) | | | 16.7 (B) | | | 25.4 (C) | | | 31.9 (C) | | |
| | 2040 No Development Build | 16.3 | NA B | 16.8 B | 0.1 A | 31.8 D | 15.8 B | 1.0 A | 26.9 C | 30.5 C | 26.8 C | 25.3 C | 32.8 D | 16.8 B |
| | | B | 15.0 (B) | | | 4.1 (A) | | | 28.5 (C) | | | 25.5 (C) | | |
| 2040 Development No Build | 30.0 | 45.8 D | 32.2 C | 21.7 C | 77.3 E | 30.4 C | 15.2 B | 43.3 D | 25.0 C | 23.7 C | 43.8 D | 10.7 B | 10.3 B | |
| | C | 32.9 (C) | | | 20.4 (C) | | | 25.8 (C) | | | 40.2 (D) | | | |
| 2040 Development Build | 19.1 | NA C | 26.4 C | 0.1 A | 39.7 D | 23.7 C | 1.5 A | 23.6 C | 25.4 C | 17.2 B | 28.2 C | 33.3 D | 17.3 B | |
| | B | 23.9 (C) | | | 21.3 (C) | | | 21.2 (C) | | | 28.1 (C) | | | |

Table 1: Town of South Hill US 58 At-Grade Intersection Operations

Table 2: Town of South Hill US 58 At-Grade Intersection Operations (Cont.)

| Intersection | Scenario | Overall Delay (LOS) | Delay per Lane Group by Approach (sec/veh) | | | | | | | | | | | | |
|--------------------|------------------------------|---------------------|--|--------|--------|-----------|--------|--------|------------|----------|--------|------------|--------|--------|--|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | |
| Crowder St & US 58 | AM Peak Hour | | | | | | | | | | | | | | |
| | 2018 Existing | 0.5 | 9.5 A | 0.0 A | NA | NA | 0.0 A | 0.0 A | NA | 12.8 B | NA | 12.8 B | | | |
| | | A | 0.7 (A) | | | 0.0 (A) | | | | 12.8 (B) | | | | | |
| | 2040 No Development No Build | 0.4 | 8.5 A | 0.0 A | NA | NA | 0.0 A | 0.0 A | NA | 9.8 A | NA | 9.8 A | | | |
| | | A | 0.5 (A) | | | 0.0 (A) | | | | 9.8 (A) | | | | | |
| | 2040 No Development Build | 0.2 | NA | 0.0 A | NA | NA | 0.0 A | 0.0 A | NA | NA | NA | 10.1 B | | | |
| | | A | 0 (A) | | | 0.0 (A) | | | | 10.1 (B) | | | | | |
| | 2040 Development No Build | 0.3 | 9.4 A | 0.0 A | NA | NA | 0.0 A | 0.0 A | NA | 10.7 B | NA | 10.7 B | | | |
| | | A | 0.5 (A) | | | 0.0 (A) | | | | 10.7 (B) | | | | | |
| | 2040 Development Build | 0.1 | NA | 0.0 A | NA | NA | 0.0 A | 0.0 A | NA | NA | NA | 10.1 B | | | |
| | | A | 0 (A) | | | 0.0 (A) | | | | 10.1 (B) | | | | | |
| | PM Peak Hour | | | | | | | | | | | | | | |
| | 2018 Existing | 1.0 | 9.8 A | 0.0 A | NA | NA | 0.0 A | 0.0 A | NA | 14.7 B | NA | 14.7 B | | | |
| | | A | 0.7 (A) | | | 0.0 (A) | | | | 14.7 (B) | | | | | |
| | 2040 No Development No Build | 0.7 | 8.8 A | 0.0 A | NA | NA | 0.0 A | 0.0 A | NA | 10.4 B | NA | 10.4 B | | | |
| | | A | 0.6 (A) | | | 0.0 (A) | | | | 10.4 (B) | | | | | |
| | 2040 No Development Build | 0.4 | NA | 0.0 A | NA | NA | 0.0 A | 0.0 A | NA | NA | NA | 10.3 B | | | |
| | | A | 0 (A) | | | 0.0 (A) | | | | 11.3 (B) | | | | | |
| | 2040 Development No Build | 0.6 | 11.0 B | 0.0 A | NA | NA | 0.0 A | 0.0 A | NA | 12.2 B | NA | 12.2 B | | | |
| | | A | 0.5 (A) | | | 0.0 (A) | | | | 12.2 (B) | | | | | |
| | 2040 Development Build | 0.3 | NA | 0.0 A | NA | NA | 0.0 A | 0.0 A | NA | NA | NA | 11.3 B | | | |
| | | A | 0 (A) | | | 0.0 (A) | | | | 11.3 (B) | | | | | |
| Cycle Ln & US 58 | AM Peak Hour | | | | | | | | | | | | | | |
| | 2018 Existing | 13.9 B | 34.0 C | 9.4 A | 3.7 A | 37.3 D | 13.3 B | 7.1 A | 33.6 C | 33.6 C | 32.6 C | 31.5 C | 31.5 C | 30.9 C | |
| | | B | 11.9 (B) | | | 12.6 (B) | | | 33.5 (C) | | | 31.2 (C) | | | |
| | 2040 No Development No Build | 14.8 B | 36.8 D | 10.5 B | 8.3 A | 43.2 D | 13.9 B | 11.1 B | 30.3 C | 30.3 C | 28.9 C | 37.8 D | 37.8 D | 35.7 D | |
| | | B | 12.8 (B) | | | 13.8 (B) | | | 30.2 (C) | | | 36.6 (D) | | | |
| | 2040 No Development Build | 4.0 A | NA | 2.3 A | 0.0 A | NA | 2.2 A | 0.1 A | 26.4 C | NA | 25.2 C | 27.5 C | NA | 25.3 C | |
| | | A | 2.1 (A) | | | 1.8 (A) | | | 26.3 (C) | | | 26.6 (C) | | | |
| | 2040 Development No Build | 23.8 C | 41.2 D | 19.7 B | 15.8 B | 41.1 D | 22.1 C | 14.7 B | 34.5 C | 34.5 C | 29.1 C | 41.1 D | 41.1 D | 38.4 D | |
| | | C | 20.7 (C) | | | 23.1 (C) | | | 33.4 (C) | | | 39.9 (D) | | | |
| | 2040 Development Build | 6.9 A | NA | 5.4 A | 0.1 A | NA | 6.0 A | 0.1 A | 18.3 B | NA | 13.8 B | 14.5 B | NA | 13.8 B | |
| | | A | 4.4 (A) | | | 5.0 (A) | | | 17.7 (B) | | | 14.2 (B) | | | |
| | PM Peak Hour | | | | | | | | | | | | | | |
| | 2018 Existing | 18.3 B | 36.9 D | 15.8 B | 5.7 A | 54.7 D | 17.5 B | 7.8 A | 31.5 C | 31.5 C | 30.3 C | 29.1 C | 29.1 C | 26.8 C | |
| | | B | 15.4 (B) | | | 16.4 (B) | | | 31.3 (C) | | | 27.9 (C) | | | |
| | 2040 No Development No Build | 25.6 C | 42.4 D | 22.3 C | 17.0 B | 77.3 E | 24.6 C | 20.3 C | 27.6 C | 27.6 C | 26.2 C | 39.4 D | 39.4 D | 33.6 C | |
| | | C | 22.7 (C) | | | 25.0 (C) | | | 27.3 (C) | | | 36.7 (D) | | | |
| | 2040 No Development Build | 6.9 A | NA | 4.9 A | 0.1 A | NA | 4.3 A | 0.2 A | 20.9 C | NA | 20.0 B | 23.2 C | NA | 20.3 C | |
| | | A | 4.1 (A) | | | 3.2 (A) | | | 20.7 (C) | | | 22.0 (C) | | | |
| | 2040 Development No Build | 31.3 C | 42.4 D | 29.0 C | 22.0 C | 45.4 D | 30.3 C | 20.3 B | 44.7 D | 44.7 D | 26.6 C | 39.4 D | 39.4 D | 33.6 C | |
| | | C | 27.7 (C) | | | 30.2 (C) | | | 41.5 (D) | | | 36.7 (D) | | | |
| | 2040 Development Build | 10.6 B | NA | 10.3 B | 0.3 A | NA | 9.8 A | 0.2 A | 22.3 C | NA | 13.5 B | 15.0 B | NA | 13.8 B | |
| | | B | 7.3 (A) | | | 7.8 (A) | | | 21.1 (C) | | | 14.5 (B) | | | |

Table 3: Town of South Hill US 58 At-Grade Intersection Operations (Cont.)

| Intersection | Scenario | Overall Delay (LOS) | Delay per Lane Group by Approach (sec/veh) | | | | | | | | | | | |
|-----------------|------------------------------|---------------------|--|----------|----------|-----------|----------|----------|------------|------------|------------|------------|-----------|-----------|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT |
| High St & US 58 | AM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 1.3 | 8.9 A | 0.0 A | 0.0 A | 8.1 A | 0.0 A | 0.0 A | 20.5 C | 20.5 C | 20.5 C | 10.4 B | 10.4 B | 10.4 B |
| | | A | 0.3 (C) | | | 0.1 (A) | | | 20.5 (C) | | | 10.4 (B) | | |
| | 2040 No Development No Build | 0.9 | 8.8 A | 0.0 A | 0.0 A | 8.4 B | 0.0 A | 0.0 A | 15.5 C | 15.5 C | 15.5 C | 10.3 B | 10.3 B | 10.3 B |
| | | A | 0.3 (A) | | | 0.1 (A) | | | 15.5 (C) | | | 10.3 (B) | | |
| | 2040 No Development Build | 4.5 | 13.5 B | 3.1 A | 3.2 A | 11.3 B | 3.8 A | 0.0 A | 13.5 B | 0.0 A | 6.0 A | 0.0 A | 0.0 A | 0.0 A |
| | | A | 4.3 (A) | | | 4.0 (A) | | | 12.4 (B) | | | 0.0 (A) | | |
| | 2040 Development No Build | 2.6 | 10.1 B | 0.0 A | 0.0 A | 8.7 A | 0.0 A | 0.0 A | 27.4 D | 27.4 D | 27.4 D | 11.7 B | 11.7 B | 11.7 B |
| | | A | 0.3 (A) | | | 0.9 (A) | | | 27.4 (D) | | | 11.7 (B) | | |
| | 2040 Development Build | 5.1 | 14.7 B | 4.3 A | 3.8 A | 11.1 B | 3.6 A | 0.0 A | NA | NA | 2.7 A | 0.0 A | 0.0 A | 0.0 A |
| | | A | 5.4 (A) | | | 5.0 (A) | | | 2.7 (A) | | | 0.0 (A) | | |
| | PM Peak Hour | | | | | | | | | | | | | |
| | 2018 Existing | 3.2 | 8.9 A | 0.0 A | 0.0 A | 9.1 A | 0.0 A | 0.0 A | 46.7 E | 46.7 E | 46.7 E | 15.1 C | 15.1 B | 15.1 B |
| | | A | 0.3 (C) | | | 0.1 (A) | | | 46.7 (E) | | | 15.1 (C) | | |
| | 2040 No Development No Build | 1.3 | 8.9 A | 0.0 A | 0.0 A | 9.0 B | 0.0 A | 0.0 A | 17.9 C | 17.9 C | 17.9 C | 11.2 B | 11.2 B | 11.2 B |
| | | A | 0.6 (A) | | | 0.3 (A) | | | 17.9 (C) | | | 11.2 (B) | | |
| | 2040 No Development Build | 4.6 | 13.7 B | 3.2 A | 3.3 A | 11.5 B | 3.9 A | 3.9 A | 13.7 B | 0.0 A | 6.2 A | 0.0 A | 0.0 A | 0.3 A |
| | | A | 4.3 (A) | | | 4.0 (A) | | | 12.4 (B) | | | 0.3 (A) | | |
| | 2040 Development No Build | 13.8 | 10.3 B | 0.0 A | 0.0 A | 10.7 B | 0.0 A | 0.0 A | 107.5 F | 107.5 F | 107.5 F | 18.0 C | 18.0 C | 18.0 C |
| | | B | 0.6 (A) | | | 2.0 (A) | | | 107.5 (F) | | | 18.0 (C) | | |
| | 2040 Development Build | 5.4 | 15.5 B | 4.7 A | 4.3 A | 11.3 B | 3.7 A | 3.7 A | NA | NA | 2.7 A | 0.0 A | 0.0 A | 0.3 A |
| | | A | 5.7 (A) | | | 5.7 (A) | | | 2.7 (A) | | | 0.3 (A) | | |

Table 4: Town of South Hill US 58 At-Grade Intersection Operations (Cont.)

| Intersection | Scenario | Overall Delay (LOS) | Delay per Lane Group by Approach (sec/veh) | | | | | | | | | | | | |
|-------------------------|-----------------|---------------------|--|--------|-------|-----------|--------|-------|------------|-------|--------|------------|-------|--------|--|
| | | | Eastbound | | | Westbound | | | Northbound | | | Southbound | | | |
| | | | LT | TH | RT | LT | TH | RT | LT | TH | RT | LT | TH | RT | |
| I-85 Southbound & US 58 | AM Peak Hour | | | | | | | | | | | | | | |
| | 2040 No Build | See Travel Times | | | | | | | | | | | | | |
| | 2040 Roundabout | 4.2 A | NA | 3.8 A | 2.9 A | NA | 3.1 A | 3.0 A | NA | | | 14.0 B | 6.3 A | 6.0 A | |
| | | | 3.7 (A) | | | 3.0 (A) | | | | | | 9.2 (A) | | | |
| | 2040 DDI | 18.3 B | NA | 22.7 C | 0.0 A | NA | 18.2 B | NA | NA | | | 11.2 B | NA | 18.2 B | |
| | | | 20.1 (C) | | | 18.2 (B) | | | | | | 14.9 (B) | | | |
| | PM Peak Hour | | | | | | | | | | | | | | |
| | 2040 No Build | See Travel Times | | | | | | | | | | | | | |
| | 2040 Roundabout | 4.0 A | NA | 4.2 A | 2.9 A | NA | 3.0 A | 3.0 A | NA | | | 14.4 B | 6.7 A | 6.4 A | |
| | | | 4.0 (A) | | | 3.0 (A) | | | | | | 9.3 (A) | | | |
| | 2040 DDI | 12.8 B | NA | 24.2 C | 0.0 A | NA | 27.5 C | NA | NA | | | 13.3 B | NA | 16.1 B | |
| | | | 20.3 (C) | | | 27.5 (C) | | | | | | 14.9 (B) | | | |
| I-85 Northbound & US 58 | AM Peak Hour | | | | | | | | | | | | | | |
| | 2040 No Build | See Travel Times | | | | | | | | | | | | | |
| | 2040 Roundabout | 4.9 A | 10.6 B | 3.0 A | NA | NA | 4.9 A | 3.0 A | 13.5 B | 5.2 A | 3.1 A | NA | | | |
| | | | 3.8 (A) | | | 4.6 (A) | | | 8.6 (A) | | | | | | |
| | 2040 DDI | 17.9 B | NA | 23.6 C | NA | NA | 17.6 B | 0.0 A | 17.9 B | NA | 11.5 B | NA | | | |
| | | | 23.6 (C) | | | | | | | | | | | | |
| | PM Peak Hour | | | | | | | | | | | | | | |
| | 2040 No Build | See Travel Times | | | | | | | | | | | | | |
| | 2040 Roundabout | 4.2 A | 10.6 B | 2.9 A | NA | NA | 4.4 A | 3.0 A | 15.6 C | 7.3 A | 4.3 A | NA | | | |
| | | | 3.4 (A) | | | 4.2 (A) | | | 8.4 (A) | | | | | | |
| | 2040 DDI | 22.2 C | NA | 25.2 C | NA | NA | 26.6 C | 0.1 A | 15.6 B | NA | 14.9 B | NA | | | |
| | | | 25.2 (C) | | | 22.3 (C) | | | 15.3 (B) | | | | | | |

Table 5: US 58 & I-85 Interchange Operations

| Scenario | US 58 & I-85 Interchange Travel Times (sec) | |
|-----------------|---|-----------|
| | Eastbound | Westbound |
| AM Peak Hour | | |
| 2040 No Build | 49 | 53 |
| 2040 Roundabout | 47 | 45 |
| 2040 DDI | 34 | 35 |
| PM Peak Hour | | |
| 2040 No Build | 55 | 59 |
| 2040 Roundabout | 48 | 54 |
| 2040 DDI | 34 | 34 |

Table 6: US 58 & I-85 Interchange Travel Times

Operationally, the recommendations improved delay in the AM and PM Peak Hours. Travel times in 2040 for both conditions improved as well.

The recommendations were also developed to reduce crashes. The following summarizes the anticipated reduction in crashes:

- Intersection of US 58 and Country Lane: Decreases crashes up to 25%
- US 58 and I-85 Interchange: DDI expected to decrease crashes up to 30% and Roundabouts would decrease crashes up to 20%
- Between Thompson Lane and High Street on US 58: Decreases crashes up to 40%

In addition to the benefits of reduced delay and improved safety, the recommendations support the Town of South Hill's economic development efforts by providing the additional capacity on US 58 and intersecting roadways. It is important to note that each of the recommendations can be constructed independently. This flexibility allows for separate project submissions by the Town of South Hill and phasing of construction. The preferred recommendations are provided following this page containing detailed information, opinion of costs, and concepts.

Attachments:

US 58 Town of South Hill Study Area

US 58 Crash History

2018 Existing Turn Movement Counts

US 58 Town of South Hill Land Use

2040 No-Development within Town of South Hill: No Build Volumes

2040 No-Development within Town of South Hill: Build Volumes

2040 Development occurring within Town of South Hill: No Build Volumes

2040 Development occurring within Town of South Hill: Build Volumes

2018 Existing Operations

2040 No-Development within Town of South Hill: No Build Operations

2040 No-Development within Town of South Hill: Build Operations

2040 Development occurring within Town of South Hill: No Build Operations

2040 Development occurring within Town of South Hill: Build Operations

Concepts of Recommendations:

- Town of South Hill Overview
- Intersection of US 58 and Country Lane
- US 58 and I-85 Interchange
- US 58 Eastern Corporate Limits: US 58 intersections between Thompson Street and High Street

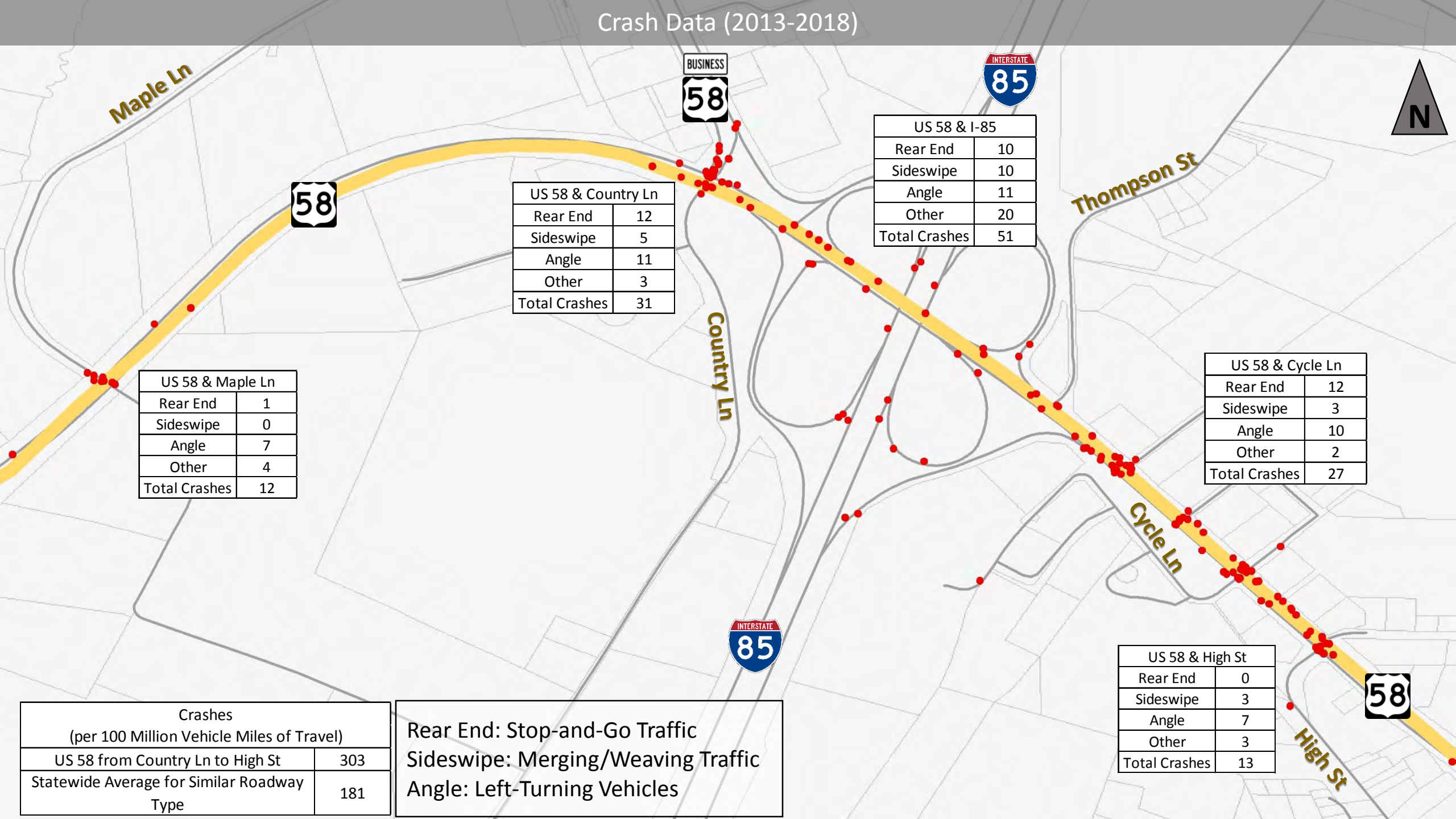
Independent Utility Considerations:

- Diverging Diamond Interchange with Town of South Hill Recommendations
- Roundabouts Interchange with Town of South Hill Recommendations

US 58 Study Area - Town of South Hill



Crash Data (2013-2018)



| US 58 & Maple Ln | |
|------------------|----|
| Rear End | 1 |
| Sideswipe | 0 |
| Angle | 7 |
| Other | 4 |
| Total Crashes | 12 |

| US 58 & Country Ln | |
|--------------------|----|
| Rear End | 12 |
| Sideswipe | 5 |
| Angle | 11 |
| Other | 3 |
| Total Crashes | 31 |

| US 58 & I-85 | |
|---------------|----|
| Rear End | 10 |
| Sideswipe | 10 |
| Angle | 11 |
| Other | 20 |
| Total Crashes | 51 |

| US 58 & Cycle Ln | |
|------------------|----|
| Rear End | 12 |
| Sideswipe | 3 |
| Angle | 10 |
| Other | 2 |
| Total Crashes | 27 |

| US 58 & High St | |
|-----------------|----|
| Rear End | 0 |
| Sideswipe | 3 |
| Angle | 7 |
| Other | 3 |
| Total Crashes | 13 |

| Crashes (per 100 Million Vehicle Miles of Travel) | |
|--|-----|
| US 58 from Country Ln to High St | 303 |
| Statewide Average for Similar Roadway Type | 181 |

Rear End: Stop-and-Go Traffic
 Sideswipe: Merging/Weaving Traffic
 Angle: Left-Turning Vehicles

2018 Existing Turn Movement Counts

Signalized Intersection

Roundabout

XX

AM Peak Hour

(XX)

PM Peak Hour

- 1

MAPLE LN
- 2

E ATLANTIC ST / HAMMER ST
- 3

E ATLANTIC ST / COUNTRY LN
- 4

I-85 SOUTHBOUND RAMP
- 5

I-85 NORTHBOUND RAMP
- 6

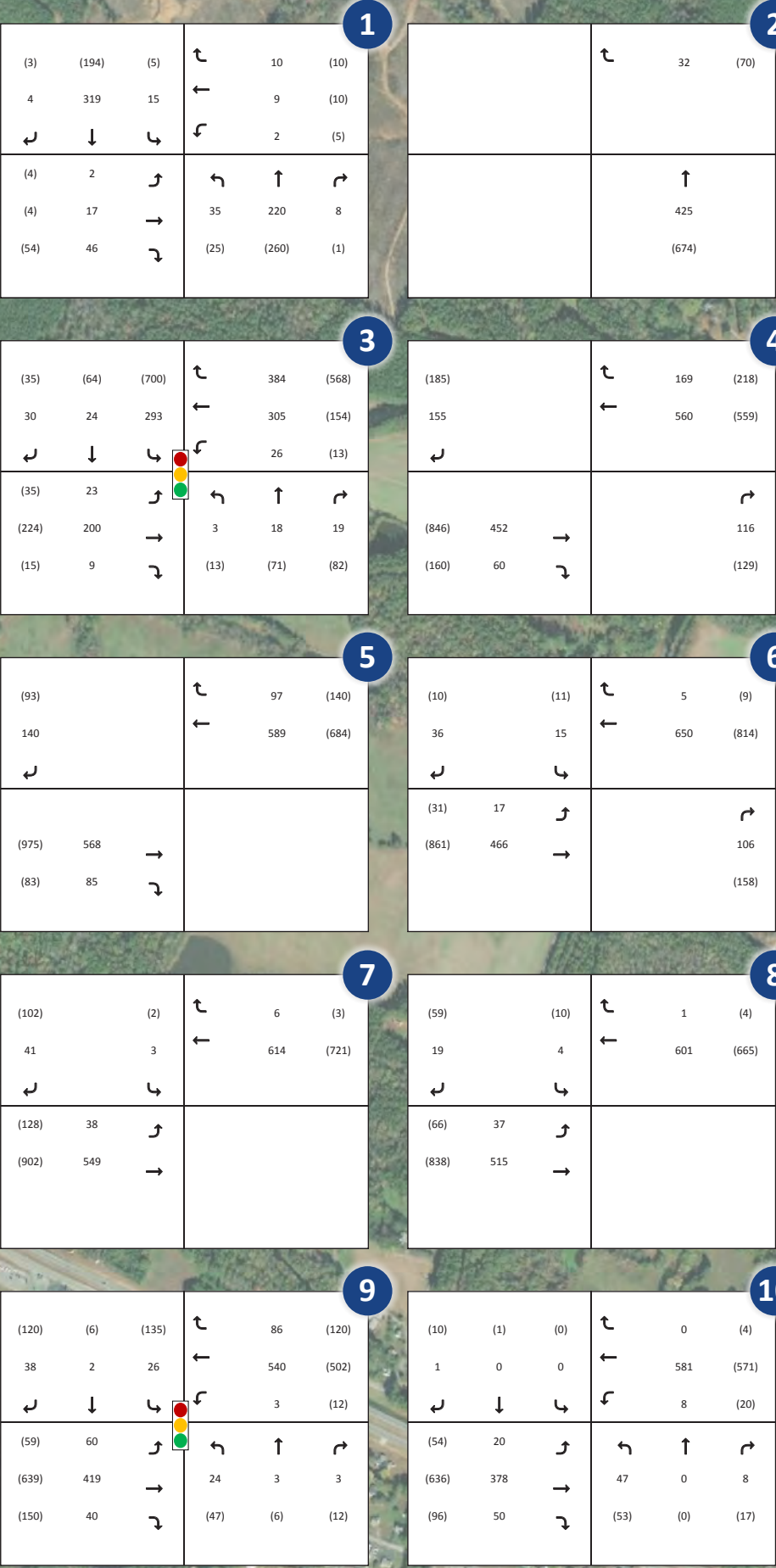
THOMPSON ST
- 7

PEEBLES ST
- 8

CROWDER ST
- 9

CYCLE LN
- 10

HIGH ST



(35)

(64)

(700)

30

24

293

↶

↓

↷

↶

↶

↶

384

305

26

(568)

(154)

(13)

(35)

23

↷

(224)

200

→

(15)

9

↷

↶

↶

↶

↶

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3

18

19

(13)

(71)

(82)

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↶

↶

↶

↶

↶

169

560

116

(218)

(559)

(129)

(93)

140

↶

↶

↶

97

589

(140)

(684)

(10)

(11)

36

15

↶

↷

↶

↶

5

650

(9)

(814)

(31)

17

↷

(861)

466

→

↶

↶

106

(158)

(102)

(2)

41

3

↶

↷

↶

↶

6

614

(3)

(721)

(128)

38

↷

(902)

549

→

(59)

(10)

19

4

↶

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↶

1

601

(4)

(665)

(66)

37

↷

(838)

515

→

(120)

(6)

(135)

38

2

26

↶

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↷

↶

↶

↶

86

540

3

(120)

(502)

(12)

(59)

60

↷

(639)

419

→

(150)

40

↷

↶

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24

3

3

(47)

(6)

(12)

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0

581

8

(4)

(571)

(20)

(54)

20

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378

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50

↷

↶

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↶

↶

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↶

47

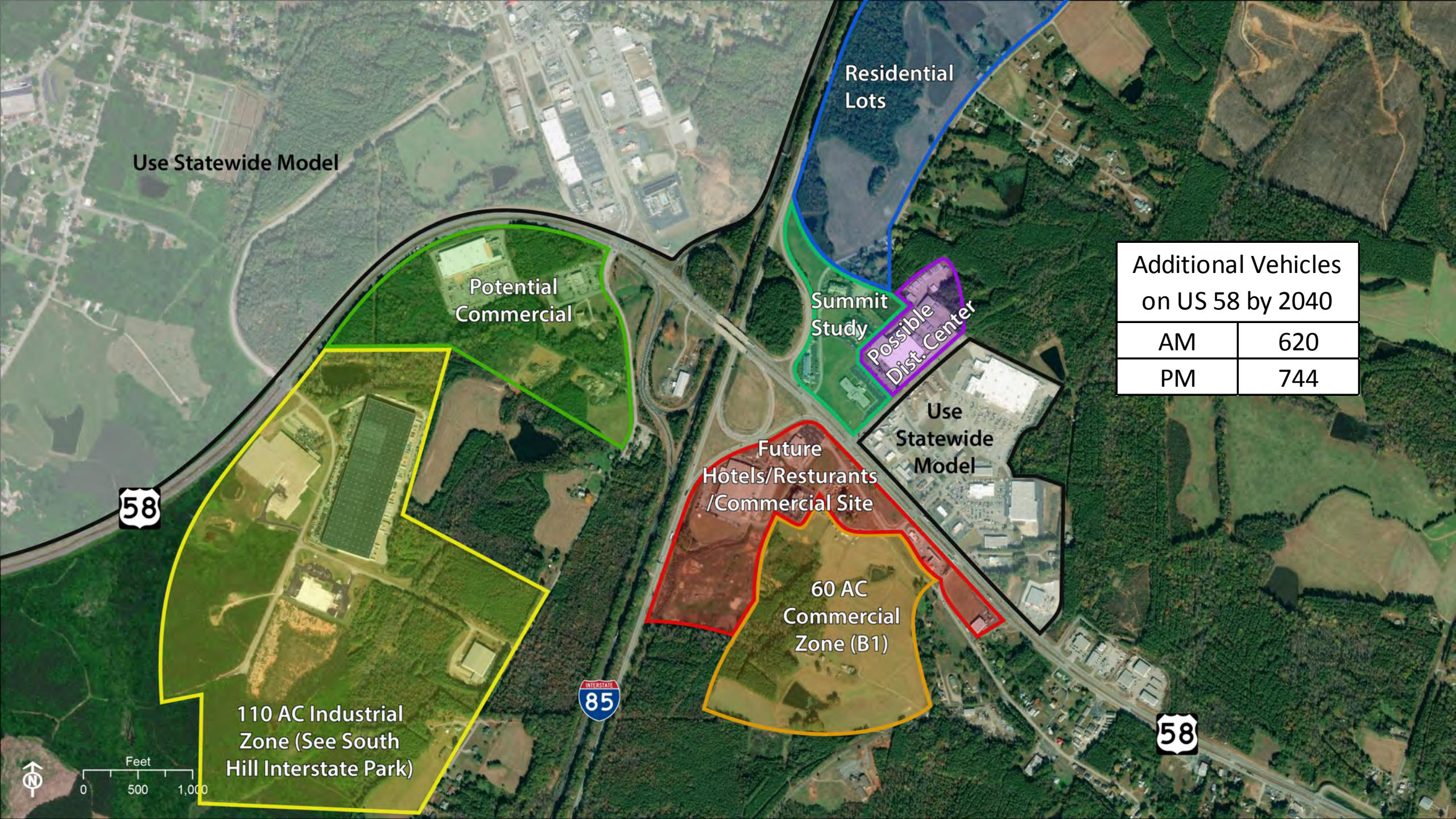
0

8

(53)

(0)

(17)



| Additional Vehicles on US 58 by 2040 | |
|---|-----|
| AM | 620 |
| PM | 744 |

2040 Development occurring within Town of South Hill:
No Build Volumes

Legend

Signalized Intersection

Roundabout

XX

AM Peak Hour

(XX)

PM Peak Hour

1 MAPLE LN

2 E ATLANTIC ST / HAMMER ST

3 E ATLANTIC ST / COUNTRY LN

4 I-85 SOUTHBOUND RAMP

5 I-85 NORTHBOUND RAMP

6 THOMPSON ST

7 PEEBLES ST

8 CROWDER ST

9 CYCLE LN

10 HIGH ST

| | | | | | |
|------|-------|------|------|-------|-------|
| (3) | (315) | (57) | ↶ | 49 | (171) |
| 4 | 395 | 119 | ↶ | 22 | (64) |
| ↶ | ↓ | ↶ | ↶ | 14 | (58) |
| (4) | 2 | ↶ | ↶ | ↑ | ↶ |
| (5) | 135 | ↶ | 35 | 318 | 62 |
| (54) | 46 | ↶ | (25) | (373) | (20) |

| | | | |
|--|---|-----|-------|
| | ↶ | 32 | (70) |
| | ↑ | 551 | (858) |

| | | | | | |
|-------|------|-------|------|------|-------|
| (35) | (68) | (832) | ↶ | 506 | (748) |
| 34 | 28 | 347 | ↶ | 481 | (319) |
| ↶ | ↓ | ↶ | ↶ | 26 | (13) |
| (37) | 25 | ↶ | ↶ | ↑ | ↶ |
| (496) | 335 | ↶ | 3 | 20 | 19 |
| (15) | 9 | ↶ | (13) | (73) | (82) |

| | | | |
|--------|-----|-----|-------|
| (193) | ↶ | 248 | (340) |
| 171 | ↶ | 843 | (887) |
| ↶ | | | ↶ |
| (1181) | 621 | ↶ | 155 |
| (229) | 80 | ↶ | (140) |

| | | | |
|--------|-----|-----|--------|
| (101) | ↶ | 143 | (219) |
| 156 | ↶ | 935 | (1126) |
| ↶ | | | |
| (1238) | 691 | ↶ | |
| (83) | 85 | ↶ | |

| | | | | |
|--------|------|---|-----|--------|
| (61) | (22) | ↶ | 10 | (23) |
| 79 | 34 | ↶ | 999 | (1284) |
| ↶ | | ↶ | | |
| (88) | 34 | ↶ | | ↶ |
| (1150) | 657 | ↶ | | 140 |
| | | | | (179) |

| | | | | |
|--------|------|---|-----|--------|
| (170) | (63) | ↶ | 109 | (82) |
| 150 | 71 | ↶ | 859 | (1137) |
| ↶ | | ↶ | | |
| (206) | 128 | ↶ | | |
| (1145) | 703 | ↶ | | |

| | | | | |
|--------|------|---|-----|--------|
| (59) | (10) | ↶ | 1 | (4) |
| 19 | 4 | ↶ | 949 | (1160) |
| ↶ | | ↶ | | |
| (66) | 37 | ↶ | | |
| (1142) | 737 | ↶ | | |

| | | | | | |
|-------|-----|-------|-------|------|-------|
| (120) | (6) | (135) | ↶ | 86 | (120) |
| 38 | 23 | 26 | ↶ | 808 | (784) |
| ↶ | ↓ | ↶ | ↶ | 84 | (72) |
| (59) | 60 | ↶ | ↶ | ↑ | ↶ |
| (765) | 557 | ↶ | 104 | 23 | 33 |
| (328) | 124 | ↶ | (260) | (53) | (67) |

| | | | | | |
|-------|-----|-----|-------|-----|-------|
| (10) | (1) | (0) | ↶ | 0 | (4) |
| 1 | 0 | 0 | ↶ | 888 | (866) |
| ↶ | ↓ | ↶ | ↶ | 107 | (201) |
| (54) | 20 | ↶ | ↶ | ↑ | ↶ |
| (751) | 541 | ↶ | 89 | 0 | 31 |
| (162) | 55 | ↶ | (100) | (0) | (171) |

2040 Development occurring within Town of South Hill: Build Volumes

Signalized Intersection

Roundabout

XX

AM Peak Hour

(XX)

PM Peak Hour

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|-------|-------|-------|--------|-------|-------|-----|-----|-----|--------|----|------|---|---|---|--------|-------|------|-----|----|--------|-----|------|-------|------|---|------|------|--|-------|------|-----|-----|-------|-------|--------|---|-------|-------|---|-----|--------|-----|-------|--------|-----|------|-------|-----|-------|-------|-----|---|-------|--|----|-------|----|---|--|--|-------|
| <div><div>1</div><table><tr><td>(3)</td><td>(315)</td><td>(57)</td><td>↶</td><td>49</td><td>(171)</td></tr><tr><td>4</td><td>395</td><td>119</td><td>↶</td><td>22</td><td>(64)</td></tr><tr><td>↶</td><td>↓</td><td>↶</td><td>↶</td><td>14</td><td>(58)</td></tr><tr><td>(4)</td><td>2</td><td>↶</td><td>↶</td><td>↑</td><td>↶</td></tr><tr><td>(5)</td><td>135</td><td>↶</td><td>35</td><td>318</td><td>62</td></tr><tr><td>(54)</td><td>46</td><td>↶</td><td>(25)</td><td>(373)</td><td>(20)</td></tr></table></div> | (3) | (315) | (57) | ↶ | 49 | (171) | 4 | 395 | 119 | ↶ | 22 | (64) | ↶ | ↓ | ↶ | ↶ | 14 | (58) | (4) | 2 | ↶ | ↶ | ↑ | ↶ | (5) | 135 | ↶ | 35 | 318 | 62 | (54) | 46 | ↶ | (25) | (373) | (20) | <div><div>2</div><table><tr><td></td><td></td><td>↶</td><td>518</td><td>(367)</td></tr><tr><td></td><td></td><td>↶</td><td>54</td><td>(81)</td></tr><tr><td>(511)</td><td>344</td><td>→</td><td></td><td></td></tr></table></div> | | | ↶ | 518 | (367) | | | ↶ | 54 | (81) | (511) | 344 | → | | | | | | | | | | | | |
| (3) | (315) | (57) | ↶ | 49 | (171) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | 395 | 119 | ↶ | 22 | (64) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↶ | ↓ | ↶ | ↶ | 14 | (58) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (4) | 2 | ↶ | ↶ | ↑ | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (5) | 135 | ↶ | 35 | 318 | 62 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (54) | 46 | ↶ | (25) | (373) | (20) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | ↶ | 518 | (367) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | ↶ | 54 | (81) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (511) | 344 | → | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div>3</div><table><tr><td>(103)</td><td>(832)</td><td>↶</td><td>538</td><td>(818)</td></tr><tr><td>62</td><td>347</td><td>↶</td><td>507</td><td>(332)</td></tr><tr><td>↶</td><td>↶</td><td>↶</td><td>↶</td><td>↑</td><td>↶</td></tr><tr><td>(496)</td><td>335</td><td>↶</td><td>3</td><td>20</td><td>19</td></tr><tr><td>(96)</td><td>63</td><td>↶</td><td>(13)</td><td>(73)</td><td>(82)</td></tr></table></div> | (103) | (832) | ↶ | 538 | (818) | 62 | 347 | ↶ | 507 | (332) | ↶ | ↶ | ↶ | ↶ | ↑ | ↶ | (496) | 335 | ↶ | 3 | 20 | 19 | (96) | 63 | ↶ | (13) | (73) | (82) | <div><div>4</div><table><tr><td>(193)</td><td></td><td>↶</td><td>248</td><td>(340)</td></tr><tr><td>171</td><td></td><td>↶</td><td>843</td><td>(887)</td></tr><tr><td>↶</td><td></td><td></td><td></td><td>↶</td></tr><tr><td>(1181)</td><td>621</td><td>→</td><td></td><td>155</td></tr><tr><td>(229)</td><td>80</td><td>↶</td><td></td><td>(140)</td></tr></table></div> | (193) | | ↶ | 248 | (340) | 171 | | ↶ | 843 | (887) | ↶ | | | | ↶ | (1181) | 621 | → | | 155 | (229) | 80 | ↶ | | (140) | | | | | | | | |
| (103) | (832) | ↶ | 538 | (818) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 62 | 347 | ↶ | 507 | (332) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↶ | ↶ | ↶ | ↶ | ↑ | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (496) | 335 | ↶ | 3 | 20 | 19 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (96) | 63 | ↶ | (13) | (73) | (82) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (193) | | ↶ | 248 | (340) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 171 | | ↶ | 843 | (887) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↶ | | | | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1181) | 621 | → | | 155 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (229) | 80 | ↶ | | (140) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div>5</div><table><tr><td>(101)</td><td></td><td>↶</td><td>143</td><td>(219)</td></tr><tr><td>156</td><td></td><td>↶</td><td>935</td><td>(1126)</td></tr><tr><td>↶</td><td></td><td></td><td></td><td></td></tr><tr><td>(1238)</td><td>691</td><td>↶</td><td></td><td></td></tr><tr><td>(83)</td><td>85</td><td>↶</td><td></td><td></td></tr></table></div> | (101) | | ↶ | 143 | (219) | 156 | | ↶ | 935 | (1126) | ↶ | | | | | (1238) | 691 | ↶ | | | (83) | 85 | ↶ | | | <div><div>6</div><table><tr><td>(61)</td><td></td><td>↶</td><td>10</td><td>(23)</td></tr><tr><td>79</td><td></td><td>↶</td><td>999</td><td>(1284)</td></tr><tr><td>↶</td><td></td><td></td><td></td><td>↶</td></tr><tr><td>(1238)</td><td>691</td><td>→</td><td></td><td>140</td></tr><tr><td></td><td></td><td></td><td></td><td>(179)</td></tr></table></div> | (61) | | ↶ | 10 | (23) | 79 | | ↶ | 999 | (1284) | ↶ | | | | ↶ | (1238) | 691 | → | | 140 | | | | | (179) | | | | | | | | | | | |
| (101) | | ↶ | 143 | (219) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 156 | | ↶ | 935 | (1126) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1238) | 691 | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (83) | 85 | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (61) | | ↶ | 10 | (23) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 79 | | ↶ | 999 | (1284) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↶ | | | | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1238) | 691 | → | | 140 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | (179) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div>7</div><table><tr><td>(170)</td><td>(69)</td><td>↶</td><td>109</td><td>(82)</td></tr><tr><td>150</td><td>94</td><td>↶</td><td>859</td><td>(1137)</td></tr><tr><td>↶</td><td>↶</td><td></td><td></td><td></td></tr><tr><td>(360)</td><td>199</td><td>↶</td><td></td><td></td></tr><tr><td>(1057)</td><td>632</td><td>↶</td><td></td><td></td></tr></table></div> | (170) | (69) | ↶ | 109 | (82) | 150 | 94 | ↶ | 859 | (1137) | ↶ | ↶ | | | | (360) | 199 | ↶ | | | (1057) | 632 | ↶ | | | <div><div>8</div><table><tr><td>(59)</td><td></td><td>↶</td><td>24</td><td>(57)</td></tr><tr><td>19</td><td></td><td>↶</td><td>949</td><td>(1160)</td></tr><tr><td>↶</td><td></td><td></td><td></td><td></td></tr><tr><td>(1126)</td><td>726</td><td>→</td><td></td><td></td></tr></table></div> | (59) | | ↶ | 24 | (57) | 19 | | ↶ | 949 | (1160) | ↶ | | | | | (1126) | 726 | → | | | | | | | | | | | | | | | | | | |
| (170) | (69) | ↶ | 109 | (82) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 150 | 94 | ↶ | 859 | (1137) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↶ | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (360) | 199 | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1057) | 632 | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (59) | | ↶ | 24 | (57) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | | ↶ | 949 | (1160) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (1126) | 726 | → | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div><div>9</div><table><tr><td>(120)</td><td>(167)</td><td>↶</td><td>146</td><td>(179)</td></tr><tr><td>38</td><td>64</td><td>↶</td><td>719</td><td>(684)</td></tr><tr><td>↶</td><td>↶</td><td>↶</td><td>↶</td><td>↶</td></tr><tr><td>(792)</td><td>579</td><td>↶</td><td>216</td><td>33</td></tr><tr><td>(334)</td><td>147</td><td>↶</td><td>(413)</td><td>(67)</td></tr></table></div> | (120) | (167) | ↶ | 146 | (179) | 38 | 64 | ↶ | 719 | (684) | ↶ | ↶ | ↶ | ↶ | ↶ | (792) | 579 | ↶ | 216 | 33 | (334) | 147 | ↶ | (413) | (67) | <div><div>10</div><table><tr><td>(10)</td><td>(1)</td><td>(0)</td><td>↶</td><td>0</td><td>(4)</td></tr><tr><td>1</td><td>0</td><td>0</td><td>↶</td><td>804</td><td>(794)</td></tr><tr><td>↶</td><td>↓</td><td>↶</td><td>↶</td><td>191</td><td>(273)</td></tr><tr><td>(113)</td><td>80</td><td>↶</td><td></td><td></td><td>↶</td></tr><tr><td>(751)</td><td>541</td><td>↶</td><td></td><td></td><td>31</td></tr><tr><td>(162)</td><td>55</td><td>↶</td><td></td><td></td><td>(171)</td></tr></table></div> | (10) | (1) | (0) | ↶ | 0 | (4) | 1 | 0 | 0 | ↶ | 804 | (794) | ↶ | ↓ | ↶ | ↶ | 191 | (273) | (113) | 80 | ↶ | | | ↶ | (751) | 541 | ↶ | | | 31 | (162) | 55 | ↶ | | | (171) |
| (120) | (167) | ↶ | 146 | (179) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 38 | 64 | ↶ | 719 | (684) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↶ | ↶ | ↶ | ↶ | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (792) | 579 | ↶ | 216 | 33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (334) | 147 | ↶ | (413) | (67) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (10) | (1) | (0) | ↶ | 0 | (4) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | 0 | 0 | ↶ | 804 | (794) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ↶ | ↓ | ↶ | ↶ | 191 | (273) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (113) | 80 | ↶ | | | ↶ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (751) | 541 | ↶ | | | 31 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| (162) | 55 | ↶ | | | (171) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

2040 No development occurring within Town of South Hill:
No Build Volumes

Legend



Signalized Intersection



Roundabout

XX

AM Peak Hour

(XX)

PM Peak Hour

1 MAPLE LN

2 E ATLANTIC ST / HAMMER ST

3 E ATLANTIC ST / COUNTRY LN

4 I-85 SOUTHBOUND RAMP

5 I-85 NORTHBOUND RAMP

6 THOMPSON ST

7 PEEBLES ST

8 CROWDER ST

9 CYCLE LN

10 HIGH ST

| | | | | | |
|------|-------|-----|------|-------|------|
| (3) | (170) | (8) | ↶ | 21 | (12) |
| 4 | 282 | 22 | ↶ | 13 | (11) |
| ↶ | ↓ | ↶ | ↶ | 5 | (5) |
| (4) | 2 | ↶ | ↶ | ↑ | ↶ |
| (4) | 25 | ↶ | 35 | 311 | 10 |
| (54) | 46 | ↶ | (25) | (314) | (1) |

| | | | |
|--|---|-----|-------|
| | ↶ | 32 | (70) |
| | ↑ | 470 | (719) |

| | | | | | |
|-------|------|-------|------|------|-------|
| (37) | (68) | (739) | ↶ | 425 | (609) |
| 34 | 28 | 330 | ↶ | 271 | (131) |
| ↶ | ↓ | ↶ | ↶ | 26 | (13) |
| (37) | 25 | ↶ | ↶ | ↑ | ↶ |
| (278) | 300 | ↶ | 3 | 20 | 19 |
| (15) | 9 | ↶ | (13) | (73) | (82) |

| | | | |
|-------|-----|-----|-------|
| (185) | ↶ | 169 | (218) |
| 156 | ↶ | 566 | (567) |
| ↶ | | | ↶ |
| (934) | 579 | ↶ | 116 |
| (165) | 69 | ↶ | (129) |

| | | | | |
|-------|-----|---|-----|-------|
| (93) | | ↶ | 97 | (140) |
| 140 | | ↶ | 594 | (692) |
| ↶ | | | | |
| (980) | 611 | ↶ | | |
| (83) | 85 | ↶ | | |

| | | | | |
|-------|------|---|-----|-------|
| (20) | (13) | ↶ | 7 | (9) |
| 44 | 19 | ↶ | 647 | (812) |
| ↶ | | ↶ | | |
| (33) | 27 | ↶ | | ↶ |
| (947) | 584 | ↶ | | 106 |
| | | | | (158) |

| | | | | |
|-------|-----|---|-----|-------|
| (102) | (8) | ↶ | 6 | (3) |
| 41 | 5 | ↶ | 613 | (719) |
| ↶ | | ↶ | | |
| (128) | 38 | ↶ | | |
| (990) | 671 | ↶ | | |



| | | | | |
|-------|------|---|-----|-------|
| (59) | (10) | ↶ | 1 | (6) |
| 19 | 4 | ↶ | 600 | (663) |
| ↶ | | ↶ | | |
| (66) | 37 | ↶ | | |
| (926) | 637 | ↶ | | |

| | | | | | |
|-------|-----|-------|------|-----|-------|
| (120) | (6) | (135) | ↶ | 86 | (120) |
| 38 | 2 | 26 | ↶ | 537 | (500) |
| ↶ | ↓ | ↶ | ↶ | 6 | (14) |
| (59) | 60 | ↶ | ↶ | ↑ | ↶ |
| (727) | 540 | ↶ | 26 | 3 | 4 |
| (150) | 41 | ↶ | (49) | (6) | (12) |

| | | | | | |
|-------|-----|-----|------|-----|-------|
| (10) | (1) | (0) | ↶ | 0 | (4) |
| 1 | 0 | 0 | ↶ | 581 | (571) |
| ↶ | ↓ | ↶ | ↶ | 8 | (20) |
| (54) | 20 | ↶ | ↶ | ↑ | ↶ |
| (724) | 500 | ↶ | 47 | 0 | 8 |
| (96) | 50 | ↶ | (53) | (0) | (17) |

2040 No development occurring within Town of South Hill: Build Volumes

Legend

-  Signalized Intersection
-  Roundabout
- XX AM Peak Hour
- (XX) PM Peak Hour

1 MAPLE LN / BUTTS ST

2

3 E ATLANTIC ST / COUNTRY LN

4 I-85 SOUTHBOUND RAMP

5 I-85 NORTHBOUND RAMP

6 THOMPSON ST

7 PEEBLES ST

8 CROWDER ST

9 CYCLE LN

10 HIGH ST

| | | | | | |
|------|-------|-----|------|-------|------|
| (3) | (170) | (8) | ↶ | 21 | (12) |
| 4 | 282 | 22 | ↶ | 13 | (11) |
| ↶ | ↓ | ↶ | ↶ | 5 | (5) |
| (4) | 2 | ↶ | ↶ | ↑ | ↶ |
| (4) | 25 | ↶ | 35 | 311 | 10 |
| (54) | 46 | ↶ | (25) | (314) | (1) |

| | | | | |
|-------|-----|---|-----|-------|
| | | ↶ | 308 | (181) |
| | | ↶ | 54 | (81) |
| (293) | 309 | → | | |
| | | | | |

| | | | | | |
|-------|-------|---|------|-------|------|
| (105) | (739) | ↶ | 457 | (679) | |
| 62 | 330 | ↶ | 297 | (144) | |
| ↶ | ↶ | ⬇ | | | |
| (278) | 300 | → | 3 | 20 | 19 |
| (96) | 63 | ↶ | (13) | (73) | (82) |

| | | | | |
|-------|-----|---|-----|-------|
| (185) | | ↶ | 169 | (218) |
| 156 | | ↶ | 566 | (567) |
| ↶ | | | | ↶ |
| (934) | 579 | → | | 116 |
| (165) | 69 | ↶ | | (129) |

| | | | | |
|-------|-----|---|-----|-------|
| (93) | | ↶ | 97 | (140) |
| 140 | | ↶ | 594 | (692) |
| ↶ | | | | |
| (980) | 611 | ↶ | | |
| (83) | 85 | ↶ | | |

| | | | | |
|-------|-----|---|-----|-------|
| (20) | | ↶ | 7 | (9) |
| 44 | | ↶ | 647 | (812) |
| ↶ | | | | ↶ |
| (980) | 611 | → | | 106 |
| | | | | (158) |

| | | | | |
|-------|------|---|-----|-------|
| (102) | (14) | ↶ | 6 | (3) |
| 41 | 7 | ↶ | 613 | (719) |
| ↶ | ↶ | | | |
| (227) | 102 | ↶ | | |
| (911) | 615 | ↶ | | |


| | | | | |
|-------|-----|---|-----|-------|
| (59) | | ↶ | 4 | (12) |
| 19 | | ↶ | 600 | (663) |
| ↶ | | | | |
| (925) | 622 | → | | |
| | | | | |


| | | | | |
|-------|-------|---|------|-------|
| (120) | (158) | ↶ | 146 | (179) |
| 38 | 49 | ↶ | 537 | (500) |
| ↶ | ↶ | ↶ | ↶ | ↶ |
| (769) | 579 | ↶ | 29 | 4 |
| (156) | 43 | ↶ | (55) | (12) |

| | | | | | |
|-------|-----|-----|------|-----|-------|
| (10) | (1) | (0) | ↶ | 0 | (4) |
| 1 | 0 | 0 | ↶ | 581 | (571) |
| ↶ | ↓ | ↶ | ↶ | 14 | (34) |
| (113) | 80 | ↶ | ↶ | ↑ | ↶ |
| (724) | 500 | ↶ | 47 | 0 | 8 |
| (96) | 50 | ↶ | (53) | (0) | (17) |

2018 Existing Operations

Legend

 Signalized Intersection

 Roundabout

XX AM Peak Hour

(XX) PM Peak Hour

1 MAPLE LN

2 E ATLANTIC ST / COUNTRY LN

3 I-85 INTERCHANGE













4 THOMPSON ST













5 PEEBLES ST



6 CROWDER ST







7 CYCLE LN







8 HIGH ST







| | | | | | |
|---|---|---|---|---|---|
| (11.5 - B) | (11.5 - B) | (11.5 - B) |  | 0 - A | (0 - A) |
| 11.7 - B | 11.7 - B | 11.7 - B |  | 0 - A | (0 - A) |
|  |  |  |  | 7.9 - A | (8.8 - A) |
| (7.7 - A) | 8.1 - A |  |  |  |  |
| (0 - A) | 0 - A |  | 12.7 - B | 11.1 - B | 11.1 - B |
| (0 - A) | 0 - A |  | (11.5 - B) | (9.5 - A) | (9.5 - A) |
| Overall | 2 - A | (1.9 - A) | | | |













| | | | | | |
|---|---|---|---|---|---|
| (26.8 - C) | (27.1 - C) | (43.2 - D) |  | 14.3 - B | (15.9 - B) |
| 27.1 - D | 26.8 - C | 36.7 - D |  | 17.6 - B | (23.9 - C) |
|  |  |  |  | 40.5 - D | (55.8 - E) |
| (53.7 - D) | 40.3 - D |  |  |  |  |
| (23.9 - C) | 17 - B |  | 45.4 - D | 37.9 - D | 38.4 - D |
| (22.2 - C) | 15.8 - B |  | (55.9 - E) | (52.1 - D) | (57.5 - E) |
| Overall | 22.4 - C | (32.3 - C) | | | |













| | | | | | |
|-------------|----|---|---|----|------|
| | | |  | 53 | (59) |
| (55) | 49 |  | | | |
| Travel Time | | | | | |

| | | | | |
|---|---|---|-------|---------|
| (25.8 - D) | (25.8 - D) |  | 0 - A | (0 - A) |
| 16.6 - C | 16.6 - C |  | 0 - A | (0 - A) |
|  |  | | | |
| (10.1 - B) | 9.5 - A |  | | |
| (0 - A) | 0 - A |  | | |
| Overall | 0.9 - A | (0.4 - A) | | |

| | | | | |
|--|--|---|-------|---------|
| (13.5 - B) | (13.5 - B) |  | 0 - A | (0 - A) |
| 14.6 - B | 14.6 - B |  | 0 - A | (0 - A) |
|  |  | | | |
| (10.7 - A) | 10 - A |  | | |
| (0 - A) | 0 - A |  | | |
| Overall | 0.8 - A | (1.5 - A) | | |


| | | | | |
|--|--|---|-------|---------|
| (14.7 - B) | (14.7 - B) |  | 0 - A | (0 - A) |
| 12.8 - B | 12.8 - B |  | 0 - A | (0 - A) |
|  |  | | | |
| (9.8 - A) | 9.5 - A |  | | |
| (0 - A) | 0 - A |  | | |
| Overall | 0.5 - A | (1 - A) | | |


| | | | | | |
|---|---|---|---|---|---|
| (26.8 - C) | (29.1 - C) | (29.1 - C) |  | 7.1 - A | (7.8 - A) |
| 30.9 - C | 31.5 - C | 31.5 - C |  | 13.3 - B | (17.5 - B) |
|  |  |  |  | 37.3 - D | (54.7 - D) |
| (36.9 - D) | 34 - C |  |  |  |  |
| (15.8 - B) | 9.4 - A |  | 33.6 - C | 33.6 - C | 32.6 - C |
| (5.7 - A) | 3.7 - A |  | (31.5 - C) | (31.5 - C) | (30.3 - C) |
| Overall | 13.9 - B | (18.3 - B) | | | |

| | | | | | |
|---|---|---|---|---|---|
| (15.1 - B) | (15.1 - B) | (15.1 - C) |  | 0 - A | (0 - A) |
| 10.4 - B | 10.4 - B | 10.4 - B |  | 0 - A | (0 - A) |
|  |  |  |  | 8.1 - A | (9.1 - A) |
| (8.9 - A) | 8.9 - A |  |  |  |  |
| (0 - A) | 0 - A |  | 20.5 - C | 20.5 - C | 20.5 - C |
| (0 - A) | 0 - A |  | (46.7 - E) | (46.7 - E) | (46.7 - E) |
| Overall | 1.3 - A | (3.2 - A) | | | |

2040 Development occurring
within Town of South Hill:
No Build Operations

Legend

 Signalized Intersection

 Roundabout

XX

AM Peak Hour

(XX)

PM Peak Hour

1 MAPLE LN

2 E ATLANTIC ST / COUNTRY LN

3 I-85 INTERCHANGE













4 THOMPSON ST













5 PEEBLES ST


6 CROWDER ST







7 CYCLE LN







8 HIGH ST







| | | | | | |
|---|---|---|---|---|---|
| (10.3 - B) | (10.3 - B) | (22 - C) |  | 0 - A | (0 - A) |
| 42.2 - E | 42.2 - E | 19.2 - C |  | 0 - A | (0 - A) |
|  |  |  |  | 8.7 - A | (9.8 - A) |
| (8 - A) | 8.3 - A |  |  |  |  |
| (0 - A) | 0 - A |  | 27.4 - D | 27.4 - D | 9.9 - A |
| (0 - A) | 0 - A |  | (22.3 - C) | (22.3 - C) | (11.5 - B) |
| Overall | 8.7 - A | (5.3 - A) | | | |













| | | | | | |
|---|---|---|---|---|---|
| (10.3 - B) | (10.7 - B) | (43.8 - D) |  | 14.5 - B | (15.2 - B) |
| 10.8 - B | 10.8 - B | 35.5 - D |  | 27.4 - C | (30.4 - C) |
|  |  |  |  | 60 - E | (77.3 - E) |
| (45.8 - D) | 46.3 - D |  |  |  |  |
| (32.2 - C) | 24.2 - C |  | 36.2 - D | 17 - B | 16.7 - B |
| (21.7 - C) | 15.8 - B |  | (43.3 - D) | (25 - C) | (23.7 - C) |
| Overall | 24.6 - C | (30 - C) | | | |












| | | | | |
|-------------|----|---|----|------|
| | |  | 53 | (59) |
| (55) | 49 |  | | |
| Travel Time | | | | |

| | | | | |
|---|---|---|-------|---------|
| (847.5 - F) | (847.5 - F) |  | 0 - A | (0 - A) |
| 85 - F | 85 - F |  | 0 - A | (0 - A) |
|  |  | | | |
| (14.5 - B) | 10.9 - B |  | | |
| (0 - A) | 0 - A |  | | |
| Overall | 6 - A | (26.8 - C) | | |

| | | | | |
|--|--|---|-------|---------|
| (37.1 - C) | (37.1 - E) |  | 0 - A | (0 - A) |
| 20.5 - C | 20.5 - C |  | 0 - A | (0 - A) |
|  |  | | | |
| (14.2 - B) | 10.6 - B |  | | |
| (0 - A) | 0 - A |  | | |
| Overall | 2.9 - A | (4.1 - A) | | |


| | | | | |
|--|--|---|-------|---------|
| (12.2 - B) | (12.2 - B) |  | 0 - A | (0 - A) |
| 10.7 - B | 10.7 - B |  | 0 - A | (0 - A) |
|  |  | | | |
| (11 - B) | 9.4 - A |  | | |
| (0 - A) | 0 - A |  | | |
| Overall | 0.3 - A | (0.6 - A) | | |


| | | | | | |
|---|---|---|---|---|---|
| (33.6 - C) | (39.4 - D) | (39.4 - D) |  | 14.7 - B | (20.3 - B) |
| 38.4 - D | 41.1 - D | 41.1 - D |  | 22.1 - C | (30.3 - C) |
|  |  |  |  | 41.1 - D | (45.4 - D) |
| (42.4 - D) | 41.2 - D |  |  |  |  |
| (29 - C) | 19.7 - B |  | 34.5 - C | 34.5 - C | 29.1 - C |
| (22 - C) | 15.8 - B |  | (44.7 - D) | (44.7 - D) | (26.6 - C) |
| Overall | 23.8 - C | (31.3 - C) | | | |

| | | | | | |
|---|---|---|---|---|---|
| (18 - C) | (18 - C) | (18 - C) |  | 0 - A | (0 - A) |
| 11.7 - B | 11.7 - B | 11.7 - B |  | 0 - A | (0 - A) |
|  |  |  | | 8.7 - A | (10.7 - B) |
| (10.3 - B) | 10.1 - B |  |  |  |  |
| (0 - A) | 0 - A |  | 27.4 - D | 27.4 - D | 27.4 - D |
| (0 - A) | 0 - A |  | (107.5 - F) | (107.5 - F) | (107.5 - F) |
| Overall | 2.6 - A | (13.8 - B) | | | |

2040 Development occurring
within Town of South Hill:
Build Operations

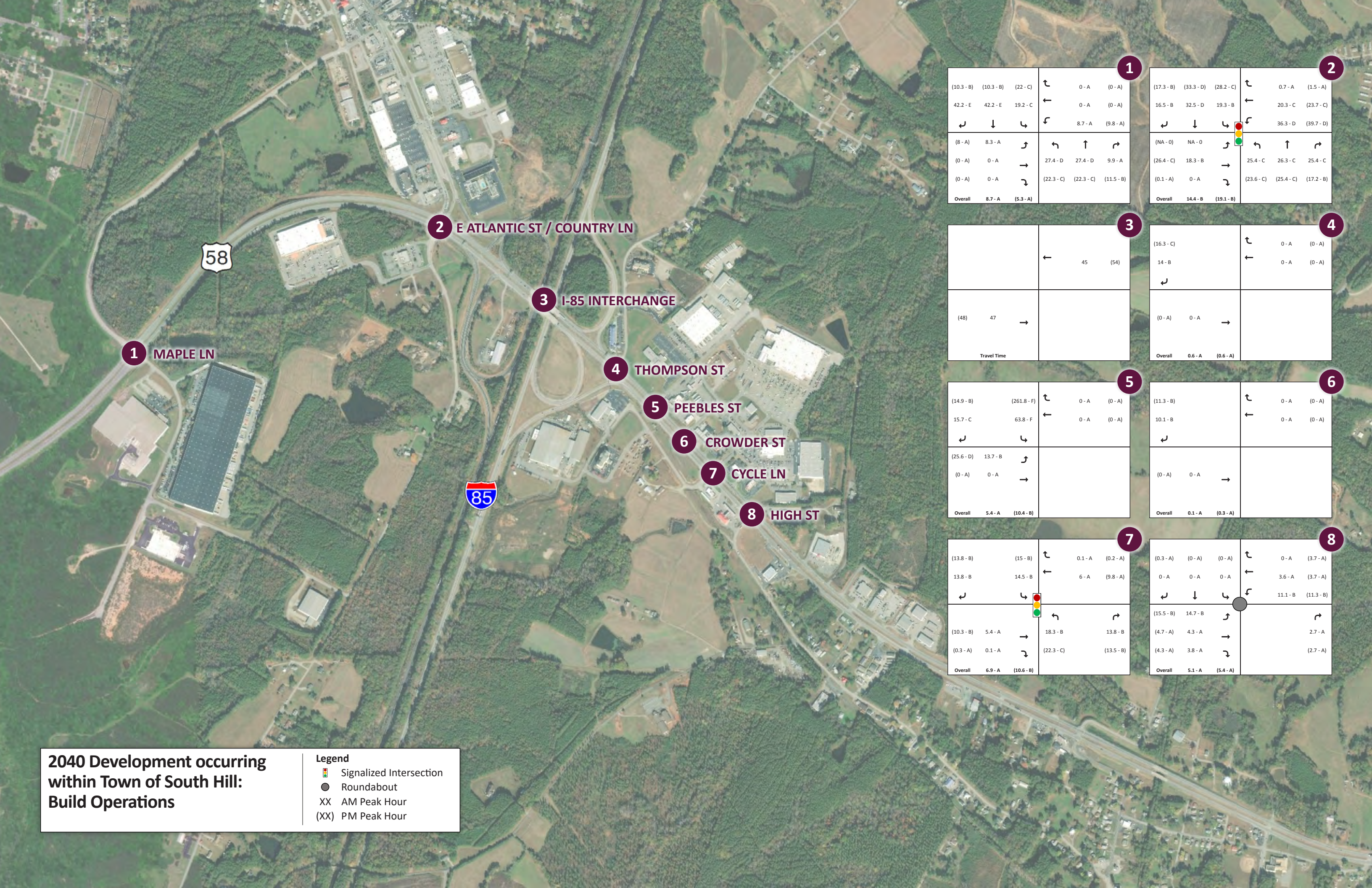
Legend

 Signalized Intersection













 Roundabout

XX AM Peak Hour













(XX) PM Peak Hour



1

| | | | | | |
|---|---|---|---|---|---|
| (10.3 - B) | (10.3 - B) | (22 - C) |  | 0 - A | (0 - A) |
| 42.2 - E | 42.2 - E | 19.2 - C |  | 0 - A | (0 - A) |
|  |  |  |  | 8.7 - A | (9.8 - A) |
| (8 - A) | 8.3 - A |  |  |  |  |
| (0 - A) | 0 - A |  | 27.4 - D | 27.4 - D | 9.9 - A |
| (0 - A) | 0 - A |  | (22.3 - C) | (22.3 - C) | (11.5 - B) |
| Overall | 8.7 - A | (5.3 - A) | | | |





2

| | | | | | |
|---|---|---|---|---|---|
| (17.3 - B) | (33.3 - D) | (28.2 - C) |  | 0.7 - A | (1.5 - A) |
| 16.5 - B | 32.5 - D | 19.3 - B |  | 20.3 - C | (23.7 - C) |
|  |  |  |  | 36.3 - D | (39.7 - D) |
| (NA - D) | NA - D |  |  |  |  |
| (26.4 - C) | 18.3 - B |  | 25.4 - C | 26.3 - C | 25.4 - C |
| (0.1 - A) | 0 - A |  | (23.6 - C) | (25.4 - C) | (17.2 - B) |
| Overall | 14.4 - B | (19.1 - B) | | | |







3

| | | | | |
|-------------|----|---|----|------|
| | |  | 45 | (54) |
| (48) | 47 |  | | |
| Travel Time | | | | |





4

| | | | |
|---|---|---|---------|
| (16.3 - C) |  | 0 - A | (0 - A) |
| 14 - B |  | 0 - A | (0 - A) |
|  | | | |
| (0 - A) | 0 - A |  | |
| Overall | 0.6 - A | (0.6 - A) | |








5

| | | | | |
|---|---|---|-------|---------|
| (14.9 - B) | (261.8 - F) |  | 0 - A | (0 - A) |
| 15.7 - C | 63.8 - F |  | 0 - A | (0 - A) |
|  |  | | | |
| (25.6 - D) | 13.7 - B |  | | |
| (0 - A) | 0 - A |  | | |
| Overall | 5.4 - A | (10.4 - B) | | |











6

| | | | |
|---|---|---|---------|
| (11.3 - B) |  | 0 - A | (0 - A) |
| 10.1 - B |  | 0 - A | (0 - A) |
|  | | | |
| (0 - A) | 0 - A |  | |
| Overall | 0.1 - A | (0.3 - A) | |

7

| | | | | |
|---|---|---|------------|------------|
| (13.8 - B) | (15 - B) |  | 0.1 - A | (0.2 - A) |
| 13.8 - B | 14.5 - B |  | 6 - A | (9.8 - A) |
|  |  |  | | |
| (10.3 - B) | 5.4 - A |  | 18.3 - B | 13.8 - B |
| (0.3 - A) | 0.1 - A |  | (22.3 - C) | (13.5 - B) |
| Overall | 6.9 - A | (10.6 - B) | | |


8

| | | | | | |
|---|---|---|---|----------|---|
| (0.3 - A) | (0 - A) | (0 - A) |  | 0 - A | (3.7 - A) |
| 0 - A | 0 - A | 0 - A |  | 3.6 - A | (3.7 - A) |
|  |  |  |  | 11.1 - B | (11.3 - B) |
| (15.5 - B) | 14.7 - B |  | | |  |
| (4.7 - A) | 4.3 - A |  | | | 2.7 - A |
| (4.3 - A) | 3.8 - A |  | | | (2.7 - A) |
| Overall | 5.1 - A | (5.4 - A) | | | |

2040 No development occurring
within Town of South Hill:
No Build Operations

Legend

 Signalized Intersection

 Roundabout

XX AM Peak Hour

(XX) PM Peak Hour

- 1

MAPLE LN
- 2

E ATLANTIC ST / COUNTRY LN
- 3

I-85 INTERCHANGE
- 4

THOMPSON ST
- 5

PEEBLES ST
- 6

CROWDER ST
- 7


CYCLE LN
- 8


HIGH ST

| | | | | | |
|---|--|--|--|--|--|
| 1 | | | | | |
| <div><div>(9.4 - A)</div><div>(9.4 - A)</div><div>(11.7 - B)</div></div> | | | <div><div><div>↶</div><div>0 - A</div><div>(0 - A)</div></div><div><div>←</div><div>0 - A</div><div>(0 - A)</div></div><div><div>↷</div><div>8.2 - A</div><div>(9.1 - A)</div></div></div> | | |
| <div><div><div>↶</div><div>↓</div><div>↷</div></div><div><div>(7.6 - A)</div><div>8 - B</div><div>↶</div></div><div><div>(0 - A)</div><div>0 - A</div><div>→</div></div><div><div>(0 - A)</div><div>0 - A</div><div>↷</div></div><div><div>Overall</div><div>2.3 - A</div><div>(1.9 - A)</div></div></div> | | | <div><div><div>↶</div><div>↑</div><div>↶</div></div><div><div>14.6 - B</div><div>14.6 - B</div><div>9.7 - A</div></div><div><div>(13 - B)</div><div>(13 - B)</div><div>(9.7 - A)</div></div></div> | | |
| 2 | | | | | |
| <div><div>(10.3 - B)</div><div>(10.7 - B)</div><div>(34.9 - C)</div></div> | | | <div><div><div>↶</div><div>14.1 - B</div><div>(13.3 - B)</div></div><div><div>←</div><div>22.7 - C</div><div>(26.6 - C)</div></div><div><div>↷</div><div>60 - E</div><div>(77.3 - E)</div></div></div> | | |
| <div><div><div>↶</div><div>↓</div><div>↷</div></div><div><div>(45.8 - D)</div><div>46.3 - D</div><div>↶</div></div><div><div>(26.8 - C)</div><div>23.3 - C</div><div>→</div></div><div><div>(21.7 - B)</div><div>15.7 - B</div><div>↷</div></div><div><div>Overall</div><div>23.4 - C</div><div>(25.4 - C)</div></div></div> | | | <div><div><div>↶</div><div>↑</div><div>↶</div></div><div><div>36.2 - D</div><div>17 - B</div><div>16.7 - B</div></div><div><div>(43.3 - D)</div><div>(24.6 - C)</div><div>(23.3 - C)</div></div></div> | | |
| 3 | | | | | |
| | | | <div><div><div>←</div><div>53</div><div>(59)</div></div></div> | | |
| <div><div>(55)</div><div>49</div><div>→</div></div> | | | | | |
| <div><div>Travel Time</div></div> | | | | | |
| 4 | | | | | |
| <div><div>(45.4 - F)</div><div>(45.4 - E)</div></div> | | | <div><div><div>↶</div><div>0 - A</div><div>(0 - A)</div></div><div><div>←</div><div>0 - A</div><div>(0 - A)</div></div></div> | | |
| <div><div><div>↶</div><div>↷</div></div></div> | | | | | |
| <div><div>(10 - B)</div><div>9.1 - A</div><div>↶</div></div> <div><div>(0 - A)</div><div>0 - A</div><div>→</div></div> | | | | | |
| <div><div>Overall</div><div>1.9 - A</div><div>(2.2 - A)</div></div> | | | | | |
| 5 | | | | | |
| <div><div>(10.1 - B)</div><div>(10.1 - B)</div></div> | | | <div><div><div>↶</div><div>0 - A</div><div>(0 - A)</div></div><div><div>←</div><div>0 - A</div><div>(0 - A)</div></div></div> | | |
| <div><div>10.1 - B</div><div>10.1 - B</div></div> | | | | | |
| <div><div><div>↶</div><div>↷</div></div></div> | | | | | |
| <div><div>(9.6 - A)</div><div>8.8 - A</div><div>↶</div></div> <div><div>(0 - A)</div><div>0 - A</div><div>→</div></div> | | | | | |
| <div><div>Overall</div><div>0.6 - A</div><div>(1.2 - A)</div></div> | | | | | |
| 6 | | | | | |
| <div><div>(10.4 - B)</div><div>(10.4 - B)</div></div> | | | <div><div><div>↶</div><div>0 - A</div><div>(0 - A)</div></div><div><div>←</div><div>0 - A</div><div>(0 - A)</div></div></div> | | |
| <div><div>9.8 - A</div><div>9.8 - A</div></div> | | | | | |
| <div><div><div>↶</div><div>↷</div></div></div> | | | | | |
| <div><div>(8.8 - A)</div><div>8.5 - A</div><div>↶</div></div> <div><div>(0 - A)</div><div>0 - A</div><div>→</div></div> | | | | | |
| <div><div>Overall</div><div>0.4 - A</div><div>(0.7 - A)</div></div> | | | | | |
| 7 | | | | | |
| <div><div>(33.6 - C)</div><div>(39.4 - D)</div><div>(39.4 - D)</div></div> | | | <div><div><div>↶</div><div>11.1 - B</div><div>(20.3 - C)</div></div><div><div>←</div><div>13.9 - B</div><div>(24.6 - C)</div></div><div><div>↷</div><div>43.2 - D</div><div>(77.3 - E)</div></div></div> | | |
| <div><div><div>↶</div><div>↓</div><div>↷</div></div><div><div>35.7 - D</div><div>37.8 - D</div><div>37.8 - D</div></div><div><div>(42.4 - D)</div><div>36.8 - D</div><div>↶</div></div><div><div>(22.3 - C)</div><div>10.5 - B</div><div>→</div></div><div><div>(17 - B)</div><div>8.3 - A</div><div>↷</div></div><div><div>Overall</div><div>14.8 - B</div><div>(25.6 - C)</div></div></div> | | | <div><div><div>↶</div><div>↑</div><div>↶</div></div><div><div>30.3 - C</div><div>30.3 - C</div><div>28.9 - C</div></div><div><div>(27.6 - C)</div><div>(27.6 - C)</div><div>(26.2 - C)</div></div></div> | | |
| 8 | | | | | |
| <div><div>(11.2 - B)</div><div>(11.2 - B)</div><div>(11.2 - B)</div></div> | | | <div><div><div>↶</div><div>0 - A</div><div>(0 - A)</div></div><div><div>←</div><div>0 - A</div><div>(0 - A)</div></div><div><div>↷</div><div>8.4 - B</div><div>(9 - B)</div></div></div> | | |
| <div><div><div>↶</div><div>↓</div><div>↷</div></div><div><div>10.3 - B</div><div>10.3 - B</div><div>10.3 - B</div></div><div><div>(8.9 - A)</div><div>8.8 - A</div><div>↶</div></div><div><div>(0 - A)</div><div>0 - A</div><div>→</div></div><div><div>(0 - A)</div><div>0 - A</div><div>↷</div></div><div><div>Overall</div><div>0.9 - A</div><div>(1.3 - A)</div></div></div> | | | <div><div><div>↶</div><div>↑</div><div>↶</div></div><div><div>15.5 - C</div><div>15.5 - C</div><div>15.5 - C</div></div><div><div>(17.9 - C)</div><div>(17.9 - C)</div><div>(17.9 - C)</div></div></div> | | |

2040 No development occurring within Town of South Hill:
Build Operations

Legend

 Signalized Intersection

 Roundabout

XX

AM Peak Hour

(XX)

PM Peak Hour

1 MAPLE LN

2 E ATLANTIC ST / COUNTRY LN

3 I-85 INTERCHANGE













4 THOMPSON ST













5 PEEBLES ST



6 CROWDER ST





7 CYCLE LN




8 HIGH ST





| | | | | | |
|---|---|---|---|---|---|
| (9.4 - A) | (9.4 - A) | (11.7 - B) |  | 0 - A | (0 - A) |
| 12 - A | 12 - A | 13.2 - B |  | 0 - A | (0 - A) |
|  |  |  |  | 8.2 - A | (9.1 - A) |
| (7.6 - A) | 8 - B |  |  |  |  |
| (0 - A) | 0 - A |  | 14.6 - B | 14.6 - B | 9.7 - A |
| (0 - A) | 0 - A |  | (13 - B) | (13 - B) | (9.7 - A) |
| Overall | 2.3 - A | (1.9 - A) | | | |








| | | | | | |
|---|---|---|---|---|---|
| (16.8 - B) | (32.8 - D) | (25.3 - C) |  | 0.5 - A | (1 - A) |
| 17.2 - B | 33.2 - D | 20 - B |  | 17 - B | (15.8 - B) |
|  |  |  |  | 33 - D | (31.8 - D) |
| (NA - 0) | NA - 0 |  |  |  |  |
| (16.8 - B) | 17.1 - B |  | 25.4 - C | 26.3 - C | 25.4 - C |
| (0.1 - A) | 0.1 - A |  | (26.9 - C) | (30.5 - C) | (26.8 - C) |
| Overall | 13.4 - B | (16.3 - B) | | | |













| | | | | |
|-------------|----|---|----|------|
| | |  | 45 | (54) |
| (48) | 47 |  | | |
| Travel Time | | | | |

| | | | | |
|---|---------|---|-------|---------|
| (11.6 - B) | |  | 0 - A | (0 - A) |
| 11 - B | |  | 0 - A | (0 - A) |
|  | | | | |
| (0 - A) | 0 - A |  | | |
| Overall | 0.1 - A | (0.1 - A) | | |

| | | | | |
|--|--|---|-------|---------|
| (13.8 - B) | (13.8 - B) |  | 0 - A | (0 - A) |
| 0 - A | 12.7 - B |  | 0 - A | (0 - A) |
|  |  | | | |
| (11.3 - B) | 9.8 - A |  | | |
| (0 - A) | 0 - A |  | | |
| Overall | 1.2 - A | (2.1 - A) | | |

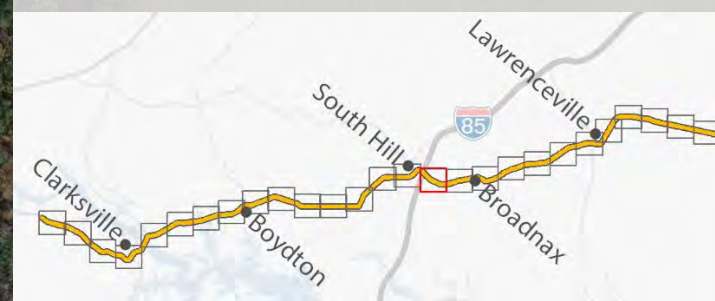
| | | | | |
|--|---------|---|-------|---------|
| (10.3 - B) | |  | 0 - A | (0 - A) |
| 10.1 - B | |  | 0 - A | (0 - A) |
|  | | | | |
| (0 - A) | 0 - A |  | | |
| Overall | 0.2 - A | (0.4 - A) | | |

| | | | | |
|---|---|---|------------|-----------|
| (20.3 - C) | (23.2 - C) |  | 0.1 - A | (0.2 - A) |
| 25.3 - C | 27.5 - C |  | 2.2 - A | (4.3 - A) |
|  |  |  | | |
| (4.9 - A) | 2.3 - A |  | 26.4 - C | 25.2 - C |
| (0.1 - A) | 0 - A |  | (20.9 - C) | (20 - B) |
| Overall | 4 - A | (6.9 - A) | | |

| | | | | | |
|---|---|---|---|---|---|
| (0.3 - A) | (0 - A) | (0 - A) |  | 0 - A | (3.9 - A) |
| 0 - A | 0 - A | 0 - A |  | 3.8 - A | (3.9 - A) |
|  |  |  |  | 11.3 - B | (11.5 - B) |
| (13.7 - B) | 13.5 - B |  |  |  |  |
| (3.2 - A) | 3.1 - A |  | 13.5 - B | 0 - A | 6 - A |
| (3.3 - A) | 3.2 - A |  | (13.7 - B) | (0 - A) | (6.2 - A) |
| Overall | 4.5 - A | (4.6 - A) | | | |



**Route 58 Arterial Management Plan
Figure 23
South Hill Area Summary**



HALIFX
COUNTY LINE

BRUNSWICK
COUNTY LINE

Route 58 Arterial Management Plan

Figure 24

Intersection #49: US 58 with Country Ln Town of South Hill

Recommendation: Reconfigure the existing intersection and traffic signal to a three-phase signal. Permit only through and right-turn movements on US 58. Permit only left and right-turn movements from US 58 BUS southbound onto US 58 and full movements from Country Ln northbound. Construct U-turn area west of existing intersection to permit movements destined to Country Ln from US 58 westbound or US 58 BUS southbound. Remove existing I-85 off ramp onto US 58 BUS and construct continuous flow right-turn lane from US 58 westbound onto US 58 BUS. Eastbound US 58 left-turns to be managed at Maple Lane or interchange (depending on interchange configuration).

ROW Impacts: All improvements are within the ROW

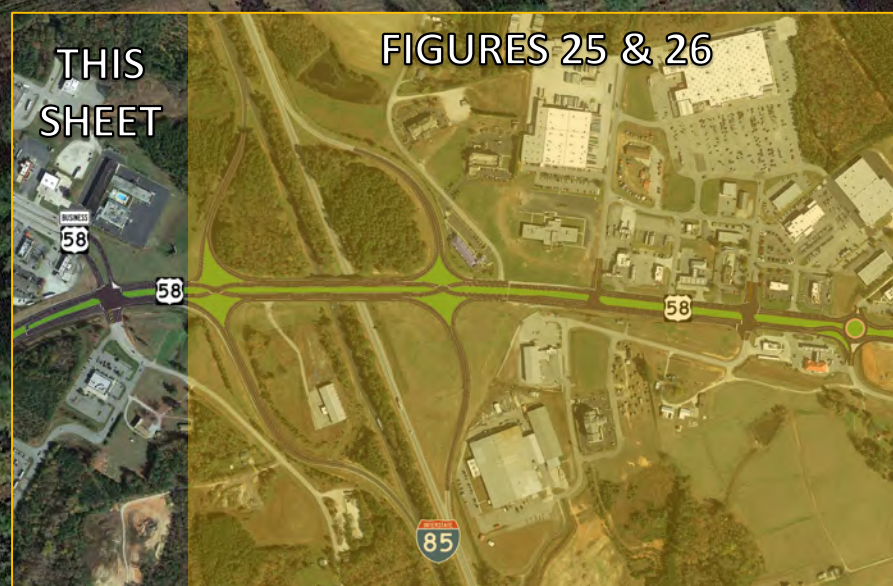
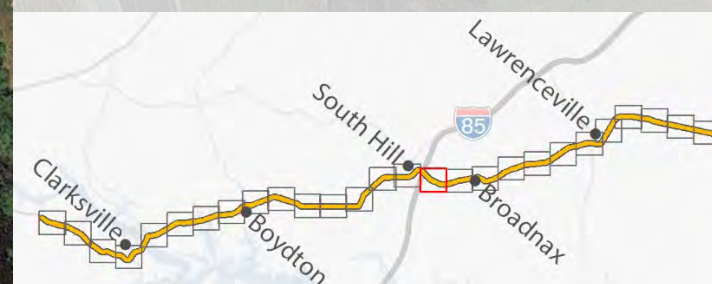
Improvement Type: Congestion Mitigation, Economic Development, Safety, Travel Time Preservation

Operations:

| 2040 Future Delay (sec - LOS) | No Build | Build |
|----------------------------------|----------|--------|
| AM | 24.6-C | 17.4-C |
| PM | 30.4-C | 20.4-C |

Cost: \$1.9M to \$3.1M

Standard Movements
Re-routed Movements



HALIFX
COUNTY LINE

BRUNSWICK
COUNTY LINE

Route 58 Arterial Management Plan

Figure 25

I-85 Interchange

Town of South Hill

Recommendation: Reconfigure interchange to Diverging Diamond Interchange or a Roundabouts Interchange (Inset). Interchange will require an Interchange Modification Report (IMR) to be submitted to the FHWA to determine ultimate configuration.

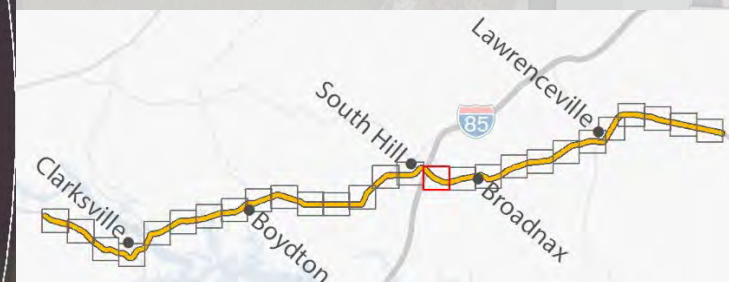
ROW Impacts: All improvements are within the ROW

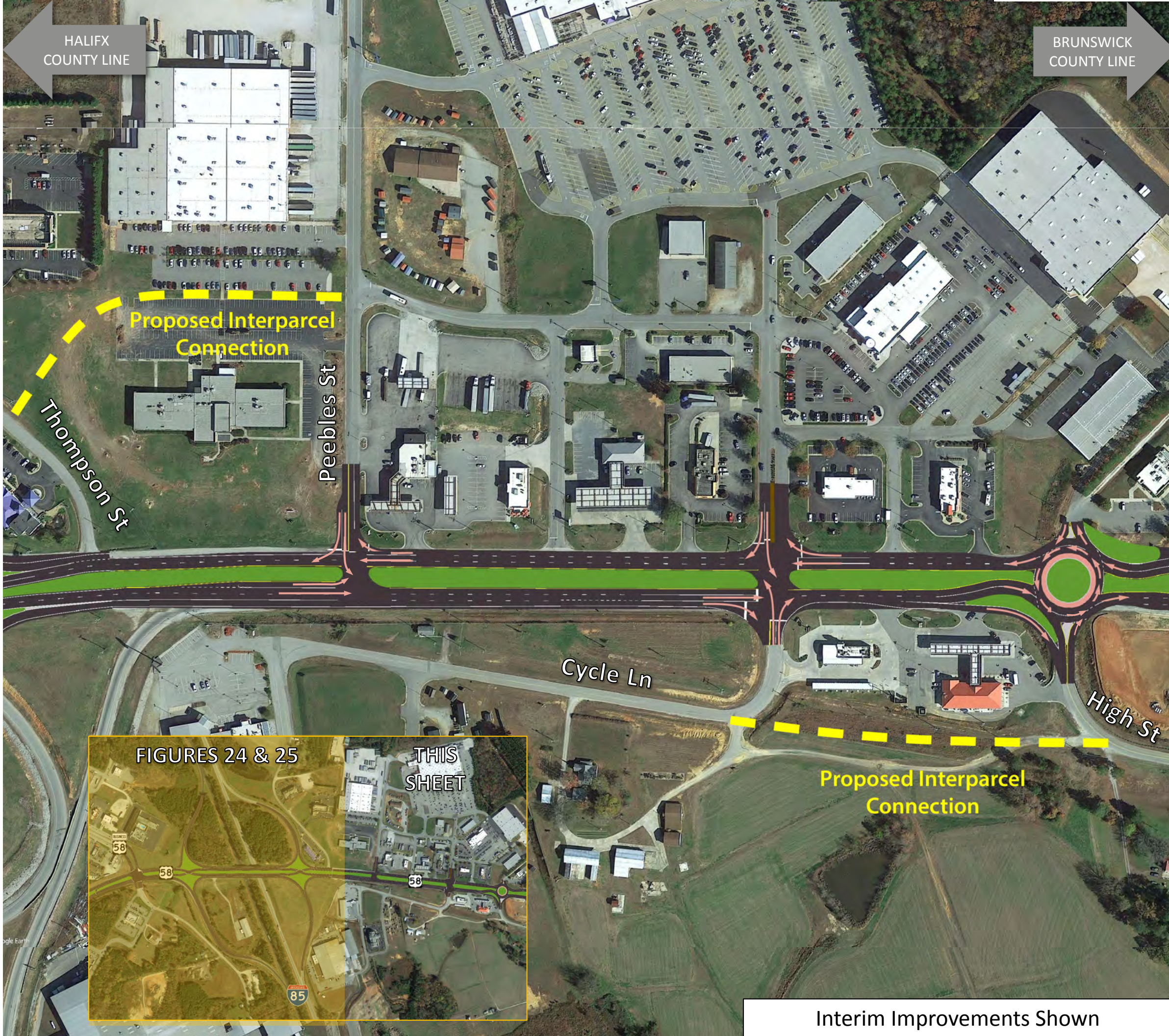
Improvement Type: Economic Development, Safety, Travel Time Preservation

Traffic Operations & Safety:

| | |
|--------------------|--|
| Traffic Operations | Reduced travel times for vehicles due to reduced weave and merge areas. |
| Safety | Decreased risk of side-swipes and rear end crashes on both I-85 and US 58. |

Cost: \$7.7M to \$28.0M





Route 58 Arterial Management Plan
Figure 26
US 58 Eastern Corporate Limits
Town of South Hill

Interim Recommendation: Reconfigure Thompson St intersection to right-in/right-out only, improve storage length of eastbound US 58 left-turn lane onto Peebles St, reconfigure Crowder St intersection to right-in/right out only, reconfigure Cycle Lane to a two-phase signal, and construct a roundabout at the intersection of High St. Construct inter-parcel connections to maintain access between Thompson St and Peebles St, and between Cycle Ln and High St. Town maintained streets should be investigated further to determine pavement condition and capacity improvements to maintain efficient traffic flow.

Long-term Recommendation: As development occurs, additional improvements will be needed at the intersection of Peebles St and US 58. These improvements may require reviews and approvals by district, state, and FHWA officials. The roundabout at High St will need to be reconfigured to remove northbound left and thru movements to maintain capacity of the corridor.

ROW Impacts: All improvements on US 58 are within the ROW. Inter-parcel connections and Town maintained street improvement may require significant ROW acquisition.

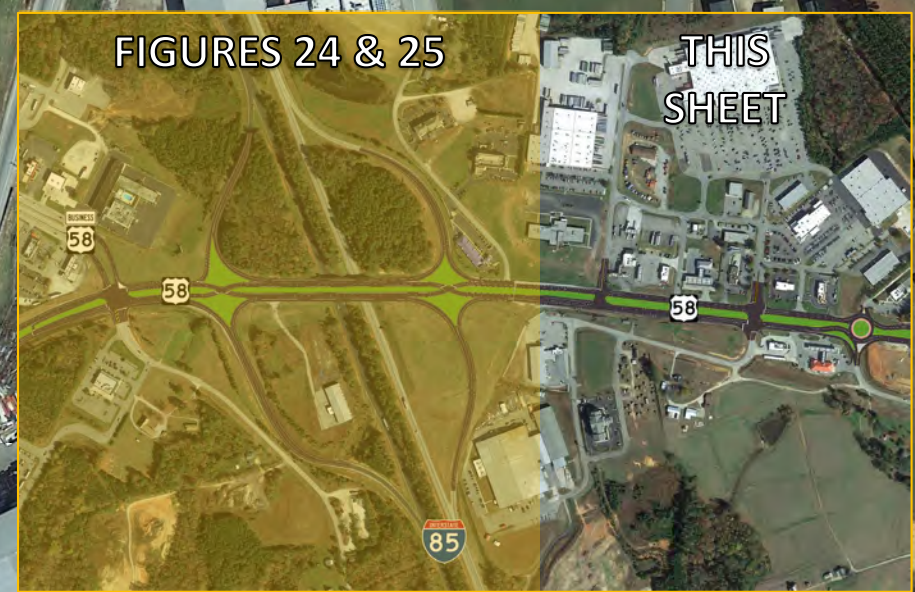
Improvement Type: Economic Development, Safety, Travel Time Preservation

Traffic Operations:

| 2040 Travel Times (min) | Eastbound US 58 | | Westbound US 58 | |
|-------------------------|-----------------|-------|-----------------|-------|
| Condition | No Build | Build | No Build | Build |
| AM | 1:02 | 0:54 | 1:02 | 0:58 |
| PM | 1:32 | 1:17 | 1:38 | 1:26 |

US 58 Improvements: \$6.4M to \$8.3M
Town Street Improvements: \$1.6M to \$10.0M

Standard Movements



Interim Improvements Shown

DDI + Configurations

| DDI | |
|-------------|--------------|
| Low | High |
| \$7,693,139 | \$26,022,638 |

| High St Roundabout | |
|--------------------|-------------|
| Low | High |
| \$4,875,000 | \$6,075,000 |

BUSINESS
58

58

| Country Lane | |
|--------------|-------------|
| Low | High |
| \$1,907,000 | \$3,046,850 |

| Thompson St to Cycle Ln | |
|-------------------------|-------------|
| Low | High |
| \$1,499,500 | \$2,294,000 |

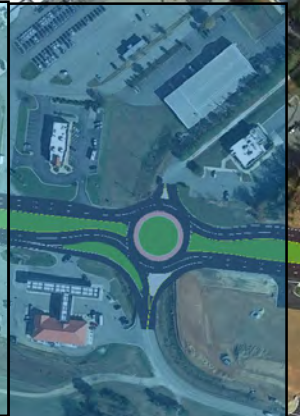
INTERSTATE
85

Roundabouts + Configurations

| Roundabouts | |
|--------------|--------------|
| Low | High |
| \$10,202,305 | \$14,593,499 |

| Roundabouts | |
|--------------|--------------|
| Low | High |
| \$10,202,305 | \$14,593,499 |

| High St Roundabout | |
|--------------------|-------------|
| Low | High |
| \$4,875,000 | \$6,075,000 |



| Country Lane | |
|--------------|-------------|
| Low | High |
| \$1,907,000 | \$3,046,850 |

| Thompson St to Cycle Ln | |
|-------------------------|-------------|
| Low | High |
| \$1,499,500 | \$2,294,000 |

58

INTERSTATE
85

