Appendix A
Design Guidelines

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Introduction

Design techniques are important consideration in the bicycle infrastructure implementation process in order to provide the highest possible level-of-service and to protect bicyclists, pedestrians and motorists from injury while traveling.

The purpose of this section is to provide local officials, planners, and advocates an overview of basic design features that should be considered when implementing the routes highlighted in the plan. These guidelines are not a substitute for a thorough evaluation by professional engineers.

Design Resources

National Bicycle Facility Design Resources

- Guide to the Development of Bicycle Facilities. The American Association of State Highway Transportation Officials (AASHTO). Updated in 2012. Available from AASHTO at https://bookstore.transportation.org/collection_detail.aspx?ID=116.
- Manual on Uniform Traffic Control Devices (MUTCD). Published by the U. S. Department of Transportation, Washington, DC, 2012. The manual is available at http://mutcd.fhwa.dot.gov.
- NACTO Urban Bikeway Design Guide. The National Association of City Transportation Officials (NACTO). Updated in Available for download at http://nacto.org/cities-for-cycling/design-guide/.
- Americans with Disabilities Act Accessibility Guidelines. U.S. Department of Justice, United States Access Board. Guidelines are available at http://www.access-board.gov/guidelines-and-standards.
- Designing Sidewalks and Trails for Access: Part Two - Best Practices Design Guide. Published by U.S. Department of Transportation, Washington, DC, 2001. The Design Guide is available at http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/sidewalk2/.
- International Building Code. Published by International Code Council (ICC), 2006.

Statewide Bicycle Facility Design Resources

- North Carolina Bicycle Facilities Planning and Design Guidelines. Published by the State of North Carolina Department of Transportation, 1994. Available at https://connect.ncdot.gov/projects/BikePed/Pages/Bike-Design-Manual.aspx.
- Walk Bike NC: Design Toolbox. Published by the State of North Carolina Department of Transportation, 2013. Available at http://www.walkbikenc.com/plan-resources/#toolbox.

On-Road Facilities

The following examples of design techniques can be used to provide an illustrative means of education on a variety of bicycle infrastructure.

Shared Lane Markings (Sharrows)

Recommended for Tier 1 routes: 66.55 miles

Cost Estimate: $450 each

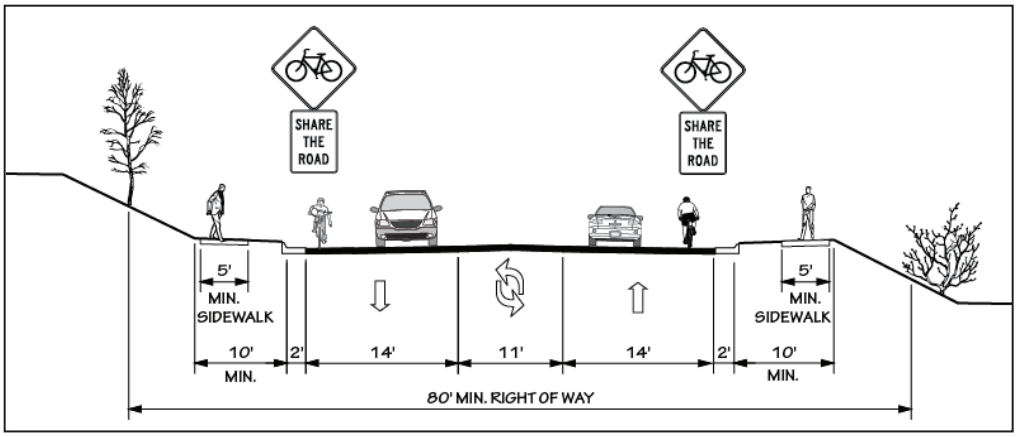
Sharrows are facilities to be used on travel lanes that are too narrow for the bicyclist and the auto-vehicle to travels side by side. These facilities are typically used on roads with low speeds and traffic volumes, however they can be used on higher volume roads with wide outside lanes or shoulders if these are present. A motor vehicle driver will usually have to cross over into the adjacent travel lane to pass a bicyclist, unless a wide outside lane or shoulder is provided. Before sharrows are installed, it is recommended to first determine if it is possible to narrow the travel lane to create a 4 ft. bike lane/offset and a 10 ft. travel lane. NC's Complete Streets Guidelines primarily calls for 10' to 12' lanes. If sharrows are determined as the best option for a roadway, the markings should be placed immediately after an intersection and spaced at intervals not greater than 250 ft and the recommended speed should be 35 mph or less.

According to the Manual on Uniform Traffic Control Devices (MUTCD), shared lane markings (sharrows) are used to:

- Assist bicyclists with lateral positioning in a shared lane with on-street parallel parking in order to reduce the chance of a bicyclist's impacting the open door of a parked vehicle
- Assist bicyclists with lateral positioning in lanes that are too narrow for a motor vehicle and a bicycle to travel side by side within the same traffic lane
- Alert road users of the lateral location bicyclists are likely to occupy within the traveled way
- Encourage safe passing of bicyclists by motorists
- Reduce the incidence of wrong-way bicycling

Source: NCDOT & Davidson Walks & Rolls: Active Transportation Master Plan & Albemarle Regional Bicycle Plan

Sample Cross Section



Source: North Carolina DOT

Bicycle Lane

Recommended for Tier 1 routes: 6.38 miles

Cost Estimate: $12,500 per mile

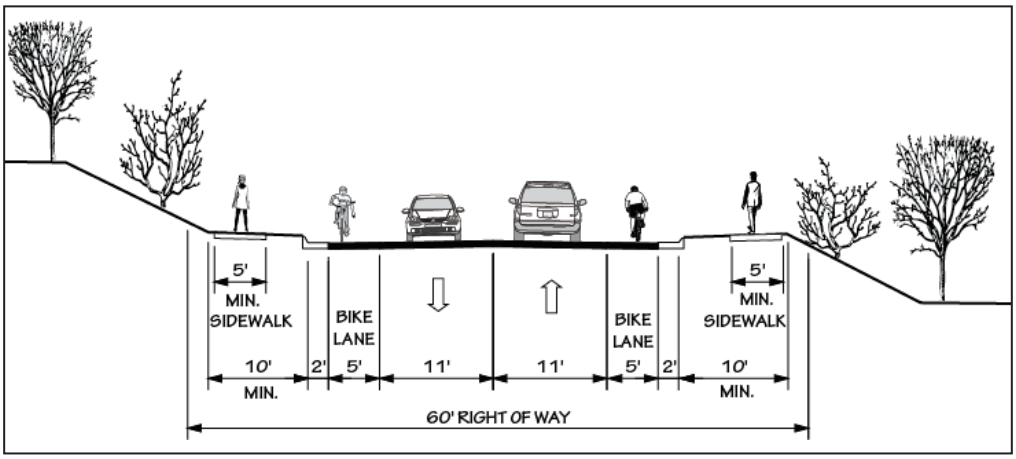
Designated exclusively for bicycle travel, bicycle lanes are segregated from vehicle travel lanes by striping, and can include pavement stencils and other treatments. Bicycle lanes are most appropriate on arterial and collector streets where higher traffic volumes and speeds warrant greater separation are most appropriate where there are a limited number of commercial driveways. Typically these lanes are 4 to 6 feet, with the preferred treatment of 5 feet.

Bicycle lanes can increase safety and promote proper riding by:

- Defining road space for bicyclists and motorists, reducing the possibility that motorists will stray into the bicyclists' path.
- Discouraging bicyclists from riding on the sidewalk.
- Reducing the incidence of wrong way riding.
- Reminding motorists that bicyclists have a right to the road.

Source: NCDOT & Davidson Walks & Rolls: Active Transportation Master Plan

Sample Cross Section



Source: North Carolina DOT

Paved Shoulders

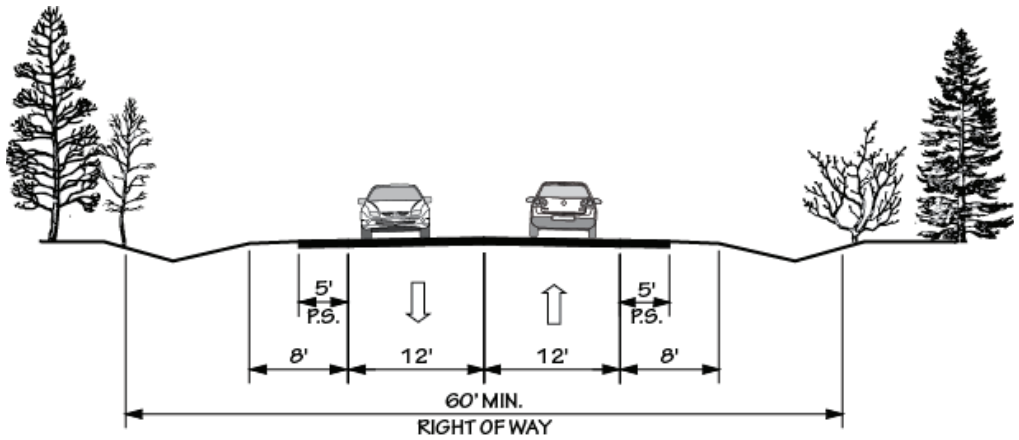
Recommended for Tier 1 routes: 75.44 miles

Cost Estimate: $247,500 - $670,000 per mile depending on topography

Typically found in less-dense areas, shoulders are paved roadways with striped shoulders (4'+) wide enough for bicycle travel but may also be valuable to other modes of travel as well. These often, but not always, include signage alerting motorists to expect bicycle travel along the roadway. Paved shoulders should be considered a temporary treatment, with full bike lanes planned for construction when the roadway is widened or completed with curb and gutter. This type of treatment is not typical in urban areas and should only be used where constraints exist. The recommended minimum width for paved shoulders is 4 feet, however greater widths are recommended if guardrail, curb or other roadside barriers are present of if motor vehicle speeds exceed 50 mph.

Source: NCDOT & Davidson Walks & Rolls: Active Transportation Master Plan

Sample Cross Section



Source: North Carolina DOT

Multi-use Paths

Cost Estimate: $261,000 per mile (paved); $84,000 per mile (unpaved)

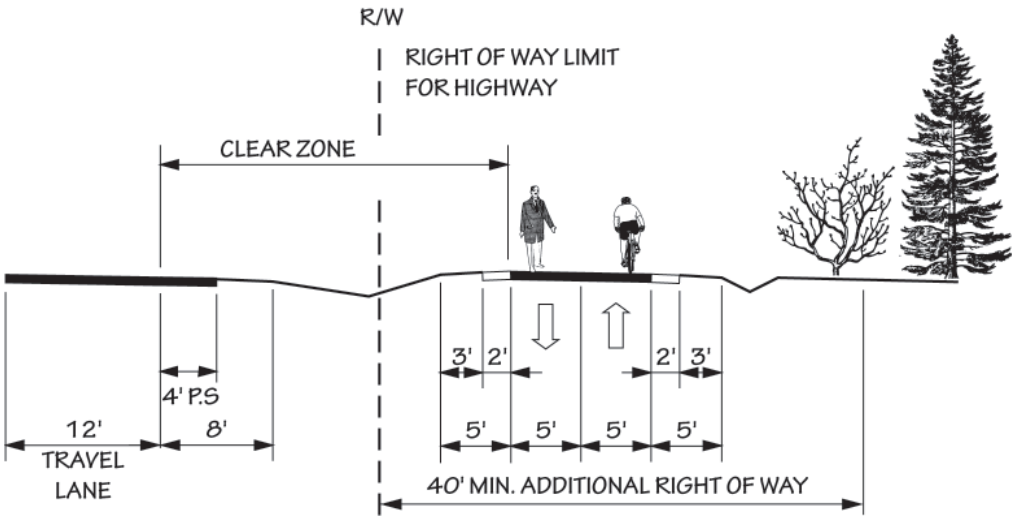
A multi-use pathway is physically separated from motor vehicle traffic, and can be either within the highway right-of-way or within an independent right-of-way. Multi-use pathways include bicycle paths, rail-trails or other facilities built for bicycle and pedestrian traffic.

When properly located, multi-use paths can be a safer type of facility for novice and child bicyclists because they do not have to share the path with motor vehicles. To be safe and enjoyable, multi-use paths must be designed according to well-established design standards. These design standards include adequate width for two-directional use by both cyclists and pedestrians, provision of good sight distance, avoidance of steep grades and tight curves that force bicyclists to make awkward movements, and minimal cross-flow by motor vehicles. Multi-use paths can serve a variety of purposes, including recreation and transportation. For transportation purposes, a multi-use pathway should have a well-defined origin and destination. Multi-use paths should not be located immediately adjacent to a roadway because of safety considerations at intersections with driveways and roads. The bicyclist and motorist each believes that he or she has the right of way; the result can be a bicycle/motor vehicle collision. Studies have shown that such parallel multi-use pathways are approximately twice as dangerous for bicyclists as riding in traffic with motor vehicles.

- A multi-use pathway should have well-defined origin and destination.
- A multi-use pathway can be a safer type of facility for novice and child.
- cyclists, if properly located and designed.
- Sidewalks should never be designated as multi-use pathways.

Source: UNC Highway Safety Research Center & NCDOT – Bicycle Facilities Guide: Types of Bicycle Accommodations

Sample Cross Section



Source: North Carolina DOT

Bicycle Parking

Cost Estimate: $600 (Rack): $2,140 (Locker)

Purpose

Provide secure and convenient parking for bicycles at a variety of destinations. Promote an orderly streetscape that does not create an obstruction in the pedestrian right-of-way.

Considerations

- Racks need to be sited and installed appropriately for them to be well used (i.e., with enough space between racks, not too close to walls).
- Racks should support the bicycle in at least two places (preventing it from falling over) and allow the frame to be locked along with one or both wheels.
- Facilities intended for short- or long-term use will have different requirements for site design and security.
- Provide covered parking when possible.
- Inventories of bicycle parking facilities should include total available parking as well as descriptions of the facilities.

For more information, visit:

- http://www.pedbikeinfo.org/planning/facilities_bike_bikeparking.cfm
- http://c.ymcdn.com/sites/www.apbp.org/resource/resmgr/Bicycle_Parking/EssentialsofBikeParking_FINA.pdf

Source: UNC Highway Safety Research Center

Photo by Kelly Wilson, 2015. Copyright American Planning Association.

Bicycle Boulevards

Cost Estimate: Costs will vary greatly depending on existing conditions and design of the connection.

Bicycle boulevards are low-volume and low-speed streets that have been optimized for bicycle travel through treatments such as traffic calming and traffic reduction, signage and pavement markings, and intersection crossing treatments. These treatments allow through movements for cyclists while discouraging similar through trips by non-local motorized traffic. Motor vehicle access to properties along the route is maintained.

Motor vehicle volumes on bicycle boulevards are usually less than 3000-4000 vehicles per day although volumes below 1500 vehicles per day are preferred. Roadways selected for bicycle boulevards ideally have maximum motor vehicle speeds of 25 mph and typically lack a centerline. In general, a speed differential between motor vehicles and cyclists of no more than approximately 15 mph is desirable. However, along segments of the route where these speed and volume conditions cannot be achieved, consider other measures that can increase cyclist comfort (such as providing a bicycle lane in areas with higher motor vehicle volume) or accept that a particular portion of the bicycle boulevard may be less attractive to less traffic tolerant cyclists. An existing street that meets these operational characteristics may naturally stand out as a bicycle boulevard candidate and may only require the installation of design elements that maintain existing motor vehicle speeds and volumes. However, a street with higher motor vehicle speeds and volumes may also be retrofitted with traffic calming and traffic reduction design elements that intentionally lower the speed and volume of motor vehicles using the roadway. This second option may be preferable if doing it improves the bicycle boulevard connectivity to key destinations or provides a less circuitous route for cyclists. Communities are also likely to discover that the presence of cyclists along the completed boulevard combined with good traffic calming measures may further reduce motor vehicle speeds as motorists adapt to sharing the street with other roadway users and/or choose other routes.

Source: Fundamentals of Bicycle Boulevard Planning and Design
https://www.pdx.edu/ibpi/bicycle-boulevard-planning-design-guidebook

Photo by National Asssociation of City Transportation Officials (NACTO)

Separated Bicycle Lanes

Cost Estimate: The costs can vary greatly due to differences in project specifications and the scale and length of the treatment.

Separated bike lanes are one of many bicycle facility types that can be used to create connected bicycle networks. FHWA defines a network as "Interconnected pedestrian and/or bicycle transportation facilities that allow people of all ages and abilities to safely and conveniently get where they want to go."

Benefits

- Provides greater shy distance between motor vehicles and bicyclists.
- Provides space for bicyclists to pass another bicyclist without encroaching into the adjacent motor vehicle travel lane.
- Encourages bicyclists to ride outside of the door zone when buffer is between parked cars and bike lane.
- Provides a greater space for bicycling without making the bike lane appear so wide that it might be mistaken for a travel lane or a parking lane.
- Appeals to a wider cross-section of bicycle users.
- Encourages bicycling by contributing to the perception of safety among users of the bicycle network.

Source: Urban Bikeway Design Guide (published by NACTO) & Federal Highway Administration

For more information, visit:

http://www.peopleforbikes.org/blog/entry/14-ways-to-make-bike-lanes-better-the-infographic

http://nacto.org/publication/urban-bikeway-design-guide/bike-lanes/buffered-bike-lanes/

http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/separated_bikelane_pdg/page00.cfm

Source: People for Bikes/Green Lane Project

Appendix B
Branding and Signing Plan

Branding

The Western Piedmont Bicycle Route logo is the official graphical representation of the plan and of the routes across the region. The image was based on the Western Piedmont Council of Governments logo which represents all of the four counties. The sprocket represents all forms of bicycling and the background and foreground represents the topography of the region which ranges from the Catawba River Valley to the high mountains in the Pisgah National Forest.

Figure B-1
Logo and Proposed Route Signage Branding

Signing

Methodology

A high priority for implementing the Western Piedmont Bicycle Plan (WPBP) is to install signage along Tier 1 roadway segments with additional future signage placed along Tier 2 and Tier 3 routes.

Required Signs

There are five types of signs used on the routes.

- Route Sign (MUTCD M1-8a with logo) to be installed at all route intersections with the corresponding route number.
- Route Right/Left Sign (MUTCD M6-1) to be installed at specified intersections.
- Route Keep Right/Left Sign (MUTCD M6-2) to be installed at specified intersections.
- Route Ahead Sign (MUTCD M6-3) to be installed at specified intersections.
- Route Left and Right Sign (MUTCD M6-4) to be installed at specified intersections.

Figure B-2
Sample Road Sign

Figure B-3
Proposed Directional Signage

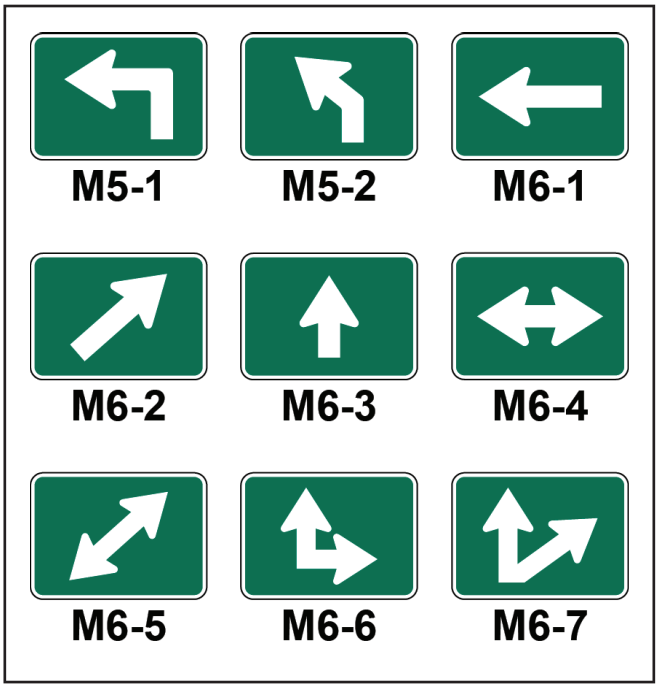


Figure B-4
Sample Share The Road Sign

Table B-1
Number of Tier 1 Segment Signs

Sign A Designation	Sign A Type	Sign B Designation	Sign B Type	Sign A and Sign B Combined	# of Recommended Signs
MUTCD M1-8a	Numbered Route Sign	M6-1	Route Left Sign	MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)	45
MUTCD M1-8a	Numbered Route Sign	M6-1	Route Right Sign	MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)	45
MUTCD M1-8a	Numbered Route Sign	M6-2	Keep Left Sign	MUTCD M1-8a (Numbered Route Sign) with M6-2 (Keep Left Sign)	2
MUTCD M1-8a	Numbered Route Sign	M6-2	Keep Right Sign	MUTCD M1-8a (Numbered Route Sign) with M6-2 (Keep Right Sign)	1
MUTCD M1-8a	Numbered Route Sign	M6-3	Route Ahead Sign	MUTCD M1-8a (Numbered Route Sign) with M6-3 (Route Ahead Sign)	14
MUTCD M1-8a	Numbered Route Sign	M6-4	Route Left and Right Sign	MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)	9
MUTCD M1-8a	Numbered Route Sign	M6-6	Route Ahead and Left Sign	MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)	11
MUTCD M1-8a	Numbered Route Sign	M6-6	Route Ahead and Right Sign	MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Right Sign)	8

Optional Signage

Depending on route location, the amount of traffic volume, and the existing sign system, the following signs may be used in certain areas in combination with the required Route signage.

Figure B-5
Optional Directional Signage

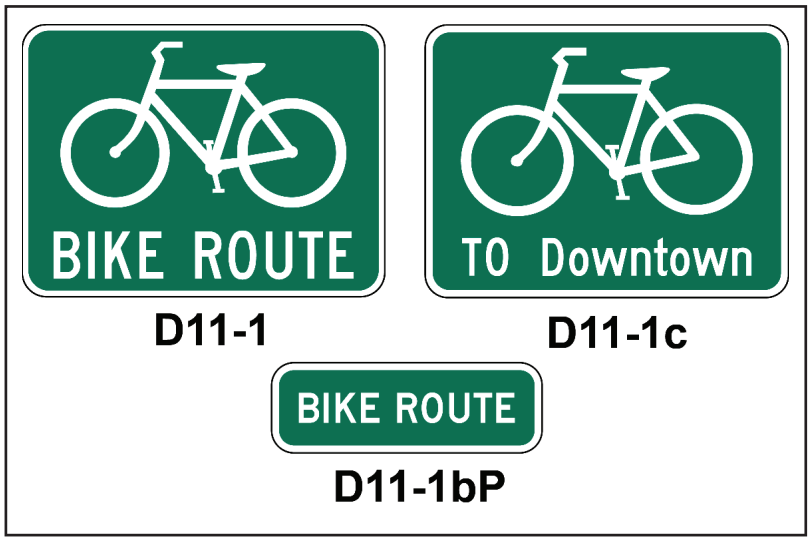
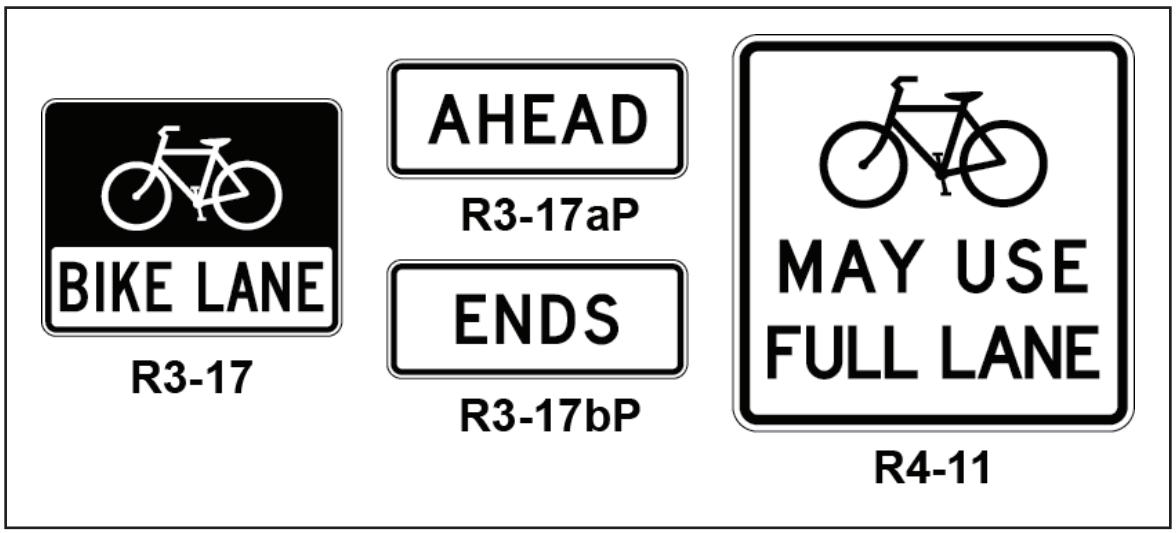


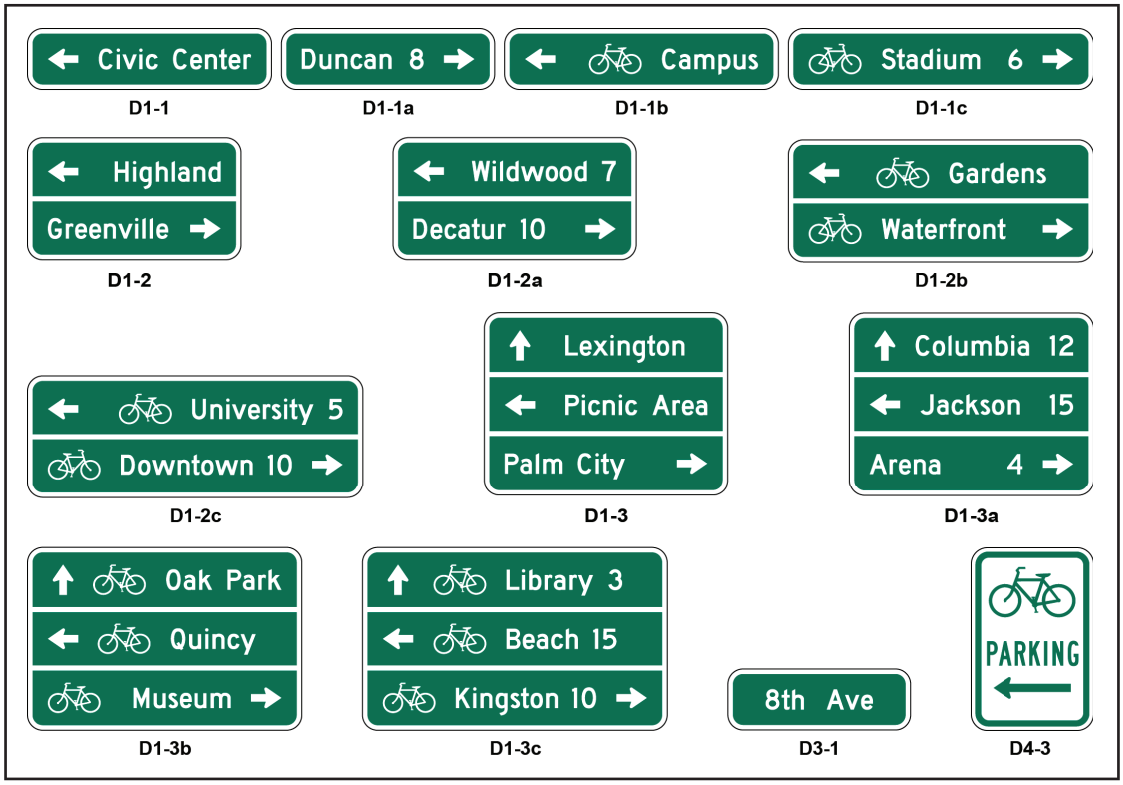
Figure B-6
Optional Regulatory Signage



Destination/Wayfinding Signage

According to the MUTCD, destination or wayfinding signage "may be installed to provide direction, destination, and distance information as needed for bicycle travel. If several destinations are to be shown at a single location, they may be placed on a single sign with an arrow (and the distance, if desired) for each name."

Figure B-7
Optional Destination Signage



Installation and Maintenance Responsibility

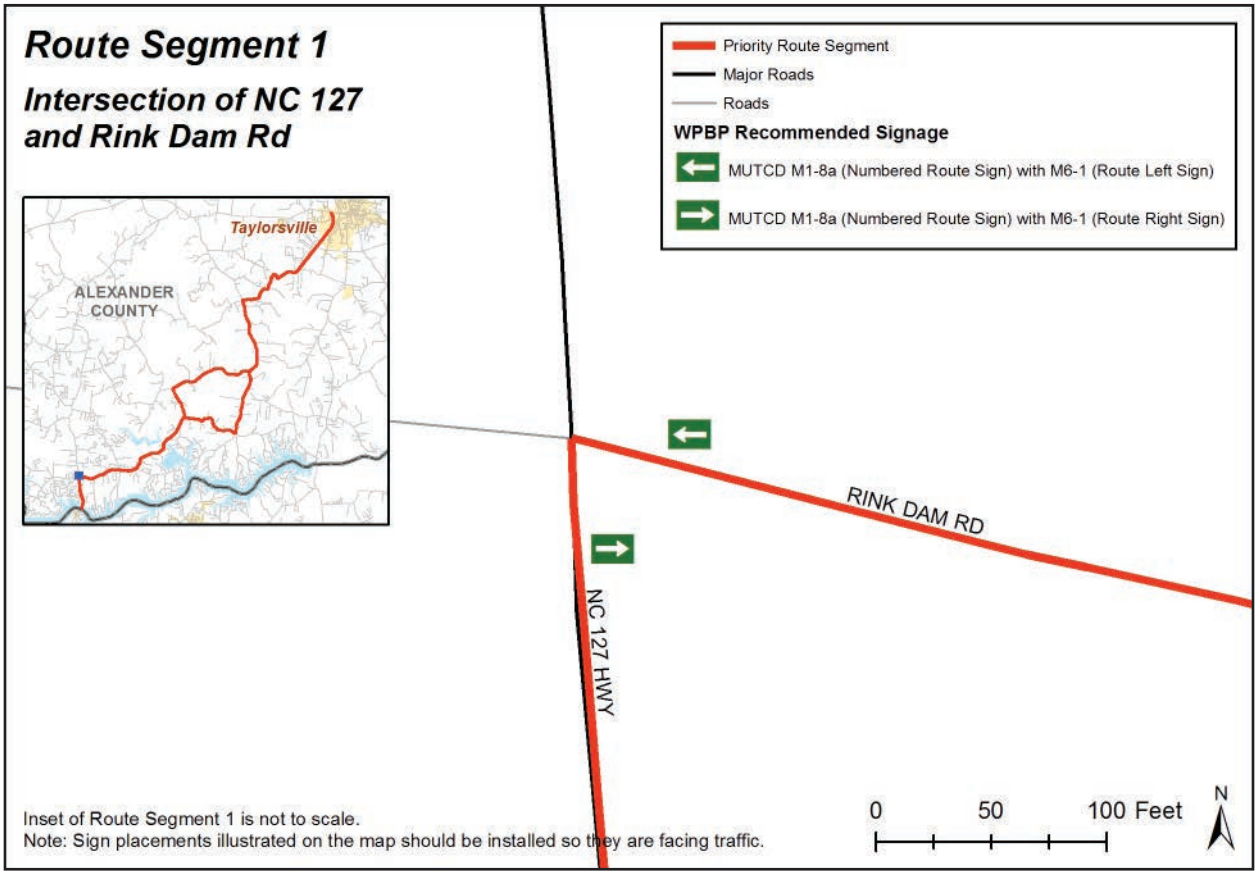
Installation of WPBP signage will be the responsibility of the local municipality or county where the segment is located. Funding for signage may come either from local municipalities, county governments, or private organizations. Any activity related to the installation of signage will coordinated through the appropriate NCDOT Division. After the signage has been installed, it will be the responsibility of the municipality or organization that purchased the signage to maintain them.

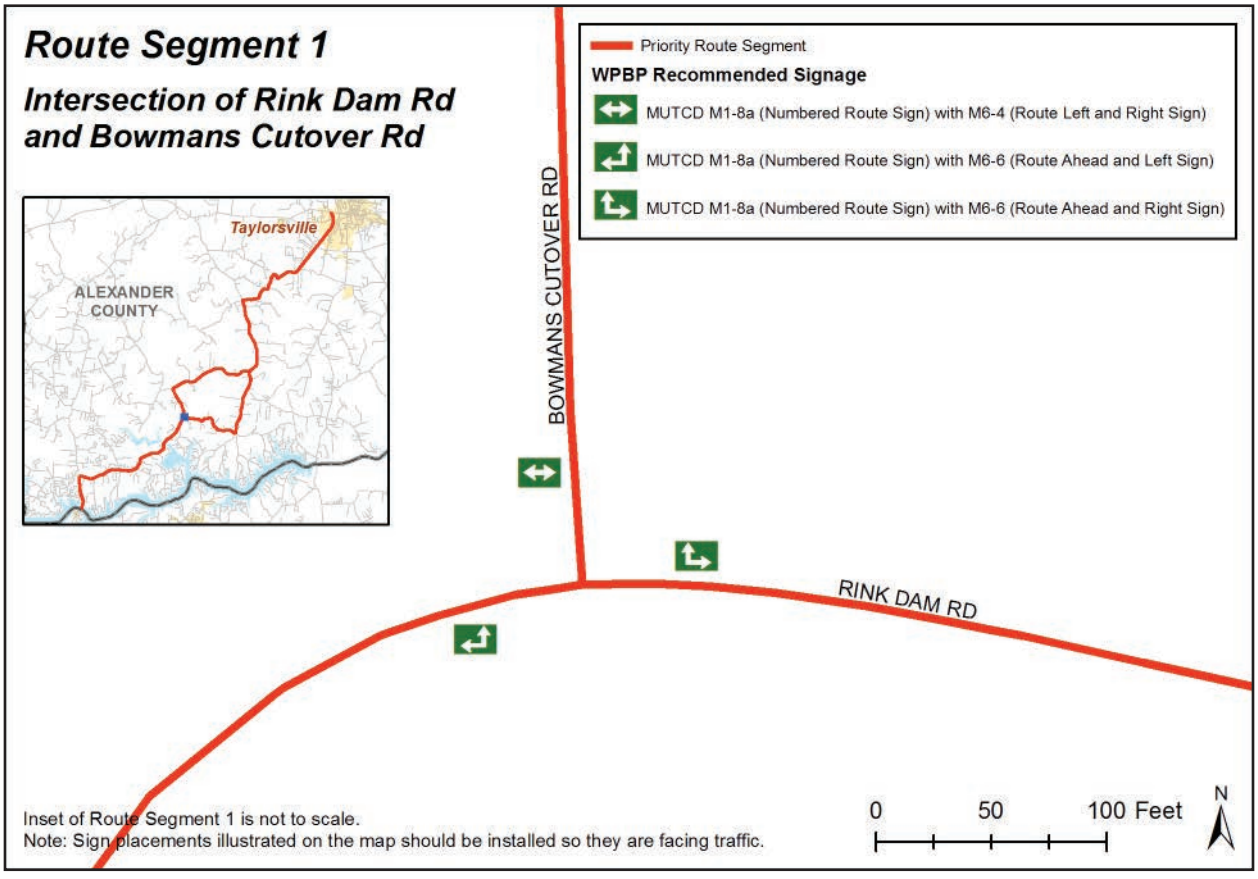
Signing Location Principles

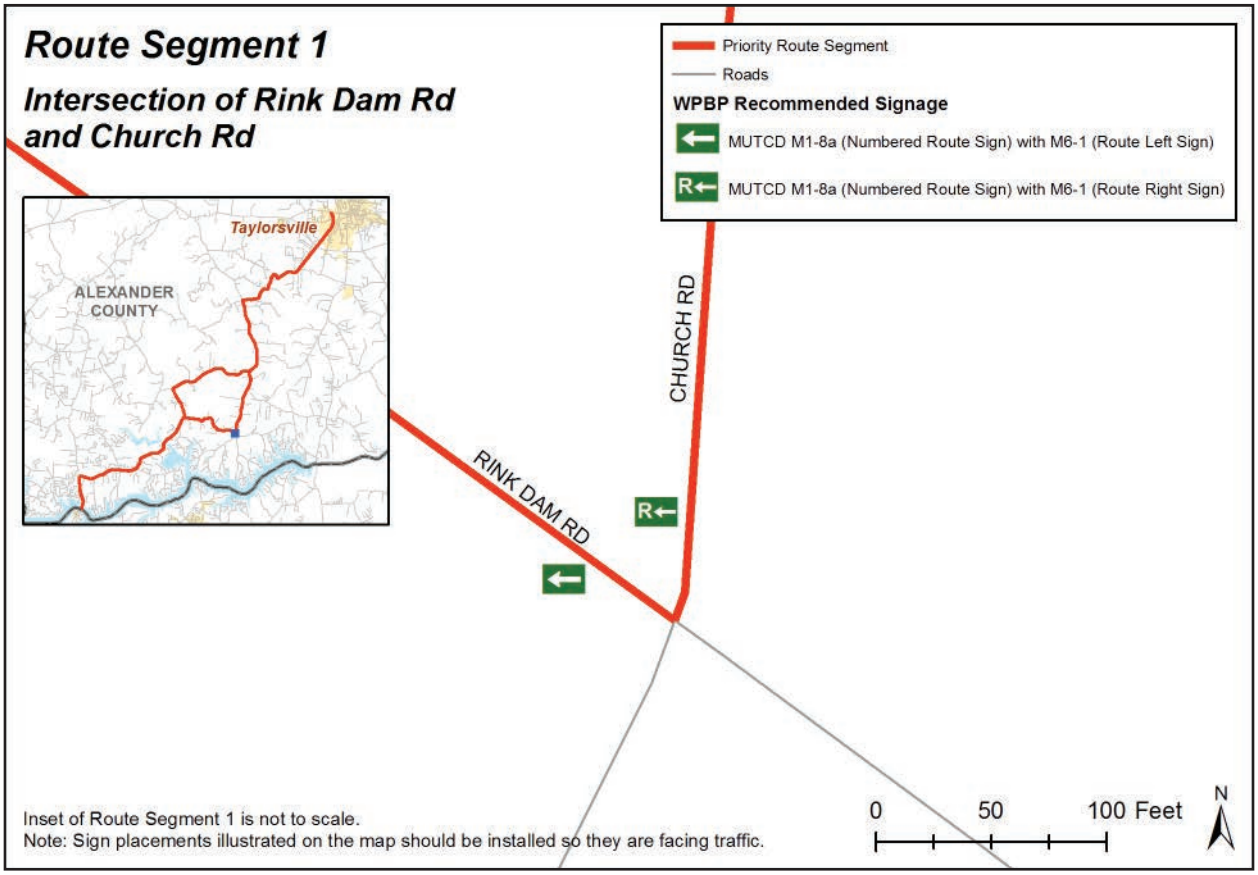
The following sign installation principles were followed:

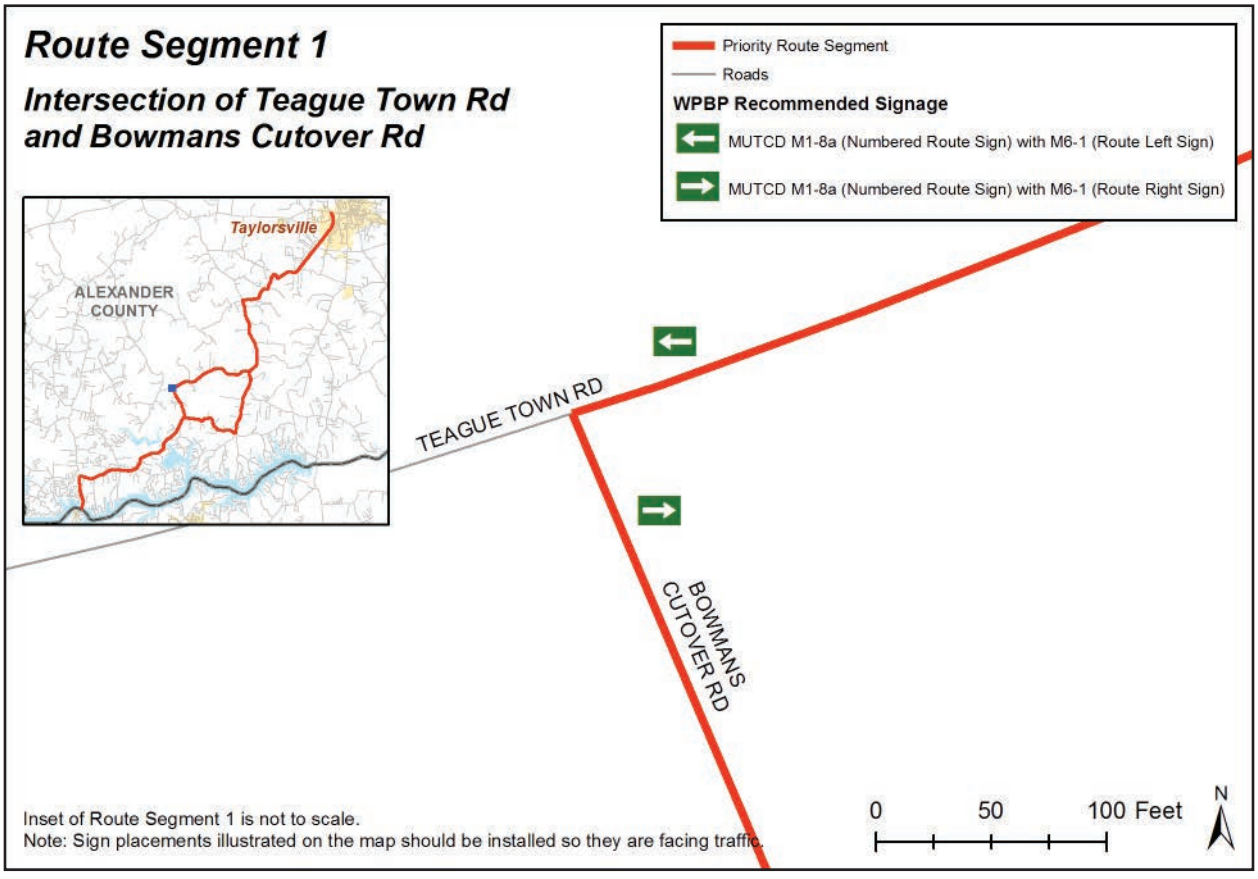
- All intersections where a Tier 1 Route makes a turn (66 locations).
- The majority of signs will be installed at intersections for both approaching directions. These signs would be located between 50-100 feet of an intersection, facing the direction of traffic. Co-locating signs is recommended where more than one sign is required at an intersection.
- The sign heights and setbacks shall comply with standard guidelines followed by the NCDOT for installing such signage.
- It is recommended that route and directional signs are to be placed around 50-ft before intersections and all signs are to be placed facing traffic.

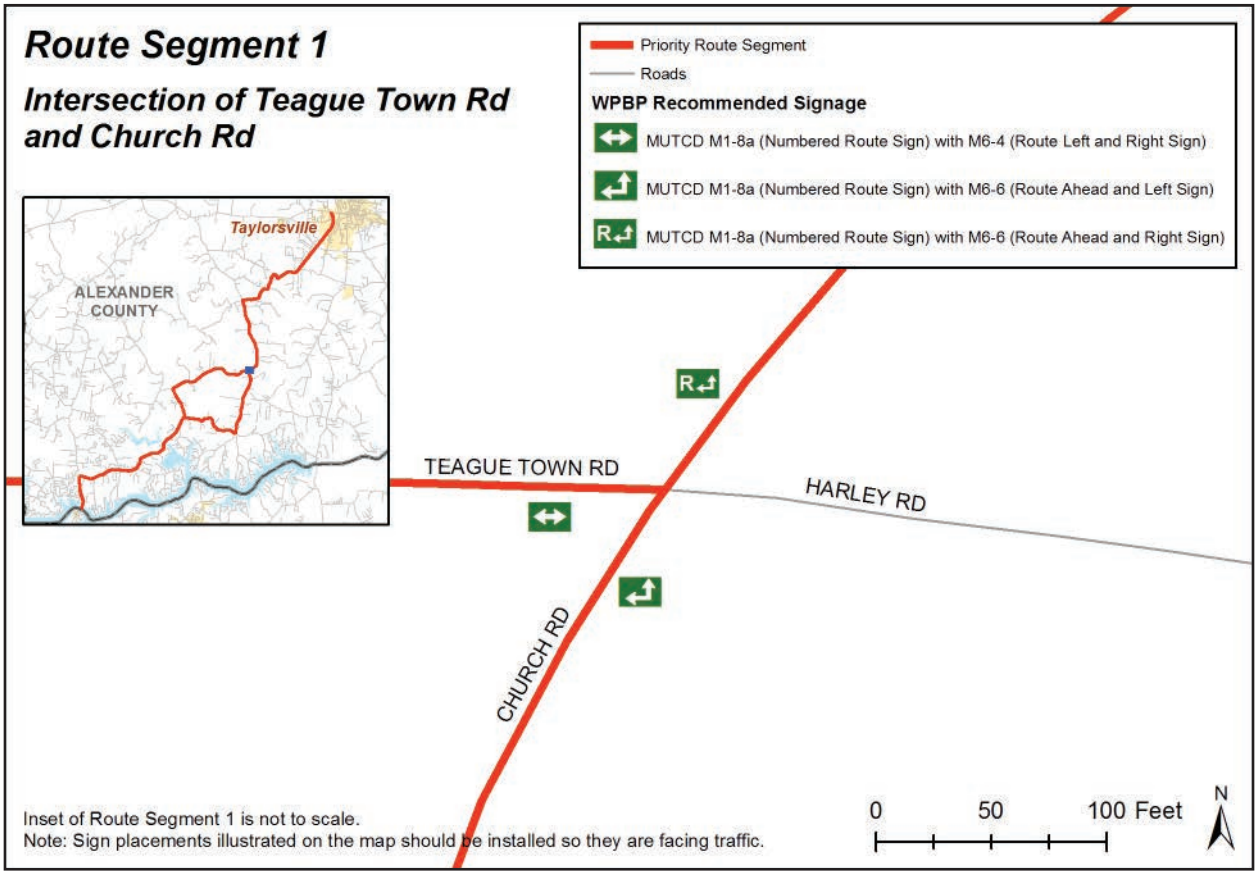
Alexander County

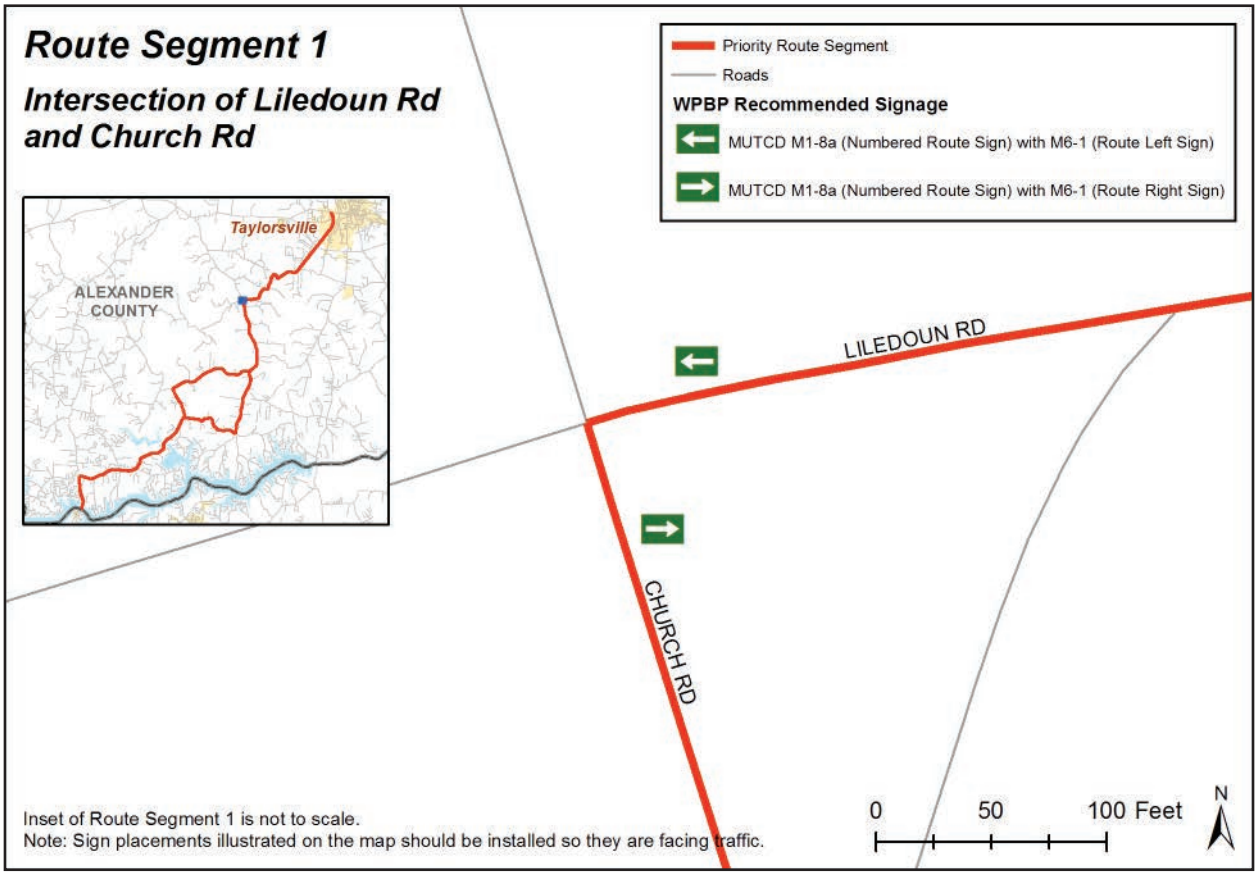

Route Segment 1
Intersection of NC 127 and Rink Dam Rd
Taylorsville
ALEXANDER COUNTY
Priority Route Segment
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
RINK DAM RD
NC 127 HWY
Inset of Route Segment 1 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

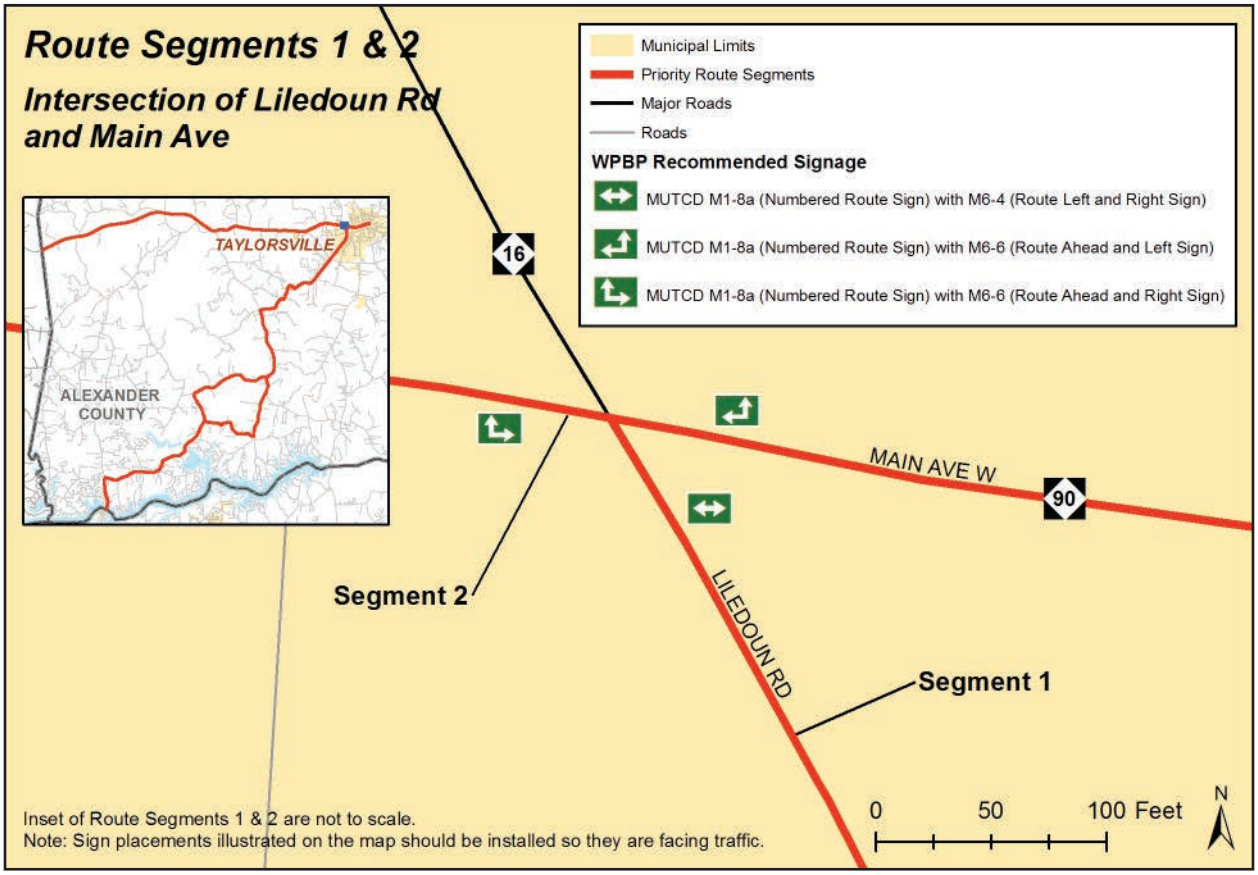

Route Segment 1
Intersection of Rink Dam Rd and Bowmans Cutover Rd
Taylorsville
ALEXANDER COUNTY
Priority Route Segment
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Right Sign)
BOWMANS CUTOVER RD
RINK DAM RD
Inset of Route Segment 1 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

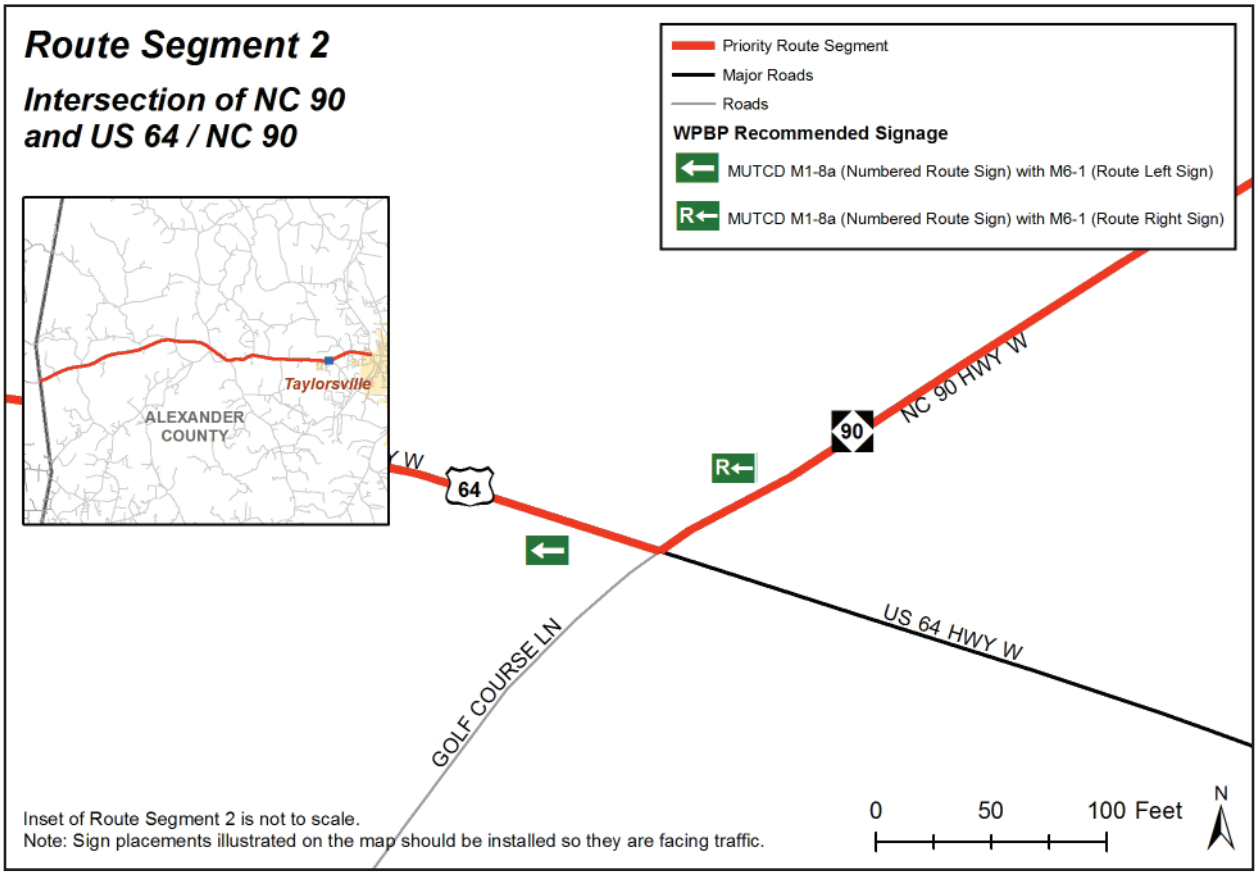

Route Segment 1
Intersection of Rink Dam Rd and Church Rd
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
Taylorsville
ALEXANDER COUNTY
CHURCH RD
RINK DAM RD
R
Inset of Route Segment 1 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

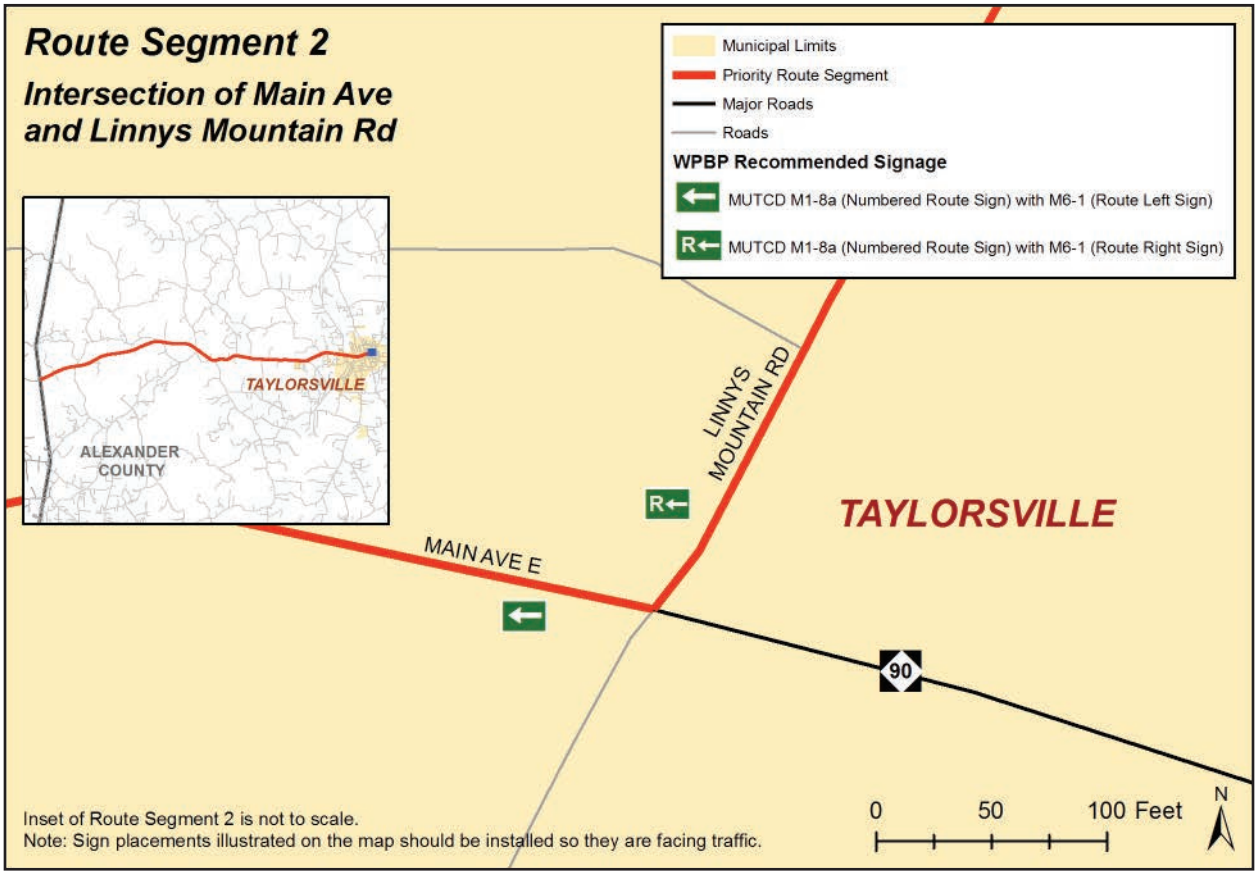

Route Segment 1
Intersection of Teague Town Rd and Bowmans Cutover Rd
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
Taylorsville
ALEXANDER COUNTY
TEAGUE TOWN RD
BOWMANS CUTOVER RD
Inset of Route Segment 1 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

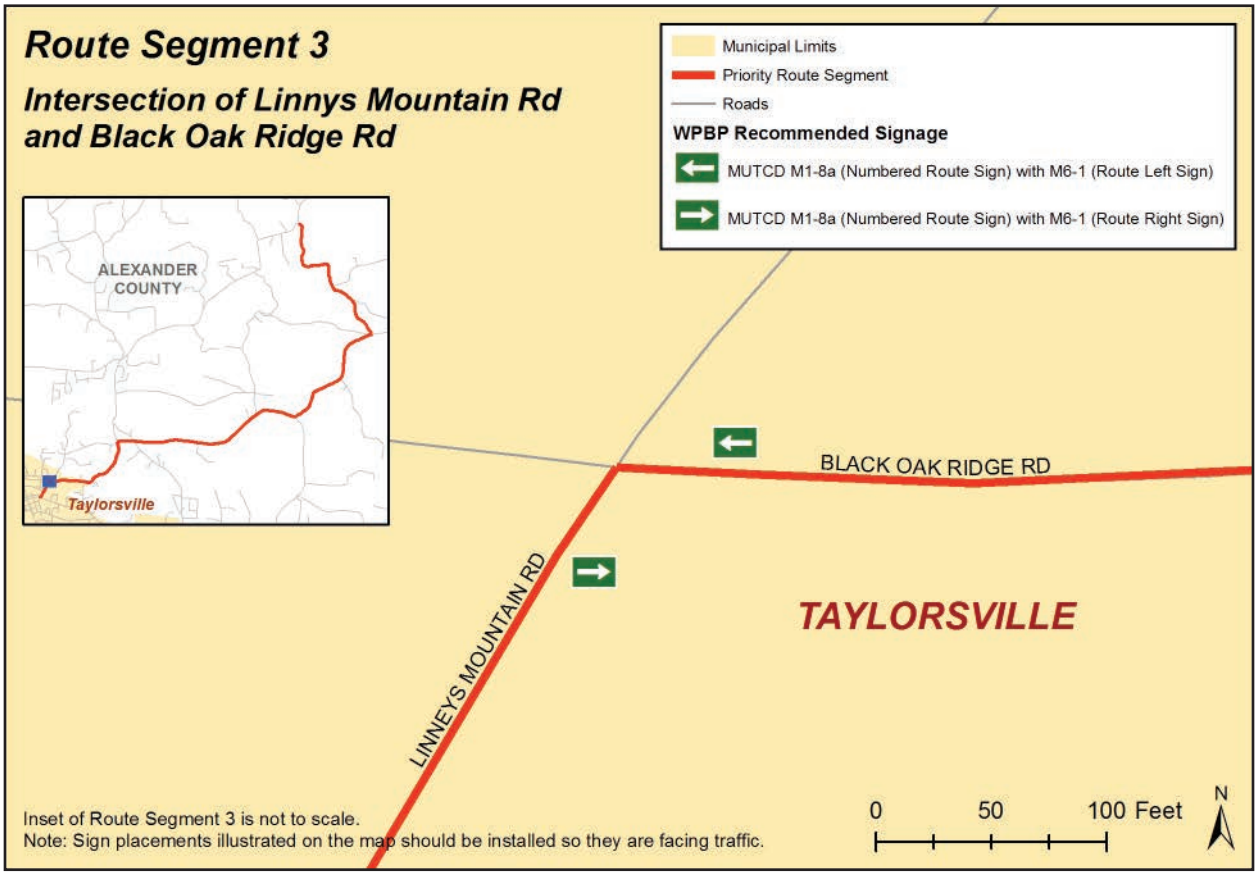

Route Segment 1
Intersection of Teague Town Rd and Church Rd
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Right Sign)
Taylorsville
ALEXANDER COUNTY
TEAGUE TOWN RD
HARLEY RD
CHURCH RD
R
Inset of Route Segment 1 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

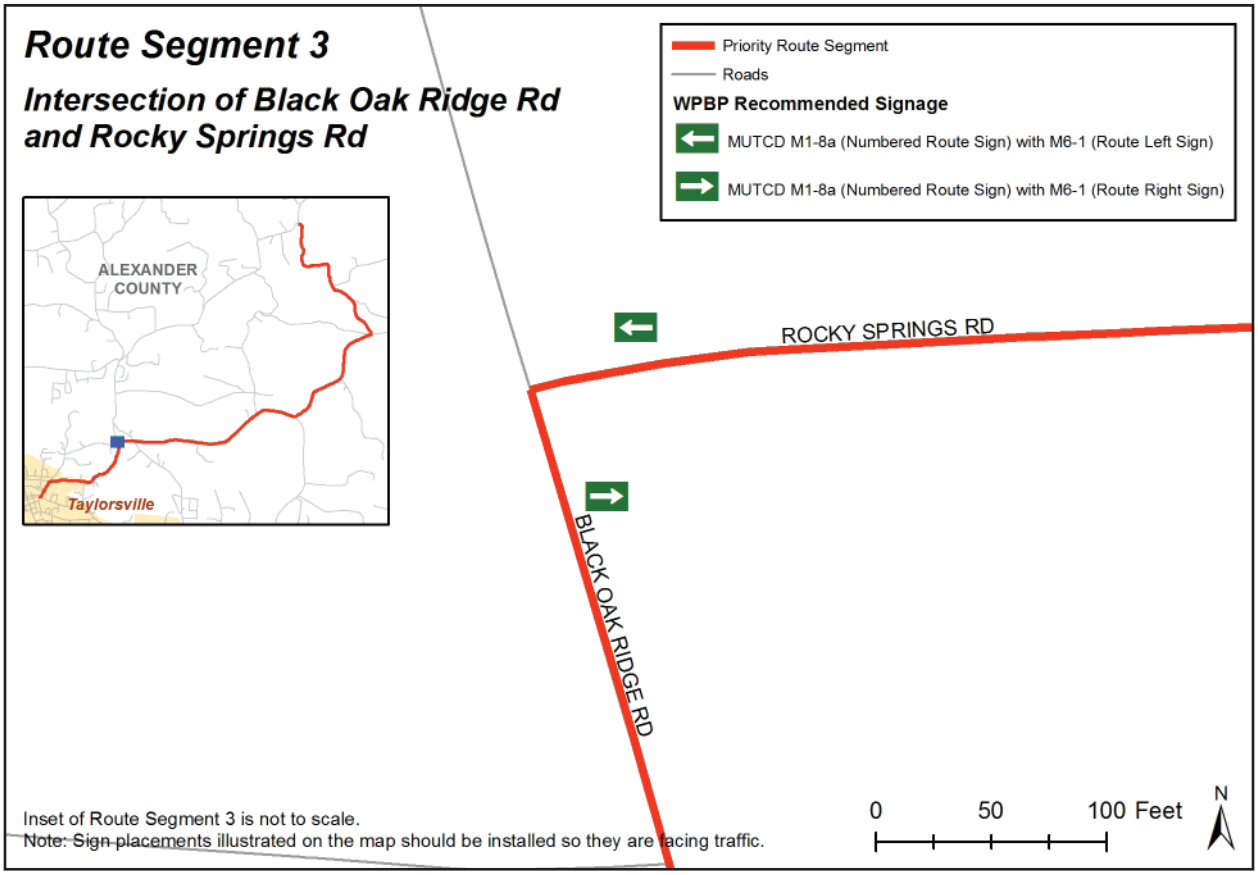

Route Segment 1
Intersection of Liledoun Rd and Church Rd
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
Taylorsville
ALEXANDER COUNTY
LILEDOUN RD
CHURCH RD
Inset of Route Segment 1 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

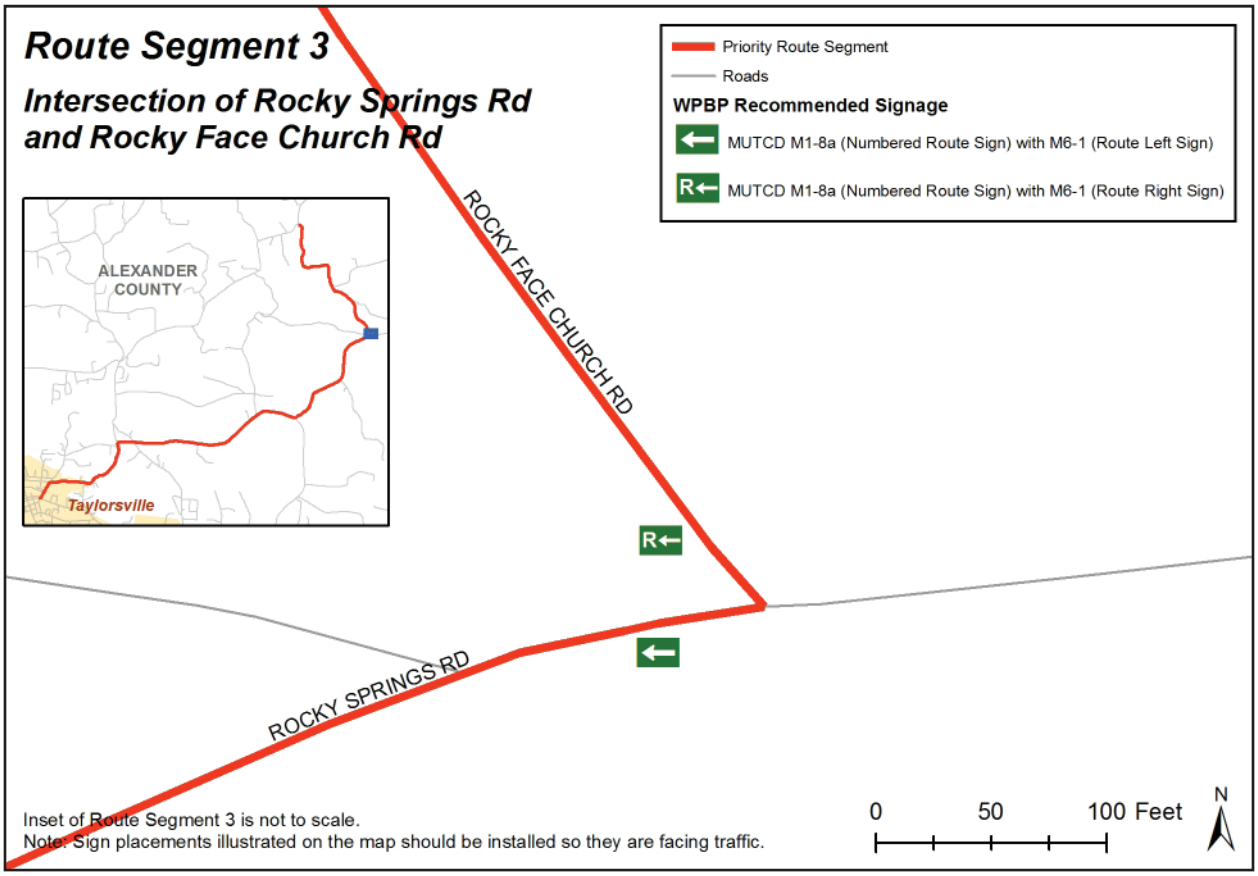

Route Segments 1 & 2
Intersection of Liledoun Rd and Main Ave
Municipal Limits
Priority Route Segments
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Right Sign)
TAYLORSVILLE
ALEXANDER COUNTY
16
MAIN AVE W
90
Segment 2
LILEDOUN RD
Segment 1
0
50
100 Feet
N
Inset of Route Segments 1 & 2 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.


Route Segment 2
Intersection of NC 90 and US 64 / NC 90
Priority Route Segment
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
Taylorsville
ALEXANDER COUNTY
64
90
NC 90 HWY W
US 64 HWY W
GOLF COURSE LN
0
50
100 Feet
N
Inset of Route Segment 2 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.


Route Segment 2
Intersection of Main Ave and Linnys Mountain Rd
Municipal Limits
Priority Route Segment
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
TAYLORSVILLE
ALEXANDER COUNTY
LINNYS MOUNTAIN RD
MAIN AVE E
90
TAYLORSVILLE
Inset of Route Segment 2 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0 50 100 Feet
N


Route Segment 3
Intersection of Linnys Mountain Rd and Black Oak Ridge Rd
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
ALEXANDER COUNTY
Taylorsville
BLACK OAK RIDGE RD
LINNEYS MOUNTAIN RD
TAYLORSVILLE
Inset of Route Segment 3 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0 50 100 Feet
N


Route Segment 3
Intersection of Black Oak Ridge Rd and Rocky Springs Rd
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
ALEXANDER COUNTY
Taylorsville
ROCKY SPRINGS RD
BLACK OAK RIDGE RD
Inset of Route Segment 3 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 3
Intersection of Rocky Springs Rd and Rocky Face Church Rd
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
ALEXANDER COUNTY
Taylorsville
ROCKY FACE CHURCH RD
ROCKY SPRINGS RD
Inset of Route Segment 3 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
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100 Feet
N

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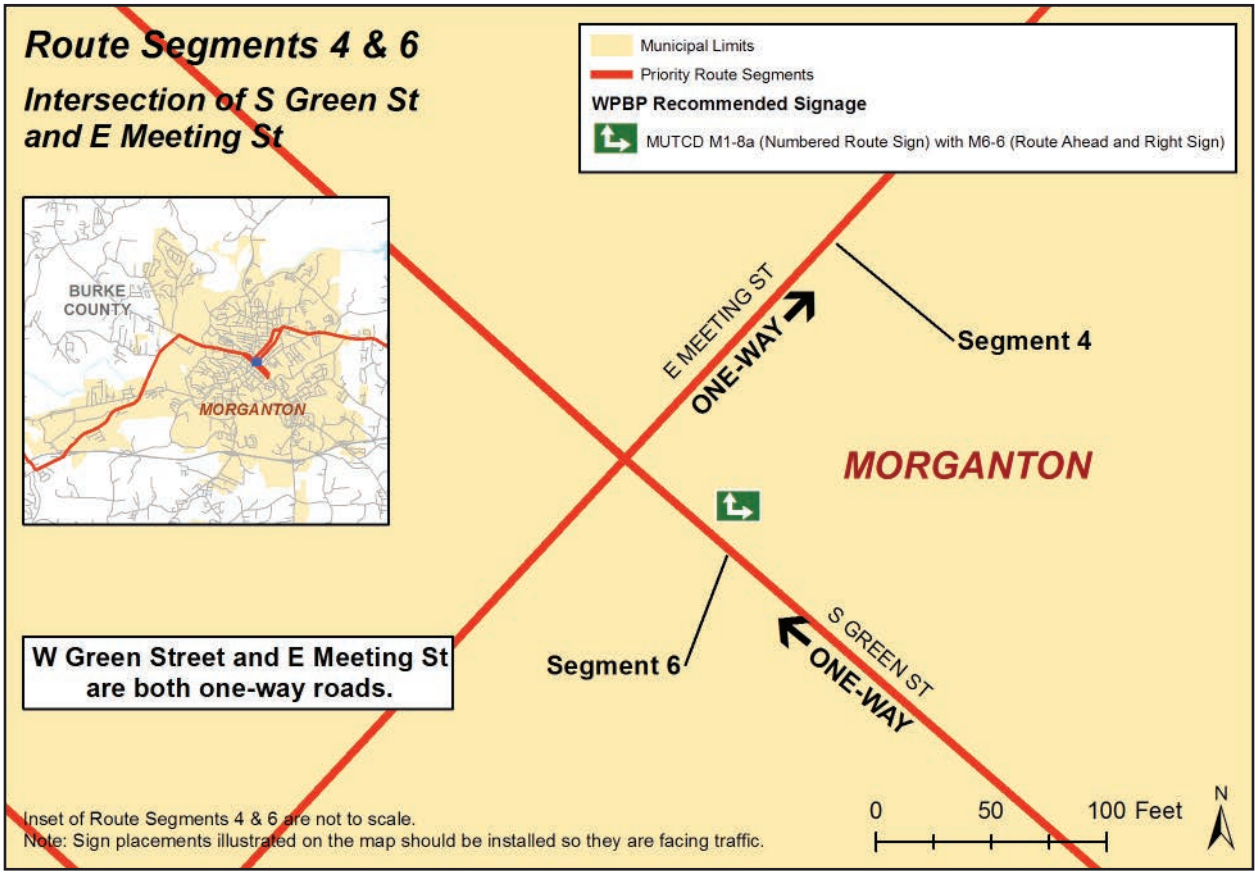
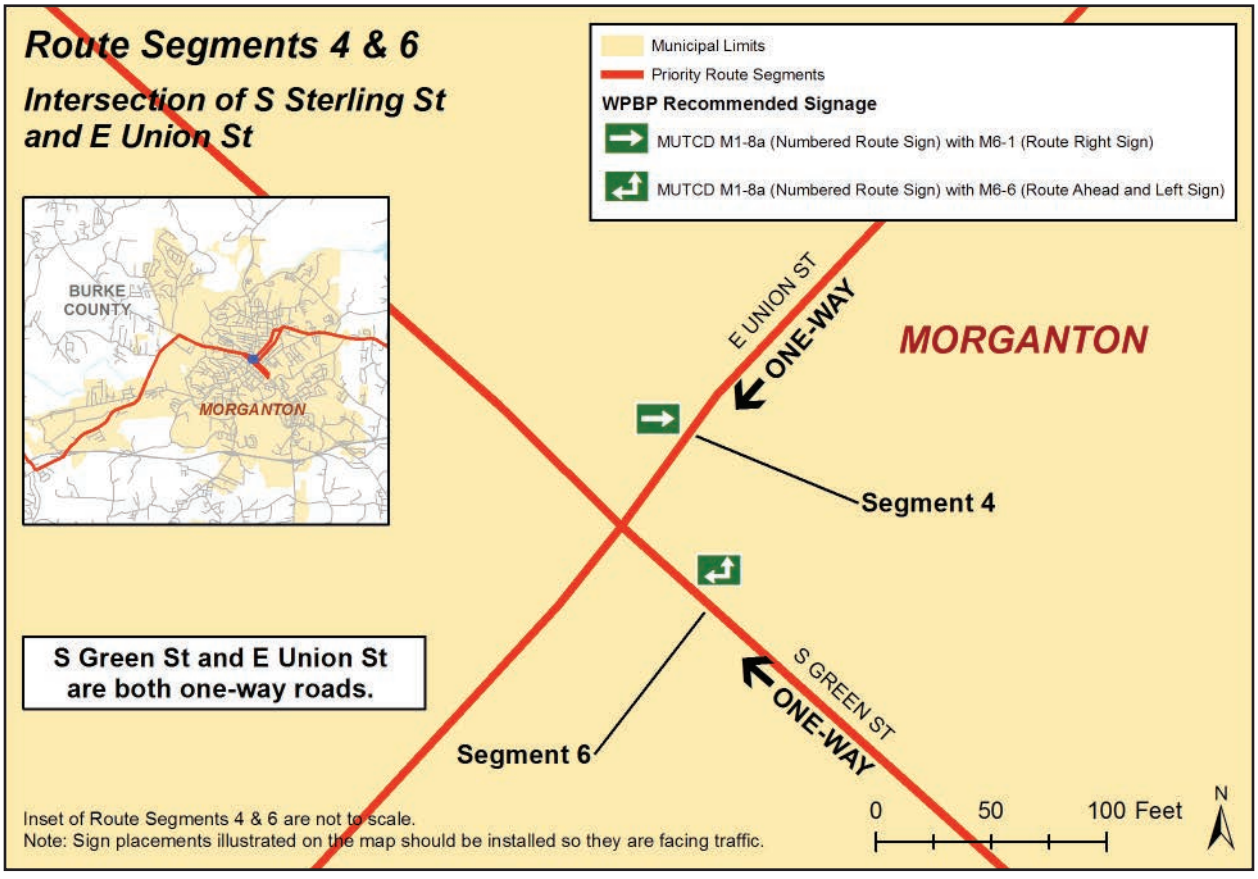
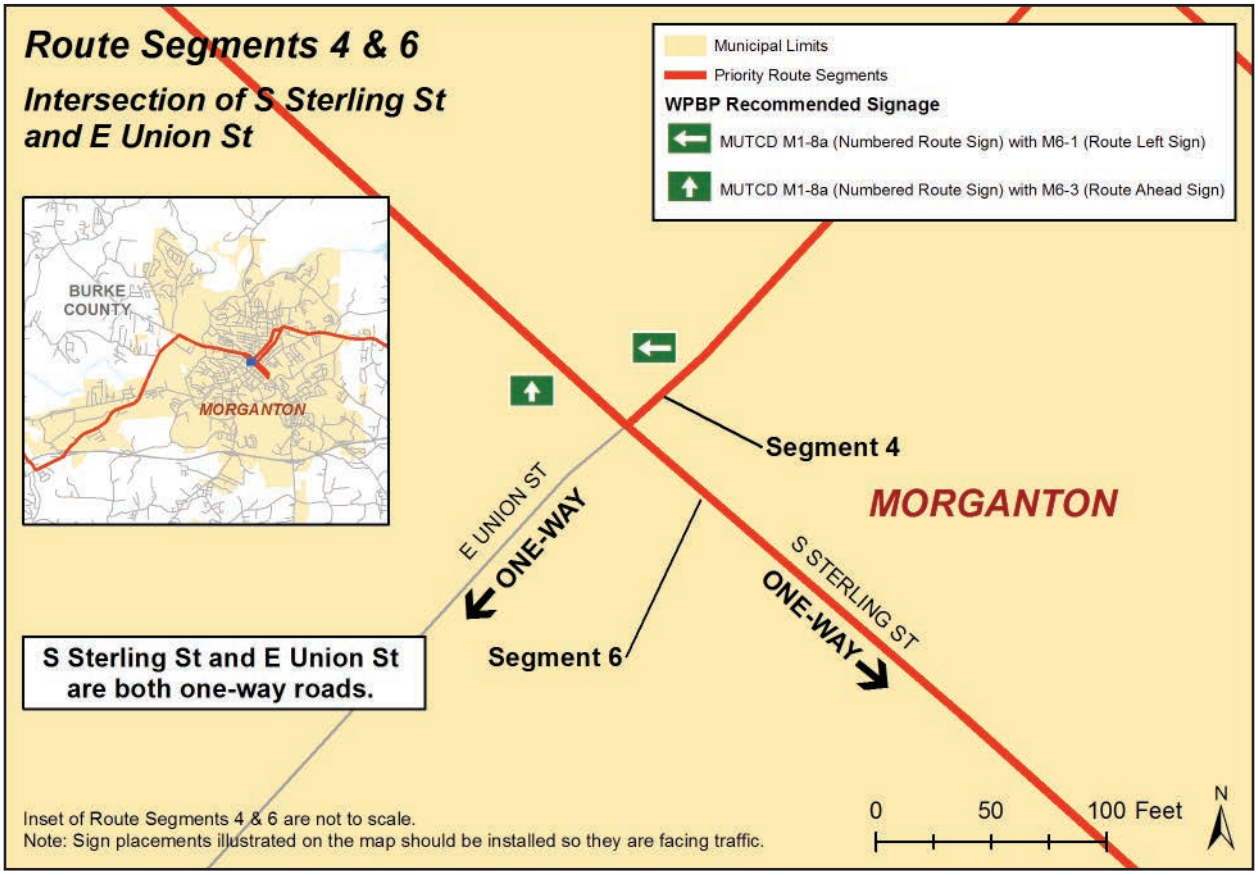
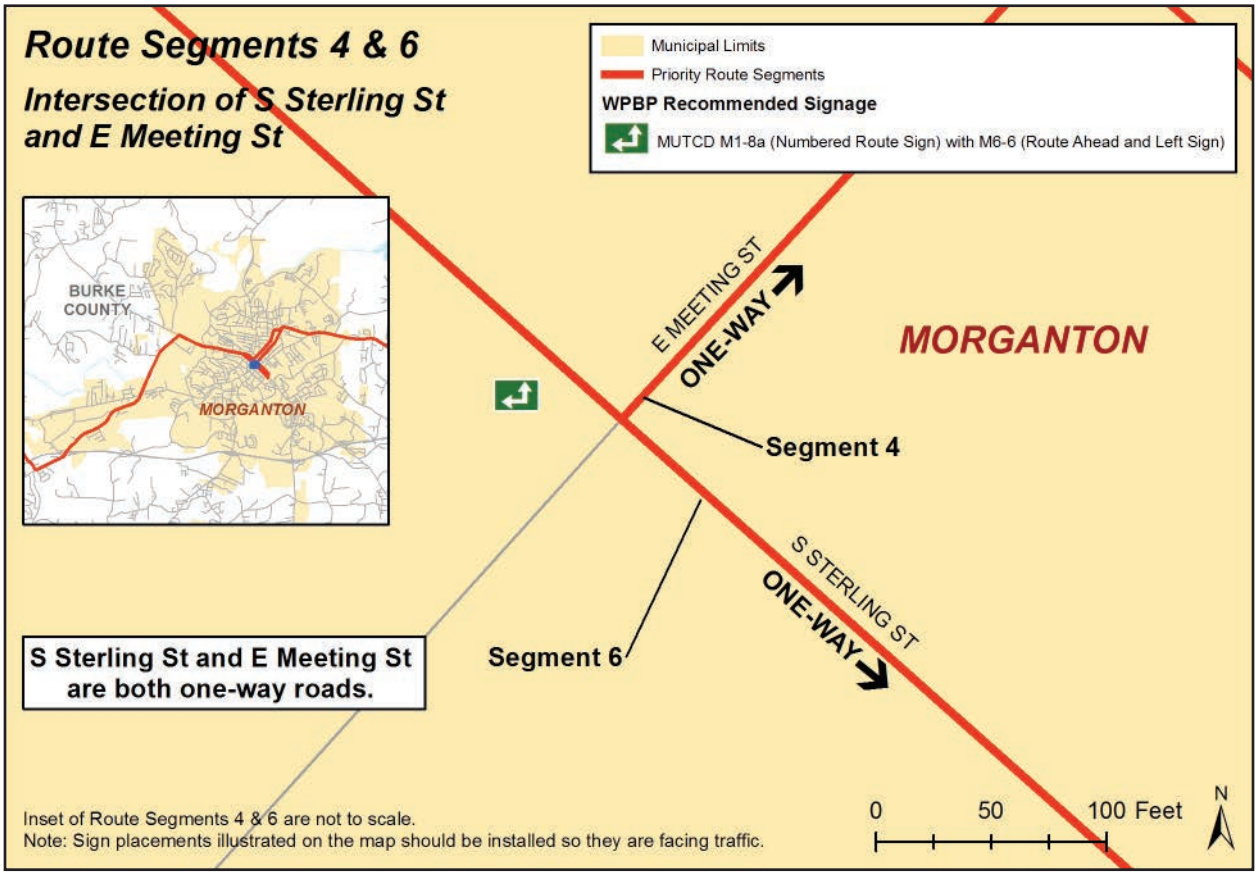
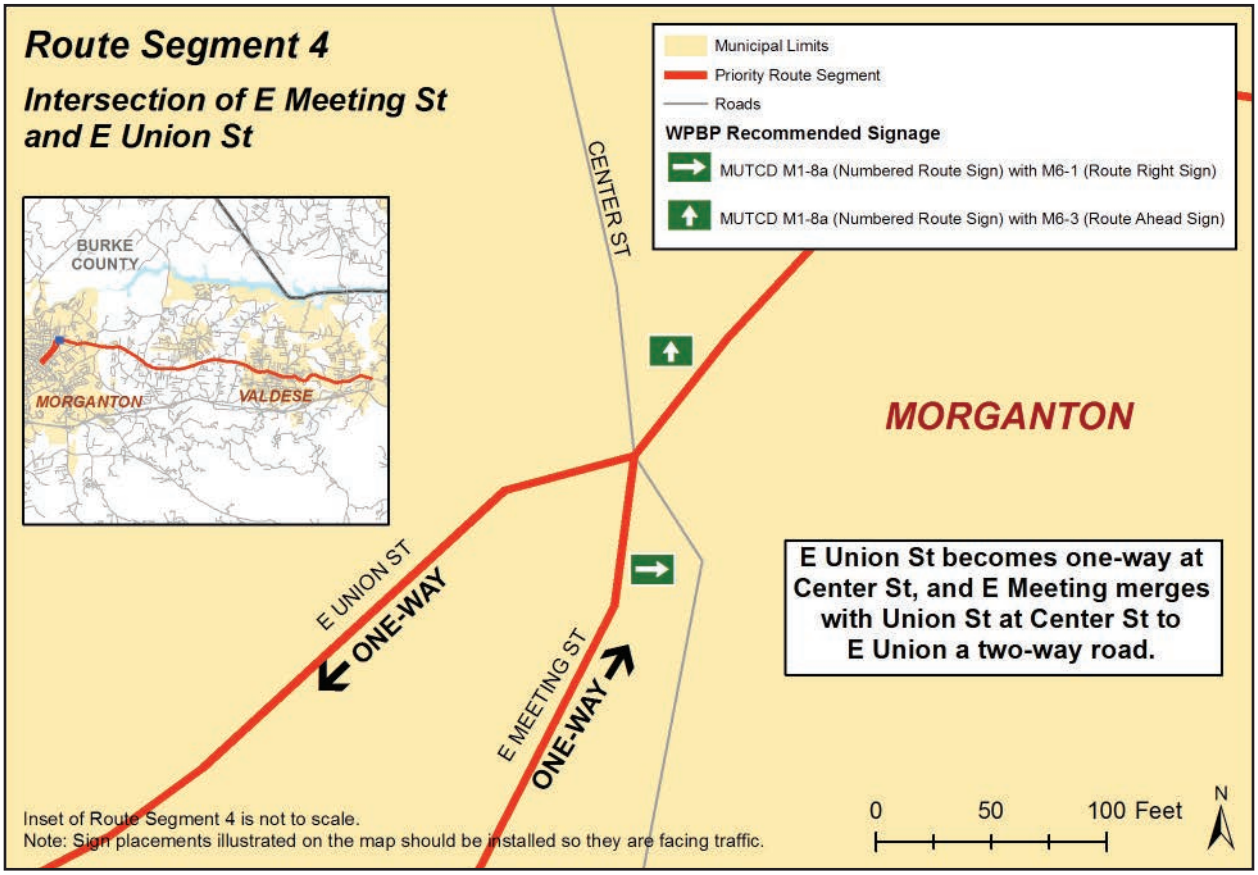
Burke County

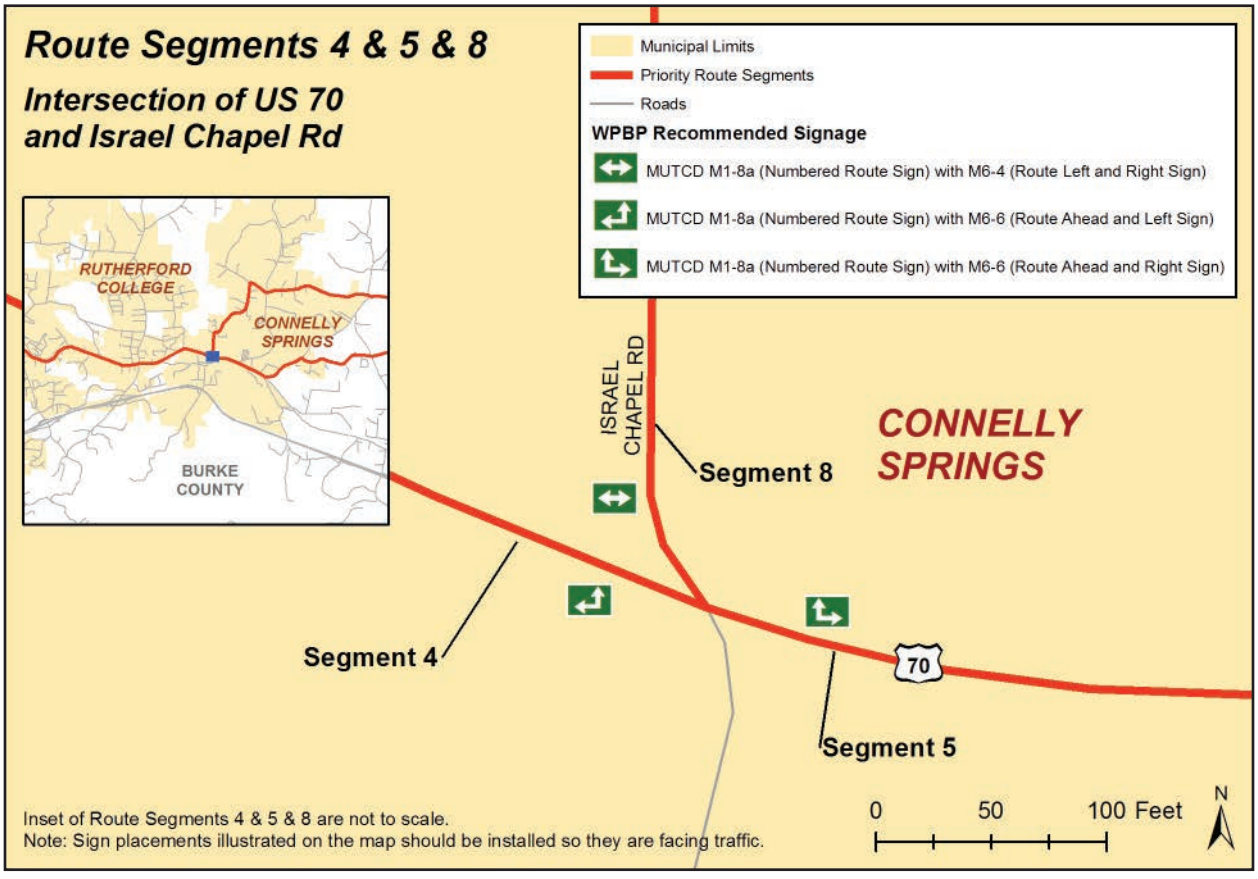

Route Segments 4 & 6
Intersection of S Green St and E Meeting St
Municipal Limits
Priority Route Segments
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Right Sign)
BURKE COUNTY
MORGANTON
E MEETING ST
ONE-WAY
Segment 4
MORGANTON
Segment 6
S GREEN ST
ONE-WAY
W Green Street and E Meeting St are both one-way roads.
Inset of Route Segments 4 & 6 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segments 4 & 6
Intersection of S Sterling St and E Union St
Municipal Limits
Priority Route Segments
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
BURKE COUNTY
MORGANTON
E UNION ST
ONE-WAY
MORGANTON
Segment 4
Segment 6
S GREEN ST
ONE-WAY
S Green St and E Union St are both one-way roads.
Inset of Route Segments 4 & 6 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segments 4 & 6
Intersection of S Sterling St and E Union St
Municipal Limits
Priority Route Segments
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-3 (Route Ahead Sign)
BURKE COUNTY
MORGANTON
Segment 4
MORGANTON
E UNION ST
ONE-WAY
S STERLING ST
ONE-WAY
Segment 6
S Sterling St and E Union St are both one-way roads.
Inset of Route Segments 4 & 6 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segments 4 & 6
Intersection of S Sterling St and E Meeting St
Municipal Limits
Priority Route Segments
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
BURKE COUNTY
MORGANTON
E MEETING ST
ONE-WAY
MORGANTON
Segment 4
S STERLING ST
ONE-WAY
Segment 6
S Sterling St and E Meeting St are both one-way roads.
Inset of Route Segments 4 & 6 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 4
Intersection of E Meeting St and E Union St
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-3 (Route Ahead Sign)
BURKE COUNTY
MORGANTON
VALDESE
CENTER ST
MORGANTON
E UNION ST
ONE-WAY
E MEETING ST
ONE-WAY
E Union St becomes one-way at Center St, and E Meeting merges with Union St at Center St to E Union a two-way road.
Inset of Route Segment 4 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segments 4 & 5 & 8
Intersection of US 70 and Israel Chapel Rd
Municipal Limits
Priority Route Segments
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Right Sign)
RUTHERFORD COLLEGE
CONNELLY SPRINGS
BURKE COUNTY
ISRAEL CHAPEL RD
Segment 8
CONNELLY SPRINGS
Segment 4
70
Segment 5
Inset of Route Segments 4 & 5 & 8 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
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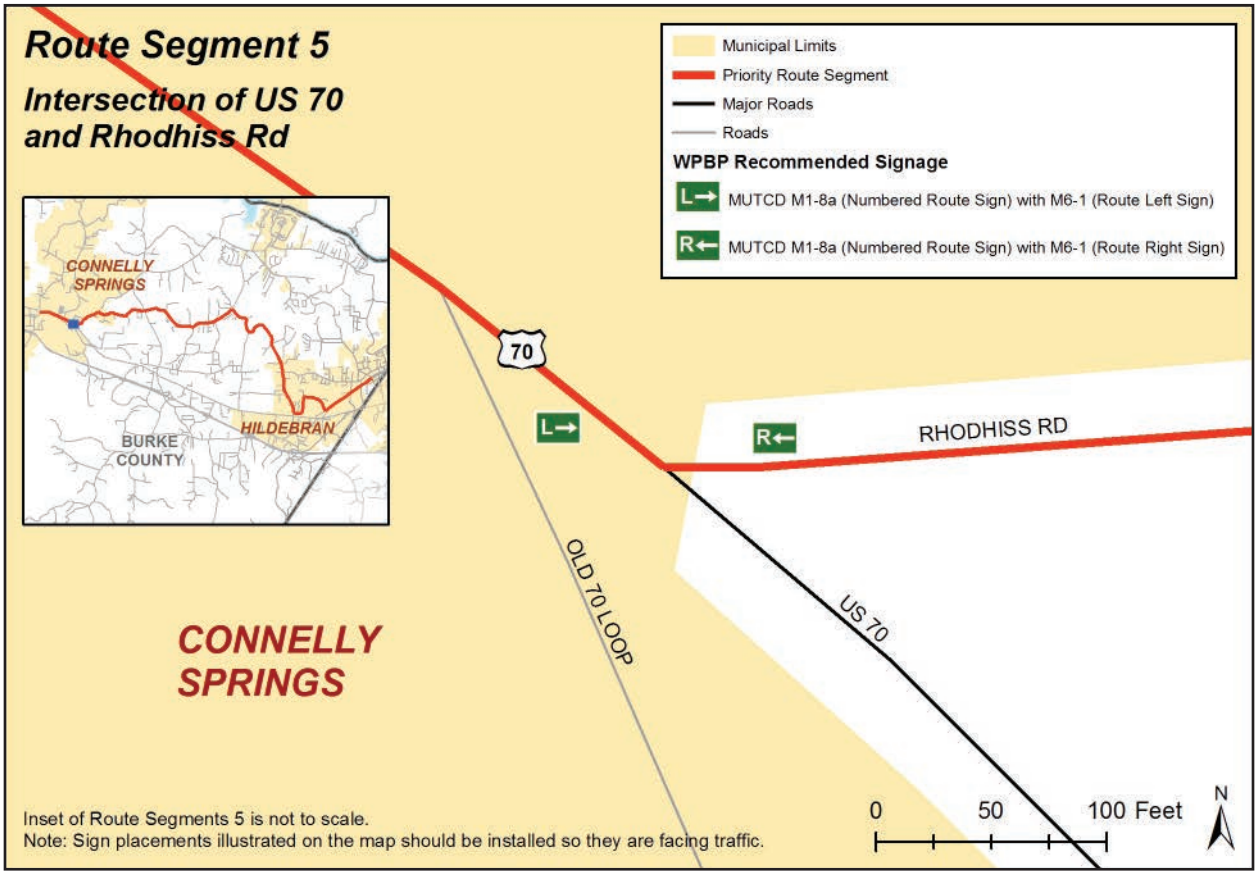
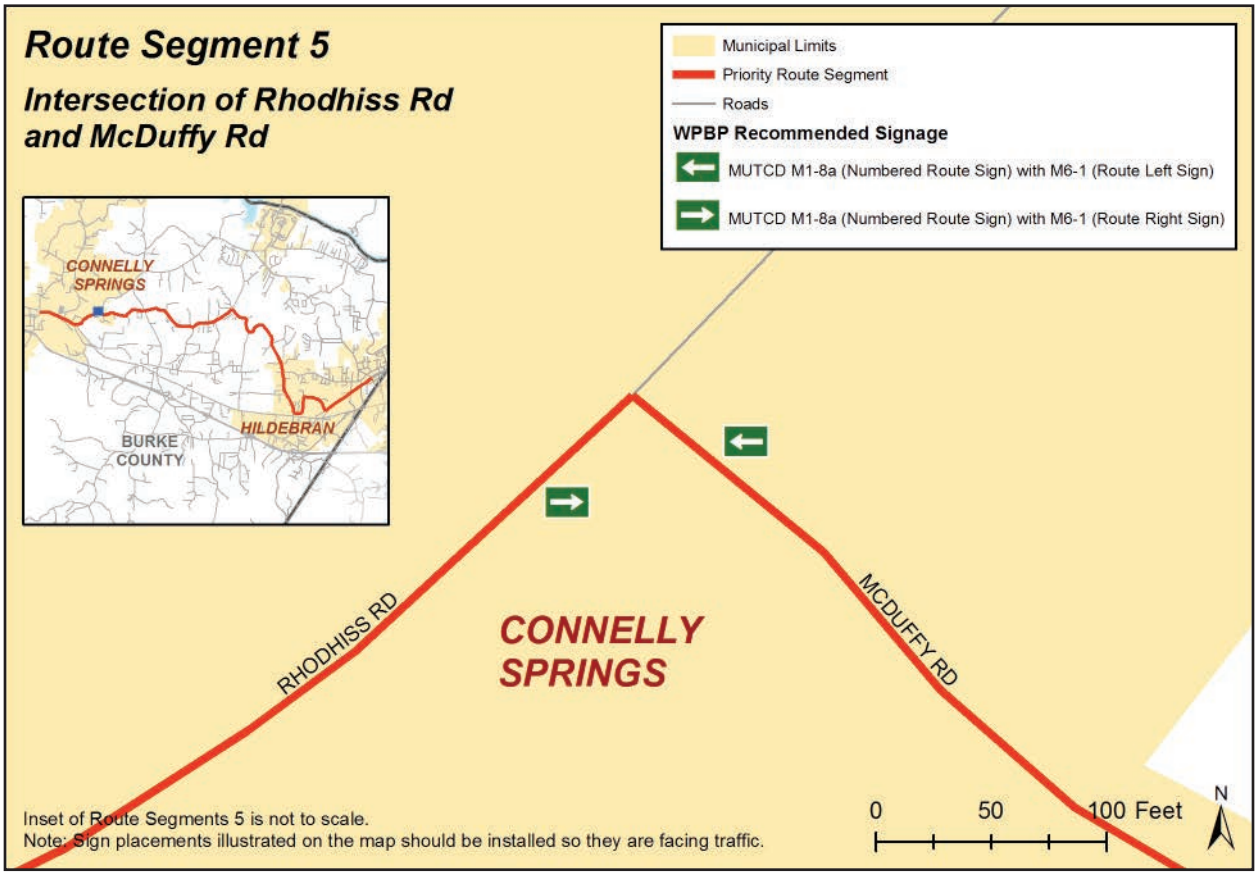
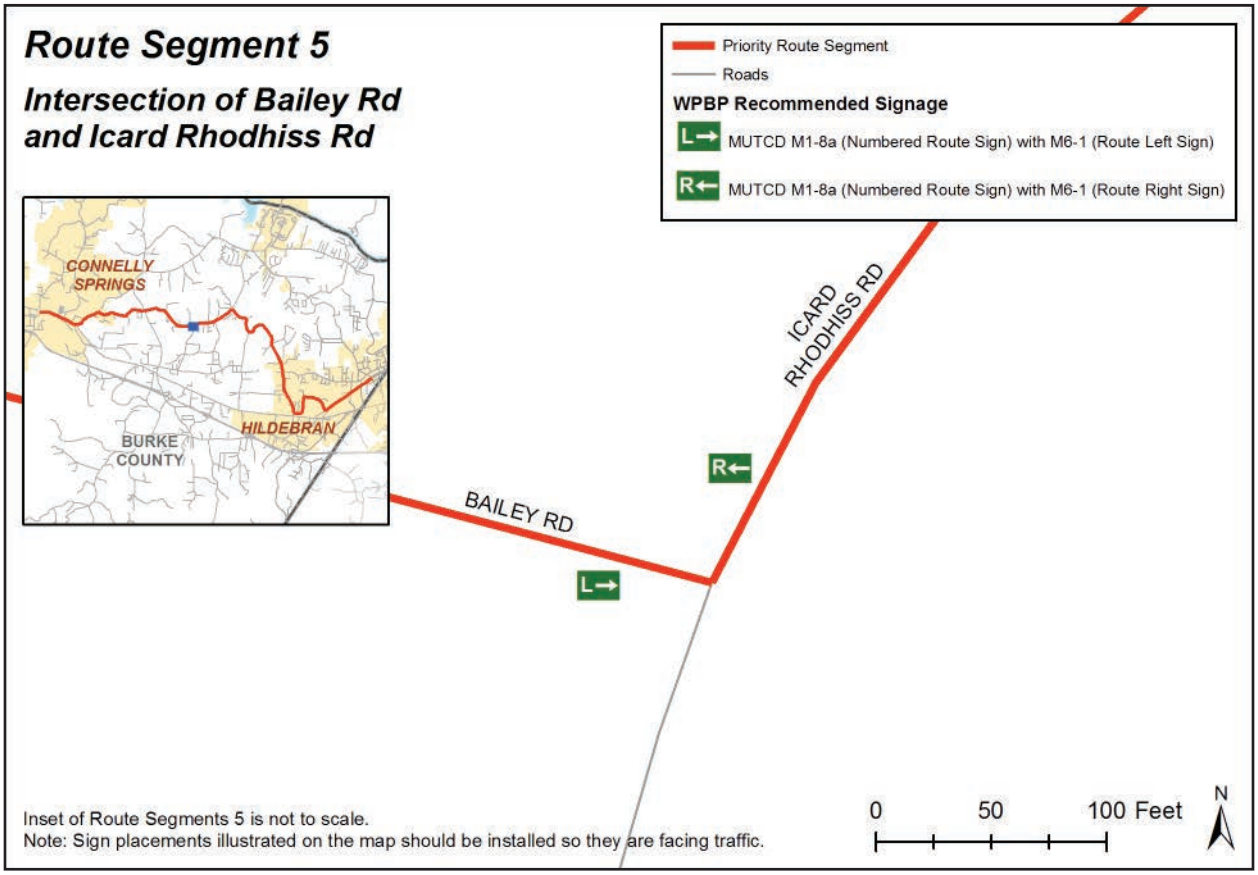
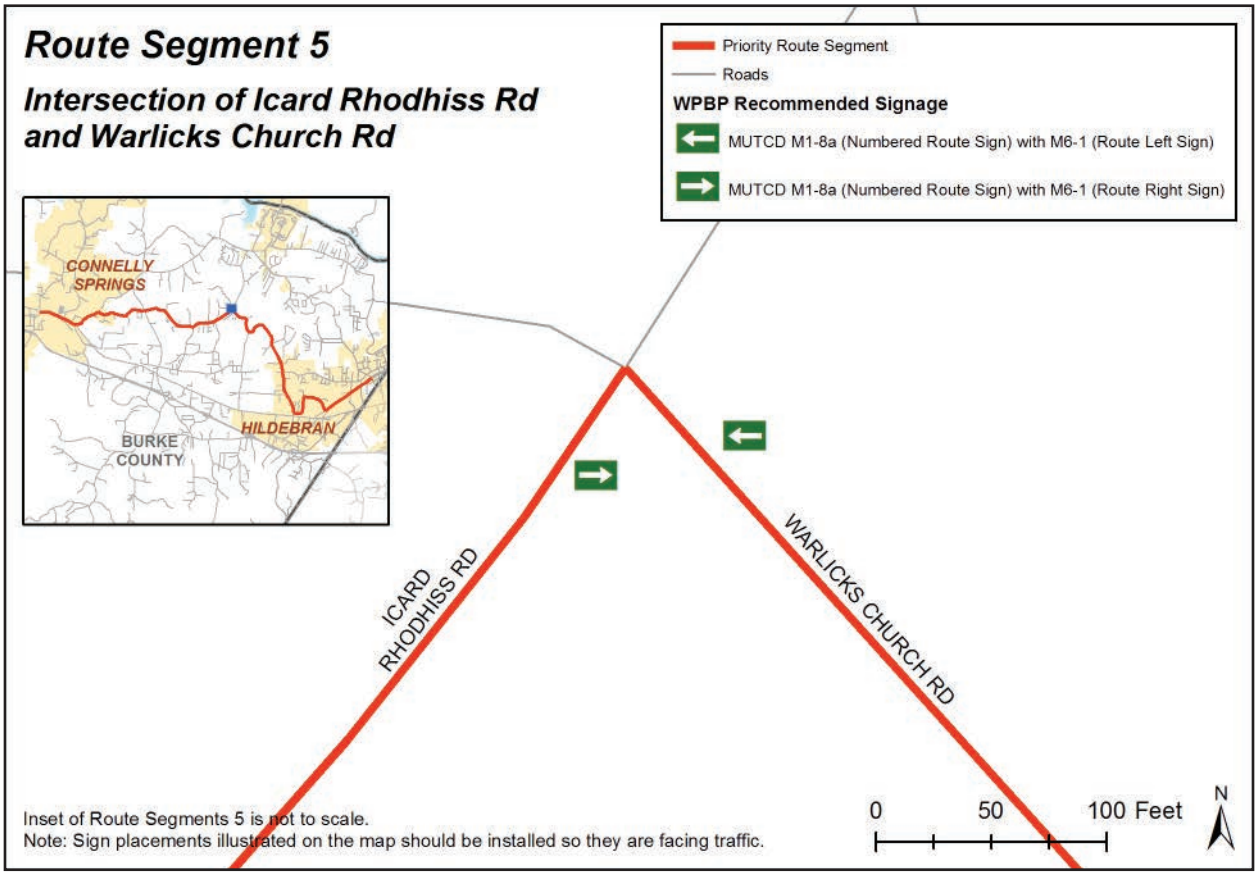
100 Feet
N


Route Segment 5
Intersection of US 70 and Rhodhiss Rd
Municipal Limits
Priority Route Segment
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CONNELLY SPRINGS
HILDEBRAN
BURKE COUNTY
70
L
R
RHODHISS RD
OLD 70 LOOP
US 70
CONNELLY SPRINGS
Inset of Route Segments 5 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 5
Intersection of Rhodhiss Rd and McDuffy Rd
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CONNELLY SPRINGS
HILDEBRAN
BURKE COUNTY
RHODHISS RD
MCDUFFY RD
CONNELLY SPRINGS
Inset of Route Segments 5 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 5
Intersection of Bailey Rd and Icard Rhodhiss Rd
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CONNELLY SPRINGS
HILDEBRAN
BURKE COUNTY
ICARD RHODHISS RD
BAILEY RD
R
L
Inset of Route Segments 5 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 5
Intersection of Icard Rhodhiss Rd and Warlicks Church Rd
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CONNELLY SPRINGS
HILDEBRAN
BURKE COUNTY
ICARD RHODHISS RD
WARLICKS CHURCH RD
Inset of Route Segments 5 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
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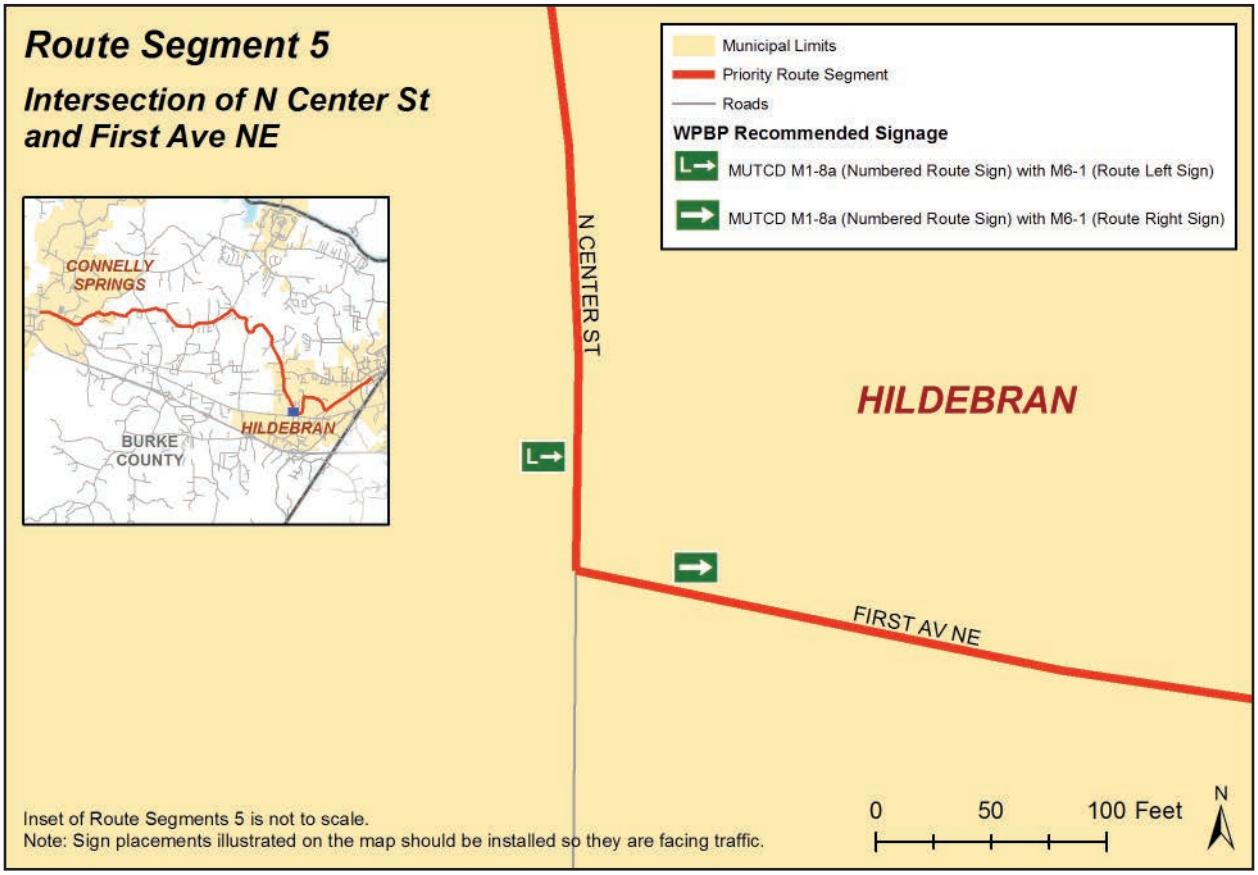
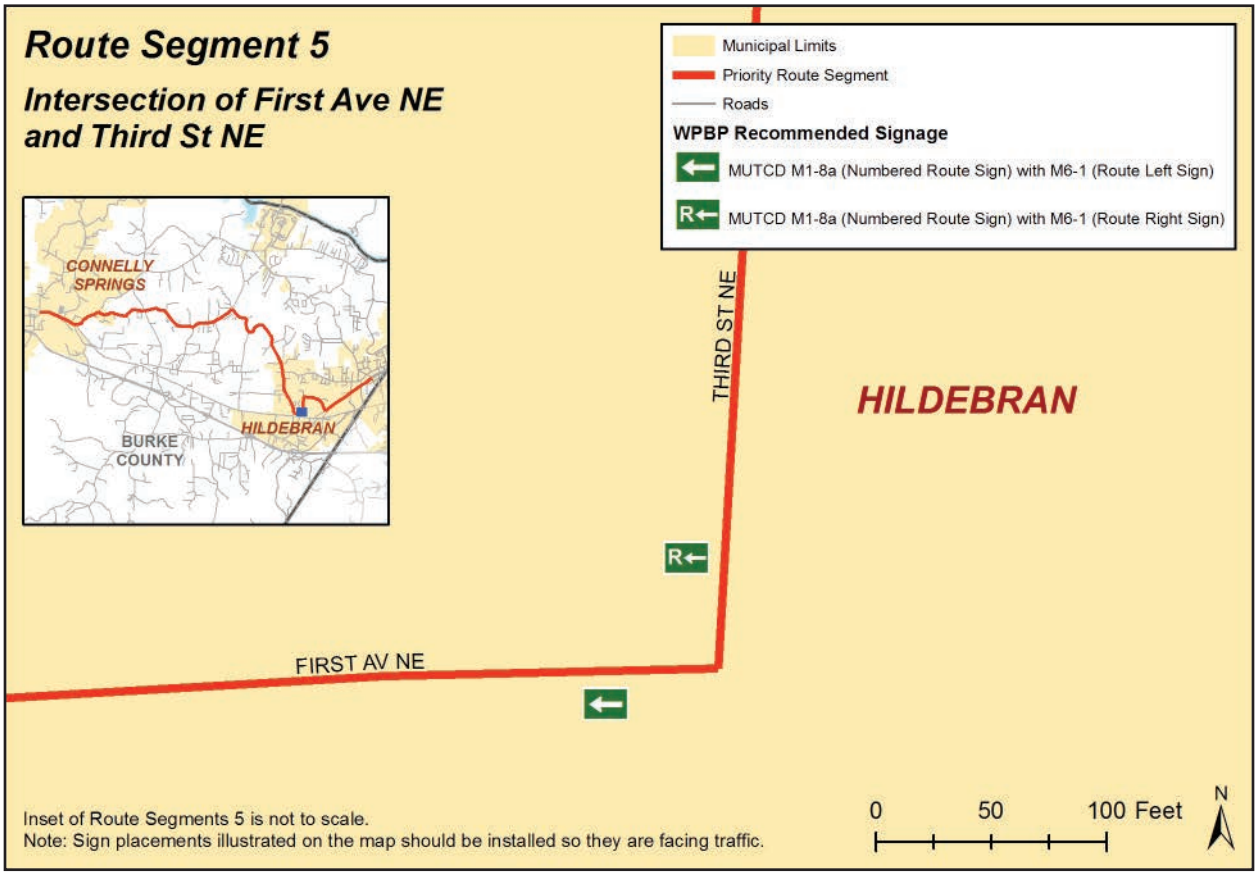
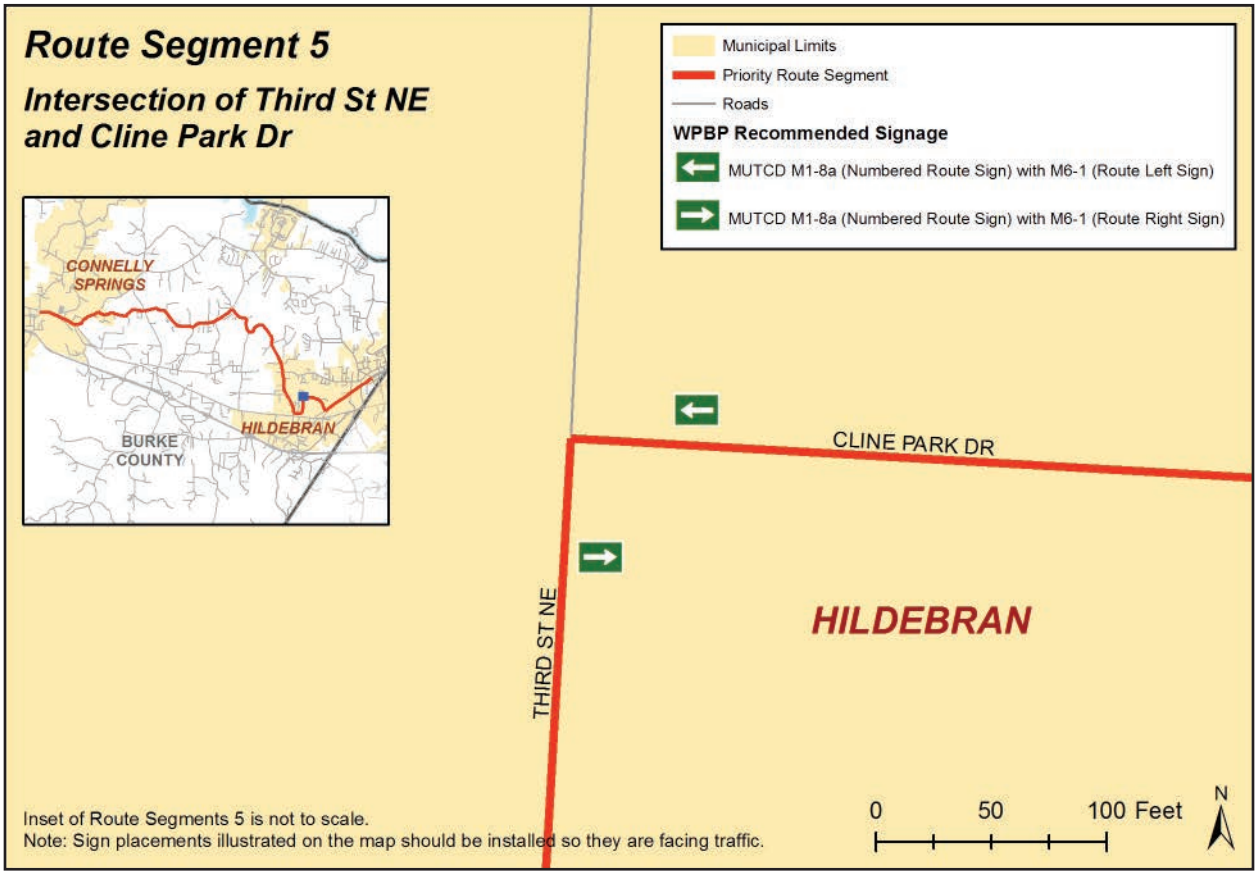
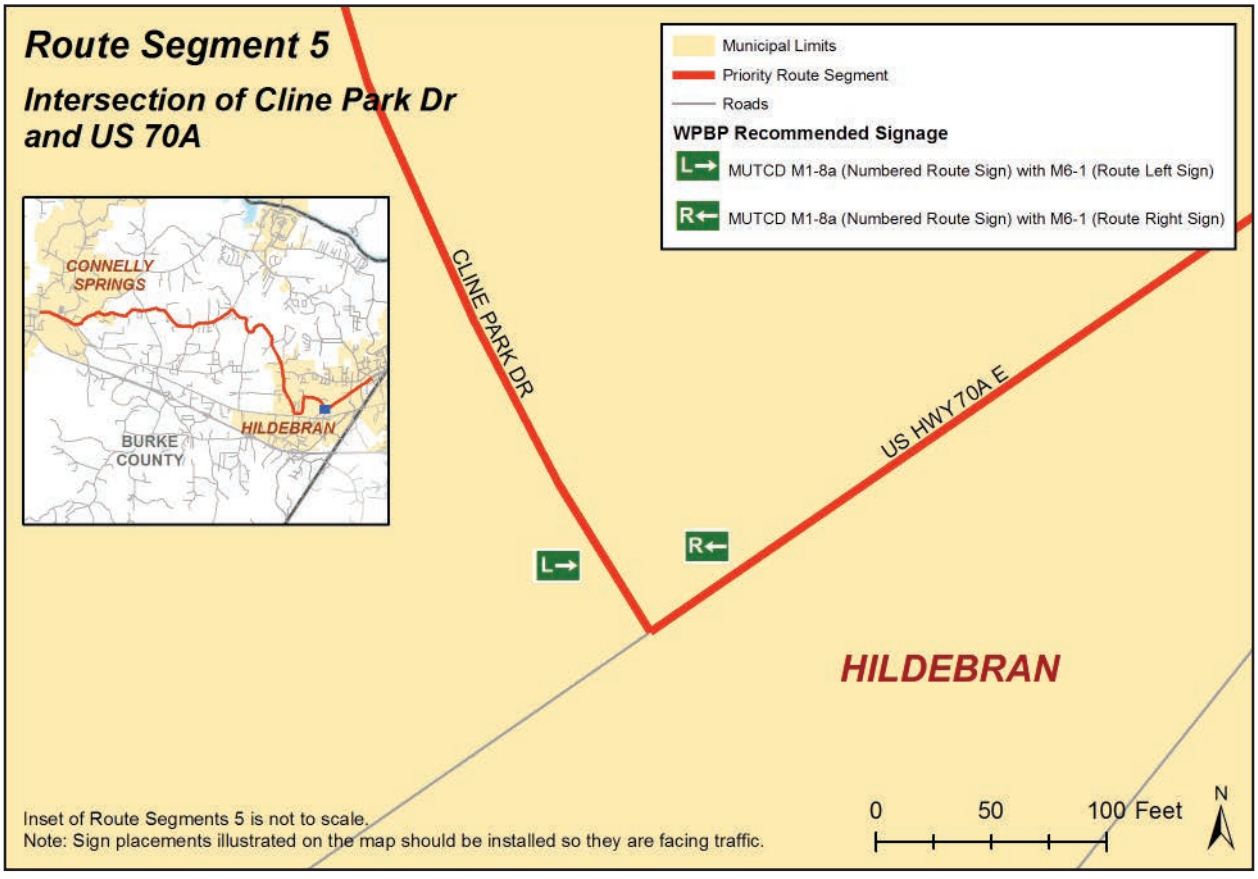
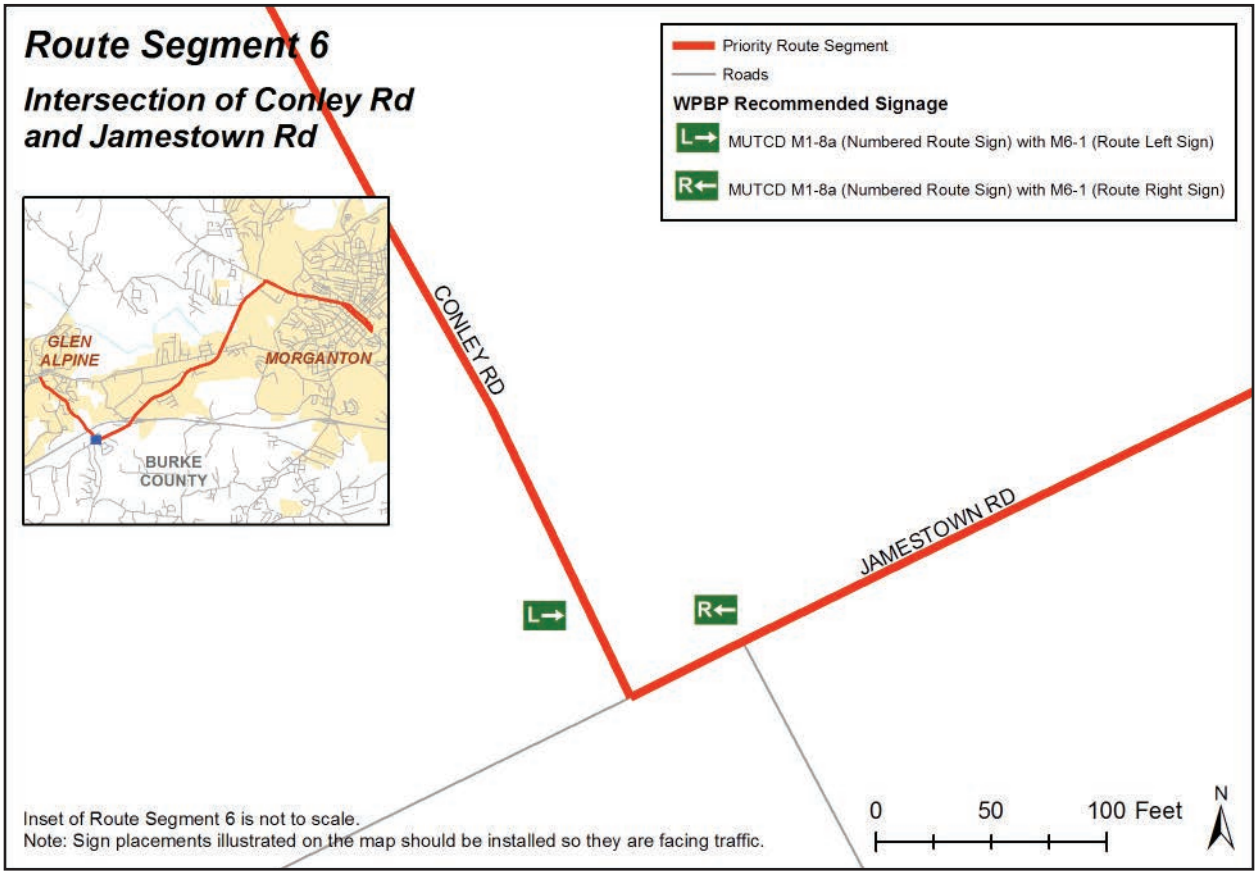
100 Feet
N

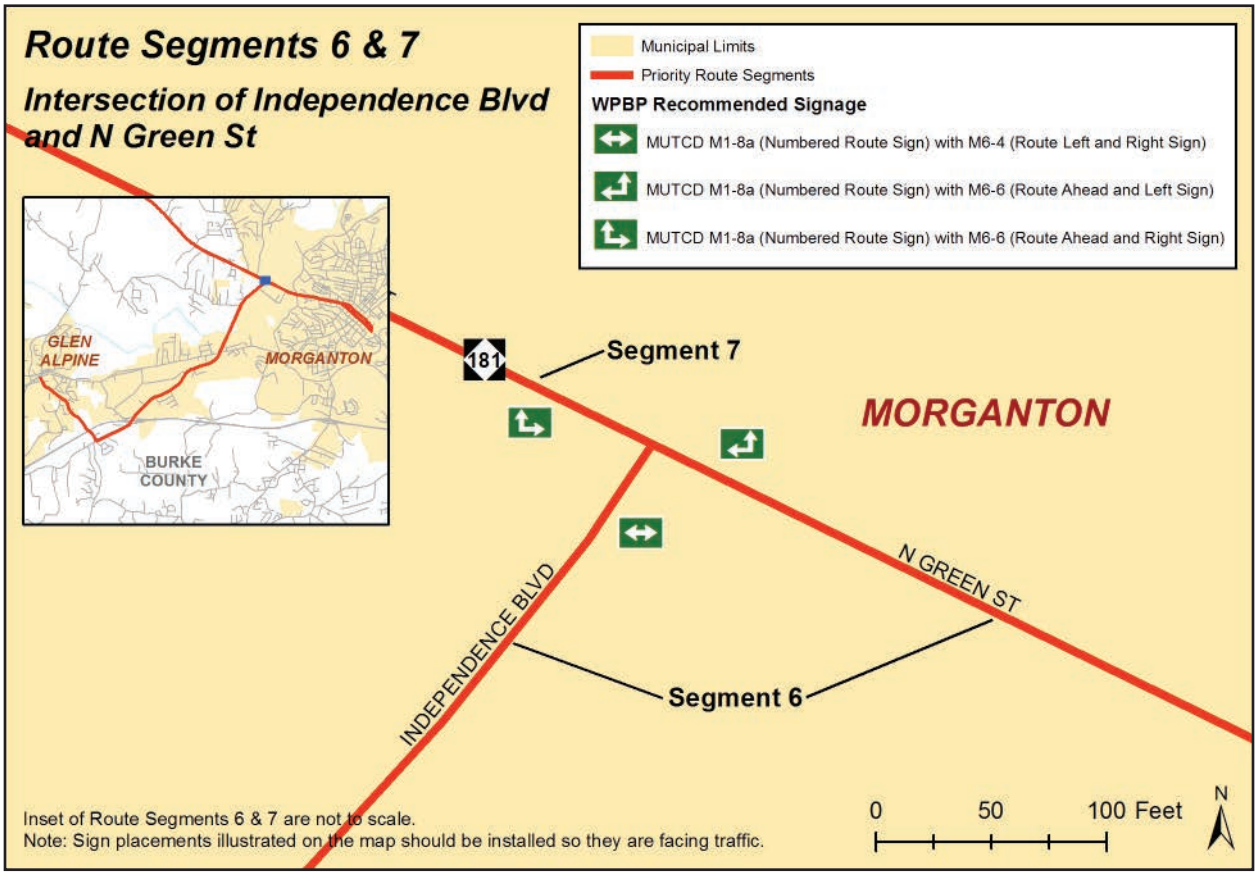

Route Segment 5
Intersection of N Center St and First Ave NE
CONNELLY SPRINGS
HILDEBRAN
BURKE COUNTY
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
N CENTER ST
HILDEBRAN
FIRST AV NE
Inset of Route Segments 5 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

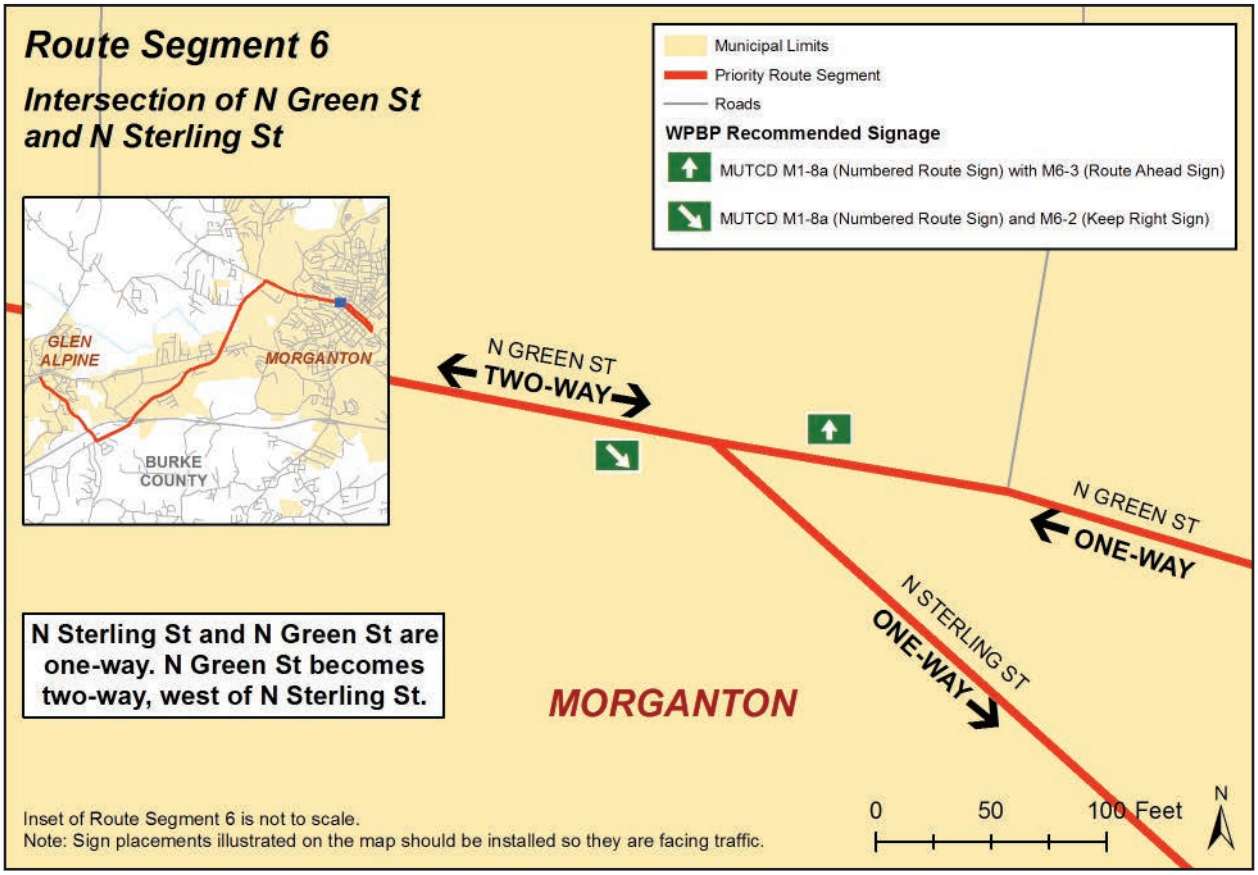

Route Segment 5
Intersection of First Ave NE and Third St NE
CONNELLY SPRINGS
HILDEBRAN
BURKE COUNTY
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
THIRD ST NE
HILDEBRAN
FIRST AV NE
Inset of Route Segments 5 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

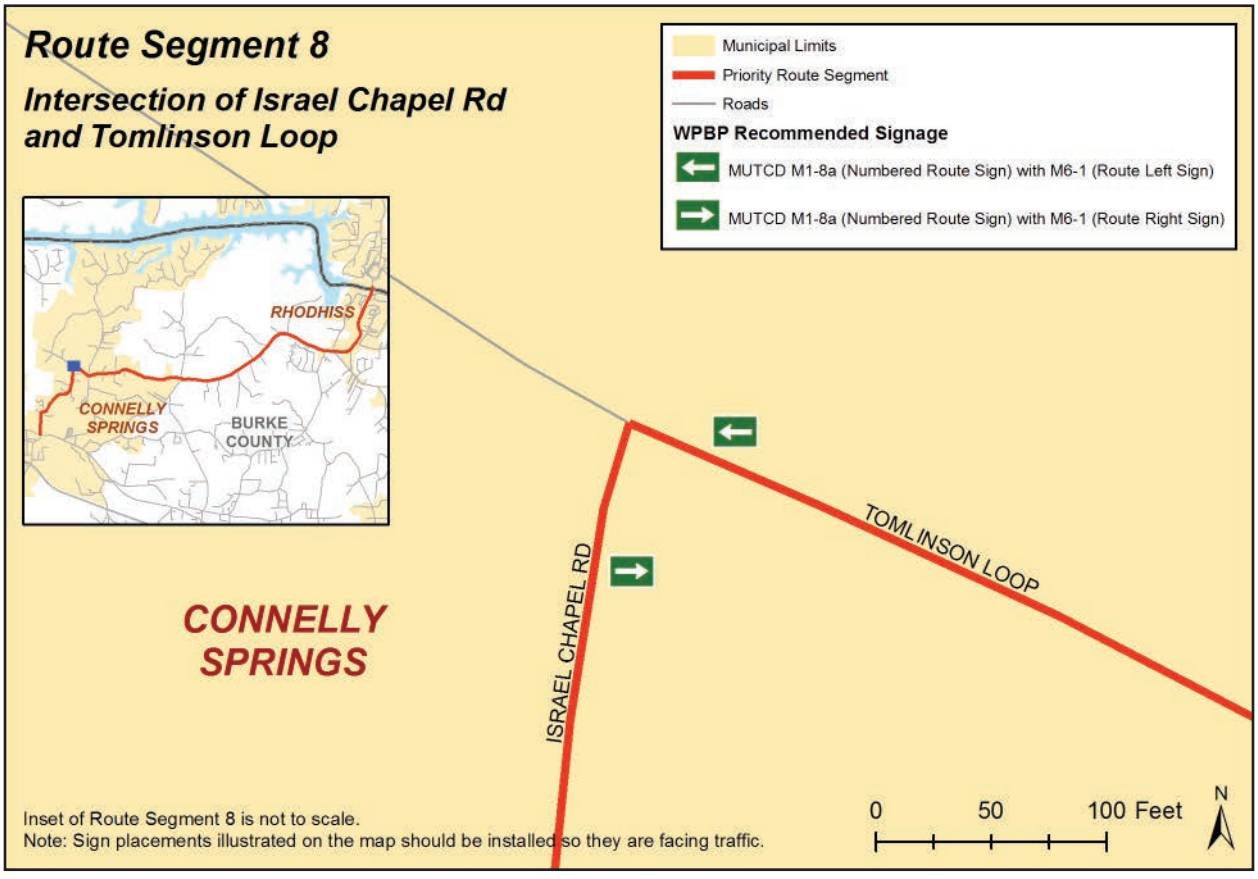

Route Segment 5
Intersection of Third St NE and Cline Park Dr
CONNELLY SPRINGS
HILDEBRAN
BURKE COUNTY
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CLINE PARK DR
THIRD ST NE
HILDEBRAN
Inset of Route Segments 5 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

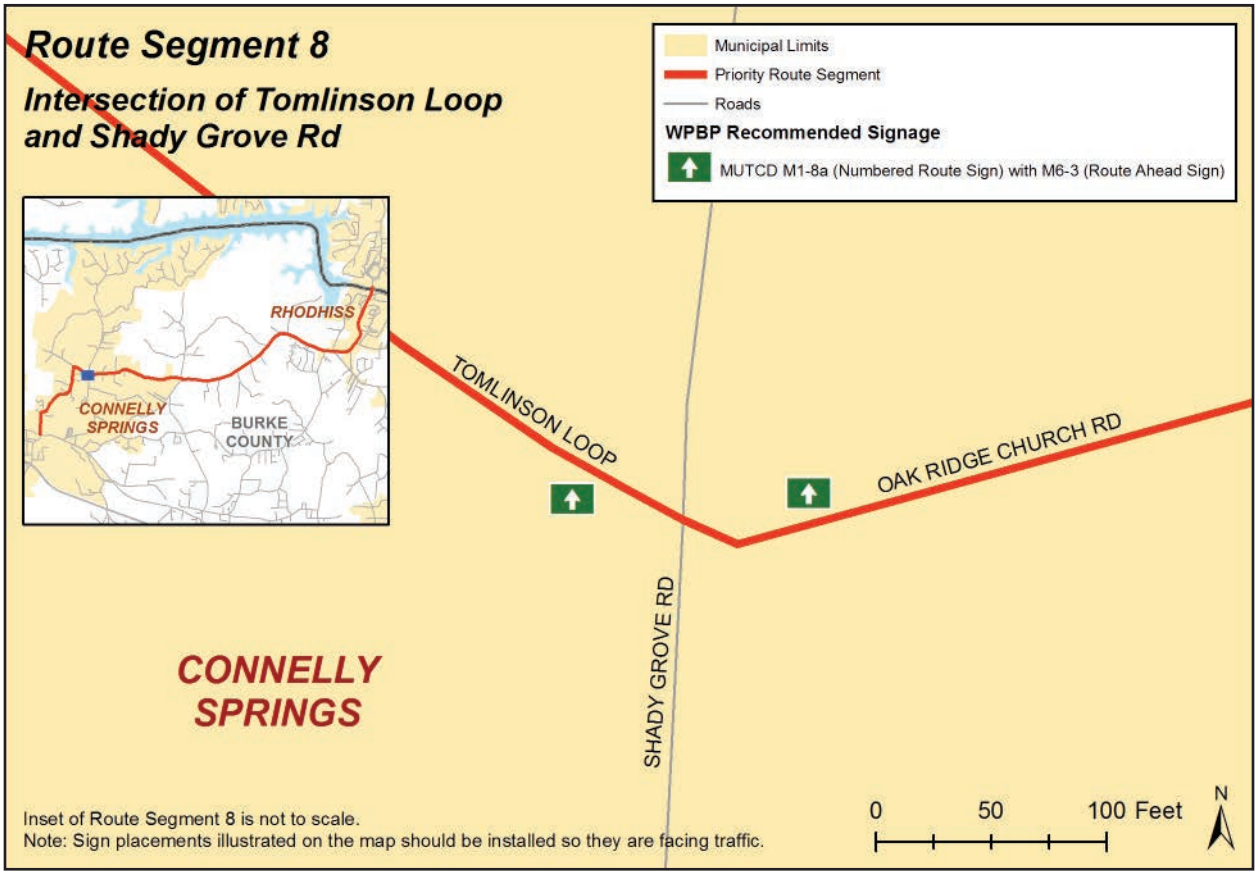

Route Segment 5
Intersection of Cline Park Dr and US 70A
CONNELLY SPRINGS
HILDEBRAN
BURKE COUNTY
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CLINE PARK DR
US HWY 70A E
L
R
HILDEBRAN
Inset of Route Segments 5 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

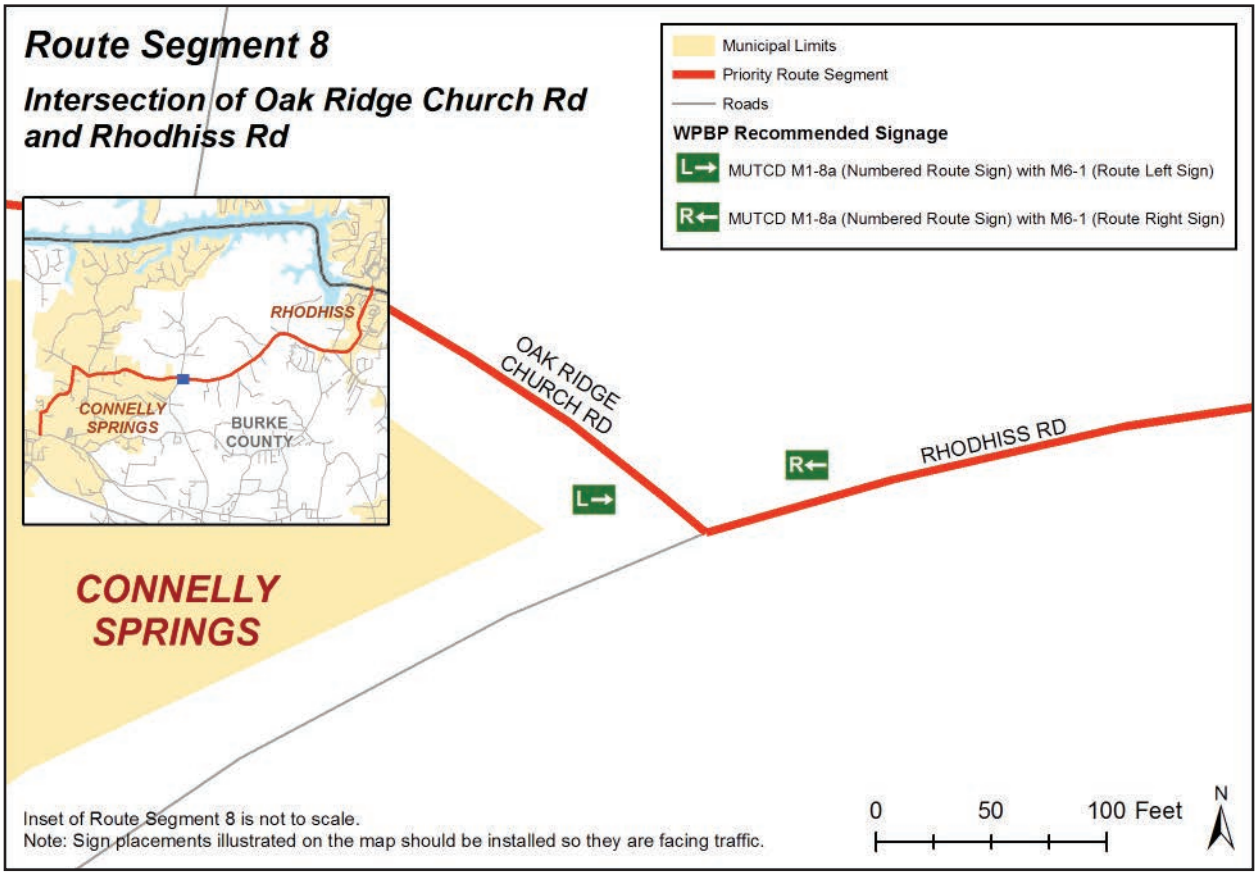

Route Segment 6
Intersection of Conley Rd and Jamestown Rd
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
GLEN ALPINE
MORGANTON
BURKE COUNTY
CONLEY RD
JAMESTOWN RD
L
R
Inset of Route Segment 6 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segments 6 & 7
Intersection of Independence Blvd and N Green St
Municipal Limits
Priority Route Segments
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Right Sign)
GLEN ALPINE
MORGANTON
BURKE COUNTY
181
Segment 7
MORGANTON
N GREEN ST
INDEPENDENCE BLVD
Segment 6
Inset of Route Segments 6 & 7 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 6
Intersection of N Green St and N Sterling St
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-3 (Route Ahead Sign)
MUTCD M1-8a (Numbered Route Sign) and M6-2 (Keep Right Sign)
GLEN ALPINE
MORGANTON
BURKE COUNTY
N GREEN ST
TWO-WAY
N GREEN ST
ONE-WAY
N STERLING ST
ONE-WAY
N Sterling St and N Green St are one-way. N Green St becomes two-way, west of N Sterling St.
MORGANTON
Inset of Route Segment 6 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 8
Intersection of Israel Chapel Rd and Tomlinson Loop
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
RHODHISS
CONNELLY SPRINGS
BURKE COUNTY
TOMLINSON LOOP
ISRAEL CHAPEL RD
CONNELLY SPRINGS
Inset of Route Segment 8 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 8
Intersection of Tomlinson Loop and Shady Grove Rd
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-3 (Route Ahead Sign)
RHODHISS
CONNELLY SPRINGS
BURKE COUNTY
TOMLINSON LOOP
OAK RIDGE CHURCH RD
SHADY GROVE RD
CONNELLY SPRINGS
Inset of Route Segment 8 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 8
Intersection of Oak Ridge Church Rd and Rhodhiss Rd
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
RHODHISS
CONNELLY SPRINGS
BURKE COUNTY
OAK RIDGE CHURCH RD
RHODHISS RD
CONNELLY SPRINGS
Inset of Route Segment 8 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

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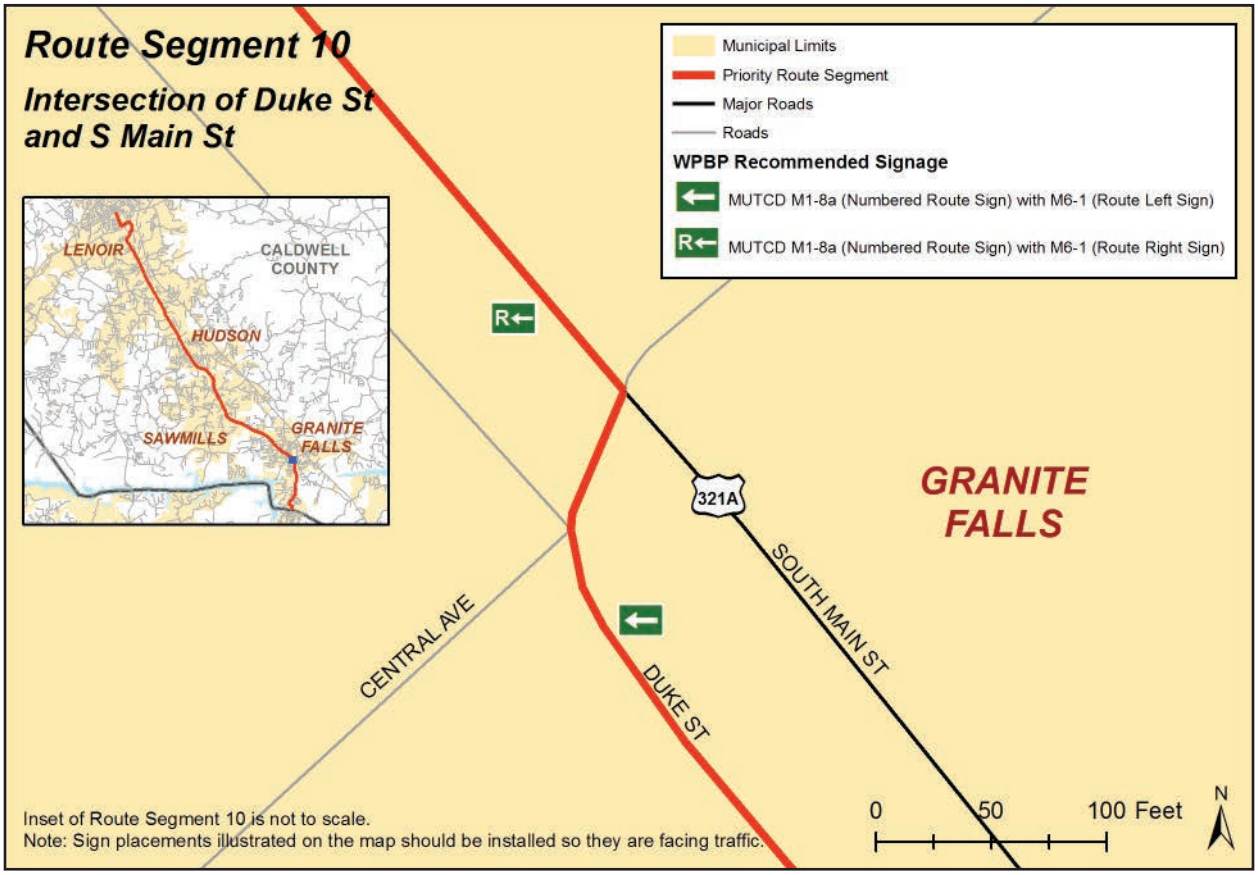
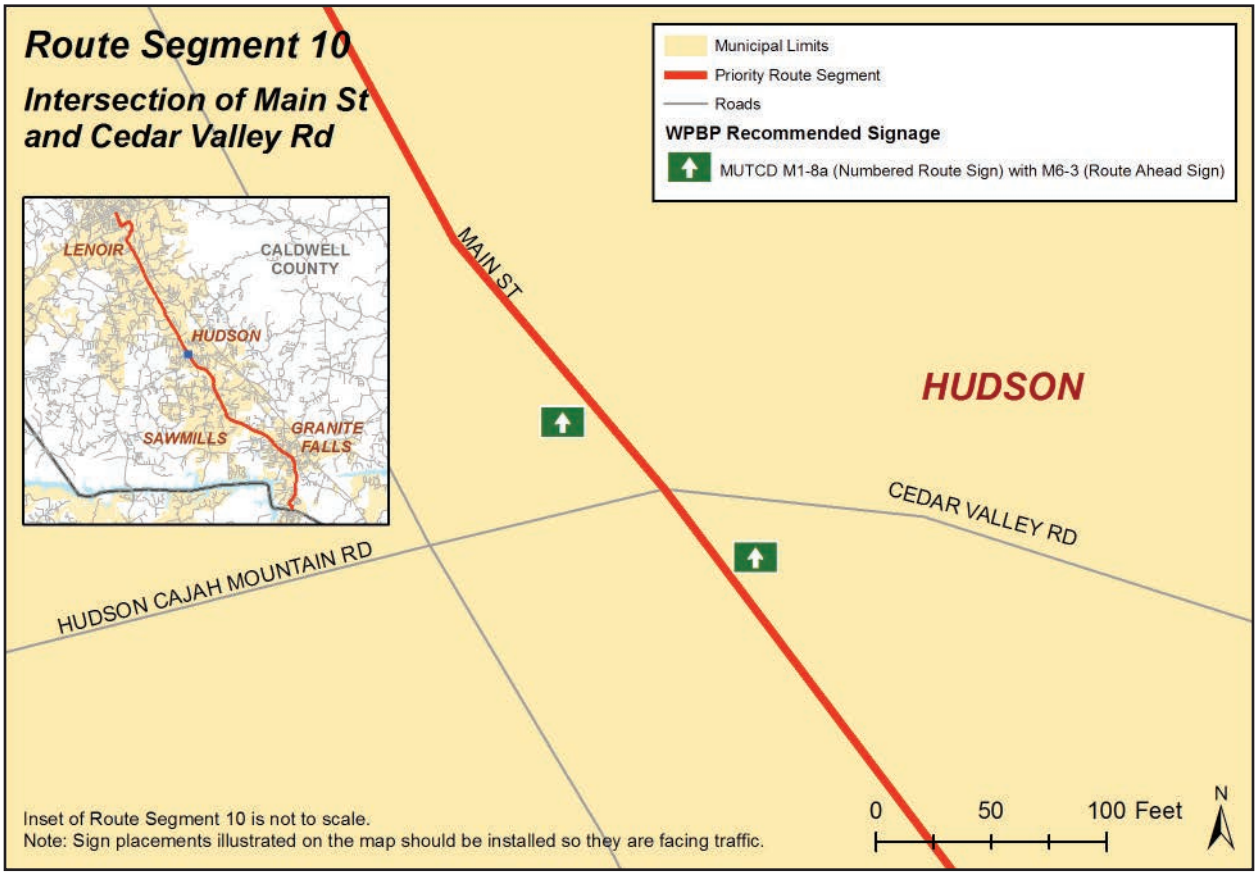
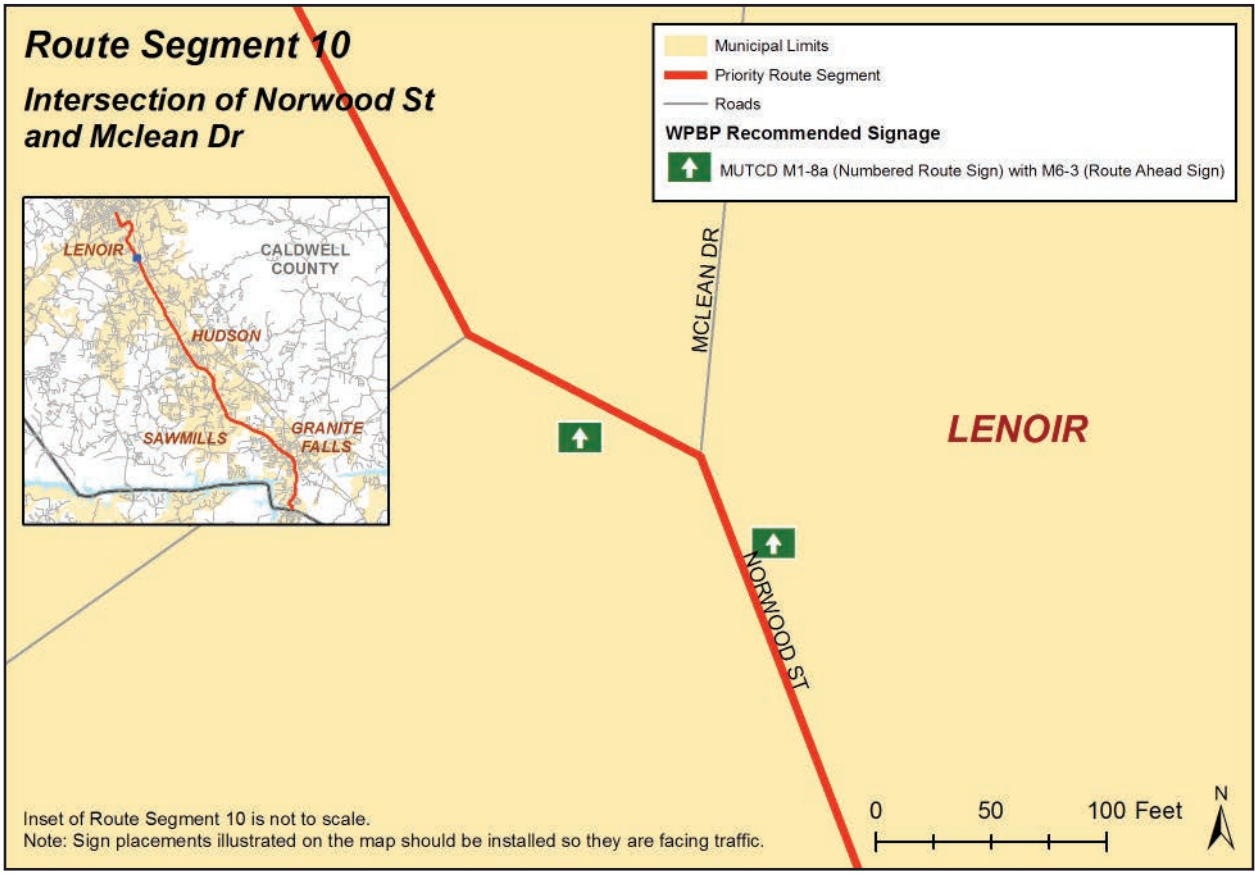
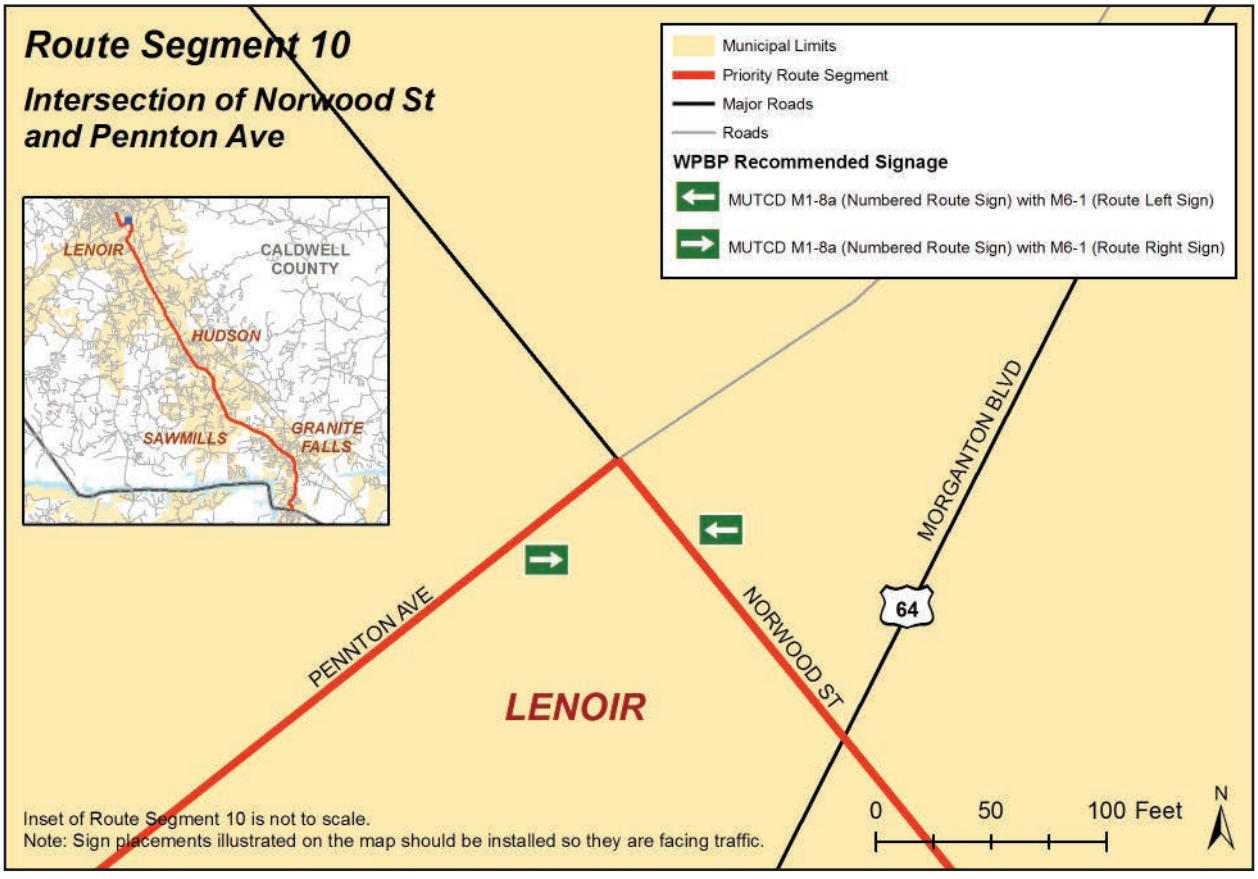
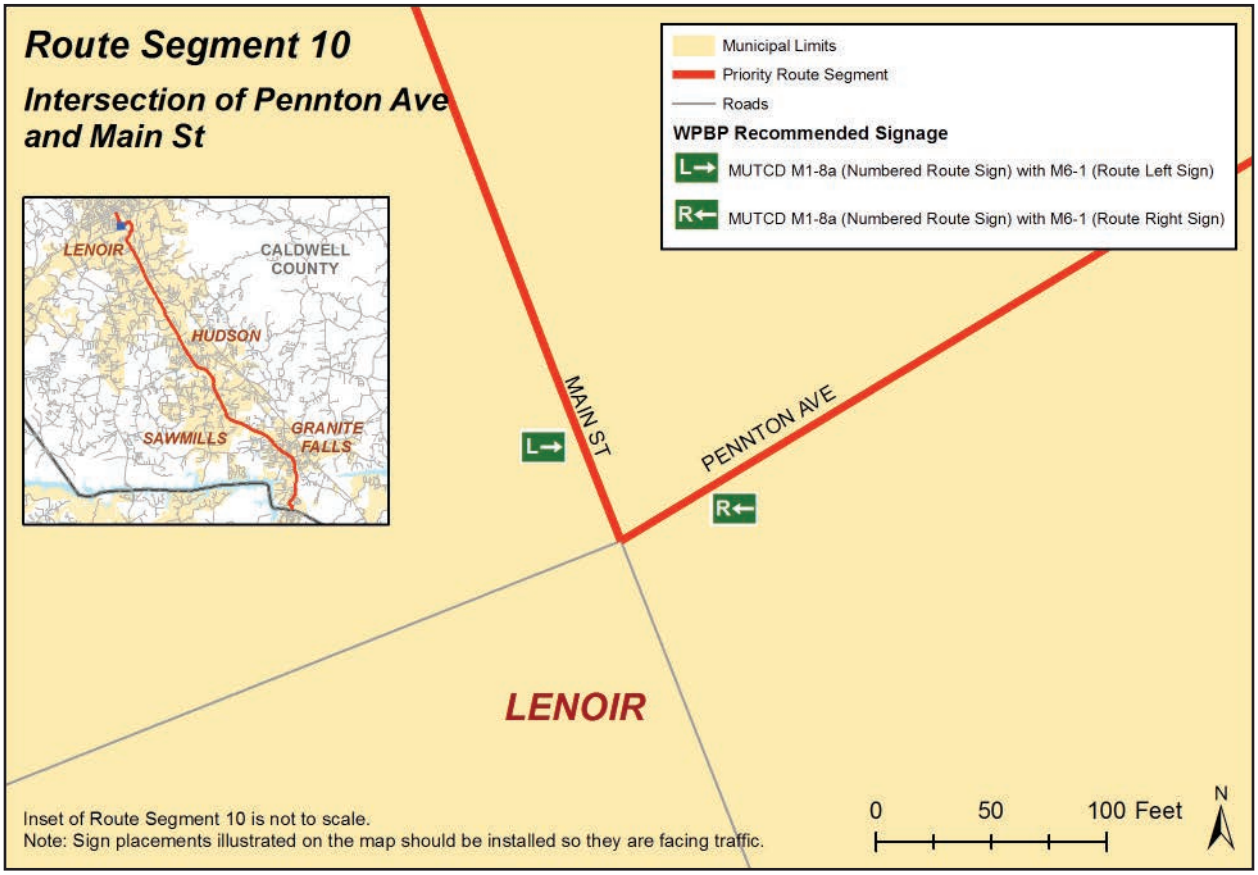
Caldwell County

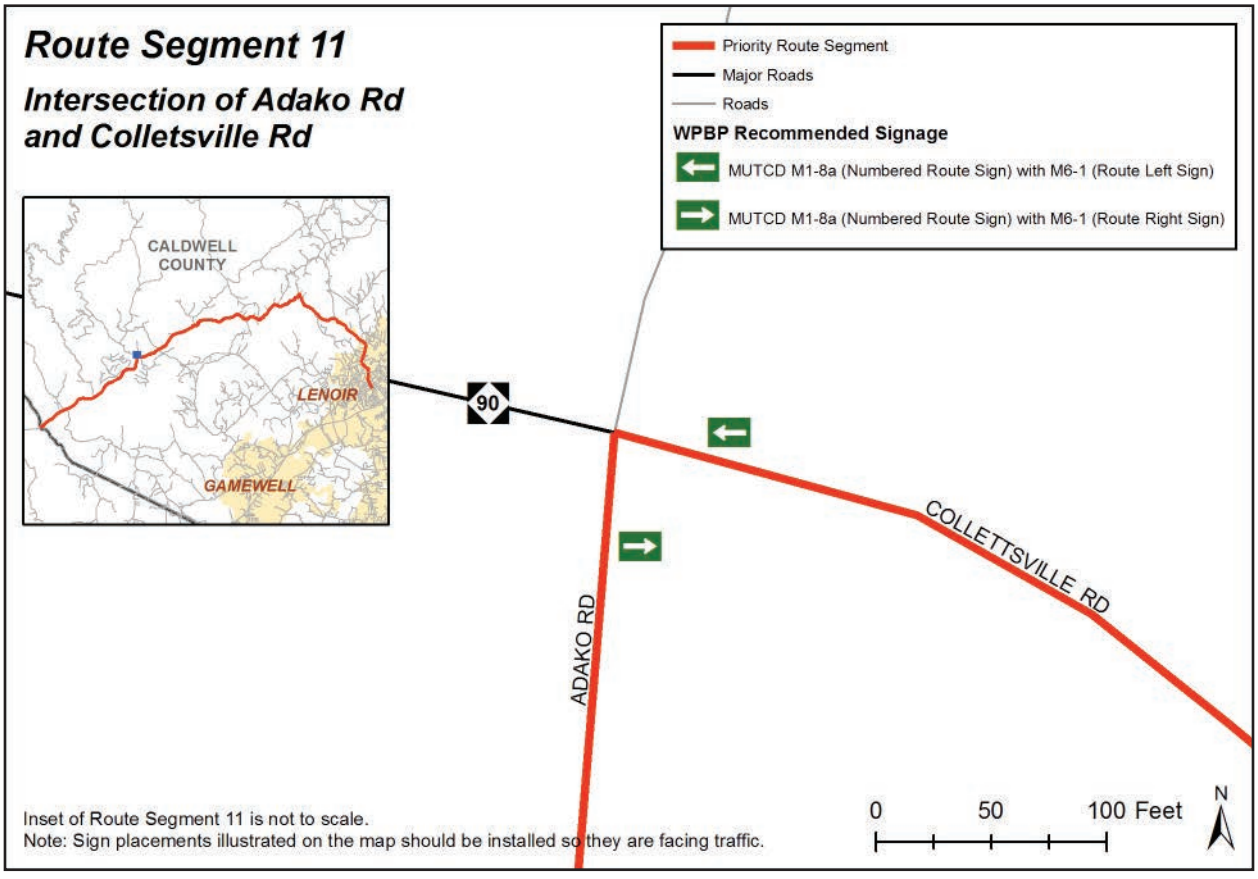

Route Segment 10
Intersection of Duke St and S Main St
Municipal Limits
Priority Route Segment
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
LENOIR
CALDWELL COUNTY
HUDSON
SAWMILLS
GRANITE FALLS
GRANITE FALLS
321A
SOUTH MAIN ST
CENTRAL AVE
DUKE ST
Inset of Route Segment 10 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

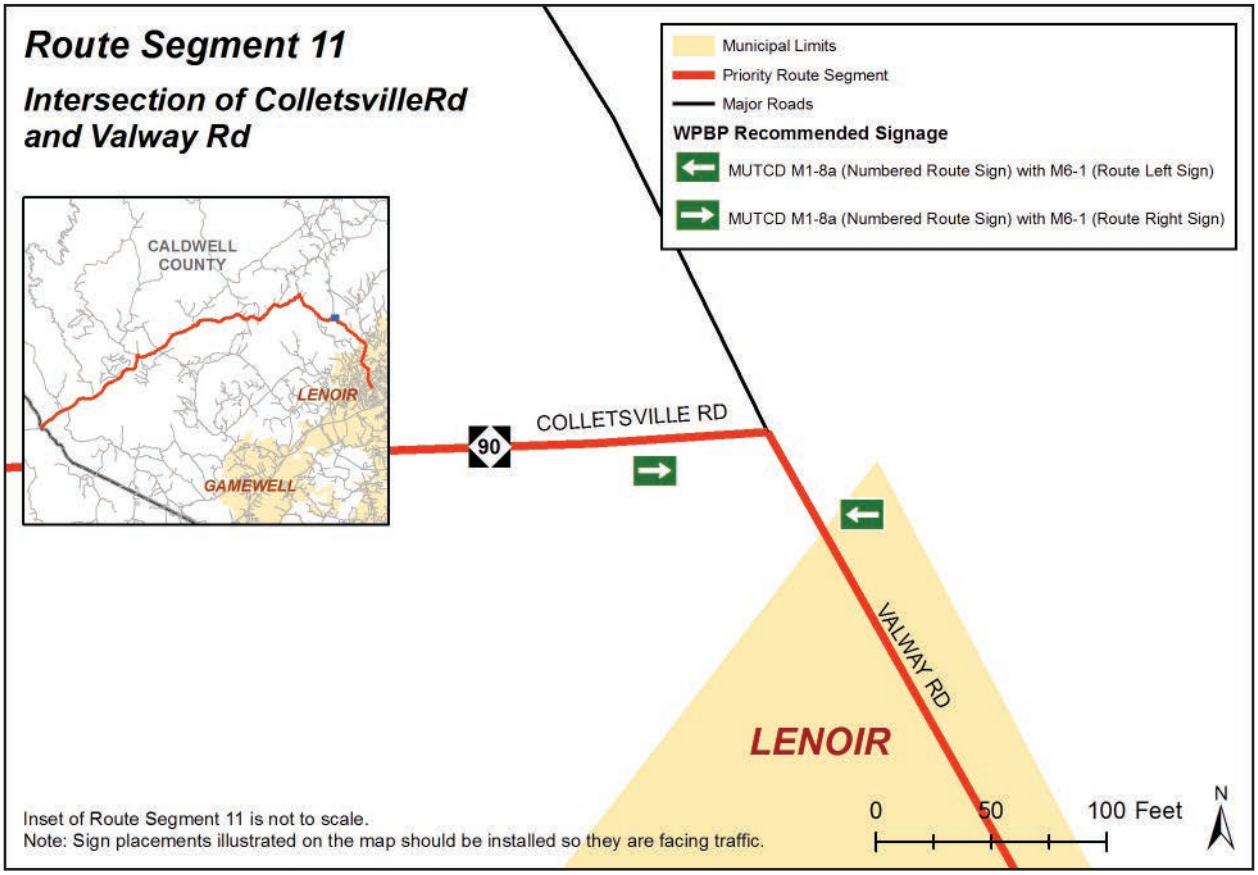

Route Segment 10
Intersection of Main St and Cedar Valley Rd
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-3 (Route Ahead Sign)
LENOIR
CALDWELL COUNTY
HUDSON
SAWMILLS
GRANITE FALLS
MAIN ST
HUDSON
CEDAR VALLEY RD
HUDSON CAJAH MOUNTAIN RD
Inset of Route Segment 10 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

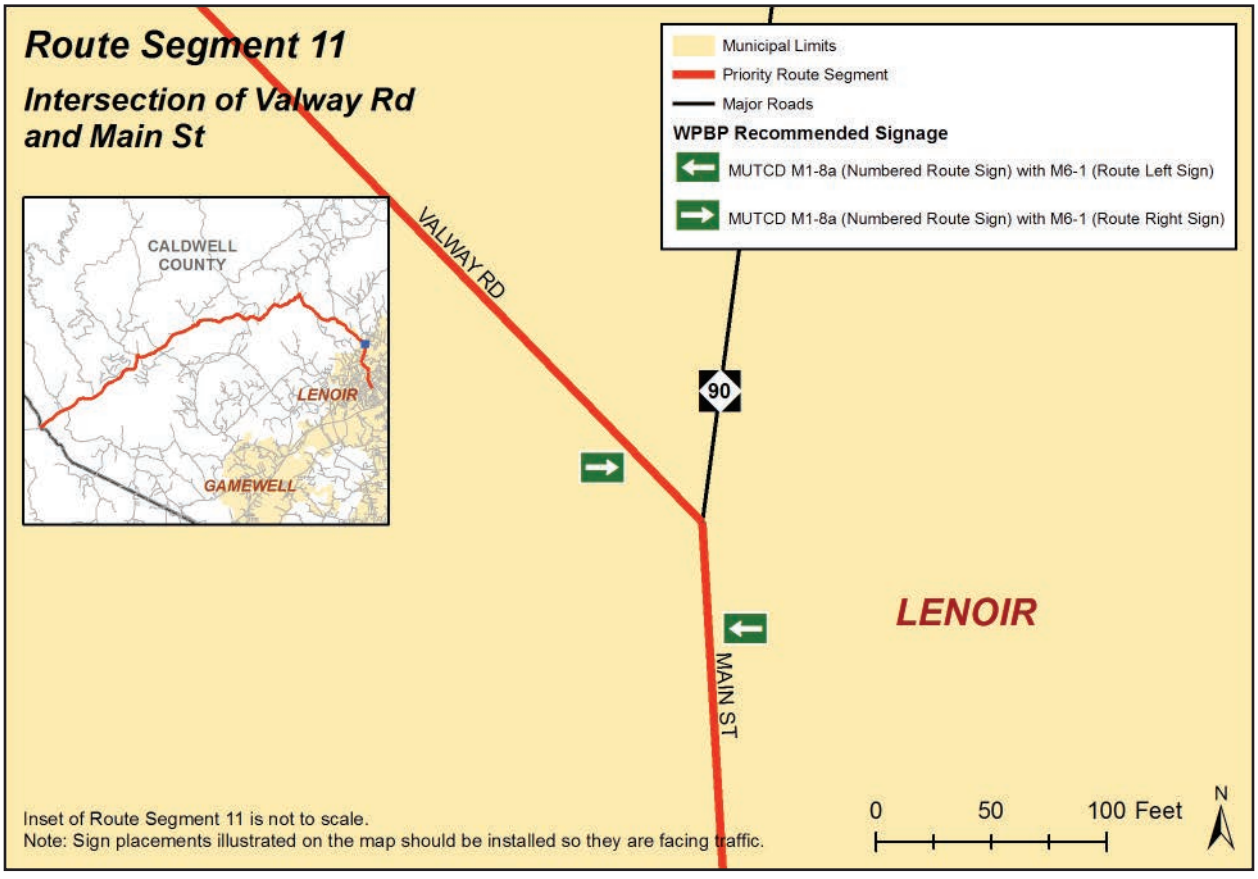

Route Segment 10
Intersection of Norwood St and Mclean Dr
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-3 (Route Ahead Sign)
LENOIR
CALDWELL COUNTY
HUDSON
SAWMILLS
GRANITE FALLS
MCLEAN DR
NORWOOD ST
LENOIR
Inset of Route Segment 10 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

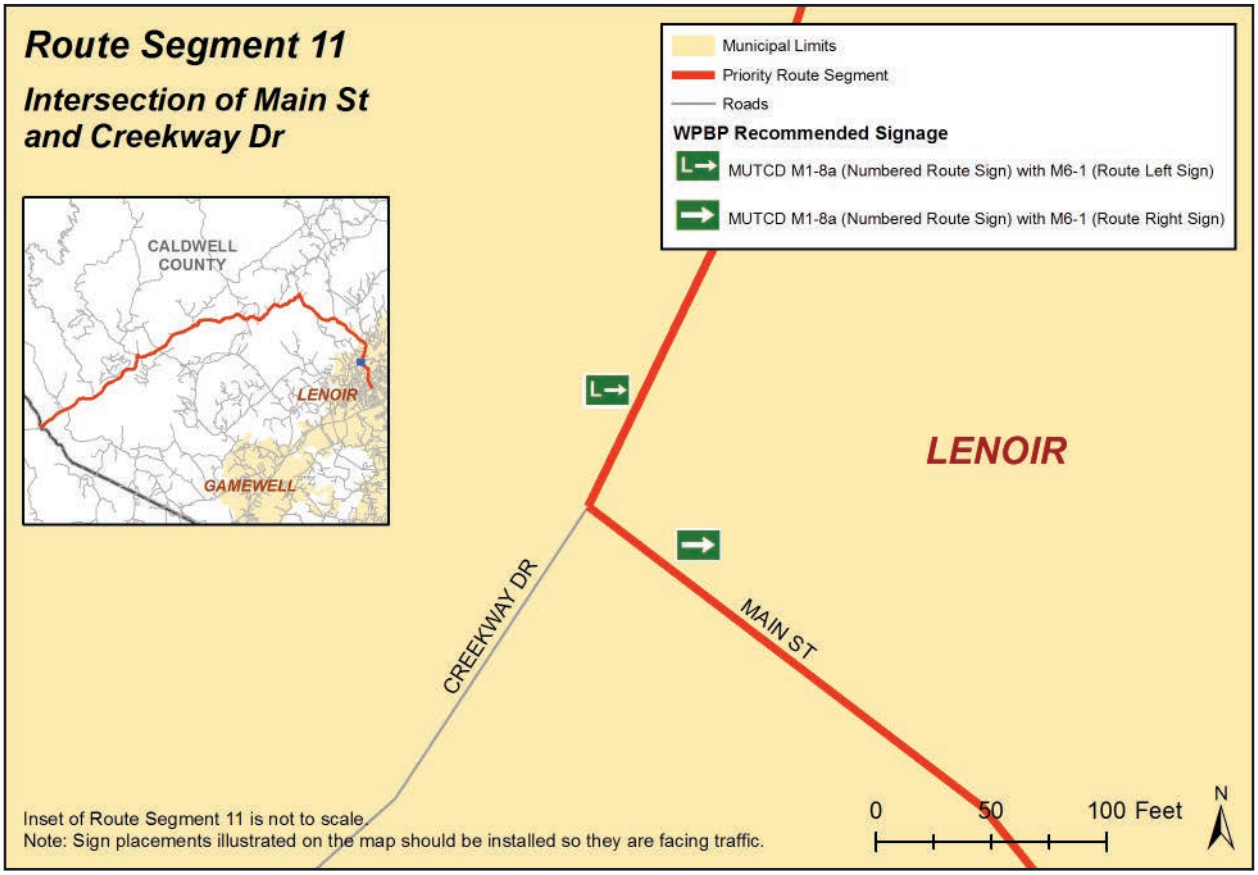

Route Segment 10
Intersection of Norwood St and Pennton Ave
Municipal Limits
Priority Route Segment
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
LENOIR
CALDWELL COUNTY
HUDSON
SAWMILLS
GRANITE FALLS
MORGANTON BLVD
64
PENNTON AVE
NORWOOD ST
LENOIR
Inset of Route Segment 10 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 10
Intersection of Pennton Ave and Main St
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
LENOIR
CALDWELL COUNTY
HUDSON
SAWMILLS
GRANITE FALLS
MAIN ST
PENNTON AVE
LENOIR
Inset of Route Segment 10 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 11
Intersection of Adako Rd and Colletsville Rd
Priority Route Segment
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CALDWELL COUNTY
LENOIR
GAMEWELL
90
COLLETTSVILLE RD
ADAKO RD
Inset of Route Segment 11 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 11
Intersection of ColletsvilleRd and Valway Rd
Municipal Limits
Priority Route Segment
Major Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CALDWELL COUNTY
LENOIR
GAMEWELL
90
COLLETSVILLE RD
VALWAY RD
LENOIR
Inset of Route Segment 11 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 11
Intersection of Valway Rd and Main St
Municipal Limits
Priority Route Segment
Major Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CALDWELL COUNTY
LENOIR
GAMEWELL
VALWAY RD
90
MAIN ST
LENOIR
Inset of Route Segment 11 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 11
Intersection of Main St and Creekway Dr
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CALDWELL COUNTY
LENOIR
GAMEWELL
LENOIR
CREEKWAY DR
MAIN ST
Inset of Route Segment 11 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
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100 Feet
N

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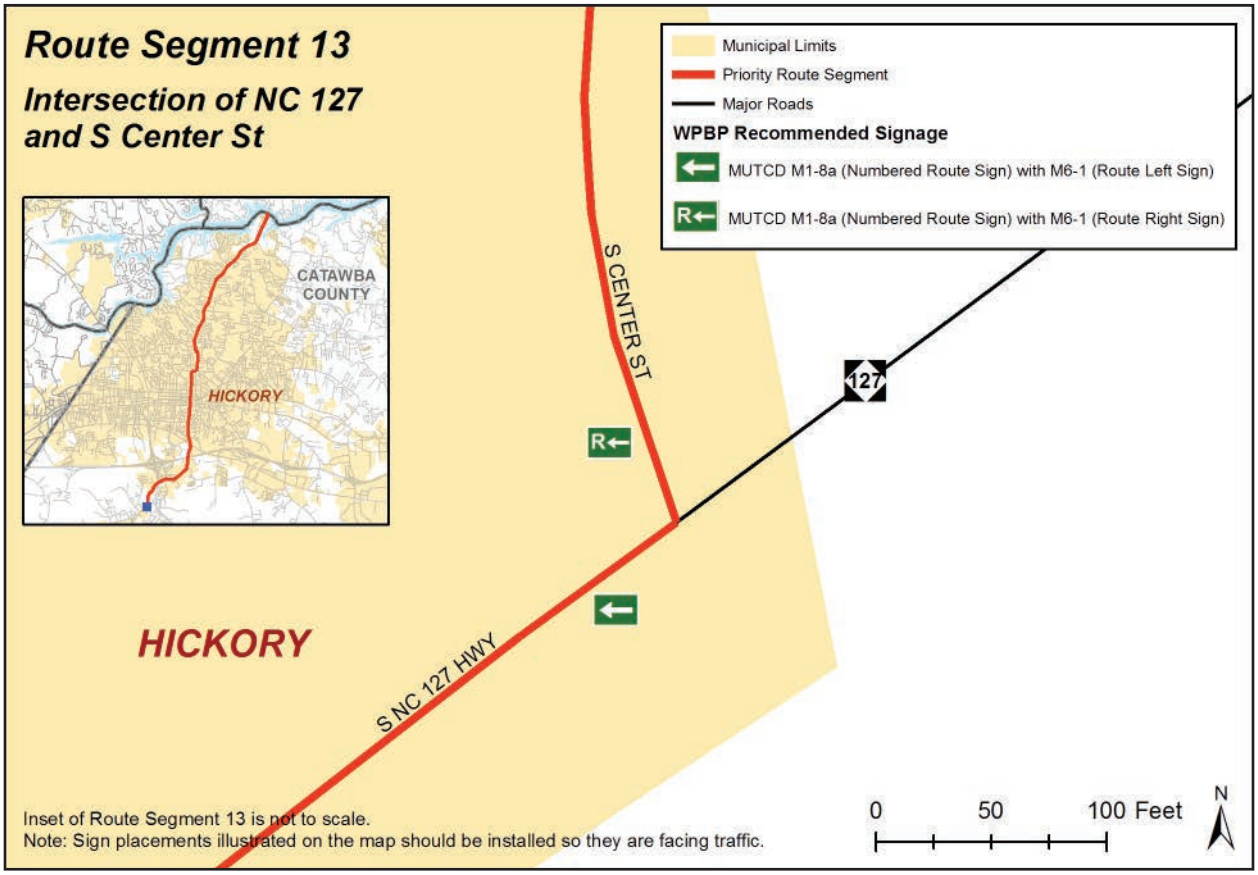
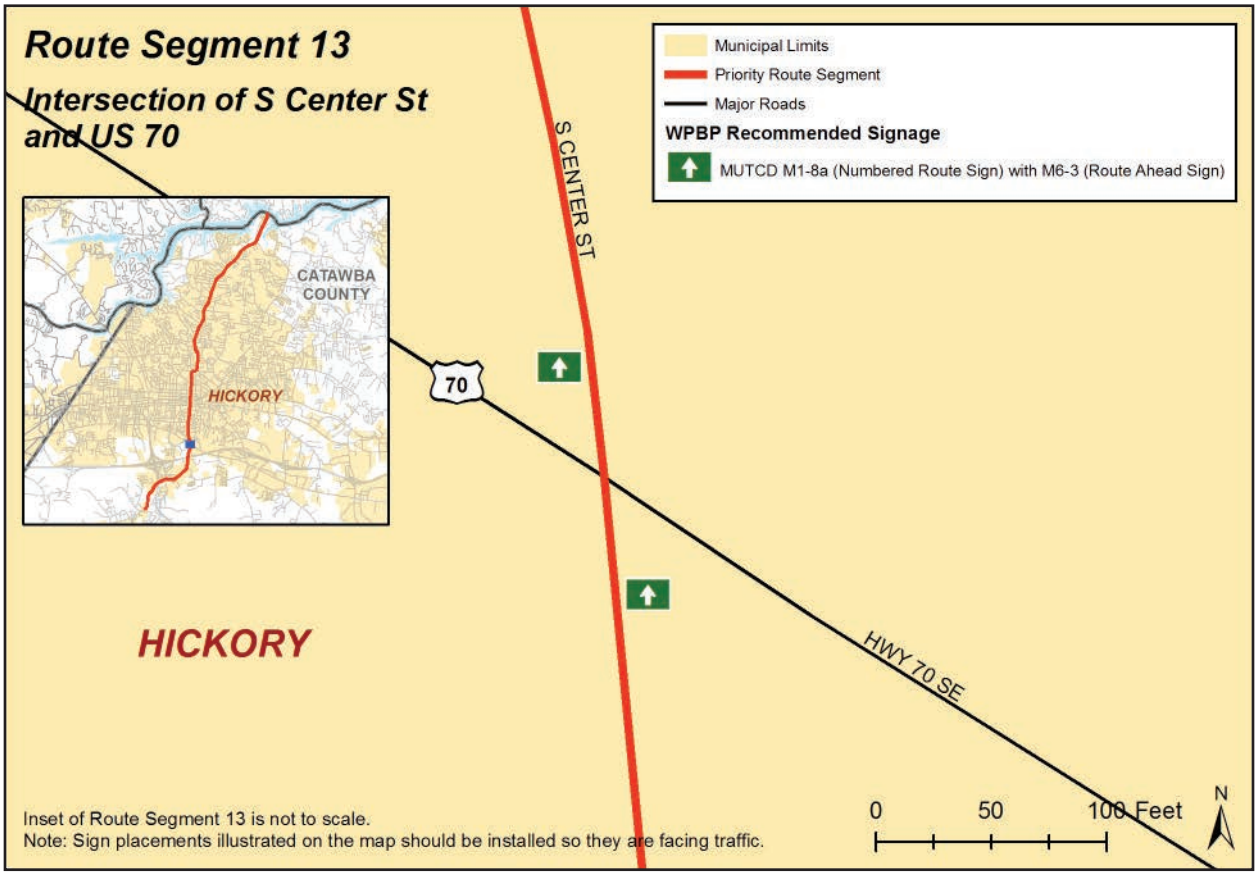
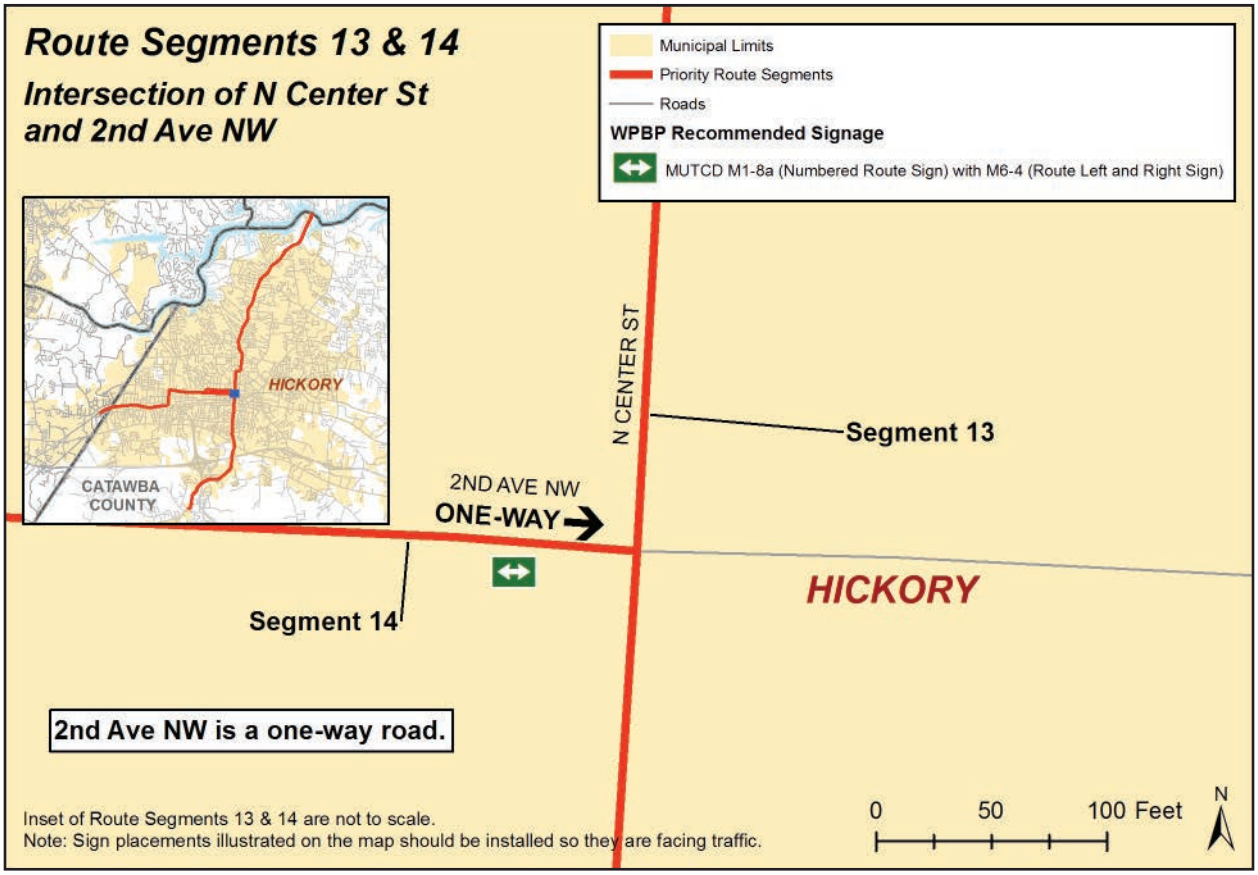
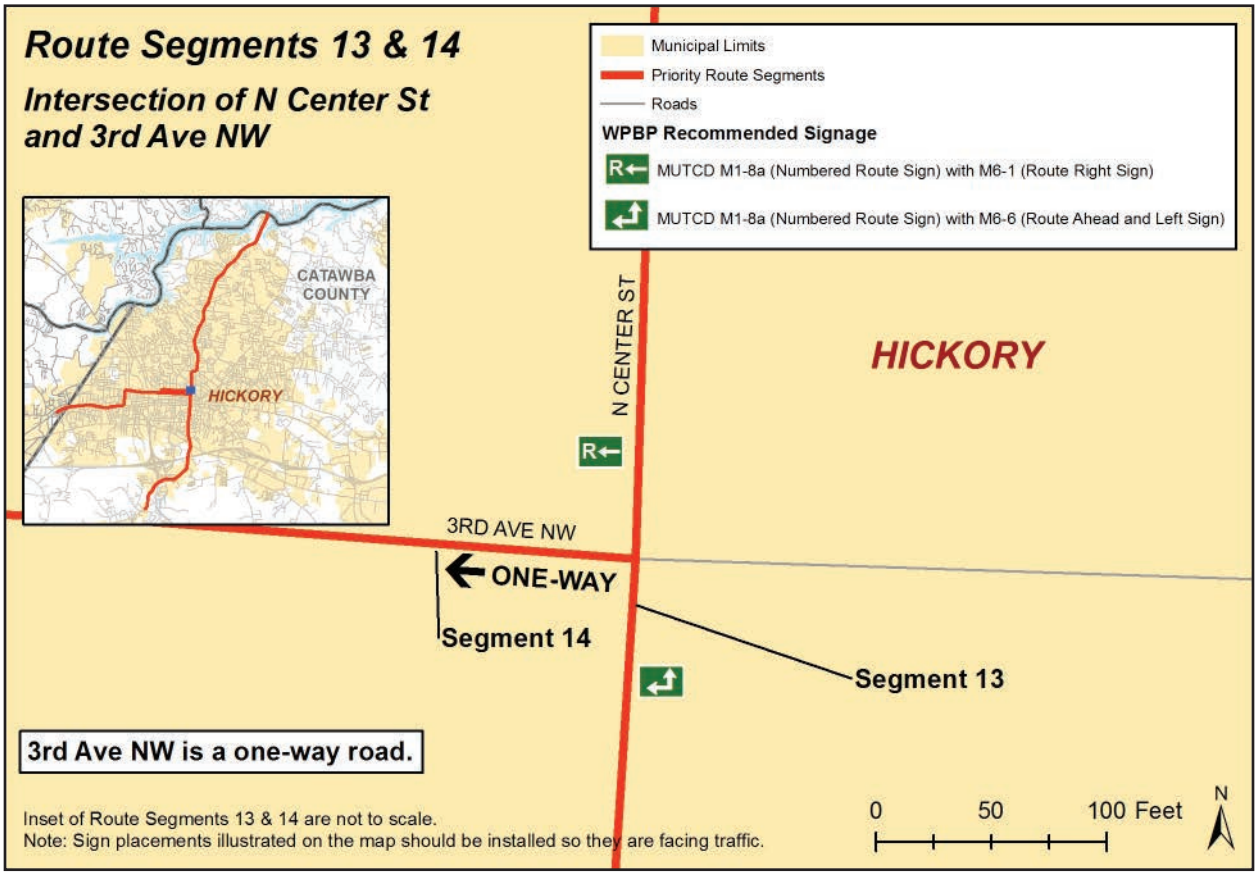
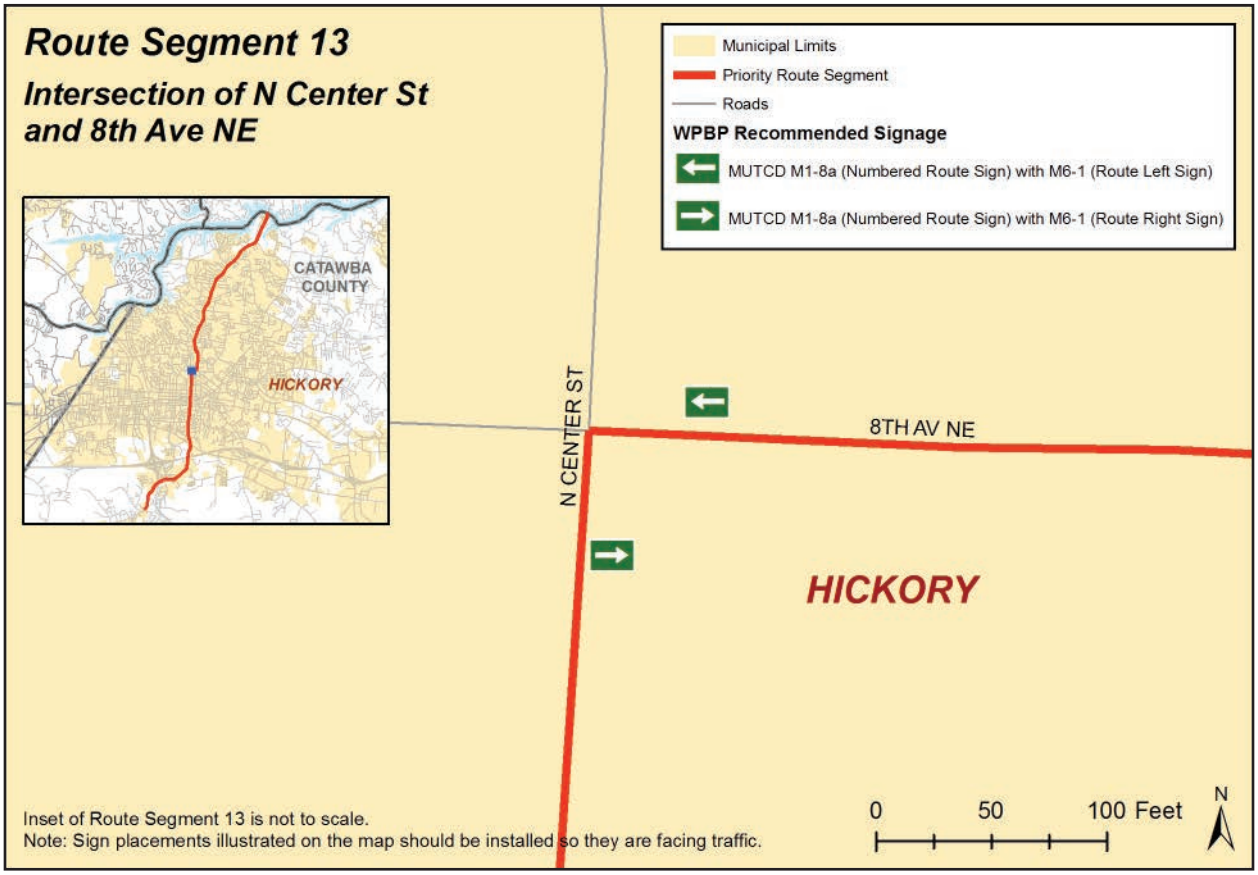
Catawba County

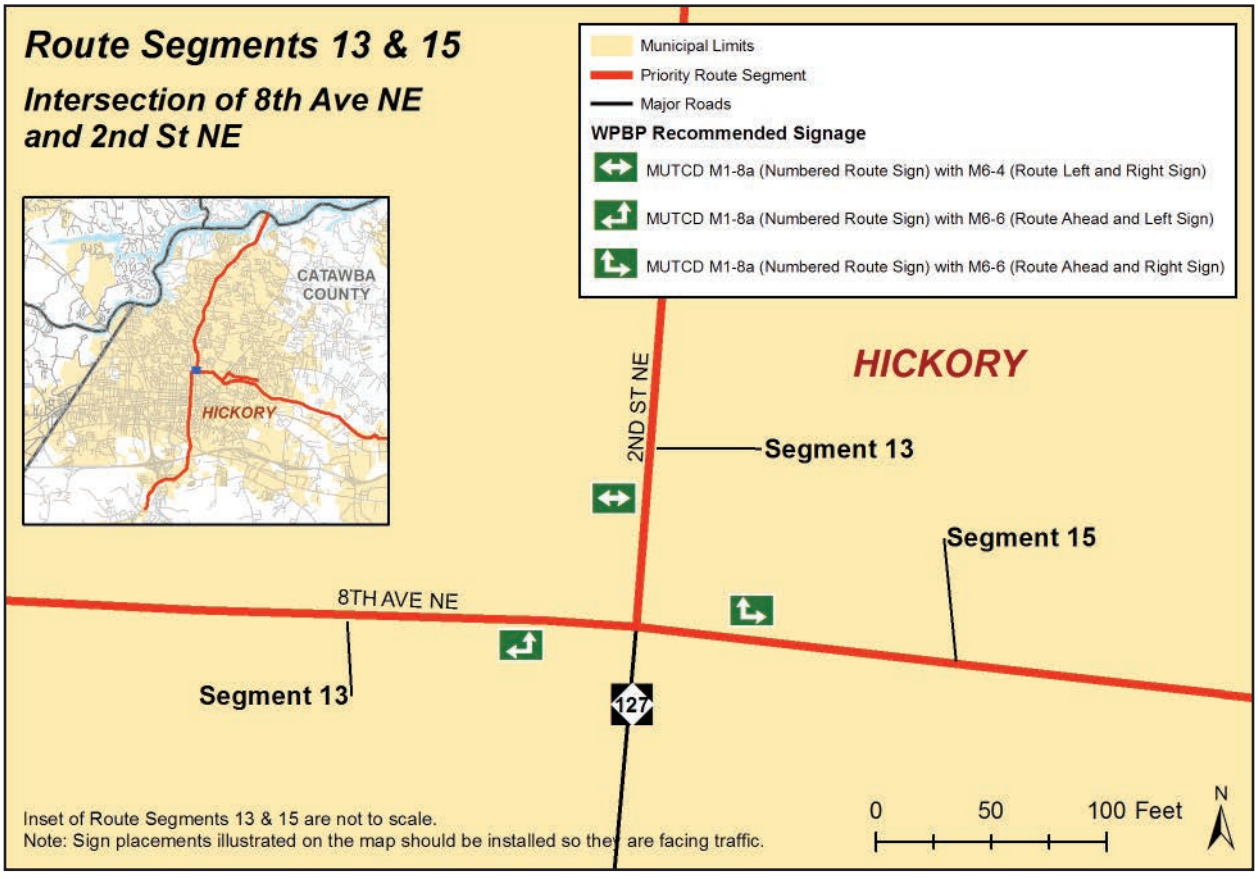

Route Segment 13
Intersection of NC 127 and S Center St
Municipal Limits
Priority Route Segment
Major Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CATAWBA COUNTY
HICKORY
S CENTER ST
127
S NC 127 HWY
HICKORY
Inset of Route Segment 13 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

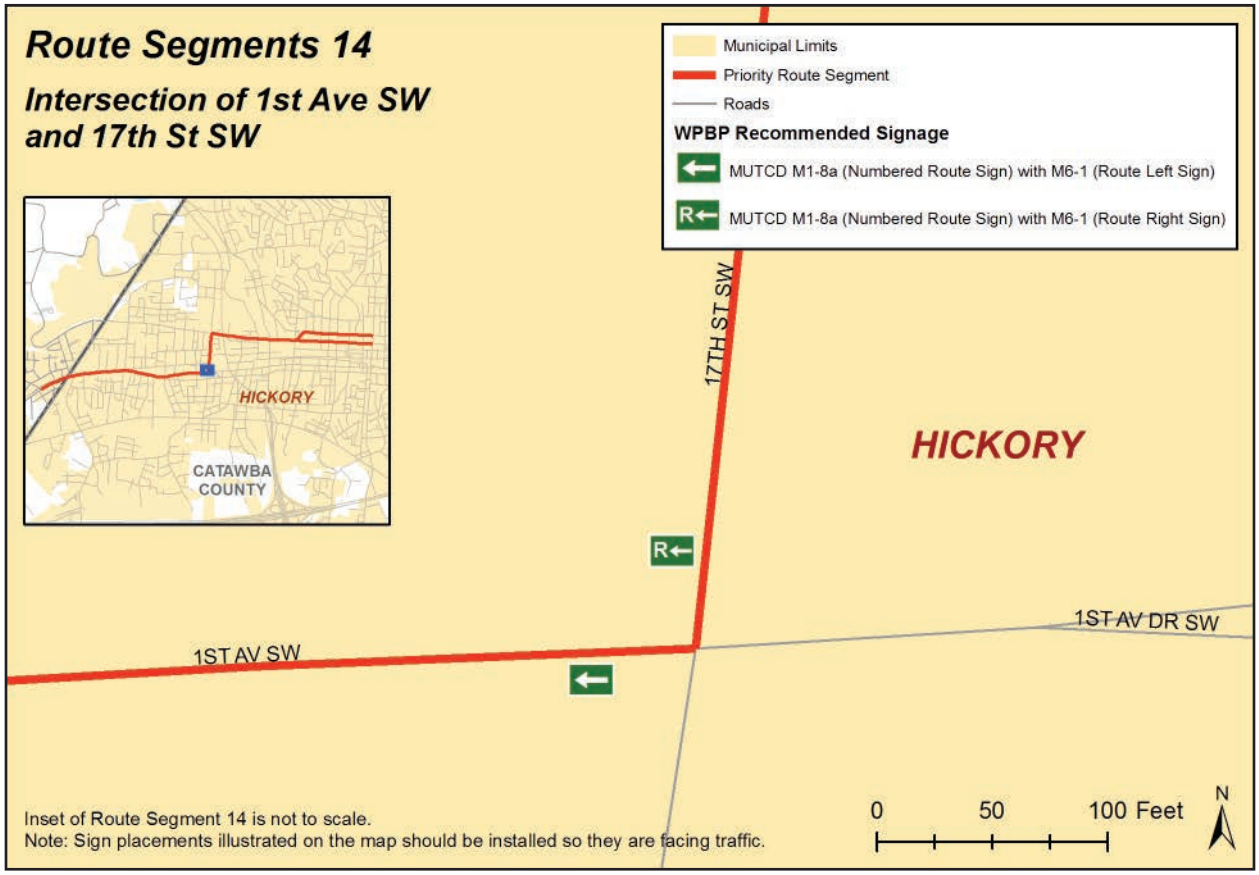

Route Segment 13
Intersection of S Center St and US 70
Municipal Limits
Priority Route Segment
Major Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-3 (Route Ahead Sign)
CATAWBA COUNTY
HICKORY
S CENTER ST
70
HWY 70 SE
HICKORY
Inset of Route Segment 13 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

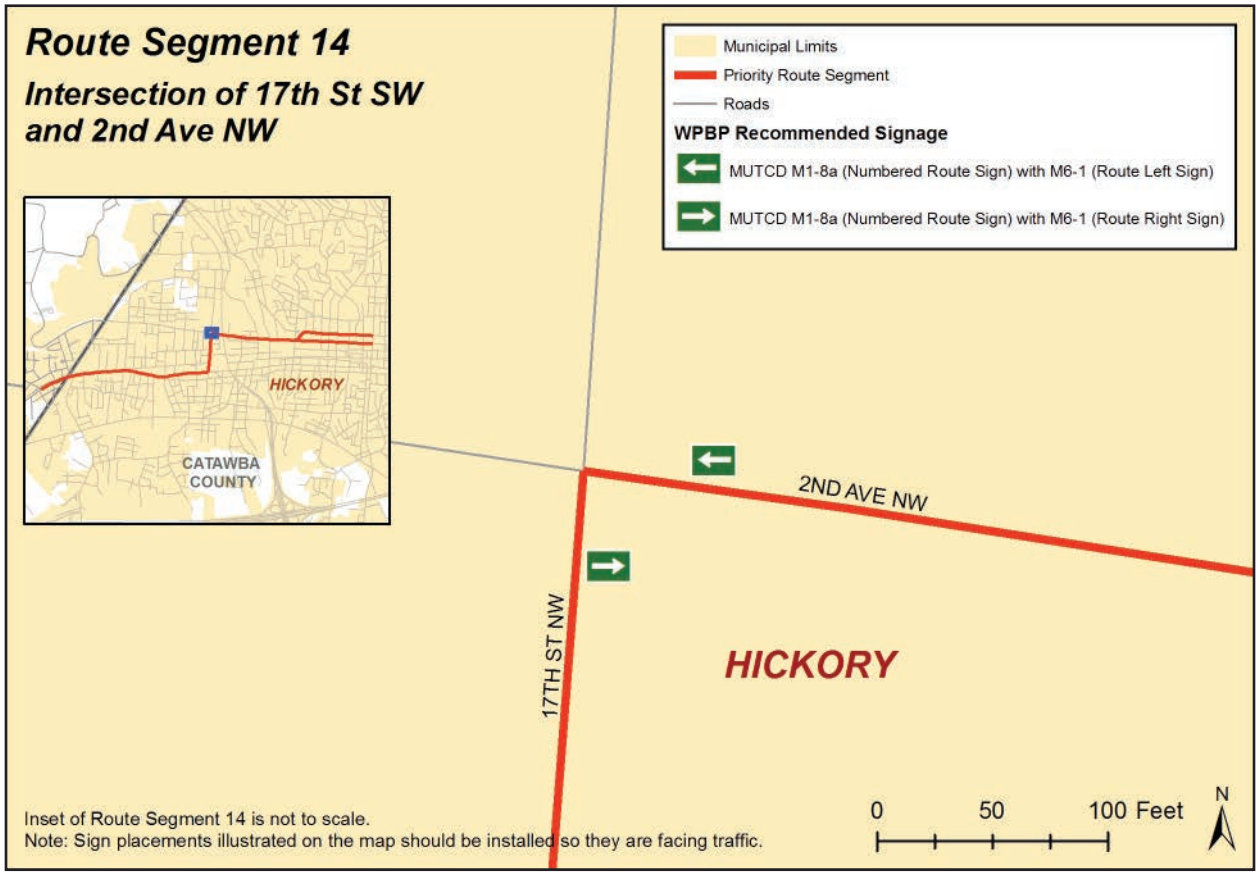

Route Segments 13 & 14
Intersection of N Center St and 2nd Ave NW
Municipal Limits
Priority Route Segments
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)
HICKORY
CATAWBA COUNTY
N CENTER ST
Segment 13
2ND AVE NW
ONE-WAY
HICKORY
Segment 14
2nd Ave NW is a one-way road.
Inset of Route Segments 13 & 14 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0 50 100 Feet
N

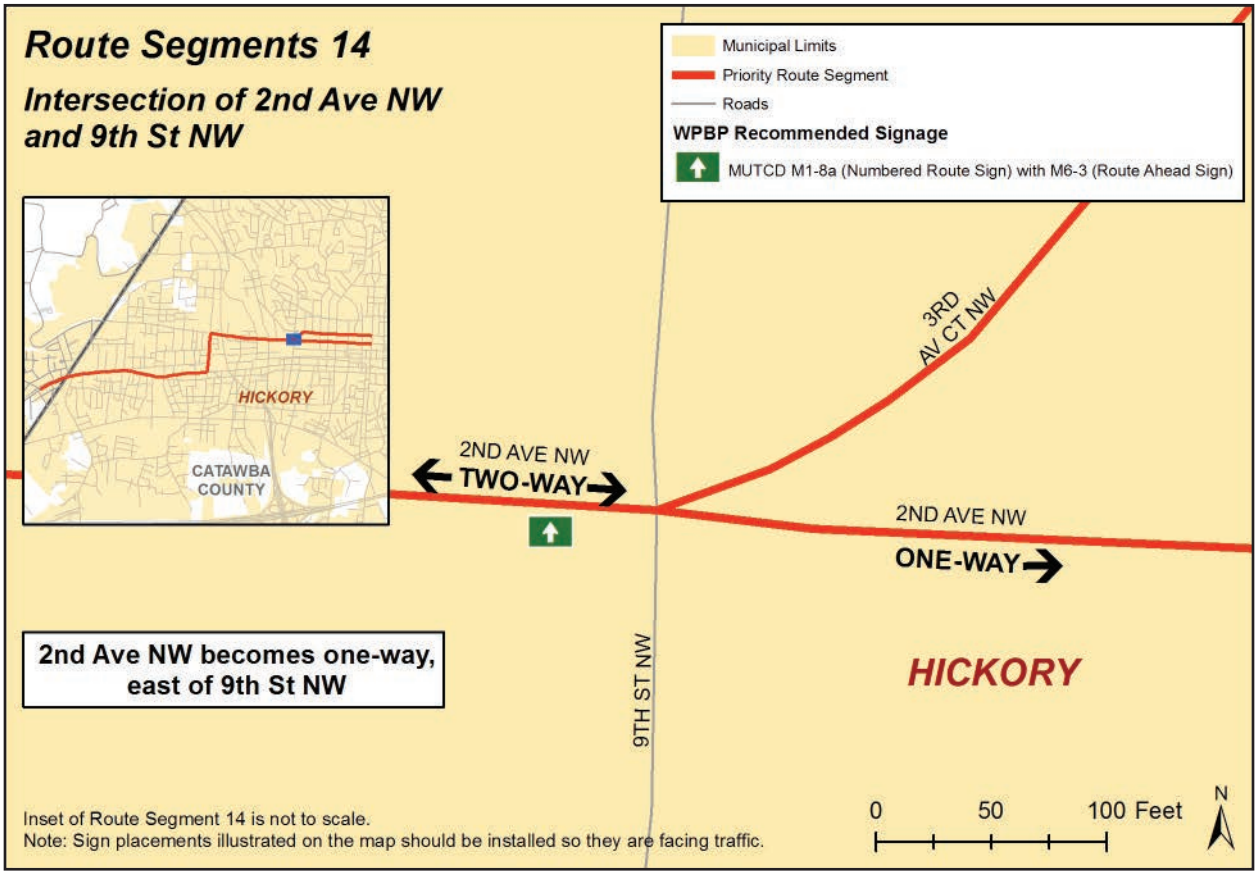

Route Segments 13 & 14
Intersection of N Center St and 3rd Ave NW
Municipal Limits
Priority Route Segments
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
CATAWBA COUNTY
HICKORY
N CENTER ST
HICKORY
3RD AVE NW
ONE-WAY
Segment 14
Segment 13
3rd Ave NW is a one-way road.
Inset of Route Segments 13 & 14 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0 50 100 Feet
N

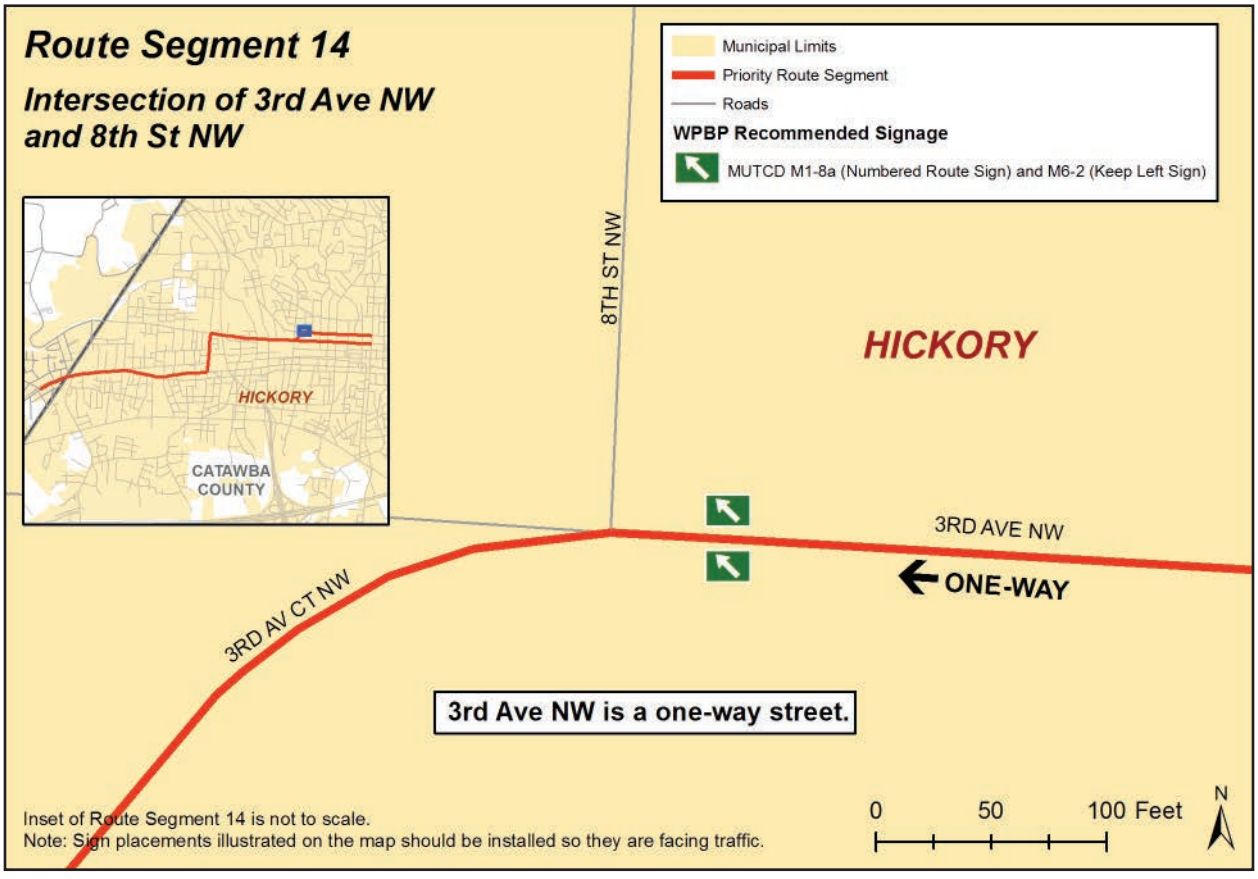

Route Segment 13
Intersection of N Center St and 8th Ave NE
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CATAWBA COUNTY
HICKORY
N CENTER ST
8TH AV NE
HICKORY
Inset of Route Segment 13 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

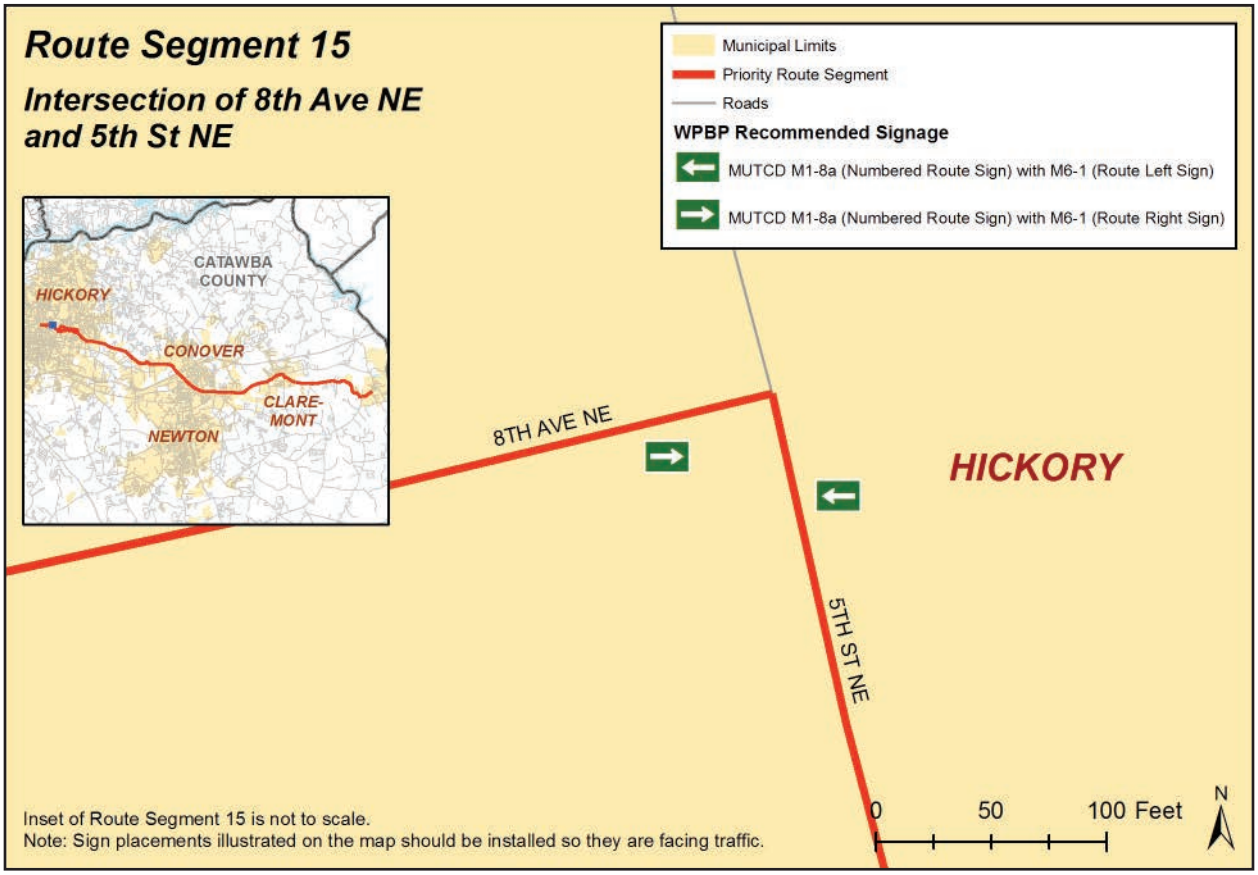

Route Segments 13 & 15
Intersection of 8th Ave NE and 2nd St NE
Municipal Limits
Priority Route Segment
Major Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Right Sign)
CATAWBA COUNTY
HICKORY
HICKORY
2ND ST NE
Segment 13
Segment 15
8TH AVE NE
Segment 13
127
Inset of Route Segments 13 & 15 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

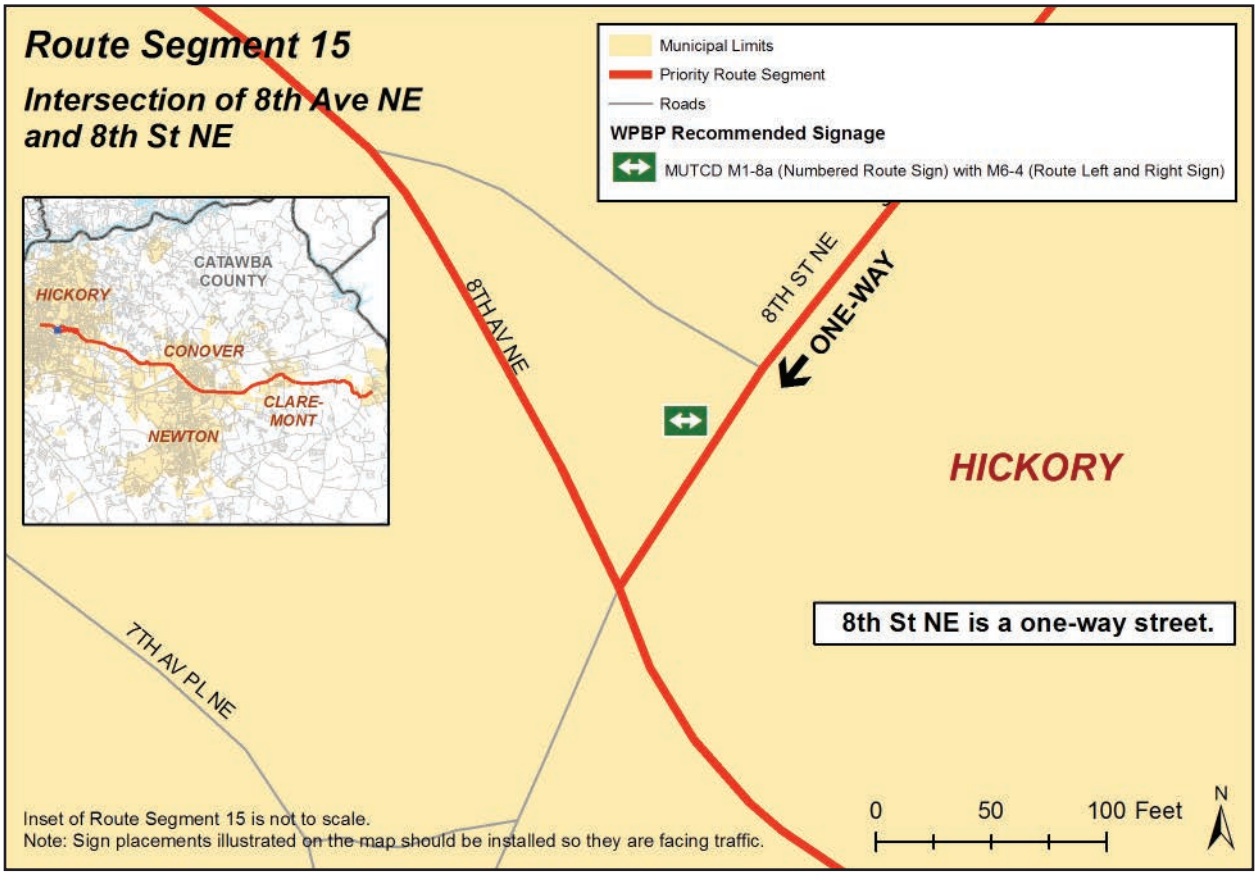

Route Segments 14
Intersection of 1st Ave SW and 17th St SW
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
HICKORY
CATAWBA COUNTY
17TH ST SW
HICKORY
1ST AV SW
1ST AV DR SW
Inset of Route Segment 14 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

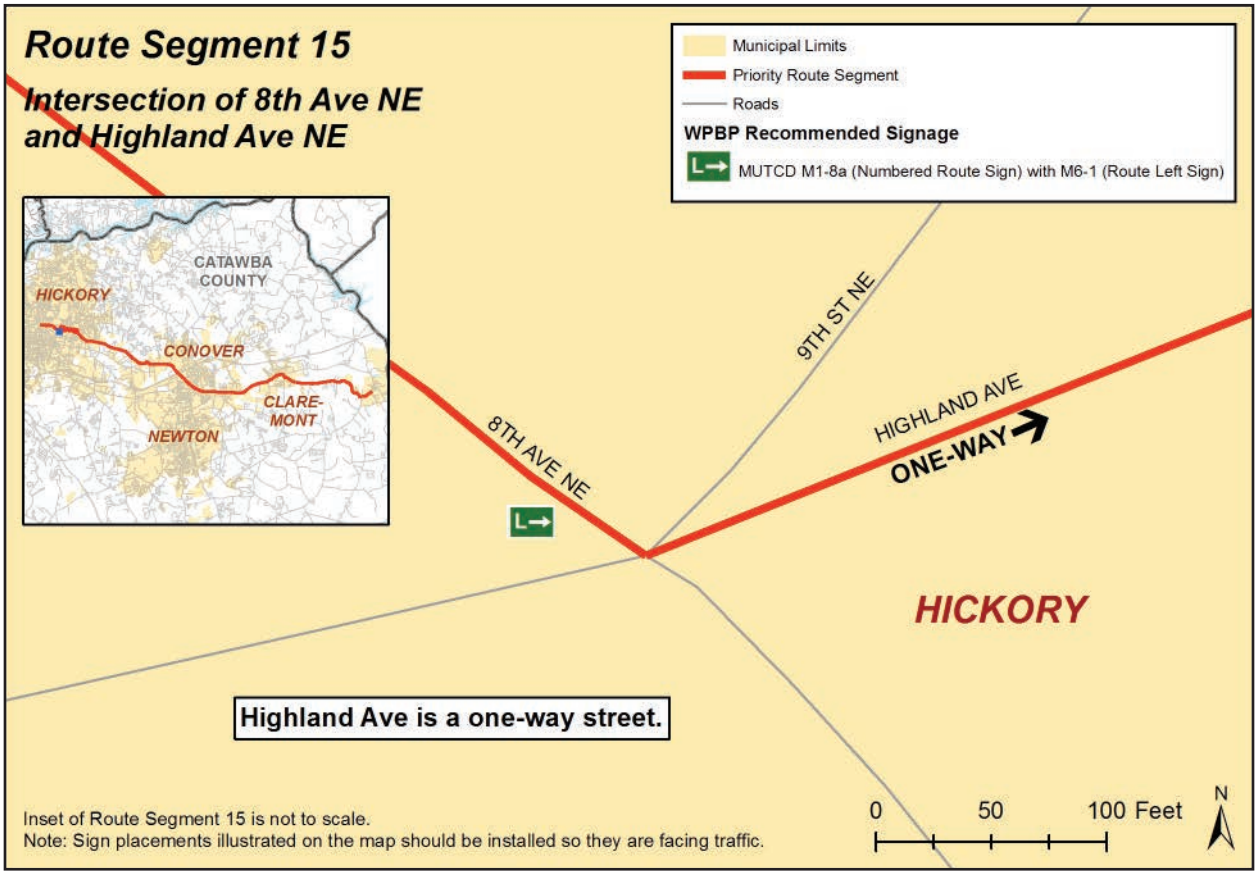

Route Segment 14
Intersection of 17th St SW and 2nd Ave NW
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
HICKORY
CATAWBA COUNTY
2ND AVE NW
17TH ST NW
HICKORY
Inset of Route Segment 14 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

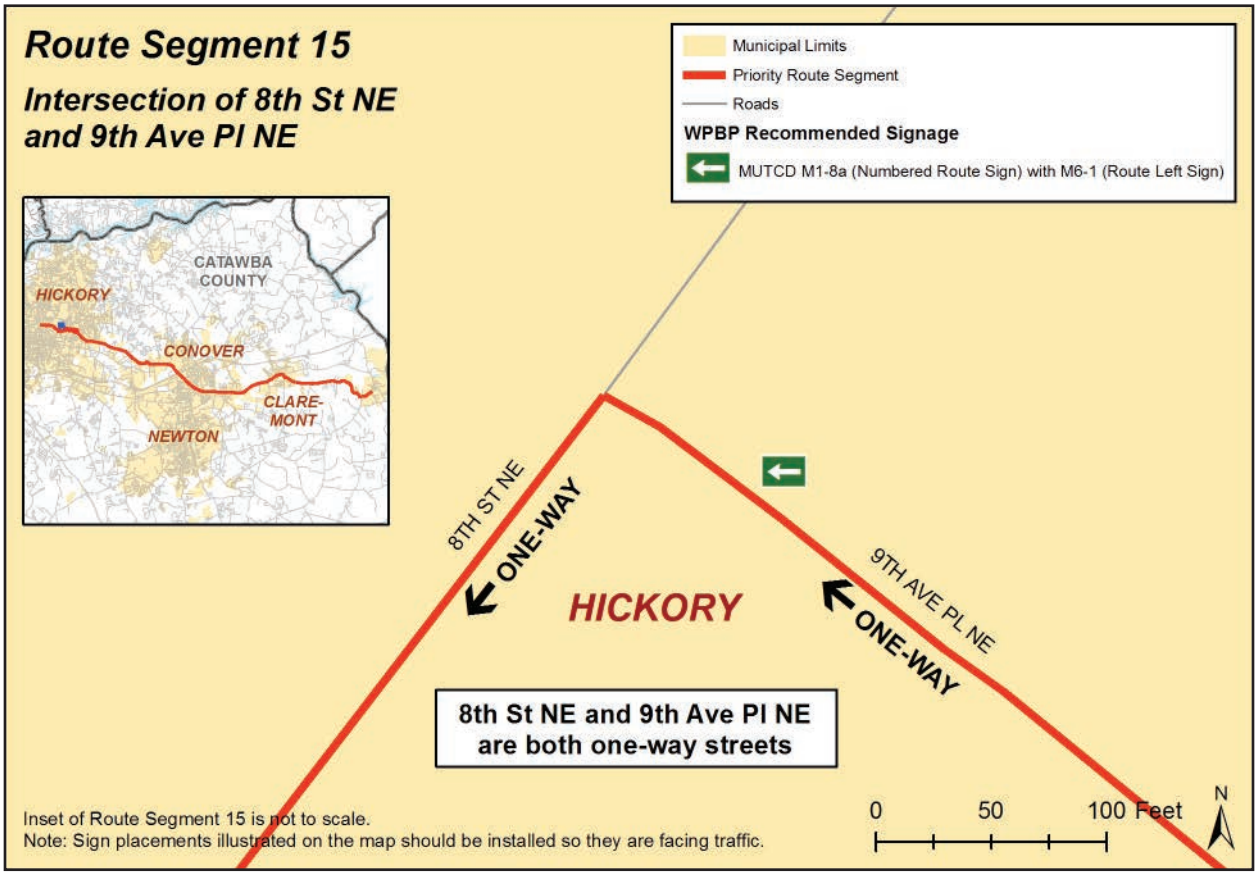

Route Segments 14
Intersection of 2nd Ave NW and 9th St NW
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-3 (Route Ahead Sign)
HICKORY
CATAWBA COUNTY
2ND AVE NW
TWO-WAY
3RD AV CT NW
2ND AVE NW
ONE-WAY
2nd Ave NW becomes one-way, east of 9th St NW
9TH ST NW
HICKORY
Inset of Route Segment 14 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

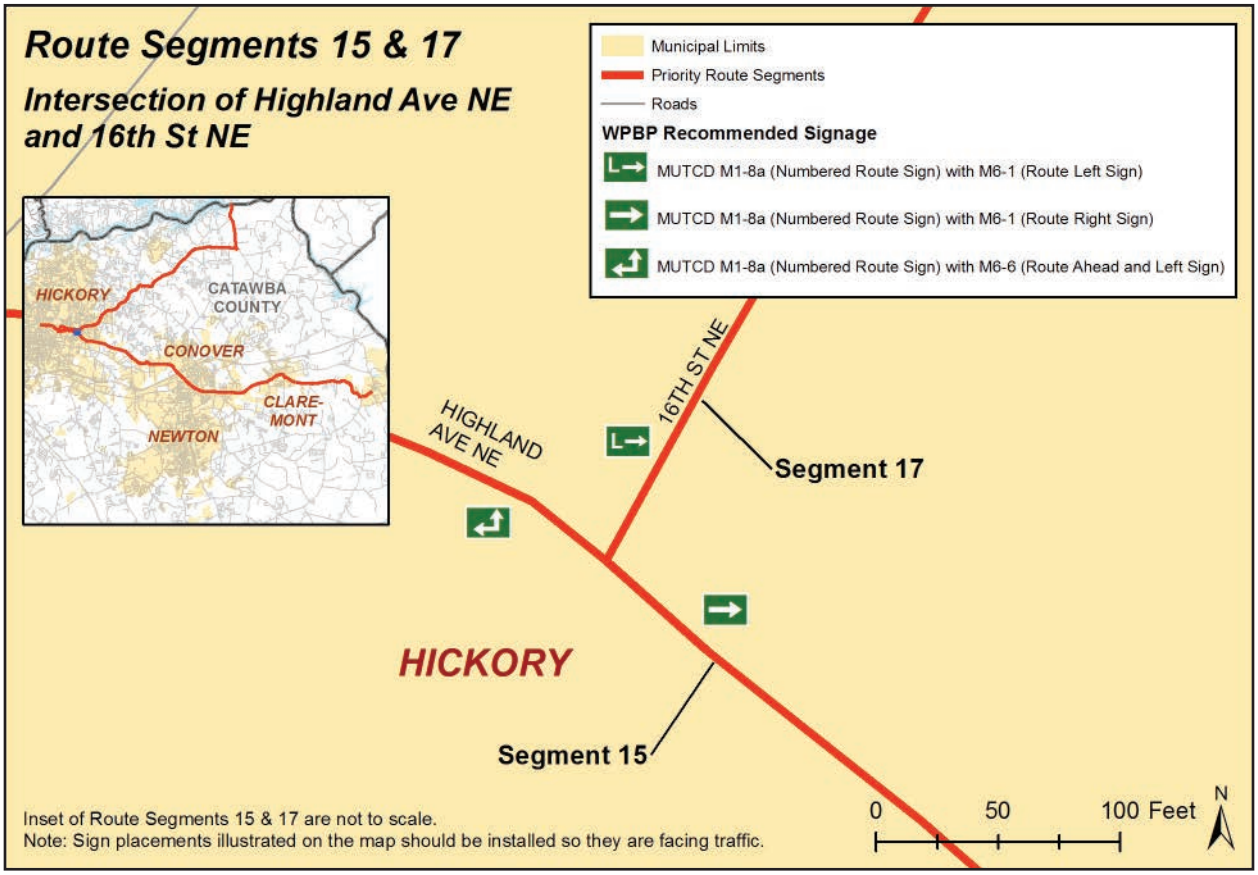

Route Segment 14
Intersection of 3rd Ave NW and 8th St NW
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) and M6-2 (Keep Left Sign)
HICKORY
CATAWBA COUNTY
8TH ST NW
HICKORY
3RD AVE NW
ONE-WAY
3RD AV CT NW
3rd Ave NW is a one-way street.
Inset of Route Segment 14 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

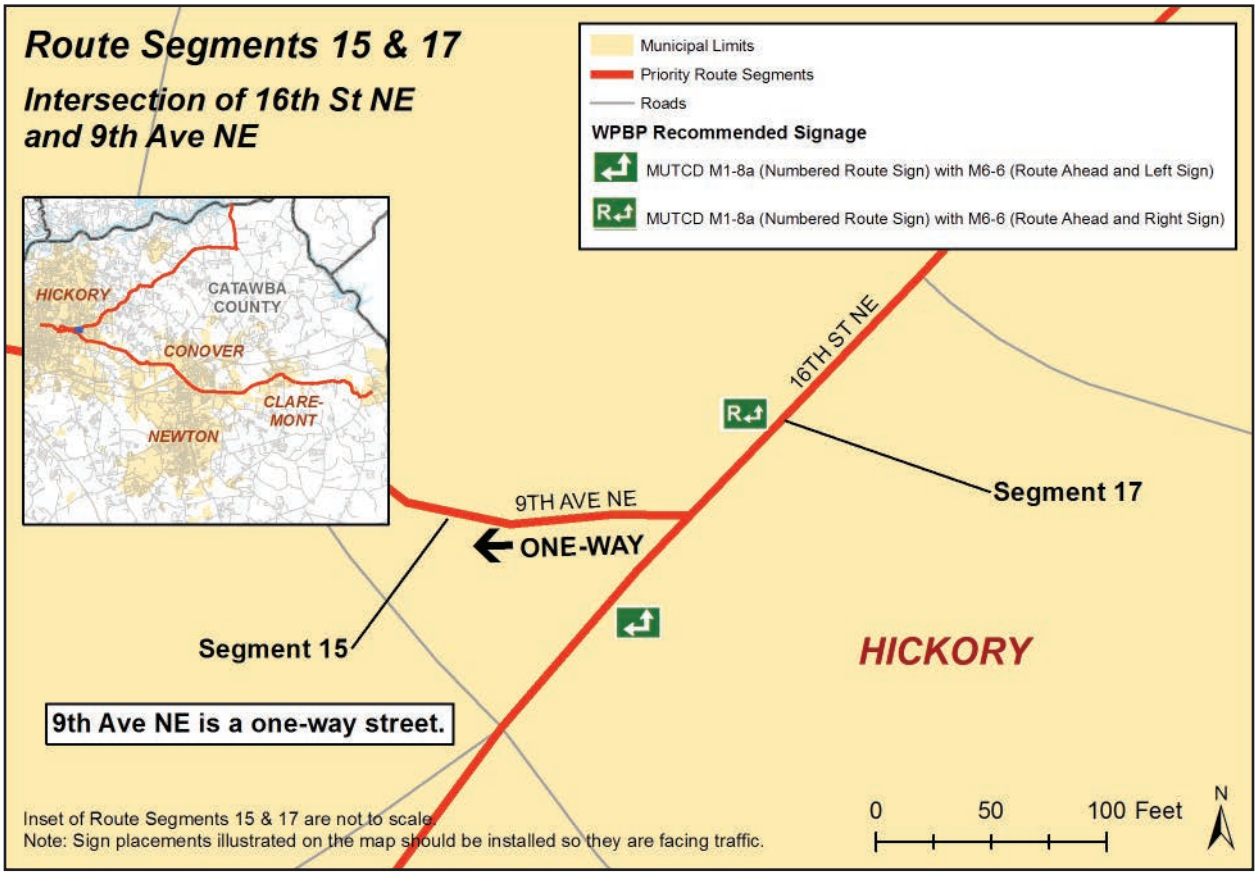

Route Segment 15
Intersection of 8th Ave NE and 5th St NE
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
CATAWBA COUNTY
HICKORY
CONOVER
CLARE-MONT
NEWTON
8TH AVE NE
5TH ST NE
HICKORY
Inset of Route Segment 15 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

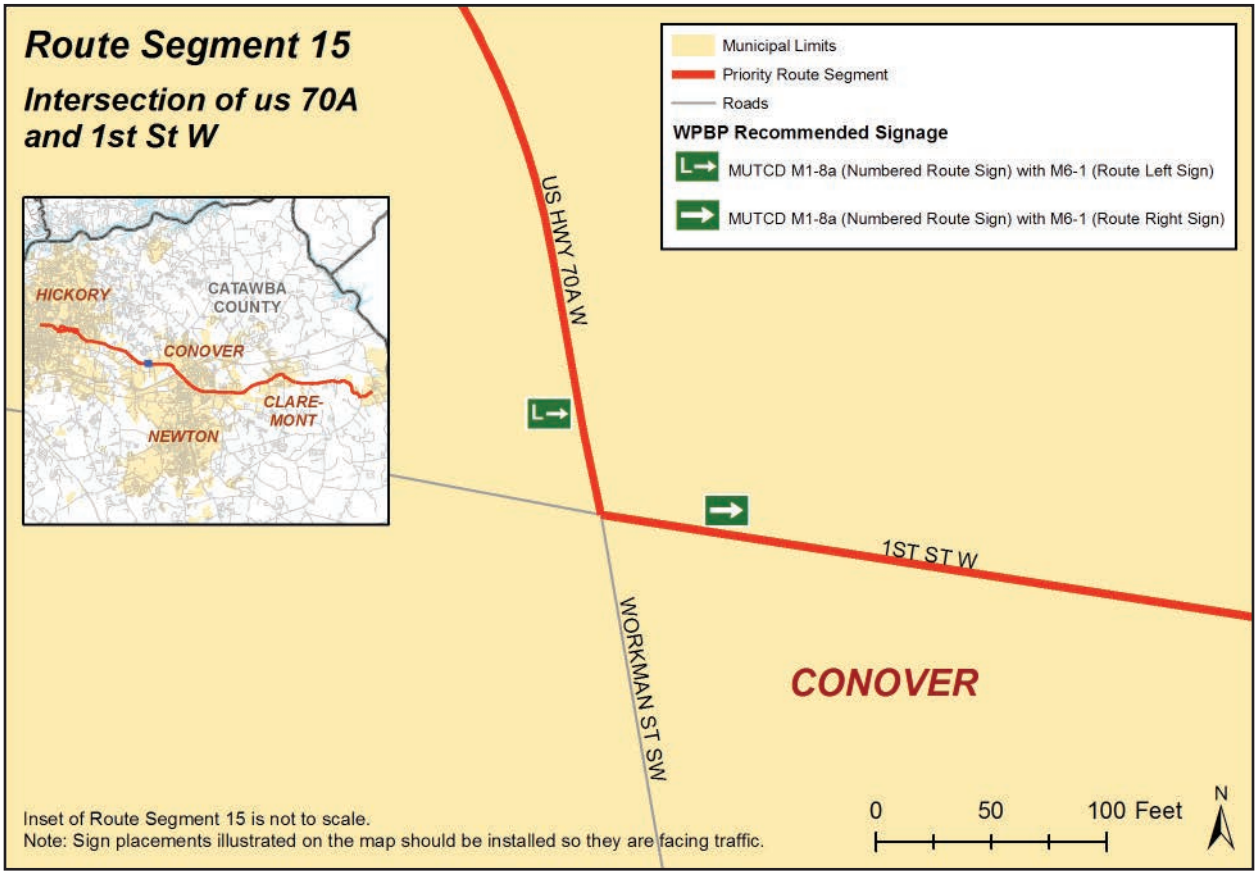

Route Segment 15
Intersection of 8th Ave NE and 8th St NE
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)
CATAWBA COUNTY
HICKORY
CONOVER
CLARE-MONT
NEWTON
8TH AV NE
8TH ST NE
ONE-WAY
HICKORY
7TH AV PL NE
8th St NE is a one-way street.
Inset of Route Segment 15 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

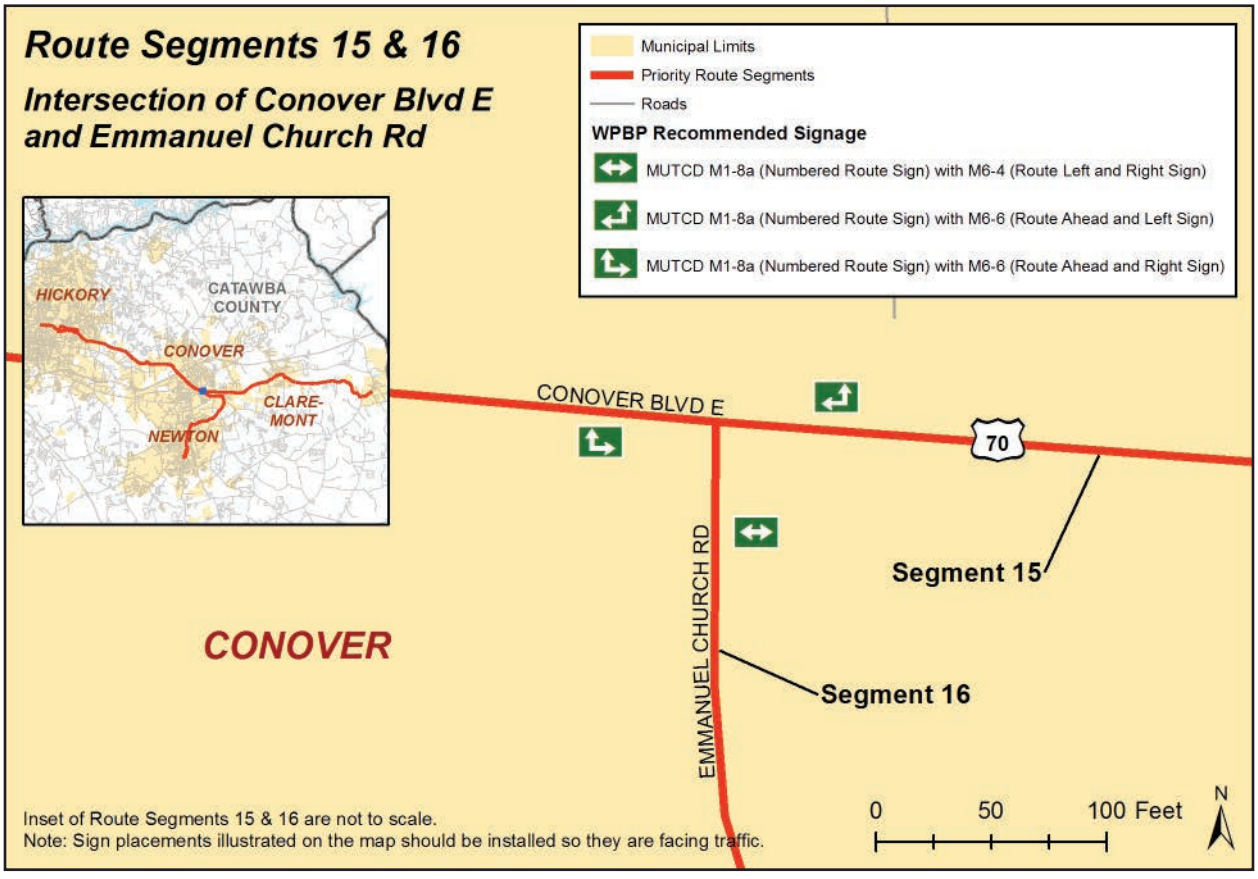

Route Segment 15
Intersection of 8th Ave NE and Highland Ave NE
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
CATAWBA COUNTY
HICKORY
CONOVER
CLARE-MONT
NEWTON
8TH AVE NE
9TH ST NE
HIGHLAND AVE
ONE-WAY
HICKORY
Highland Ave is a one-way street.
Inset of Route Segment 15 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

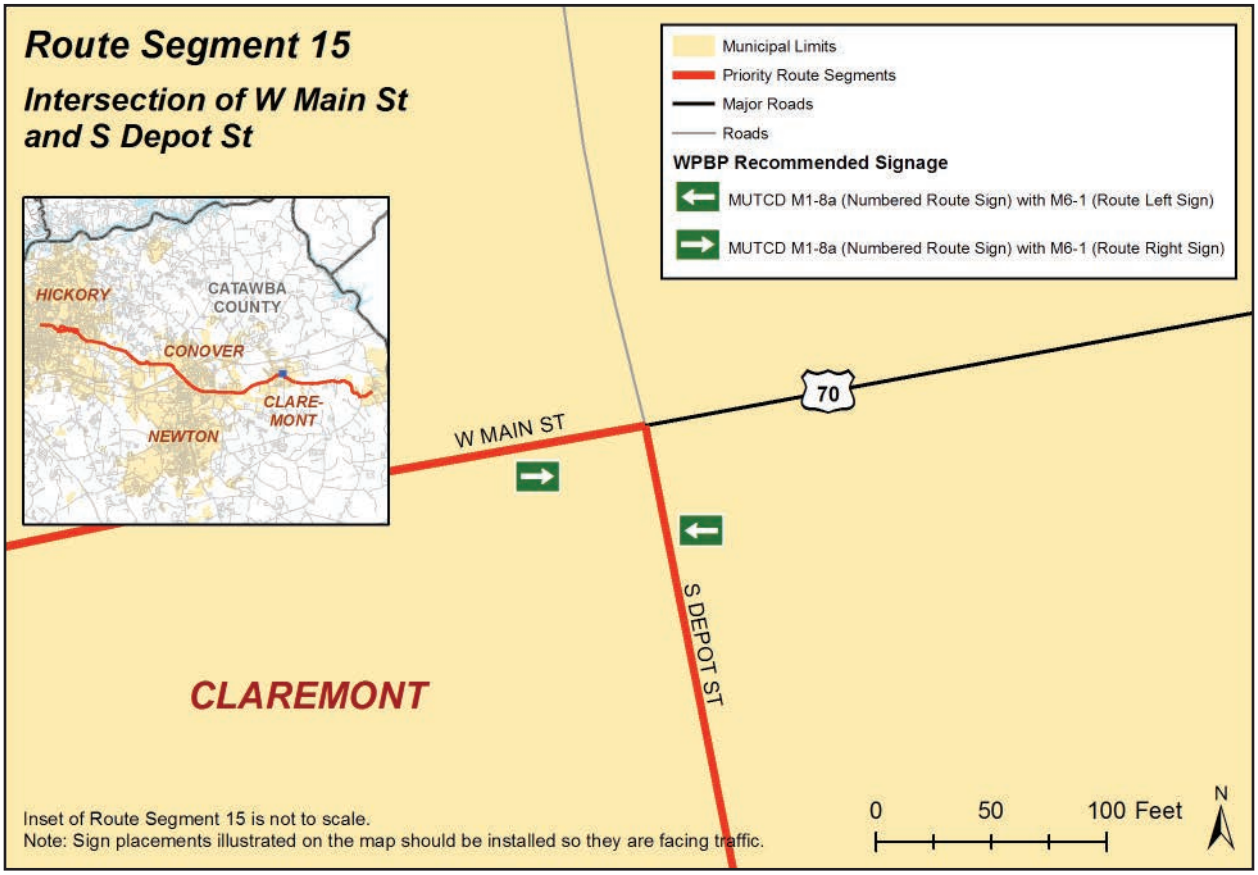

Route Segment 15
Intersection of 8th St NE and 9th Ave Pl NE
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
CATAWBA COUNTY
HICKORY
CONOVER
CLARE-MONT
NEWTON
8TH ST NE
ONE-WAY
9TH AVE PL NE
ONE-WAY
HICKORY
8th St NE and 9th Ave Pl NE are both one-way streets
Inset of Route Segment 15 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

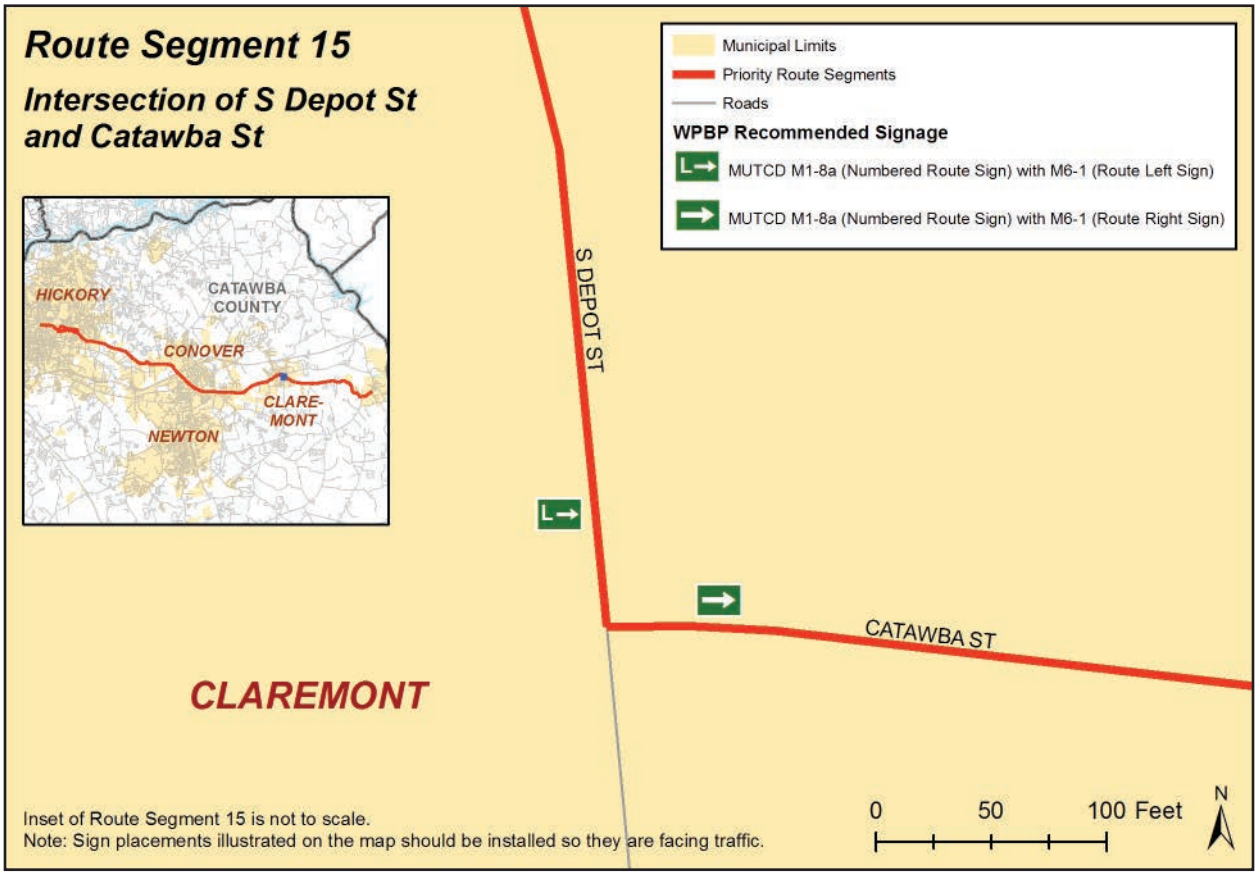

Route Segments 15 & 17
Intersection of Highland Ave NE and 16th St NE
Municipal Limits
Priority Route Segments
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
HICKORY
CATAWBA COUNTY
CONOVER
CLARE-MONT
NEWTON
HIGHLAND AVE NE
16TH ST NE
Segment 17
HICKORY
Segment 15
Inset of Route Segments 15 & 17 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

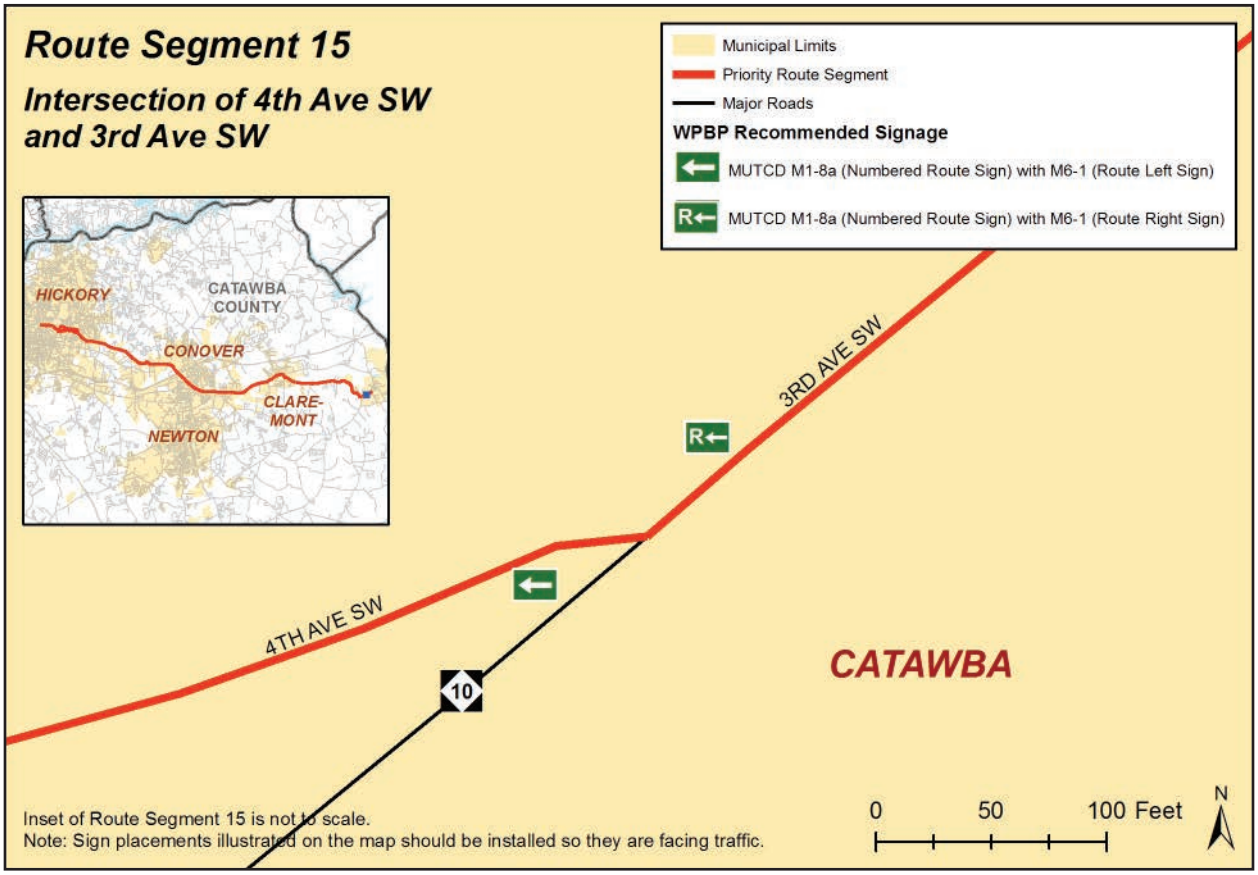

Route Segments 15 & 17
Intersection of 16th St NE and 9th Ave NE
Municipal Limits
Priority Route Segments
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Right Sign)
HICKORY
CATAWBA COUNTY
CONOVER
CLARE-MONT
NEWTON
16TH ST NE
Segment 17
9TH AVE NE
ONE-WAY
Segment 15
HICKORY
9th Ave NE is a one-way street.
Inset of Route Segments 15 & 17 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

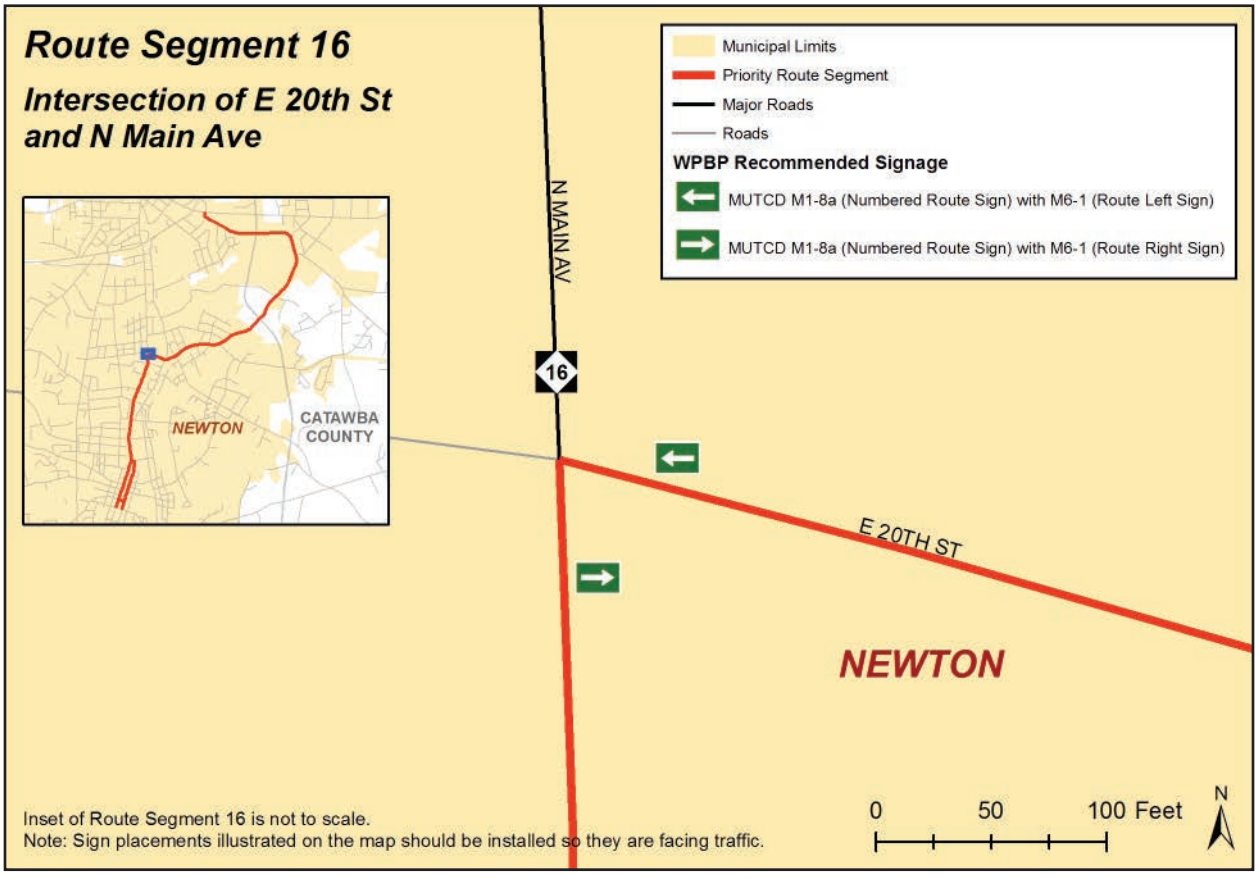

Route Segment 15
Intersection of us 70A and 1st St W
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
HICKORY
CATAWBA COUNTY
CONOVER
CLARE-MONT
NEWTON
US HWY 70A W
1ST ST W
WORKMAN ST SW
CONOVER
Inset of Route Segment 15 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

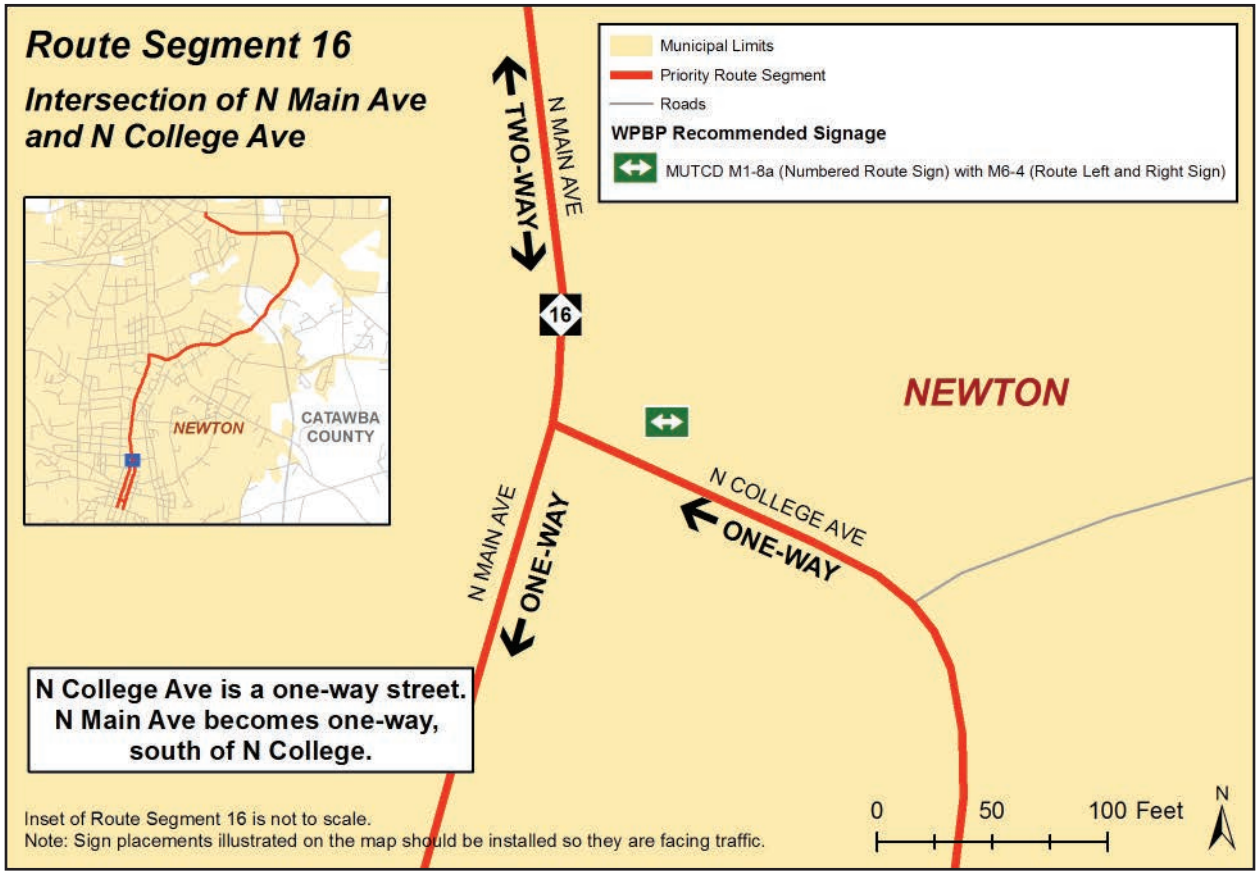

Route Segments 15 & 16
Intersection of Conover Blvd E and Emmanuel Church Rd
Municipal Limits
Priority Route Segments
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-6 (Route Ahead and Right Sign)
HICKORY
CATAWBA COUNTY
CONOVER
CLARE-MONT
NEWTON
CONOVER BLVD E
70
EMMANUEL CHURCH RD
Segment 15
Segment 16
CONOVER
Inset of Route Segments 15 & 16 are not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

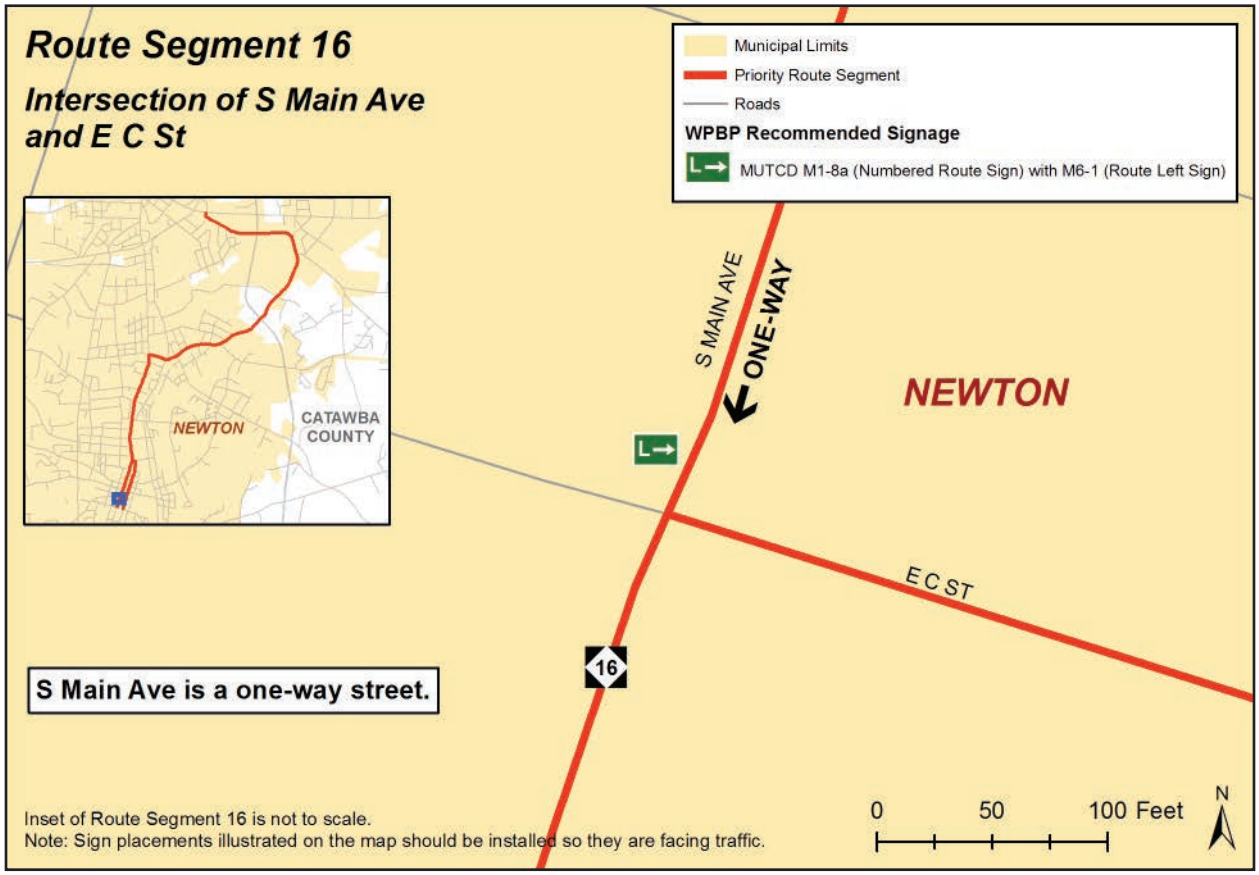

Route Segment 15
Intersection of W Main St and S Depot St
Municipal Limits
Priority Route Segments
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
HICKORY
CATAWBA COUNTY
CONOVER
CLARE-MONT
NEWTON
W MAIN ST
70
S DEPOT ST
CLAREMONT
Inset of Route Segment 15 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

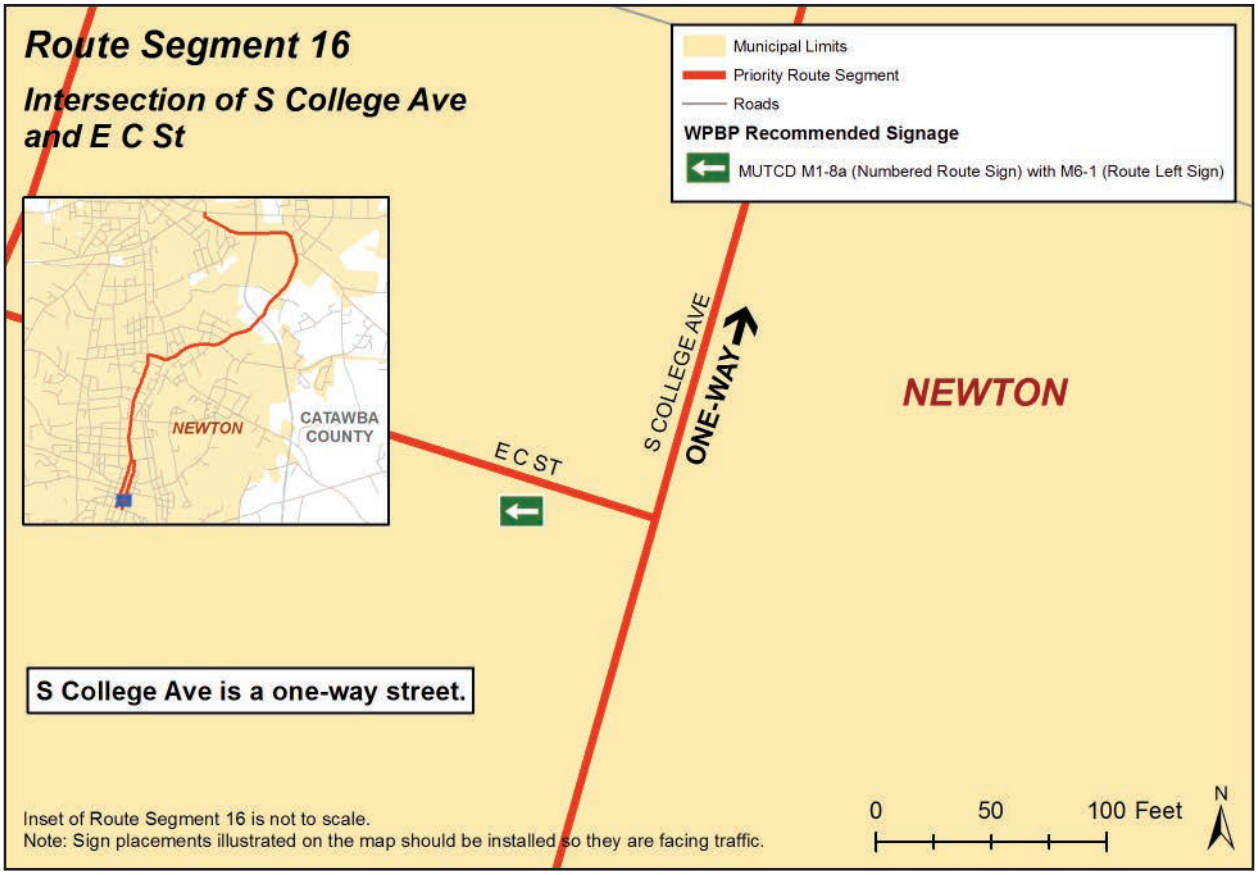

Route Segment 15
Intersection of S Depot St and Catawba St
Municipal Limits
Priority Route Segments
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
HICKORY
CATAWBA COUNTY
CONOVER
CLARE-MONT
NEWTON
S DEPOT ST
CATAWBA ST
CLAREMONT
Inset of Route Segment 15 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

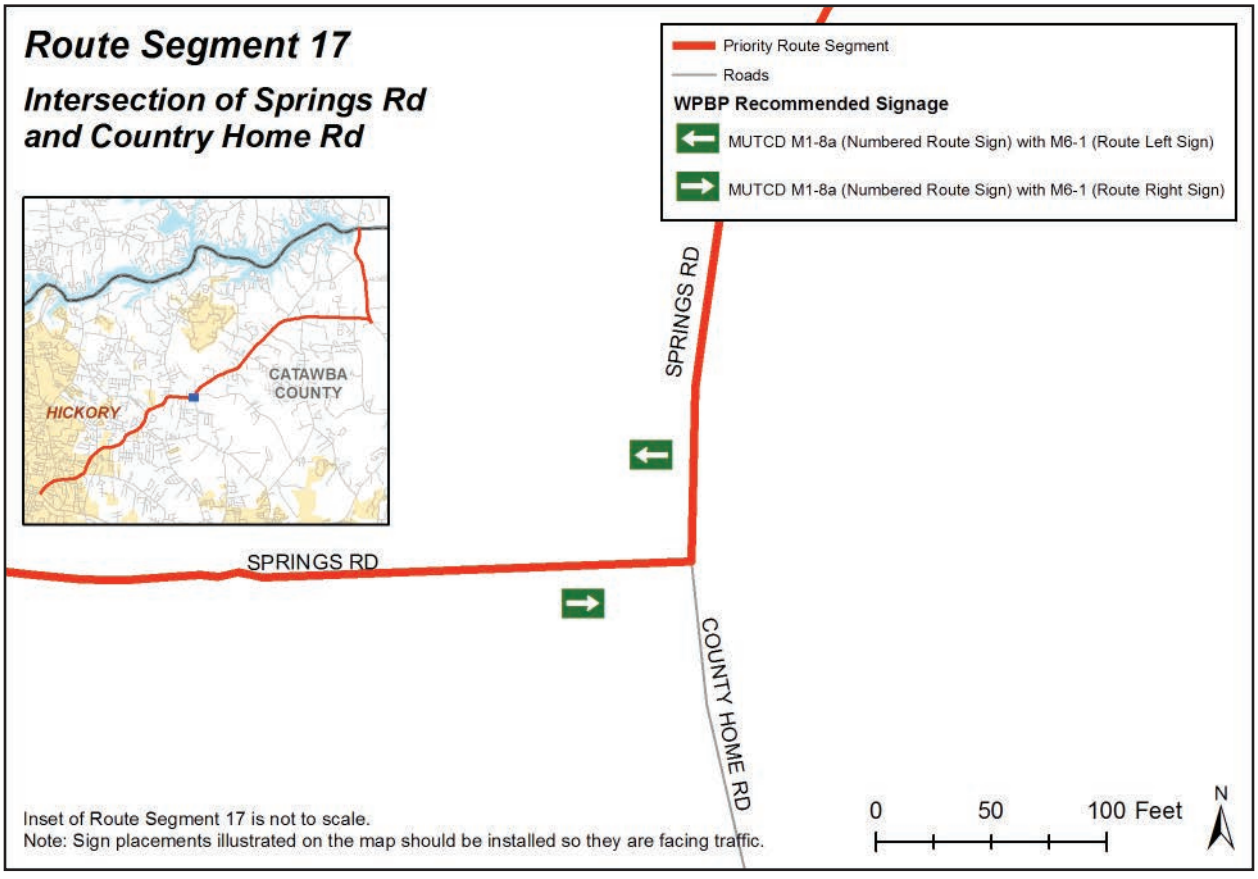

Route Segment 15
Intersection of 4th Ave SW and 3rd Ave SW
Municipal Limits
Priority Route Segment
Major Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
HICKORY
CATAWBA COUNTY
CONOVER
CLARE-MONT
NEWTON
3RD AVE SW
4TH AVE SW
10
CATAWBA
Inset of Route Segment 15 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N

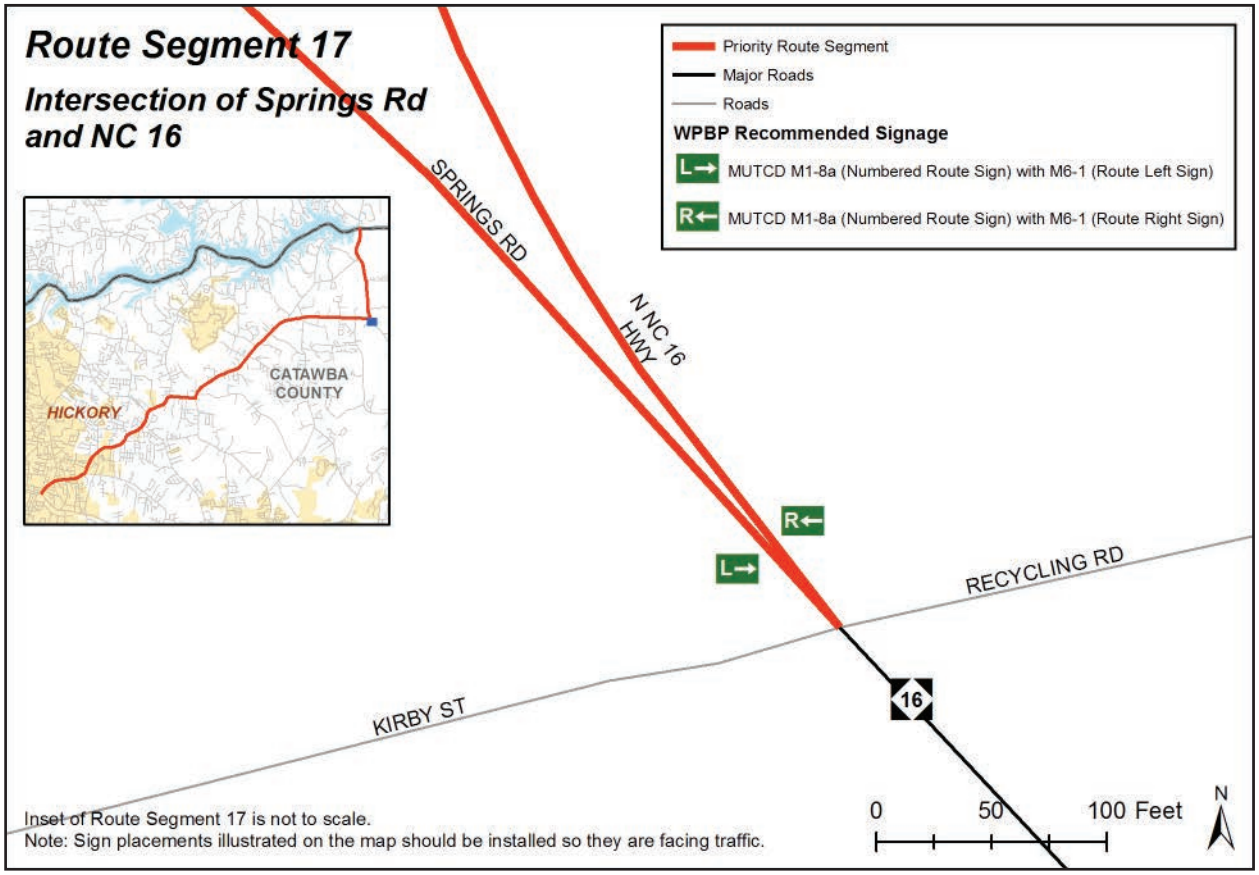

Route Segment 16
Intersection of E 20th St and N Main Ave
Municipal Limits
Priority Route Segment
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
N MAIN AV
16
NEWTON
CATAWBA COUNTY
E 20TH ST
NEWTON
Inset of Route Segment 16 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 16
Intersection of N Main Ave and N College Ave
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-4 (Route Left and Right Sign)
TWO-WAY
N MAIN AVE
16
NEWTON
CATAWBA COUNTY
N COLLEGE AVE
ONE-WAY
N MAIN AVE
ONE-WAY
N College Ave is a one-way street.
N Main Ave becomes one-way, south of N College.
Inset of Route Segment 16 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 16
Intersection of S Main Ave and E C St
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
S MAIN AVE
ONE-WAY
NEWTON
CATAWBA COUNTY
E C ST
16
S Main Ave is a one-way street.
Inset of Route Segment 16 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 16
Intersection of S College Ave and E C St
Municipal Limits
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
NEWTON
CATAWBA COUNTY
E C ST
S COLLEGE AVE
ONE-WAY
NEWTON
S College Ave is a one-way street.
Inset of Route Segment 16 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 17
Intersection of Springs Rd and Country Home Rd
Priority Route Segment
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
HICKORY
CATAWBA COUNTY
SPRINGS RD
SPRINGS RD
COUNTY HOME RD
Inset of Route Segment 17 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.
0
50
100 Feet
N


Route Segment 17
Intersection of Springs Rd and NC 16
Priority Route Segment
Major Roads
Roads
WPBP Recommended Signage
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Left Sign)
MUTCD M1-8a (Numbered Route Sign) with M6-1 (Route Right Sign)
SPRINGS RD
N NC 16 HWY
CATAWBA COUNTY
HICKORY
RECYCLING RD
KIRBY ST
16
0
50
100 Feet
N
Inset of Route Segment 17 is not to scale.
Note: Sign placements illustrated on the map should be installed so they are facing traffic.

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Appendix C
Policy Impementation Resources

Overview

Implementing adopted policies, ordinances, and resolutions that support active transportation is a critical step for the Western Piedmont region for creating a supportive environment for bicycling. This appendix provides information on what is currently in place in the region and state in addition to recommended sample templates for future opportunities.

Policy Inventory

Overall, the Western Piedmont region does not yet support many pro-bicycle laws and policies. However, there are a few exceptions at both the city and county level. The following examples are existing ordinances and policies from the city, county, and statewide level.

City Ordinances

Section 5 of the City of Hickory's ordinances references state law and grant bicycles the same privileges as a motor vehicle.

"Section 5-1. - Applicability of traffic regulations to riders: every person riding a bicycle upon a public way shall be granted all rights and shall be subject to all duties applicable to the driver of a vehicle by the laws of the state and applicable provisions of this Code and other ordinances of the city, except as to special regulations in this chapter and except as to those provisions of laws and ordinances which, by their nature, can have no applicability."

County Ordinances

Catawba County's ordinances states in Section 44-538 that "bicycle-parking facilities shall be installed as part of nonresidential and multifamily developments within 500 feet of bicycle corridors identified in officially adopted bikeway plans. Bicycle-parking facilities should be designed in accordance with the recommendations from the Association of Pedestrian and Bicycle Professionals (APBP) or equivalent standards."

North Carolina Bicycle Policy

Bicycles are legally defined as vehicles in North Carolina. NCDOT's Laws and Policies section identifies all the North Carolina laws that pertain to bicycles, pedestrians, school zones, and school crossing guards. For more information, visit: http://www.ncdot.gov/bikeped/download/bikeped_laws_Bicycle_Policy.pdf.

NCDOT Complete Streets Policy

In July 2009, The North Carolina Department of Transportation (NCDOT) adopted a "Complete Streets" policy. According to the Department "the policy directs the Department to consider and incorporate several modes of transportation when building new projects or making improvements to existing infrastructure." Several of the benefits include:

- Making it easier for travelers to get where they need to go.
- Encouraging the use of alternative forms of transportation.
- Building more sustainable communities.
- Increasing connectivity between neighborhoods, streets, and transit systems.
- Improving safety for pedestrians, cyclists, and motorists.

NCDOT Bridge Policy

NCDOT's Bridge Policy establishes the controlling design elements of new and reconstructed bridges on the North Carolina Highway System. It is intended that this policy be for general use. In special cases where sound engineering judgment so dictates, the requirements of this policy will be adjusted upward or downward as necessary. It will be necessary to examine each individual structure to provide the most economical and safest design. When a bikeway is required, the bridge shall be designed in accordance with AASHTO standard bicycle accommodations and North Carolina Bicycle Facilities Planning and Design Guidelines to give safe access to bicycles where feasible. A minimum handrail height of 54" is required where bicyclists will be riding next to the handrail. For more information visit:
https://connect.ncdot.gov/projects/Roadway/RoadwayDesignAdministrativeDocuments/Bridge%20Policy.pdf.

NCDOT Greenway Policy

In 2015, NCDOT approved guidelines for the accommodation of future greenways under bridges that NCDOT is replacing or adding. The guidelines include a decision-making approach and cost-sharing recommendations for accommodations. For more information visit:
http://www.ncdot.gov/bikeped/download/GuidelinesForGreenwayAccommodations.pdf.

NCDOT Board of Transportation Resolution for Bicycle and Walking

The N.C. Board of Transportation has strongly demonstrated its commitment to improving conditions for bicycling and walking in North Carolina by passing a resolution to make bicycling and walking a critical part of the state's transportation system. Although the department incorporated bicycle and pedestrian elements — including bike lanes and sidewalks into many of its highway projects prior to September 8, 2000, this resolution exemplifies the department's dedication to integrating these elements into its long-range transportation system. It also acknowledges the benefits that bicycling and walking offer: cleaner air, reduced congestion, more livable communities, more efficient use of road space and resources and healthier people.

The resolution also encourages cities and towns across the state to make bicycling and pedestrian improvements an integral part of their transportation planning and programming. For more information visit:
http://www.ncdot.gov/bikeped/download/bikeped_laws_BOT_Mainstreaming_Resolution.pdf.

Sample Policies and Resources

Sample Bicycle Parking Ordinance

Municipalities seeking to begin or strengthen their support for bicycle infrastructure can use the following sample created by ChangeLab Solutions as guidance when developing an ordinance for bicycle parking in their own jurisdiction. For more information visit: http://changelabsolutions.org/publications/bike-parking.

Complete Street Guidelines

Adopting a Complete Streets policy is the first step in creating safe, multi-modal transportation options for people of all ages and abilities. The day-to-day decisions a transportation agency and community leaders make in funding, planning, design, maintenance, and operations should be aligned to the goals of that adopted policy document. The National Complete Streets Coalition, a program of Smart Growth America, has developed a set of tools for implementing complete street policies at the local level. For more information visit: http://www.smartgrowthamerica.org/complete-streets/changing-policy/model-policy/local-policy.

Greenway Set Asides

Greenways are important to on-road bicycle facilities by increasing the access to areas where a roadway may not be present. One way for municipalities and counties to increase the number of greenways inside of their planning boundaries is to add a section to their Unified Development Ordinance which will set aside land in development plats or site plans if that particular piece of land has been identified in the municipality or county's Comprehensive Plan for a future greenway.

For a sample ordinance from the City of Raleigh visit:
https://www.raleighnc.gov/content/extra/Books/PlanDev/UnifiedDevelopmentOrdinance/files/assets/basic-html/page256.html

Mixed Use Development

Active transportation like bicycling and walking work best in places that are compact and offer a mix of uses for residents and visitors alike. According to the American Planning Association, the purpose of mixed use development is that it:

1. Accommodates mixed-use buildings with neighborhood-serving retail, service, and other uses on the ground floor and residential units above the nonresidential space;
2. Encourages development that exhibits the physical design characteristics of pedestrianoriented, storefront-style shopping streets; and
3. Promotes the health and well-being of residents by encouraging physical activity, alternative transportation, and greater social interaction.

For more information visit:

- https://www.planning.org/pas/quicknotes/pdf/QN6.pdf
- https://www.planning.org/policy/guides/adopted/smartgrowth.htm
- https://www.cnu.org/resources/tools

National Bike Month Proclamation

The following is a sample proclamation for a municipality acknowledging May as Bike Month endorsed by the League of American Bicyclists. For more information visit: http://bikeleague.org/bikemonth.

The City/County of _____ Proclamation

Whereas, the bicycle is an economical, healthy, convenient, and environmentally sound form of transportation and an excellent tool for recreation and enjoyment of [insert city/county]'s scenic beauty; and

Whereas, throughout the month of May, the residents of [insert city/county] and its visitors will experience the joys of bicycling through educational programs, races, commuting events, charity events, or by simply getting out and going for a ride; and

Whereas, [insert city/county]'s road and trail system attracts bicyclists each year, providing economic health, transportation, tourism, and scenic benefits; and

Whereas, creating a bicycling-friendly community has been shown to improve citizens' health, well-being, and quality of life, growing the economy of [insert city/county], attracting tourism dollars, improving traffic safety, supporting student learning outcomes, and reducing pollution, congestion, and wear and tear on our streets and roads; and

Whereas, [insert local bicycle club/ organization/chamber/tourism bureau/regional planning organization], the League of American Bicyclists, schools, parks and recreation departments, police departments, public health districts, hospitals, companies and civic groups will be promoting bicycling during the month of May [year]; and

Whereas, these groups are also promoting bicycle tourism year round to attract more visitors to enjoy our local restaurants, hotels, retail establishments, and cultural and scenic attractions; and

Whereas, these groups are also promoting greater public awareness of bicycle operation and safety education in an effort to reduce collisions, injuries, and fatalities and improve health and safety for everyone on the road; and

Now therefore, I, _____, Mayor/Executive of [insert city/county], do hereby proclaim May [year] as Bike Month in [insert city/county], and I urge all residents to join me in this special observance Signed this ____ day of May, [year]

Mayor/Executive _____

Safe Routes to Schools Resolution

The following is a sample resolution supporting safe routes to schools for a board of education.

[_____] board of education
Resolution in support of [municipality]

Prioritization of bicycle and pedestrian infrastructure

WHEREAS, the health and safety of children is of highest concern to both the citizens and City Council of [Municipality], and the [_____] Board of Education; and

WHEREAS, driving students to school in private vehicles contributes to undue traffic congestion, safety concerns, and air pollution throughout [Municipality]—particularly in neighborhoods where schools are located; and

WHEREAS, the [Municipality] has identified safe walking and bicycling route to schools in its [Name of adopted bicycle/pedestrian plan], and established within it a goal to "link neighborhoods and schools to one another by improving street and sidewalk connections and providing safer road crossings"; and

WHEREAS, being able to walk or bicycle to school along safe routes offers an opportunity to build healthful physical activity into daily routines, so that children can arrive at school ready to learn;

WHEREAS, having safer routes to and from schools can increase physical activity and decrease pedestrian and bicycling-related injuries, not just for students, but for the entire community; and

WHEREAS, [School system] has been working together with the [Municipality] to identify priority walking and bicycling routes to school; and

WHEREAS, [School system] is willing to provide technical support to the City and work with the City Council and staff as they select, design and implement projects that improve walking and bicycling access.

NOW, THEREFORE, the [_____] Board of Education resolves to support and champion the City's effort to prioritize the safety and comfort of school children in pedestrian infrastructure projects that affect school travel routes; in order to gain the benefits mentioned above and strengthen the quality of life for [Municipality] students, families, and neighborhoods.

Appendix D
Public Survey

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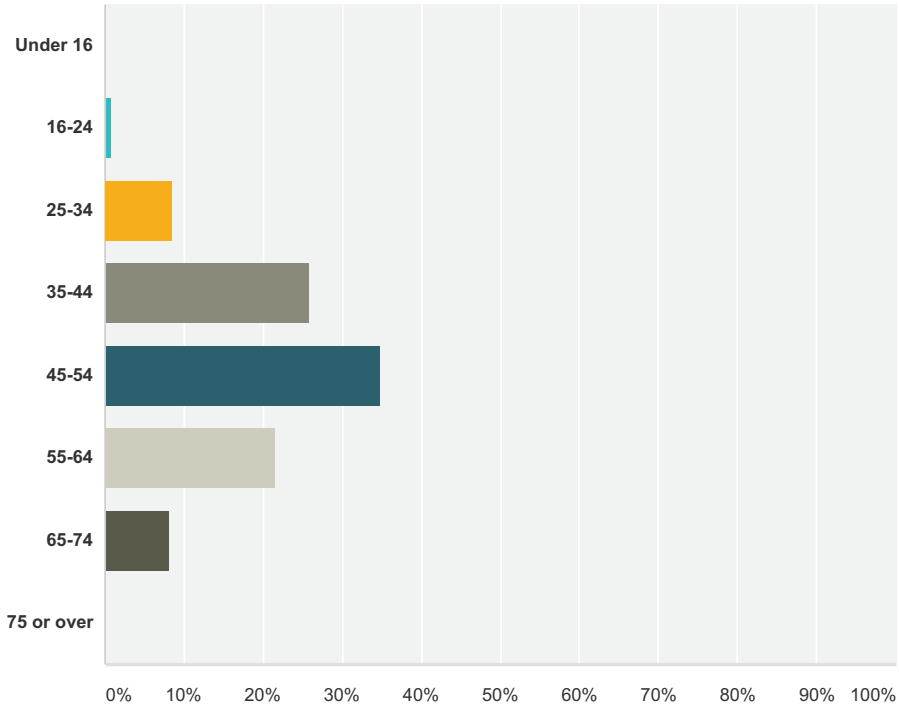
Q1 Please select your age range:

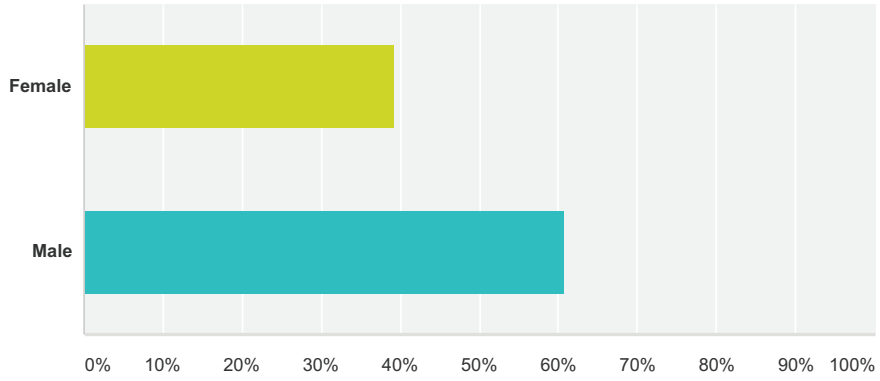
Answered: 255 Skipped: 3



Answer Choices	Responses	
Under 16	**0.00%**	0
16-24	**0.78%**	2
25-34	**8.63%**	22
35-44	**25.88%**	66
45-54	**34.90%**	89
55-64	**21.57%**	55
65-74	**8.24%**	21
75 or over	**0.00%**	0
Total		**255**

Q2 Gender

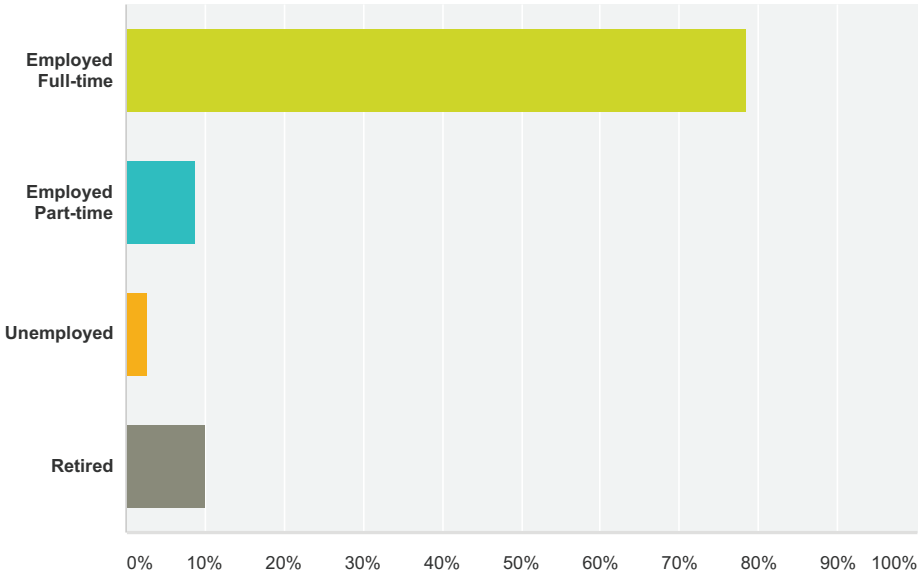
Answered: 255 Skipped: 3



Answer Choices	Responses	
Female	**39.22%**	100
Male	**60.78%**	155
Total		**255**

Q3 Employment

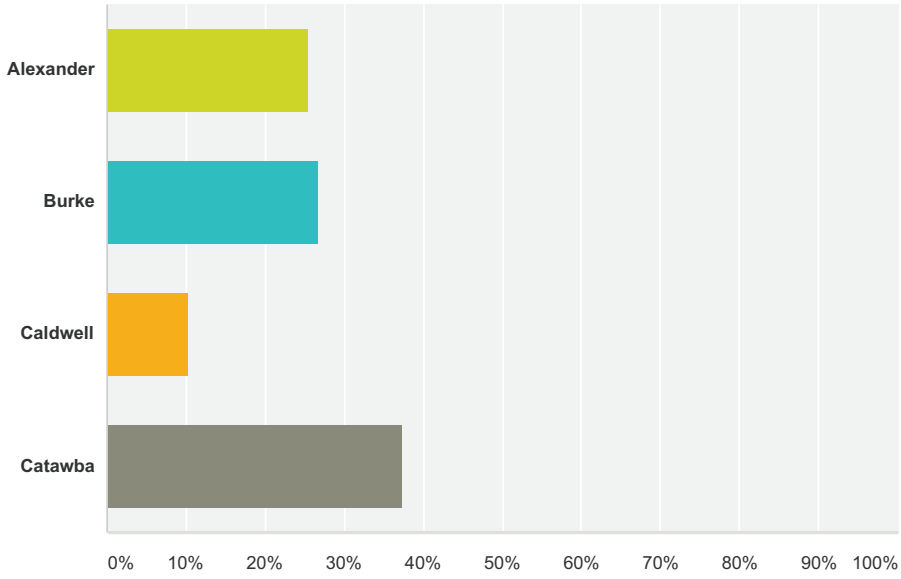
Answered: 251 Skipped: 7



Answer Choices	Responses	
Employed Full-time	**78.49%**	197
Employed Part-time	**8.76%**	22
Unemployed	**2.79%**	7
Retired	**9.96%**	25
Total		**251**

Q4 What county do you live in?

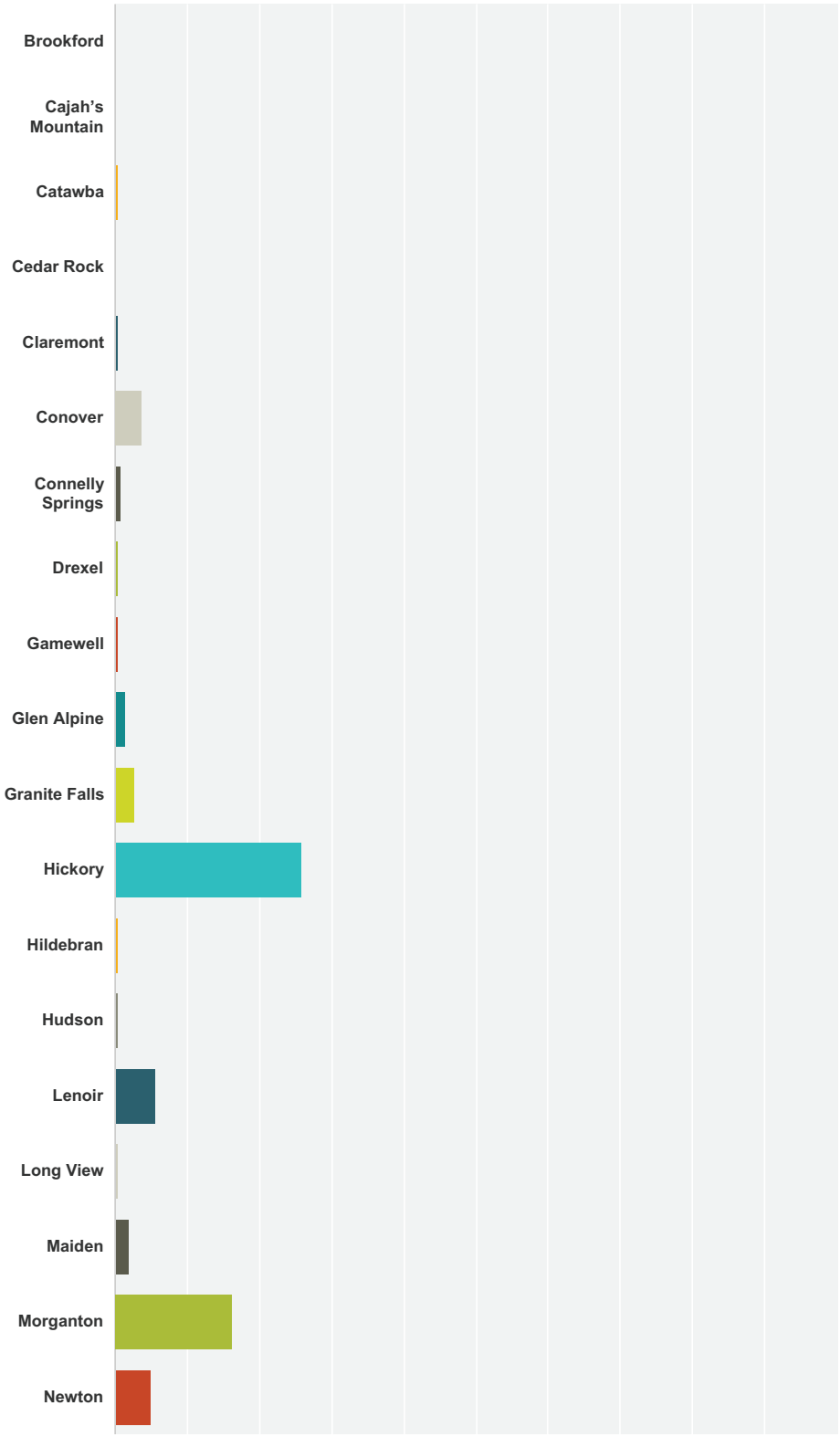
Answered: 235 Skipped: 23



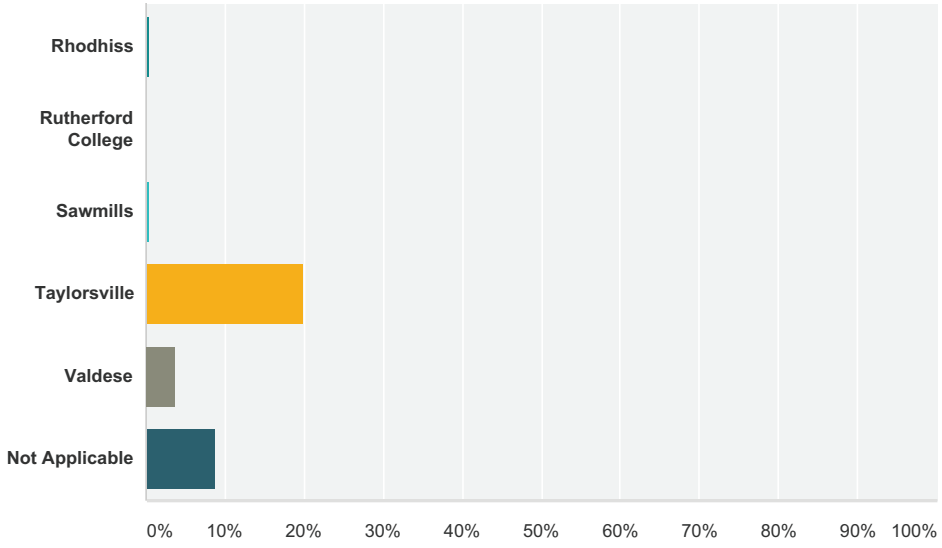
Answer Choices	Responses	
Alexander	**25.53%**	60
Burke	**26.81%**	63
Caldwell	**10.21%**	24
Catawba	**37.45%**	88
Total		**235**

Q5 What city or town do you live in?

Answered: 216 Skipped: 42



Western Piedmont Bicycle Plan - Survey SurveyMonkey

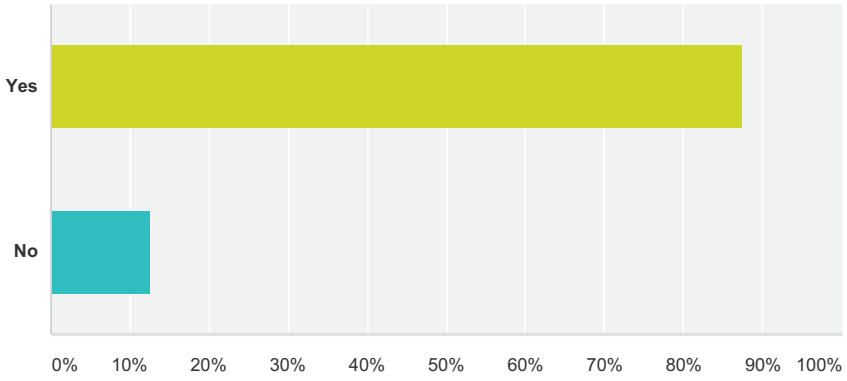


Answer Choices	Responses	
Brookford	**0.00%**	0
Cajah's Mountain	**0.00%**	0
Catawba	**0.46%**	1
Cedar Rock	**0.00%**	0
Claremont	**0.46%**	1
Conover	**3.70%**	8
Connelly Springs	**0.93%**	2
Drexel	**0.46%**	1
Gamewell	**0.46%**	1
Glen Alpine	**1.39%**	3
Granite Falls	**2.78%**	6
Hickory	**25.93%**	56
Hildebran	**0.46%**	1
Hudson	**0.46%**	1
Lenoir	**5.56%**	12
Long View	**0.46%**	1
Maiden	**1.85%**	4
Morganton	**16.20%**	35
Newton	**5.09%**	11

Rhodhiss	**0.46%**	1
Rutherford College	**0.00%**	0
Sawmills	**0.46%**	1
Taylorsville	**19.91%**	43
Valdese	**3.70%**	8
Not Applicable	**8.80%**	19
Total		**216**

Q6 Do you own a bicycle?

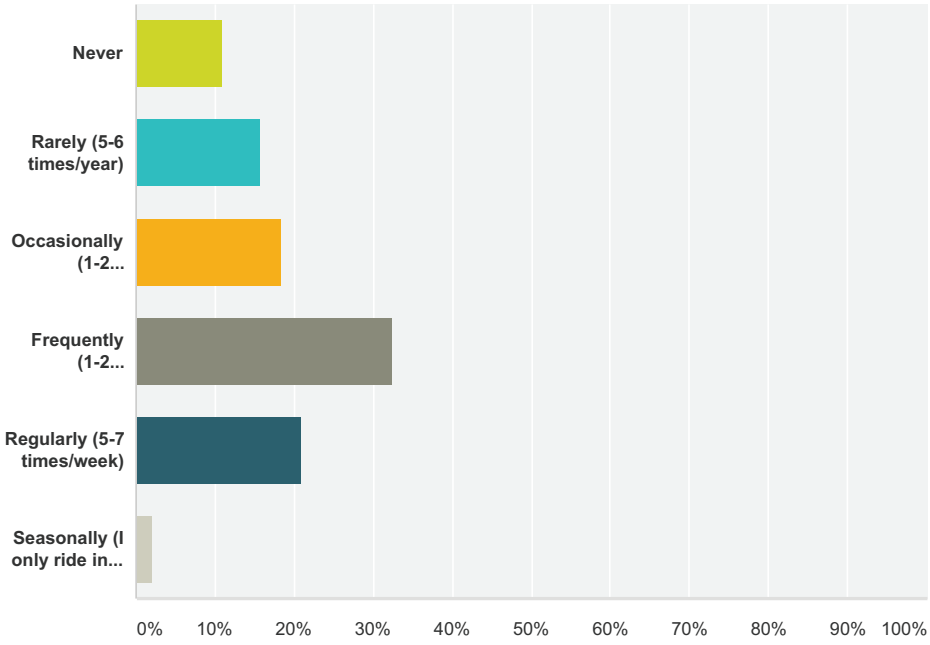
Answered: 247 Skipped: 11



Answer Choices	Responses	
Yes	**87.45%**	216
No	**12.55%**	31
Total		**247**

Q7 How often do you ride a bicycle?

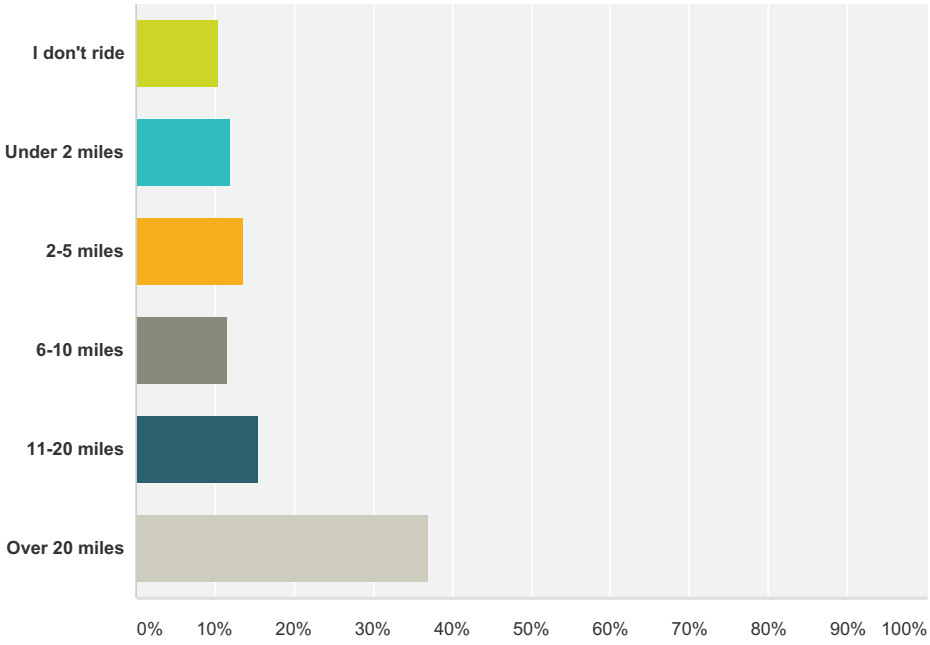
Answered: 250 Skipped: 8



Answer Choices	Responses	
Never	10.80%	27
Rarely (5-6 times/year)	15.60%	39
Occasionally (1-2 times/month)	18.40%	46
Frequently (1-2 times/week)	32.40%	81
Regularly (5-7 times/week)	20.80%	52
Seasonally (I only ride in warmer months)	2.00%	5
Total		250

Q8 What is the average distance of your bicycle trips?

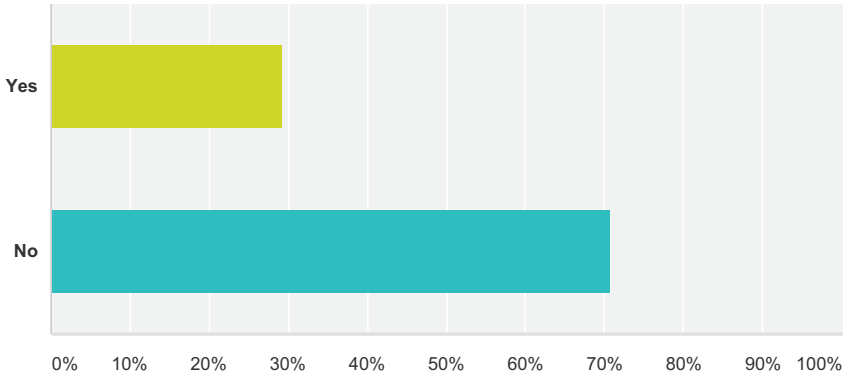
Answered: 251 Skipped: 7



Answer Choices	Responses	
I don't ride	**10.36%**	26
Under 2 miles	**11.95%**	30
2-5 miles	**13.55%**	34
6-10 miles	**11.55%**	29
11-20 miles	**15.54%**	39
Over 20 miles	**37.05%**	93
Total		**251**

Q9 Are you a member of a bicycling club, organization, or advocacy group?

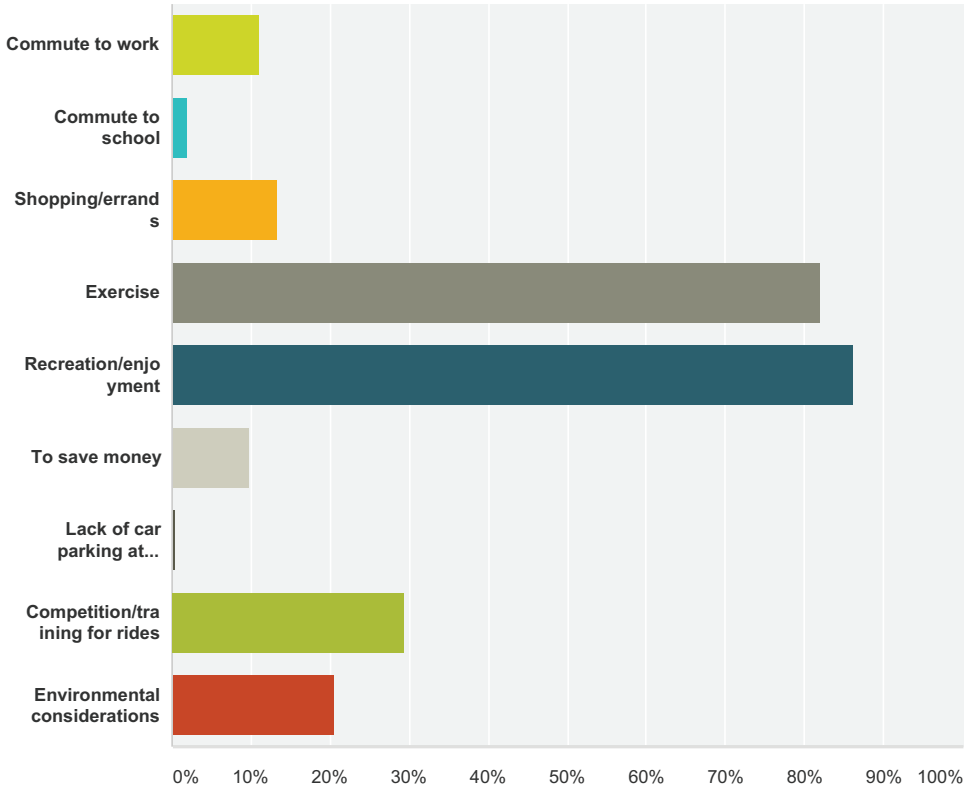
Answered: 249 Skipped: 9



Answer Choices	Responses	
Yes	**29.32%**	73
No	**70.68%**	176
Total		**249**

Q10 For what reasons do you regularly ride a bicycle? Choose all that apply.

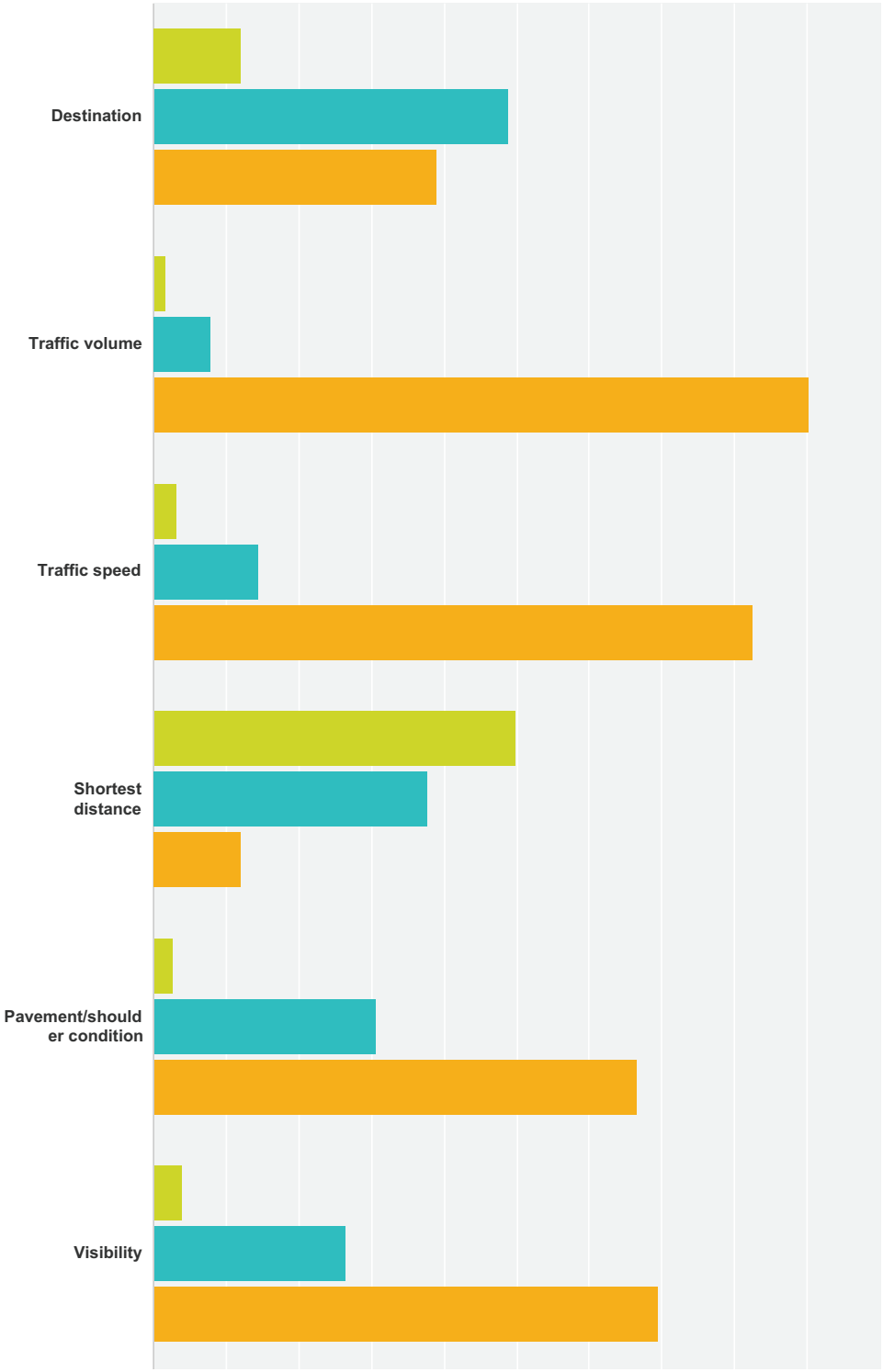
Answered: 224 Skipped: 34



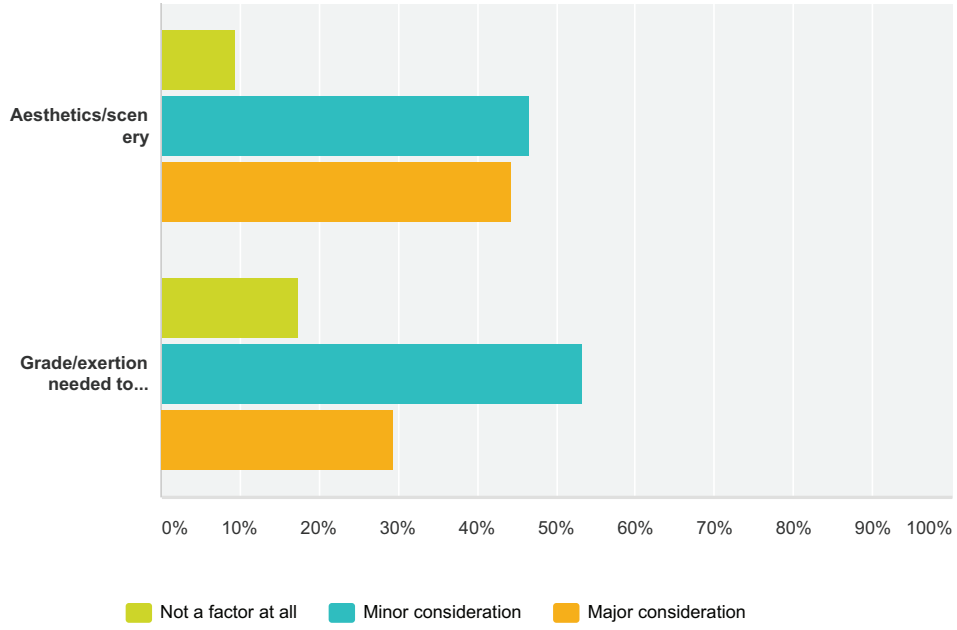
Answer Choices	Responses	
Commute to work	**11.16%**	25
Commute to school	**1.79%**	4
Shopping/errands	**13.39%**	30
Exercise	**82.14%**	184
Recreation/enjoyment	**86.16%**	193
To save money	**9.82%**	22
Lack of car parking at destination	**0.45%**	1
Competition/training for rides	**29.46%**	66
Environmental considerations	**20.54%**	46
Total Respondents: 224		

Q11 When choosing a bicycle route, how do the following factors influence your decision?

Answered: 228 Skipped: 30



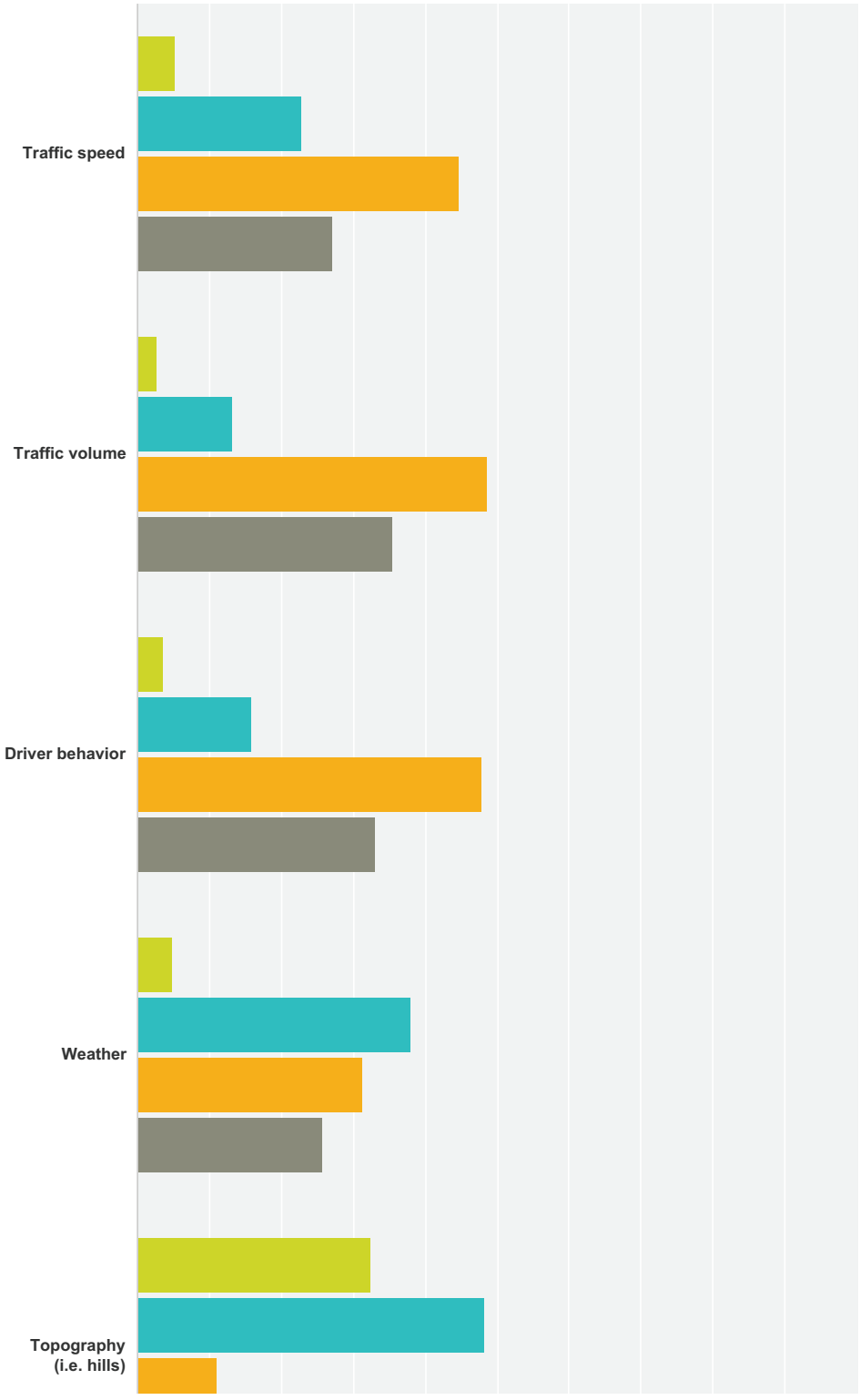
Western Piedmont Bicycle Plan - Survey SurveyMonkey

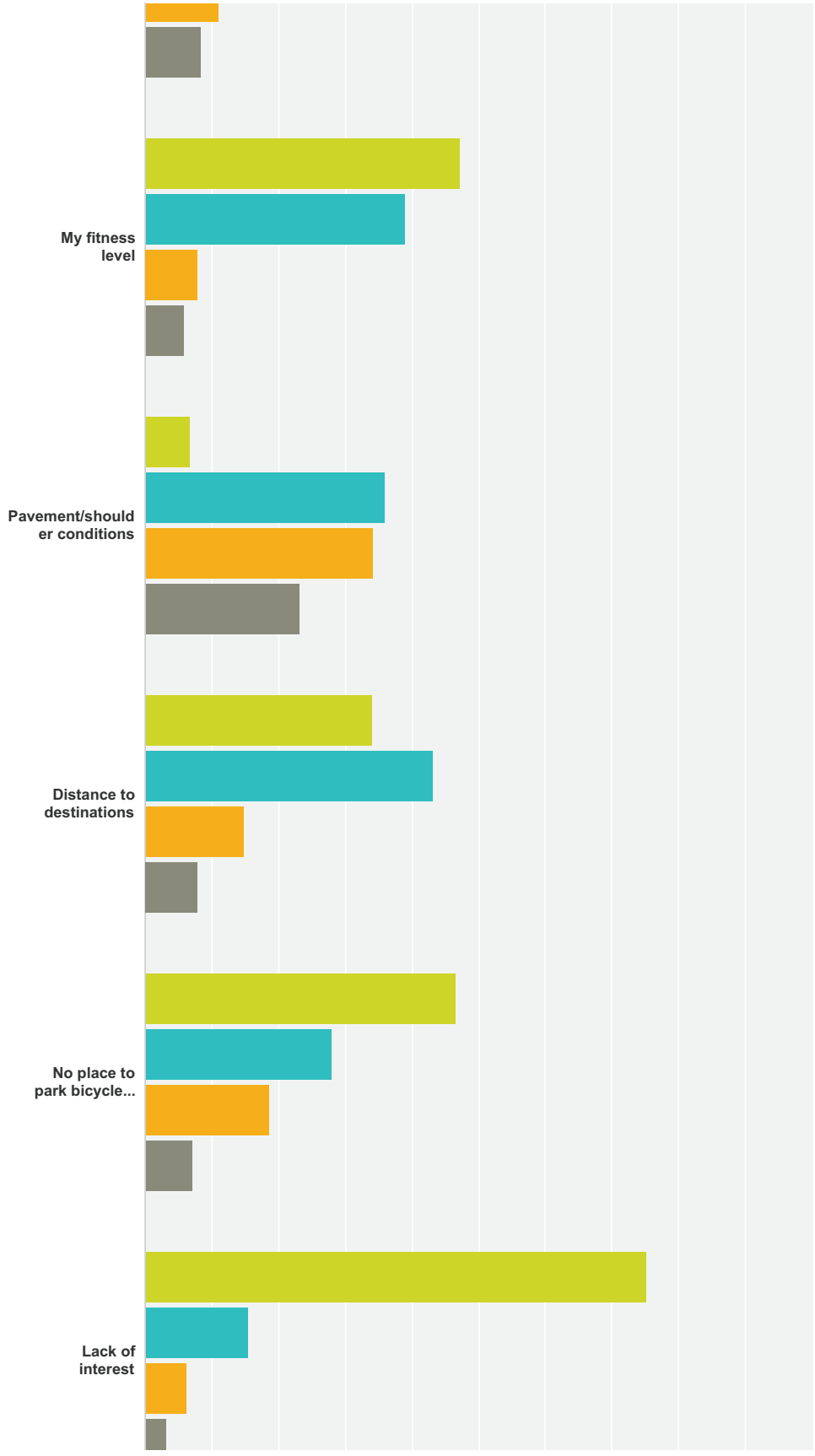


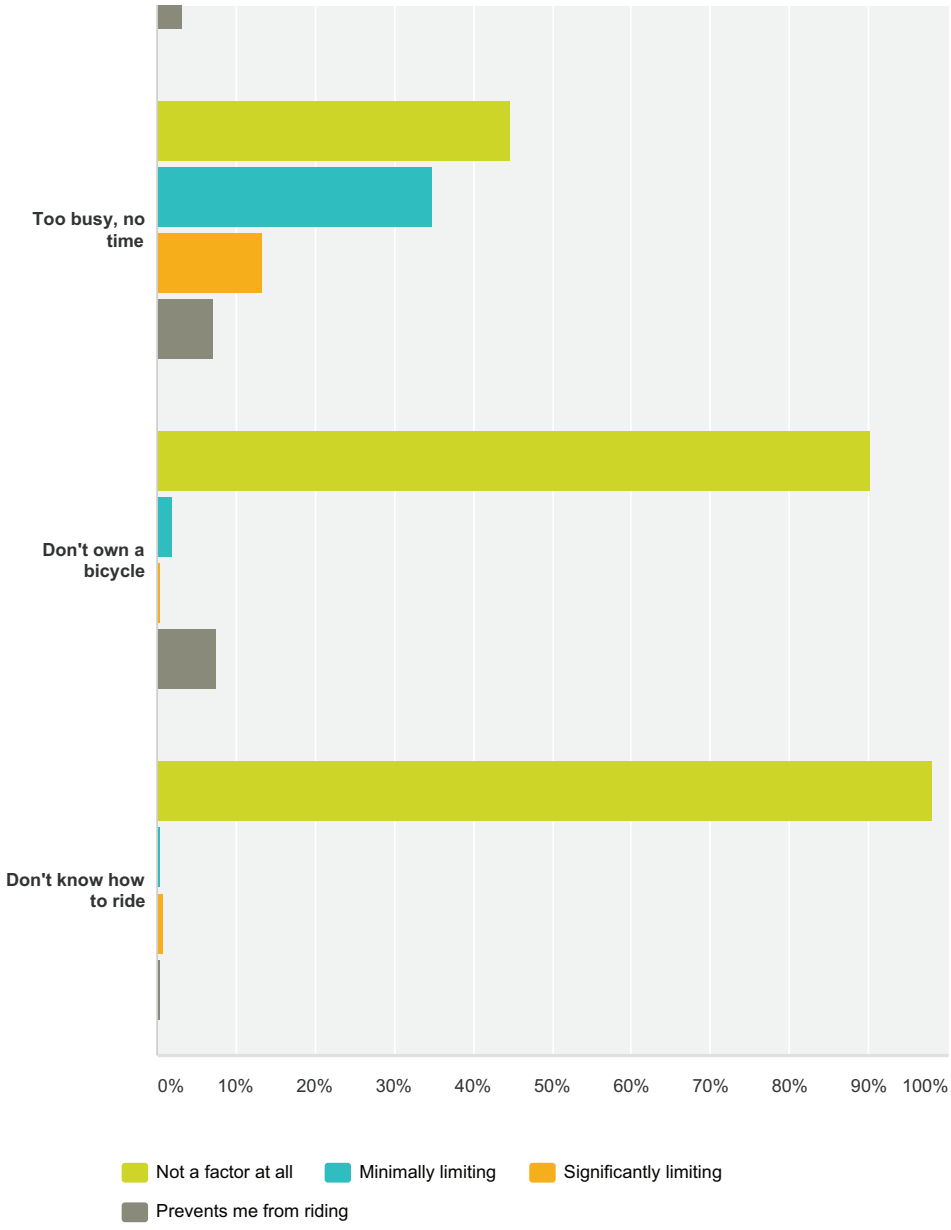
	Not a factor at all	Minor consideration	Major consideration	Total
Destination	**12.11%** 27	**48.88%** 109	**39.01%** 87	223
Traffic volume	**1.77%** 4	**7.96%** 18	**90.27%** 204	226
Traffic speed	**3.14%** 7	**14.35%** 32	**82.51%** 184	223
Shortest distance	**50.00%** 111	**37.84%** 84	**12.16%** 27	222
Pavement/shoulder condition	**2.67%** 6	**30.67%** 69	**66.67%** 150	225
Visibility	**4.04%** 9	**26.46%** 59	**69.51%** 155	223
Aesthetics/scenery	**9.29%** 21	**46.46%** 105	**44.25%** 100	226
Grade/exertion needed to travel route	**17.33%** 39	**53.33%** 120	**29.33%** 66	225

Q12 What factors discourage you from cycling more often?

Answered: 233 Skipped: 25




My fitness level
Pavement/shoulder conditions
Distance to destinations
No place to park bicycle...
Lack of interest



	Not a factor at all	Minimally limiting	Significantly limiting	Prevents me from riding	Total
Traffic speed	**5.26%** 12	**22.81%** 52	**44.74%** 102	**27.19%** 62	228
Traffic volume	**2.63%** 6	**13.16%** 30	**48.68%** 111	**35.53%** 81	228
Driver behavior	**3.51%** 8	**15.79%** 36	**47.81%** 109	**32.89%** 75	228
Weather	**4.87%** 11	**38.05%** 86	**31.42%** 71	**25.66%** 58	226
Topography (i.e. hills)	**32.30%** 73	**48.23%** 109	**11.06%** 25	**8.41%** 19	226

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My fitness level	**47.11%** 106	**39.11%** 88	**8.00%** 18	**5.78%** 13	225
Pavement/shoulder conditions	**6.58%** 15	**35.96%** 82	**34.21%** 78	**23.25%** 53	228
Distance to destinations	**33.93%** 76	**43.30%** 97	**14.73%** 33	**8.04%** 18	224
No place to park bicycle at destination	**46.46%** 105	**27.88%** 63	**18.58%** 42	**7.08%** 16	226
Lack of interest	**75.22%** 170	**15.49%** 35	**6.19%** 14	**3.10%** 7	226
Too busy, no time	**44.69%** 101	**34.96%** 79	**13.27%** 30	**7.08%** 16	226
Don't own a bicycle	**90.18%** 202	**1.79%** 4	**0.45%** 1	**7.59%** 17	224
Don't know how to ride	**98.19%** 217	**0.45%** 1	**0.90%** 2	**0.45%** 1	221

Q13 List up to five common destinations for your bicycle trips.

Answered: 162 Skipped: 96

Answer Choices	Responses	
1.	**100.00%**	162
2.	**82.72%**	134
3.	**68.52%**	111
4.	**48.15%**	78
5.	**34.57%**	56

Q14 When cycling for transportation purposes, which roads do you use? List from most used to least; use road name or route number, and indicate which County.If you only bicycle for recreation, skip to the next question.

Answered: 49 Skipped: 209

Answer Choices	Responses	
1.	100.00%	49
2.	83.67%	41
3.	73.47%	36
4.	53.06%	26
5.	32.65%	16

Q15 When cycling for recreation and/or exercise, which roads do you use? List most used to least; use road name or route number, and indicate which County.

Answered: 161 Skipped: 97

Answer Choices	Responses	
1.	100.00%	161
2.	77.64%	125
3.	65.84%	106
4.	57.14%	92
5.	47.83%	77

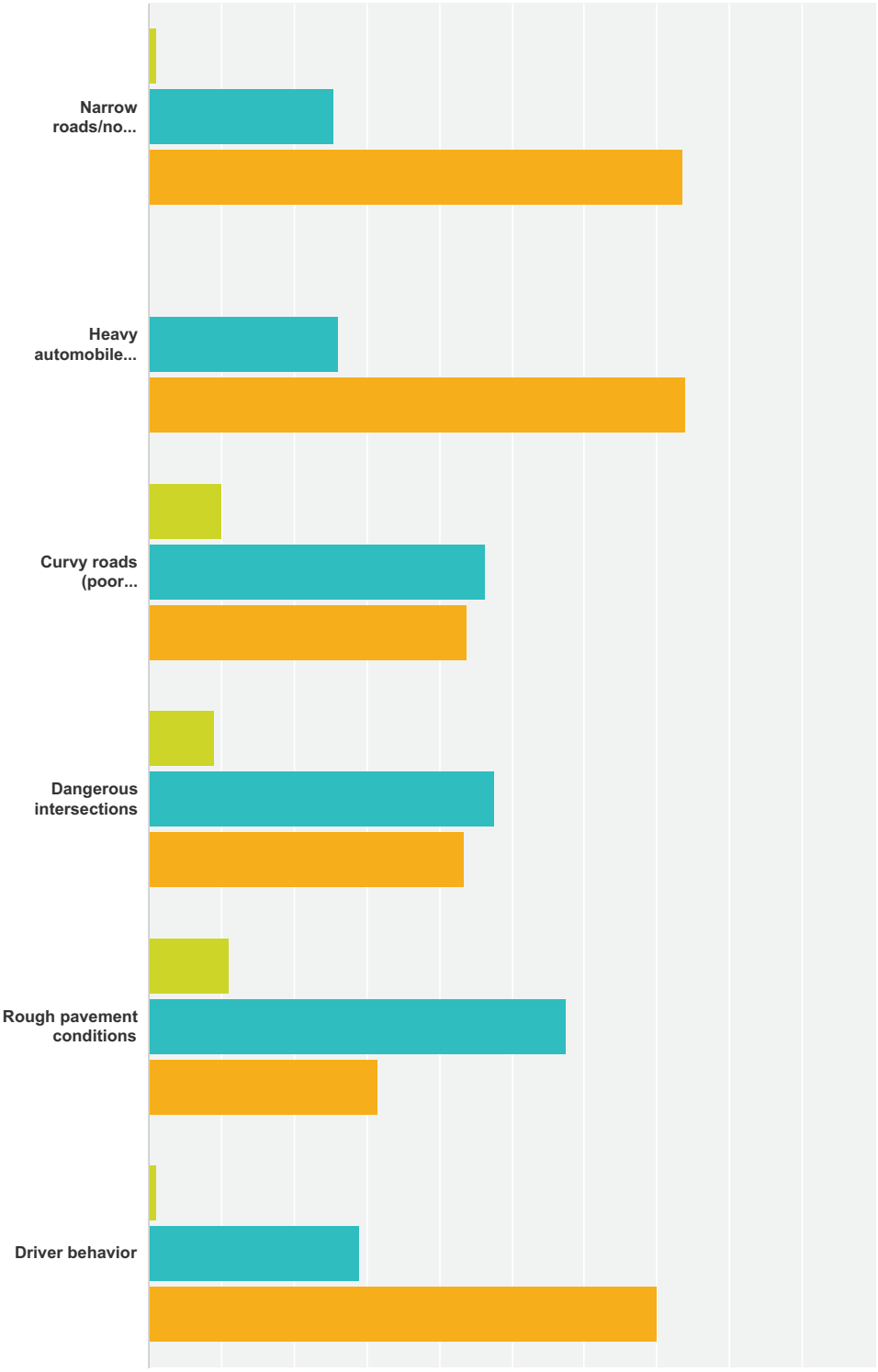
Q16 List up to five (5) roads/locations in your local area where current conditions make cycling dangerous (list from most dangerous to least dangerous; use road name or route number, and indicate which County).

Answered: 164 Skipped: 94

Answer Choices	Responses	
1.	100.00%	164
2.	81.10%	133
3.	60.37%	99
4.	38.41%	63
5.	23.17%	38

Q17 Rate the following challenges to bicycling in the four counties (Alexander, Burke, Caldwell, Catawba).

Answered: 202 Skipped: 56



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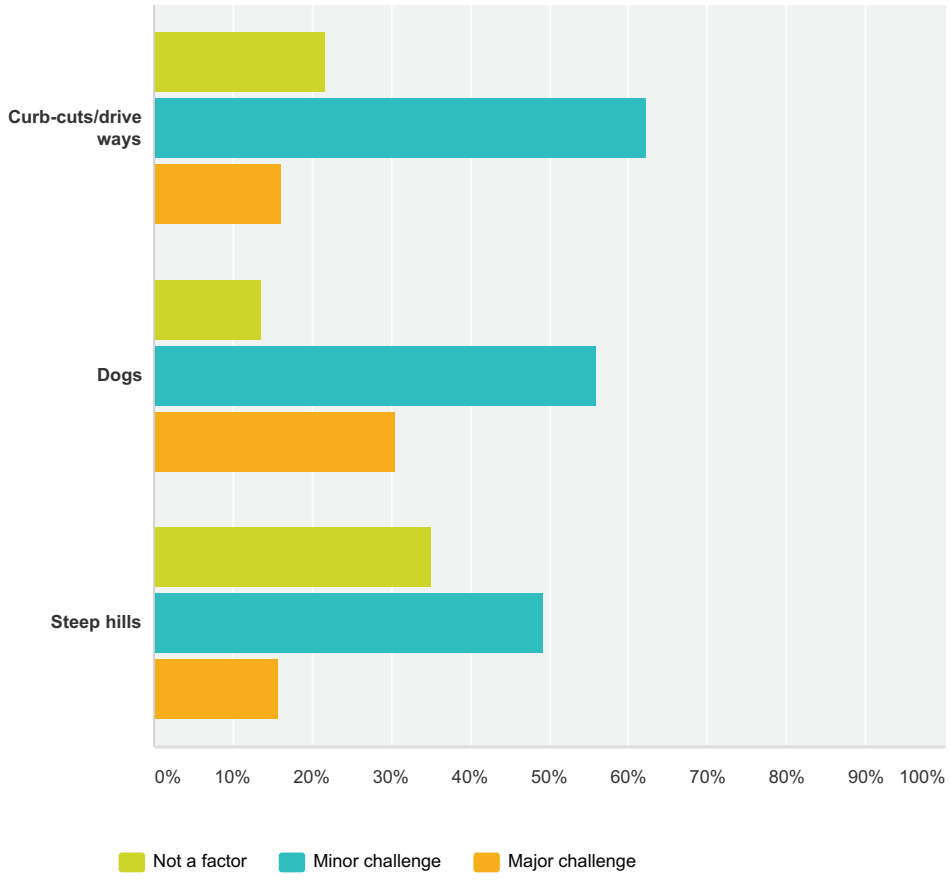
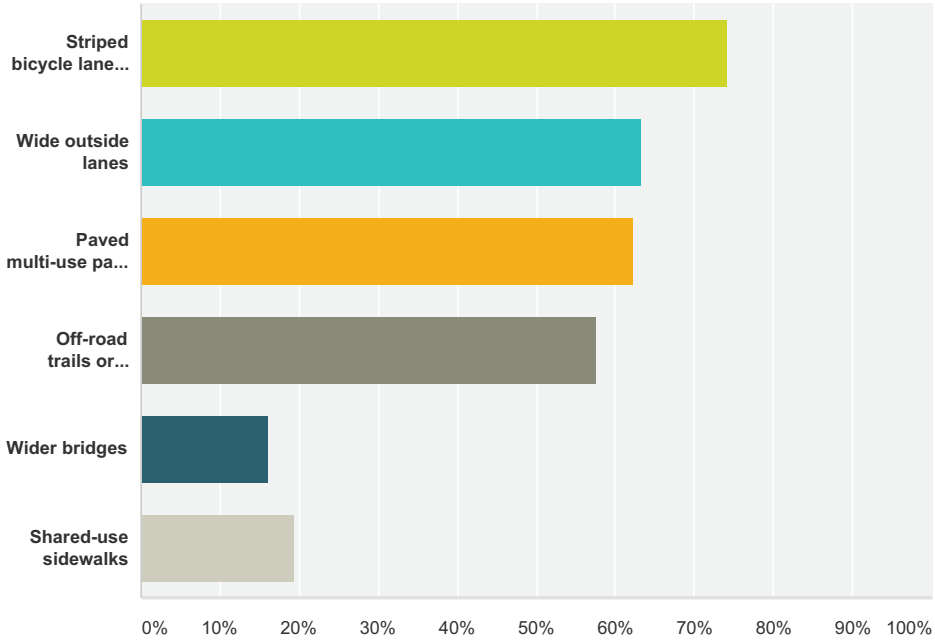


	Not a factor	Minor challenge	Major challenge	Total
Narrow roads/no shoulders	**1.00%** 2	**25.50%** 51	**73.50%** 147	200
Heavy automobile traffic	**0.00%** 0	**26.00%** 52	**74.00%** 148	200
Curvy roads (poor visibility)	**9.95%** 20	**46.27%** 93	**43.78%** 88	201
Dangerous intersections	**9.00%** 18	**47.50%** 95	**43.50%** 87	200
Rough pavement conditions	**11.00%** 22	**57.50%** 115	**31.50%** 63	200
Driver behavior	**1.00%** 2	**29.00%** 58	**70.00%** 140	200
Curb-cuts/driveways	**21.72%** 43	**62.12%** 123	**16.16%** 32	198
Dogs	**13.50%** 27	**56.00%** 112	**30.50%** 61	200
Steep hills	**35.18%** 70	**49.25%** 98	**15.58%** 31	199

Q18 Pick three (3) of the following bicycle infrastructure improvements that are most important to increase safety.

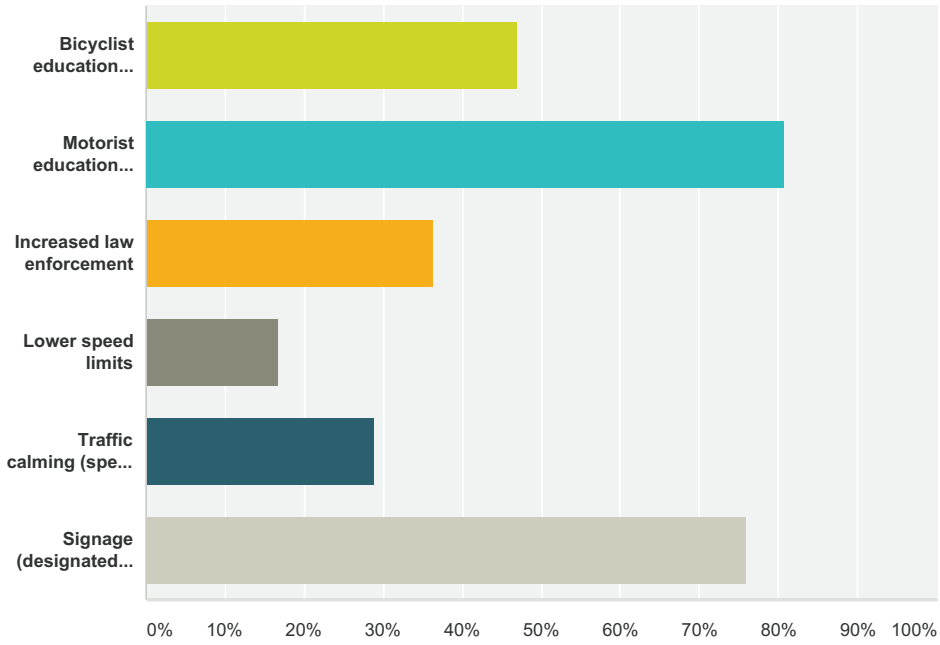
Answered: 212 Skipped: 46



Answer Choices	Responses	
Striped bicycle lanes on roads	**74.06%**	157
Wide outside lanes	**63.21%**	134
Paved multi-use path separated from motor traffic	**62.26%**	132
Off-road trails or greenways	**57.55%**	122
Wider bridges	**16.04%**	34
Shared-use sidewalks	**19.34%**	41
Total Respondents: 212		

Q19 Pick three (3) of the following bicycle infrastructure improvements that are most important to increase safety.

Answered: 209 Skipped: 49



Answer Choices	Responses	
Bicyclist education programs	**46.89%**	98
Motorist education programs	**80.86%**	169
Increased law enforcement	**36.36%**	76
Lower speed limits	**16.75%**	35
Traffic calming (speed bumps, roundabouts, etc.)	**28.71%**	60
Signage (designated bicycle routes, share the road, etc.)	**76.08%**	159
Total Respondents: 209		

Q20 List three (3) actions bicyclists can take to make roadways safer for all users.

Answered: 158 Skipped: 100

Answer Choices	Responses	
1.	100.00%	158
2.	93.04%	147
3.	81.01%	128

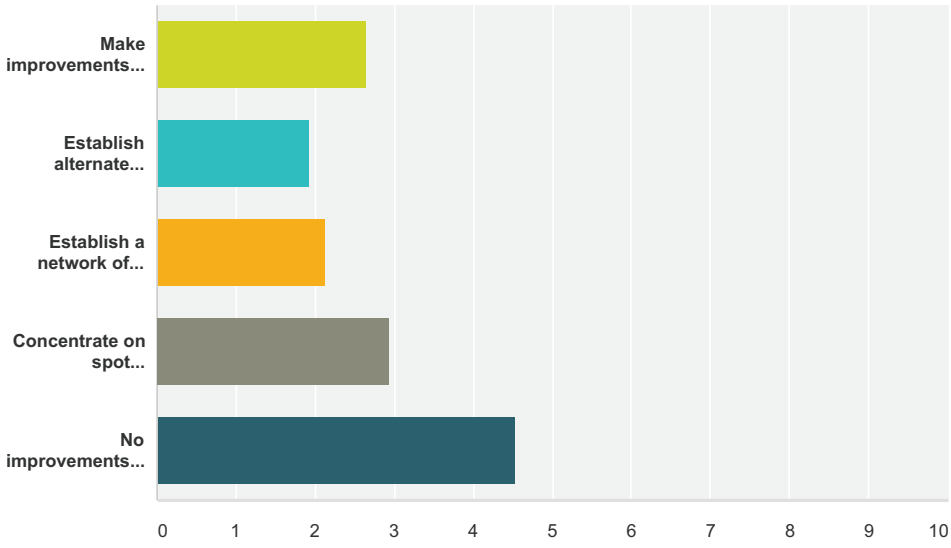
Q21 List three (3) actions motorists can take to make roadways safer for all users.

Answered: 162 Skipped: 96

Answer Choices	Responses	
1.	100.00%	162
2.	89.51%	145
3.	75.31%	122

Q22 Rank your preferences for the following strategies for bicycle infrastructure improvements, with 1 being the most preferred and 5 being the least.

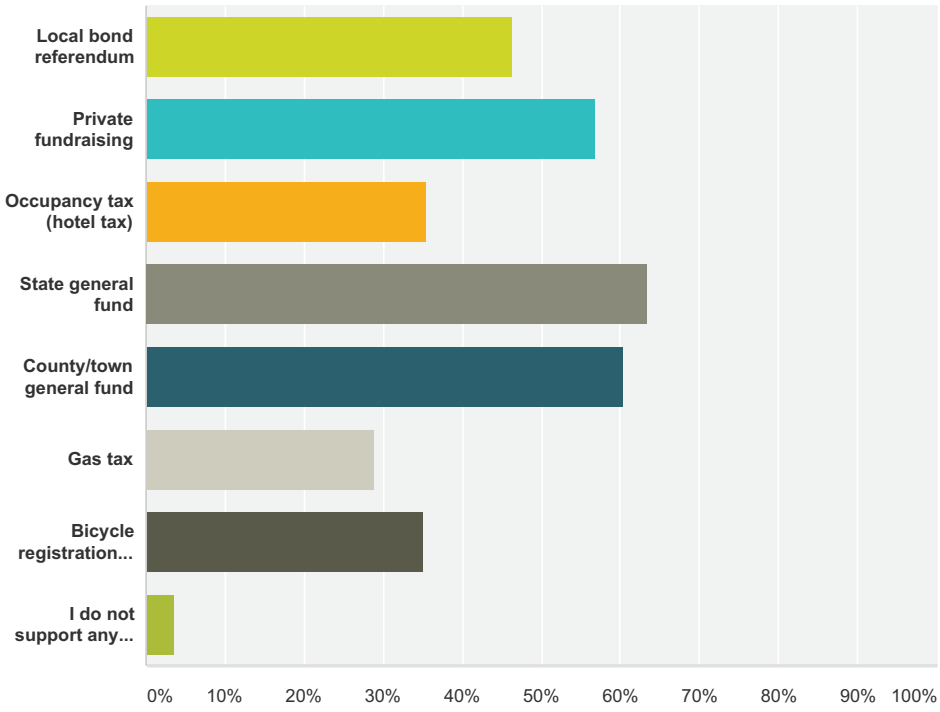
Answered: 195 Skipped: 63



	1	2	3	4	5	Total	Weighted Average
Make improvements on major traffic corridors that offer the quickest routes between destinations.	**20.83%** 40	**24.48%** 47	**29.17%** 56	**18.75%** 36	**6.77%** 13	192	2.66
Establish alternate routes away from the major traffic corridors in order to avoid heavy motor vehicle traffic.	**44.04%** 85	**36.79%** 71	**8.29%** 16	**5.18%** 10	**5.70%** 11	193	1.92
Establish a network of off-road bicycle paths that connect destinations.	**42.56%** 83	**25.64%** 50	**16.92%** 33	**6.67%** 13	**8.21%** 16	195	2.12
Concentrate on spot improvements at intersections, bridges, and other site-specific locations.	**10.58%** 20	**22.22%** 42	**31.75%** 60	**32.80%** 62	**2.65%** 5	189	2.95
No improvements are needed.	**10.65%** 18	**0.00%** 0	**0.59%** 1	**1.78%** 3	**86.98%** 147	169	4.54

Q23 Which funding options would you support to pay for bicycle infrastructure improvements? Choose all that apply.

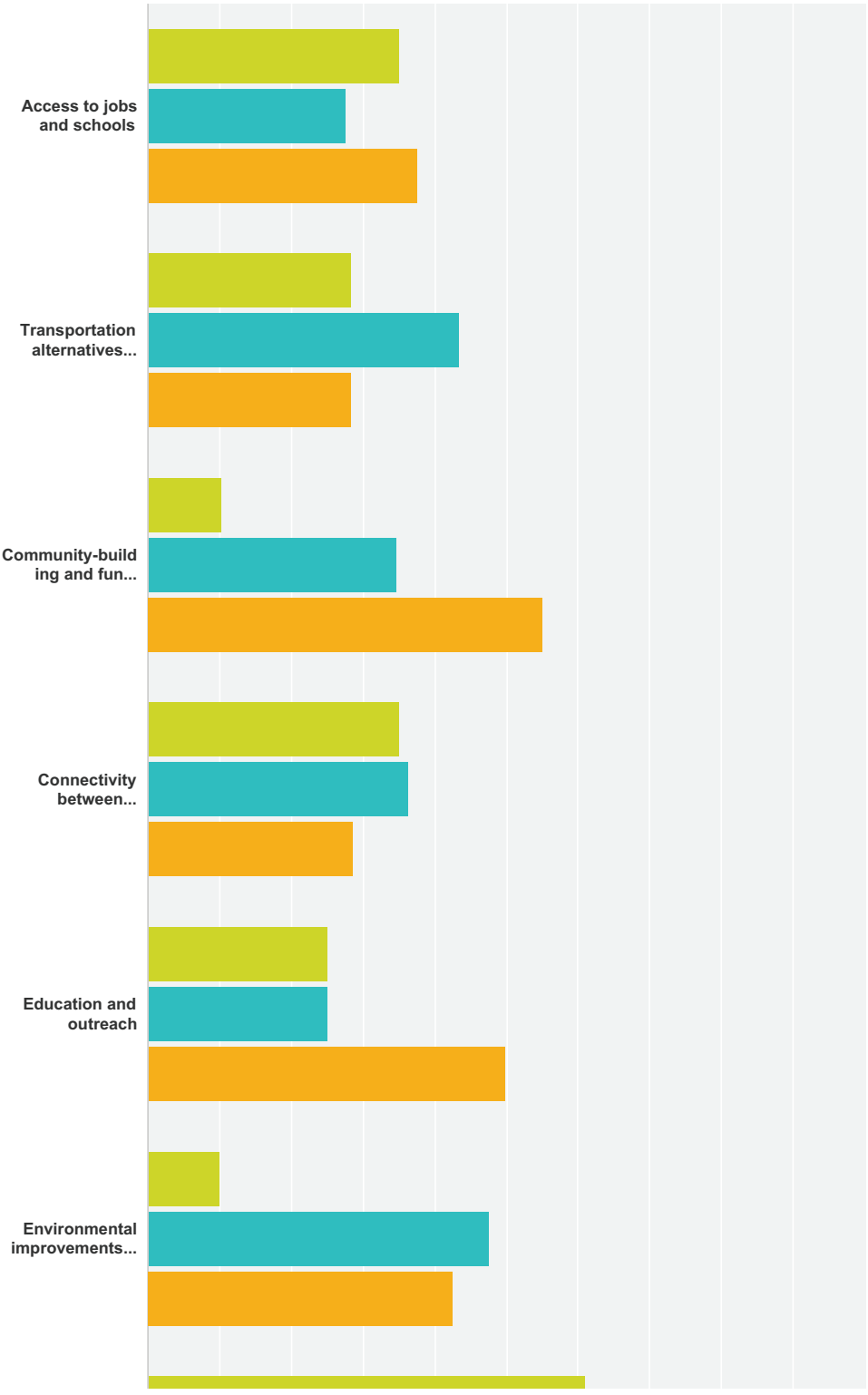
Answered: 194 Skipped: 64



Answer Choices	Responses	
Local bond referendum	**46.39%**	90
Private fundraising	**56.70%**	110
Occupancy tax (hotel tax)	**35.57%**	69
State general fund	**63.40%**	123
County/town general fund	**60.31%**	117
Gas tax	**28.87%**	56
Bicycle registration fees	**35.05%**	68
I do not support any expenditures for bicycle infrastructure	**3.61%**	7
Total Respondents: 194		

Q24 What are the most important benefits or uses of a regional bicycle system?

Answered: 196 Skipped: 62



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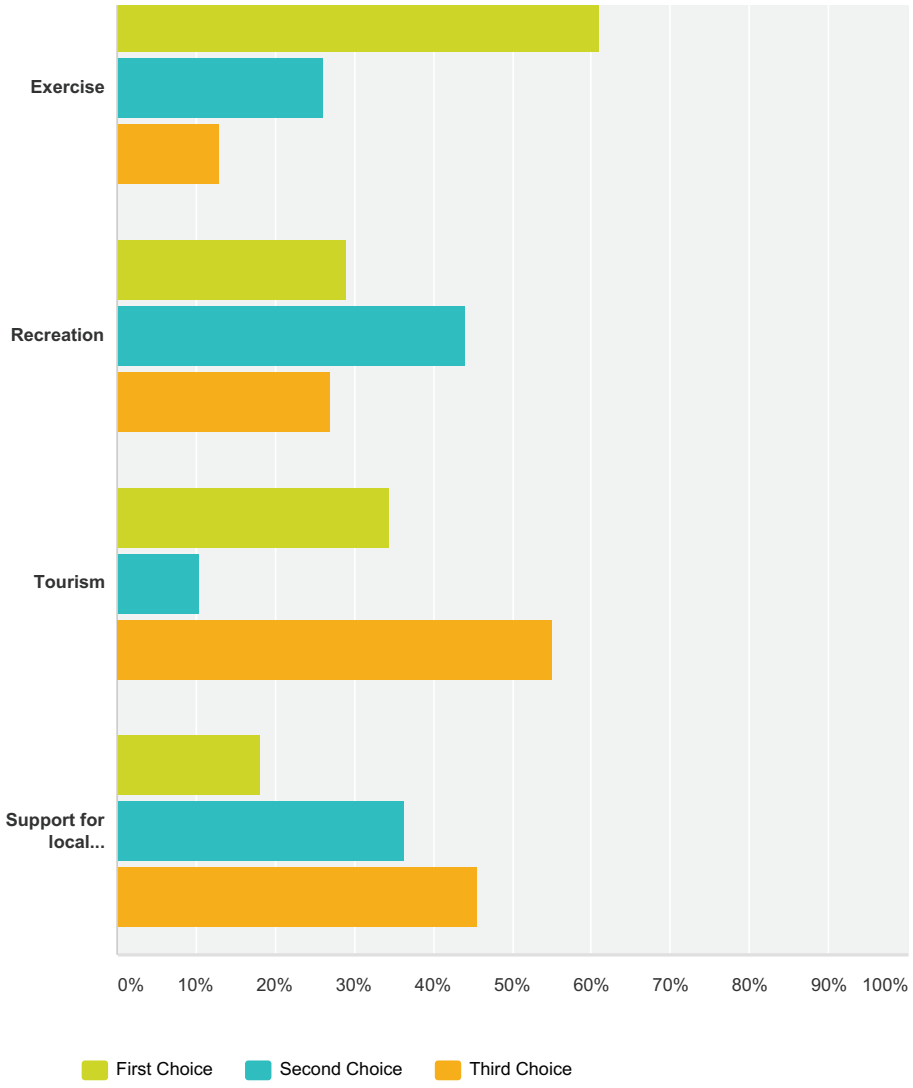

	First Choice	Second Choice	Third Choice	Total
Access to jobs and schools	**35.00%** 14	**27.50%** 11	**37.50%** 15	40
Transportation alternatives including expanding the reach of public transit	**28.30%** 15	**43.40%** 23	**28.30%** 15	53
Community-building and fun events such as bike races, etc.	**10.20%** 5	**34.69%** 17	**55.10%** 27	49
Connectivity between residential neighborhoods and destinations	**35.06%** 27	**36.36%** 28	**28.57%** 22	77
Education and outreach	**25.00%** 2	**25.00%** 2	**50.00%** 4	8
Environmental improvements (air and water quality)	**10.00%** 4	**47.50%** 19	**42.50%** 17	40
Exercise	**60.98%** 75	**26.02%** 32	**13.01%** 16	123

Recreation	**29.00%** 29	**44.00%** 44	**27.00%** 27	100
Tourism	**34.48%** 20	**10.34%** 6	**55.17%** 32	58
Support for local businesses	**18.18%** 4	**36.36%** 8	**45.45%** 10	22

Public Survey - Comments

- "Greenways are not always a good alternative. We run on the Morganton Greenway and often encounter riders with racing bikes trying to ride as fast as they can. While, as runners, we can easily dodge pedestrians and don't come up on them very quickly, the racing road bikes often show little regard for the walkers along the greenway. I would most strongly support totally separate surfaces for bikes. Be it an off-road course like the new one at Lake James State Park or a disconnected bike lane around Lake James."
- "If these infrastructure enhancement actually happen, make sure these places are wide enough for golf carts. This is a great way to get around without using a car. See Peachtree City, Georgia for how they did this. They have an awesome network of trails for walkers, bikers, and golf carts and people don't even need to use their cars to get to work, the store or school...."
- "Cycling in the Lake James area has grown steadily in the last few years. Burke County tourism needs to be aware (notified) when road projects are planned in the area. Nothing turns off a cyclist quicker than resurfacing secondary roads with tar and gravel surfaces instead of actual black top pavement. A few years ago the upper powerhouse road was resurfaced with the gravel surface and was practically unusable by cyclist for several weeks/months. Also just an additional 6" or 12" of blacktop makes a huge difference in the areas if it could be added to the shoulder during repaving projects. These roads need a special classification for resurfacing and the plans approved before the project moves forward."
- "Need more trails areas parks for kids and for fun. pump tracks trails etc"
- "Thank you for considering this!"
- "Bicycle users should be rewarded for choosing an alternative means of transportation. A specific tax/fee on these users would be highly prejudicial and counter intuitive."
- "Burke and surrounding counties offer wonderful cycling venues. However, angry, ignorant motorist who are unwilling to share the road make cycling very dangerous. I enjoy the sport enough to take the risk but I have considered moving to an area a little more bicycle friendly. I know many people who have quit riding because of being hit by cars or just have decided it is not safe given the number of idiots on the roads."
- "I do not think bicycles should be on busy roads. Rink Dam road in Taylorsville being on of the most dangerous. As a motorist it is very frustrating."
- "Also consider mixed use opportunities for runners."
- "Thank you for conducting this survey and considering public opinion on this pertinent topic. I recently sustained substantial injury, requiring 2 surgeries, from a bicycle accident due to an unsafe road conition and thus appreciate the opportunity to provide comment,"
- "Thank you for helping make a difference! I often wonder if we (cyclists) can promote an ad campaign or similar educational initiative to heighten awareness like "Share the Road" did back in the 90's (when I was a bicycle shop manager and active cycling advocate in GA). Signage isn't enough; motorists need an "in-your-face" yet friendly message about HOW to share the road, number of injuries/deaths occur in their area due to motor vehicles/driver behavior."
- "Love it. Please make improvements and make us a leader in the country."
- "Reconsider the old railroad bed from conover to lincolnton and also any other unused railroad beds."
- "Many of the railroad tracks in the area are in need of repair, especially in Newton on 11th and 13th streets. Railroad tracks are an easy way for a rider to crash. Major roads need to be wider (HWY 10, Startown)."
- "We are far behind in biking accessibility compared to other parts of our country. If safe lanes were

provided, many people would ride not only for recreational purposes but to their jobs or to shopping areas, etc. It would be wonderful to be able to go from county to country safely on safe paths and I would support any endeavors to raise the funds to make this happen.."

- "I hear of other states that have bike lanes everywhere for the bikers. Why is North Carolina so behind most other states to provide bike lanes? Just saying"
- "Putting up share the road signs is not a solution. These signs are a joke as there is typically no room on the road to share"
- "Maps of wider roads and shoulders would be a great start. I often bike at night due to less traffic and try to find roads that are lighted - a map of these would be great too! Even if the maps are only available on-line to print."
- "I do not currently own or ride a bicycle. In Michigan my husband and I rode 20 miles/day on an old rail line that was being converted into a paved 100+ mile walking/bicycle path. The roads near me have no shoulder to ride on, or are too busy or curvy for me to feel comfortable on."
- "We are currently moving to the Viewmont area of Hickory partly because it is more bike friendly especially near 5th Street NE. We currently live near Sandy Ridge Baptist Church and before I retired I tried biking to work but part of the problem was having to ride part of the way on 16th Street NE (narrow, no shoulders, lots of traffic) until I could get to a neighborhood back way to work at 16th Avenue and NC 127. This was part of the reason I did not continue to do this. We need safe and enjoyable ways for ordinary folks to bike to destinations so they realistically get out of their cars and on to their bikes."
- "Work with the Humane Society, etc on the Dog Issue & Education of Bike/Dog Hazards. The dog may not bite, but it can still cause us to fall as we try to avoid it. This happens in city and country areas. I avoid some great routes because of problem dogs."
- "Please provide for a section of the plan addressing the routes taken and potentially taken by elementary and middle schoolchildren from their neighborhoods to/from schools; infrastructure improvements along bicycling routes taken by these riders (e.g.: crosswalks, longer ped signal timing, sidewalk connections) are often different and less expensive than those needed by avid, confident cyclists."
- "Part of NCDOT seems to promote Complete Streets while others in the divisions seem not receptive to the idea. Need more acceptance and help from NCDOT to implement these systems. NCDOT seems to do anything else they want but they seem reluctant to install their own Complete Streets policies."
- "I think that riding bicycles in large groups is extremely dangerous. The Hickory Velo club should not be allowed to have more than ten riders in a group. This is a major source for contributing to accidents."
- "Even though I am not a resident of Alexander County, I do have an opportunity to ride some of the roads in the county."
- "As a 30 yr cyclist I see real hope for future. Greenways and car free paths help generate safe places of learning for kids and new cyclists. Then they may move on to choosing to use the bike to run short errands. They then become better drivers of autos because of this. They look at our roads differently as cyclists They may begin to use bike more once they find safe ways to travel from a to b Over time they become advocates for all things bike! Building a greenway creates jobs, safe recreation, family activity that's healthy and MORE cyclists. Link anything to anything with a bike path and people will go out and ride back and forth just to skip the auto traffic. Others run there, push strollers and create art spaces in the outdoors. All this starts to feed a community. We should shoot for a greenway in every county at least 5 miles long. Build it and they will come."
- "I think that making any area pedestrian and cycle friendly improves the quality of life for those in that area. It promotes health, exercise and community. I think that it also has a huge economical

impact on business and tourism and the real estate market. Many people look to a beautiful area such as ours for retirement or a quiet lifestyle if it has a people friendly infrastructure in place as we are discussing. Duck Island in the Outer Banks has a paved path along its' major roads and it literally stays packed with people walking, biking and exercising. It is unbelievable what it does for a community."

- "Alexander County really needs some support for bikes and bikers!!"
- "All road repairs should consider widening shoulders and placement of sidewalks as indicated. Too many narrow roads and uneducated drivers - creating a greenway (road) with enough miles to ride safely would be very helpful, particularly of it connects to major destination points. Very good aesthetics and for drawing young people / tourism to town. Road cycling is different from off road and is a wonderful asset for this area (US cycling team trains in blue ridge) - but is unnecessarily dangerous without such improvements."
- "I would like to see Newton, Conover, Hickory, and Claremont establish bike lanes aling main rods in the cities."
- "OVER THE YEARS, SEVERAL COUNTIES HAVE RE-PAVED THEIR COUNTY ROADS WITH STIMULUS AND STATE MONEY. NOT ONE ROAD HAD ITS SHOULDER IMPROVED OR WIDENED TO MAKE IT SAFER FOR CYCLISTS. I WAS TOLD THE COUNTIES WERE NOT REQUIRED TO DO THAT. THE COUNTIES MISSED THEIR CHANCE TO MAKE IT SAFER THRU OUT THE NETWORK."
- "To be a top tier community you must have a extensive bike/walking/jogging path system"
- "Greenways and bike lanes are great if they are kept in good condition. How about planners actually riding a bike on bike paths/lanes and see the conditions we deal with - missing pavement, gravel, sticks? A stick on the road will stop a bike immediately if caught in spokes. One stick can be avoided but when they are numerous ones we don't attempt the lane. All these hazards make us ride next to the route instead of in the lane/path. I'm not expecting constant upkeep, but at least some maintenance."
- "I ride often and ride in other cities that have better infrastructure. The other cities all have more people riding and enjoying their community because it's safer to do so. Hickory is not a safe place to ride unless you are experienced."
- "Drivers need to respect the cyclist. I have been passed on blind turns with oncoming traffic. Drivers need to realize cyclists have a right to be on the road too"
- "A healthy and safe bicycle community will help create a more positive and welcoming region. This will enhance our area as a place to visit, ride and enjoy local businesses and restaurants. This Positive attitude will create safer, friendlier and economically advantageous conditions that will help many aspects of life in Hickory."
- "No comment was made on texting and driving which I consider to be a major impediment to safe cycling. Motorists are often just not paying attention!!!"
- "I appreciate the fact that someone is seeing the need to take a closer look at this in our area."
- "I see a lack of sholders on roadways as the largest hurdle for any bike routes or increase in bike traffic."
- "The Greenway is becoming much too crowded with bicycles in Morganton. We need safe, alternative routes for people ro ride."
- "Please consult with cyclists in planning. I am an avid and experienced cyclist who is comfortable in all conditions, including heavy traffic. The bike lanes that were added to downtown Morganton were poorly planned and have contributed to heavier traffic and unsafe conditions for cycling. Bike lanes do not always equate to safer cycling (or driving)."
- "Given the considered plans, please take runners into account, keeping in mind that they are almost as vulnerable to bikes as bikes are to cars when trying to share the same space."

- "Connect greenway up to lake james along river. Gravel just fine."
- "My husband and I ride both Mt and Road bikes for recreation and exercise. We find that rude and bad driver behavior towards us and loose dogs are the most dangerous things we encounter. We have people swear at us and yell frequently to get off the road. This is in all counties we have ridden in. We have had multiple very close calls when people drive extremely close to us when passing even while we are almost off the pavement. Drivers are very impatient with us. We ride together or with groups because it is too dangerous to ride alone. We like to go to Buncombe county to ride their miles and miles of mountain bike trails where there are no cars. Burke county has mt bike trails also but most are to hard for casual riders unless you ride the short Greenway trail."
- "Need more places for kids and family to ride"
- "Please remove the gravel from the roads. Gravel is dangerous for all bicycles and motorcycles. Keep designated bike lanes clear of gravel, debris and parked cars. Teach drives not to honk at cyclist."
- "Bicycles are a public nuisance..... they should ne banned from the greenway entirely. nothing but a bunch of inconsiderant IDIOTS...."
- How do we combine the efforts of inspiring spaces, active. well crafted, league of american bicyclists, etc? How to we get money to make this happen? How do we get to being a Bicycle Friendly Community? How can I help?
- Find a group and location (many empty old factory buildings) to build and support an indoor mountain bike park Large ones in Ohio and Michigan, I think. Google search-indoor mountain bike park
- As a long time cyclist and Traffic safety professional, I believe society has done a poor job educating the general public as to the rights of cyclist and pedestrian traffic on the roadway. In general the motoring public does not understand that both are entitled to use the roadway. Further they do not se to understand that cyclist are entitled to use the entire lane, and only operate one the shoulder or to the far right as a curtsey to motor vehicles. I have been threatened for being in the roadway while trying to make a left turn. You have a very hard task ahead in trying to educate the public in your area.
- There is a need to educate the public on the use and benefits of bike lanes. There is a lack of interest on the NCDOT level for installing bike lanes while at the same time other divisions of NCDOT are promoting Complete Streets. There is a need for all of NCDOT to get on board with their new Complete Streets policy so that this policy can be implemented as maintenance projects arrise. NCDOT could do a better job of notifying the municipalities of upcoming maintenance and initiating complete streets policy at every possible road update/resurfacing, etc.
- Thank you for all the work you are doing to improve our local roadways and encourage cycling in the Unifour area.

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Appendix E
Glossary

AADT
Short for Annual Average Daily Traffic. It is the average daily traffic on a roadway link for all days of the week during a period of one year, expressed in vpd (vehicles per day).

Bicycle
Every vehicle propelled solely by human power upon which any person may ride, having two tandem wheels, except scooters and similar devices. The term "bicycle" for this publication also includes three and four-wheeled human-powered vehicles, but not tricycles for children.

Bicycle Facilities
A general term denoting improvements and provisions made by public agencies to accommodate or encourage bicycling, including parking and storage facilities, and shared roadways not specifically designated for bicycle use.

Bicycle Lane or Bike Lane
A portion of a roadway which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists.

Bicycle Path or Bike Path
A portion of a roadway that has been designated by striping, signing, and pavement markings for the preferential or exclusive use of bicyclists Also see Shared Use Path.

Bicycle Route System
A system of bikeways designated by the jurisdiction having authority with appropriate directional and informational route markers, with or without specific bicycle route numbers. Bike routes should establish a continuous routing, but may be a combination of any and all types of bikeways.

Bikeway
A generic term for any road, street, path or way which in some manner is specifically designated for bicycle travel, regardless of whether such facilities are designated for the exclusive use of bicycles or are to be shared with other transportation modes.

Highway
A general term denoting a public way for purposes of vehicular travel, including the entire area within the right-of-way.

Rail-Trail
A shared use path, either paved or unpaved, built within the right-of-way of an existing or former railroad.

Right-of-Way
A general term denoting land, property or interest therein, usually in a strip, acquired for or devoted to transportation purposes.

Right of Way
The right of one vehicle or pedestrian to proceed in a lawful manner in preference to another vehicle or pedestrian.

Roadway
The portion of the highway, including shoulders, intended for vehicular use.

Rumble Strips
A textured or grooved pavement sometimes used on or along shoulders of highways to alert motorists who stray onto the shoulder.

Shared Roadway
A roadway which is open to both bicycle and motor vehicle travel. This may be an existing roadway, street with wide curb lanes, or road with paved shoulders.

Shared Use Path
A bikeway physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Shared use paths may also be used by pedestrians, skaters, wheelchair users, joggers and other non-motorized users.

Sharrows
A short-form for "shared lane bicycle marking". This pavement marking includes a bicycle symbol and two white chevrons and is used to remind motorists that bicyclists are permitted to use the full lane. There are no striped bicycle lanes on streets marks with sharrows.

Shoulder
The portion of the roadway contiguous with the traveled way for accommodation of stopped vehicles, for emergency use and for lateral support of sub-base, base and surface courses.

Sidewalk
The portion of a street or highway right-of-way designed for preferential or exclusive use by pedestrians.

Signed Shared Roadway (Signed Bike Route)
A shared roadway which has been designated by signing as a preferred route for bicycle use.

STIP
The STIP is a multi-year capital improvement document which denotes the scheduling and funding of construction projects across the state over a minimum 4 year time period as required by State and Federal laws.

Traveled Way
The portion of the roadway for the movement of vehicles, exclusive of shoulders.

Unpaved Path
Paths not surfaced with asphalt or Portland cement concrete.

Appendix F
Project Evaluation Rankings

Route Scoring Methodology

Criteria and Maximum Points	0 Points	5 Points	10 Points	15 Points
Safety Factor - Exposure (10 max)	AADT ≥ 5,000	AADT btw 2,001-4,999	AADT ≤ 2,000	
Safety Factor - Speed (10 max)	All other projects	Roadway speed limit ≤ 40 mph	Roadway speed limit ≥ 45 mph	
Safety Factor - Crashes (10 max)	All other projects	Proposed bicycle facility with 1 reported crash (2007-2012)	Proposed bicycle facility on roadway with more than 1 reported crash (2007-2012)	
Economic Development (10 max)	All other projects	Project located 1 mile from major employment center (100 + employees)	Project located 1/2 mile from major employment center (100 + employees)	
Connection to Employment Centers (15 max)	All other projects	Projects that are located in or provide a connection to a higher commercial area (50-100 employees)	Projects that are located in or provide a connection to a higher commercial area (101 - 499 employees)	Projects that are located in or provide a connection to a higher commercial area (500+ employees)
Connection to Recreation Areas (15 max)	All other projects	Projects that are located in or provide a connection to a city or town recreation area	Projects that are located in or provide a connection to a city county recreation area	Projects that are located in or provide a connection to a state or federal recreation area
Route Connectivity (10 max)	All other projects	Connects to all other existing or proposed onroad bicycle facility or greenway	Directly connects to or is a part of the Urbanized Area Route	
Environmental Justice (5 max)	All other projects	Intersects Census Tract with provery level of 20%+	Intersects Census Tract with low car ownership of ≥ 4%	
Proximitiy to School (5 max)	All other projects	1/2 mile from a school		

Alexander County

Route Segment	Routes	From	To	Public Ranking	Route Score
Route Segment 1	NC 127, Rink Dam Rd, Bowmans Cutover Rd, Teague Town Rd, Church Rd, Liledoun Rd	NC 16	Catawba Co. Border	1	45
Route Segment 2	Main Ave, NC 90, US 64-NC 90	Linneys Mountain Rd	Caldwell Co. Border	3	35
Route Segment 3	Linneys Mountain Rd, Black Oak Ridge Rd, Rocky Springs Rd, Rocky Face Church Rd	Main Ave (NC 90)	Atwell Canter Rd (Rocky Face Mountain Recreational Area)	5	70
Route Segment 18	NC 16, Linneys Mountain Rd, Black Oak Ridge Rd, Rocky Springs Rd, Sulphur Springs Rd, Linneys Mill Rd	Liledoun Rd	Iredell Co. Border	7	50
Route Segment 19	NC 127, Richey Rd, Sam Hefner Rd	Catawba Co. Border	Caldwell Co. Border	4	40
Route Segment 20	Shiloh Church Rd, Wildlife Access Rd, Hubbard Rd,	NC 127	Caldwell Co. Border	4	25
Route Segment 35	NC 16, Walker Foundry Loop, Old Wilksboro Rd Ext, NC 16, St Clair Rd, Silas Deal Rd, NC 16	Maine Ave W (US 64-NC 90)	Wilkes Co. Border	9	55
Route Segment 36	NC 90	Linney's Mountain Rd	Iredell Co. Border	6	75
Route Segment 37	NC 16	Main Ave (NC 90)	Catawba Co. Border	8	65

Route Segment	Safety Factor - Exposure	Safety Factor - Speed	Safety Factor - Crashes	Economic Development	Connection to Employment Centers	Connection to Recreation Areas	Route Connectivity	Enviromental Justice	Proximity to School	Total Points
Route Segment 1	5	10	0	0	10	5	0	5	5	40
Route Segment 2	0	10	0	0	10	0	0	5	5	30
Route Segment 3	10	10	5	10	15	10	0	5	0	65
Route Segment 18	5	5	5	10	15	0	0	5	0	45
Route Segment 19	0	10	0	0	10	10	0	0	5	35
Route Segment 20	5	10	0	0	5	0	0	0	0	20
Route Segment 35	5	10	0	0	10	15	0	5	5	50
Route Segment 36	5	10	0	10	15	15	5	5	5	70
Route Segment 37	0	5	0	10	15	15	5	5	5	60

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Burke County

Route Segment	Routes	From	To	Public Ranking	Route Score
Route Segment 4	E Meeting St, E Union St, US 70, Main St, US 70	Green St (Morganton)	US 70 (Connelly Springs)	1	65
Route Segment 5	US 70, Rhodhiss Rd, McDuffy Rd, Bailey Rd, Icard Rhodhiss Rd, Warlicks Church Rd, N Center St, First Ave NE, Third St NE, Cline Park Dr, US 70A, 1st Ave SW	Spings Rd (Connelly Springs)	39th St NW (Long View)	5	65
Route Segment 6	S Sterling St, N Sterling St, S Green St, N Green St, Independence Blvd, James-town Rd, Conley Rd, London St	US 70 (Morganton)	US 70 (Glen Alpine)	2	80
Route Segment 7	NC 181, N Green St	Sanford Dr (Morganton)	Brown Mountain Beach Rd	4	65
Route Segment 8	Israel Chapel Rd, Tomlinson Loop, Oakridge Church Rd, Rhodhiss Rd, Burke St	US 70 (Connelly Springs)	Caldwell Co. Border	6	40
Route Segment 21	Amherst Rd, Setz Rd, John Berry Rd, Lakeview Acres Rd, Falls Rd NW, Meytre Ave NE, Lovelady Rd, Malcolm Blvd,- Campus St, Woodlawn Dr, US 70	Union St (Morganton)	Israel Chapel Rd (Connelly Springs)	7	60
Route Segment 22	Cape Hickory Rd, 39th St NW	Burke St (Rhodhiss)	1st Ave SW (Long View)	8	55
Route Segment 23	Brown Mountain Beach Rd	NC 181	Caldwell Co. Border	11	35
Route Segment 24	Huffman Bridge Rd, Antioch Rd, NC 18-US 64	Amherst Rd	Caldwell Co. Border	14	40
Route Segment 25	S Sterling St, Old NC 18	Fleming Dr (Morganton)	Cleveland Co. Border	10	75
Route Segment 38	Sugar Loaf Rd, NC 18, George Hildebran School Rd, Old Laurel Rd	Old NC 18	Catawba Co. Border	12	35
Route Segment 39	NC 181, NC 183, NC 221	Brown Mountain Beach Rd	Blue Ridge Parkway	9	55
Route Segment 40	Rose Creek Rd, Fish Hatchery Rd, NC 126, South Mountain Institute Rd	NC 181	McDowell Co. Border	13	60
Route Segment 41	Indepedence Blvd, NC 126, Benfields Landing Rd, N Powerhouse Rd	NC 181	NC 126	3	85

Route Segment	Safety Factor - Exposure	Safety Factor - Speed	Safety Factor - Crashes	Economic Development	Connection to Employment Centers	Connection to Recreation Areas	Route Connectivity	Environmental Justice	Proximity to School	Total Points
Route Segment 4	0	10	0	10	15	5	10	10	5	65
Route Segment 5	10	10	5	10	10	0	10	5	5	65
Route Segment 6	10	5	10	10	15	5	10	10	5	80
Route Segment 7	0	10	0	10	15	5	10	10	5	65
Route Segment 8	5	10	5	0	5	0	10	5	0	40
Route Segment 21	10	10	0	5	10	0	10	10	5	60
Route Segment 22	5	10	0	10	10	0	10	5	5	55
Route Segment 23	10	10	0	0	5	0	0	10	0	35
Route Segment 24	5	10	0	0	5	0	10	10	0	40
Route Segment 25	0	10	5	10	15	15	10	5	5	75
Route Segment 38	10	10	0	0	5	0	0	5	5	35
Route Segment 39	10	10	0	0	10	15	0	10	0	55
Route Segment 40	10	10	0	0	10	15	5	10	0	60
Route Segment 41	10	10	5	10	15	15	5	10	5	85

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Caldwell County

Route Segment	Routes	From	To	Public Ranking	Route Score
Route Segment 9	Morganton Blvd (US 64)	Rocky Rd (Gamewell)	Burke Co. Border	11	40
Route Segment 10	Main St, Pennton Ave, Norwood St, Main St, US 321A, North Main St, Duke St, Caldwell St, Burke St	Harper Ave (Lenoir)	Burke Co. Border	7	65
Route Segment 11	Main St, Valway Rd, Collettsville Rd, Adako Rd	Harper Ave (Lenoir)	Burke Co. Border	2	75
Route Segment 12	Taylorsville Rd (US 64)	Wilkesboro Rd (Lenoir)	Alexander Co. Border	6	40
Route Segment 26	Main St, Finley Ave, Greenhaven Dr, Nuway Cir, Zacks Fork Rd, Grandin Rd, NC 268	Harper Ave (Lenoir)	Wilkes Co. Border	8	75
Route Segment 27	US 321A, Sawmills School Rd, Dry Ponds Rd, Connelly Springs Rd, Lee Pearson Rd, JM Craig Rd, Union Grove Rd, Smokey Creek Rd, Clarks Chapel Rd, Orchard Dr, Connelly Springs Rd, Pleasant Hill Rd, Main St	Pleasant Hill Rd (Hudson)	US 321A (Hudson)	3	65
Route Segment 28	Abington Rd, Colletsville Rd, Adako Rd	Harper Ave (Lenoir)	Burke Co. Border	9	60
Route Segment 29	Anthony Creek Rd, Globe Rd	NC 90	Blowing Rock (Watauga Co.)	12	55
Route Segment 42	Morganton (US 64), Beecher Anderson Rd, Abington Rd, Harper Ave, Wilksboro Blvd (NC 18)	Rocky Rd (Gamewell)	Robertson Ln	5	75
Route Segment 43	Falls Ave, Grace Chapel Rd, Petra Mill Rd, Icard Dam Rd	US 321A	Catawba Co. Border	1	20
Route Segment 44	Morris Creek Rd, Charlie Litte Rd	US 64	Catawba Co. Border	4	45
Route Segment 45	Collettesville Rd, NC 90, Edgemont Rd, Roseboro Rd	Adako Rd	Avery Co. Border	10	60

Route Segment	Safety Factor - Exposure	Safety Factor - Speed	Safety Factor - Crashes	Economic Development	Connection to Employment Centers	Connection to Recreation Areas	Route Connectivity	Environmental Justice	Proximity to School	Total Points
Route Segment 9	0	10	5	0	5	0	10	5	5	40
Route Segment 10	0	5	5	10	15	5	10	10	5	65
Route Segment 11	10	10	0	10	15	5	10	10	5	75
Route Segment 12	5	10	0	0	5	0	10	5	5	40
Route Segment 26	10	10	0	10	15	5	10	10	5	75
Route Segment 27	0	5	10	10	15	5	10	5	5	65
Route Segment 28	5	10	0	10	15	0	10	5	5	60
Route Segment 29	10	10	0	0	10	15	0	10	0	55
Route Segment 42	0	10	10	10	15	5	10	10	5	75
Route Segment 43	5	5	0	0	5	0	0	0	5	20
Route Segment 44	10	10	5	0	5	10	0	0	5	45
Route Segment 45	10	10	0	0	10	15	5	5	5	60

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Catawba County

Route Segment	Routes	From	To	Public Ranking	Route Score
Route Segment 13	NC 127, S Center St, N Center St, 8th Ave NE, 2nd St NE (NC 127), N Center St (NC 127)	Harris Farm Rd (Hickory)	Alexander Co. Boundary	2	75
Route Segment 14	1st Ave SW, 17th St NW, 2nd Ave NW, 3rd Ave NW, 3rd Ave Ct NW	39th St NW (Long View)	9th Ave NW (Hickory)	1	65
Route Segment 15	8th Ave NE, 5th St NE, 8th St NE, 9th Ave Pl NE, 9th Ave NE, Highland Ave NE, 1st St W/E Conover Blvd, US 70, Main St, Depot St, Catawba St, Old Catawba St, 4th Ave SW, 3rd Ave SW	6th St NW (Hickory)	2nd St SW (town of Catawba)	3	75
Route Segment 16	Emmanuel Church Rd, S Mclin Creek Rd, E 20th St, N/S Main Ave, N/S College Ave, E C St	Conover Blvd (Conover)	NC 10 (Newton)	9	70
Route Segment 17	16th St NE, 12th Ave NE, Springs Rd, NC 16	Highland Ave	Catawba Co. Boundary	6	70
Route Segment 30	Brittian Rd, Old Shelby Rd, 33rd St SW	1st Ave SW (Long View)	Burke Co. Boudary	7	65
Route Segment 31	Emanuel Church Rd, Keisler Rd SE, Keisler Dairy Rd, Bethany Church Rd, Boggs Rd, NC 10, Murrays Mill Rd, Sherrills Ford Rd, Long Island Rd	Emmanuel Church Rd (Conover)	Monbo Rd (Lake Norman Bike Route)	14	75
Route Segment 32	NC 127, Zion Church Rd, Hickory Lincolnton Hwy	NC 127	Lincoln Co. Boundary	5	45
Route Segment 33	Startown Rd, Blackburn Bridge, Hickory Lincolnton Hwy, Grace Chapel Rd, Plateau Rd, Greedy Hwy, Old Shelby Rd, Brittain Rd	US 321 (Maiden)	Burke Co. Boudary	4	50
Route Segment 34	W 15 St, Laffon Rd, Old Conover Startown Rd, Startown Rd, Dove St, NC 10, Sigmon Dairy Rd, Maiden Rd, Main St	NC 16 (Newton)	8th Ave (Maiden)	16	45
Route Segment 46	N Mclin Creek Rd, Rock Barn Rd, St Johns Church Rd NE, NC 16, C & B Rd, Lee Cline Rd, St John's Church NE, NC 16	Emmanuel Church Rd	Catawba Co. Boundary	15	65
Route Segment 47	Mt Olives Church Rd, Little Mountain Rd, Joe Johnson Rd, Long Island Rd	E 20th St (Newton)	Monbo Rd (Lake Norman Bike Route)	13	75
Route Segment 48	NC 10, Oxford School Rd, River Bend Rd, NC 16	2nd Ave SW (town of Catawba)	Catawba Co. Boundary	12	35
Route Segment 49	NC 10, Balls Creek Rd, Providence Mill Rd	4th Ave SW (town of Catawba)	E Maiden Rd (Maiden)	10	50
Route Segment 50	NC 10, Murrays Mill Rd, Buffalo Shoals Rd, Maiden Rd	4th Ave SW(town of Catawba)	Providence Mill Rd (Maiden)	8	55
Route Segment 51	2nd Ave SW, 2nd St SE, Hudson Chapel Rd	2nd Ave SW (town of Catawba)	Kale Rd (Lake Norman Bike Route)	11	55

Route Segment	Safety Factor - Exposure	Safety Factor - Speed	Safety Factor - Crashes	Economic Development	Connection to Employment Centers	Connection to Recreation Areas	Route Connectivity	Environmental Justice	Proximity to School	Total Points
Route Segment 13	0	10	10	10	15	5	10	10	5	75
Route Segment 14	0	5	10	10	15	5	10	5	5	65
Route Segment 15	0	10	10	10	15	5	10	10	5	75
Route Segment 16	5	5	10	10	15	0	10	10	5	70
Route Segment 17	0	10	10	10	15	0	10	10	5	70
Route Segment 30	5	10	5	10	15	0	10	5	5	65
Route Segment 31	5	10	5	10	15	10	10	10	0	75
Route Segment 32	0	10	0	10	15	0	10	0	0	45
Route Segment 33	5	10	0	10	10	0	5	5	5	50
Route Segment 34	0	5	5	0	10	5	10	5	5	45
Route Segment 46	5	5	5	10	15	0	10	10	5	65
Route Segment 47	10	10	0	10	15	5	10	10	5	75
Route Segment 48	5	10	0	0	10	0	5	0	5	35
Route Segment 49	5	10	5	0	10	0	10	5	5	50

Route Segment	Safety Factor - Exposure	Safety Factor - Speed	Safety Factor - Crashes	Economic Development	Connection to Employment Centers	Connection to Recreation Areas	Route Connectivity	Environmental Justice	Proximity to School	Total Points
Route Segment 50	5	10	0	0	10	10	10	5	5	55
Route Segment 51	10	10	0	0	10	0	10	10	5	55

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Appendix G
Proposed WPBP Regional Routes

Figure G-1
Proposed Route 1

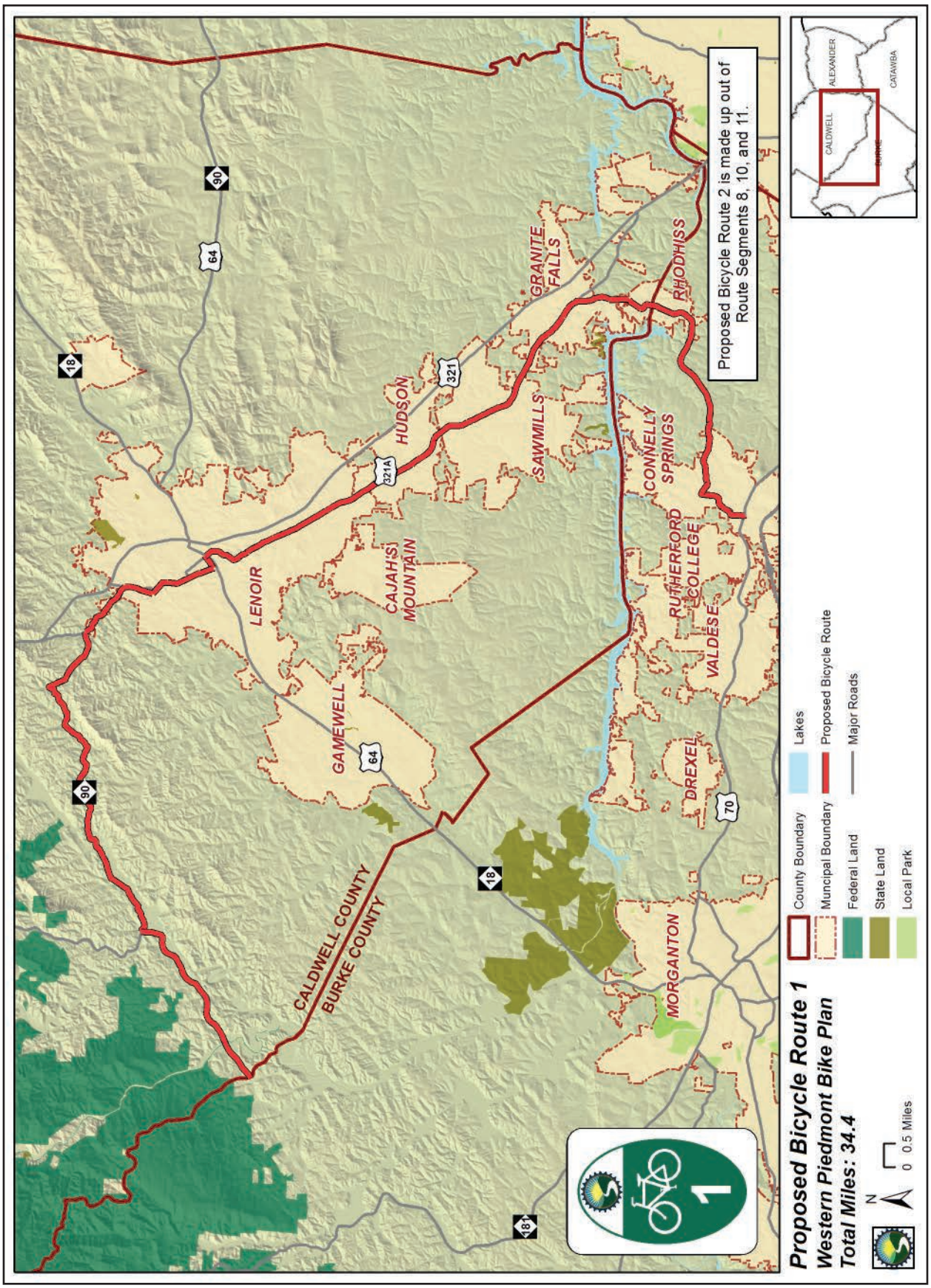

Figure G-2
Proposed Route 1 Road Improvements

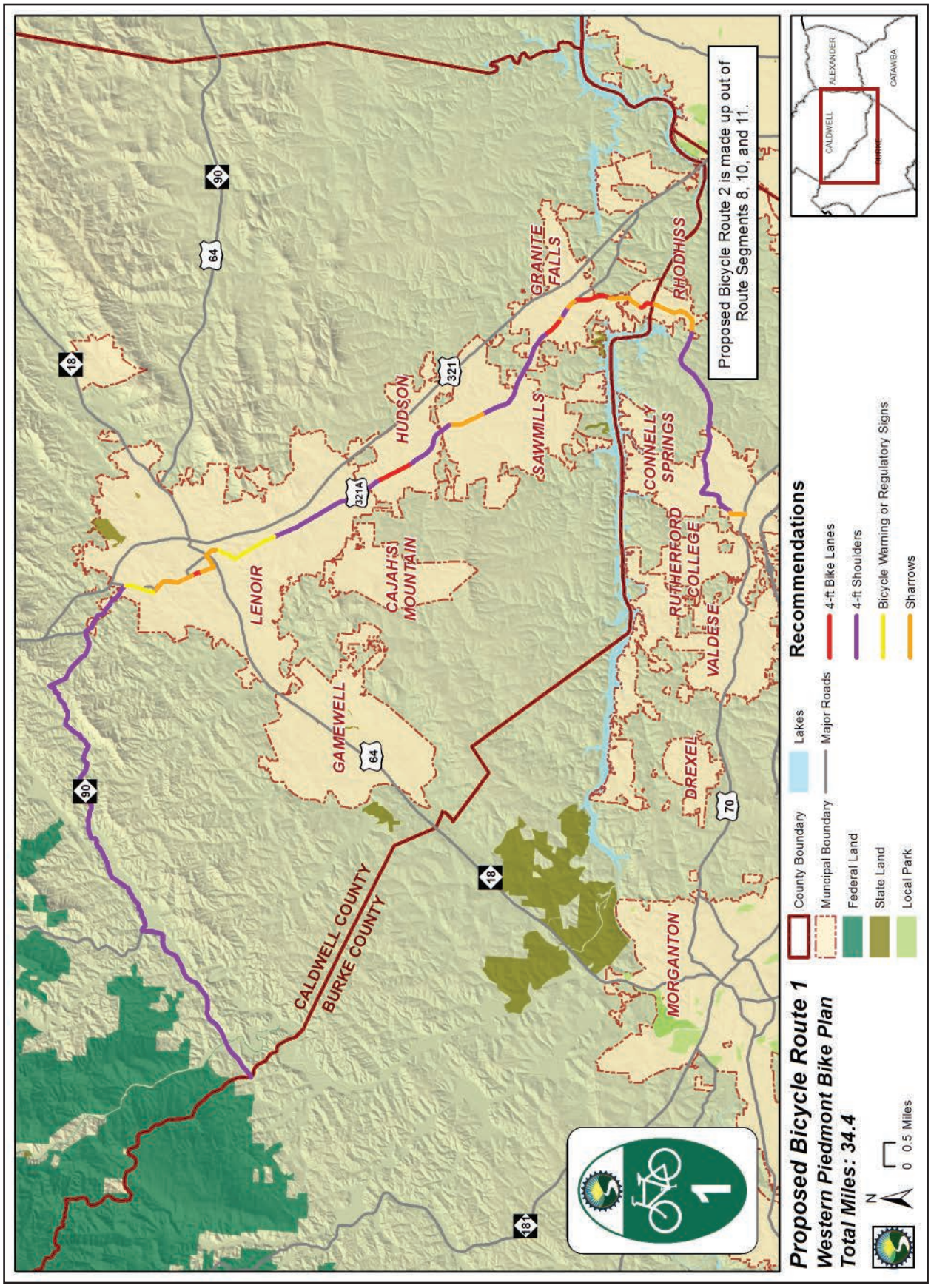

Figure G-3
Proposed Route 2

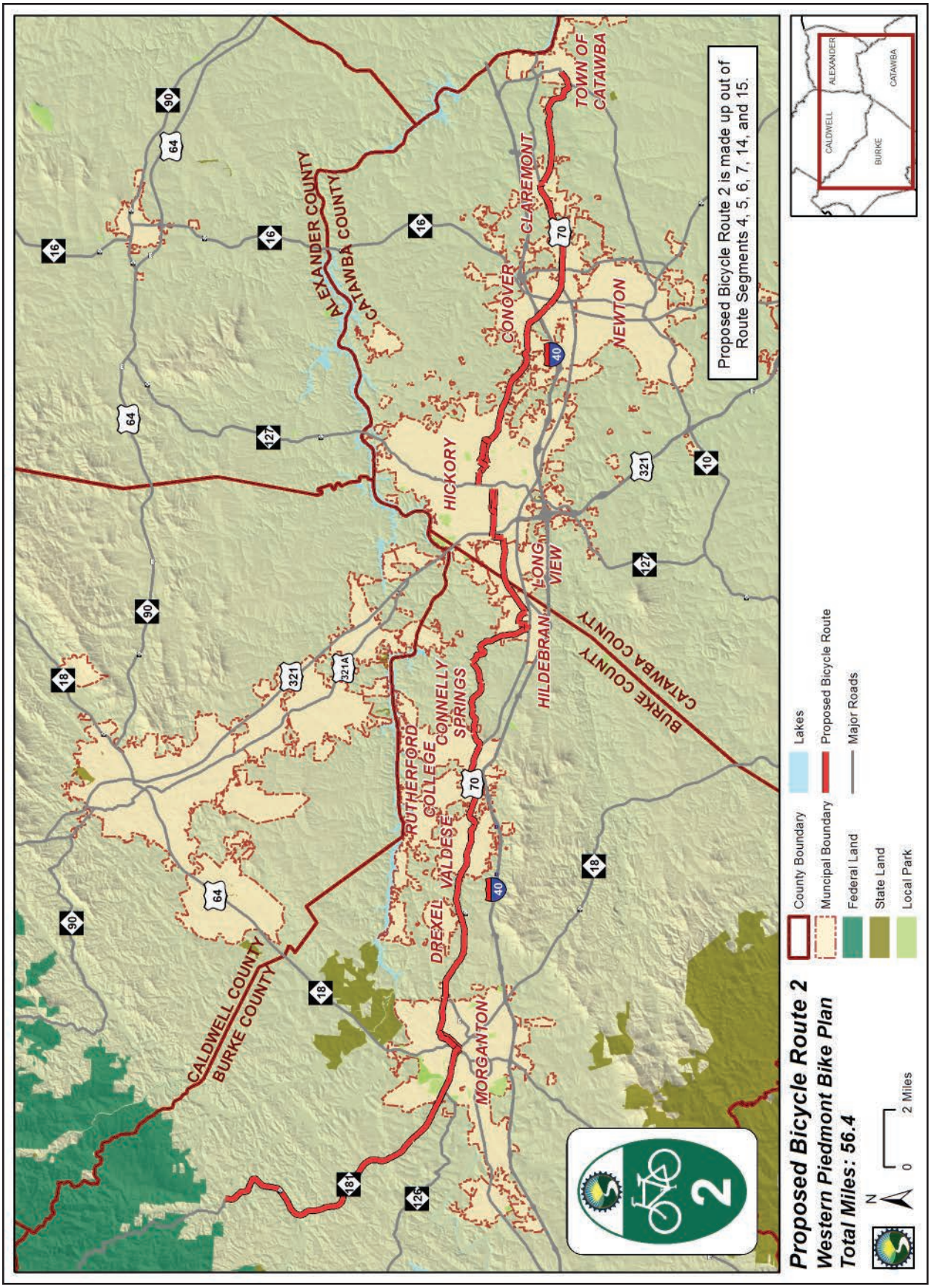

Figure G-4
Proposed Route 2 Road Improvements

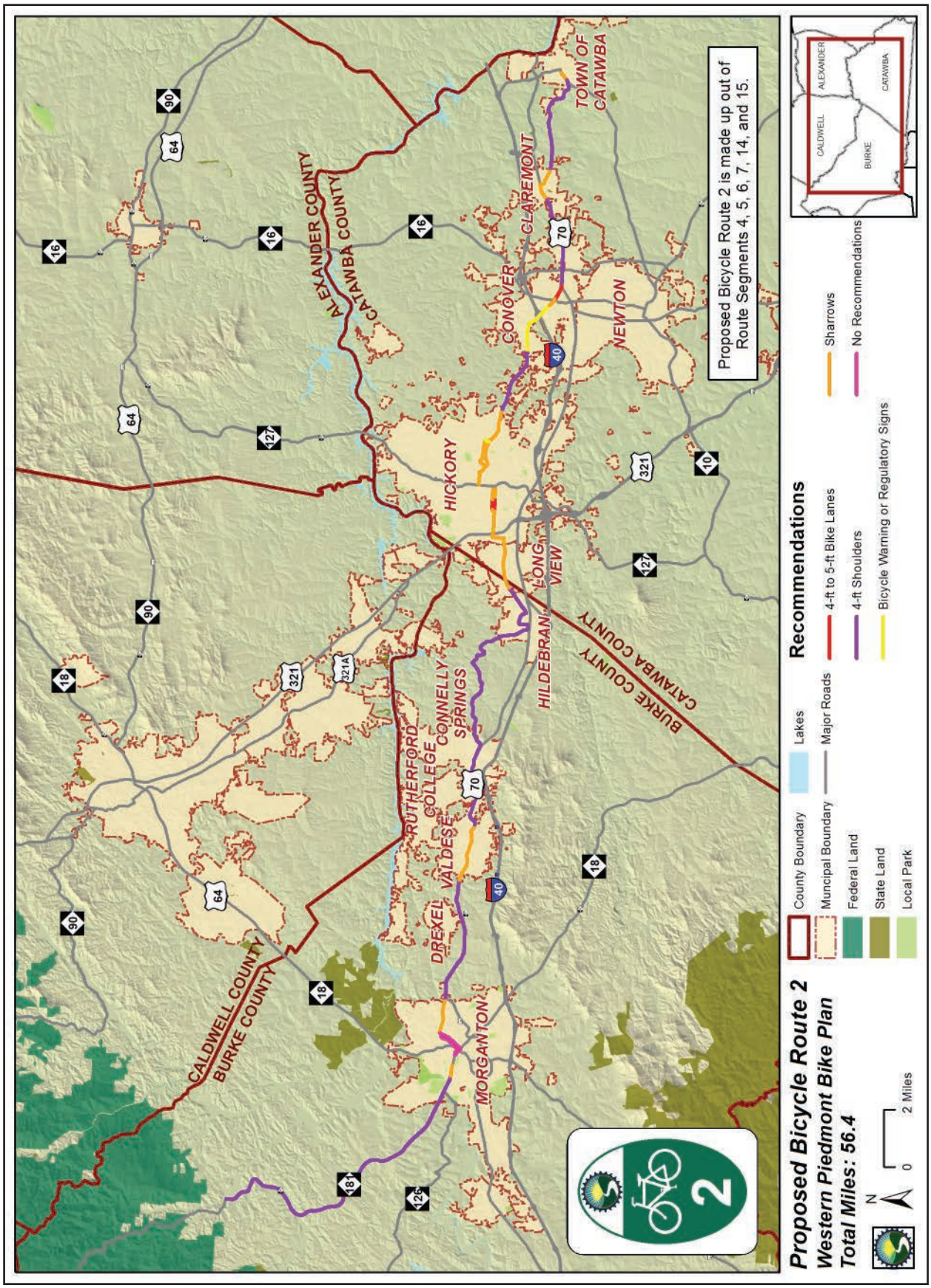

Figure G-5
Proposed Route 3

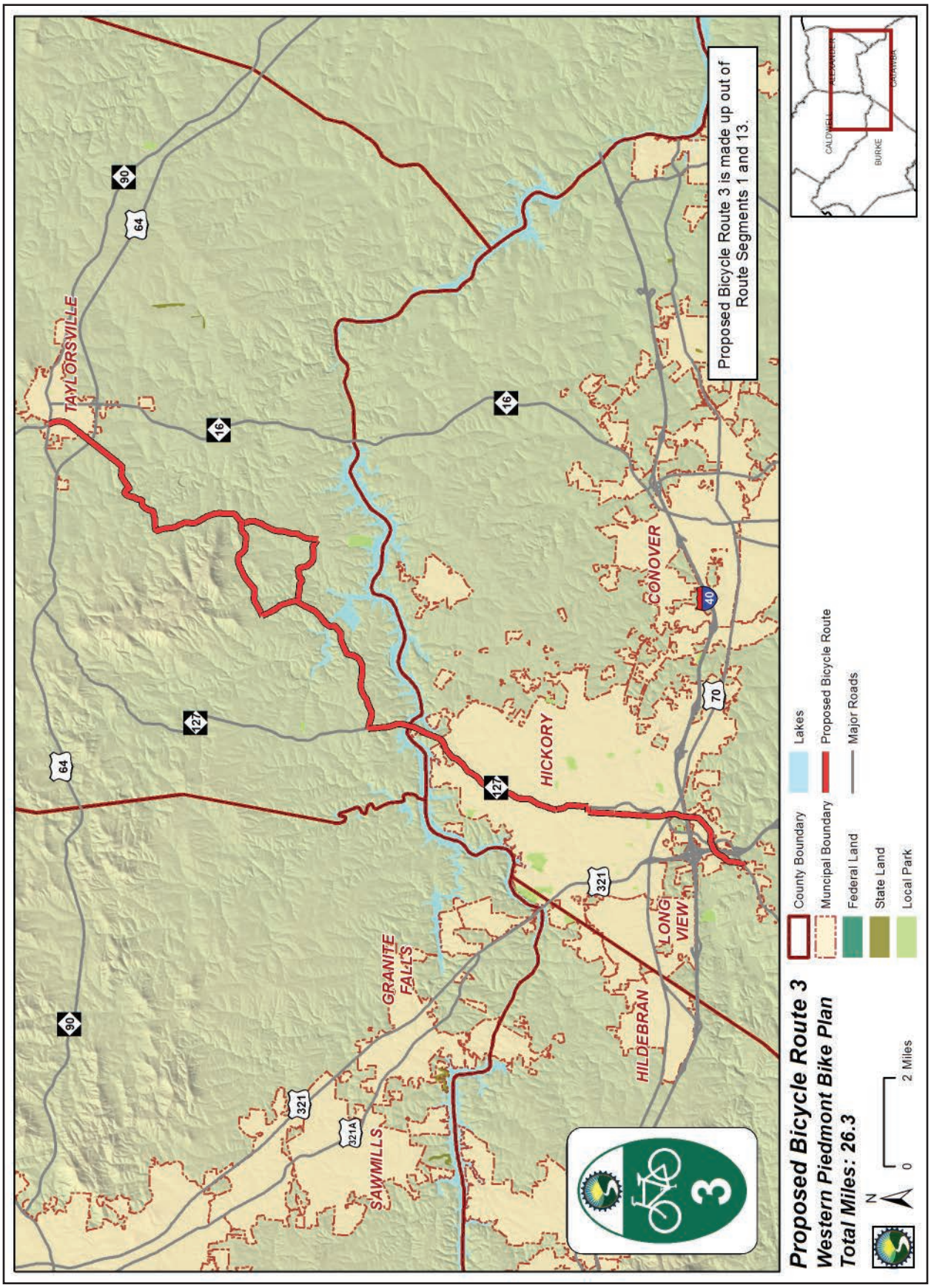

Figure G-6
Proposed Route 3 Road Improvements

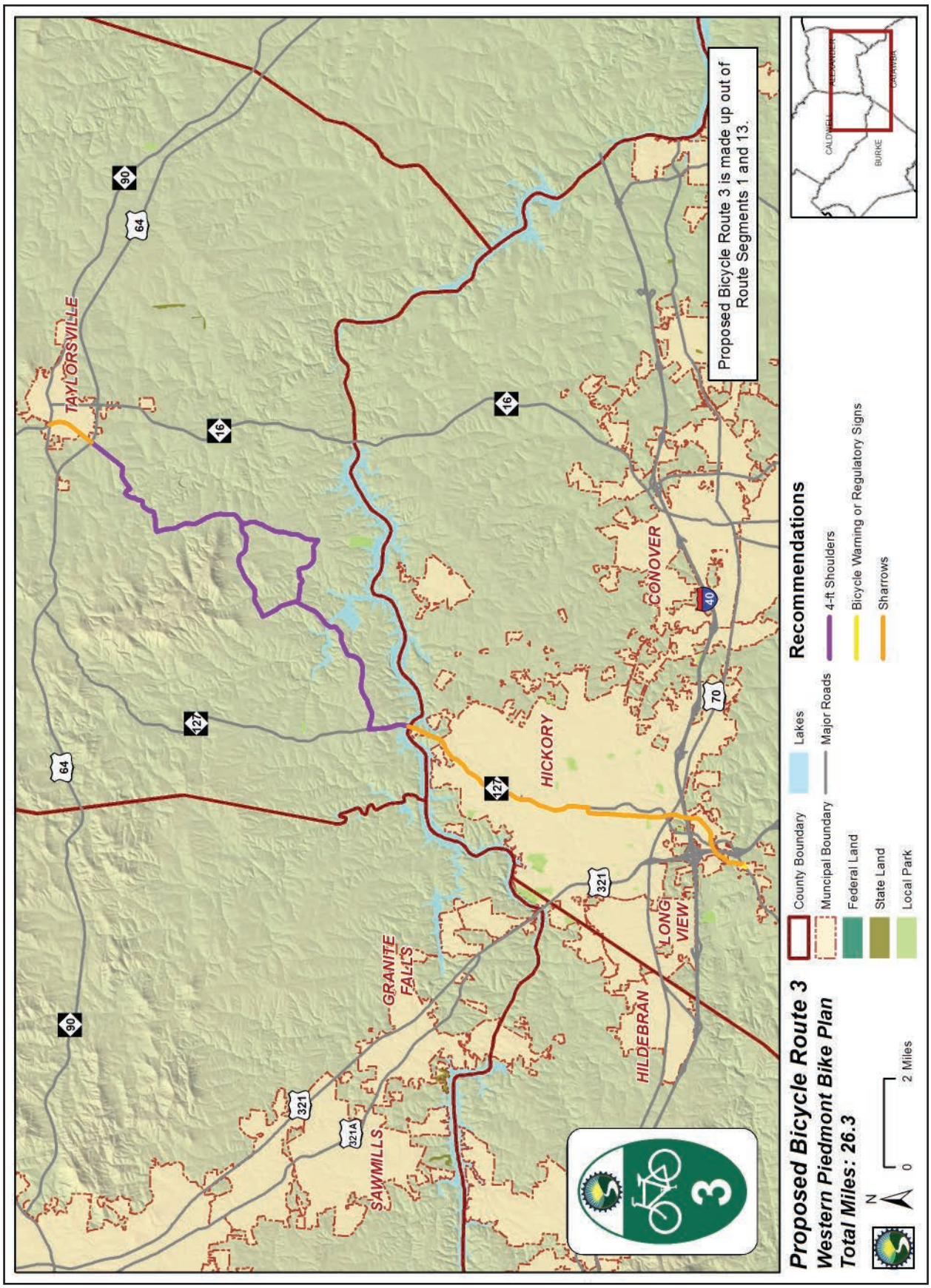

Figure G-7
Proposed Route 4

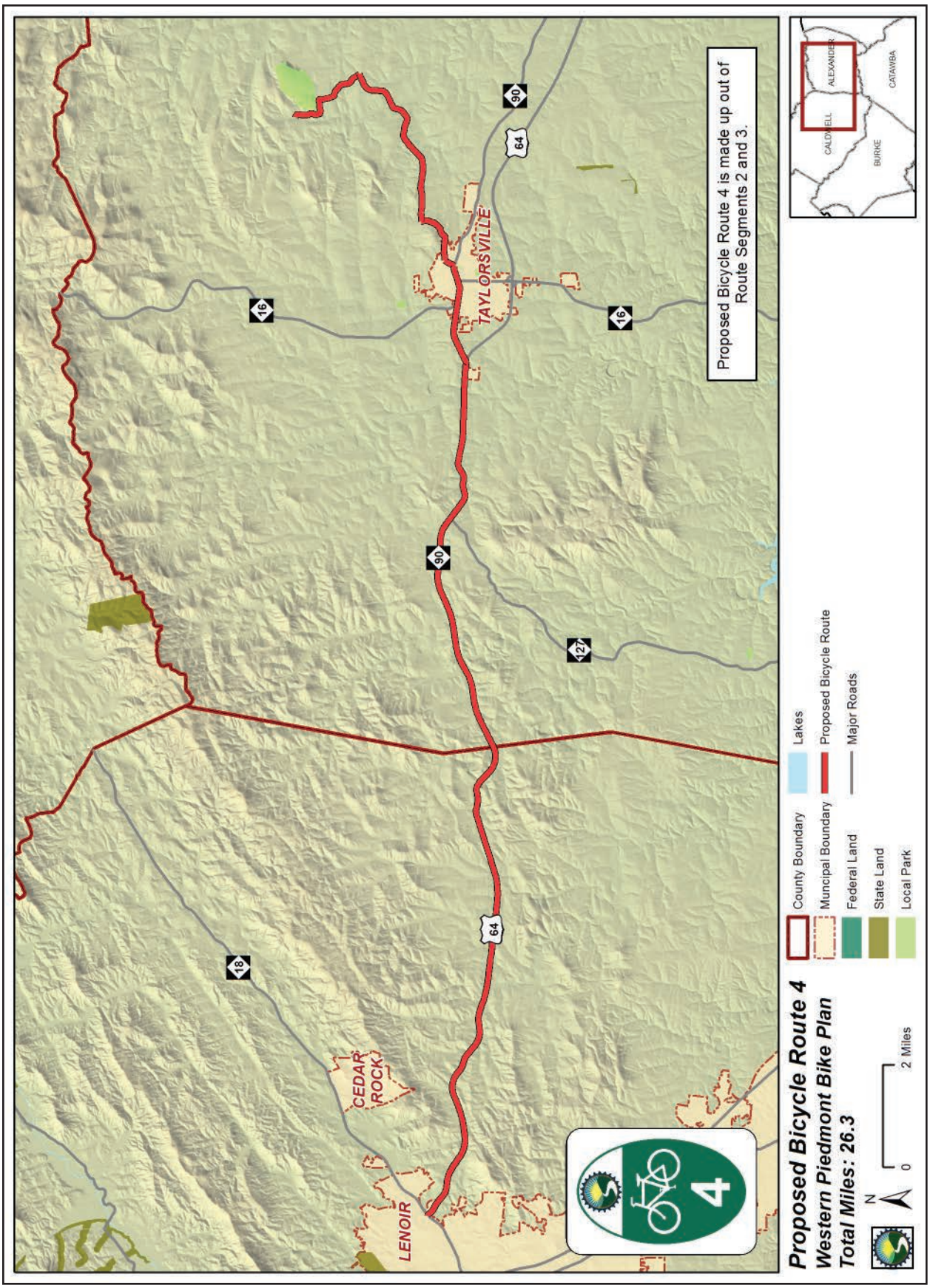

Figure G-8
Proposed Route 4 Road Improvements