



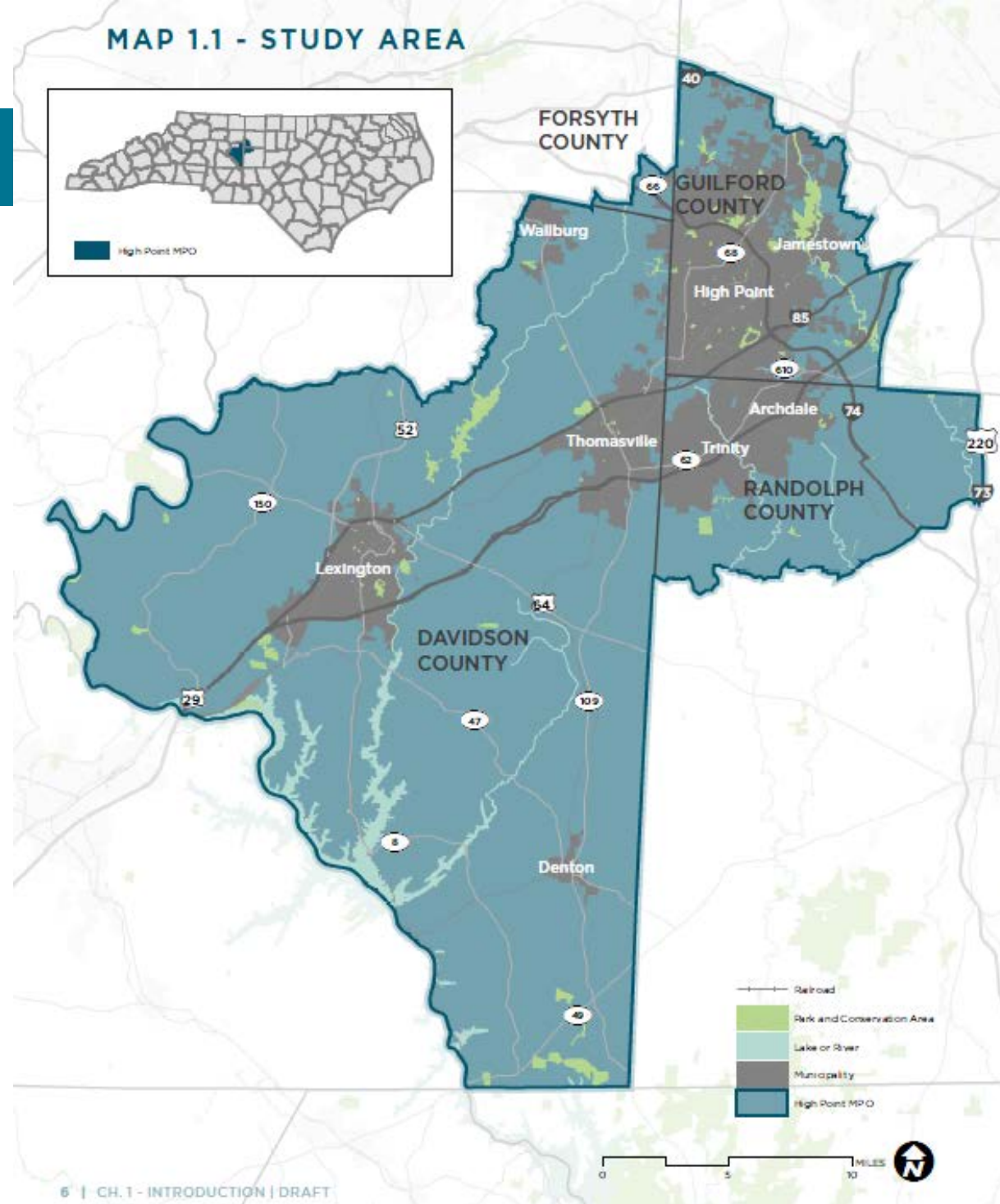
2019 NCAMPO Annual  
Transportation  
Conference  
April 25, 2019

# High Point MPO Regional Bicycle Planning and Implementation



# Overview

- HPMPO led the development of this bicycle plan, the first for this region as a whole.

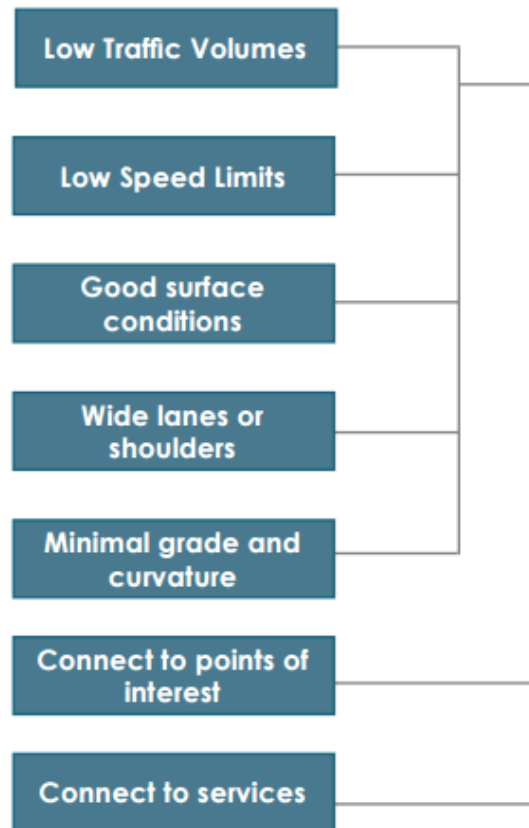


# Regional Bicycle Planning in NC:

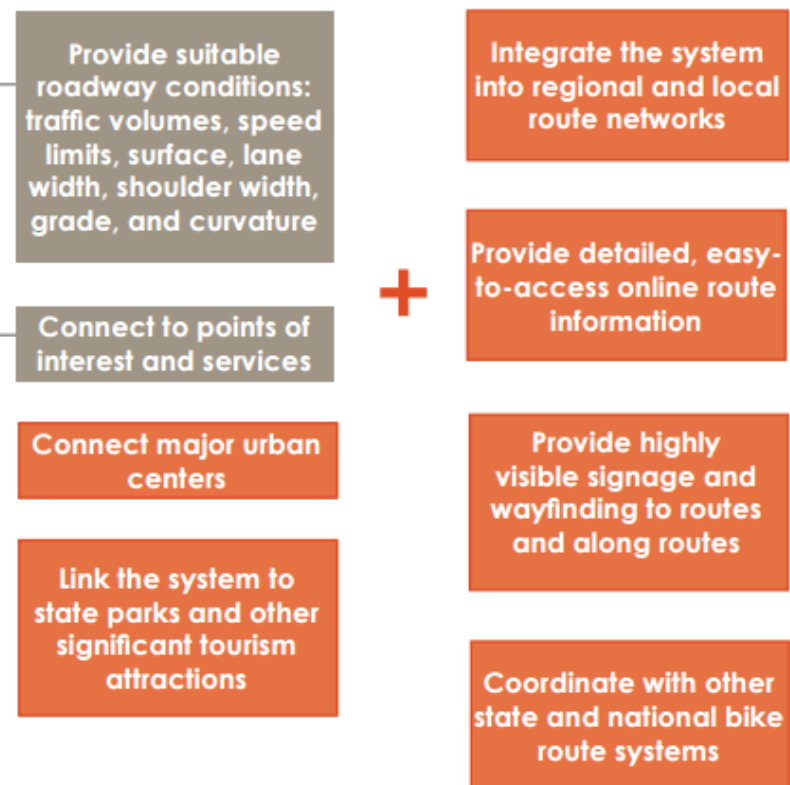
## *The State Bike Route System*



### 1975 System Goals



### 2013 System Goals



# Past Local/Regional Planning



MAP 2.4 - PAST PLANNING EFFORTS

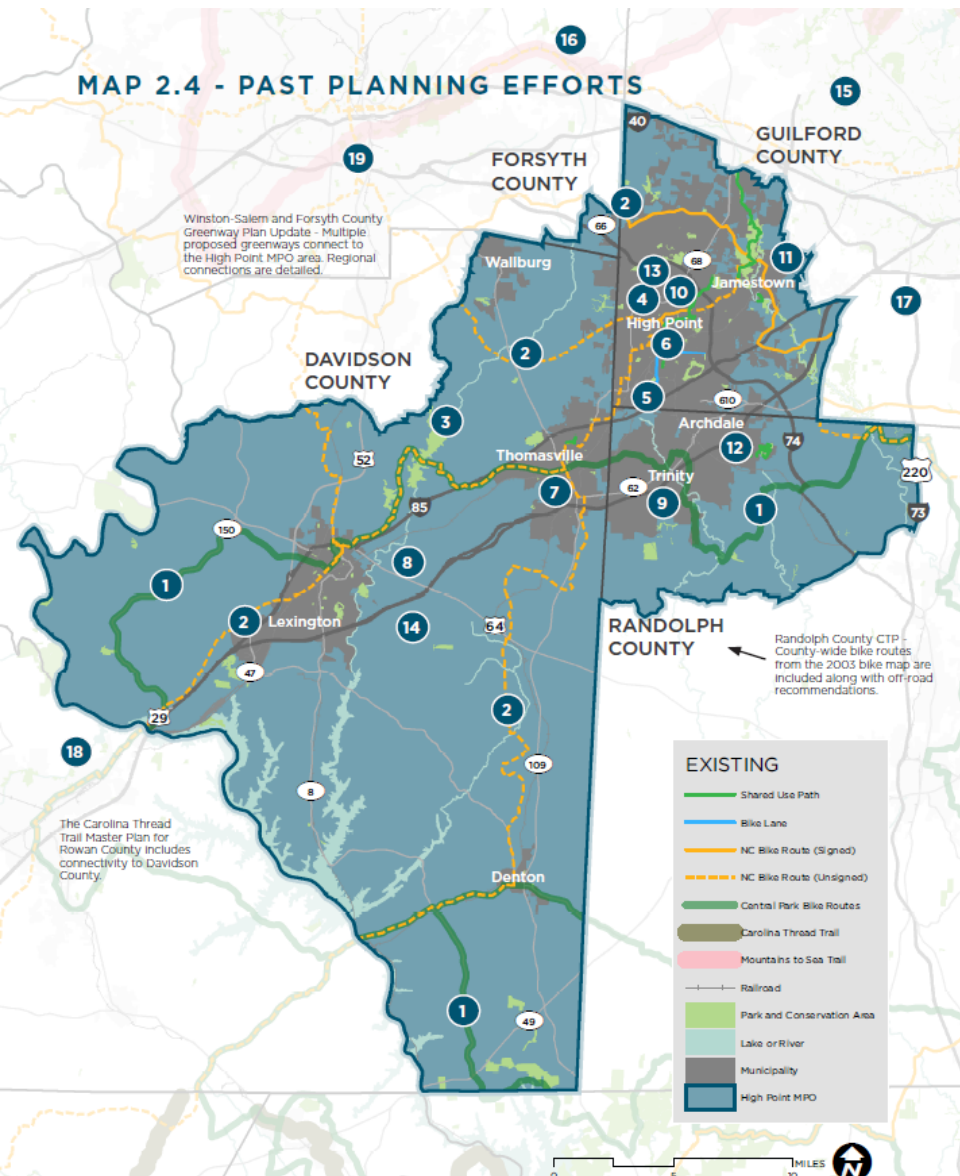


TABLE 2.4 - PAST PLANNING EFFORTS

ID # FROM MAP 2.4	EXISTING PLAN	KEY PROJECTS/RECOMMENDATIONS RELATED TO THE HIGH POINT REGIONAL BICYCLE PLAN
1	Central Park Regional Bicycle Plan	The overall recommended regional network includes four loop routes, two of which cross through the High Point MPO study area (North Uwharrie and Piedmont/Daniel Boone routes). Route segments are further broken down with specific facility recommendations.
2	WalkBikeNC	<b>NC 2 Mountains to Sea</b> - recommendations include adding a business route through Winston-Salem, High Point, and Greensboro to complement the existing rural route through this region. <b>NC 10 Triad-Charlotte</b> - provides a new route through both downtown Winston-Salem and downtown Greensboro, which funnel together to connect through the High Point MPO area to Charlotte.
3	Piedmont Triad Regional Trail Plan Inventory	Priorities detailed in/near the High Point MPO area include Abbotts Creek Greenway, the Bicentennial Greenway, and a High Point Connector (Abbotts Creek Greenway to the High Point SW Trail).
4	High Point Area Bicycle Map	Developed in 1998, eight bike routes are signed through High Point, connecting to Thomasville, Winston-Salem and the surrounding area.
5	High Point Southwest Greenway Feasibility Study	Five greenway segments that are each 1-2 miles in length are detailed through the southwest part of High Point.
6	High Point Downtown Multimodal Vision Plan	Priority project recommendations include bicycle, pedestrian, and greenway improvements to downtown corridors such as Elm St, Main St, the railroad corridor, Southwest High Point Greenway, and greenway connectivity through Oakwood Cemetery.
7	Thomasville Bicycle Plan	Key recommendations include four priority multi-use path projects in addition to 12 bike lane and sharrows projects.
8	Davidson County Greenway Master Plan	Primary greenway corridor recommendations include the Abbotts Creek and Yadkin river corridors. This plan also identifies secondary greenway corridors county-wide.
9	Trinity Parks and Recreation Plan	Appendix B in the Trinity Parks and Recreation Plan includes a proposed city-wide greenway network.
10	High Point Pedestrian Plan	Key recommendations relevant to bicycling include a city-wide greenway network, priority enhanced corridor projects that should incorporate bicycle facilities, limited access highway crossings, and transit amenities.
11	Jamestown Pedestrian Plan	Priority recommended multi-use paths include the Deep River Trail, City Lake/Penny Road Connector, Rail with Trail from Main Street to Guilford College Road, and the Gibson Park neighborhood connector.
12	Archdale Pedestrian & Trails Plan	Priority recommended shared use paths include a loop around Archdale with connectivity to Creekside Park, High Point, and Trinity.
13	High Point MPO CTP	Includes on-road and off-road recommendations for the urban area including High Point, Thomasville, Trinity, Archdale, and Jamestown; recommendations incorporated from the High Point Bikeway, Greenway, and Trails Master Plan.
14	Davidson County CTP	Recommendations include greenway recommendations from county-wide greenway plan as well as bike routes throughout county.
15	Greensboro Bicycle, Pedestrian, and Greenways Master Plan	Priority bicycle and greenway recommendations are focused in the downtown area, but numerous longer-term recommendations connect toward the High Point MPO area. Two priority projects connect near the High Point MPO area, including a protected bike lane along Grandover Parkway and the Reedy Fork Greenway (part of the Piedmont Greenway).
16	Piedmont Greenway Triad Park/Reedy Fork Section Feasibility Study	This feasibility study details three phases of the Piedmont Greenway that will eventually link Winston-Salem to Greensboro.
17	Pleasant Garden Bicycle and Pedestrian Plan	Key recommendations include paved shoulder and greenway connectivity toward the HPMPO area.
18	Spencer and East Spencer Bicycle and Pedestrian Master Plan	Bicycle lanes are recommended along US 29, linking East Spencer to the Yadkin River and Davidson County.
19	Winston-Salem Urban Area Bike Plan (currently being updated)	Recommendations from the 2005 plan include 28 segments throughout the city that are designated as high priority. Multiple connections to the High Point MPO area are included in the comprehensive network.



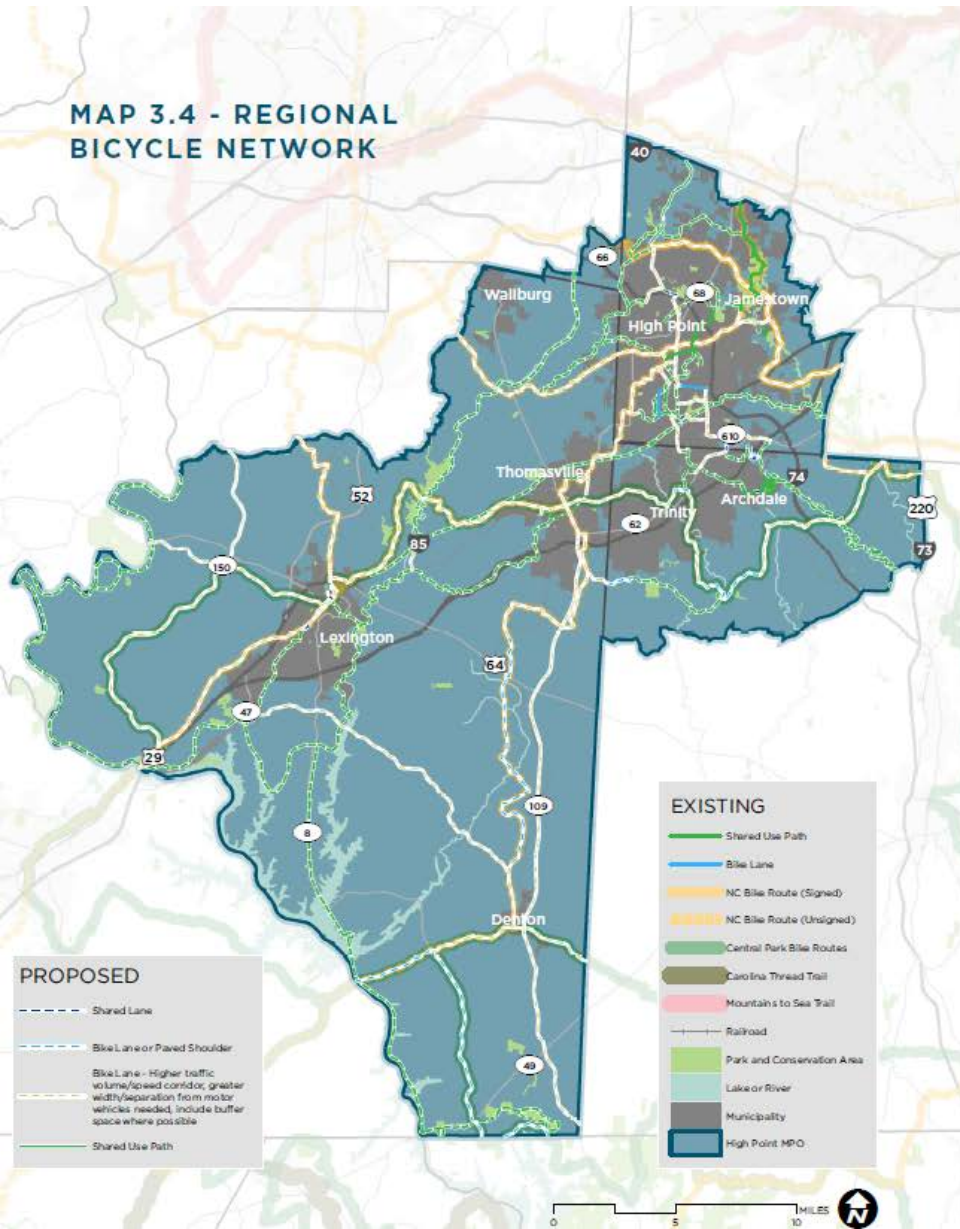


## CONCEPT MAP

-  Municipalities
-  Parks & Natural Areas
-  Conceptual Corridors

# Regional Network

**MAP 3.4 - REGIONAL BICYCLE NETWORK**



**MAP SET 3.5 - REGIONAL BICYCLE NETWORK: URBAN AREAS**

## ABOUT THIS MAP:

This map shows the complete comprehensive network of potential bikeway and greenway opportunities throughout the region. It is not expected that all of these projects will be built. They are still an important part of this plan though, as they show what the potential is for any given future roadway resurfacing or construction that may provide an opportunity for incorporating a recommended greenway or bikeway facility. See chapters five and six for related policy and implementation considerations, including how these long-term network maps should be referenced during regular roadway design and development processes.

### HIGH POINT



### THOMASVILLE



### LEXINGTON



### ARCHDALE





# Physical Separation

What is the likelihood that the following types of bicycling facilities would influence you to bike more often? (% responding "very likely" shown below)



Separated bike lanes  
(physically separated from traffic)



Greenways



Buffered bike lanes



Intersection improvements for  
bicyclists



Striped bike lanes



Shared-use paths



Paved shoulders

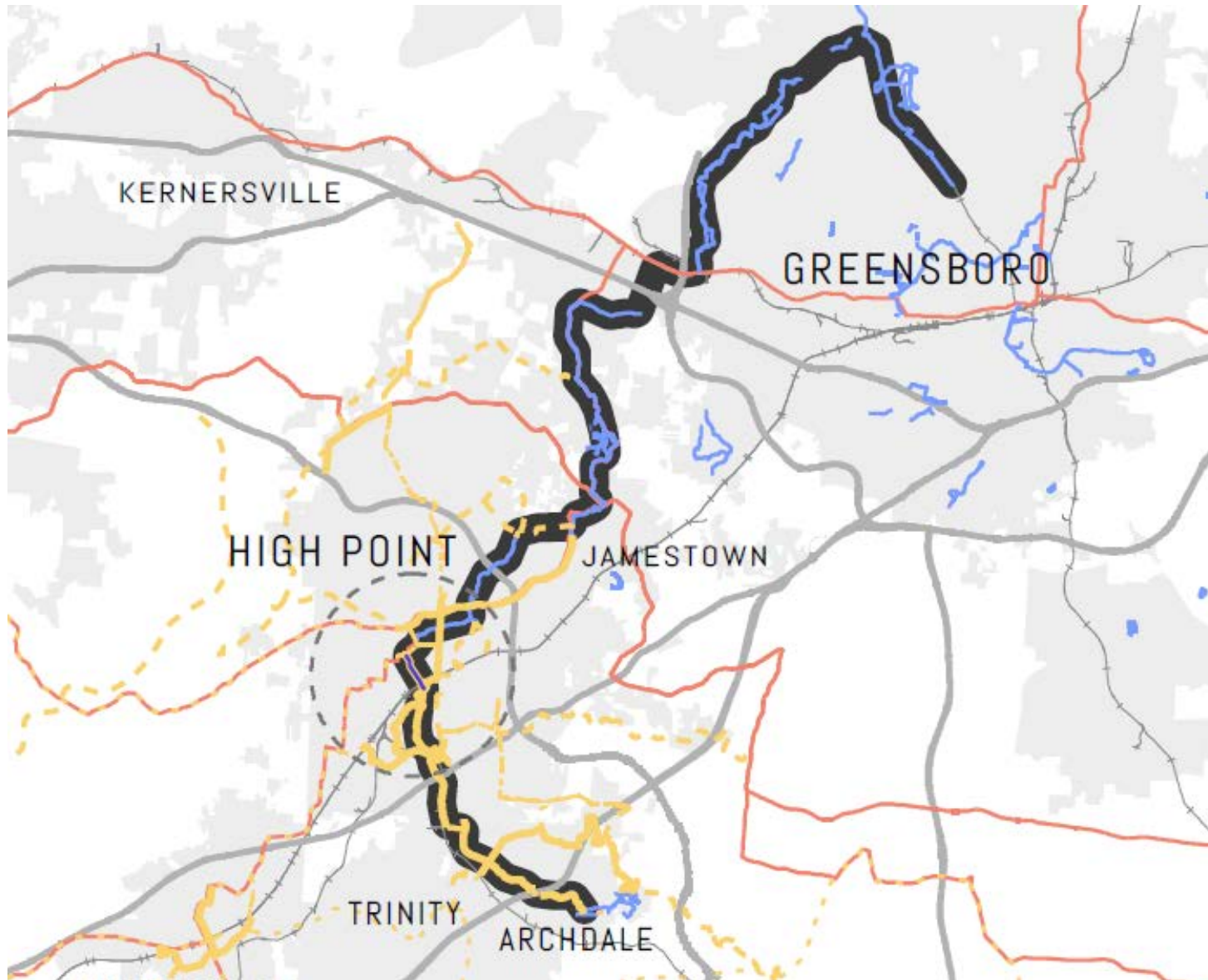


Bike parking



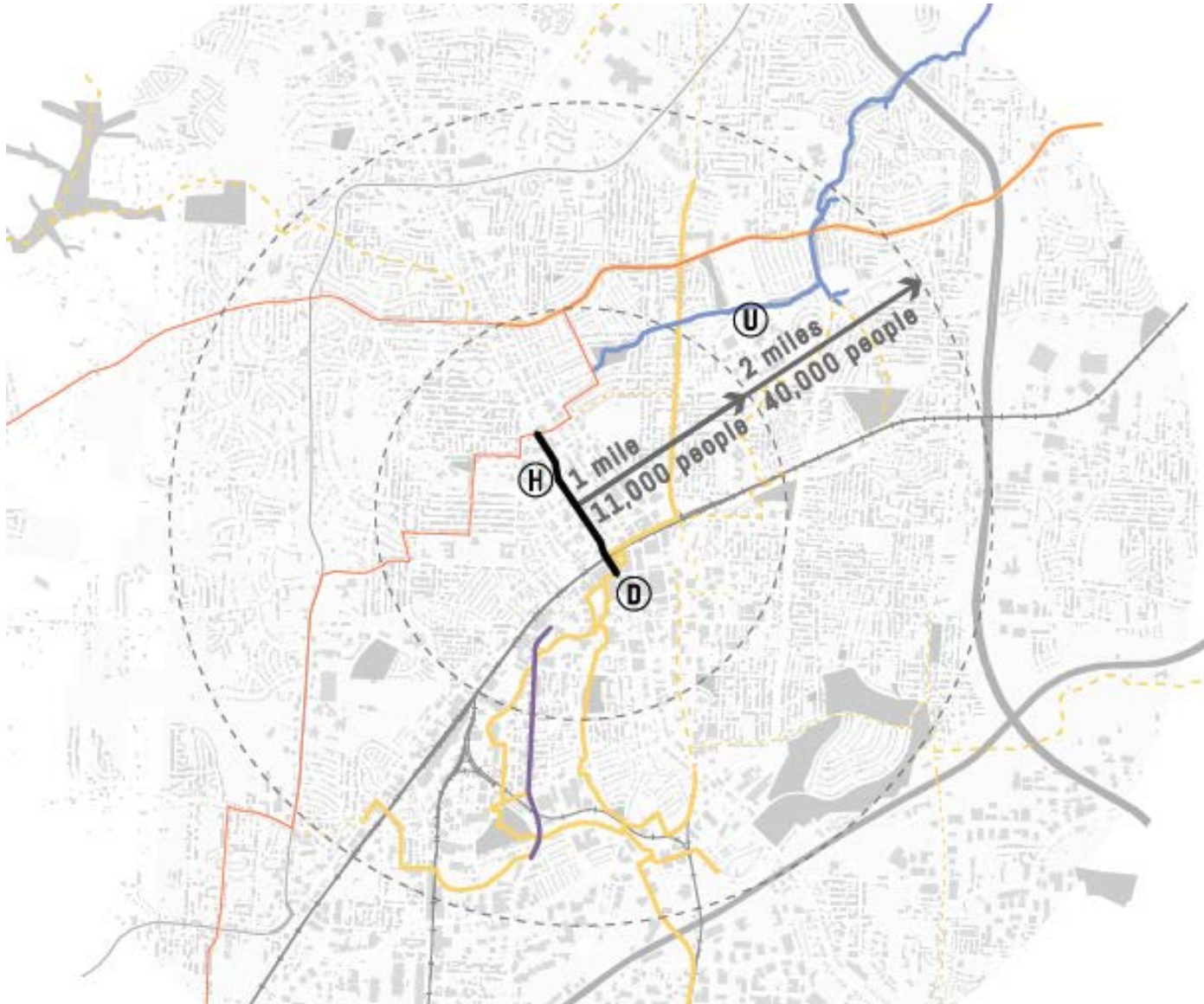
Directional and wayfinding  
signage for bicyclists

# Greensboro to Archdale





# Downtown High Point Connectivity

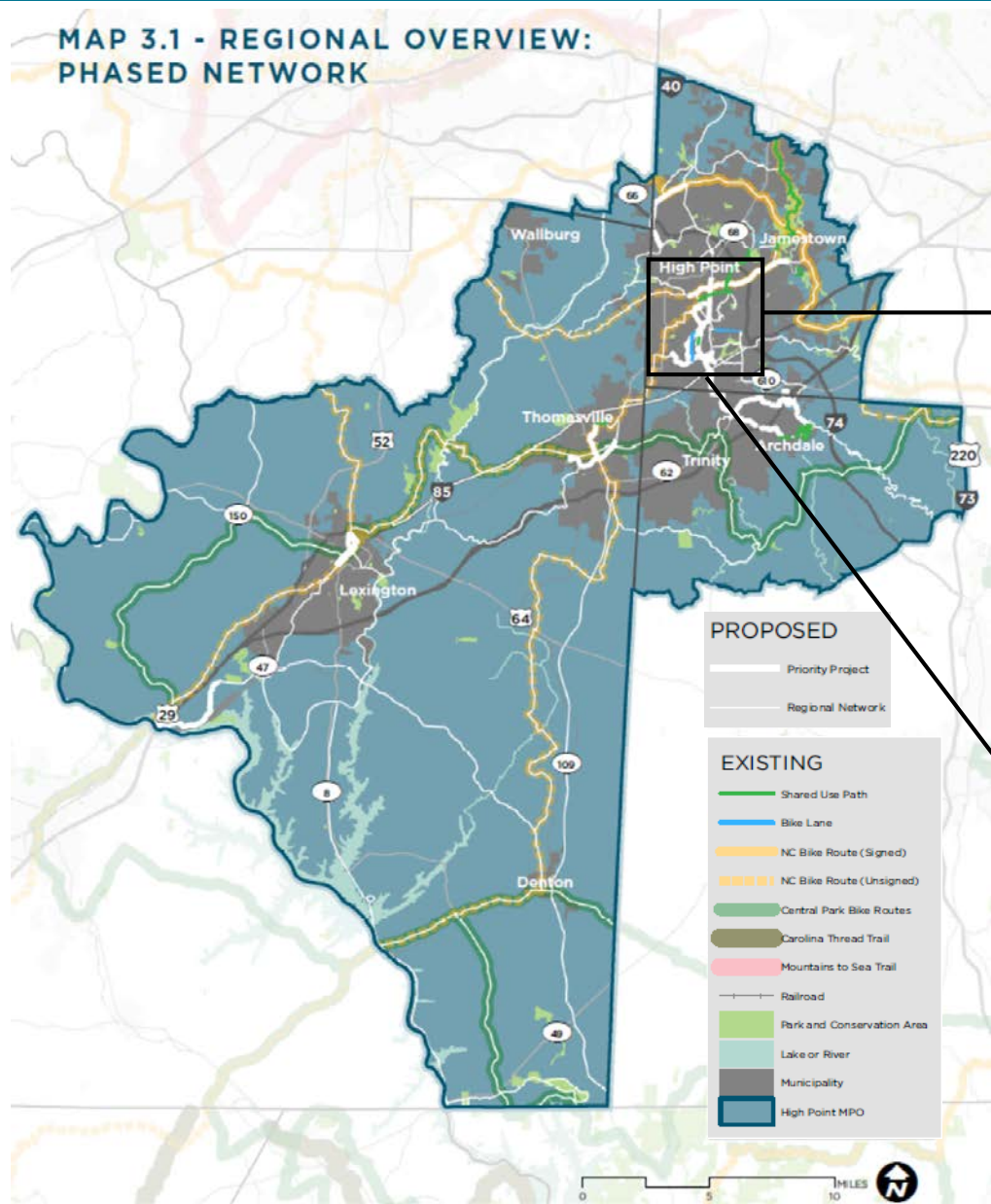




# Priority Projects



MAP 3.1 - REGIONAL OVERVIEW:  
PHASED NETWORK



HIGH POINT







# Implementation Strategy

**Restriping projects**

**Redevelopment  
opportunities**

**TIP projects**

**Capital Improvement  
projects**

**Projects that require  
further studies**



# Centennial Street



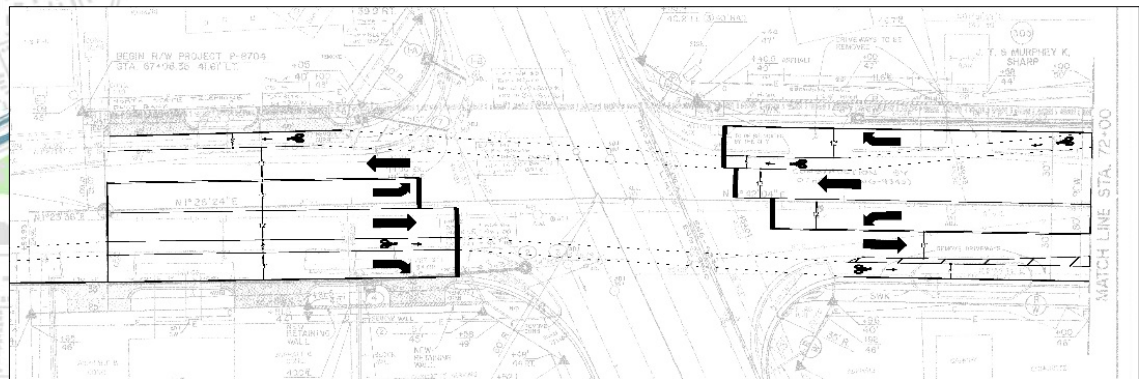




# Centennial Street



- Proposed buffered bike lanes connect:
- Downtown High Point
  - High Point University
  - High Point Greenway
  - Schools, businesses, and residential areas along the corridor







# Elm Street



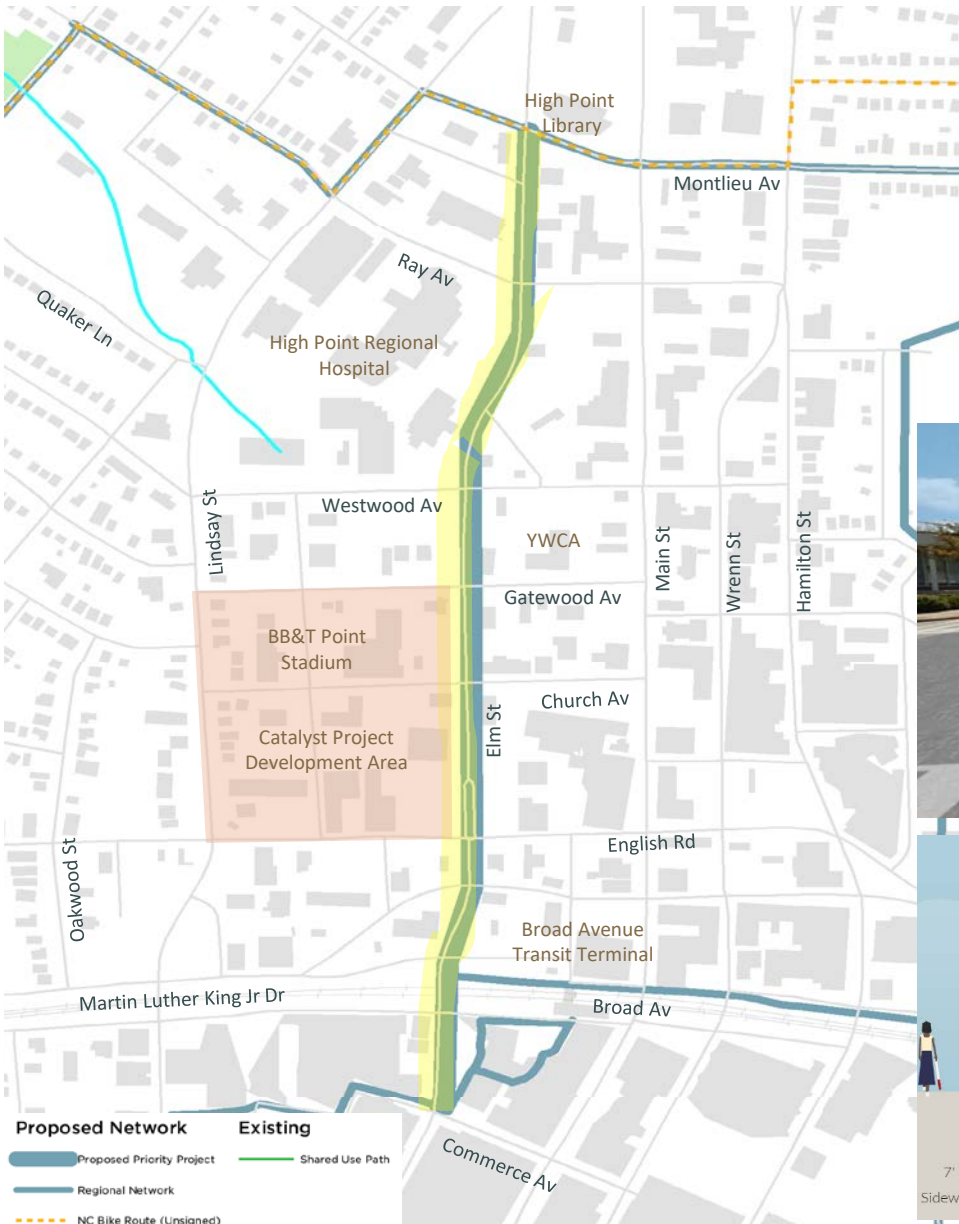


# Elm Street



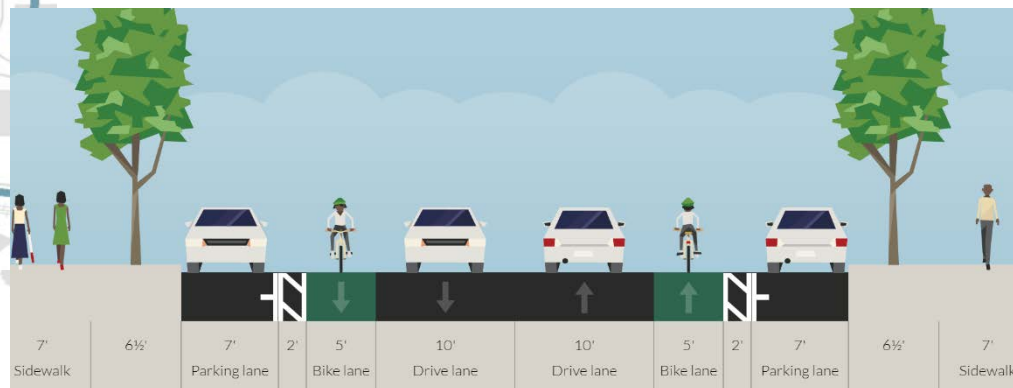


# Elm Street



Project connects:

- Catalyst Development
- Downtown
- Transit Terminal and Amtrak
- Proposed Southwest High Point Greenway
- High Point Regional Hospital
- High Point Library





# Multi-jurisdictional Coordination



## HIGH POINT/ARCHDALE SURRETT DRIVE COMPLETE STREET

**FROM:**  
Eden Terrace

**TO:**  
Market Center Drive

**LENGTH:**  
1.5 Miles

### NOTES:

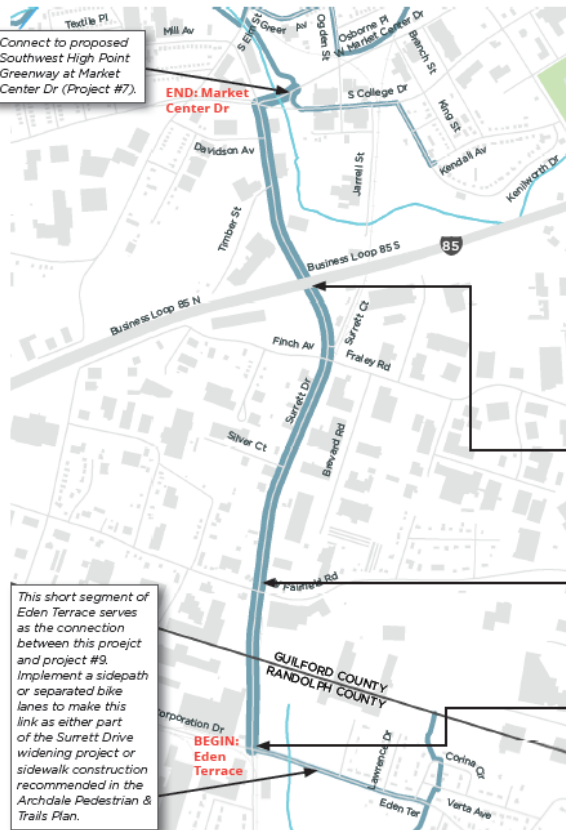
Surrett Dr, from Eden Terrace to Market Center Dr, varies between two and three lanes with 24'-42" pavement width (and 50'-66" ROW). Physical separation from automobile traffic is recommended<sup>1</sup> due to traffic volumes that are between 8,200 and 13,000 AADT with a 35 mph speed limit. This corridor links the proposed SW High Point Greenway (project #7) to Archdale (Eden Terrace to project #9), providing a key regional link.

In SPOT 5.0, Surrett Dr from Eden Terrace to Market Center Dr, is proposed to be widened. Separated bicycle facilities should be incorporated into the design of the Surrett Dr roadway widening project.

Existing bridge over Business I-85 has limited space on the north side due to left turn lane for the west bound Business I-85 ramp.

Space along the east side of Surrett Dr south of I-85 Business is constrained by the existing railroad tracks.

Connect to the proposed Archdale Loop Trail (project #9) here at Eden Terrace.



### Proposed Network

### Existing

- Proposed Priority Project
- Bike Lane
- Regional Network

0 0.25 0.5 MILES

<sup>1</sup> Further information on physically separated bike lanes can be found in Appendix A: Design Guidelines.

### TRIP GENERATORS:

- Proposed High Point and Archdale greenway systems
- Multiple businesses along corridor
- Multiple neighborhoods

### SUPPORT IN OTHER PLANS:

- Archdale Pedestrian and Trails Plan (2018)
- High Point Pedestrian Plan (2017)

### POTENTIAL ROW NEEDS:

- ROW acquisition needed for most of the corridor

### JURISDICTIONS:

- City of Archdale
- City of High Point

### POTENTIAL PARTNERSHIPS:

- City of High Point
- City of Archdale
- NCDOT
- Norfolk Southern
- Businesses along the corridor

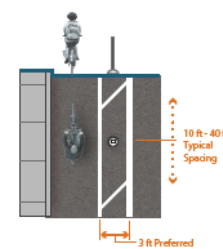
### ESTIMATED CONSTRUCTION COSTS:

- TBD

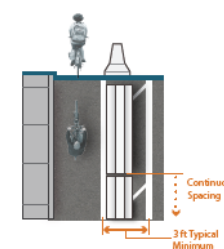
### DESIGN OPTIONS AND CONSIDERATIONS:

When incorporating separated bike lanes into roadway design, a one-way street-level design may be most appropriate. This design provides protection through physical barriers and can include flexible delineators, curbs, on-street parking or other barriers. For further design guidance and considerations for separated bike lanes, see the Design Guidelines Appendix.

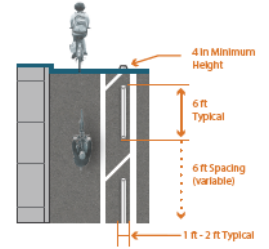
#### DELINEATOR POSTS



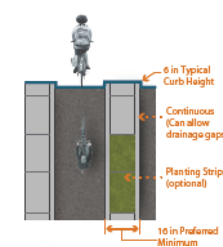
#### CONCRETE BARRIER



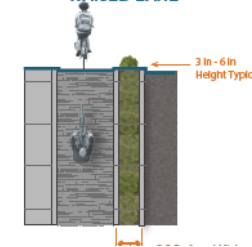
#### PARKING STOPS



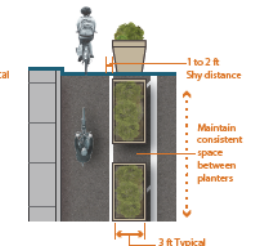
#### RAISED MEDIA



#### RAISED LANE



#### PLANTERS



# Multi-jurisdictional Coordination



## HIGH POINT/JAMESTOWN LEXINGTON AVENUE COMPLETE STREET

**FROM:**  
N Main Street

**TO:**  
High Point City Lake Park

**LENGTH:**  
4.4 Miles

### NOTES:



### Proposed Network

- Proposed Priority Project
- Regional Network
- NC Bike Route (Signed)
- NC Bike Route (Unsigned)

### Existing

- Shared Use Path
- Bike Lane

0 0.5 1 MILES

East of I-74, Lexington Ave turns into Greensboro Road, which connects directly into High Point City Lake Park and Jamestown. This section is predominantly a three-lane road with 30'-31' pavement width (and 60'-100' ROW). Physical separation is recommended<sup>1</sup> due to traffic volumes that are 15,000 AADT with a 35 mph speed limit.

The Jamestown Bypass, when complete, will likely lower traffic volumes along this section of Greensboro Rd, which is an opportunity to improve bicycle connectivity along this corridor. This section should be further studied to incorporate separated bicycle facilities and complete street elements as part of any future corridor investments.

Lexington Ave from Main St to I-74, aside from the section near High Point University, is predominantly a two-lane road with 30' pavement width (and 50'-60' ROW). Physical separation from automobile traffic is recommended<sup>1</sup> due to traffic volumes that are between 8,000 and 14,000 AADT with a 35 mph speed limit.

In SPOT 5.0, Lexington Ave from Main St to I-74, is proposed to be widened. This will connect directly to the Jamestown Bypass project that will be constructed from the I-74/Lexington Ave/Greensboro Rd interchange along the south side of Jamestown.

Separated bicycle facilities should be incorporated into the design of the Lexington Ave roadway widening project.<sup>1</sup>

<sup>1</sup> Further information on physically separated bike lanes can be found in Appendix A: Design Resources

<sup>2</sup> Further information on protected intersections can be found in Appendix A: Design Guidelines

### TRIP GENERATORS:

- High Point University
- High Point City Lake Park
- Downtown High Point
- Downtown Jamestown
- Piedmont Environmental Center
- High Point Greenway
- Multiple businesses along corridor
- Multiple neighborhoods
- Multiple schools

### SUPPORT IN OTHER PLANS:

- Walk/Bike NC (2013)
- High Point Pedestrian Plan (2017)

### POTENTIAL ROW NEEDS:

- ROW needed for most of the corridor, especially west of I-74

### JURISDICTIONS:

- City of High Point
- Town of Jamestown

### POTENTIAL PARTNERSHIPS:

- NCDOT
- City of High Point
- Town of Jamestown
- High Point University
- Businesses along the corridor
- Neighborhood associations

### ESTIMATED CONSTRUCTION COSTS:

- TBD

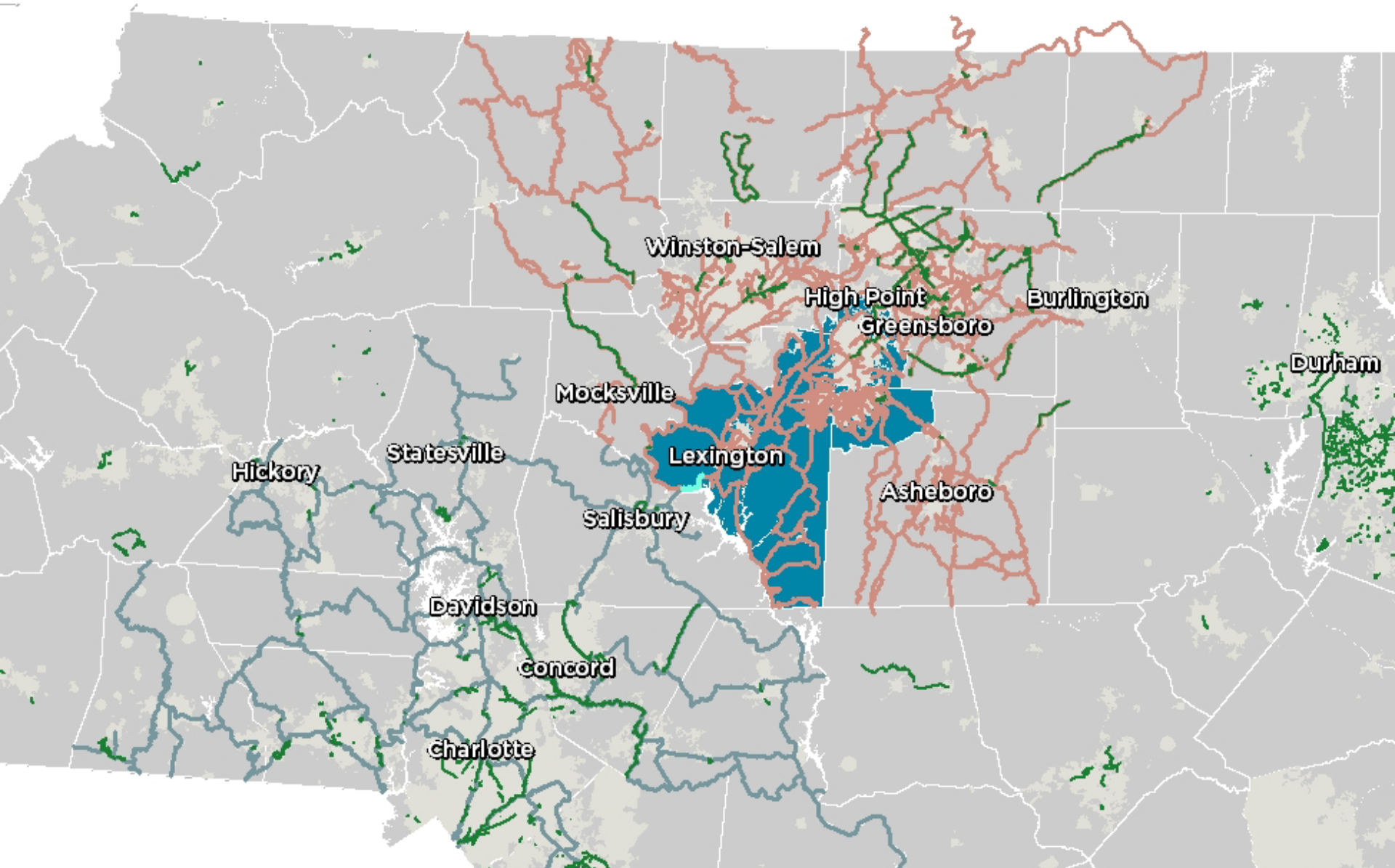
### DESIGN OPTIONS AND CONSIDERATIONS:

As a key part of this project (and project #3), a protected intersection is recommended at the Lexington Ave/Centennial St intersection. A protected intersection uses a collection of intersection design elements designed to maximize user comfort within the intersection and promote a high rate of yielding to through bicyclists. The design is based on a setback bikeway crossing using physical separation within the intersection to define the turning paths of motor vehicles, slow motor-vehicle turning speed, and offer a comfortable refuge for bicyclists waiting within the intersection at a red signal. For further design guidance and considerations for separated bike lanes and intersections, see the Design Guidelines Appendix.





# Carolina Thread Trail/Piedmont Legacy Trail Connectivity





# Wil-Cox Bridge



**Carolina Thread  
Trail/Piedmont  
Legacy Trail Link!!**



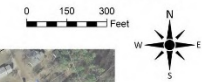
# Carolina Thread Trail/Piedmont Legacy Trail Connectivity



## Wil-Cox Bridge Recreation Area | Conceptual Site Plan

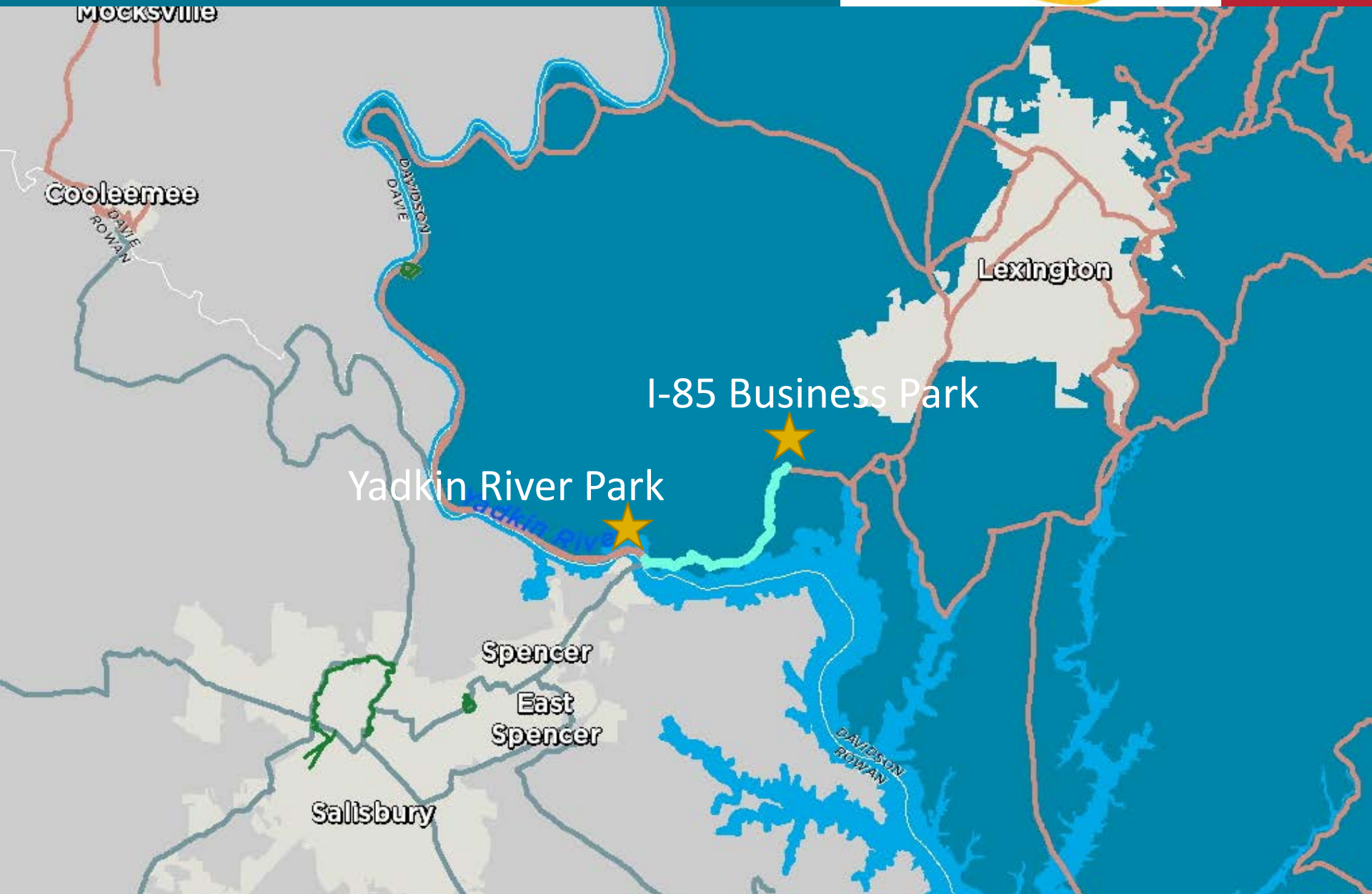
Davidson County, NC

Davidson County | 01.12.2017





# Carolina Thread Trail/Piedmont Legacy Trail Connectivity





# Business Park to Yadkin River Park Greenway

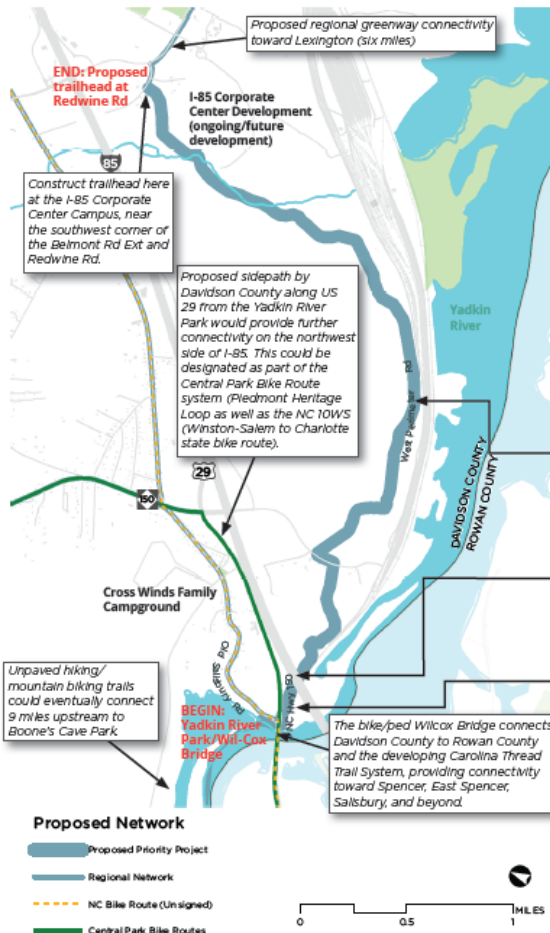


## DAVIDSON COUNTY YADKIN RIVER TO BUSINESS PARK GREENWAY

**FROM:**  
Yadkin River Park

**TO:**  
I-85 Corporate Center

**LENGTH:**  
4.2 Miles



### NOTES:

The Yadkin River Access, Wil-Cox bike/ped bridge, Fort York Historic Site, existing natural surface trails, miles of Yadkin River frontage open space and future park development, combined with the I-85 Corporate Center Development (over \$700 million in investments) just a few miles away, together provide a significant opportunity to build a greenway trail spine between the two sites. Combined with the existing Wil-Cox bike/ped bridge, developing bike/ped links to Spencer, East Spencer, and Salisbury, this project will be a foundational element for regional connectivity by connecting the developing Carolina Thread Trail and Piedmont Legacy Trail systems as well as the Central Park Bike Route system and NC State Bike Route system.

Construct greenway from the Yadkin River Park Access/Wil-Cox Bridge to the developing I-85 Corporate Center. The alignment should stay on the north side of the railroad tracks. The final alignment will depend on negotiations with local property owners and/or future development.

The greenway will need to utilize railroad ROW to cross under the I-85 bridge here; coordination needed with North Carolina Railroad.

After crossing under the Wil-Cox Bridge and US 29, the greenway will need to traverse a relatively steep section between US 29 and the railroad tracks. If steps are needed for this section, include a bicycle railing so that bicyclists can more easily move up and down the stairs with their bicycles.

### TRIP GENERATORS:

- Yadkin River Park
- I-85 Corporate Center
- Cross Winds Family Campground

### SUPPORT IN OTHER PLANS:

- Davidson County Parks & Recreation Master Plan Update (2018)
- Davidson County CTP (2011)

### POTENTIAL ROW NEEDS:

- ROW needed for most of the corridor between the Yadkin River Park and I-85 Corporate Center

### JURISDICTIONS:

- Davidson County

### POTENTIAL PARTNERSHIPS:

- Davidson County
- NCDOT
- North Carolina Railroad Company
- Egger Wood Products
- Roadies and Dirties Cycling Club

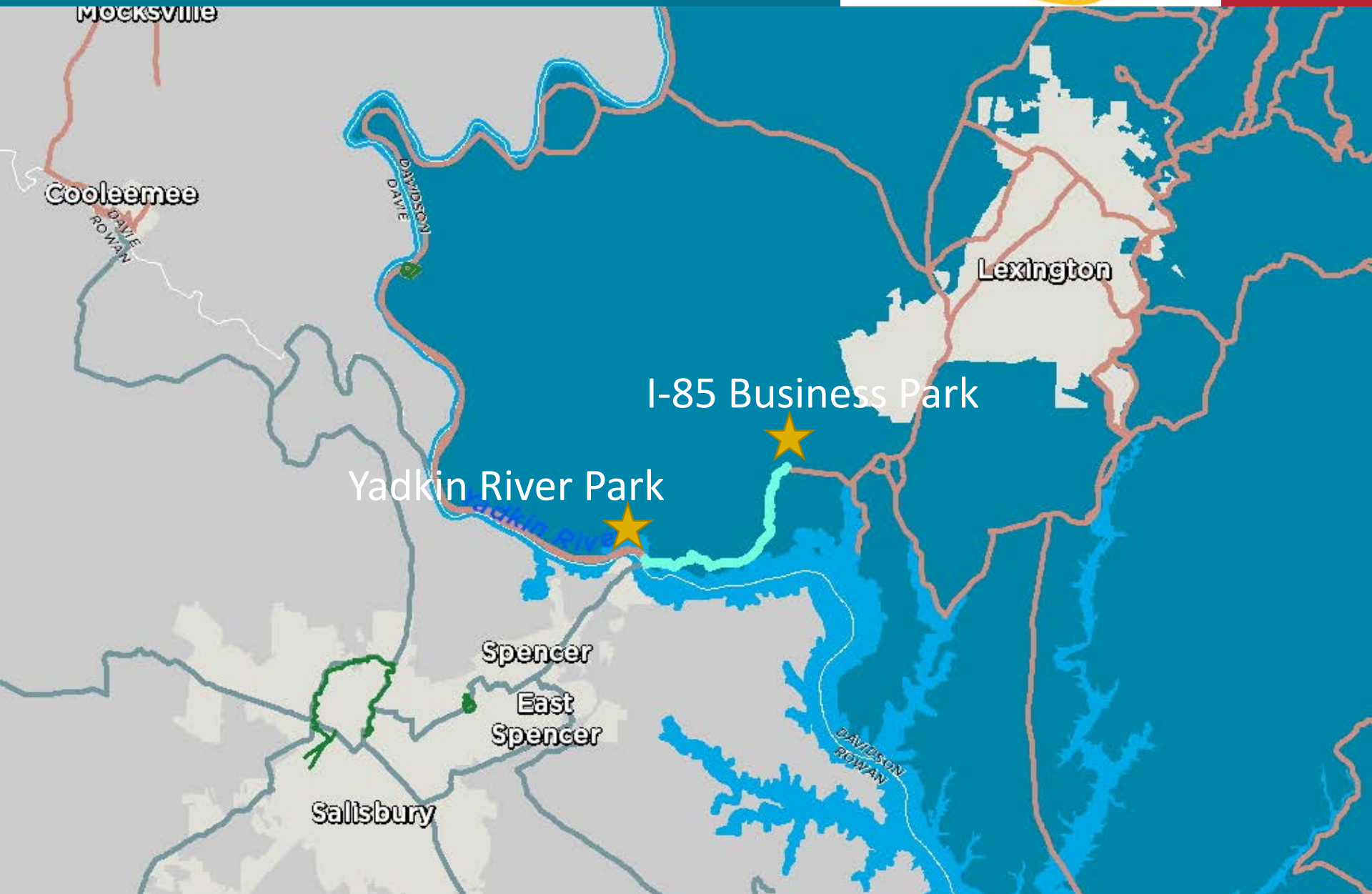
### ESTIMATED CONSTRUCTION COSTS:

- TBD

### DESIGN OPTIONS AND CONSIDERATIONS:



# Carolina Thread Trail/Piedmont Legacy Trail Connectivity





# Downtown Bicycle Circulation

## LEXINGTON DOWNTOWN LOOP

**FROM:** Winston Road  
**TO:** W 9th Avenue

**LENGTH:**  
4 Miles

### NOTES:

From State St heading north to Winston Rd, W MLK Jr Blvd is predominantly two lanes (and a one way street) with 33'-36' pavement width. Physical separation from automobile traffic is recommended<sup>1</sup> due to traffic volumes that are between 4,700 and 7,500 AADT with a 35 mph speed limit. This would entail reconfiguring the road dimensions to two 12' travel lanes and a 6'-7' bike lane with a 2'-5' buffer between the bike lane and automobile traffic. This could be completed as part of a future resurfacing project.

Heading south from Winston Rd along Salem St to the W 5th St intersection, the same dimensions and recommended opportunity as the W MLK Jr Blvd section above should be implemented during resurfacing. Along W 5th St from Salem St to State St, the surface width narrows to 28'-29'. Restriping the travel lanes to 11' widths would allow for a 5' bike lane and a 1'-2' buffer heading south. This would also enhance pedestrian comfort on the existing sidewalk along the west side of 5th St that currently has no buffer between the roadway and sidewalk.

From 2nd St to 9th Ave, Main St is predominantly four lanes with variable pavement width (43'-56' pavement width, including parking in the downtown core). Physical separation from automobile traffic is recommended<sup>1</sup> due to traffic volumes that are between 9,900 and 12,000 AADT with a 35 mph speed limit (20 mph through the downtown core). A corridor study is recommended to consider reconfiguring the roadway from four lanes to three to include separated bike lanes.

### TRIP GENERATORS:

- Grimes Park
- Lexington High School
- Downtown Lexington
- Multiple businesses
- Multiple neighborhoods
- Holt Moffitt Field

### POTENTIAL ROW NEEDS:

- None

### JURISDICTIONS:

- City of Lexington

### POTENTIAL PARTNERSHIPS:

- City of Lexington
- NCDOT
- Businesses along the corridor
- Roadies and Dirties Cycling Club

### SUPPORT IN OTHER PLANS:

- Davidson County Parks & Recreation Master Plan Update (2018)
- Davidson County CTP (2011)

### ESTIMATED CONSTRUCTION COSTS:

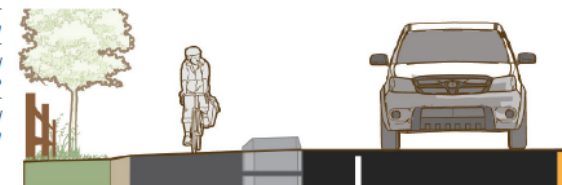
- TBD

### DESIGN OPTIONS AND CONSIDERATIONS:

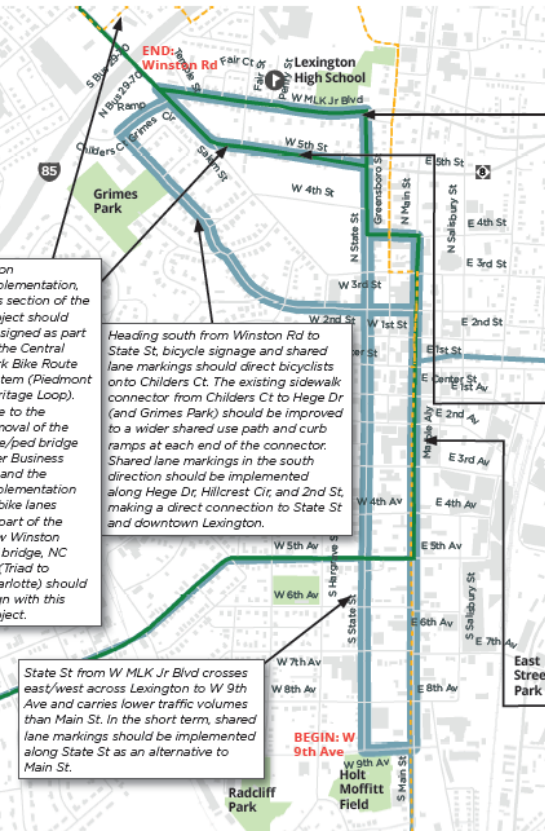
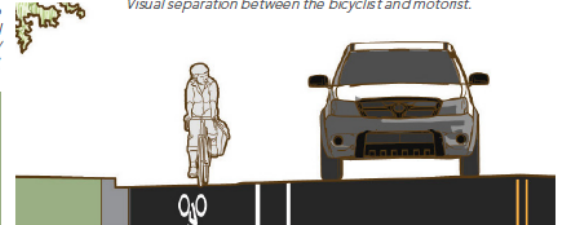
While less ideal, construction of a bicycle lane with a painted buffer rather than a physical buffer can be a significant improvement for bicycle and motorist safety and comfort, while still reserving space for constructing a physical buffer in the future. This strategy could be used for MLK Jr Blvd and W 5th St in Lexington.

Further detail regarding visually and physically separated bike lanes can be found in the Design Guidelines Appendix. Graphics to the right and below are from the Small Town and Rural Multimodal Network Design Guide - <http://ruraldesignguide.com/>.

Physical separation between the bicyclist and motorist.



Visual separation between the bicyclist and motorist.



### Proposed Network

- Proposed Priority Project
- Regional Network
- NC Bike Route (Unsigned)
- Central Park Bike Routes

<sup>1</sup> Further information on physically separated bike lanes can be found in Appendix A: Design Resources

Get Organized!!



*Roadies and Dirties Cycling Club*  
**DIG, RIDE, HAVE FUN!**

GET INVOLVED! JOIN OUR GROUP!

JOIN + SUPPORT





## Additional Key Action Steps



- Form a MPO Bicycle and Pedestrian Advisory Committee to engage stakeholders
- Update the MPO's CTP and MTP with recommendations from the Plan and seek funding opportunities to implement priority projects
- Consider setting aside a portion of the City's budget for local match or stand alone projects
- Identify several programs or pilot projects that the City can participate in to increase bicycle education and awareness
- Evaluate the Plan's policy recommendations and incorporate development regulations to better support bicycling
- Re-evaluate implementation strategies and update the Plan as necessary

THANK YOU!



**Andrew Edmonds, Transportation Planner**  
**High Point MPO**

336-883-3235 | [andrew.edmonds@highpointnc.gov](mailto:andrew.edmonds@highpointnc.gov)

**Stephen Bzomowski, AICP, Senior Planner**  
**Alta Planning + Design**

984-201-2902 | [stephenbzomowski@altaplanning.com](mailto:stephenbzomowski@altaplanning.com)