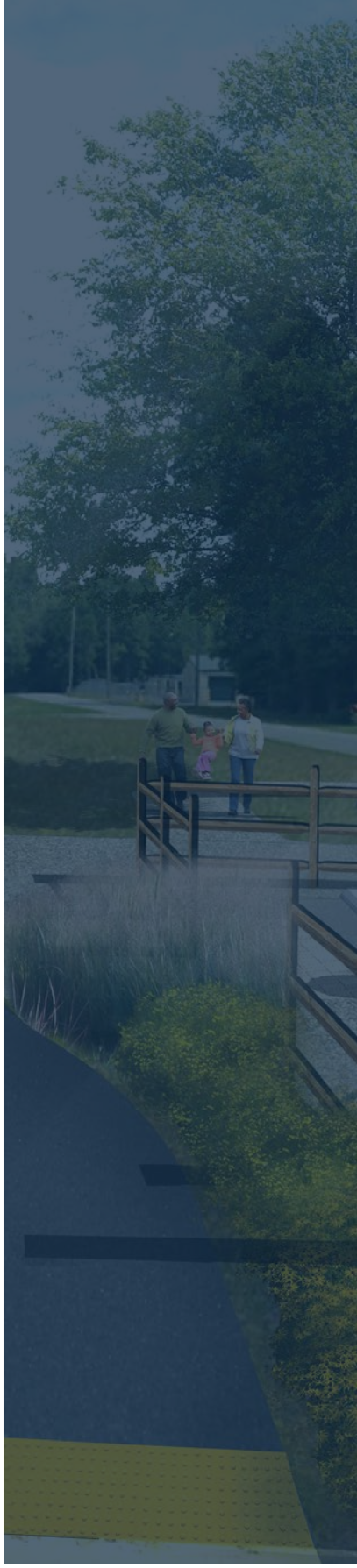


Person County Trail Feasibility Study

Roxboro to Person-Durham County Line

AUGUST 2024



Integrated Mobility Division
N.C. DEPARTMENT OF TRANSPORTATION

Person County Recreation Arts & Parks

alta

Acknowledgments

Thank you to the local community members and stakeholders who provided time and input during this study. Special thanks to those who participated as part of the project Steering Committee, listed below.

Steering Committee

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Stephen Vaughan, Person County Friends of the Parks

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ABBREVIATIONS & ACRONYMS

CPTED Crime Prevention Through Environmental Design

IMD Integrated Mobility Division

MOU Memorandum of understanding

MPO Metropolitan Planning Organization

MUTCD Manual on Uniform Traffic Control Devices

NCDOT North Carolina Department of Transportation

NS Norfolk Southern Railroad

O&M Operations and maintenance

PS&E Plans, Specifications, and Estimates

ROW Right-of-way

RPO Rural Planning Organization

RRFB Rectangular Rapid-Flashing Beacon

SPOT Strategic Prioritization Office of Transportation

SUP Shared-use path

TDI Transportation Disadvantage Index

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EX Executive Summary



Purpose

In 2023, Person County received funding from the North Carolina Department of Transportation's Integrated Mobility Division (NCDOT IMD) to initiate this feasibility study. The purpose was to **explore future options for approximately 15 miles of continuous paved trails and/or sidewalks from Uptown Roxboro to the Person-Durham County line** and recommend the optimal trail alignment. The study assessed the feasibility of developing a trail on the 8.7-mile inactive Norfolk Southern rail corridor or the parallel US 501 roadway corridor. At the northern end of the study area near Roxboro, where the rail line is still active, other route options (using public right-of-way [ROW] where possible) were examined.

Vision

- Create a regional multimodal trail that fosters economic development and growth, increases equitable transportation and mobility, and reduces reliance on automobiles.
- Improve the health and wellness of Person County residents and other trail users.
- Provide safe transportation and recreation opportunities for people of all ages and set an example of good environmental stewardship.

Goals

1. Create a safe and equitable facility for transportation and recreation.
2. Leverage the trail's potential to support local economic development goals.
3. Preserve community identity and natural resources through conservation.

Project Process

The study was guided by a Steering Committee representing a range of perspectives, and drew upon public input and a group of stakeholders for input throughout the process, including, but not limited to:

- NCDOT (IMD and Division 5)
- Person and Durham Counties
- City of Roxboro
- Kerr-Tar Council of Governments
- Norfolk Southern Railroad
- The Conservation Fund
- Triangle Trails Initiative

Study Alternatives

Four pairs of alternatives were selected and examined for opportunities and constraints and are shown on the map on the next page.



The project team conducted a field visit in September 2023 to help determine alternatives for further study.

PROJECT TIMELINE

JULY–AUGUST 2023

Project Kickoff + Existing Conditions

SEPTEMBER 2023–JANUARY 2024

30% Draft Study Development + Review

APRIL 2024

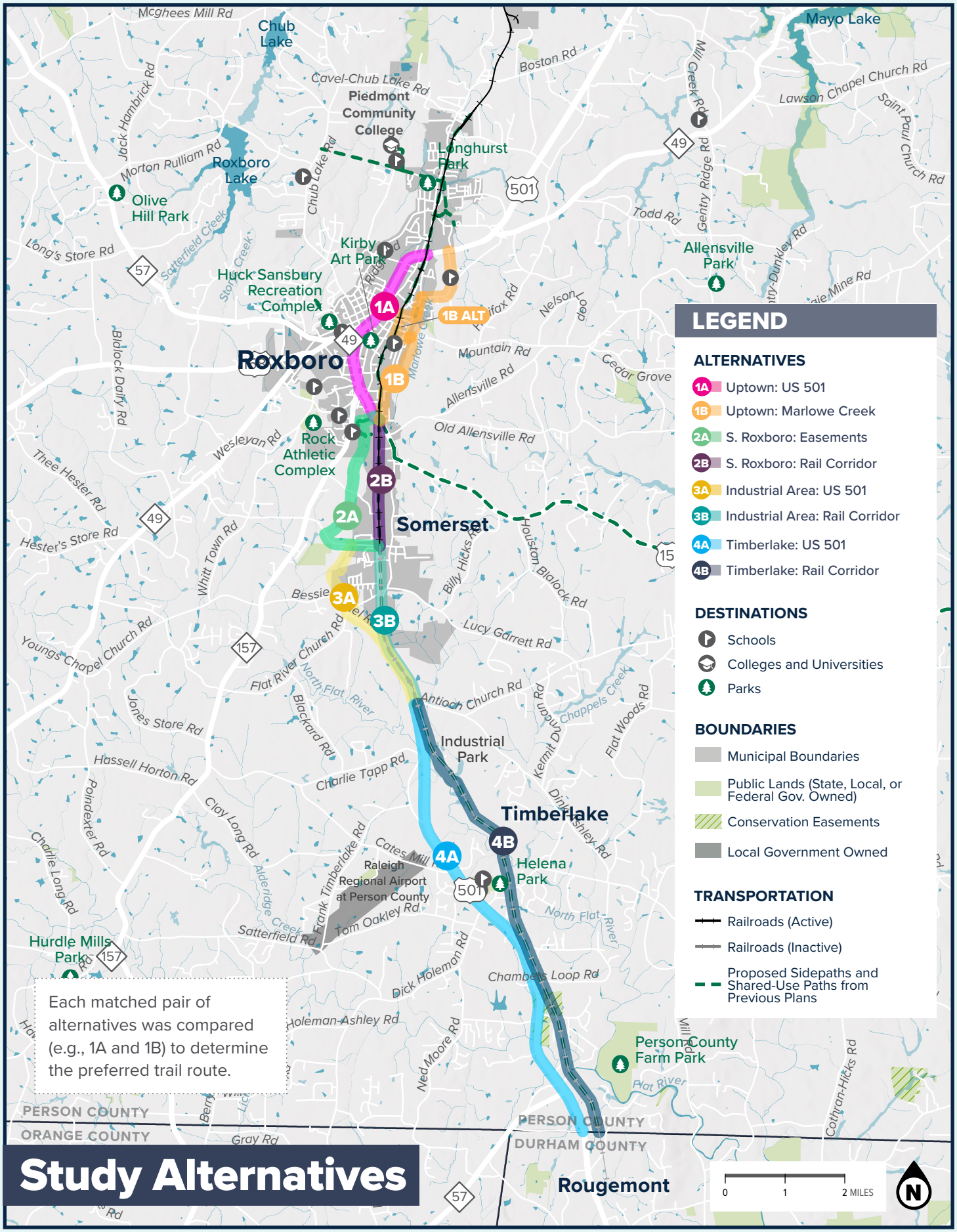
Public Open House

FEBRUARY–JULY 2024

Final Study Development + Presentation

JULY 2024 ONWARDS

Implementation



Study Alternatives



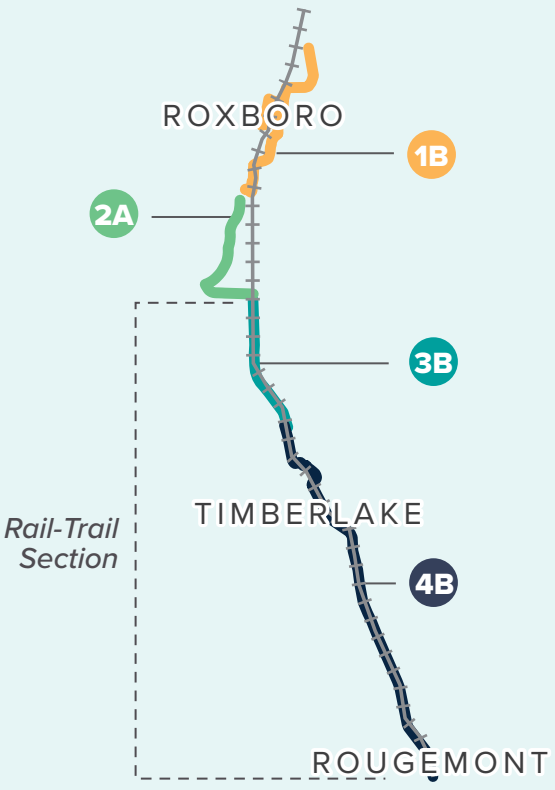
Public Open House Workshop

The public open house was held on April 11, 2024, at the Kirby Cultural Arts Complex in Roxboro. Attendees were given information about the alternatives being studied and were asked to select their preferred alternative from each pair.

Coming to a Preferred Alternative

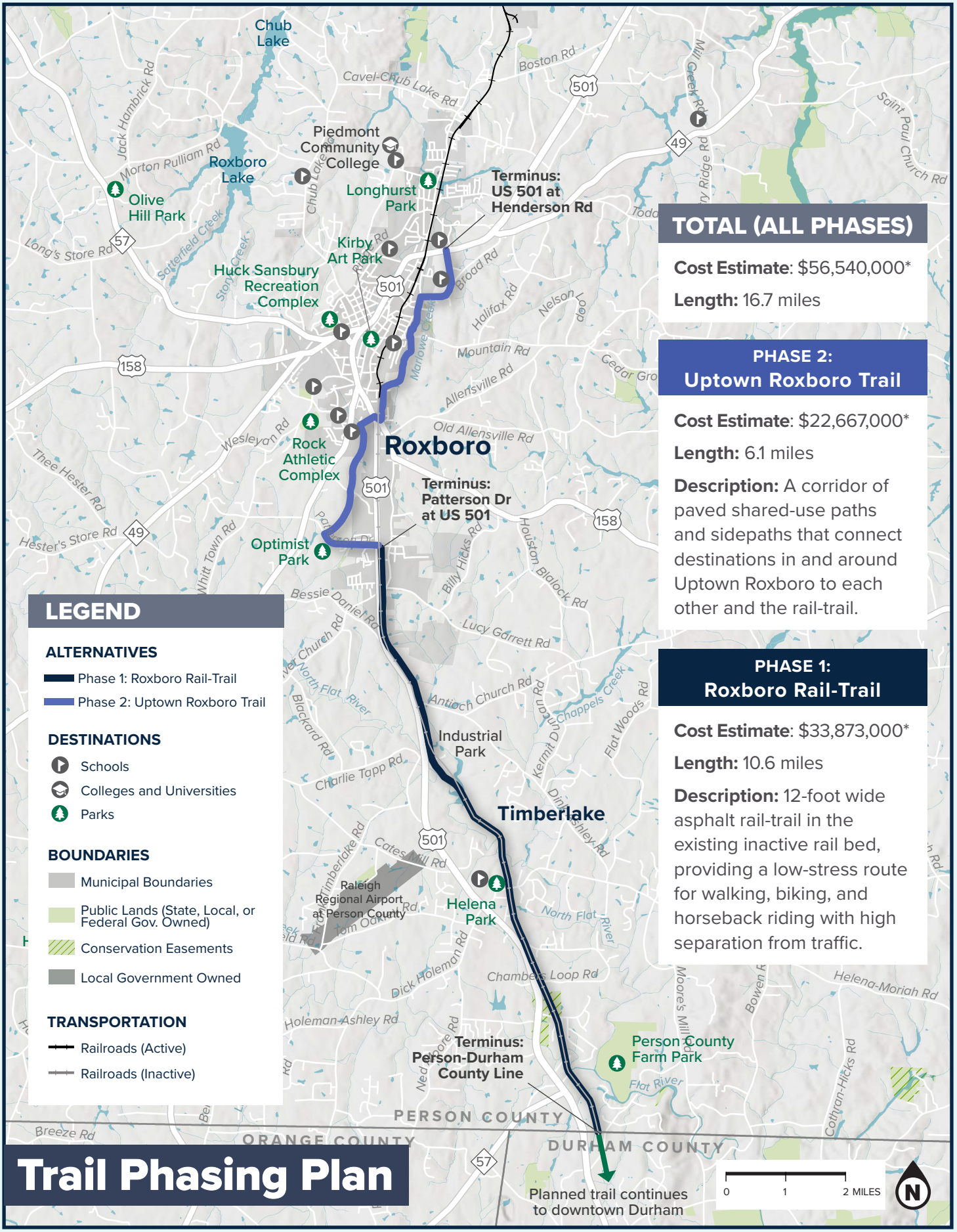
Through stakeholder input, public input, fieldwork, and ongoing status of negotiations on the rail corridor acquisition at the time of this study, the project team identified a "preferred alternative," or optimal trail route. A decision matrix was developed, informed by guidance from the Steering Committee, to rate the alternatives. The preferred alternative (shown to the right) was supported by feedback from the general public.

PREFERRED ALTERNATIVE
(OPTIMAL TRAIL ROUTE)



Trail Phasing Plan

Long distance trails are typically built in phases. A map of Phases 1 and 2 is shown on the next page.



Trail Phasing Plan

LEGEND

ALTERNATIVES
- Phase 1: Roxboro Rail-Trail
- Phase 2: Uptown Roxboro Trail

DESTINATIONS
- Schools
- Colleges and Universities
- Parks

BOUNDARIES
- Municipal Boundaries
- Public Lands (State, Local, or Federal Gov. Owned)
- Conservation Easements
- Local Government Owned

TRANSPORTATION
- Railroads (Active)
- Railroads (Inactive)

TOTAL (ALL PHASES)

Cost Estimate: $56,540,000*

Length: 16.7 miles

PHASE 2: Uptown Roxboro Trail

Cost Estimate: $22,667,000*

Length: 6.1 miles

Description: A corridor of paved shared-use paths and sidepaths that connect destinations in and around Uptown Roxboro to each other and the rail-trail.

PHASE 1: Roxboro Rail-Trail

Cost Estimate: $33,873,000*

Length: 10.6 miles

Description: 12-foot wide asphalt rail-trail in the existing inactive rail bed, providing a low-stress route for walking, biking, and horseback riding with high separation from traffic.

*Planning-level cost estimates for design, engineering, and construction.

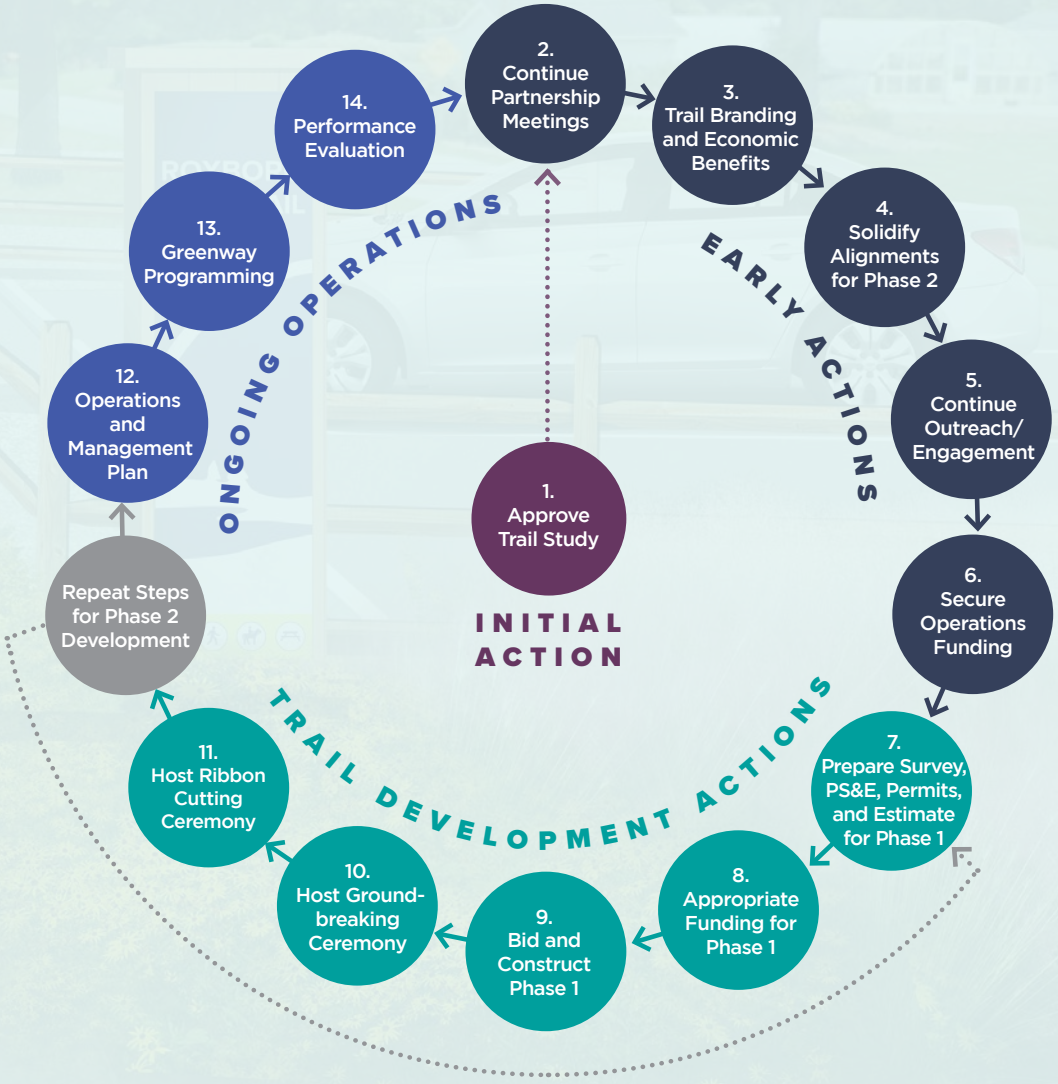
TRAILHEAD CONCEPT

Roxboro Rail-Trail near Helena Park



Implementation

Implementation includes the physical development of trail phases, operations, management, and programming, all underpinned by the vision and goals of this project. A partnership formed of stakeholders from Person County, NCDOT, Durham County, City of Roxboro, City of Durham, Durham-Chapel Hill-Carrboro MPO, Kerr-Tar Rural Planning Organization, and others should continue working together, and remain flexible and opportunistic, to achieve the ultimate goal of not only completing the Person County section, but ultimately connecting to Durham, expanding the vision and economic opportunity the trail will bring. The diagram below shows the steps, not necessarily sequential depending on opportunity and schedule, that should be taken to ensure the project is a success. Person County and its partners should ensure that an operations and management/maintenance plan is established for the long-term sustainability and success of the trail.





01 Introduction

Project Vision

Create a regional multimodal trail that fosters economic development and growth, increases equitable transportation and mobility, and reduces reliance on automobiles.

Improve the health and wellness of Person County residents and other trail users.

Provide safe transportation and recreation opportunities for people of all ages and set an example of good environmental stewardship.

Project Purpose

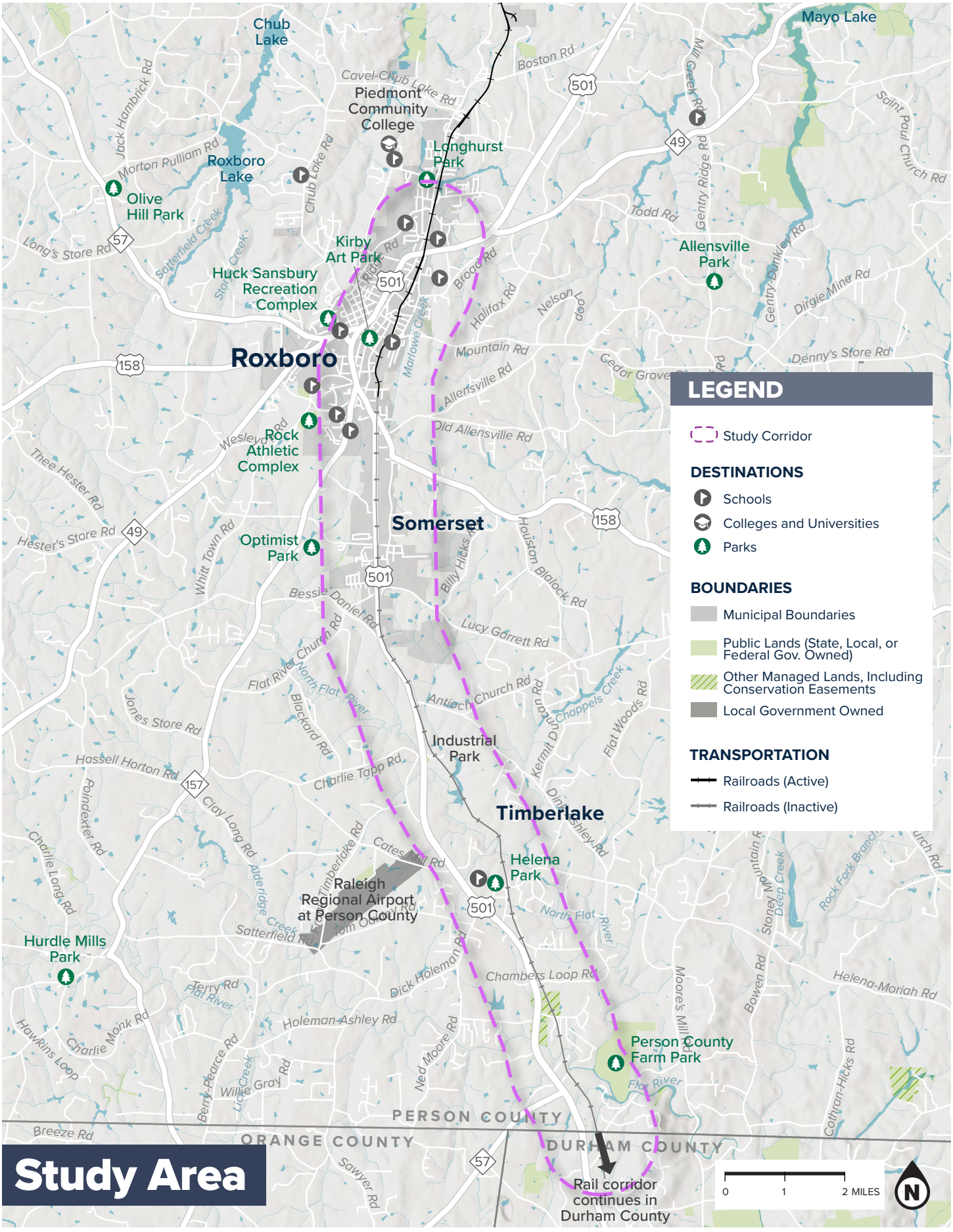
In 2023, as a result of Person County Recreation, Arts, and Parks' application for funding, Person County and the North Carolina Department of Transportation's Integrated Mobility Division (NCDOT IMD) initiated this feasibility study. The purpose was to **explore future options for approximately 15 miles of continuous paved trails and/or sidewalks from Uptown Roxboro to the Person-Durham County line and recommend the optimal trail alignment**, which may include a combination of trails, rails-to-trails, and sidepaths. The study assessed the feasibility of developing a trail on the approximately 10-mile inactive Norfolk Southern rail corridor or the parallel US 501 roadway corridor. At the northern end of the study area near Roxboro, several alternate alignments (using public right-of-way [ROW] where possible) were also examined.

Local Context

The inactive Norfolk Southern rail corridor represents untapped **potential as both a trail corridor and economic development lever**. Development pressure threatens the continuity and connectivity of the corridor. Many of the former industrial properties on the east side of the rail corridor do not have clear access across the rail line to US 501, the region's main transportation corridor. Acquiring ownership of the corridor would allow the County to offer access easements for these properties, making the area more attractive to current and prospective businesses and other development.

A local **desire for a walking and biking trail in Person County** has been demonstrated in past planning efforts. This signature trail will be a **transformative, first-of-its-kind project for the County**, which currently lacks dedicated facilities for walking and biking. The trail will expand local options for transportation and recreation, promote sustainability and environmental stewardship, foster community identity, and increase tourism and economic development opportunities. Durham County is also currently studying the feasibility of a trail on the adjacent Durham County section of the rail corridor. Together, these trails will **directly connect Roxboro to Durham** and beyond, linking to other trails including the American Tobacco Trail, the statewide Mountains-to-Sea Trail, and the multi-state East Coast Greenway.

The trail will help Person County achieve its **goals of diversifying its economy and increasing quality of life for residents**. A trail increases economic opportunities for businesses, such as restaurants and retail shops, and provides opportunities for organized recreation events such as biathlons, races, and fitness classes. These features will attract businesses and residents to the County and will help retain young families, who are a vital segment of the workforce and local economy. Trails are also shown to improve health and well-being; an attractive, well-maintained trail will provide opportunities for citizens of all physical abilities and socio-economic backgrounds to have a safe, accessible, and fun way to exercise and enjoy nature.


Chub Lake
Mayo Lake
Piedmont Community College
Longhurst Park
Roxboro Lake
Olive Hill Park
Kirby Art Park
Huck Sansbury Recreation Complex
Allensville Park
Roxboro
Rock Athletic Complex
Somerset
Optimist Park
Industrial Park
Timberlake
Helena Park
Raleigh Regional Airport at Person County
Hurdle Mills Park
Person County Farm Park
PERSON COUNTY
ORANGE COUNTY
DURHAM COUNTY
Rail corridor continues in Durham County
Study Area
LEGEND
Study Corridor
DESTINATIONS
Schools
Colleges and Universities
Parks
BOUNDARIES
Municipal Boundaries
Public Lands (State, Local, or Federal Gov. Owned)
Other Managed Lands, Including Conservation Easements
Local Government Owned
TRANSPORTATION
Railroads (Active)
Railroads (Inactive)
0 1 2 MILES
N

Project Goals

1

Create a safe and equitable facility for transportation and recreation.

- Create equitable alternative transportation opportunities by connecting the trail to key destinations.
- Improve local health and wellness by promoting trail use for recreation and transportation.
- Create a safe, accessible, and comfortable facility for walking, biking, and rolling for people of all ages and abilities.

2

Preserve community identity and natural resources through conservation.

- Foster a sense of ownership through community engagement during the project, and involve residents in the project's creation and development.
- Highlight cultural awareness of the communities and neighborhoods as well as environmental stewardship on and along the corridor.
- Protect natural habitats, improve local air and water quality, preserve wildlife corridors, and incorporate stormwater management facilities that are eligible for stormwater credits.

3

Leverage the trail's potential to support local economic development goals.

- Create a regional multimodal connection that's also an economic development tool to promote what is available within the County and ensure a return on investment.
- Advertise new developments to current residents, and attract potential new residents, businesses, and investors by promoting the trail's connectivity to key destinations.

Study Process

This planning process included input from the public, participation and direction from project stakeholders, and public presentation of the final study document. The time frame for these and other steps are outlined below and in the Project Timeline graphic to the right.

The study was guided by a Steering Committee representing a range of perspectives, and drew upon a group of stakeholders for input throughout the process, including, but not limited to:

- NCDOT (IMD and Division 5)
- Person and Durham Counties
- City of Roxboro
- Kerr-Tar Council of Governments
- Norfolk Southern Railroad
- The Conservation Fund
- Triangle Trails Initiative

Community Involvement

This study was designed to involve the community throughout the process, from project kickoff through final study development and presentation. The project team engaged the public through different channels, including:

- Steering committee meetings
- Stakeholder meetings
- Public open house workshops

See **Chapter 2: Community Involvement** for more details.

PROJECT TIMELINE



JULY–AUGUST 2023

Project Kickoff + Existing Conditions



SEPTEMBER 2023–JANUARY 2024

30% Draft Study Development + Review



APRIL 2024

Public Open House



FEBRUARY–JULY 2024

Final Study Development + Presentation



JULY 2024 ONWARDS

Implementation

How Can Trails Benefit Person County?



Economic Opportunities

Investment in walking, biking, and trails often yields returns through economic revitalization, recreational tourism, increased property values, small business opportunities, and construction jobs. Many employers also consider quality of life factors, including amenities like trails, when choosing where to locate.

$1.00 INVESTED ⟶ **$1.72** RETURNED

According to a 2018 study of four trails in North Carolina, every $1.00 spent on initial trail construction led to $1.72 per year earned from local business revenue, sales tax revenue, and benefits related to health and transportation—demonstrating how trails can boost local economies.[1]

$2.8 billion/year

in spending is generated by the outdoor industry in NC, which is also responsible for 260,000 direct jobs.[2]

1. ITRE, Alta, and NCDOT, 2018.
2. Economic Development Partnership of North Carolina (EDPNC), n.d.



Safety and Equity

Dedicated infrastructure for walking and biking (such as trails), can help prevent crashes and save lives. Well-connected facilities can also reduce burdens on low-income populations, who are more likely to walk or bike for transportation.

20%

of all road fatalities in the US from 2015 to 2020 were pedestrians and bicyclists, despite these groups making up only 11% of all road users.[3]

13%

of households in Roxboro do not have access to a vehicle.[4]

22%

of household income is spent on transportation in households making less than $30,000 per year; almost all of this spending goes to the purchase and maintenance of personal vehicles.[5]

3. NACTO, City Limits: Setting Safe Speed Limits on Urban Streets, 2020
4. 2022 American Community Survey 5-Year Estimates
5. Institute for Transportation & Development Policy, 2019

Health and Quality of Life

Trails can improve health and wellbeing by providing opportunities for people to exercise, socialize, and spend time in nature. Physical activity and exposure to nature and green spaces have been shown to have mental and physical health benefits.

56%

of adults in Person County don't have adequate access to locations for physical activity, compared with 25% for the state of North Carolina.[6]

25%

of adults in Person County are physically inactive, compared with 22% for the state of North Carolina.[6]

29%

lower risk of all-cause mortality for people who engage in moderate activity (i.e., brisk walking) for at least 2.5 hours a week.[7]

6. https://www.countyhealthrankings.org/app/north-carolina/2023/overview
7. Zhao, et al, 2020.

Environmental Stewardship

Trails can serve as a tool for conserving open space. Additionally, decreasing reliance on automobiles for transportation will lead to improved air quality.

Preserving land for greenspace and trails (instead of more intensive development) can have the following benefits:

- **Improving air quality**
- **Linking and protecting plant and animal habitats**
- **Reducing flood damage and soil erosion**
- **Maintaining cleaner drinking water sources and reducing the cost of water treatment[8]**

26%

of all daily trips in the United States are one mile or less—equivalent to a 6-minute bike ride or 20-minute walk.[9] If more of these trips were made without cars, it would reduce greenhouse gases and improve air quality.

8. North Carolina Department of Parks and Recreation, North Carolina Trails Program Annual Report 2020-2021
9. United States Bureau of Transportation Statistics. https://data.bts.gov/Research-and-Statistics/Trips-by-Distance/w96p-f2qv

The Need for the Trail

Area Overview

Person County and the City of Roxboro are surrounded by gorgeous countryside, but located in proximity to Raleigh, Durham, and Chapel Hill, where many Person County residents make a living. Compared to Person County overall, Roxboro (the county seat and largest community in the county) has a significantly lower median household income, higher poverty rate, less widespread access to vehicles, and a greater proportion of residents who are Black or multiracial. The following pages explore these and other demographic, geographic, and social factors, and how trails may present opportunities to reduce disparities and improve quality of life for people in Roxboro and Person County.

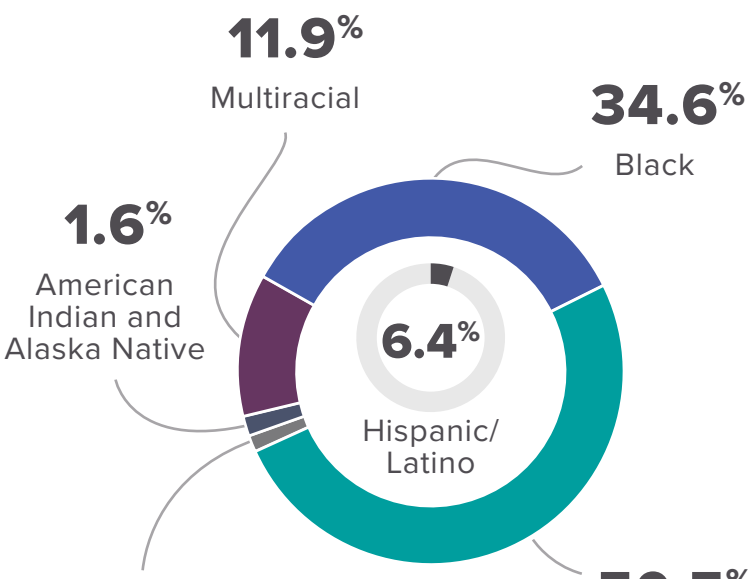
TOTAL POPULATION

39,097
PERSON COUNTY

8,134
ROXBORO

Source: 2020 Decennial Census

RACE AND ETHNICITY
City of Roxboro



LESS THAN 1%:
Asian (0.6%);
Native Hawaiian and Other Pacific Islander (0.0%);
Some other race (0.8%)

Source: 2022 American Community Survey 5-Year Estimates

MEDIAN AGE

ROXBORO	PERSON COUNTY	NORTH CAROLINA
41	44	39

Source: 2022 American Community Survey 5-Year Estimates

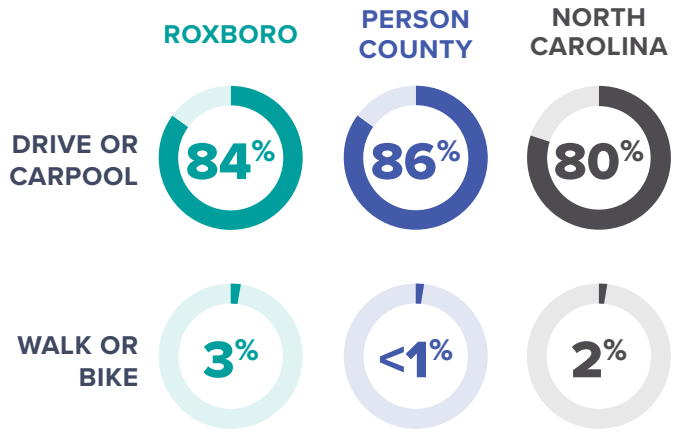
LANGUAGE OTHER THAN ENGLISH SPOKEN AT HOME

ROXBORO	PERSON COUNTY	NORTH CAROLINA
6%	5%	13%

5% of people in Roxboro speak Spanish at home; less than 1% speak another non-English language.

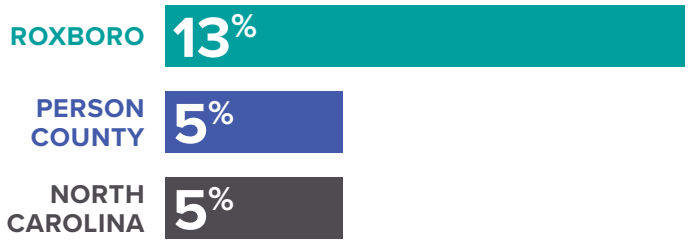
Source: 2022 American Community Survey 5-Year Estimates

COMMUTE MODE TO WORK



Source: 2022 American Community Survey 5-Year Estimates

HOUSEHOLDS WITHOUT ACCESS TO PERSONAL VEHICLES



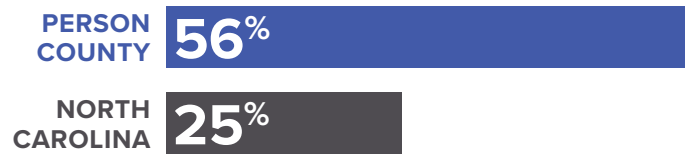
Source: 2022 American Community Survey 5-Year Estimates



5 OF PERSON COUNTY'S LARGEST PRIVATE EMPLOYERS

are located within walking and biking distance of the trail's study area.

POPULATION WITHOUT ACCESS TO EXERCISE OPPORTUNITIES



Source: County Health Rankings, https://www.countyhealthrankings.org/app/north-carolina/2023/overview

Transportation and Jobs

At a glance, commute patterns seem similar for the City, County, and state; however, more than 14% of workers in Roxboro carpool to work—much higher than the Countywide and statewide figures (both around 8.5%). This number aligns with the similarly high rate of households without access to a car in Roxboro.

For many Person County residents commuting to the Triangle, walking and biking to work may not be viable due to distance. Instead, making Roxboro more walkable and bikable adds value to their community by expanding their options for getting around within the City. There is also great potential to connect several large local employers (such as the hospital, college, Walmart, and US Flue-Cured Tobacco) to neighborhoods via walking and biking trails, making it easier for residents to reach jobs without a car.

Community Health

Based on statewide rankings, Person County residents lack places to exercise and have disproportionately high percentages of diabetes, heart disease, and stroke. Access to parks and trails has been shown to improve physical and mental health. Trails can serve as destinations for activity, from casual walking groups to organized 5K runs. Trails can also connect to other areas where people can exercise, such as schools, community centers, and parks.

Access to Opportunities

According to the Opportunity Atlas, over the last 20 years, children from high-income families in Person County generally grow up to have middle to high household incomes themselves. However, children of middle-income families in Person County have grown up to achieve lower median household incomes than their parents. More opportunities for meaningful, well-paying jobs in the community are needed to increase quality of life and retain the next generation of children. Compared to the County and state, Roxboro residents on average have access to fewer financial resources, underscoring a need for inexpensive transportation options in and around the City.

Transportation Disadvantage

NCDOT defines transportation disadvantage as "*limited ability to reach necessary goods, services, and employment by people with limited access to transportation options*." According to NCDOT's Transportation Disadvantage Index (TDI), **the highest levels of transportation disadvantage within the county are primarily located in the City of Roxboro**, as well as northeast and southwest of town (see map on following page).

High TDI scores indicate areas that can benefit from diversified transportation options to help people access their daily destinations. **A walking and biking trail with connections to Uptown, essential services, and major employers would provide residents of Person County and Roxboro with a convenient, affordable way to access these destinations.**

MEDIAN HOUSEHOLD INCOME

ROXBORO	PERSON COUNTY	NORTH CAROLINA
$39,787	$60,688	$67,481

POVERTY RATE

ROXBORO	PERSON COUNTY	NORTH CAROLINA
32%	17%	13%

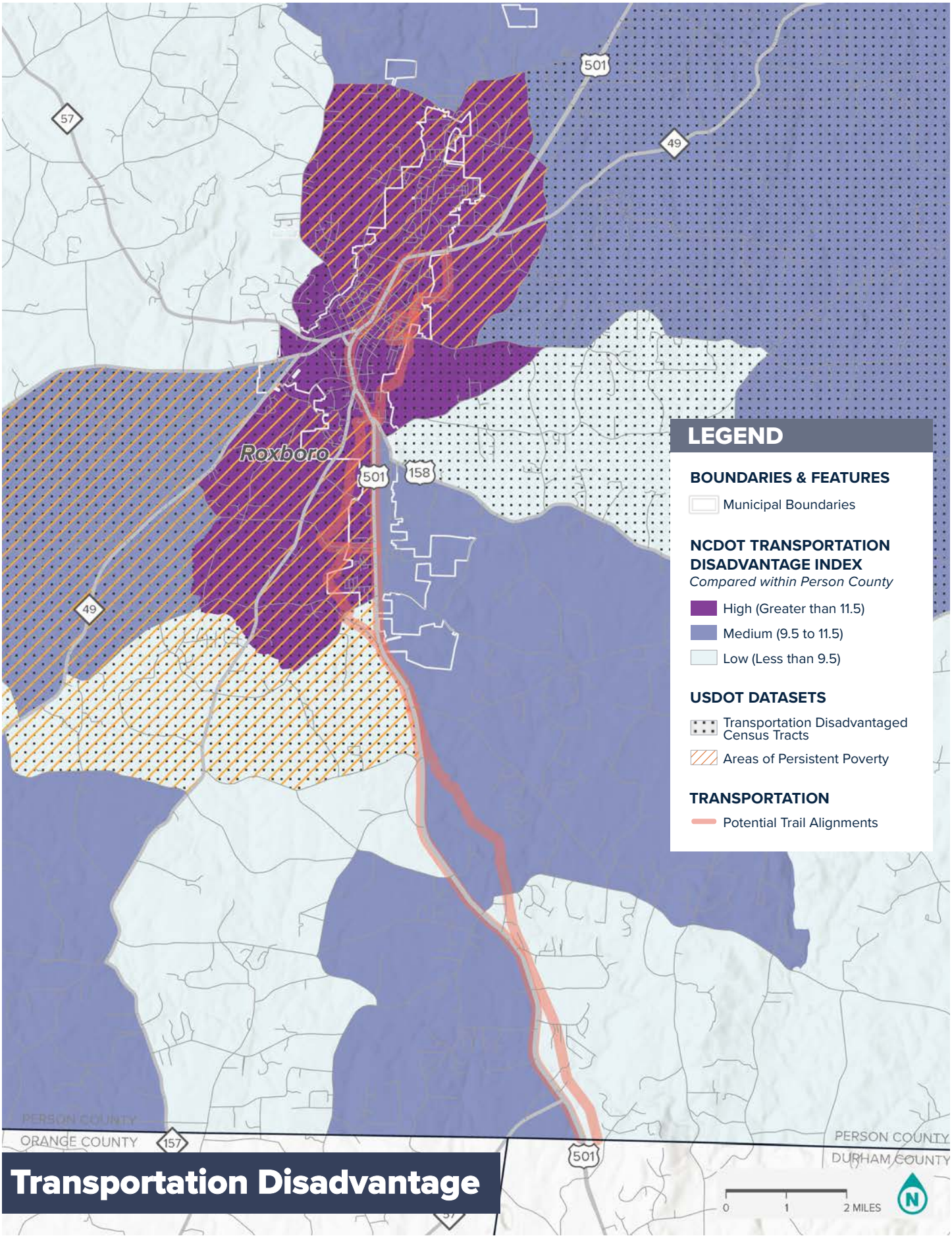
BACHELOR'S DEGREE OR HIGHER

ROXBORO	PERSON COUNTY	NORTH CAROLINA
18%	18%	36%

Source: 2022 American Community Survey 5-Year Estimates

Transportation disadvantage can result from lack of access to a motor vehicle or transit, inability to drive or access transit, or for other reasons. Historic disinvestment and exclusionary policies have also contributed to disparities in the built and social environments, making some groups (including children, older adults, minorities, and people with disabilities) more likely to experience transportation disadvantage.

The US Department of Transportation and NCDOT both prioritize funding to address equity, including projects that expand transportation options to areas with high Transportation Disadvantage.

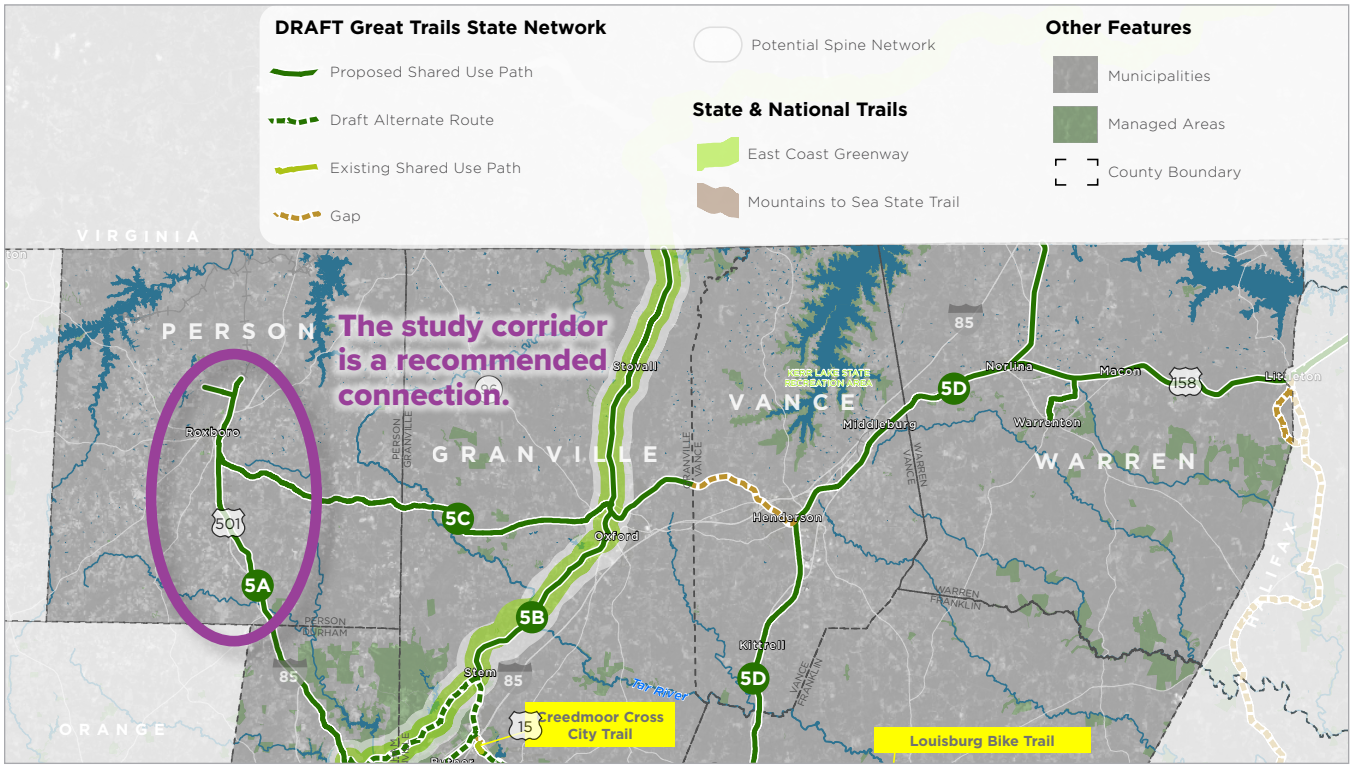


Transportation Disadvantage

Relevant Plans, Studies, and Policies

NAME + YEAR	KEY FINDINGS + RECOMMENDATIONS
Complete Streets Policy (updated 2019) NCDOT	▸ Complete Streets is North Carolina's approach to interdependent, multi-modal transportation networks that safely accommodate access and travel for all users. ▸ This policy requires NCDOT planners and designers consider and incorporate multimodal facilities in the design and improvement of all appropriate transportation projects in North Carolina. Consideration of multimodal elements will begin at the inception of the transportation planning process and the decisions made will be documented. ▸ The policy generally applies to all projects undertaken by NCDOT throughout the state. ▸ Routine maintenance projects may be excluded from this requirement if an appropriate source of funding is not available.
Uptown Roxboro Strategic Streetscape Plan (2023) City of Roxboro	▸ Plan for enhancing public space and streetscape, as well as improving pedestrian access and safety. ▸ A safe and accessible plan for Uptown Roxboro encourages trail users to visit local Roxboro shops and restaurants. ▸ While the anticipated project is outside the Streetscape Plan Project Area, the recommendation to improve the intersection at Depot and Foushee could serve as a good entryway into town from the trail, as well as the narrowing of Main Street.

NAME + YEAR	KEY FINDINGS + RECOMMENDATIONS
The Great Trails State Plan (2022) NCDOT	▸ Network planning approaches and implementation strategies for connecting all 100 North Carolina counties. ▸ Recommendations for shared-use paths connecting Roxboro south to Durham and east to Henderson.



Map of proposed trail network for NCDOT Division 5 counties, including Person County, from The Great Trails State Plan (2022)

Joint Comprehensive Land Use Plan (2021) Person County and City of Roxboro	▸ Merged and comprehensive land-use plan for the City and County with guiding vision, goals, and implementation strategies. ▸ "Moving forward, the City and County should work together to update the City's 2008 pedestrian plan and develop a joint long-range pedestrian and trails plan and begin funding investments in the pedestrian network."

NAME + YEAR	KEY FINDINGS + RECOMMENDATIONS
Recreation, Arts, and Parks Master Plan Update (2020) Person County	▸ Recommendations for improving recreational opportunities in Person County, and highlighting the lack of, and public support for, trails and greenways. ▸ Helena School Park: Investigate potential of connection with future rail trail. ▸ Add a walking trail at Rock Athletic Complex, about 1 mile away from the rail corridor. ▸ Preliminary planning for a bike trail in Allensville Landfill has begun (Cedar Grove Church Rd near Brann's Wrecking). ▸ Community parks (Huck Sansbury, Southern Middle School, Person High School, and Rock Athletic Complex) should all be accessible through a linked trail system, and via major streets. ▸ "The one glaring deficiency in the region is a lack of a longer greenway trail to encourage walking, running and biking." ▸ Key action items: greenways master plan, acquire land for greenway trail system, develop bike trails starting at existing parks, acquire rail corridor ROW. ▸ Work with the rest of County Government to require sidewalk construction, recreation space, and trail connections for any new proposed developments, private and public.
NC Lakes District Regional Bike Plan (2016) Kerr-Tar Regional Council of Governments	▸ Bicycle network recommendations connecting lakes, regional parks, and key attractions, as well as implementation strategies. ▸ Recommendations include paved shoulders around Hyco and Mayo Lakes, paved shoulders connecting the two lakes, east to Kerr Lake, and south to Roxboro. Recommendations for sharrow or bike lane in Roxboro.

NAME + YEAR	KEY FINDINGS + RECOMMENDATIONS
Comprehensive Transportation Plan (2011) City of Roxboro and Person County	▸ Long-range recommendations for multimodal improvements. ▸ Bicycle maps note Route 4 (east-west) needs improvement, Highway 49 is a recommended bike route, and there is a recommended multi-use path in Roxboro (a rail trail from Depot Street and Memorial Drive). ▸ Pedestrian maps highlight the need for more sidewalk connections across much of Uptown Roxboro. ▸ US 501/NC 57, from Durham County Line to N Main St, is expected to be near and over capacity by 2035, with recommendations for enhanced mobility options, including bus routes, and bicycle and pedestrian improvements.
Durham Trails and Greenways Master Plan (2011) City of Durham	▸ Plan focuses on maps of routes and implementation recommendations. Relevant to Person County are how the Roxboro Rail Trail will connect to Durham County. ▸ Trail connections include: Durham-Person County line to Goose Creek Trail, County line to Lake Michie as part of the Flat River Trail ▸ If the Roxboro Rail Trail corridor becomes available, Durham Open Space and Trails commission would advance the Durham County trail connections' priority ranking. ▸ Durham County recently submitted funding to fund a feasibility study for their section of the rail trail.
Roxboro Pedestrian Transportation Plan (2008) City of Roxboro	▸ Plan features on-street and off-street recommendations for improving connectivity and walkability in Roxboro, as well as policy, program, and funding recommendations. ▸ The multi-use recommendations include: » Connect South Elementary on Hurdle Mills Road to the rail trail. There is currently a worn foot path from the back of the elementary school to the Walmart shopping center » Hickory Court to Long Ave.

02 Community Involvement



Community Involvement

Public and stakeholder input were essential to the development of the Person County Trail Feasibility Study. The overall communication strategy was a multifaceted campaign to inform, educate, and engage the community and gather input on priorities and feedback on recommendations. The project included options for virtual and in-person participation to allow people and groups to participate in ways that are most comfortable and convenient for them.

Engagement Opportunities

STAKEHOLDER INTERVIEWS

The project team conducted virtual interviews with the following stakeholders identified by the Steering Committee:

- The Conservation Fund
- NCDOT Division 5
- Tar River Land Conservancy

For detailed notes from these meetings, see **Appendix A.**

PUBLIC OPEN HOUSE WORKSHOPS

The project team held two public open house events. The purpose of the first workshop on April 11, 2024 was to collect feedback on the draft recommendations. A second open house, held on July 18, 2024, provided an opportunity for the public to review the draft recommendations. Key findings are described later in this chapter.

STEERING COMMITTEE

A Steering Committee was assembled with representation from local, regional, and state agencies and organizations. The committee met three times throughout the project. For detailed notes from these meetings, see **Appendix A.**

Meeting #1: Kickoff (July 20, 2023)

The first Steering Committee meeting was held virtually. The purpose was to introduce committee members to the project and each other to facilitate knowledge sharing through the project. Attendees participated in activities to synthesize the project's vision, goals, and criteria for success.

Meeting #2: Existing Conditions and Alternatives (September 20, 2023)

The second Steering Committee meeting was held at the Kirby Cultural Arts Center in Roxboro. The group provided input on existing conditions and potential alternatives by marking up maps of the corridor, and participated in an activity to prioritize and finalize criteria for route selection. Several Steering Committee members also led a driving tour of the corridor and potential alignment locations.

Meeting #3: Final Review and Next Steps (September 2024)

The final Steering Committee meeting was held in September 2024 to review the final draft report and discuss roles and actions for implementation.

What We Heard: April 2024 Public Open House Workshop

SUMMARY

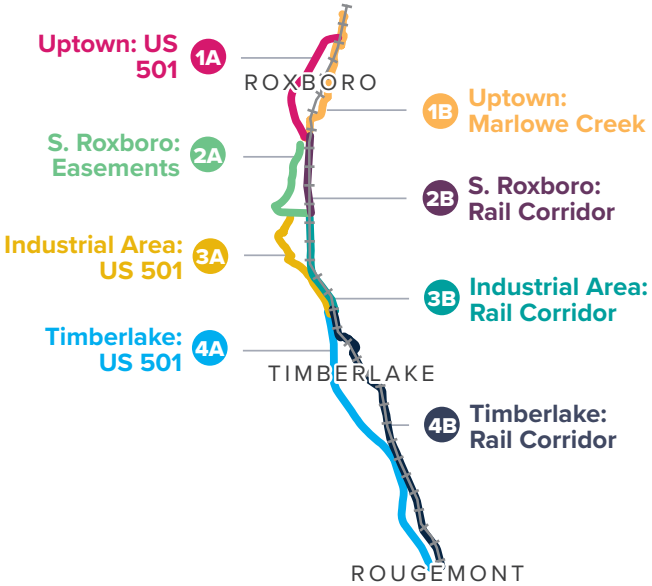
The public open house was held on April 11, 2024, at the Kirby Cultural Arts Complex in Roxboro. The meeting was held in conjunction with a public open house for the City of Roxboro's Pedestrian and Bicycle Plan update, so attendees could learn about and provide input on both projects. More than 55 interested members of the public came to learn more about the trail project and to indicate their top choices for trail alignment, preferred amenities along the trail, and ideal selection criteria to be used to determine the optimal trail route.



ROUTE PREFERENCES

Attendees were given information about the alternatives being studied and were asked to select their preferred alternative from each pair. The trail route on the right is made up of the alternatives that received the most votes.

ALL TRAIL ALTERNATIVES

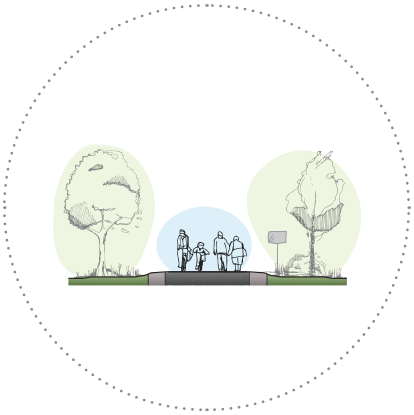


TRAIL ROUTE PREFERRED BY THE PUBLIC

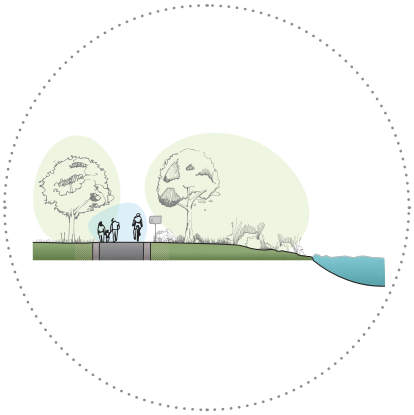


PREFERRED FACILITY TYPES for walking, biking, and horseback riding:

Rail-Trail
(35 votes)



Shared-Use Path: River or Stream Adjacent
(19 votes)



Shared-Use Path
(16 votes)



Note: While 1A was not the preferred trail route and sidewalks were not a top three preferred facility type, many participants expressed that sidewalks are needed on US 501/N Madison Blvd in Uptown regardless of the trail project.

MOST IMPORTANT CRITERIA

for selecting the optimal trail route:

Traffic Safety
(19 votes)

Connectivity and Equity
(16 votes)

User Experience
(14 votes)

Minimized Environmental Impacts
(14 votes)

MOST DESIRED TRAIL FEATURES

that people would like to see along the trail:

Restrooms/water fountains (22 votes)

Trashcans/pet waste stations (18 votes)

Benches and places to rest (14 votes)

Multiple trail surfaces (13 votes)

Flowers and plantings (12 votes)

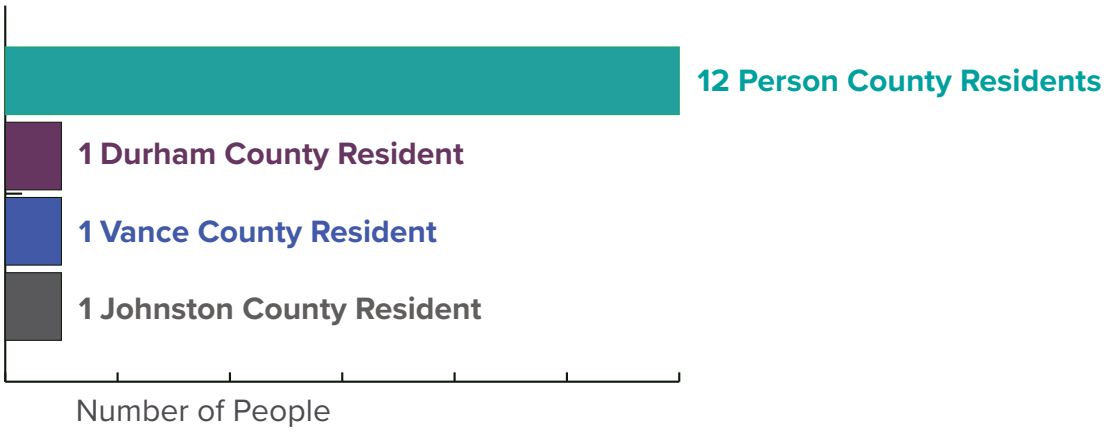
Additional write-in ideas included accessible play areas, parking spaces for horse trailers, water spigots for horses/dogs, and lighting.

What We Heard: July 2024 Public Open House Workshop

SUMMARY

The public open house was held on July 18th, 2024 at the Timberlake Volunteer Fire Department in Timberlake, NC. The meeting was held to share and review final updates about the Final Draft of the Trail Feasibility Study. The project team presented the planning process and explained the recommended Phase 1 and Phase 2. Attendees had opportunities to voice questions, comments, and concerns. Around 20 people attended this meeting, and most people provided written feedback through a paper comment form.

WORKSHOP ATTENDEES' COUNTY OF RESIDENCE





Meeting in full progress. Comment forms on the tables to the right. Photo taken by John Hill.

People shared their excitement for the trail to bring...

> **“A safe and accessible place for folks to walk/ride/run [and] more opportunity for safe exercise and natural appreciation for all modalities.”**
>
> *—two Person County residents in attendance*

COMMENT FORM RESPONSES

Attendees were asked for their current perspectives on Phase 1 and Phase 2 of the plan. Questions were organized by phase and framed as excitement or concern for each phase.

Many people expressed excitement for the recreational and economic advantages of the proposed trail.

Concerns, for both phases, circulated around funding insufficiencies, trail maintenance/cleanliness, and safety/security. Regarding safety concerns, some people drew particular concern for solo travelers. Other responses mentioned concern for landowners, though the specific concern wasn’t listed. One person expressed concern for the potential interruption of local business operations, most likely during the construction process.

Though most responses applied to both phases, one person indicated concern specifically for Phase 2. The commenter expressed concern about "limiting the size/width of the trail to accommodate vehicle traffic/DOT issues."



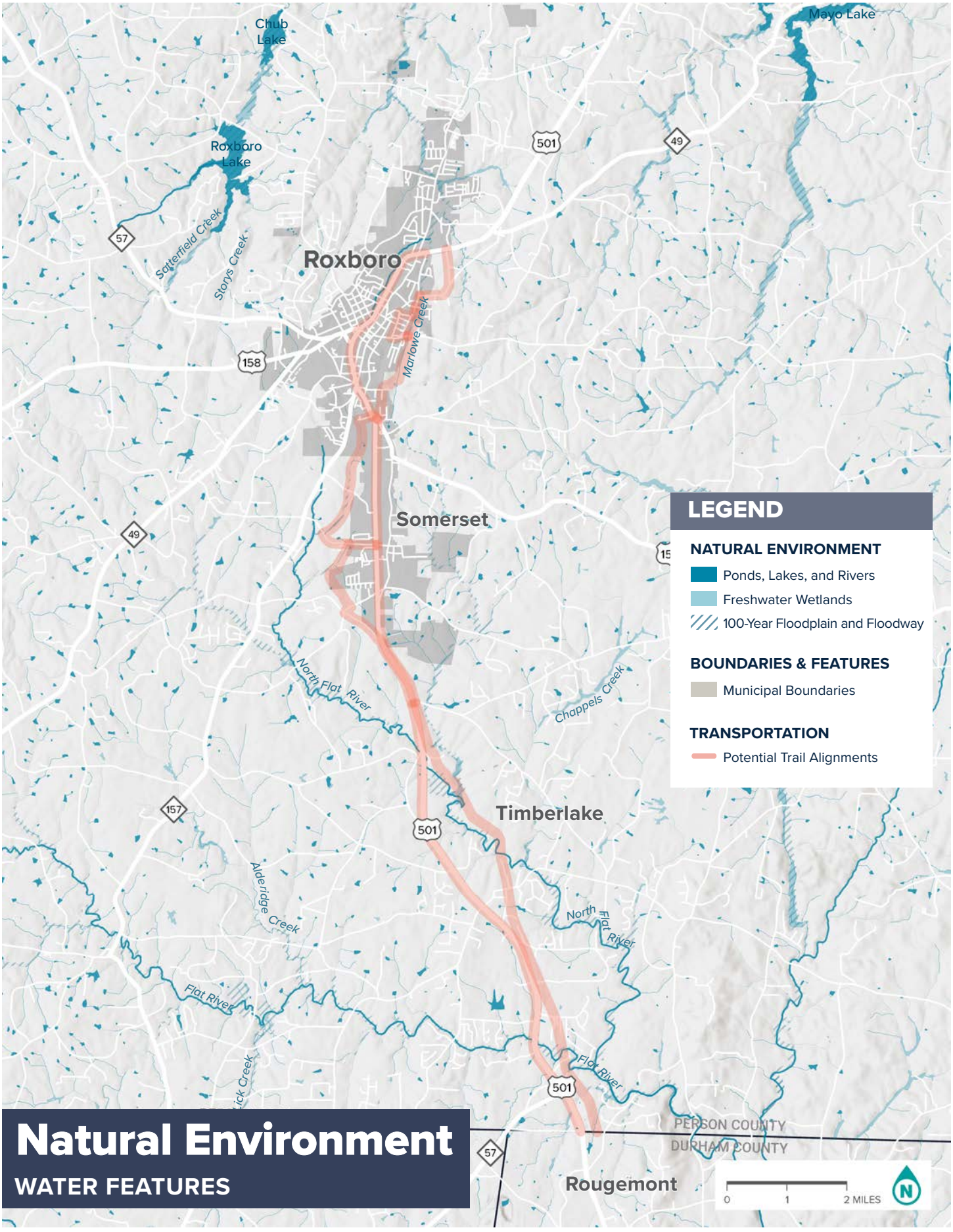
Final Draft Materials being explained. Photo taken by John Hill.

03 Study Considerations and Alternatives

Local Context and Considerations

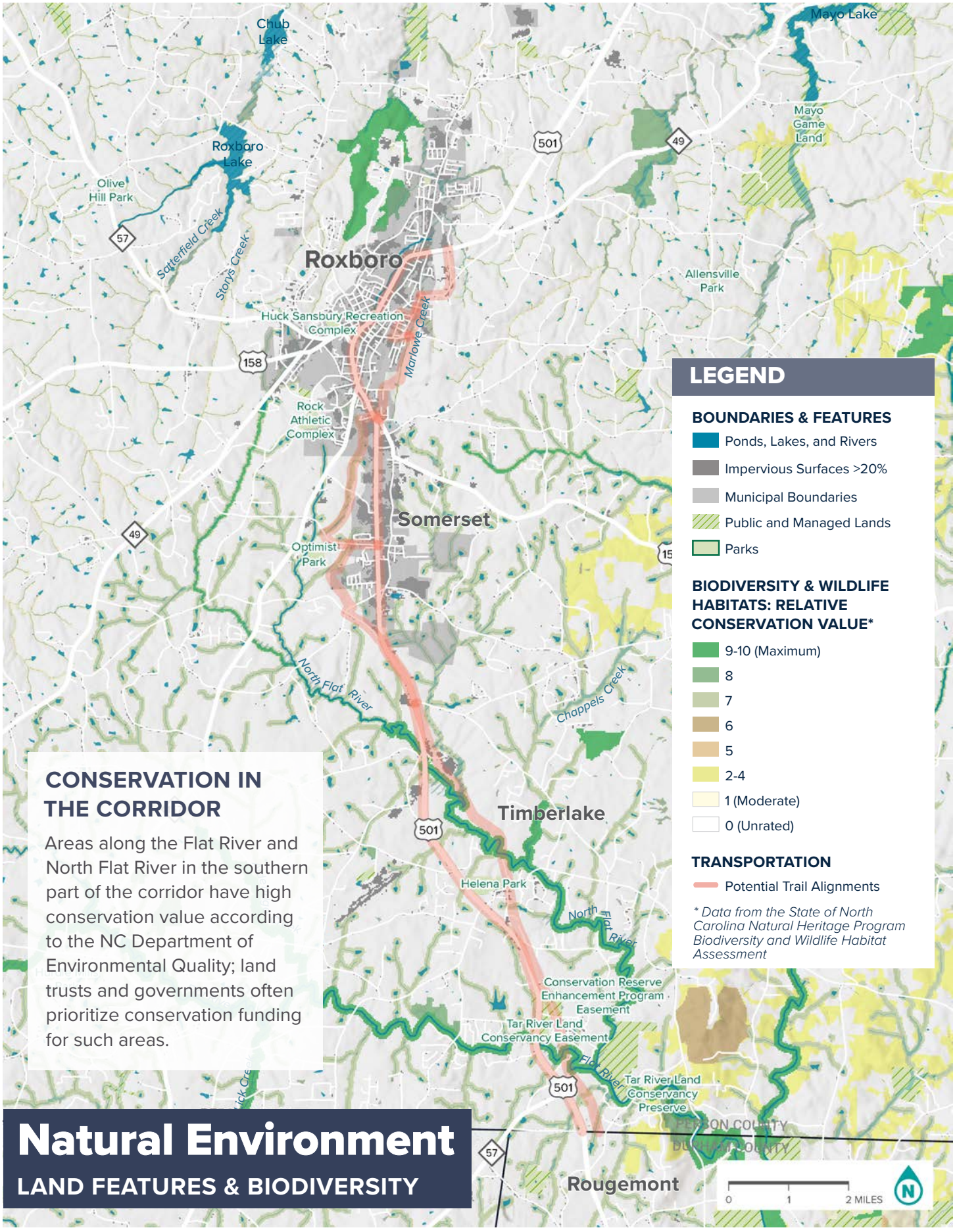
This section describes key considerations that influence the feasibility and optimal route for a trail from Uptown Roxboro to the southern border of Person County, including:

- *Natural Environment*
- *Human Environment*
- *Traffic Volumes and Speeds*
- *Rail Corridor Status*



Natural Environment

WATER FEATURES



LEGEND

BOUNDARIES & FEATURES

- Ponds, Lakes, and Rivers
- Impervious Surfaces >20%
- Municipal Boundaries
- Public and Managed Lands
- Parks

BIODIVERSITY & WILDLIFE HABITATS: RELATIVE CONSERVATION VALUE*

- 9-10 (Maximum)
- 8
- 7
- 6
- 5
- 2-4
- 1 (Moderate)
- 0 (Unrated)

TRANSPORTATION

- Potential Trail Alignments

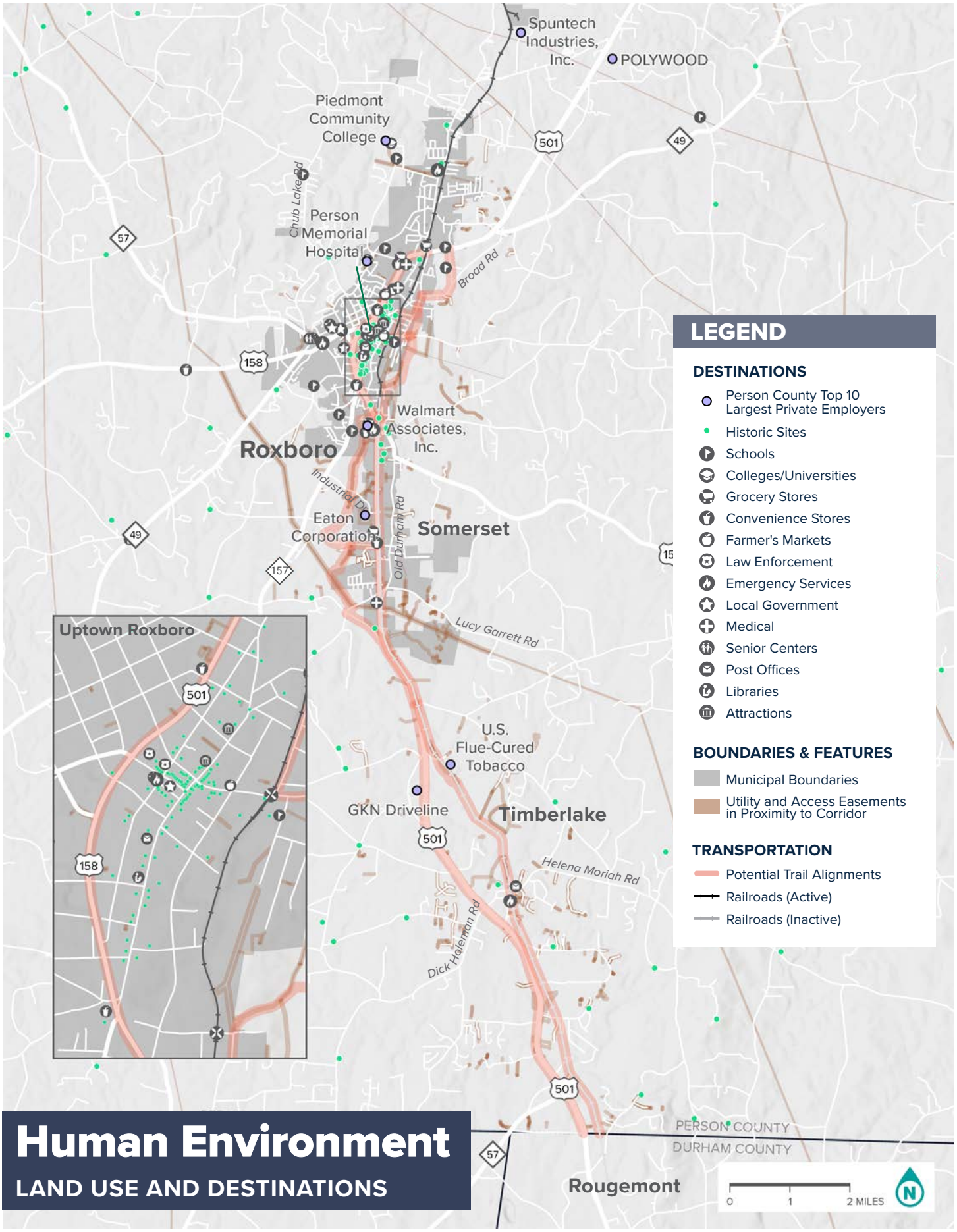
** Data from the State of North Carolina Natural Heritage Program Biodiversity and Wildlife Habitat Assessment*

CONSERVATION IN THE CORRIDOR

Areas along the Flat River and North Flat River in the southern part of the corridor have high conservation value according to the NC Department of Environmental Quality; land trusts and governments often prioritize conservation funding for such areas.

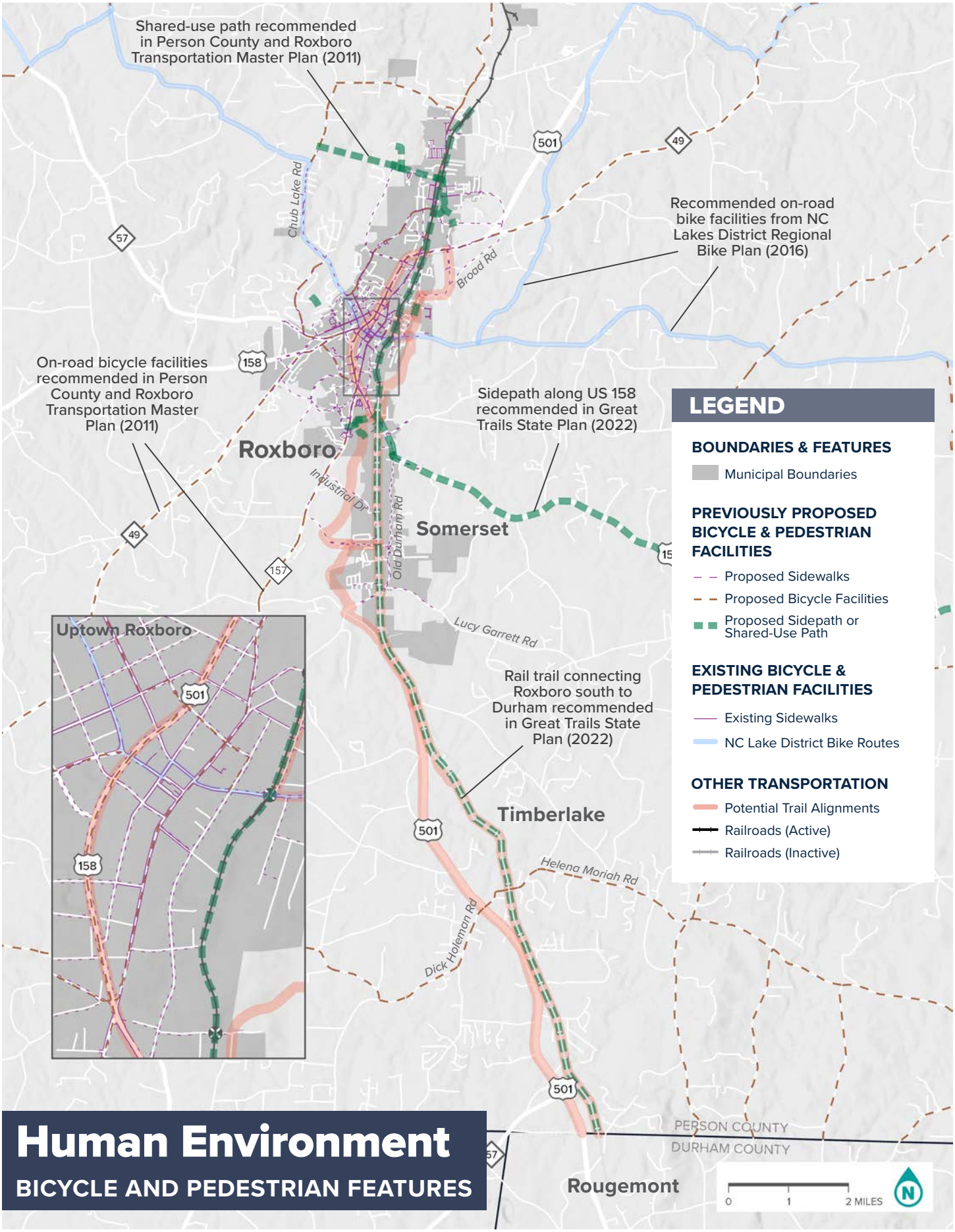
Natural Environment

LAND FEATURES & BIODIVERSITY



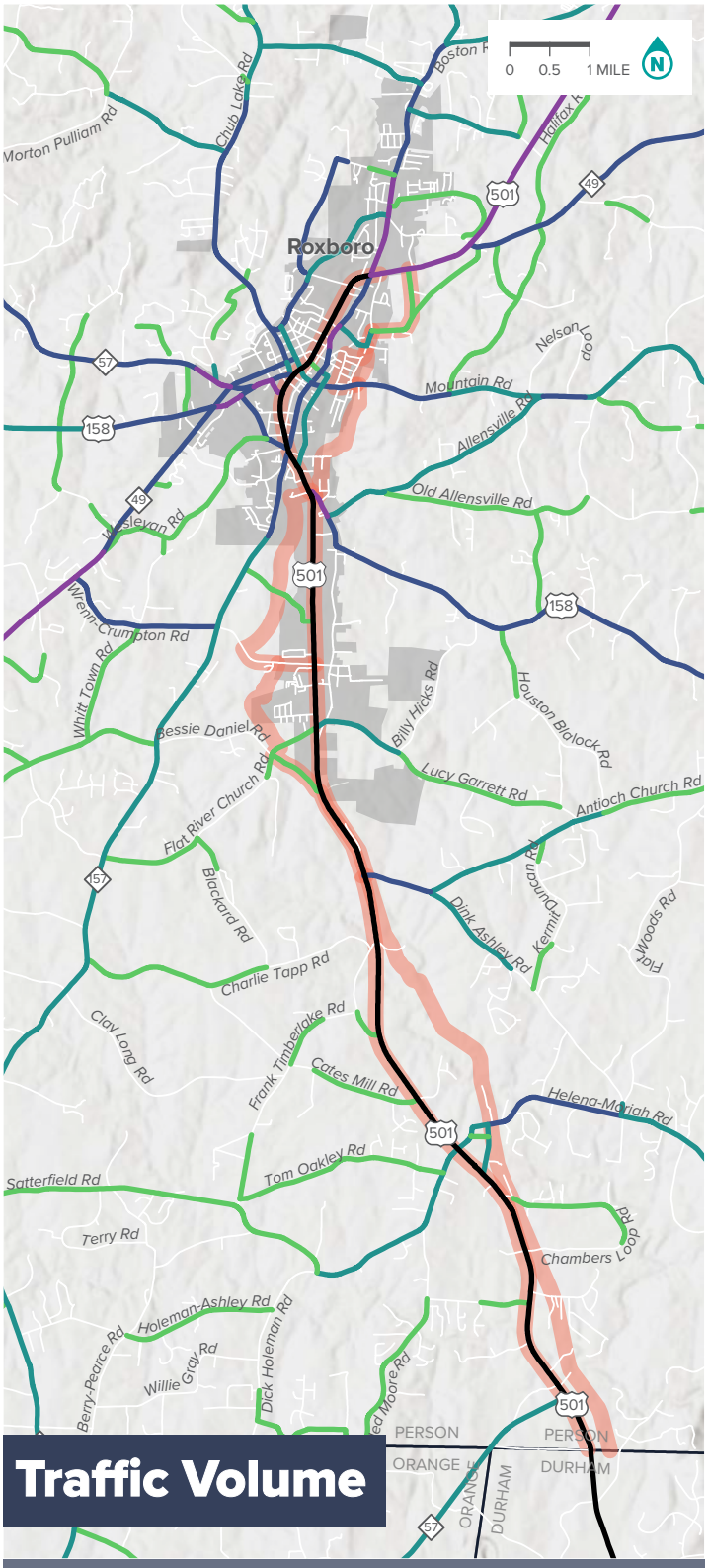
Human Environment

LAND USE AND DESTINATIONS



Human Environment

BICYCLE AND PEDESTRIAN FEATURES



Traffic Volume

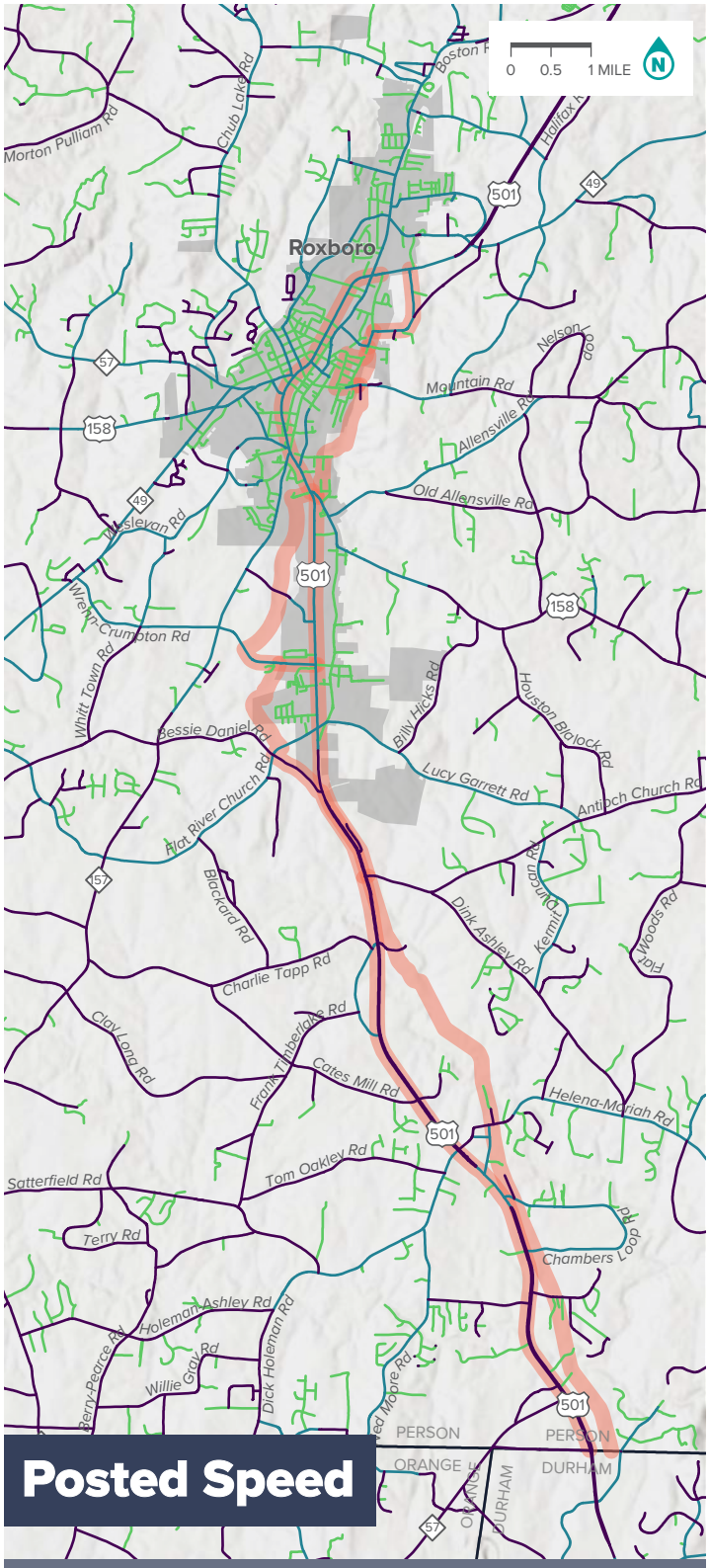
LEGEND

AVERAGE ANNUAL DAILY TRAFFIC (AADT)

- 50–1,200 vehicles
- 1,201–2,900 vehicles
- 2,901–5,400 vehicles
- 5,401–10,000 vehicles
- 10,001–30,500 vehicles

TRANSPORTATION

- Potential Trail Alignments



Posted Speed

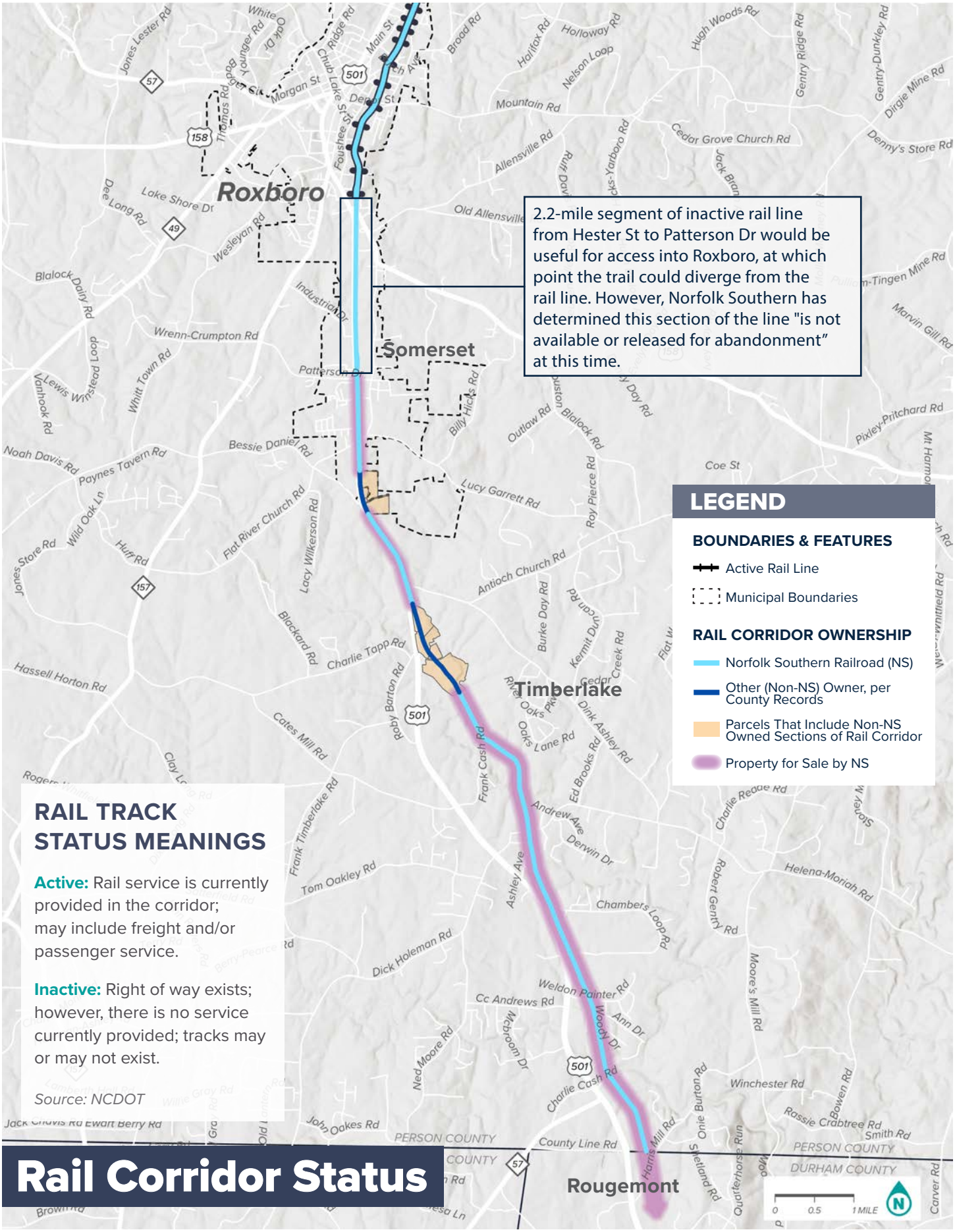
LEGEND

POSTED SPEED LIMIT

- Less than 35 mph
- 35–54 mph
- 55–60 mph

TRANSPORTATION

- Potential Trail Alignments

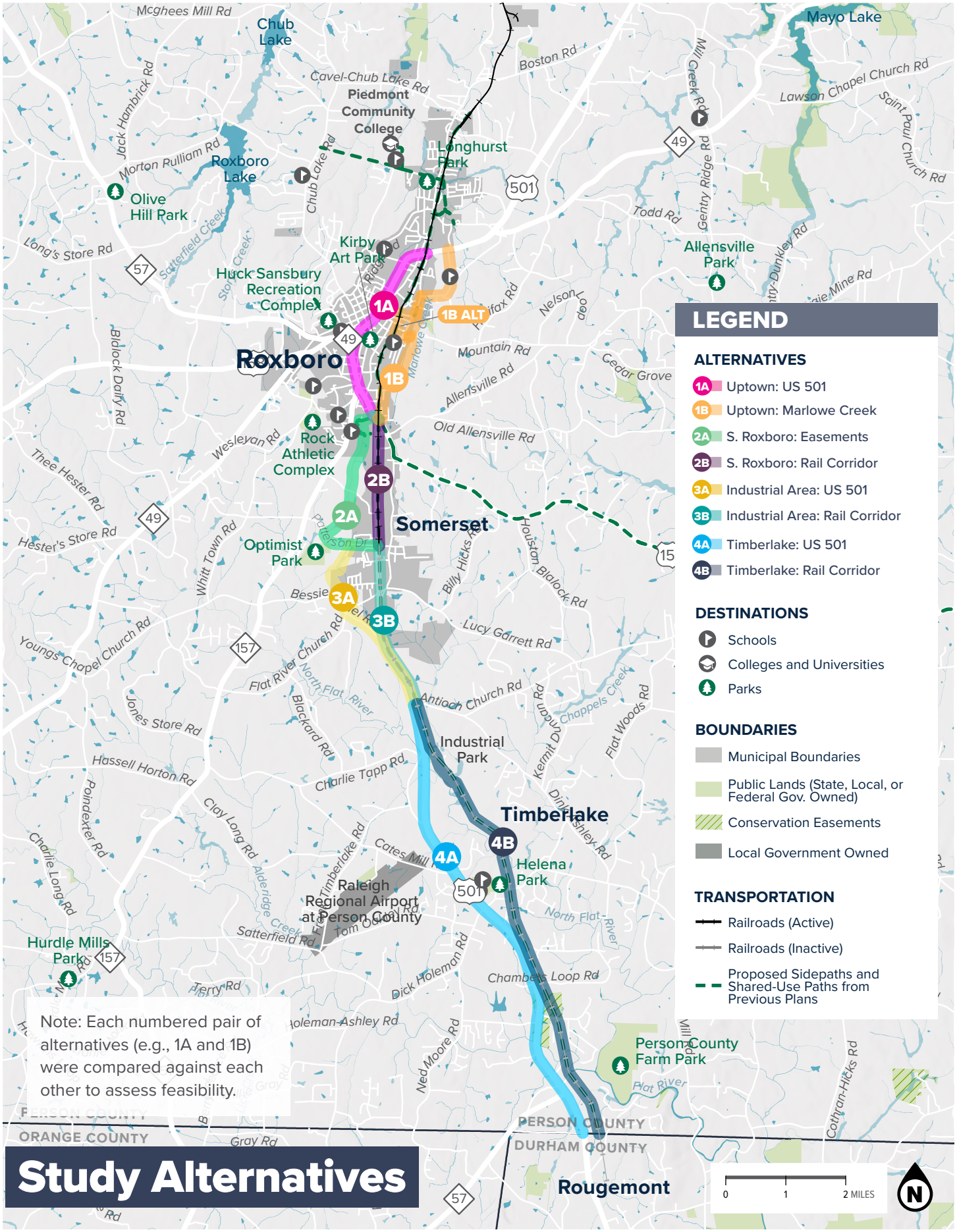


Rail Corridor Status



Alternatives

Four pairs of alternatives were selected for further study. This section describes opportunities and constraints along each potential route and provides examples of the recommended facility types for each alternative.



Study Alternatives

Table 1. *Summary of Alternatives*

ID	DESCRIPTION (NORTH TO SOUTH)	FACILITY TYPE + LENGTH + COST*	OPPORTUNITIES + CHALLENGES
1A	**Uptown: US 501** Sidepath along US 501 (side to be determined) from railroad crossing near Henry Street to the planned trail at Garrett Street.	**Sidepath** **2.67 miles** **Cost to be determined as part of NCDOT U-5969**	**Opportunity:** Potential to coordinate with NCDOT project STIP U-5969 to add sidepath along US 501 through Uptown. **Challenge:** US 501 through Uptown Roxboro is a heavily-used vehicle corridor with many commercial driveways.
1B	**Uptown: Marlowe Creek** Starting at Person County Learning Academy, crosses US 501 at Henderson Road. Sidepath along Henderson Road, Broad Road, and Broad Street (using former roadway bridge). Shared-use path in sewer easements along Marlowe Creek to Nichols Avenue; uses Burton Street and vacant lots to connect to Melvin Street and to NC 158/ US 501 intersection. Alternate option uses ROW on Depot Street, Front Street, and Barnett Avenue.	**Shared-Use Path and Sidepath** **3.18 miles** **$12.6 million*** **Note: alignment was modified slightly after cost estimate was calculated*	**Opportunity:** Potential to utilize planned bike/pedestrian connection at site of former road bridge; opportunity to connect to transportation disadvantaged area and affordable housing. **Challenges:** Potential environmental issues; aging sewer infrastructure may need to be upgraded with the addition of a trail; landowner/ROW privacy concerns.
2A	**S. Roxboro: Easements** Connects to an existing footpath/ planned trail between South Elementary School and Walmart. Shared-use path along City of Roxboro sewer easement (east side of the waterway) south to Patterson Drive; sidepath along Patterson Drive to US 501.	**Shared-Use Path and Sidepath** **2.29 miles** **$9 million**	**Opportunities:** Coordination with City for public access in sewer easement along east side of creek; planned connection between park and school. **Challenge:** Less direct access to commercial areas, services, and employers.
2B	**S. Roxboro: Rail Corridor or US 501** Trail in rail corridor (preferred) or in NCDOT ROW along east side of US 501 from Old Durham Road to Somerset Church Road.	**Rail Corridor Option:** **Shared-Use Path (Rail-to-Trail)** **1.69 miles** **$6.6 million**	**Opportunities:** Connection to affordable housing; opportunity to provide access across rail corridor for businesses/new development. **Challenge:** Norfolk Southern determined this segment of rail corridor is "not available or released for abandonment" at this time.
3A	**Industrial Area: US 501** Shared-use path along sewer easement from Patterson Drive to Flat River Church Road; sidepath along Flat River Church Road and Bessie Daniel Road to US 501; sidepath on west side of US 501 to Antioch Church Road.	**Shared-Use Path and Sidepath** **2.75 miles** **$9.2 million**	**Opportunities:** Potential for trail in Duke Energy transmission easement and HOA open space; opportunity for trailhead at Palace Pointe multiplex.

*See **Cost Disclaimer** on following page

ID	DESCRIPTION (NORTH TO SOUTH)	FACILITY TYPE + LENGTH + COST*	OPPORTUNITIES + CHALLENGES
3B	**Industrial Area: Rail Corridor** Shared-use path on rail corridor from Somerset Church Road to Antioch Church Road.	**Shared-Use Path (Rail-to-Trail)** **2.23 miles** **$7.3 million**	**Opportunity:** Inactive rail corridor. **Challenges:** Heavy truck traffic on Old Durham Road serving industrial land uses; privately-owned section of rail corridor.
4A	**Timberlake: US 501** Sidepath on the western side of US 501 from Antioch Church Road to the Person/Durham County Line.	**Sidepath** **6.43 miles** **$19.7 million**	**Opportunities:** Potential to connect to several businesses; wide ROW in northern part of segment. **Challenges:** reduced ROW and multiple driveways in the southern part of the segment; additional connection and crossing over rail corridor and Flat River would be needed to access County Farm Park.
4B	**Timberlake: Rail Corridor** Shared-use path on rail corridor from Antioch Church Road to the Person/ Durham County Line, with one section that splits from the rail corridor and runs along the west side of North Flat River around the Industrial Park.	**Shared-Use Path (Rail-to-Trail)** **6.60 miles** **$20 million**	**Opportunities:** Potential for trailhead and connection to trails at Person County Farm Park and future access to Moore's Mill Road. **Challenges:** Routing through/ around solar farm and Industrial Park; condition of several railroad trestle bridges is unknown; additional connection and crossing over Flat River would be needed to access County Farm Park.

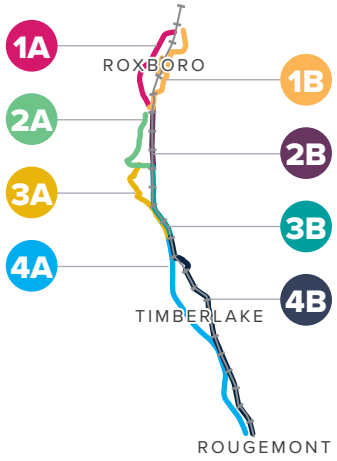
***Cost Disclaimer:** These order of magnitude planning level costs were developed using the NCDOT Planning Cost Estimator Tool updated in 2023 for the SPOT Prioritization process. **This should not be used for construction cost estimates and is only intended for a cost comparison between alternatives. A contingency of +/- $500,000 should be considered for any cost.**

This cost opinion does not include detailed estimates on: permitting, inspection, construction management, temporary or permanent easements, detailed utility analysis of conflicts and specific relocation needs or the cost for ongoing maintenance, detailed design layout or grading model for quantities, detailed drainage and water quality analysis, detailed cost related to stream crossings, stormwater treatment, detailed utility relocation costs, and structural/ geotechnical analysis.

It does consider certain costs at a broad planning level, if needed: Design, construction, right-of-way acquisition cost, signalizations and road crossings, stream crossings, and broad utility relocation cost.

The estimator tool assumes regional cost prices and average land values in North Carolina. This cost opinion is provided for cost comparison only and is adjusted for factors known at the time of preparation. Alta Planning + Design has no control over the cost of labor and material, competitive bidding, or market conditions; and makes no warranties, expressed or implied, concerning the accuracy of the opinion as compared to actual bids or cost.

ALTERNATIVES



Existing Conditions in the Corridor

1A | Uptown: US 501



US 501/Durham Rd near S Main St

1B | Uptown: Marlowe Creek



Former crossing of Marlowe Creek at Broad St

2A | S. Roxboro: Easements



View of City sewer easement from Industrial Dr looking south

2B | S. Roxboro: Rail Corridor/US 501



Rail removed at business entrance

3A | Industrial Area: US 501



View of Duke Energy easement from Flat River Church Rd (photo: ©Google Maps)

3B | Industrial Area: Rail Corridor



New development along rail corridor and US 501

4A | Timberlake: US 501

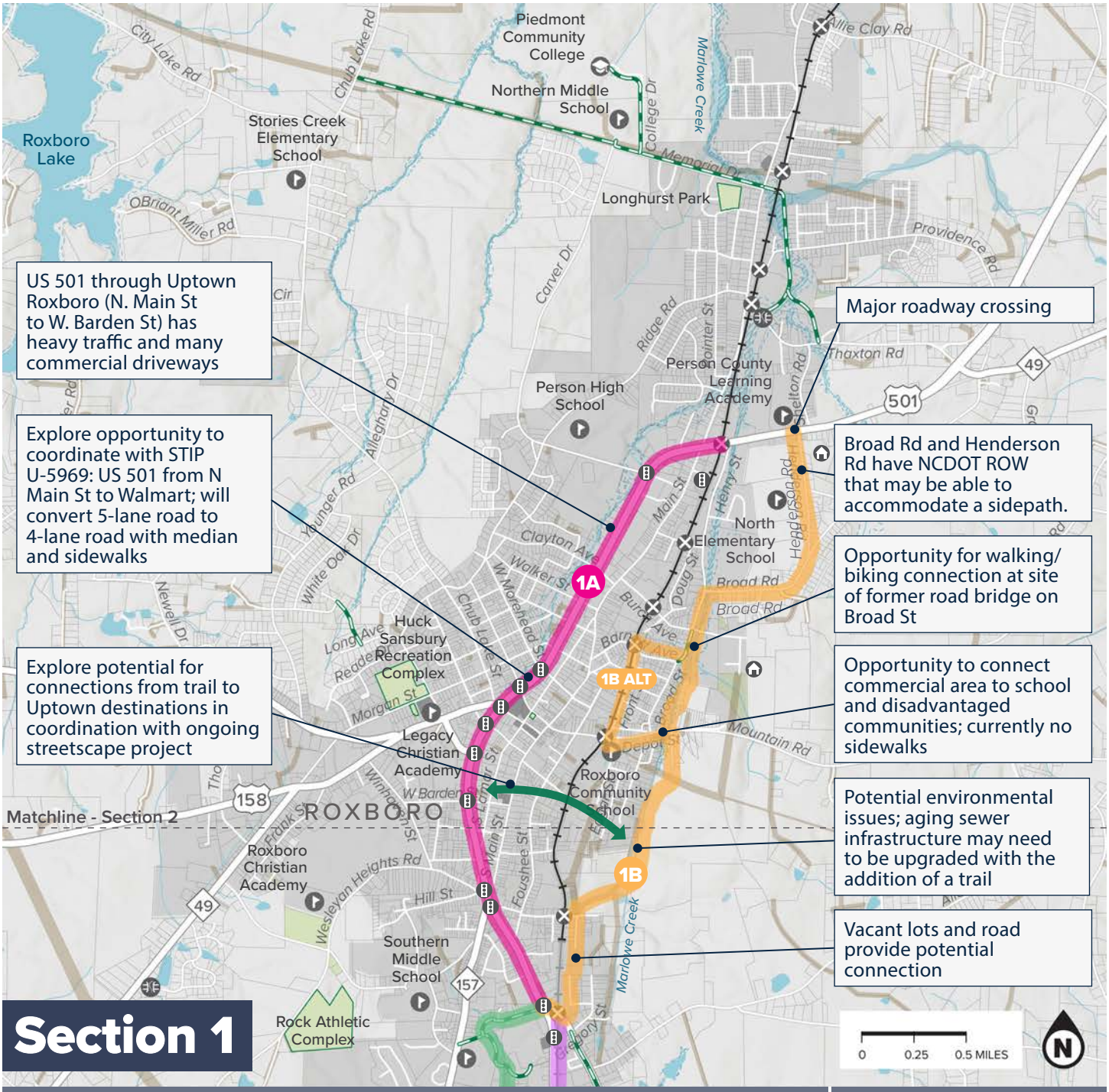


US 501 looking south

4B | Timberlake: Rail Corridor



Old rail corridor visible from Harris Mill Rd



LEGEND

ALTERNATIVES
- 1A Uptown: US 501
- 1B Uptown: Marlowe Creek
- 2A S. Roxboro: Easements
- 2B S. Roxboro: Rail Corridor or US 501

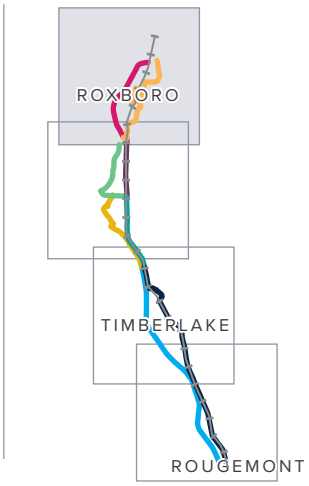
TRANSPORTATION
- Bridges
- Signalized Intersections
- Railroad Crossings
- Railroad (Active/Inactive)
- Proposed Shared-Use Paths from Previous Plans

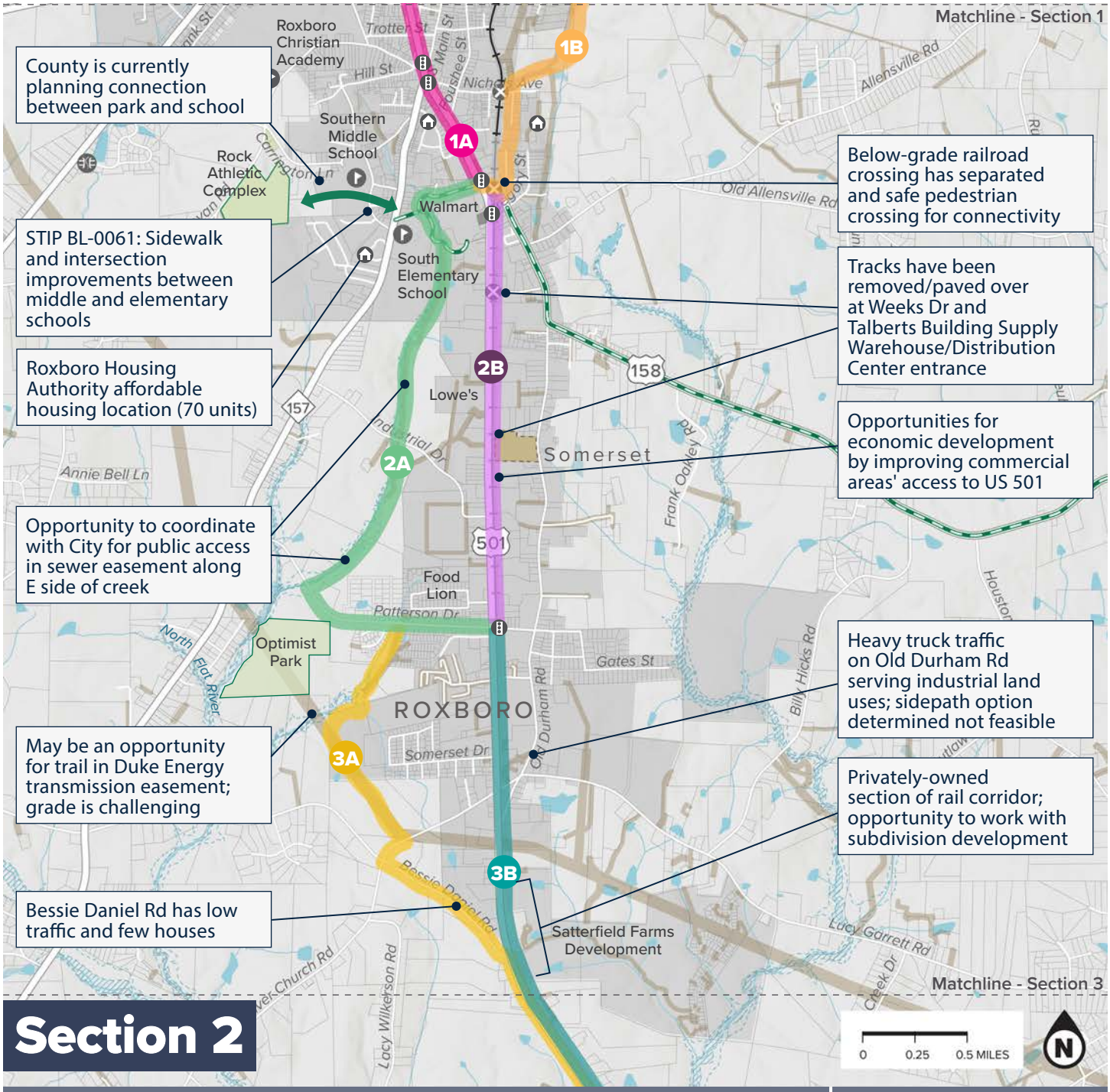
HUMAN ENVIRONMENT
- Parcels
- Municipal Boundaries
- Public Lands (State, Local, or Federal Gov. Owned)
- Local Government Owned
- Utility or Access Easements

NATURAL ENVIRONMENT
- Wetlands
- 100-Year Floodplain
- Floodways

DESTINATIONS
- Parks
- Schools
- Colleges/Universities
- Roxboro Housing Authority Affordable Housing Locations

STUDY CORRIDOR





Section 2

LEGEND

ALTERNATIVES

- 1A Uptown: US 501
- 1B Uptown: Marlowe Creek
- 2A S. Roxboro: Easements
- 2B S. Roxboro: Rail Corridor or US 501
- 3A Industrial Area: US 501
- 3B Industrial Area: Rail Corridor

TRANSPORTATION

- Bridges
- Signalized Intersections
- Railroad Crossings
- Railroad (Active/Inactive)
- Proposed Shared-Use Paths from Previous Plans

HUMAN ENVIRONMENT

- Parcels
- Municipal Boundaries
- Public Lands (State, Local, or Federal Gov. Owned)
- Local Government Owned
- Utility or Access Easements

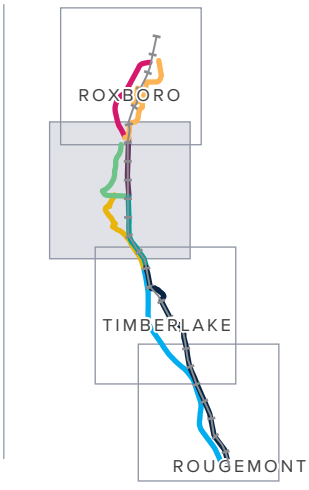
NATURAL ENVIRONMENT

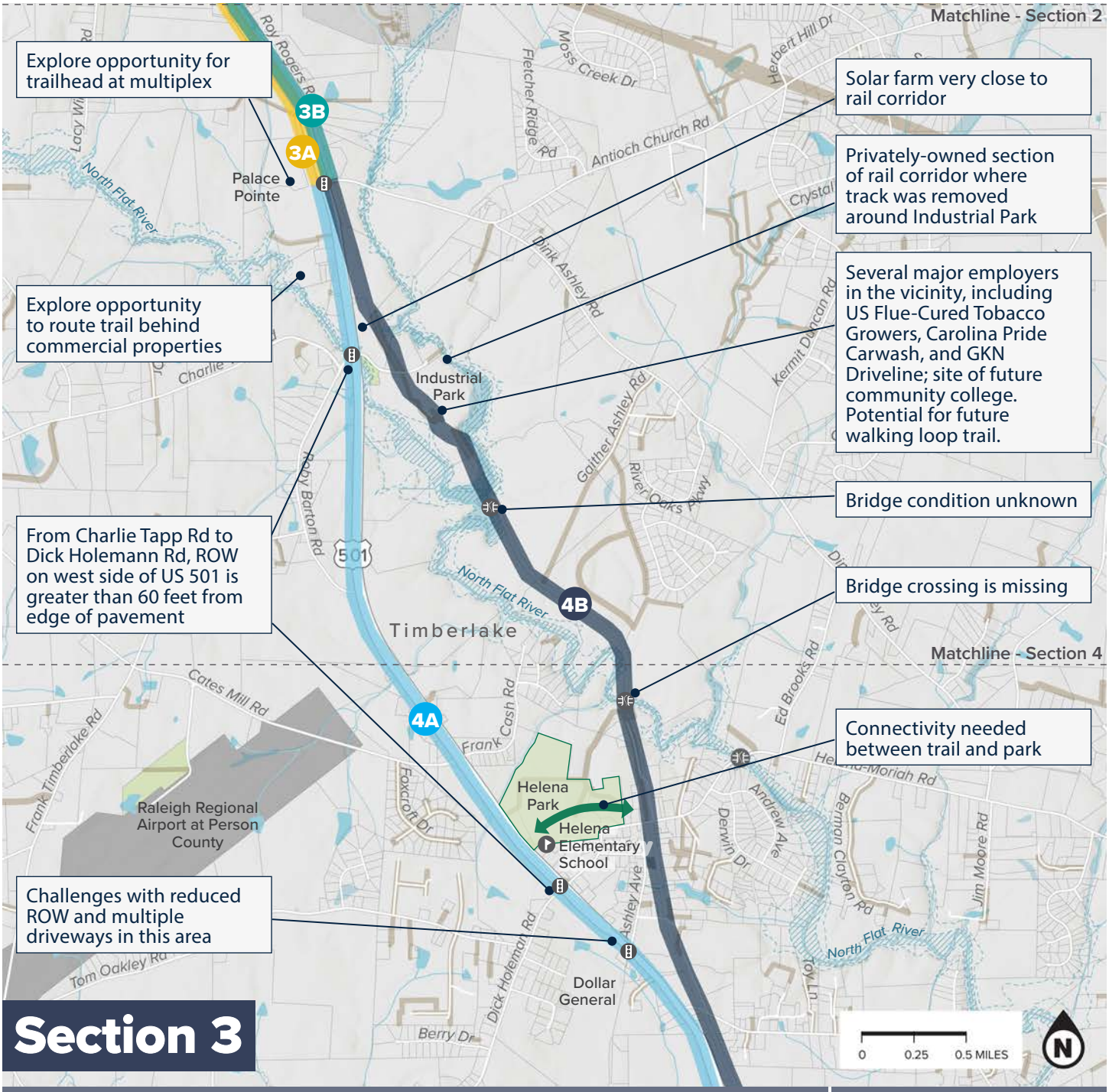
- Wetlands
- 100-Year Floodplain
- Floodways
- Brownfields

DESTINATIONS

- Parks
- Schools
- Roxboro Housing Authority Affordable Housing Locations

STUDY CORRIDOR





Section 3

LEGEND

ALTERNATIVES
- 3A Industrial Area: US 501
- 3B Industrial Area: Rail Corridor
- 4A Timberlake: US 501
- 4B Timberlake: Rail Corridor

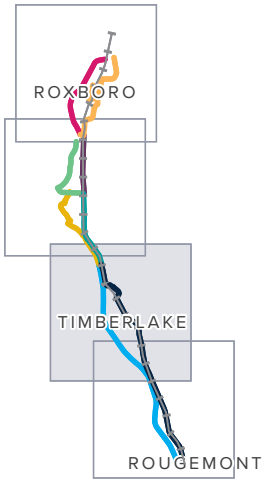
TRANSPORTATION
- Bridges
- Signalized Intersections

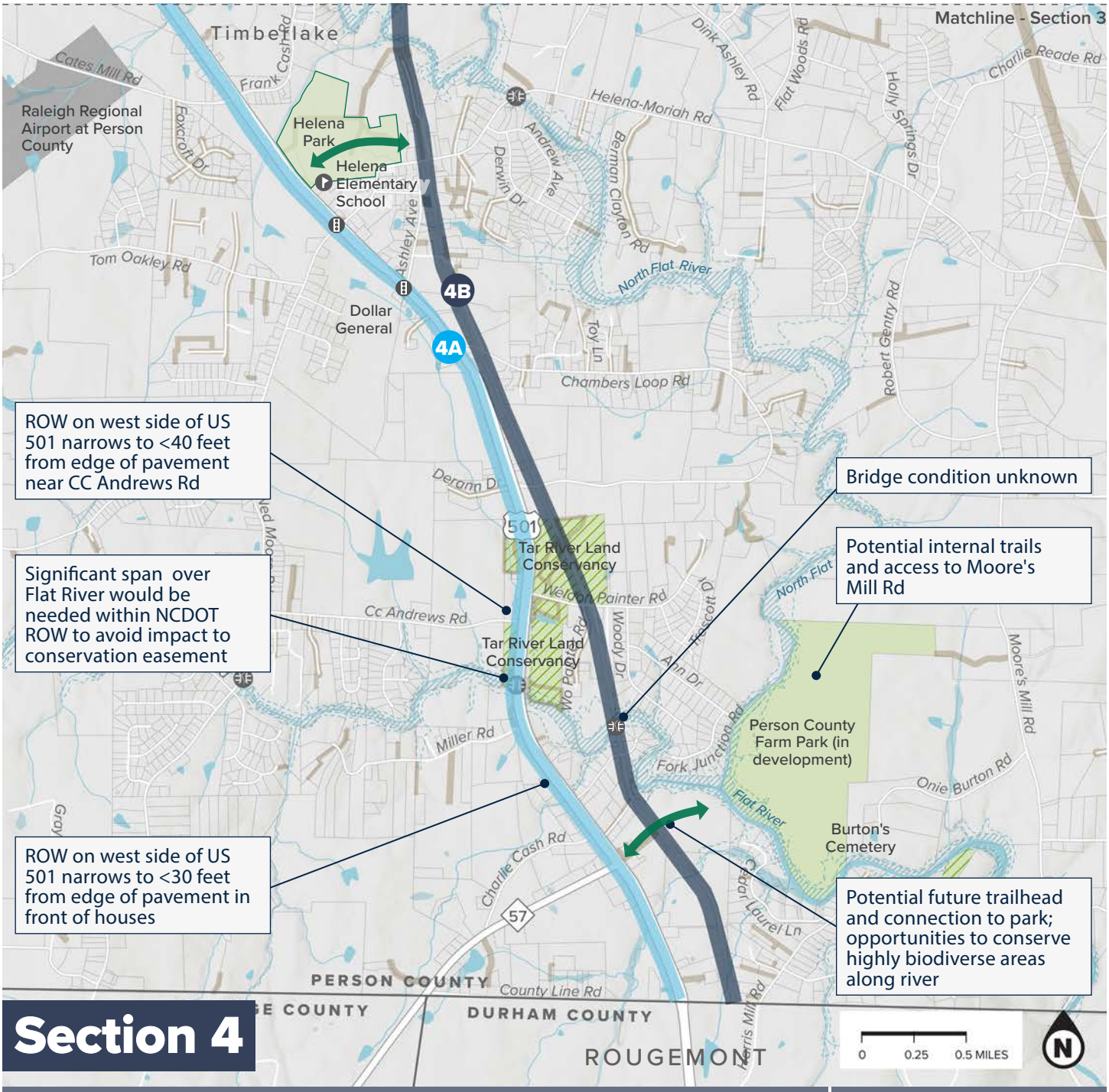
HUMAN ENVIRONMENT
- Parcels
- Municipal Boundaries
- Public Lands (State, Local, or Federal Gov. Owned)
- Local Government Owned
- Utility or Access Easements

NATURAL ENVIRONMENT
- Wetlands
- 100-Year Floodplain
- Floodways

DESTINATIONS
- Parks
- Schools

STUDY CORRIDOR





LEGEND

ALTERNATIVES
- 4A Timberlake: US 501
- 4B Timberlake: Rail Corridor

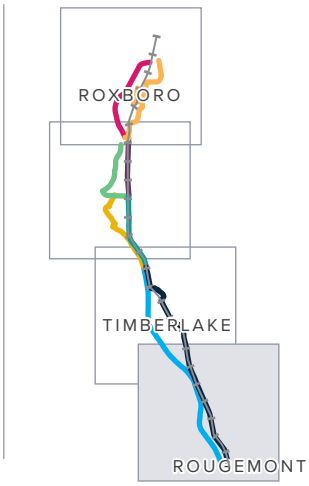
TRANSPORTATION
- Bridges
- Signalized Intersections

HUMAN ENVIRONMENT
- Parcels
- Public Lands (State, Local, or Federal Gov. Owned)
- Conservation Easements
- Local Government Owned
- Utility or Access Easements

NATURAL ENVIRONMENT
- Wetlands
- 100-Year Floodplain
- Floodways

DESTINATIONS
- Parks
- Schools

STUDY CORRIDOR

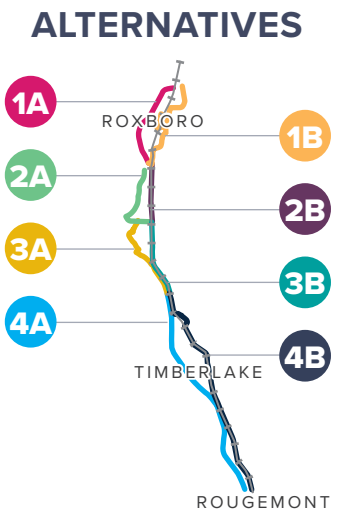


Facility Types

This section shows potential facility types for each segment of the trail. Some segments will have multiple facility types along their lengths.

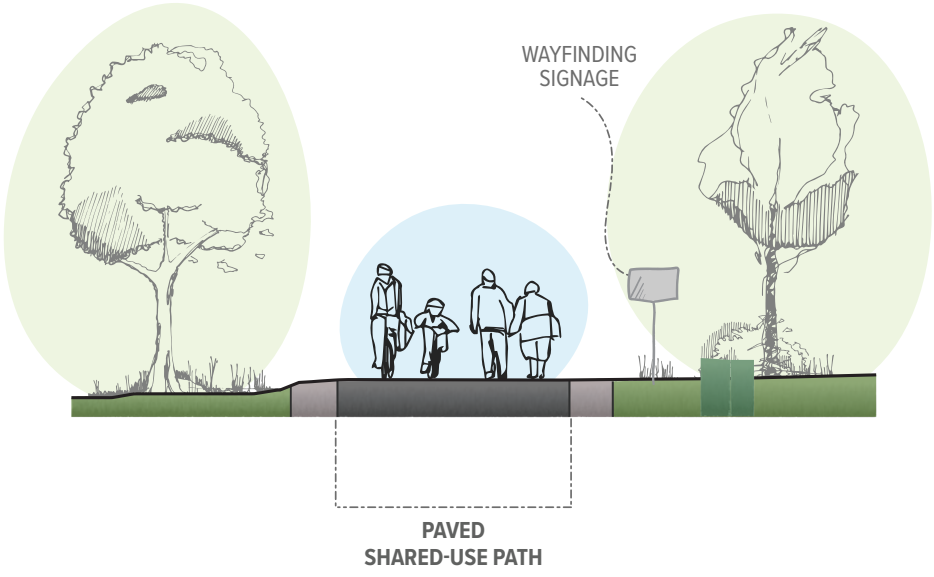
Alternatives:

1A Uptown: US 501
1B Uptown: Marlowe Creek
2A S. Roxboro: Easements
2B S. Roxboro: Rail Corridor or US 501
3A Industrial Area: US 501
3B Industrial Area: Rail Corridor
4A Timberlake: US 501
4B Timberlake: Rail Corridor



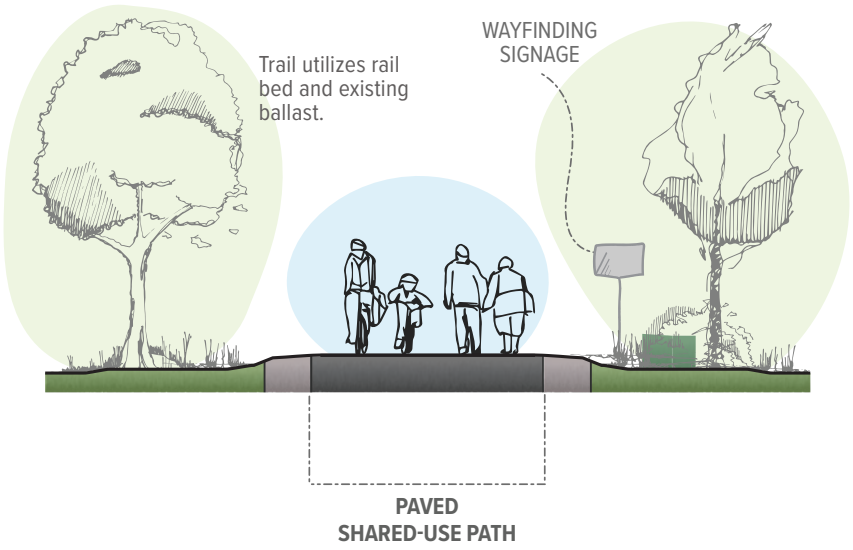
Shared-Use Path

ALTERNATIVES: 2A 3A

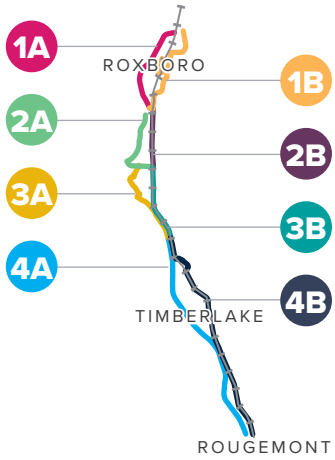


Shared-Use Path: Rail to Trail

ALTERNATIVES: 2B 3B 4B

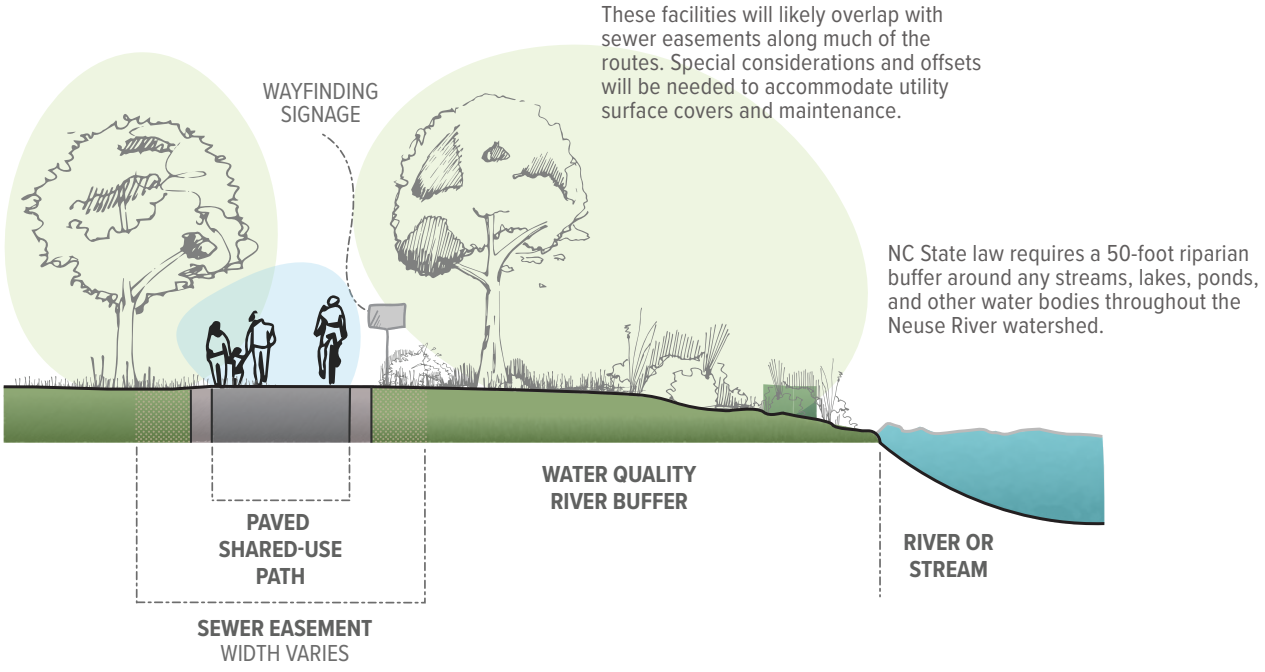


ALTERNATIVES



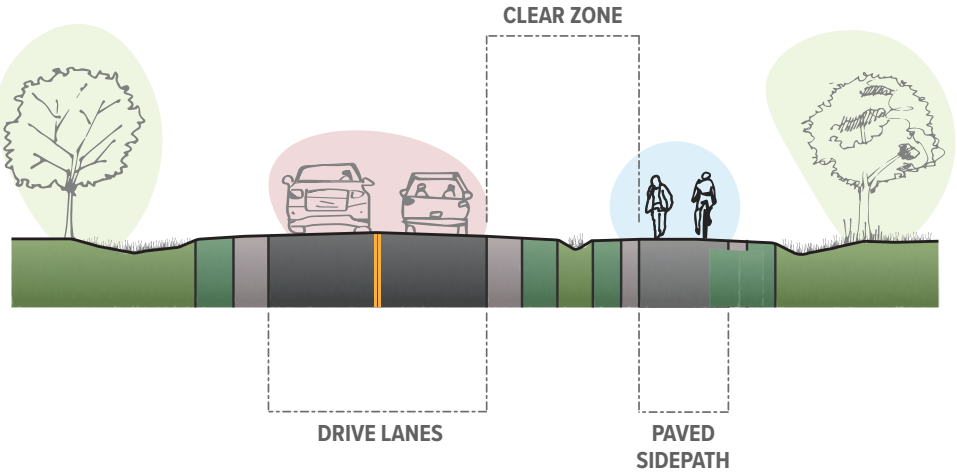
Shared-Use Path: River or Stream Adjacent

ALTERNATIVES: 1B 2A 4B

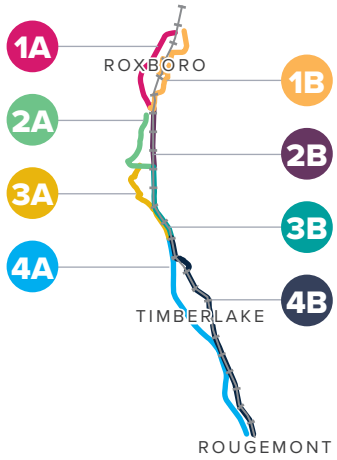


Sidepath: Minor Roadway

ALTERNATIVES: 2A 3A



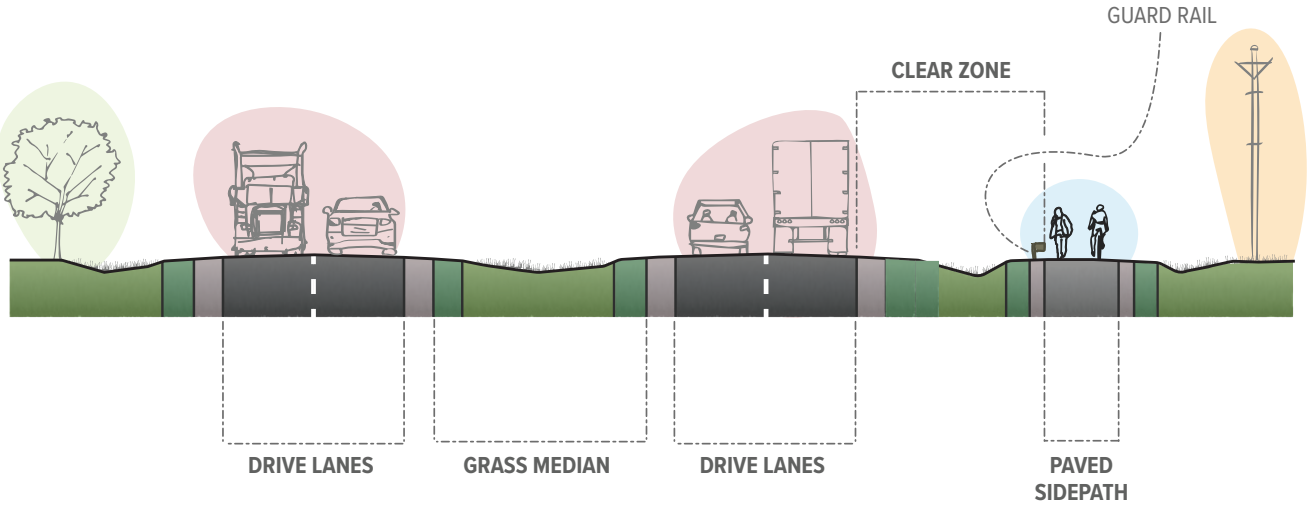
ALTERNATIVES



Sidepath: Rural Highway

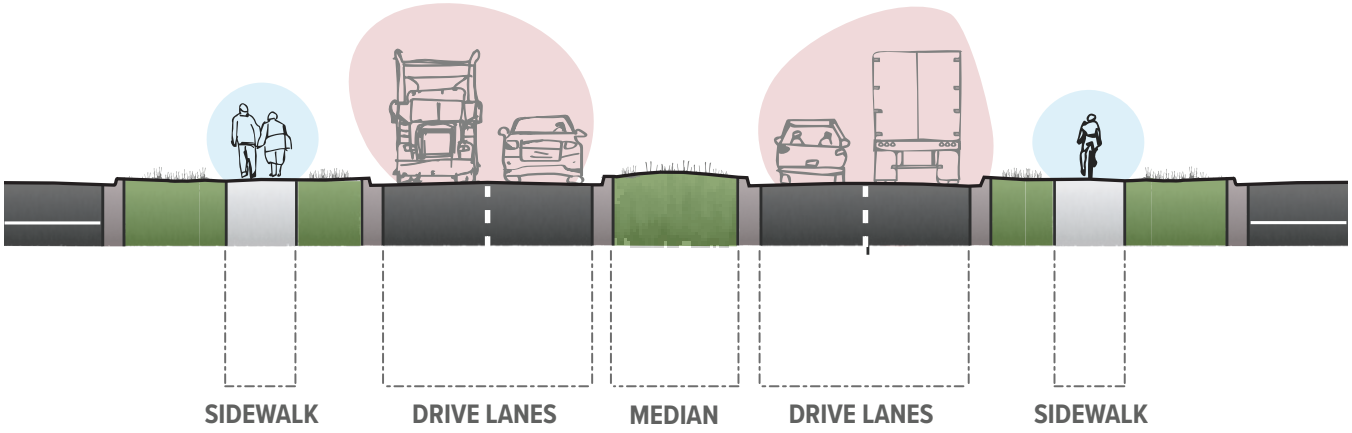
ALTERNATIVES: 2B 3A 4A

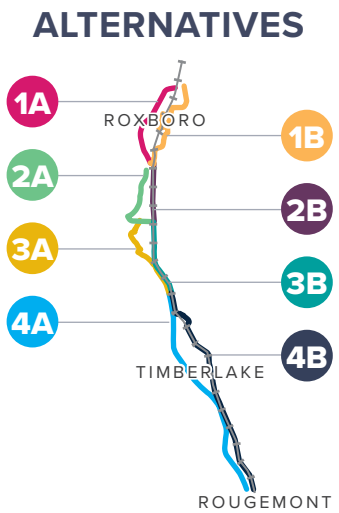
The distance from highway edge of pavement to edge of ROW varies greatly throughout the corridor, but averages about 50 feet.



Sidepath: Commercial Arterial

ALTERNATIVES: 1A





04 Evaluation and Recommendations



Criteria for Evaluating Alternatives

Alternatives within each section of the study area were compared and given a score of high, medium, or low based on the following criteria:

GOAL	EVALUATION MEASURES	PERFORMANCE		
		Low	Medium	High
Connectivity and Equity	Connects to existing and future destinations, such as other trails, parks, retail, schools, major employers, and neighborhoods Expands the area's overall walking and biking transportation network Serves low-income areas with high Transportation Disadvantage Index (TDI) scores, from 0 to 21, with higher scores conveying the greatest level of need for pedestrian and bicycle facilities	Connects to few destinations TDI scores <9.5 Existing walking/biking facilities	Connects to some destinations TDI scores 9.5-11.5 Some existing walking/biking facilities	Connects to the highest number of destinations and/or key destinations TDI scores >11.5 Few existing walking/biking facilities
Traffic Safety	Minimizes crossings with roadways, driveways, and active railways Minimizes exposure to high-speed (>45mph) and/or high-traffic (AADT >15,000) roadways	>6 local road crossings, >2 major road crossings, or >2 signalized crossings Lower separation from high-speed/high-traffic roadways	2-6 local roadway crossings, up to 2 major road crossings, and up to 2 signalized crossings Sufficient separation from high-speed/high-traffic roadways	<2 local roadway crossings, no major road crossings, and no signalized crossings High separation/not adjacent to high-speed/high-traffic roadways
Cost Effectiveness	Minimizes costs related to ROW acquisition, design, and construction compared to other alternatives (based on planning-level cost estimates; see pages 33 to 34)	Most expensive due to longer length, more structures, greater environmental and utility impacts (power lines and stormwater infrastructure), and/or ROW acquisition	Moderately expensive due to length, needed structures, environmental impacts, utilities, and/or ROW acquisition	Less expensive due to shorter length, fewer structures, fewer environmental and utility impacts, and/or little-to-no ROW acquisition
Available ROW	Uses public ROW or private property where landowners have expressed interest in a trail, number of private easements that may need to be acquired	Limited public ROW exists and landowners do not support the trail or support is unknown; between 15-20 easements would be needed	Some public ROW exists but may require up to 15 easements, especially in areas with many landowners	Public ROW available and/or largely one large private landowner that has expressed interest in accommodating the trail

GOAL	EVALUATION MEASURES	PERFORMANCE		
		Low	Medium	High
 **User Experience**	Opportunities for shade/tree cover, attractive scenery, desired destinations, separation from traffic, gentle grade, and trail amenities (drinking fountains, trailheads, scenic areas, benches, etc)	Along high-traffic roads with minimal separation Few opportunities for trailside amenities	Along high-traffic roads with moderate separation, or along low-traffic roads Some opportunities for trailside amenities	Not alongside roads Natural setting with existing trees or opportunity for landscaping Many opportunities for trailside amenities
 **Minimized Environmental Impacts**	Conserves land for habitats, opportunity to conserve high biodiversity/conservation value, using State Biodiversity and Wildlife Assessment (SBWA) scores to determine performance Minimizes impacts to wetlands, habitats, and trees Reuses existing or abandoned infrastructure	>5 FEMA stream crossings impacted Creation of new impervious surfaces, loss of tree canopy Low opportunity for conservation, with SBWA scores <5	3-5 FEMA stream crossings impacted Mixture of new impervious surfaces and reusing existing infrastructure Some opportunity for conservation, with SBWA scores between 5-6	<3 FEMA stream crossings impacted Reuses existing infrastructure to limit creation of new impervious surfaces High opportunity for conservation, with SBWA scores between 7-10
 **Economic Development**	Supports local economic development goals including greater transportation options and access to jobs and destinations Increases opportunities for local businesses	Does not support local economic development goals Does not increase opportunities for local businesses	Supports local economic goals through access to jobs and destinations May slightly increase opportunities for local businesses	Supports local economic goals through access to jobs and destinations Provides business and development opportunities by increasing access to US 501
 **Public and Stakeholder Input**	Aligns with preferences of the public and key stakeholders, based on input received during this and prior planning efforts	Low support in this or other plans	Some support in this and other plans	Strong support in this and other related plans
 **Ease of Maintenance**	Does not require maintenance that is significantly more costly or more frequent than other alternatives: ease of access (proximity to road crossings), chance of flooding, and structures (i.e. bridges) that would require higher maintenance	Largely within a floodplain, in a less-accessible area, highest amount of structures	Sometimes traveling within a floodplain, somewhat accessible, lower amount of structures	Not in, or briefly traversing a floodplain, and proximate to a major road or side road for easy access

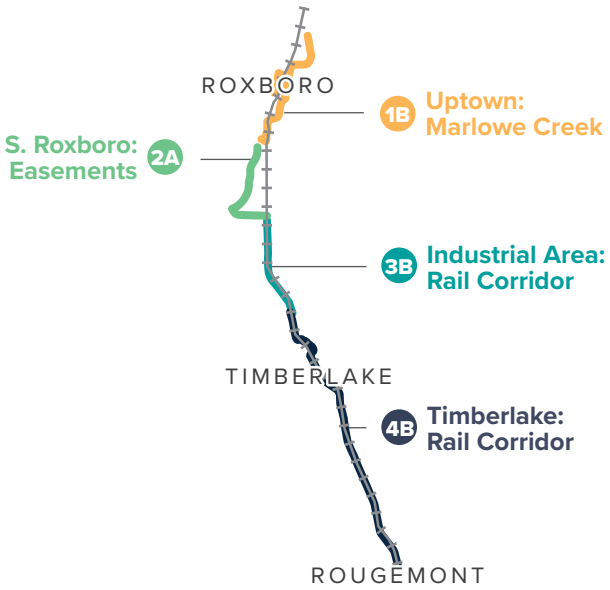
Evaluation Results

Each pair of alternatives was qualitatively compared across each of the evaluation goals and given a relative performance score of high, medium, or low. The optimal trail route is made up of the highest-performing alternatives from each pair.

Overall performance provides an estimate of how well an alternative meets the community goals. Higher overall performance is also linked to greater competitiveness for grant funding from state and federal agencies.

The highest-performing segments were 1B, 2B, 3B, and 4B. Three of these segments use the existing rail bed, while the last runs alongside local roads and a creek. These segments comprise the optimal trail route that is most aligned with local goals and preferences.

OPTIMAL TRAIL ROUTE





Example of what a rail trail could look like in Person County (photo: American Tobacco Trail in Durham)

Decision Matrix

Table 2 shows each alternative's performance across all evaluation criteria and its overall performance rating (high, medium, or low). Details on each score are provided in Table 3.

Table 2. *Decision Matrix Summary*

	ALTERNATIVES							
GOALS	**1A**	**1B**	**2A**	**2B**	**3A**	**3B**	**4A**	**4B**
Connectivity and Equity								
Traffic Safety								
Cost Effectiveness								
Available ROW								
User Experience								
Minimized Environmental Impacts								
Economic Development								
Public and Stakeholder Support								
Ease of Maintenance								
Overall Performance	**LOW**	**MID**	**MID**	**LOW***	**MID**	**HIGH**	**LOW**	**HIGH**

**alternative 2B determined not feasible at this time due to unavailable ROW*

PERFORMANCE:	Low	Medium	High
OVERALL PERFORMANCE:	At least 4 Low scores + No more than 2 High scores	At least 3 Mid scores + No more than 3 Low scores + No more than 3 High scores	At least 4 High scores + No more than 2 Low scores

Table 3. *Decision Matrix: Performance Details*

	ALTERNATIVES			
GOALS	**1A**	**1B**	**2A**	**2B**
Connectivity and Equity	STIP U-5969 will add sidewalks on US 501; improves access to many Uptown destinations; high TDI	No existing facilities; connects to low-income housing to Uptown, schools, and grocery store; high TDI	No existing facilities; connects to school and park; other direct connections to groceries, retail, and employers dependent upon landowner willingness; high TDI	Direct connections to employers east of US 501; connections to groceries, employers, and retail west of US 501 possible with intersection improvements; medium to high TDI
Traffic Safety	Crosses 16 roads and 20+ commercial driveways; 11 signalized intersections; adjacent to US 501 (17,000-22,500 AADT) with low separation	Crosses 1 major and 5 local roads; 0 signalized intersections	Crosses 1 major and 1 local road; 1 signalized intersection; adjacent to 45mph roads with low separation	Crosses 1 local road; 0 signalized intersections; high separation from roadway
Cost Effectiveness *(total cost / cost per mile)*	Unknown; would occur with NCDOT U-5969 project	$12.6M total, $3.9M/mi (note: alignment was modified slightly after cost estimate)	$9M total, $3.9M/mi (significantly longer and more expensive than 2B)	$6.3M total, $3.7M/mi (significantly shorter and less expensive than 2A)
Available ROW	There is limited public ROW along 501, likely requiring acquisition of adjacent parcels	Uses some NCDOT ROW and public sewer easements; 16-20 easements would be needed from private landowners	Uses NCDOT ROW and public sewer easements; may require 5-10 easements	Norfolk Southern has determined the section of rail corridor is "not available or released for abandonment"
User Experience	Alongside major roadway with little separation from traffic; numerous road/driveway crossings require vigilance	Alongside neighborhood streets or completely separated from traffic in natural setting along creek	Partially along moderately busy roadway; partially separated from traffic in natural setting along creek	Completely separated from vehicle traffic on rail bed
Minimized Environmental Impacts	0 stream crossings, reuses existing infrastructure; low conservation value	4 stream crossings; some opportunity for conservation	3 stream crossings; higher opportunity for conservation	0 stream crossings; reuses existing rail bed; possible brownfield remediation; low conservation value
Economic Development	May increase foot traffic to businesses along US 501	Provides transportation options and increases job access for low income residents	Supports local economic development goals	Direct opportunity for economic development by improving commercial access to US 501
Public and Stakeholder Support	Less preferred trail route than 1B	More preferred trail route than 1A	More preferred trail route than 2B	Not feasible at this time according to Norfolk Southern
Ease of Maintenance	Near roadway, no floodplain or structures	May flood more frequently	May flood more frequently	Near roadway, not within floodplain
Overall Performance	**LOW**	**MID**	**MID**	**LOW***

**alternative 2B determined not feasible at this time due to unavailable ROW*

ALTERNATIVES

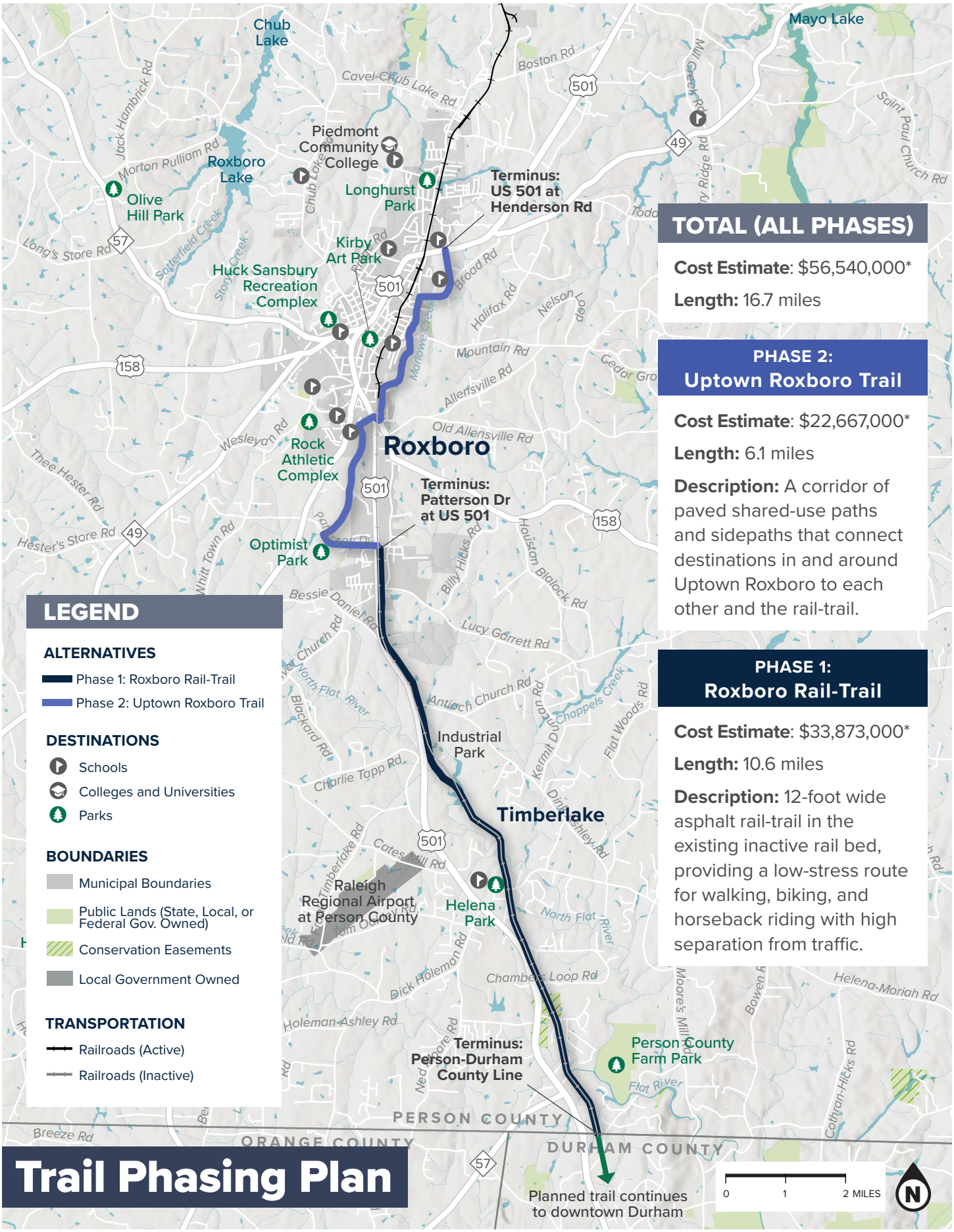
GOALS	3A	3B	4A	4B
Connectivity and Equity	Connection to medical clinic; low, medium, and high TDI	Connection to bank and several industrial employers; low, medium, and high TDI	Same side of US 501 as several retail/commercial destinations; potential connection to Helena Park; low to medium TDI	Connects to several major employers; potential for connections to Helena Park and future Person County Farm Park; low to medium TDI
Traffic Safety	Crosses 5 local roads; 1 signalized intersection; sufficient separation from roadway	Crosses 2 local roads; 0 signalized intersections; high separation from roadway	Crosses 8 local roads; 3 signalized intersections; narrow ROW in some areas may not allow high separation from roadway	Crosses 6 local roads; 1 signalized intersection; high separation from roadway
Cost Effectiveness *(total cost / cost per mile)*	$9.2M total, $3.4M/mi (somewhat longer and more expensive than 3B)	$7.3M total, $3.3M/mi (somewhat shorter and less expensive than 3A)	$19.7M total, $3.1M/mi (4A and 4B are similar in cost and length)	$20M total, $3M/mi (4A and 4B are similar in cost and length)
Available ROW	Uses NCDOT ROW and Duke Energy easement; would require easement on HOA open space; around 5 easements needed	Uses inactive railroad ROW (largely one single landowner)	Uses NCDOT ROW	Uses inactive railroad ROW; small private section has willing landowners
User Experience	Half of alternative is alongside major roadway traffic	Not alongside vehicle traffic	Alongside major roadway traffic; ROW narrow in some places	Not alongside vehicle traffic
Minimized Environmental Impacts	0 stream crossings; some opportunity for conservation	0 stream crossings; reuses existing rail bed; low conservation value	7 stream crossings; some conservation value	5 stream crossings; reuses existing rail bed; high conservation value
Economic Development	Supports local economic development goals	Direct opportunity for economic development by providing access to US 501	Supports local economic development goals	Direct opportunity for economic development by providing access to US 501
Public and Stakeholder Support	Less preferred trail route than 3B	More preferred trail route than 3A	Less preferred trail route than 4B	More preferred trail route than 4A
Ease of Maintenance	Near roadway for half, other section has less access; within floodplain for a short stretch; no stream crossings	Near major roadway; not within a floodplain; no structures	Near roadway; some structures; crosses a floodplain; some structures	Near roadway; crosses a floodplain; some structures
Overall Performance	MID	HIGH	LOW	HIGH



05 Implementation

Trail Phasing Plan

Long distance trails are typically built in phases. The successful acquisition of the rail corridor from Norfolk Southern Railroad in spring 2024 advanced the project readiness of Alternatives 3B and 4B, which became Phase 1. Phase 2 will extend the trail north to Roxboro, where right-of-way still needs to be assessed and easements acquired, requiring more time. A map of Phases 1 and 2 is shown on the next page.



TOTAL (ALL PHASES)

Cost Estimate: $56,540,000*

Length: 16.7 miles

PHASE 2: Uptown Roxboro Trail

Cost Estimate: $22,667,000*

Length: 6.1 miles

Description: A corridor of paved shared-use paths and sidepaths that connect destinations in and around Uptown Roxboro to each other and the rail-trail.

PHASE 1: Roxboro Rail-Trail

Cost Estimate: $33,873,000*

Length: 10.6 miles

Description: 12-foot wide asphalt rail-trail in the existing inactive rail bed, providing a low-stress route for walking, biking, and horseback riding with high separation from traffic.

LEGEND

ALTERNATIVES
- Phase 1: Roxboro Rail-Trail
- Phase 2: Uptown Roxboro Trail

DESTINATIONS
- Schools
- Colleges and Universities
- Parks

BOUNDARIES
- Municipal Boundaries
- Public Lands (State, Local, or Federal Gov. Owned)
- Conservation Easements
- Local Government Owned

TRANSPORTATION
- Railroads (Active)
- Railroads (Inactive)

Trail Phasing Plan

*Planning-level cost estimates for design, engineering, and construction.

Project Cutsheets

The following pages describe the trail phases in detail, including maps, estimated planning-level project costs, and conceptual graphics.

PHASE 1: Roxboro Rail-Trail

ALTERNATIVES 3B 4B

A rail-trail in the existing inactive rail bed, providing a low-stress route for walking and biking with high separation from traffic.

OVERVIEW

Location and Length:
Patterson Drive in Roxboro to Person-Durham County Line (10.6 miles)

Trail Types:
12-foot wide asphalt rail-trail and shared-use path (SUP)

Structures Required:
Three trail bridges (including two existing rail bridges, which are assumed to need full replacement)

At-Grade Crossings:
Two signalized, nine unsignalized, and two Rectangular Rapid Flashing Beacons (RRFBs)

Key Connections and Destinations:
Future connections to Durham County's rail-trail, Industrial Park, Uptown Roxboro, Helena Park, and Person County Farm Park.

Acquisition Needs:
Rail corridor ROW, currently being acquired.

Permitting Needs:

- Floodplain Development Permit
- NCDOT Encroachment Permit
- Duke Transmission Encroachment Agreement

Jurisdictions and Partners:
Project is within City of Roxboro and unincorporated Person County. Partners include Person County Parks, City of Roxboro, Norfolk Southern Railroad, NCDOT, The Conservation Fund, Tar River Land Conservancy, and Durham County.

ESTIMATED PROJECT COSTS

CONSTRUCTION COST SUBTOTAL (2024)	$14,731,000
Project Contingency (30%)	$4,419,300
CONSTRUCTION COST TOTAL (2024)	$19,151,000
Inflation Factor (8% over 4 years)	$6,904,000
CONSTRUCTION COST TOTAL (2028)	$26,055,000
Design and Permitting (15%)	$3,909,000
Construction Engineering Inspection (15%)	$3,909,000
ROW ACQUISITION COST	TBD
TOTAL ESTIMATED COST	**$33,873,000**

POTENTIAL FUNDING SOURCES

- Federal grants, such as RAISE
- Recreational Trails Program
- Transportation Alternatives
- Community Development Block Grant
- Private sources
- State funds

NEXT STEPS

- Complete 10% Schematic Design, as a preliminary design will give a more accurate cost estimate and better position the project for grants.
- Apply for funding for design and/or construction.
- The rail line will be acquired by The Conservation Fund and then conveyed over to NCDOT once local partners can raise the total funds for acquisition.
- NCDOT will develop an MOU with Person County Parks to manage.

Roxboro Rail-Trail

PHASE 1



Install pedestrian signals at Patterson Dr/Durham Rd intersection

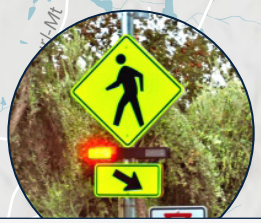
Helena Park can serve as a location for horse trailer parking, using existing parking areas; short connection to the trail is needed

Minor trailhead if adjacent commercial landowners are willing to accommodate parking for trail use

Minor trailhead and RRFB at Helena Moriah Rd

Install pedestrian signals at Antioch Church Rd/US 501 intersection

Minor trailhead near Industrial Park



RRFB at Chambers Loop Rd

Future connection to Person County Farm Park

Major trailhead with 10-15 parking spaces (including horse trailer space) on Hillsborough Rd (exact location to be determined)

ROXBORO
Optimist Park
Industrial Park
Timberlake
Helena Park
Raleigh Regional Airport at Person County
Tar River Land Conservancy
Person County Farm Park (in development)
PERSON COUNTY
ORANGE COUNTY
DURHAM COUNTY
158
501
157
57
Vernn-Crumpton Rd
Whitt Town Rd
Billy Hicks Rd
Houston Blalock Rd
Bessie Daniel Rd
River Church Rd
Lucy Garrett Rd
Antioch Church Rd
Flat Woods Rd
Blackard Rd
Charlie Tapp Rd
Cates Mill Rd
Dirk Ashley Rd
Clay Long Rd
Helena-Moriah Rd
Tom Oakley Rd
Satterfield Rd
North Flat River
Chambers Loop Rd
Terry Rd
Dick Holeman Rd
Ned Moore Rd
Moore's Mill Rd
Willie Gray Rd
Flat River
0 1 2 MILES
N

LEGEND

RECOMMENDATIONS

- Phase 1 Trail Alignment
- Phase 2 Trail Alignment
- Trail Bridges
- Trailheads
- Signalized Trail Crossings
- Rectangular Rapid-Flashing Beacons (RRFBs)

DESTINATIONS

- Parks
- Schools

HUMAN ENVIRONMENT

- Parcels
- Public Lands (State, Local, or Federal Gov. Owned)
- Conservation Easements
- Local Government Owned

NATURAL ENVIRONMENT

- Water and Wetlands

TRAIL TYPES

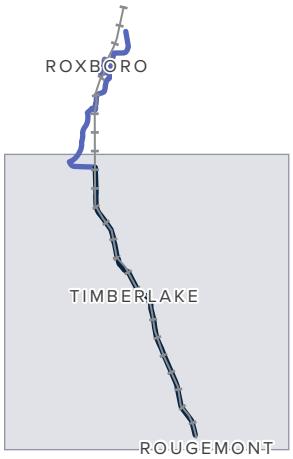


RAIL-TRAIL



SHARED-USE PATH (SUP)

STUDY CORRIDOR



Pedestrian signal photo: Alyson West/Pedbikeimages.org
RRFB photo: Lara Justine/Pedbikeimages.org


TRAILHEAD CONCEPT:
Roxboro Rail-Trail Near Helena Park
Farm Fresh
Produce


ROXBORO
RAIL-TRAIL

PHASE 2: Uptown Roxboro Trail

ALTERNATIVES 1B 2A

A corridor of shared-use paths and sidepaths that connects destinations in and around Uptown Roxboro to each other and the rail-trail.

OVERVIEW

Location and Length:
Patterson Dr in Roxboro to US 501 near Henderson Dr (6.1 miles)

Typology:
12-foot wide asphalt shared-use path along sewer easement, creek, natural areas, and minor roadways (as a sidepath separated from vehicle traffic by vegetative buffer).

Structures Required:
Three trail bridges

At-Grade Crossings:
Two signalized, one unsignalized, and four Rectangular Rapid Flashing Beacons (RRFBs)

Key Connections and Destinations:
Optimist Park, South Elementary School, North Elementary School, Person County Learning Academy, Walmart, and many neighborhoods (including four Roxboro Housing Authority communities within 0.5 miles of the trail).

Acquisition Needs:
Uses NCDOT and City of Roxboro ROW where possible, but may require 20-30 easements from property owners along route.

Permitting Needs:
- Floodplain Development Permit
- NCDOT Encroachment Permit
- Duke Transmission Encroachment Agreement

Jurisdictions and Partners:
Project is within City of Roxboro and unincorporated Person County. Partners include City of Roxboro, Person County Parks, NCDOT, and private landowners.

ESTIMATED PROJECT COSTS

CONSTRUCTION COST SUBTOTAL (2024)	$9,446,000
Utilities	$535,000
Project Contingency (30%)	$2,833,800
CONSTRUCTION COST TOTAL (2024)	$12,815,000
Inflation Factor (8% over 4 years)	$4,620,000
CONSTRUCTION COST TOTAL (2028)	$17,435,000
Design and Permitting (15%)	$2,616,000
Construction Engineering Inspection (15%)	$2,616,000
TOTAL ESTIMATED COST*	**$22,667,000**

POTENTIAL FUNDING SOURCES

- Recreational Trails Program
- Transportation Alternatives
- Community Development Block Grant
- Federal grants, such as RAISE
- Private sources
- State funds

High poverty rates and transportation disadvantage may make this section highly competitive for state and federal grants.

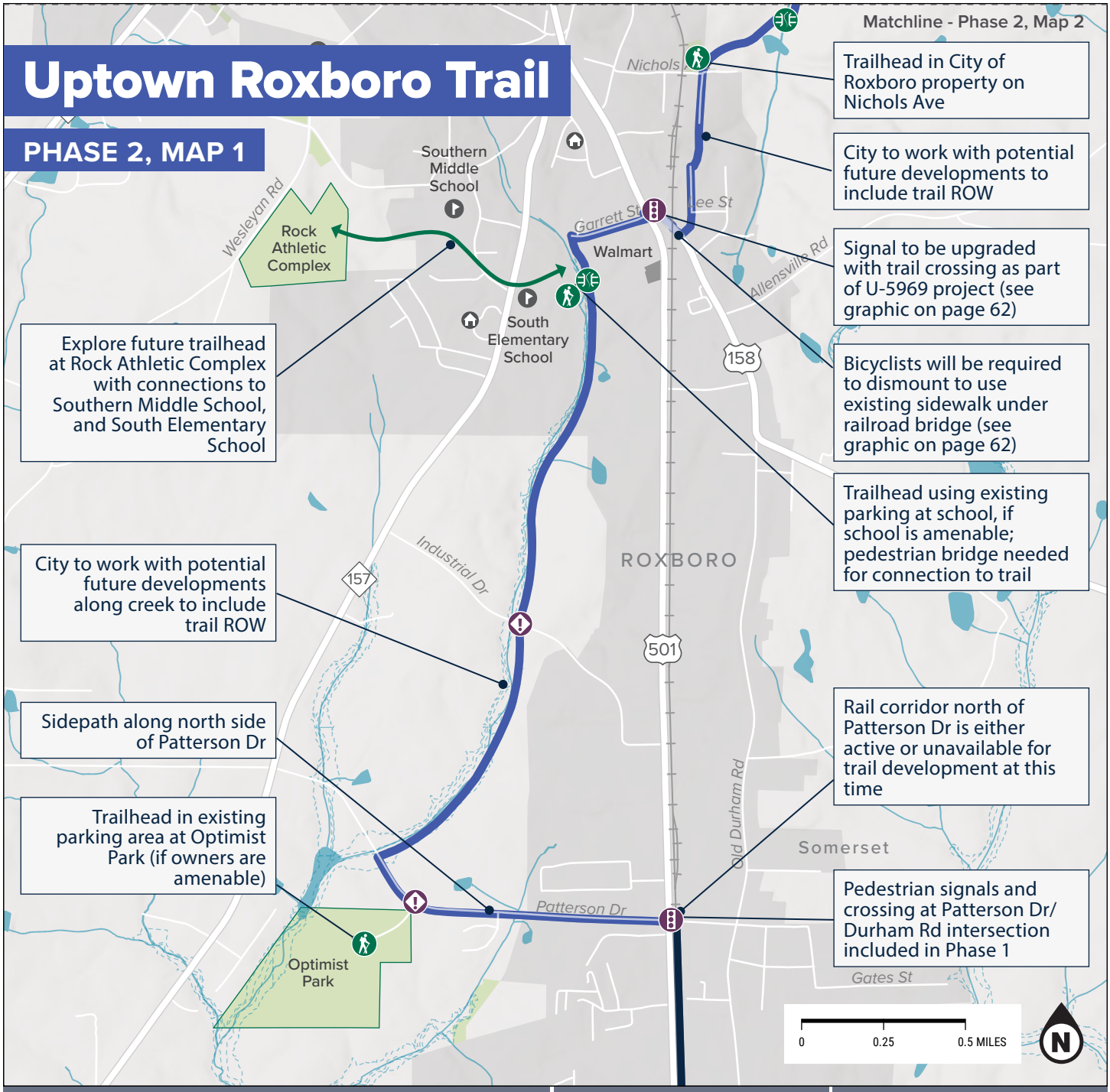
NEXT STEPS

- Work with landowners to determine final trail and trailhead locations.
- Complete 10% Schematic Design, as a preliminary design will give a more accurate cost estimate and better position the project for grants.
- Apply for funding for design and/or construction.

**ROW acquisition costs have not been included due to the highly variable and distinct acquisition methods that will be used, including use of NCDOT ROW and dedication of open space/ROW during development or redevelopment under City jurisdiction.*

Uptown Roxboro Trail

PHASE 2, MAP 1



LEGEND

RECOMMENDATIONS

- Phase 1 Trail Alignment
- Phase 2 Trail Alignment
- Trail Bridges
- Trailheads
- Signalized Trail Crossings
- Rectangular Rapid-Flashing Beacons (RRFBs)

DESTINATIONS

- Parks
- Schools
- Roxboro Housing Authority Affordable Housing

HUMAN ENVIRONMENT

- Public Lands (State, Local, or Federal Gov. Owned)
- Local Government Owned

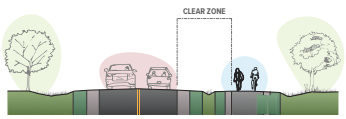
NATURAL ENVIRONMENT

- Water and Wetlands
- 100-Year Floodplain

TRAIL TYPES



SHARED-USE PATH (SUP)

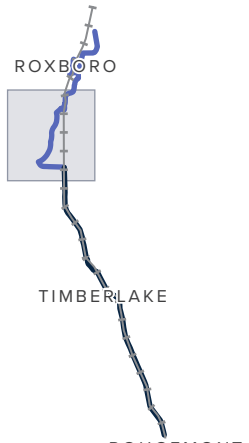


SIDEPATH: MINOR ROADWAY



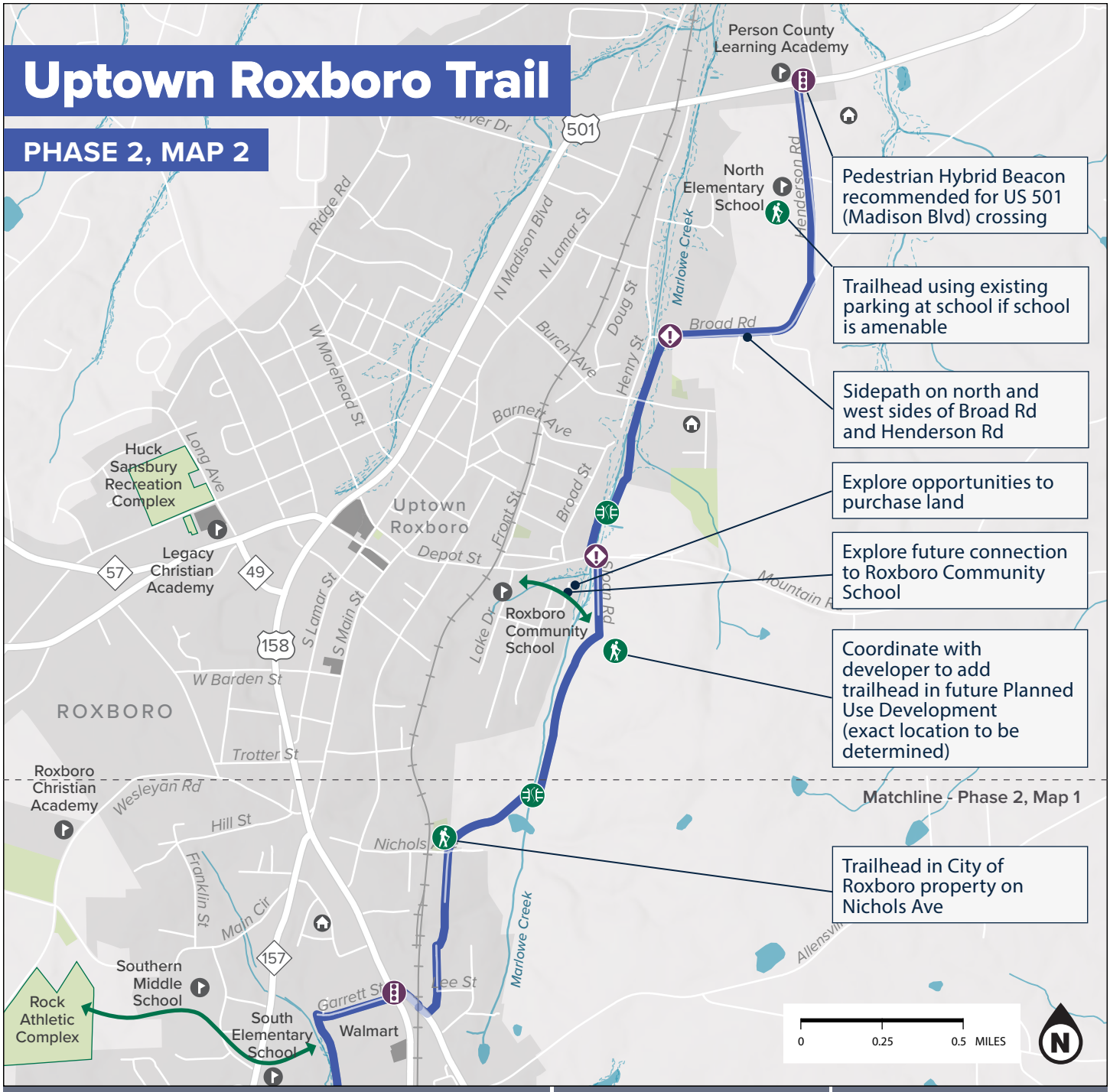
SUP: RIVER/STREAM ADJACENT

STUDY CORRIDOR



Uptown Roxboro Trail

PHASE 2, MAP 2



LEGEND

RECOMMENDATIONS

- Phase 2 Trail Alignment
- Trail Bridges
- Trailheads
- Signalized Trail Crossings
- Rectangular Rapid-Flashing Beacons (RRFBs)

DESTINATIONS

- Parks
- Schools
- Roxboro Housing Authority Affordable Housing

HUMAN ENVIRONMENT

- Public Lands (State, Local, or Federal Gov. Owned)
- Local Government Owned

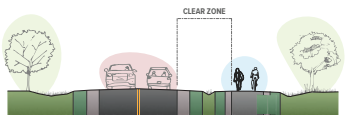
NATURAL ENVIRONMENT

- Water and Wetlands
- 100-Year Floodplain

TRAIL TYPES



SHARED-USE PATH (SUP)



SIDEPATH: MINOR ROADWAY



SUP: RIVER/STREAM ADJACENT

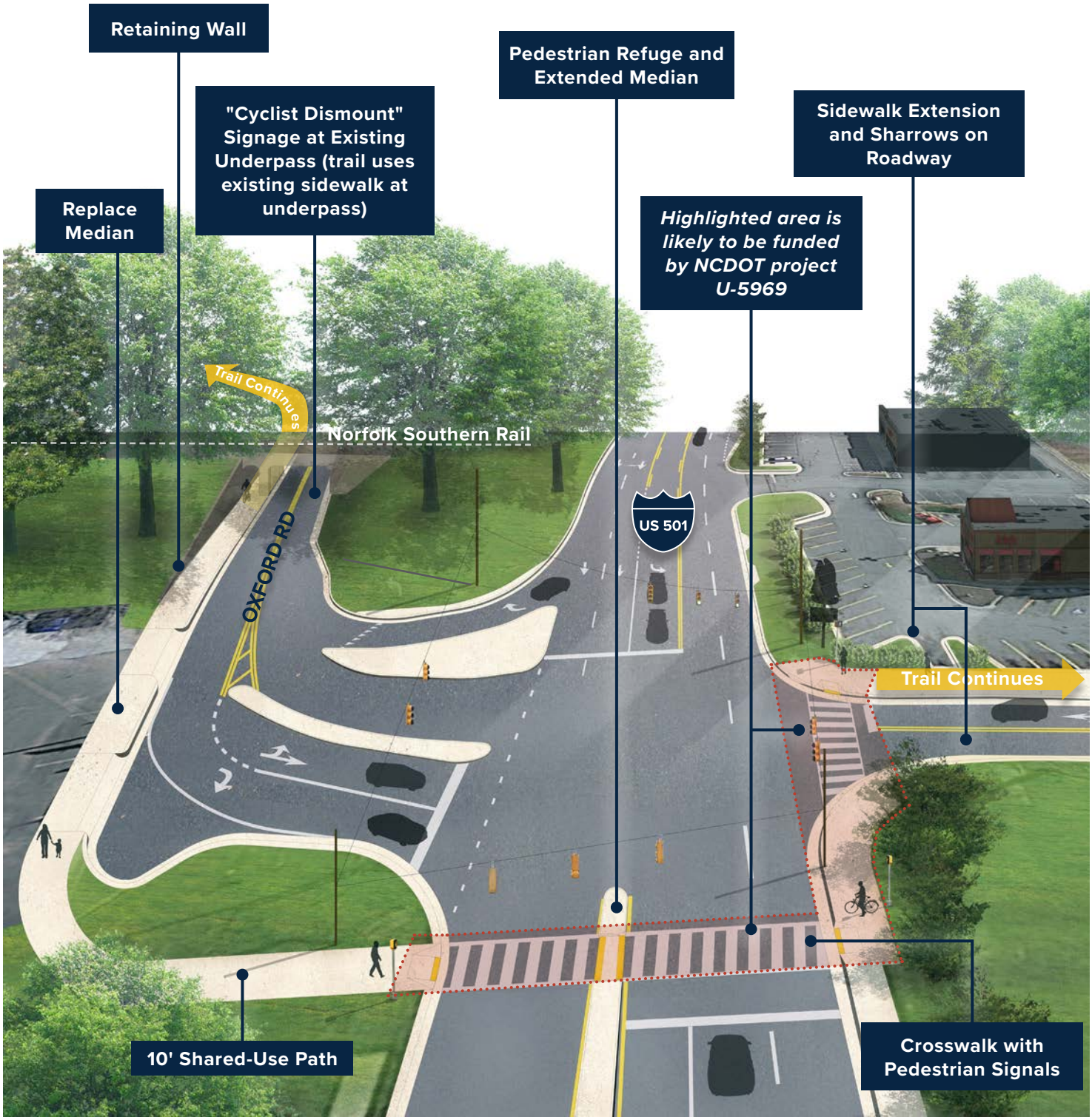
STUDY CORRIDOR



INTERCHANGE CONCEPT:

US 501 and Oxford Rd

The trail is proposed to cross US 501, parallel Oxford Road and cross under one of the only below grade crossings of the active rail line. The area shown in orange can likely be built as part of an NCDOT project for US 501.



Implementation Process

This section provides the program of action for Person County and its project partners to begin the development of the trail in a strategic and phased approach. The County should adopt a flexible and opportunistic approach, working closely with NCDOT, the City of Roxboro, the Conservation Fund, Durham County, and other project partners.

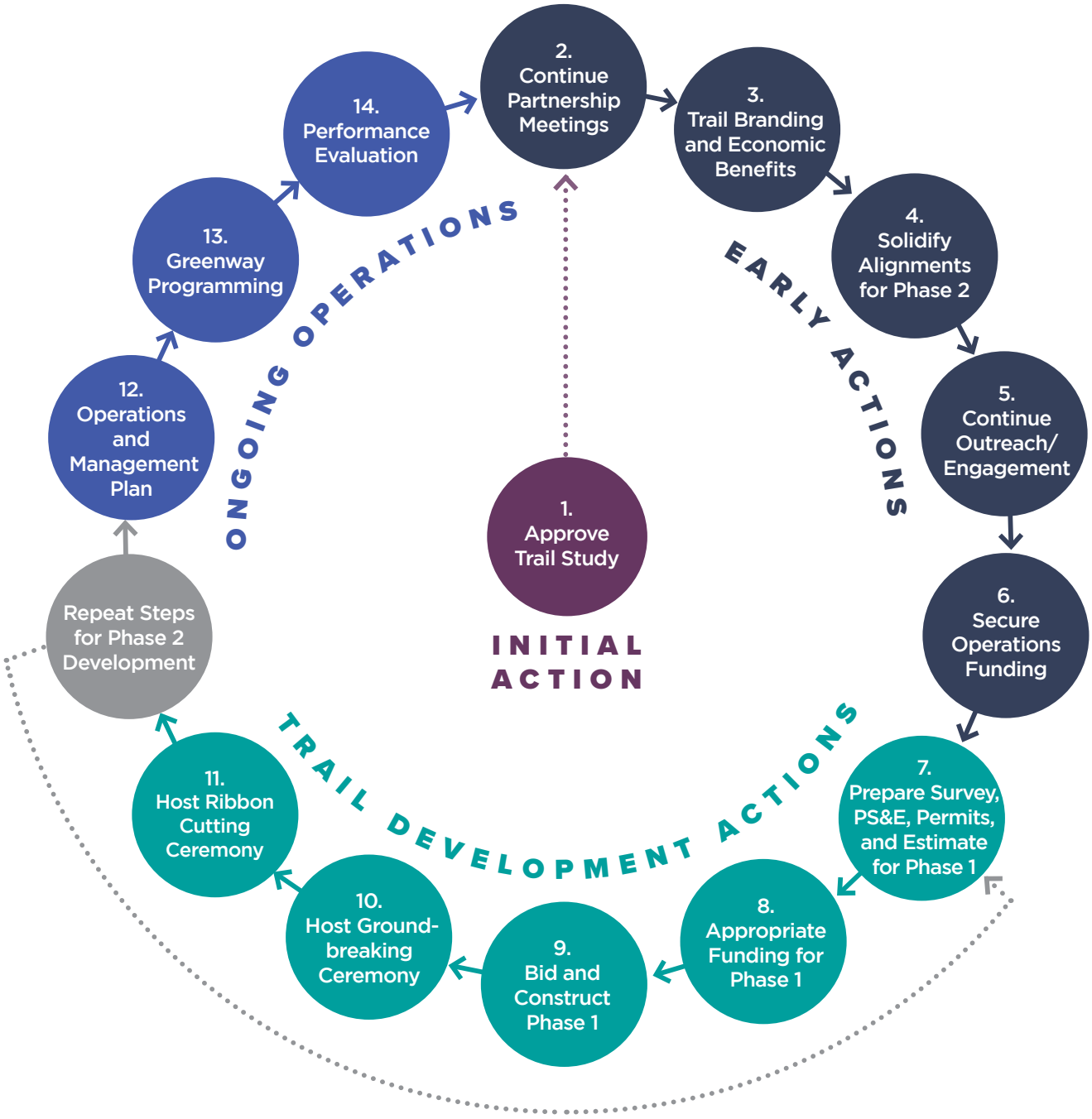
Implementation includes the physical development of trail phases, operations, management, and programming, all underpinned by the vision and goals of this project. The vision, goals, and guidance of the Steering Committee were established early in the planning process (Chapter 1). They focus on advancing economic development, tourism, conservation, recreation, transportation, and safety, while also highlighting and honoring the history and culture of the region. **The project vision should be at the forefront of each step of the implementation process, to continually remind project partners, the public, and potential funding agencies why this project is so important to the region.**

At the time of this plan's completion, multiple implementation steps have already been taken or are in progress:

- The Conservation Fund is in the process of purchasing rail ROW from Norfolk Southern, extending from Downtown Durham to the south side of Roxboro, in the summer of 2024.
- Person County has budgeted $480,000 in their capital improvement plan to be used for the project.
- NCDOT is preparing to take ownership and purchase the corridor in 2026.
- A feasibility study will be underway for the Durham County segment of the acquired rail corridor starting in the fall of 2024.
- A partnership has formed, working together for the entirety of the project corridor from Durham to Roxboro, to share resources and identify funding sources.

Action Steps

The following pages describe a series of action steps that will need to be accomplished. Again, flexibility should be built into the process based on multiple factors including funding availability and resource sharing across counties. These steps may not be completed in the exact sequence shown below, although they are generally in sequential order. **See the Action Plan table on page 73 highlighting organizations involved and time frames to complete.**



INITIAL ACTION

Step 1: Approve Trail Study

The most important first step in the process is to have this Trails Study adopted by Person County and the City of Roxboro. Adoption is an important first step as grant funding typically requires proof of local government support through an adopted plan. Additionally, local government adoption signifies endorsement and approval of project development, operations, and management. Adoption does not commit funding to the project, but it does signify an intention to contribute funding in the future, especially for matching funds to secure grants and leverage other opportunities for implementation.

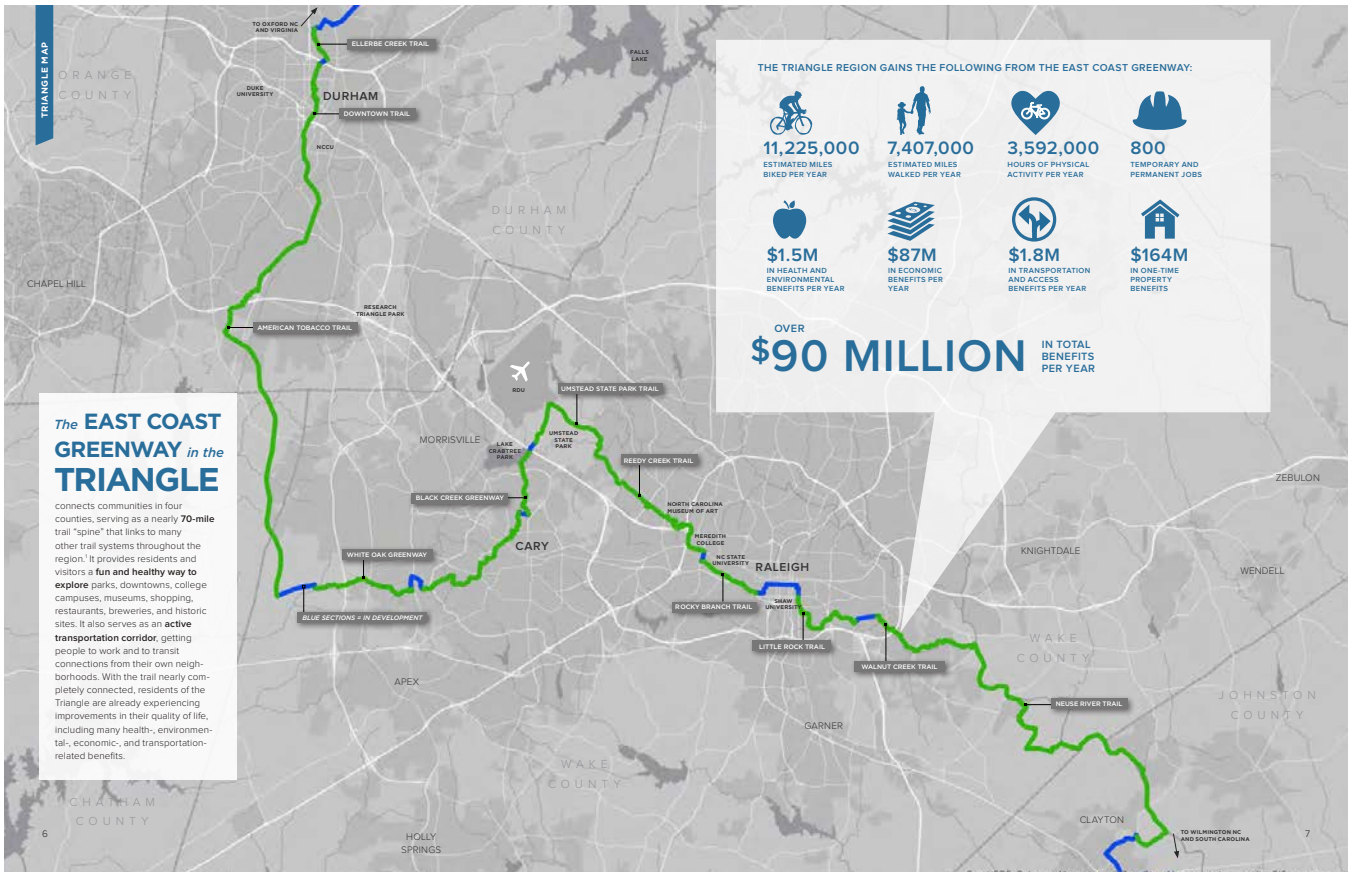
Adoption is an important first step as grant funding typically requires proof of local government support through an adopted plan.

EARLY ACTIONS

Step 2: Continue Partnership Meetings

Meetings with project partners such as Person County, Durham County, NCDOT, the Conservation Fund, City of Durham, City of Roxboro, and others have been held and will continue. Partners should work closely to share information, identify funding opportunities, and begin determining operations and maintenance needs for a continuous trail from Durham to Roxboro. The Partnership will be tasked with three key items:

1. Hosting regular and recurring coordination meetings with project partners to advance the project and support the Conservation Fund/NCDOT acquisition process;
2. Pursuing trail funding opportunities (such as major federal grants, the Congestion Mitigation and Air Quality Improvement Program, the Transportation Alternatives Program, or NCDOT funds) and leveraging funds across federal, state, local, private, and nonprofit sources; and
3. Developing an operations and management plan for the entirety of the corridor to set the stage for a high-quality and consistent experience for future trail users.



An economic impact study of the East Coast Greenway in the Triangle quantified the annual benefits to the region.

Step 3: Develop Trail Branding and Economic Impact Study

The working trail name is "Roxboro Rail-Trail"; The Partnership should confirm and finalize the name. A beneficial step will be branding and external communications, to represent the project in an exciting and iconic way across multiple media venues.

Finally, the County or Partnership should consider developing an economic impact study to help communicate the future benefits of the trail to the surrounding communities. These impacts and returns on investment will be useful to share with decision-makers and funders.

Step 4: Solidify Alignments for Phase 2

This step should be advanced as quickly as is feasible, considering time needed to secure ROW. Person County should work with the City of Roxboro to confirm alignment and implementation methods for Phase 2, the trail to Uptown Roxboro. This will require working with landowners and NCDOT to acquire easements and determine means to accommodate trails along and across state roadways, in conjunction with existing and future NCDOT projects (like STIP U-5969 on US 501). Typically, a 10% preliminary engineering design set can inform ROW acquisition needs and a refined cost. Once the routing and implementation decisions are made, the County or City can begin the acquisition and design process in similar fashion to the steps described below for Phase 1 (Steps 7 through 11). Part of this phase may also be completed through working with developers who are willing to accommodate the greenway. Completing this step may make grant applications stronger by showing connections to Roxboro, including areas of high need as it relates to poverty and transportation disadvantage.

Completing Step 4 may make grant applications stronger by showing connections to Roxboro, including areas of high need as it relates to poverty and transportation disadvantage.

Step 5: Continue Public Outreach, Engagement, and Communications

The public support and project momentum gained for this study in 2023 and 2024 must be nurtured and expanded as the project enters the implementation phase. The following steps can help build on the success to date:

- **Continue to Build Partners:** Many groups and agencies already support this project. Continue to encourage other nongovernment partners to "sign-on" and support the plan and project implementation, including local boards, committees, and commissions. User groups like equestrian groups, cyclists, land conservancies, and others can be great allies in advocacy and outreach assistance.
- **Marketing and Communications about the Trail:** Generate positive stories about the beneficial impacts that the trail will have in the region. Work with local media outlets and make use of social media to share the project information.
- **Public and Landowner Engagement:** Continue public engagement by staging information tables or booths at community events and during peak hours at popular destinations along the corridor, even into Durham County. Make a concerted effort to reach out to adjacent landowners to hear from them and share information early to prevent disinformation.

Step 6: Build and Maintain an Operations Fund

Person County should secure continued funding for project development and ongoing operations. Staff time will be needed to deliver on the work program for this project; the County could consider funding a full-time position to support the delivery of this trail project. Ultimately, the goal of this operations fund is to support the staffing, advocacy, and leadership required to implement all phases of the project.

The County could consider funding a full-time position to support the delivery of this trail project.

TRAIL DEVELOPMENT ACTIONS

Step 7: Prepare Survey, PS&E, Permits, and Final Engineering Estimate for Phase 1

Person County, with the support of project partners and working with Durham County, should remain flexible and opportunistic, depending upon funding that may become available, when determining how to phase and design the trail. For Person County, Phase 1 with segments 3B and 4B (the rail trail segments) is most defined and ready for design due to the successful purchase of the rail corridor by the Conservation Fund.



Alta engineer assessing the condition of a railroad trestle for a rail-trail in in Hendersonville, NC

This step involves developing a survey, acquiring permits, and preparing Plans, Specifications, and Estimates (PS&E) for construction. Permits can include environmental, access, all construction activities (e.g., earth moving, erosion control, use of fill material, and impacts to wildlife), and in some instances, accessibility. The County can contract directly with a design development consultant to complete the Phase 1 PS&E. These plans should meet the requirements of construction funding for each project phase. For example, if a phase is constructed with federal transportation funding, PS&E will need to address USDOT, FHWA, and NCDOT design development requirements. PS&E documents will need to be reviewed and approved by local, state, and federal authorities. A separate workflow process for completing PS&E for each phase of the project should be prepared. Once design is complete, an updated and more accurate cost estimate can be provided.

Typically, a funding "quilt" is required to finance all elements of project development. This quilt may be made from a variety of sources that are used in combination to fund project development.

Step 8: Appropriate Funding for Phase 1 Development

It is rare but not impossible to fund long-distance trail projects from a single funding source. Person County should remain open to the possibility of funding the entirety of the project to Durham with a large federal or state grant or allocation. Typically, however, a funding "quilt" is required to finance all elements of project development. This quilt may be made from a variety of sources that are used in combination to fund project development. Person County should be prepared to assist with matching funds for grants. This plan's Appendix provides a list of typical sources of funding from federal, state, and local public and private sources. In some cases, funding for both design and construction can be accomplished through a federal grant, although a project is more likely to be funded with design completeness, some level of environmental review, and high degree of project readiness. It is important to keep in mind that federal funding can often take 6 to 12 months just to get under contract.

Step 9: Bid, Award, and Begin Construction of Phase 1

The next step will be to bid and award a construction contract for each phase of the project. Typically, bid packages for each phase will be prepared by the design development consultant. Depending on how

the project is funded, a sponsoring agency will administer the bid, and oversee awarding a construction contract. The process of bidding and awarding a construction contract takes time, no less than three to four months and as much six to eight months depending on the approval process of the agency that awards the contract.

Once a bid is awarded, the selected construction contractor will be given a specific number of working or calendar days to build the trail. It is normal for construction activities to take between six months and one year to complete. Sometimes construction may take longer based on the complexity of a given project. If the project is federally funded, federal processes, requirements, and timelines must be adhered to.

Step 10: Host a Groundbreaking Ceremony

For each phase, Person County and its partners should work together to host a groundbreaking ceremony. Make sure to invite and involve everyone who has worked in partnership to make a particular phase successful. Inviting elected officials can help build additional support for future phases; especially consider inviting those who seem less aware or supportive of segments of the trail in their area. Groundbreaking ceremonies will vary in size and celebration. Be certain to invite local media outlets to attend, arrange for interviews with key stakeholders, and document the celebration.

Step 11: Host a Ribbon Cutting Ceremony

Once construction is completed, it will be time for a second celebration and official public opening of the trail segment. As with the groundbreaking ceremony, it will be important to include all parties that made trail construction a success. This is also a good time to recognize those who will operate and maintain each segment of the trail. A celebratory ride or walk should be included in the festivities.

Inviting elected officials can help build additional support for future phases.



Groundbreaking ceremony for a section of the Atlanta BeltLine rail-trail in Atlanta, GA

ONGOING OPERATIONS

Step 12: Develop an Operations and Management Plan

Operations and management are often forgotten due to the complexity and challenges of trail acquisition, funding, and construction. While this is Step 12 in the process, it is highly recommended for the Partnership described in Step 1 to begin these conversations as soon as possible. For all segments of the trail, operations, maintenance, and management are critical elements of project development. Like a city street system, park system, or utility networks, trails should be managed as highly valued public assets. Trails are public resources and components of local green infrastructure. There can be an unwarranted belief that trails either take care of themselves or should be managed in a less attentive manner. This is, of course, not true. Trails require daily, weekly, and monthly attention as well as a systematic approach to maintenance to keep them functioning in the manner in which they were designed and constructed.

Operations, maintenance, and management are critical elements of project development. Like a city street system, park system, or utility networks, trails should be managed as highly valued public assets.

Person County should secure operations funding to maintain the trail to a high standard. Since NCDOT will hold title to the rail corridor property, they will require a maintenance memorandum of understanding (MOU) with Person and Durham Counties; this agreement can be adjusted over the years as needs change and opportunities arise.

Step 13: Plan Trail Programming for Events and Education

The trail will be an ideal landscape for programming and hosting of events. Some of these events can generate additional revenue for Person County and the City of Roxboro to offset the costs associated with operations, maintenance, and management of the system.

The trail can also serve as an outdoor classroom where young and old alike can learn about local and regional history, experience the wonders of nature, and visit important cultural landscapes that are part of our community. Person County and the City of Roxboro can work with local historians, schools, and organizations on a case-by-case basis to make trail areas available for cultural, ecological, and environmental study. Typically, a local government will review and approve curricula and programs that include access and use of trails so that these programs are compatible with other nonprogrammed uses.

Step 14: Evaluate Performance

Once the trail is opened for public use, Person County should work with the City of Roxboro and its other partners to evaluate the trail's use and performance. For example, if transportation funds were used, how effective is the trail segment at providing alternatives to the use of cars for a specific trip? If environmental education was a primary emphasis of a particular segment, how effective has the segment been in serving the educational needs of school groups? Evaluations can be completed starting within one year of the official public opening of a given segment.



Trail user counts and surveys are examples of methods to evaluate trail performance.

ACTION PLAN

STEPS/ACTIONS	ORGANIZATION(S)	RESOURCES NEEDED	TIME FRAME
INITIAL ACTION			
1. APPROVE STUDY			
Jurisdictions present to regulating board for approval	Person County and City of Roxboro	• Staff needed to present to regulating board	Fall 2024
EARLY ACTIONS			
2. CONTINUE PARTNERSHIP MEETINGS			
Meet quarterly, or as needed, to coordinate with partners	Person County led, City of Roxboro involved on Phase 2 meetings	• Staff time	Ongoing
3. TRAIL BRANDING AND ECONOMIC BENEFITS			
Coordination with partners on trail branding and a baseline economic impact study	Person County led, with input from other partners	• Staff time • May need consultant for economic study and branding	Ongoing
4. SOLIDIFY ALIGNMENTS FOR PHASE 2			
Work with landowners and developers to secure easements or dedicated future open space, Person County to secure process for holding easements	City of Roxboro to take the lead in majority of areas for Phase 2, Person County to hold easements	• Staff time • Funding needed to secure easements if not donated	Ongoing
5. CONTINUE OUTREACH/ENGAGEMENT			
Continue to build partners, marketing and communications of the trail, public and landowner engagement	Person County to take the lead, City of Roxboro to collaborate	• Staff time • Communication experts within organization	Ongoing
6. SECURE OPERATIONS FUNDING			
Fund a full time position and operational costs prior to trail construction	Person County to lead	• Funding needed as reoccurring funds in Person County's budget	Ongoing; beginning now, in place by Phase 1 construction

ACTION PLAN (CONTINUED)

STEPS/ACTIONS	ORGANIZATION(S)	RESOURCES NEEDED	TIME FRAME
TRAIL DEVELOPMENT ACTIONS			
7. PREPARE SURVEY, PS&E, PERMITS, AND ESTIMATE FOR PHASE 1			
Fully complete survey, PS&E, permits, and estimation	Person County to lead for their section of trail, coordinate with NCDOT	• Funding for consultant • Person County project manager to manage consultant or be part of a client team managing consultant	Funding secured as soon as possible in 2025; ideally completed before construction funds secured
8. APPROPRIATE FUNDING FOR PHASE 1			
Fully fund Phase 1	Person County to lead for their section of trail, work with NCDOT and Kerr-Tar RPO	• Construction funding • Staff time (or consultant) for grant writing	Secure within 2025-2028, if possible
9. BID AND CONSTRUCT PHASE 1			
Bid, award, and construct Phase 1	Person County to lead for their section of trail, or work with Client Team including other partners	• Construction funding • Person County project manager to manage contractor or be on Client Team managing contractor	Complete within 10 years of 2025, as conditional requirement of acquisition funding
10 AND 11. HOST GROUNDBREAKING & RIBBON CUTTING CEREMONY			
Groundbreaking ceremony	Person County to coordinate with all participating partners like NCDOT, City of Roxboro, etc.	• Staff time	Complete within 10 years of 2025, as conditional requirement of acquisition funding
ONGOING OPERATIONS			
12-14. OPERATIONS, PROGRAMMING,AND PERFORMANCE EVALUATION			
Develop operations and management (O&M)plan, program the greenway, and evaluate performance	Person County to lead	• Staff time • Funding for programming	O&M plan completed by step 10, programming and evaluation is ongoing

A NOTE ABOUT PHASE 2 ACTIONS AND TIMELINE

Steps 5 through 14 will be repeated for Phase 2. Person County will lead much of the development of the trail, while close collaboration is needed with the City of Roxboro related to securing easements and conducting outreach. The time frame for Phase 2 is dependent on how soon easements can be secured. Since Phase 1 will take priority, most of Steps 6 through 14 will likely occur beyond 2030.

Organizational Framework for Implementation

LEAD AGENCY: PERSON COUNTY

- ★ Lead coordination with partners on the trail development process.
- ★ Continue public outreach, engagement, and communication for the project.
- ★ Pursue trail funding opportunities, including ways to leverage funds across federal, state, local, private, and non-profit sources.

IMPLEMENTATION TEAM

- ★ Made up of many of the partners listed below; Meet quarterly to advance plan implementation.
- ★ Pursue right-of-way for Phase 2 trail development.
- ★ Seek funding for operations and implementation of Phase 1 trail.

BOARDS, COMMISSIONS, AND COMMITTEES

These groups could provide letters of support to local officials for project funding (to be used in grant applications) and by helping communicate the benefits of trails to the public (featured in Chapter 1). Example groups could include:

- ★ Person County Economic Development Commission
- ★ Person County Recreation Advisory Board
- ★ Person County Planning Board
- ★ Person County Board of Health

KEY PROJECT PARTNERS

- ★ City of Roxboro: Work with Person County to confirm alignment and implementation methods for Phase 2, Uptown Roxboro Trail. Continue to promote and support the project.
- ★ The Conservation Fund & NCDOT IMD: Work with the County and their partners to help identify a funding strategy for trail right-of-way, including communication with Norfolk Southern.
- ★ Norfolk Southern: Remain open to communication and coordination with project partners, primarily via The Conservation Fund.
- ★ NCDOT: Incorporate proposed trail alignments from this study in NCDOT projects, especially for trail-roadway crossings and trail connections within NCDOT rights-of-way.
- ★ Great Trails State Coalition: Add this trail corridor to the map and list of trail projects in North Carolina that are Investment ready; consider advocating for this project in upcoming rounds of Great Trails State Program grant funding.
- ★ Great Trails State Plan (NCDOT IMD): Update the trail alignment in Person County to reflect this study and identify this corridor as a priority in plan updates.
- ★ Kerr-Tar RPO: Coordinate with project partners on funding opportunities; incorporate and prioritize the trail alignment in this study within long-range transportation plans.
- ★ Durham County, City of Durham, and East Coast Greenway Alliance: Continue to coordinate with Person County on trail development and funding opportunities.

PRIVATE PARTNERSHIPS

- ★ Local businesses, economic development advocates, and tourism promoters should recognize the benefits of a complete trail corridor; help promote project funding; and capitalize on increased business as trail segments are complete.
- ★ Consultants should provide guidance to project partners on project development, trail design, funding applications, and trail construction services.
- ★ Major employers should recognize the quality of life benefits that trails bring; support the development of the trail through letters of support; and promote the trail as a means of talent recruitment and retention.

PEER COMMUNITIES

- ★ The County should build relationships and learn from neighboring communities also working on trails, such as Butner, Oxford, Granville County, and Durham County. Participate in Great Trails State Coalition meetings to stay on top of funding opportunities.

Operations and Maintenance (O&M)

The following guiding principles will help assure the operation of a first-class trail system:

1. Good maintenance begins with sound planning and design.
2. Foremost protect life, property, and the environment.
3. Promote and maintain a quality outdoor recreation and transportation experience.
4. Maintain quality control and standards and conduct regular inspections.
5. Develop a management plan that is reviewed and updated annually with tasks, operational policies, standards, and routine and remedial maintenance goals.
6. Keep complete records of regular inspections.
7. Maintain an effective, responsive public feedback system and promote public participation.
8. Be a good neighbor to adjacent properties.
9. Operate a cost-effective program with sustainable funding sources.
10. Establish, adopt, and implement a uniform plan and level of quality amongst City and County agencies along the project corridor.

Operations & Management (O&M) Agreements

Person County will be responsible for trail maintenance. As described in the Action Steps section, this will require a maintenance MOU with NCDOT, which will hold title to the rail corridor property; this agreement can be adjusted over the years as needs change and opportunities arise.

O&M Strategies and Actions

The purpose of an O&M plan is to promote a well-maintained, well-groomed, safe, secure, and pleasant-to-use trail. O&M plans describe tasks of work to be performed, along with policies and programs that will be undertaken by responsible partners to operate, manage, and maintain the trail. Operations and maintenance refer to day-to-day tasks as well as the long-term remedial tasks and programs performed to keep resources and facilities of the trail in a usable condition. This begins with sound design, durable construction, and a comprehensive management plan. In addition, community groups, residents, business owners, developers, and other stakeholders will continue to be engaged in the long-term stewardship of the resources preserved and enhanced by the trail. The following are typical routine, remedial, and seasonal maintenance tasks:

Routine Maintenance refers to the normal regime of trail sweeping, trash and debris removal, sign replacement, weed control, tree and shrub trimming, ice or snow removal, and other regularly scheduled activities. Routine maintenance also includes minor repairs and replacement such as fixing cracks and potholes or repairing broken furniture and furnishings.

Remedial Maintenance refers to correcting significant defects as well as repairing, replacing, or restoring major components that have been destroyed, damaged, or significantly deteriorated during the life of the project. Some items (“minor repairs”) may occur on a five- to-ten-year cycle such as repainting, seal coating asphalt pavement, or replacing signage. Major reconstruction items will occur over a longer period or after an event such as a flood. Examples of major reconstruction remedial maintenance include stabilization of a severely eroded hillside, repaving a significant stretch of the trail surface, repaving a street used for biking, or replacing a footbridge. Remedial maintenance should be part of a long-term capital improvement plan.

Seasonal Maintenance is in addition to the routine and remedial categories and includes seasonal tasks that should be performed on an as-needed basis. Designated maintenance crews should remove leaf debris, sediment from flood events, snow, and ice from all trail facilities as soon as possible. (Leaf debris is hazardous when wet, and special attention should be given to facilities with heavier usage).

Life Cycle of Built Facilities

Constructed greenway facilities will have a limited life cycle, or useful life. The life cycle varies based on environmental impact, use, and care of the resource. The following chart offers a typical life cycle for major trail elements:

GREENWAY COMPONENT	LIFE CYCLE
Asphalt Trails	10-20 years
Concrete Trails	25-35 years
Gravel Trails	5-10 years
Wood Bark Trails	2-3 years
Wood Boardwalk Trails	7-10 years
Steel Bicycle and Pedestrian Bridge	15-20 years
Asphalt Parking Lot	10-12 years
Crosswalks	3-5 years
Greenway Signage	7-10 years
Park Benches	7-10 years
Trash Receptacles	7-10 years
Wood Bollards	5-7 years
Metal Bollards	15-20 years

Adopt-a-Trail

An Adopt-a-Trail program is one method for maintaining the environmental and aesthetic quality of the trail by generating a strong sense of ownership among citizens. Through the Adopt-a-Trail program, residents, businesses, trail users, and various community groups can have an active role in maintaining the lands and facilities of the trail. Volunteers work with local agency staff to participate in trail projects, which may include:

- Picking up litter
- Raking leaves
- Removing graffiti or touching up murals
- Spreading mulch or gravel
- Sweeping paved trails
- Removing exotic invasive plants
- Planting flowers
- Reporting safety hazards, illegal dumping, injured or dead animals, storm damage, and other issues

Trail Ambassador Programs

Trail Ambassadors differ from those who participate in Adopt-a-Trail services. Ambassadors are an additional set of eyes and ears on the trail. They promote goodwill, help trail users with minor needs (such as directions), and promote safety and authorized use of the trail. Ambassadors often work in pairs and are usually given clothing to signify their status. Ambassadors

are typically volunteers who provide services to an entire trail corridor. Some communities may deputize Ambassadors and provide them with telecommunications equipment. Ambassadors are skilled in first aid, they are very knowledgeable about the trail and location of services and facilities, and they are also knowledgeable about natural and cultural resources. As with Adopt-a-Trail programs, Trail Ambassadors will undergo orientation and training. They are asked to work specific dates and times. Some local governments will ask that they sign waiver of liability forms. Often, Ambassadors make use of a bike to complete their service.

Crime Prevention Through Environmental Design (CPTED)

Many trail managers across the United States employ Crime Prevention Through Environmental Design (CPTED) techniques in the design, development, and management of trails. According to the National Crime Prevention Institute, "CPTED is the proper design and effective use of the built environment which may lead to a reduction in the fear and incidence of crime, and an improvement of the quality of life."

CPTED theories contend that law enforcement officers, architects, city planners, landscape designers, and resident volunteers can create a climate of safety in a community right from the start. CPTED's goal is to prevent crime by designing a physical environment that positively influences human behavior. For trails, people who use the trail regularly should perceive it as safe, and would-be criminals should view the trail as a highly risky place to commit crime. CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts.

CPTED is based on the following principles: natural surveillance, natural access control, and territorial reinforcement.

NATURAL SURVEILLANCE

Natural surveillance increases the threat of apprehension by taking steps to increase the perception that people can be seen while using a trail. Natural surveillance occurs by designing the placement of physical features, activities, and people in such a way as to maximize visibility and foster positive social interaction among legitimate users of public space. Potential offenders feel increased scrutiny and limitations on their escape routes. Natural surveillance design features include:

- Use adjacent roadways and the passing vehicular traffic as a surveillance asset.
- Create landscape designs that provide surveillance, especially in proximity to designated points of entry and opportunistic points of entry.
- Use the shortest, least sight-limiting fence appropriate for the situation.
- When creating lighting design, avoid poorly placed lights that create blind-spots for potential observers and miss critical areas. Potential problem areas should be well-lit: pathways, stairs, entrances/exits, parking areas, children's play areas, recreation

areas, storage areas, and dumpster and recycling areas.

- Avoid too-bright security lighting that creates blinding glare or deep shadows, hindering the view for potential observers. Eyes adapt to night lighting and have trouble adjusting to severe lighting disparities. Using lower-intensity lights often requires more fixtures.
- Place lighting along pathways and other pedestrian-use areas at proper heights for lighting the faces of the people in the space (and to identify the faces of potential attackers).
- Natural surveillance measures can be complemented by mechanical and organizational measures. For example, closed-circuit television (CCTV) cameras can and should be used.

NATURAL ACCESS CONTROL

Natural access control limits the opportunity for crime by taking steps to clearly differentiate between public space and private space. Natural access control occurs by selectively placing entrances and exits, fencing, lighting, and landscape to limit access or control flow.

- Use a single, clearly identifiable point of entry.
- Use low, thorny bushes to keep people out of sensitive areas.
- Use waist-level, picket-type fencing to control access and encourage surveillance.
- Natural access control is used to complement mechanical and operational measures to control access and strengthen security of an area.

NATURAL TERRITORIAL REINFORCEMENT

Natural territorial reinforcement promotes social control through increased definition of space and improved proprietary concern. An environment designed to clearly delineate private space does two things. First, it creates a sense of ownership. Owners have a vested interest and are more likely to challenge intruders or report them to the police. Second, the sense of owned space creates an environment where “strangers” or “intruders” stand out and are more easily identified. Natural territorial reinforcement occurs by using buildings, fences, pavement, signs, lighting, and landscape to express ownership and define public, semipublic, and private space. Additionally, these objectives can be achieved by assignment of space to designated users in previously unassigned locations.

- Maintain premises and landscaping such that it communicates an alert and active presence occupying the space.
- Provide trees in residential areas. Research indicates that, contrary to traditional views within the law enforcement community, outdoor residential spaces with more trees are seen as significantly more attractive, safer, and more likely to be used than similar spaces without trees.
- Restrict private activities to defined private areas.
- Display security system signage at access points.
- Avoid cyclone fencing and razor-wire fence topping as it communicates the absence of

a physical presence and a reduced risk of being detected.

- Scheduling activities in common areas increases proper use, attracts more people, and increases the perception that these areas are controlled.
- Natural territorial reinforcement measures make the typical user feel safe and make the potential offender aware of a substantial risk of apprehension or scrutiny.

Funding for O&M

Several types of funding sources can be identified and it is likely that a combination will offer the best solution. The following are potential funding sources:

- Budget allocation commitments
- Partnerships
- Dedicated tax
- Endowments
- Outside funding sources
- In-kind services

BUDGET ALLOCATIONS

These funds come directly from annual budget allocations by the respective municipality. Typically, this is the most reliable revenue source for project management, operations, and maintenance. This is the most common and likely source of O&M funding. Note that on most trail projects, private donors or other potential partners will want to see a strong long-term public commitment to management as a condition of awarding grants for capital trail improvements and management programs.

PARTNERSHIPS

Some elements of the program serve multiple public and private benefits including access for corridor upkeep, promotion of local businesses, utility access, school facilities, road maintenance, and enhancement of adjacent private properties. This may provide opportunities for task sharing and cost sharing among the various beneficiaries. These options should be vigorously and creatively explored. In addition, area businesses may have a vested interest in sponsoring and participating in trail maintenance along segments of the corridor.

DEDICATED TAX

A number of communities have specific dedicated tax programs in place such as open space sales taxes or special districts with property tax-based funding. To implement such a program, it will be important to have a specific visionary plan in place and build broad-based public support and partnerships with park, recreation, and open space advocacy groups. Pursuing this process should begin with an examination of the potential property, sales, lodging, and other potential tax bases.

ENDOWMENTS

An endowment is a set-side account held strictly to generate revenue from investment earnings. The endowment could be held by a nonprofit. Funding of the endowment could come from a percentage of capital grants and from an endowment campaign.

The endowment could also be funded by bequests and deferred giving such as donations of present or future interests in stock or real estate. To have an impact, the endowment should have several million dollars in its "corpus" (asset holdings). This endowment could be built up gradually in tandem with project development.

OUTSIDE FUNDING SOURCES

Outside funding sources include public and private sector grants that can be applied toward management including routine and remedial maintenance. Some federal programs have funded trail replacement projects in a number of locations, though the availability of such programs in the future is hard to predict. Private contributors might help fund seasonal youth "trail ranger" programs or purchase equipment such as a sweeper. Note that, except for remedial projects, private donors are generally not interested in funding operations and maintenance. Outside funding sources may be unpredictable year after year; therefore, this funding is considered "uncontrollable income."

IN-KIND SERVICES

Management services might be supported and enhanced by available non-cash resources such as volunteers, youth, student labor, user groups (such as cyclist associations), correctional services, and seniors. In-kind support may also include donations of materials and equipment. Groups may be encouraged to "adopt" a park or a trail and hold annual fundraisers. The corridor might also be eligible for youth programs such as AmeriCorps.

Note, however, that volunteer and in-kind participation will likely meet only a fraction of the operations and maintenance needs, and funding of these programs may be sporadic. The management program will still need a base of trained professionals and proper equipment. These programs require staff time to coordinate.

Volunteers offer a cost-effective method for maintaining certain aspects of trails. For example, local Eagle Scouts can work with local government staff to build or repair bridges and help with other small construction projects. The Federal Volunteer Protection Act of 1997 protects volunteers of nonprofit organizations or governmental entities. The act states that such volunteers are not liable for harm caused by their acts of commission or omission, provided the acts are in good faith.

Conclusion

This undertaking will take time, patience, and consistent hard work from many project partners to complete.

Project partners, through the already-formed Partnership, should continue regular coordination through the cycle of acquisition, transition to NCDOT ownership, and funding of design and construction. It will likely be that multiple sources of funding are needed, leveraging both public and private sources for trail design, construction, and maintenance (and ROW and land acquisition for later northern phases). Person County should remain flexible and opportunistic to develop the trail.

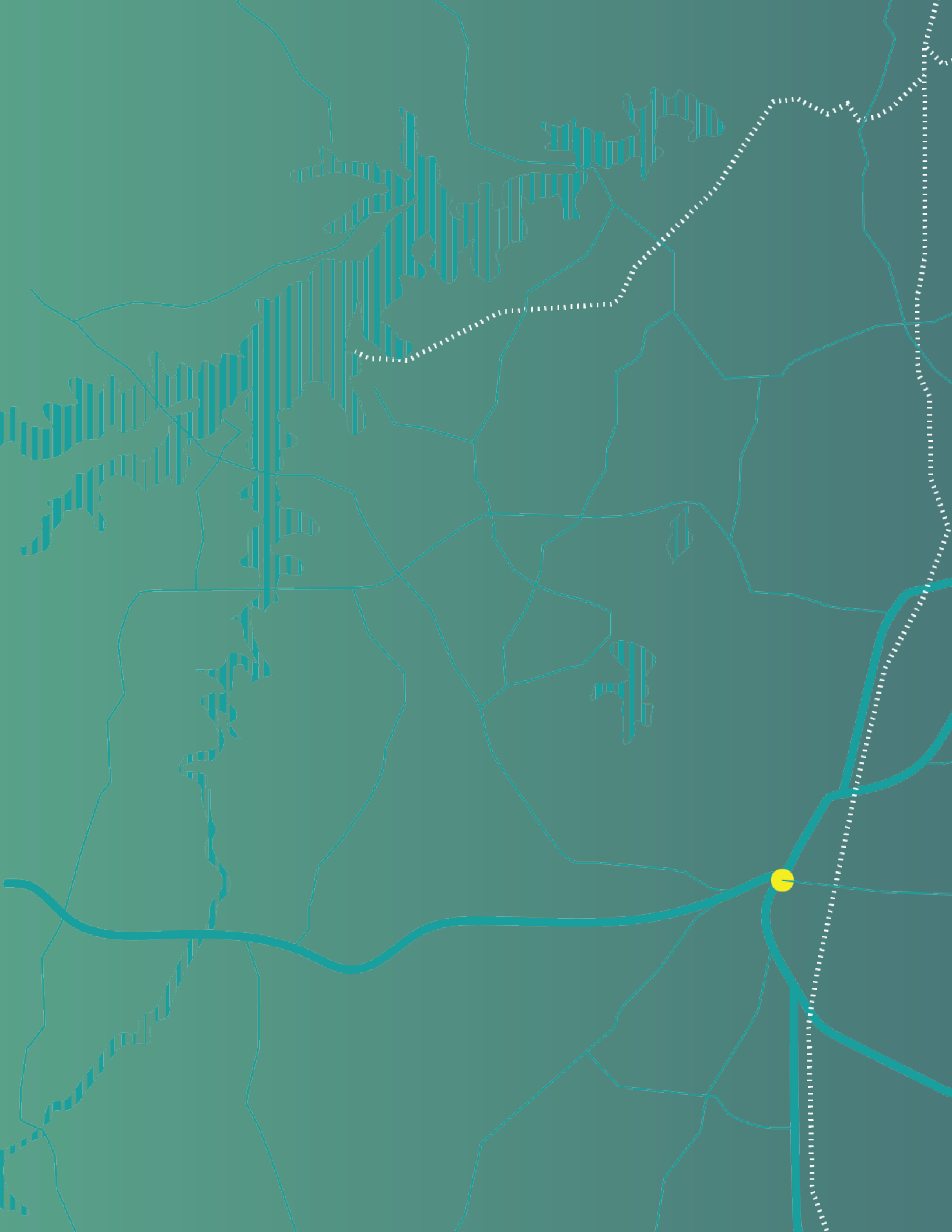
Get Involved!

Whether you are a local resident, business owner, landowner, government official, trails advocate, or just simply someone with an idea or helping hand, there are ways to get involved to make this trail a reality.

When available, you can help by participating in related public surveys, webinars, and events, and by helping spread the word about engagement opportunities via social media and word of mouth. There will also be times when voicing support for the project with elected officials will be welcomed and encouraged, such as with local adoption of the trails study, local funding related to trails, and support for the many benefits of trails generally.

The Person County website and social media feeds will serve as the most up-to-date resources for how and when to get involved.





Appendices



A Steering Committee Meeting Minutes

Person County Trail Feasibility Study

KICK-OFF MEETING MINUTES

July 20, 2023 from 3:30 – 5:00 PM (virtual)

Attendees

- Alta: Matt Hayes, Kim Williams, Meg Bryson, Kay Wolf
- Sallie Vaughn, Person County
- Brandy Lynch, Person County
- Joe Furstenberg, NCDOT IMD
- Chris Bowley, Person County
- Stephen Vaughan, Friends of the Parks Person County, Recreation Advisory Board
- David Proper, The Conservation Fund (TCF), advisory board for Triangle Trails Initiative
- John Hill, Person County
- Ellen Beckmann, Durham County
- Lauren Johnson, City of Roxboro
- Brian Hart, Person County

Project Overview

- The Great Trails State Plan aims to connect all 100 counties; this project is a piece of that.
- Matt Hayes: This is a trail feasibility study from Durham County to Roxboro; the hope is for a rail to trail. The study will identify the best possible route and alternatives, looking at side paths, easements, and rail corridor.
- David Proper: 15 counties are under official resolutions supporting the regional trail network.

Goals

Alta facilitated a group discussion about project goals. Notes are grouped by category.

Economics

- Create a regional multimodal connection that is also an economic development tool to promote what is available within the county and ensure a return on investment.
- Advertise that new things are on the horizon to current residents and to attract potential new residents as the county grows by promoting the trail's connectivity to destinations such as uptown and the casino (several other upcoming projects were mentioned).

Equity and Safety

- Create equitable alternative transportation and equitable recreation opportunities by providing a resource for a variety of recreation activities.
- Create safe opportunities for children, both in recreation and mobility.
- Improve accessibility and reduce conflicts by creating safe pedestrian and bicycle connection options for the community while reducing crime and improving personal safety for locals.
- Make sure the trail is built the right way, and adequately address safety and maintenance concerns. The perception of safety and crime around trail use for users and adjacent landowners is especially important.
- Improve local health and wellness by promoting alternative recreation to decrease rates of heart disease.

Community and Conservation

- Foster a sense of community by engaging the community through the project and involve the community in the project's creation and development.
- To illustrate the trail/corridor as a community asset instead of a project that draws concerns for crime or safety, highlight cultural awareness of the communities and neighborhoods and the environmental stewardship on and along the corridor.
- Protect natural habitats, improve local air and water quality, and preserve wildlife corridors through the recreation project for the City of Roxboro and Person County.
- Add stormwater management facilities to be eligible for stormwater credits.

Vision

A draft project vision was developed from the goals discussion:

- Create a regional multimodal trail connection that: serves as an equitable transportation option, is a resource for a variety of recreation activities for people of all ages, improves regional and local accessibility and mobility, improves local safety and decreases crime, improves the health and wellness of local residents and other trail users, fosters economic development and growth, and sets an example of good environmental stewardship.

Critical Issues

Alta facilitated a group discussion about what issues the steering committee members felt are critical to the success of the project. Notes are grouped by topic.

Stakeholder Coordination – Scheduling, Funding, and Communication

- Keep Norfolk Southern and elected officials abreast of the process and in the loop. Respect the boundaries set by Norfolk Southern, especially regarding project publicity.
    - Confirm that Norfolk Southern and elected officials at least somewhat support the project before mentioning to the public that local funding may be used.

    - Summer coordination with elected officials may be difficult as fewer meetings occur in the summer.
    - David Proper is willing to do outreach with each board member and Durham County Commissioners to identify who is in opposition.
    - All 3 at-large city council members and the mayor are up for reelection.
    - 15 counties are under official resolution to support the initiative (ECG or TTI)
- Identify and engage with all stakeholders.
- Gain public support for the project, downplay the “rail trail” and emphasize that other options are also being investigated as part of the feasibility study.
    - The feasibility study gives elected officials evidence to point to and creates more public credibility for the project.
    - Emphasize that this is a long-term project, and communicate that buying ROW now guarantees a future opportunity and **doesn’t affect current priorities**.
- Work with Durham partners and establish how they relate to this plan.
    - It was a surprise regarding timing and readiness for public engagement within two months. Consider Durham County needs and interests as the project moves forward (recent meeting w/ Sallie).
- 3-day charette timing depends on coordination with Norfolk Southern.
    - Update: Randy (Norfolk Southern) asked for scope and overview map to get approval from a committee within Norfolk Southern, and to continue coordination with TCF.

A **schedule update** is likely needed. Alta can shift some of the later work to a compressed timeline to keep the project within a 12-month time frame.

- Updates and comments from Person County include:
    - Proposal 1: Joint purchase between Durham and Person Counties.
    - Proposal 2: Separate purchases among Durham and Person Counties.
    - Person county would prefer a joint effort, but are willing to separately purchase if it would be faster.
    - Some funds are already secured through the park system that could be used as a match, but we’re waiting on recreational trails program updates.
    - Person County also applied for ARP funds for the railroad corridor and it’s at the top of the priority list. Funding is currently stuck, and is waiting on the feasibility study.
    - A grant was written for Person County, so the project should offer the County a transportation and economic development facility that improves mobility and park equity.

Regarding **costs and funding** – How much will this cost, and who will pay?

- Durham County is concerned about funding, not the feasibility study.
- Proposal 1: prepare a strong funding strategy as a group to minimize request for local funds.
- David Proper is situated well to provide land cost and title estimates. Norfolk Southern is reviewing Phase 1 to determine the possibility of Phase 2.

- Matt advised that construction costs can be surprising; it comes down to the number of bridges and their state of repair. Also, federal funding opportunities change so those sources could be at risk in the future.
- Suggestions for local, state, and federal funding should be prepared.
- TCF can negotiate with Norfolk Southern to work on an agreement without formal commitment from a public entity and the work can be later presented to elected officials.

Ownership and Land Use

- Find alternate routes along privately owned sections of the corridor, and make sure not to impose on landowners. Use sidewalks for some sections if necessary.
    - Sallie has knowledge of some specific breaks in ownership and can help with marking maps at workshops.
- A bridge over Flat River is missing. We have a good sense of the infrastructure condition and connectivity issues along the corridor.
- The current rail corridor goes through an industrial area and cuts access from properties east of the rail to 501. This is an opportunity to create an economic development strategy that gives roadway access and attracts developers.
- Timberlake may be the most sensitive area due to the location of the rail line.

Personal Safety (anticipating public concerns about this)

- Create messaging and awareness of studies/research on trail safety and crime, as well as stories about the Virginia Creeper and Swamp Rabbit Trails, where community fear was replaced by community love and appreciation.
- Create design and operational measures to mitigate various concerns.
- This is similar to concerns about parks near homes, but we have studies, like resources from NC State and the National Recreation and Parks Association. Stephen Vaughan works for Durham Police Department and can chime in on the ATT.
    - Stephen: There may be some who recall issues on the ATT. I've been with the PD for 40 years and can say there is very little crime on the trail. There have also been some improvements with design, and now that it is so heavily used there are always people around, which deters crime. Like any place there are occasional issues. We have tons of good examples from around the region though (note - could be great to have him on hand for the public meetings)
    - Matt: Long term operations and maintenance is critical to this issue as well.

Stormwater

- Use Neuse River Watershed Protection Funds: include stormwater management facilities in the Neuse Basin in project designs to report for stormwater credits.
- TCF has been involved with Raleigh on Upper Neuse Clean Water Initiative, and they have done thousands of acres.
- Talk to Raleigh about some funding from their watershed protection program.

Community Engagement Plan Finalization

- Alta will update audience and project contact list.
- The question was asked – Is there any additional engagement happening beyond what Alta does?

Public Participation Plan Discussion

Alta wants to reach a wide audience and plans on meeting with the committee several times. Alta encourages Person County to have a landing page. The Steering Committee can help promote materials and meetings. Providing information at community events will also help (Alta can provide materials).

Alta is scoped for three **one-on-one stakeholder meetings**. Norfolk Southern is confirmed. Recommendations were also made to consider meeting with:

- Council members or commissioners.
- Person Area Transportation Board.
- Economic development folks? Brandy offered to set up a meeting with the economic development board.
- John: The townships, but need to think about how to promote it. We have one of the only major business sites in the area, they want to be a little more livable like RTP with all the trails and restaurants.
- Interviews with areas that already have trails on the ground and can provide testimony/experience, especially on economic effects.

Additional suggestions were made to:

- Provide drop-in time slots for elected officials at public meetings so they can stagger their times.
- Take elected officials on a field trip to Swamp Rabbit/Greenville, or Travelers Rest.

Person County Trail Feasibility Study

STEERING COMMITTEE MEETING MINUTES

September 20, 2023 from 3:00 – 5:00 PM (Kirby Cultural Arts Complex, Roxboro, NC)

Attendees

- Kim Williams, Alta
- Matt Hayes, Alta
- Mary Elbech, Alta
- Meg Bryson, Alta
- Lauren Johnson, City of Roxboro
- Brooks Lockhart, City of Roxboro
- Stephen Vaughan, Friends of the Parks - Person County
- Madeline Galliano, Kerr-Tar COG
- Hart Evans, NCDOT IMD
- Amin Mohamadi Hezaveh, NCDOT Division 5
- John Hill, Person County
- Sally Vaughn, Person County
- Chris Bowley, Person County
- Brian Hart, Person County
- Rashawn King, Triangle Trails Initiative

Introductions and Project Overview

- Attendees did a round of introductions.
- Matt Hayes gave an overview of the project. The project is an opportunity for more than just a trail; conservation and economic development will be key as well. We are still at the start of the process, gathering information about the opportunities and constraints. Then, we will move from vision to action plan, project phases, etc.
- Kim Williams reminded attendees that we are officially looking at multiple alternative routes, not just the rail corridor. This is especially important because we are still working on coordinating with Norfolk Southern.
- Kim emphasized that the Conservation Fund is the key lead on talking with Norfolk Southern. Once Alta gets the go-ahead, we will have a stakeholder meeting with them.
- John Hill stated that he was looking into having a communication platform so that the entities and individuals working on this project can share information. This would include running updates of goings-on, stakeholder meetings, etc., to help everyone stay on the same page and avoid duplicating work.

Plan Review

- Alta provided attendees with a handout detailing relevant recommendations from previous plans.
- Kim asked attendees if there were other plans to be aware of. Responses included:
    - There are several major developments and redevelopments going on in the area. It would be good to have information about major planned subdivisions and other projects.
    - There are several STIP projects in Roxboro.
    - The Durham County Open Space Plan.
    - If there are any NCDOT Feasibility Studies for US 501, those could be good to include.
    - Durham is applying for a federal RCN grant for a feasibility study for the Durham to Roxboro Rail Trail – Durham County section (18 mi).

It was noted that scoring is done with Kerr-Tar RPO.

Alternatives Mapping Exercise

- Alta led an interactive activity around several large corridor maps. Participants recorded comments on the maps, which will be reflected in the opportunities and constraints section of Alta's report. Photos of the maps are provided at the end of this document.
- Several key discussion topics included:
    - Coordination with NCDOT is needed for any proposals within their ROW.
    - There are some potential creek sections in the southern part of the corridor.
    - Due to numerous constraints in the northern part of the corridor, it is imperative to find an alternative for the part of the rail line that's still active. We need the trail to get into the city.
    - The U-5969 project timeline is unknown, but it will be relevant due to its location (downtown Roxboro).

Criteria and Priorities

- Alta provided attendees with a list of potential criteria for selecting alternatives.
- Attendees discussed criteria that were important to them and suggested new criteria, which were recorded on the criteria board by Meg Bryson.
- Several key discussion topics included:
    - There was a suggestion to add an **Economic Development** criterion.
        - At times there seems to be a disconnect on the subject of economic development; County/City leadership are interested in economic development to increase livability, while some members of the public prefer to maintain the status quo. This topic will need to be approached carefully.

        - For the rail corridor alternative, there is unique redevelopment potential through increasing access. Currently, industrial parcels are missing access because there isn't ROW access across rail line.
    - The conservation aspect of the trail is key as well, and can be more palatable to those who are hesitant about the effects of growth. The trail will help protect and preserve parts of Person County that residents value.
        - Rather than "Minimize **Environmental Impact**," the criterion could be reframed to "Maximize **Conservation Impact**."
        - Conservation can also include historic preservation.
    - There was a suggestion to add an **Equity** criterion.
        - It is important to connect to low-income housing; we should create a category for equity, or tie it specifically to connectivity.
        - Park equity and access to greenspace are important criteria for funding.
    - Co-location with sewer lines could be relevant to the **Property Impacts** and/or **Cost** criteria.
    - There was a suggestion to add a **Maintenance** criterion related to ability/ease of maintaining the trail.
        - If sewer easements are used, check and see if they need cell membranes to deal with sewer burps. Also consider maintenance for mowing – ease of use for future sewer maintenance. We don't want hard-top pavement, as maintenance should be able to dig it up, and it should not be difficult to replace. The sewer easements are next to flood areas, so we should be cognizant that it may be wet.
    - **User Experience** criterion:
        - Historical landmarks and places of interest that follow the rail system can enhance user experience and highlight the history of the area. Storytelling can help with buy-in for landowners.
        - Pinpoint particular activation sites, such as art sculptures, parks, or other unique features that add to user experience.
    - **Connectivity** criterion:
        - Walkability of the community is important for project scoring.
        - A connection to Durham helps with density and points of interest in terms of scoring.
        - There could be a potential **Tourism** criterion related to the connection to Durham.
    - **Personal Safety** is a factor.
        - At the southern end of the trail, the community has some concerns that trail users will negatively affect their community and physical safety. There is fear around people having access to their land. Some perceptions of the American Tobacco Trail (ATT) is that it is unsafe or too close to personal property.
        - Show rural examples when communicating with the public (instead of the ATT). Good rural examples include Forest City and Caswell County Trail.
        - Show concepts for protecting other peoples' property (such as fencing) and case studies on property values increasing with trails.

        - There was a question about the Sherriff's Department being engaged to help offset safety concerns. John Hill responded that they will be engaged in the planning process.
    - **Local Support** and **Property Impacts** criteria:
        - Overall, community sentiment is that some growth is okay, but they want the project to remain authentic to Roxboro/Person County, and not just a replication of the ATT in Durham.
    - **Traffic Safety** is also important. Several alternatives along roadways may be less safe than the rail corridor or sewer easements.
- To conclude, each steering committee member was given three stickers and asked to vote on their top 3 most important criteria. A photo of the results is included at the end of this document.

Next Steps

- Alta will follow up with the timeline.
- Alta will share the 30% draft report, which includes the Opportunities and Constraints, Introduction, and Project Overview, likely in November.
- Alta will continue trying to talk to Norfolk Southern (Conservation Fund is the main point of communication with Norfolk Southern).
- Additional outreach with stakeholders will continue.

Person County Trail Feasibility Study

STEERING COMMITTEE MEETING #3 MINUTES

February 7, 2024 from 2:00 – 3:00 PM (virtual meeting)

Attendees

- Kim Williams, Alta
- Matt Hayes, Alta
- Meg Bryson, Alta
- Lauren Johnson, City of Roxboro
- David Proper, The Conservation Fund
- Stephen Vaughan, Friends of the Parks – Person County
- Amin Mohamadi Hezaveh, NCDOT Division 5
- Hart Evans, NCDOT IMD
- Chris Bowley, Person County
- Brian Hart, Person County
- Ryan Eldridge, Durham County
- John Hill, Person County Recreation, Parks, and Art
- Sallie Vaughn, Person County
- Rashawn King, Triangle Trails Initiative

Overview of Draft Plan

- Kim gave an overview of the draft plan and the project to date.
    - We are about halfway through – still need to do a design chapter with the preferred alignment, public engagement, and wrap-up.
    - Public engagement workshops planned for March/April (will discuss later in the meeting).
    - Anticipated study wrap-up in summer 2024.
- Stakeholder engagement update:
    - Project team will be meeting with NCDOT Division 5 soon.
    - David Proper is working on confirming the understanding of the corridor (for both Person and Durham sections). Will redo the maps and give them back to their appraiser, will help get an offer together.
        - David recently found out that NS is going through an internal re-org later this year and it may be a disruption, but ideally will be under contract before that. NS is also a bit understaffed at the moment.
        - Don’t know how long it will take the appraiser to update their report, but it appears that this would not conflict with the planned April public meeting. Could get an offer out to NS in spring.

  - Kim shared that the project team met with Tar River Land Conservancy (TRLC) and they are interested in conservation along the rail corridor in coordination with the trail efforts.
- Trail alternatives:
  - Kim reviewed the alternatives and explained that 2B rail line is not going to be available after conversations with NS.
- Key considerations:
  - Kim pointed out that looking at the TDI map, this project (especially northern sections) could be set up to do well for certain federal grant opportunities.
  - Kim noted that because TRLC is interested in collaborating with the project, there could also be opportunities for conservation funding.
  - Kim showed a map of the rail corridor status and pointed out the 2-mile segment just south of the active rail line. NS is not willing to sell. So we are just looking at south of Patterson Drive for a rail trail and will need to use another alternative to 2B.
  - Kim asked if the group wanted to consider a sidepath on US 501 as a third alternative to 2A and 2B. Kim and Matt have looked at it already and it is very constrained with utilities, rail ROW, etc.
    - John Hill said he would like to consider it since it is one of our only options.
    - Kim said we could have 2C as an option, listed in the report. It could help in the future if an NCDOT project would come up.
    - John asked how wide the ROW is on US 501 and who owns the utility ROW.
      - Kim reiterated that the width would be challenging, and would need to include lots of caveats if showing it in the report.
      - Lauren said she thinks the utility ROW is NCDOT owned but noted that it crosses onto private property (with NCDOT access).
    - Sallie said her main concern is whether they could lose out on future funding if they don't include the US 501 option.
    - Matt agreed that although the route is not ideal right now, it could help out in the future if an NCDOT project comes through.
    - John noted that 2B will happen eventually but it might be 20+ years, so another alternative is needed.
  - Lauren noted that for 3A, Patterson Place HOA open space is really tight and it doesn't seem like a trail is feasible through the subdivision. Using the sewer line would require further discussion with others at the City.
    - John noted that will likely be a long-term conversation with Brooks and others at the City.
  - John noted that 2A has good equity benefits because it ties into the school, low income area, and will eventually connect to the sportsplex. However, discussion with City Council is needed.

- Sallie asked about the development platted on Patterson but not built out.
  - Lauren said she doesn't have any info about it. Sallie said it could be the place the trail exits off Patterson Drive.
  - Kim noted Alta will refine the 3A route. Kim will send maps to Susie and Lauren to confirm.
- Kim noted she will bring up the question of DOT ROW on Patterson when she meets with NCDOT Div 5.
- Kim noted that the team looked at going through Optimist Park but it didn't help too much, as the trail ultimately needs to go north.

Group Discussion on Recommendations

Consensus on the preferred alignment (consider alternative since rail line section on north end in Roxboro is a no-go)

- Sallie asked how the connection from the north end of 2B into Roxboro will look.
  - Kim said the alignment is using the previously proposed greenway, which she believes goes underneath the railroad bridge, but we are looking at other ways to get across because it is tight.
  - Lauren requested more detailed views of the 1 and 2 sections.
  - Kim offered a 30 min call to walk through it with Lauren
- Chris asked if Old Durham Road had been considered as an alternative.
  - Kim noted we drove the corridor and felt it was too constrained, too challenging
- John said 1B looks attractive but would be a lot of sidewalks, and would have a lot of crossings.
- Sallie said she would like to see some mention about 1A coexisting with NCDOT project that will improve ped access – U5969.
  - Lauren said she does not think NCDOT will backtrack to make it more multimodal, due to the history of the project (bike lanes were included at one point but removed due to lack of support).
  - Hart said he will check and see if IMD has done a Complete Streets review yet.
  - Kim noted that Alta had researched the cross section and found something, which they can send to Hart.

Potential phasing

- Meg asked whether there was consensus that 3B and 4B would be first.
  - John said that from a County CIP standpoint that makes the most sense.
  - David Proper noted there could be multiple phases underway at the same time.
  - Kim asked whether to separate out 3B and 4B. John replied that in the CIP they are combined.

- Lauren noted that the City budget for construction is very limited, and a new trail is likely not a priority unless funded by other means.
- Kim proposed listing 3B and 4B as near-term, and 1B and 2A as long-term. The report could also highlight the key railroad crossing at bottom of 2A (getting into the City) as a key short-term project.
- Hart said that if NCDOT applies for a discretionary grant, they would likely try to do it for the entire corridor (design, construction, or both).
    - Matt said the cost estimates from this plan should help with grant applications.

Management discussion around non-County sections

- Matt noted that this topic may be premature since we are still talking about the preferred alternatives in the northern half, but is important to think about. No hard commitments need to be made right now. But, there will eventually be a trail from Durham to Roxboro, so cross jurisdictional agreements will be important to maintain the trail.
- Matt described at high-level what a long-term agreement could look like.
    - Hart shared that if NCDOT eventually owns the corridor, they would not be the entity responsible for maintenance.
- Lauren asked if it was now appropriate to engage Roxboro City Council, since previously the committee was asked not to share information about project yet. She noted that currently some council members may not even be aware of the project.
    - John said it would be good to get them involved and up to speed. He noted that perhaps the Council's priorities will change as this project becomes more of a reality. Person County similarly needs to make sure their Commissioners are involved.
    - Matt said it is appropriate to start by just sharing information.
    - Kim offered to provide talking points with things that elected officials typically ask, if needed.

Group Discussion on What We Take to the Public

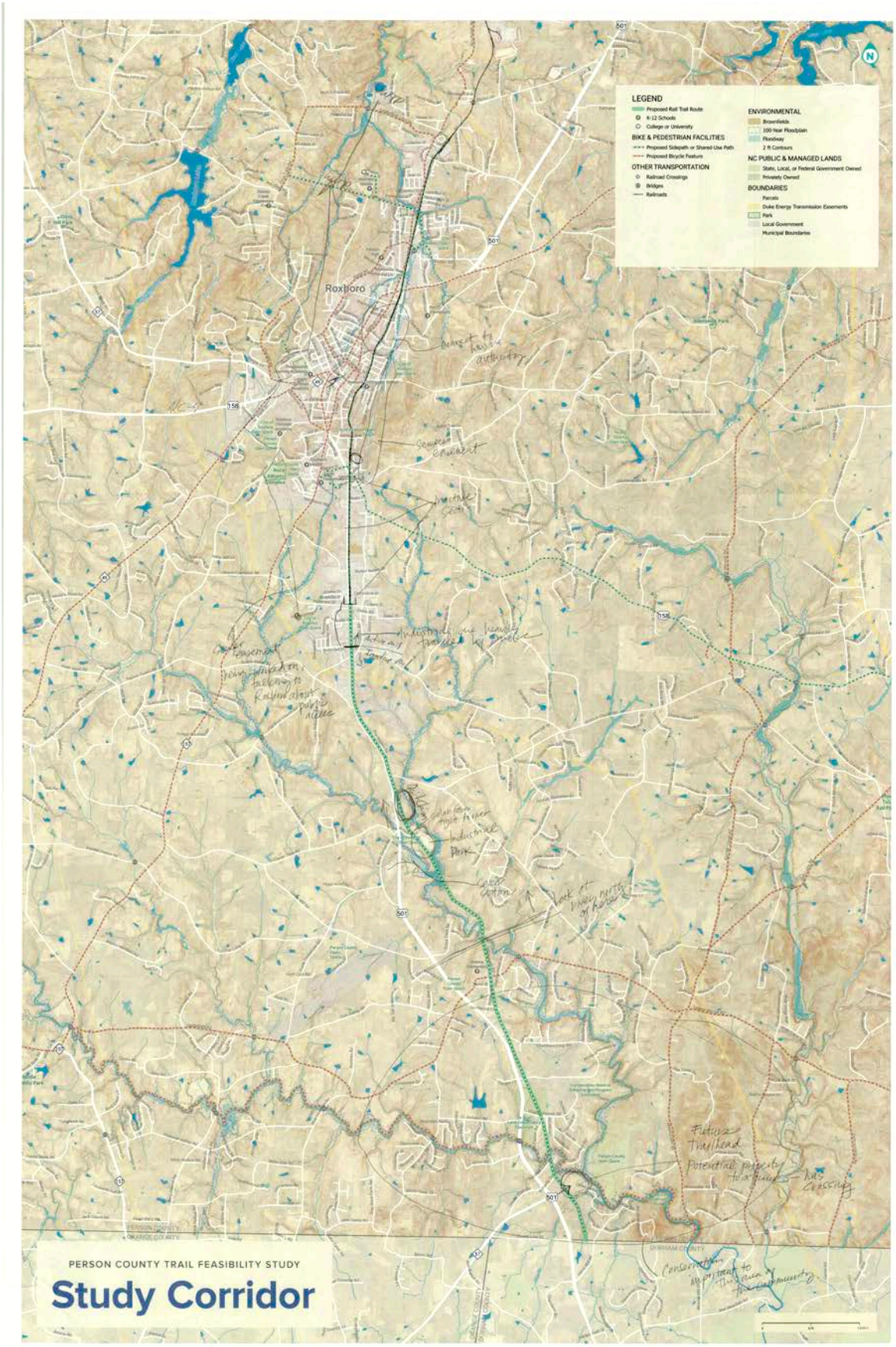
- Kim shared that Alta is doing a bike ped plan with Roxboro that will have engagement around April, so we want to think through how we balance those to not confuse people. She will coordinate with Lauren and Meg to determine how to do that.
- David offered to provide examples of governments that were resistant but now value the investment of trails if Roxboro Council needed convincing.
    - Lauren does not think Council will oppose the trail, but just doesn't think it will be a priority for them right now. Maintaining existing infrastructure is a priority.

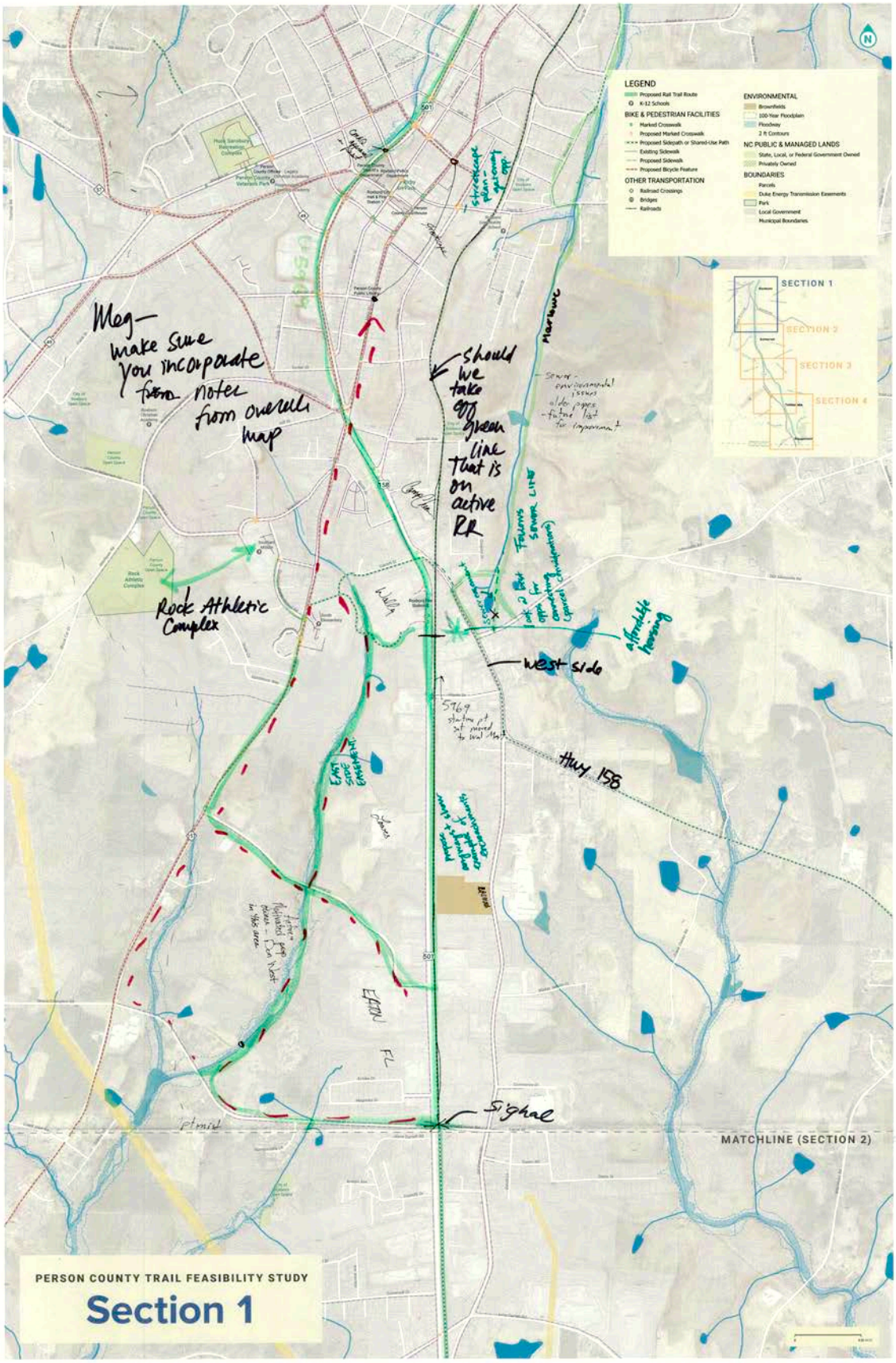
- Kim shared that Tar River Land Conservancy would like to have a presence at outreach to talk to adjacent landowners in the southern section.

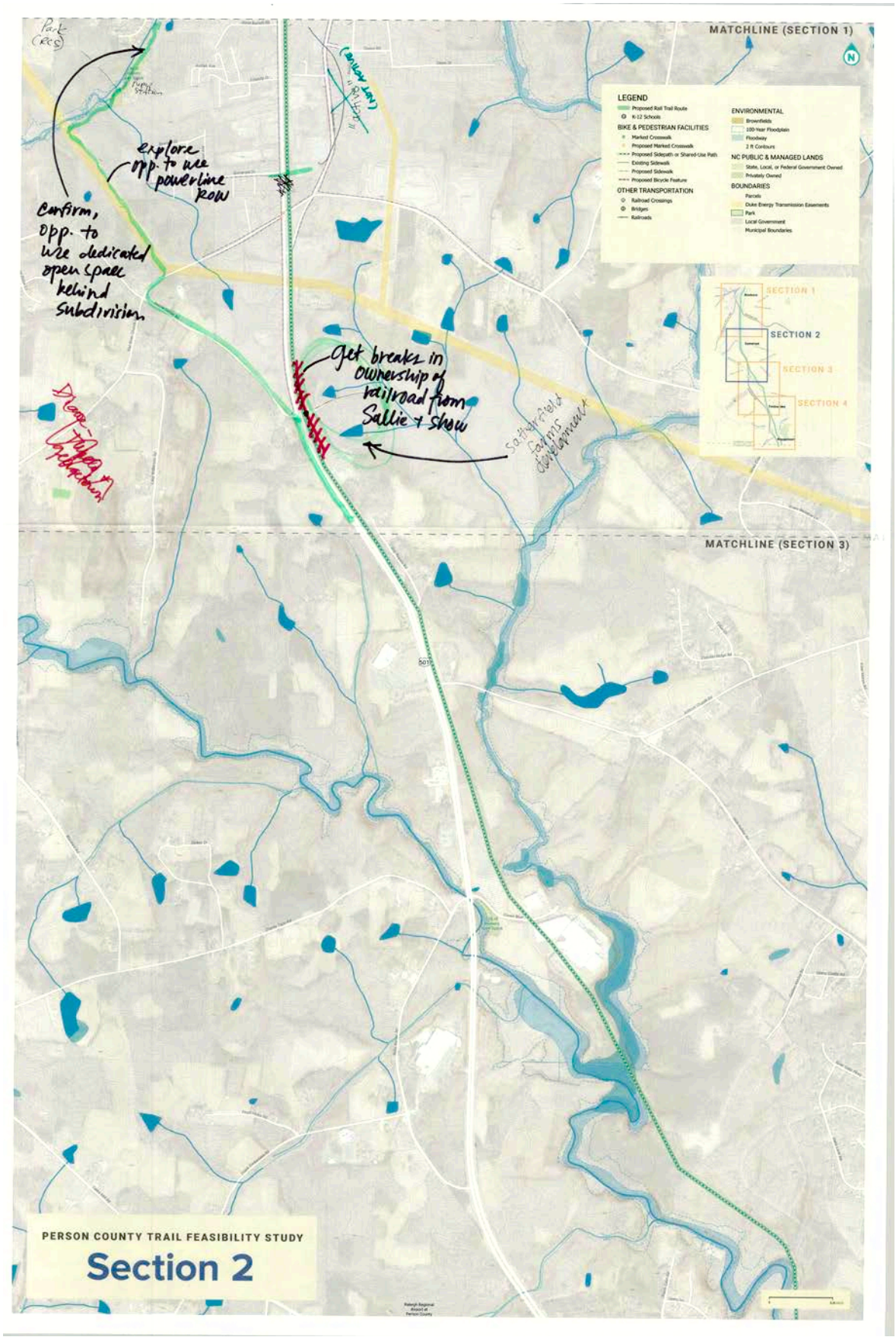
Next Steps

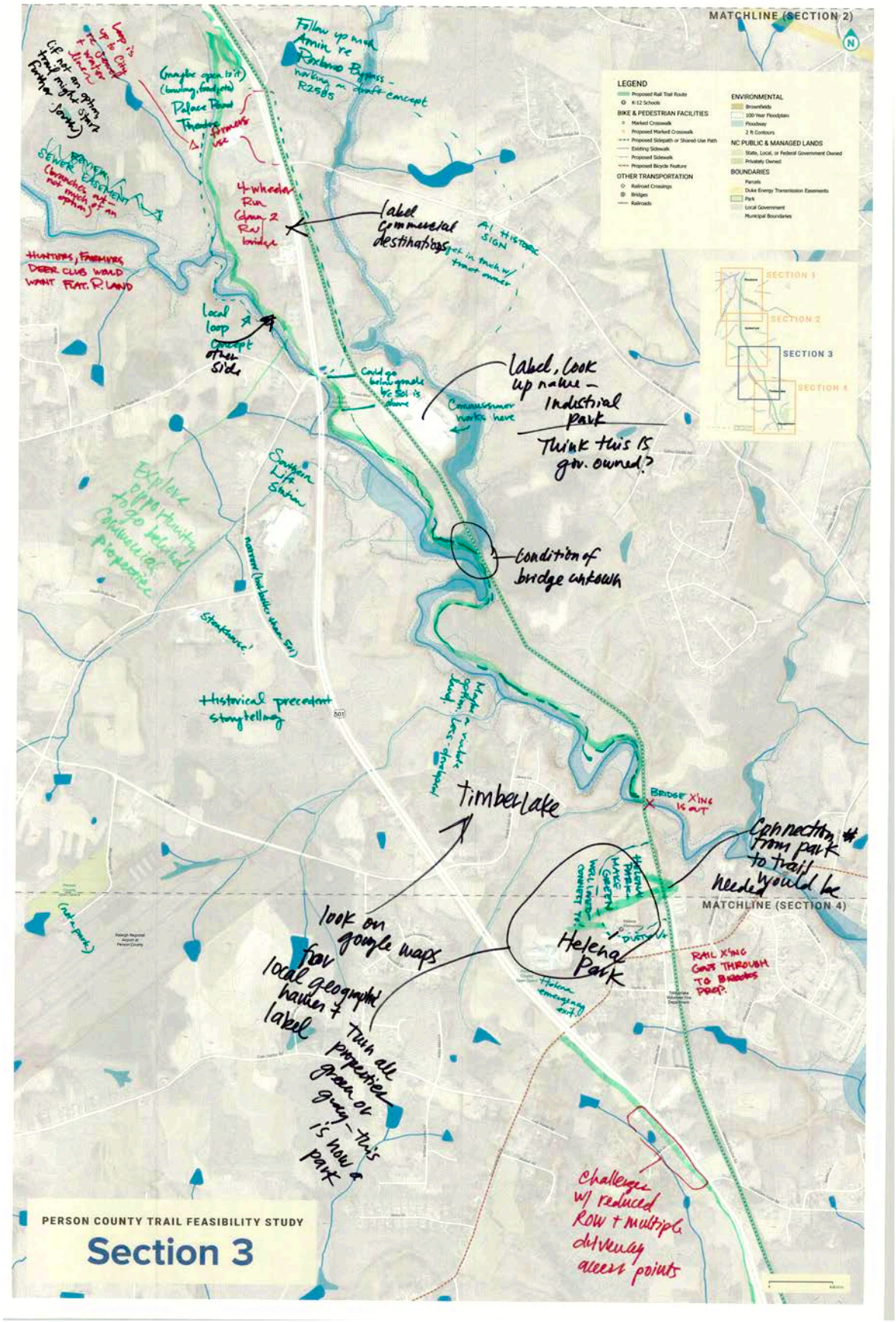
- Project team meeting with NCDOT Division 5 to discuss alternatives
- Project team developing cutsheet for phase 1 (rail-trail alternative)
- Project team preparing for public open house in April
- Project team to connect with Person County on rail-trail sections
- Project team to connect with City of Roxboro

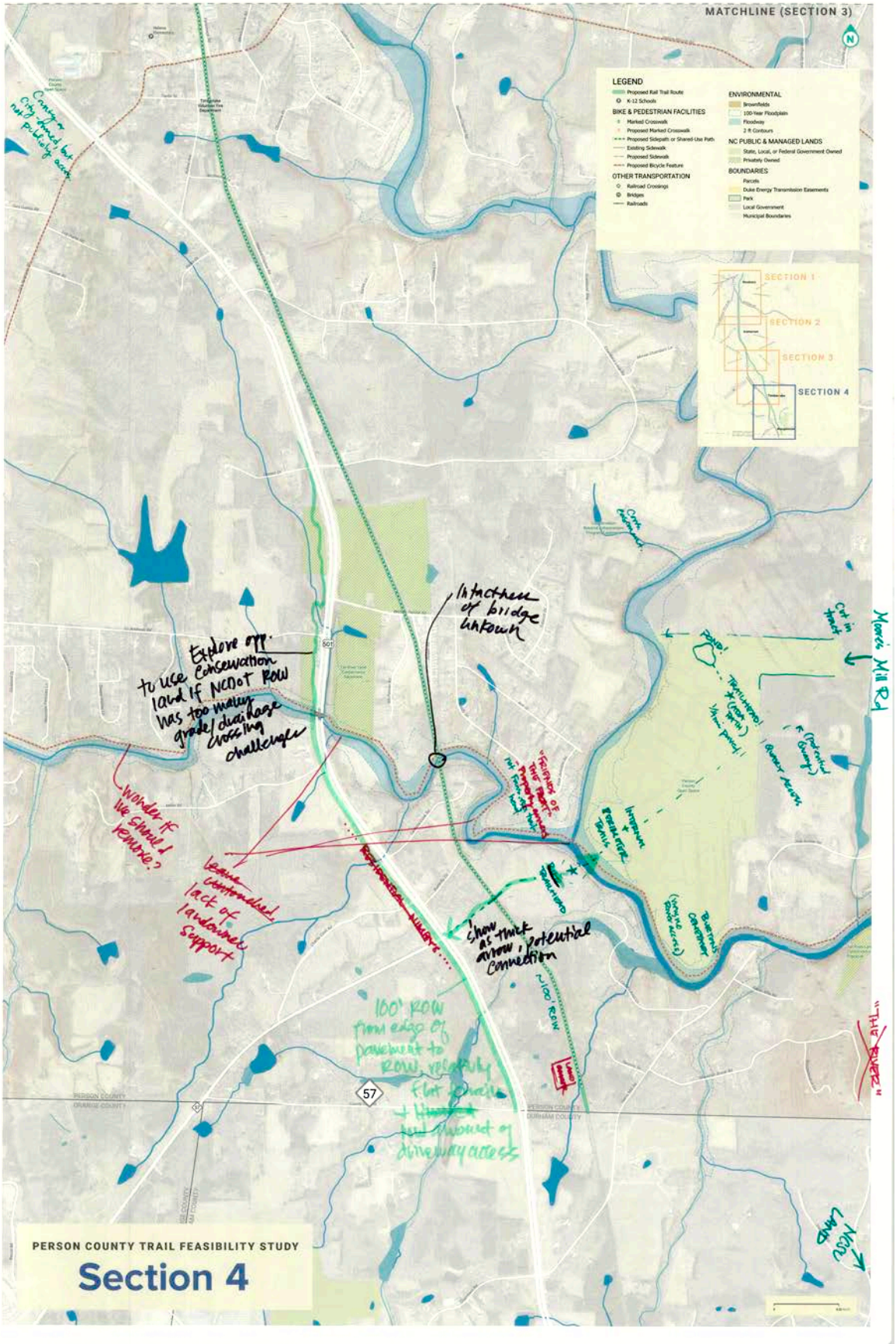
Study Area Maps from Steering Committee Meeting 2, September 20, 2024

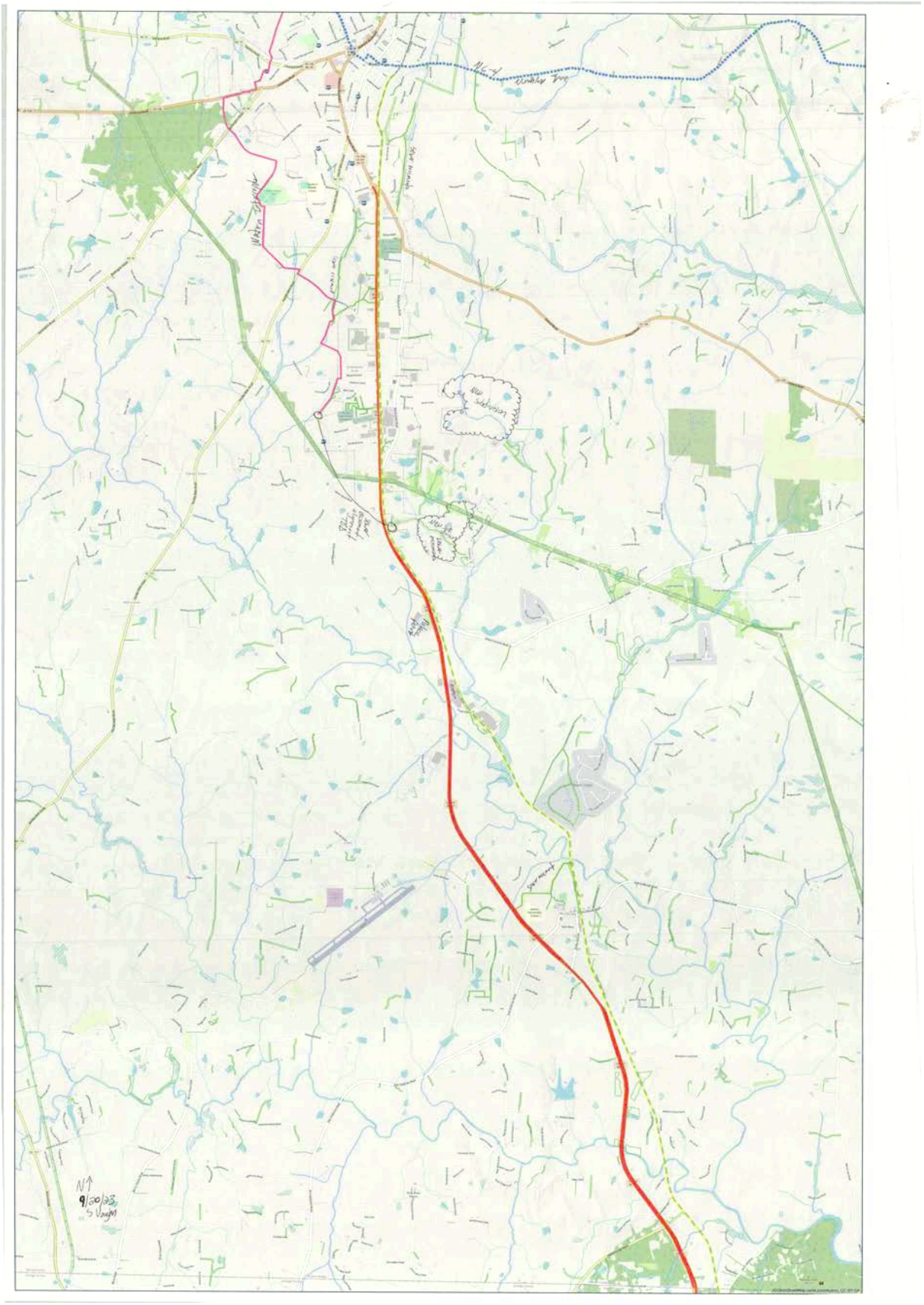



LEGEND
Proposed Rail Trail Route
K-12 Schools
BIKE & PEDESTRIAN FACILITIES
Marked Crosswalk
Proposed Marked Crosswalk
Proposed Sidepath or Shared-Use Path
Existing Sidewalk
Proposed Sidewalk
Proposed Bicycle Feature
OTHER TRANSPORTATION
Railroad Crossings
Bridges
Railroads
ENVIRONMENTAL
Brownfields
100-Year Floodplain
Floodway
2 ft Contours
NC PUBLIC & MANAGED LANDS
State, Local, or Federal Government Owned
Privately Owned
BOUNDARIES
Parcels
Duke Energy Transmission Easements
Park
Local Government
Municipal Boundaries
SECTION 1
SECTION 2
SECTION 3
SECTION 4
Meg— make sure you incorporate from notes from overall map
Should we take off green line that is on active RR
Rock Athletic Complex
Thurs Sewer Line
west side
affordable housing
Hwy 158
Signal
MATCHLINE (SECTION 2)
PERSON COUNTY TRAIL FEASIBILITY STUDY
Section 1


MATCHLINE (SECTION 1)
explore opp. to use powerline ROW
Confirm, Opp. to use dedicated open space behind subdivision
Get breaks in ownership of railroad from Sallie + Show
Satterfield Farms development
LEGEND
Proposed Rail Trail Route
K-12 Schools
BIKE & PEDESTRIAN FACILITIES
Marked Crosswalk
Proposed Marked Crosswalk
Proposed Sidepath or Shared-Use Path
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Park
Local Government
Municipal Boundaries
SECTION 1
SECTION 2
SECTION 3
SECTION 4
MATCHLINE (SECTION 3)
PERSON COUNTY TRAIL FEASIBILITY STUDY
Section 2


MATCHLINE (SECTION 2)
LEGEND
ENVIRONMENTAL
BIKE & PEDESTRIAN FACILITIES
NC PUBLIC & MANAGED LANDS
OTHER TRANSPORTATION
BOUNDARIES
SECTION 1
SECTION 2
SECTION 3
SECTION 4
Follow up with Admin re Parkland Bypass - having an R2985
label Commercial destinations
4 wheeler Run (Class 2 ROW bridge)
HUNTERS, FIREMEN, DEER CLUB WOULD WANT FLAT, R. LAND
local loop Concept other side
label, look up name - Industrial park
Think this is gov. owned?
condition of bridge unknown
Historical precedent storytelling
timberlake
look on google maps for local geographic haven't label
Think all properties green or grey - this is how a park
Helena Park
BRIDGE X'ING IS OUT
Connection to park to trail would be needed
MATCHLINE (SECTION 4)
RAIL X'ING GOES THROUGH TO BRIDGES PROP.
challenges w/ reduced ROW + multiple driveway access points
PERSON COUNTY TRAIL FEASIBILITY STUDY
Section 3


MATCHLINE (SECTION 3)
LEGEND
Proposed Rail Trail Route
K-12 Schools
BIKE & PEDESTRIAN FACILITIES
Marked Crosswalk
Proposed Marked Crosswalk
Proposed Sidepath or Shared-Use Path
Existing Sidewalk
Proposed Sidewalk
Proposed Bicycle Feature
OTHER TRANSPORTATION
Railroad Crossings
Bridges
Railroads
ENVIRONMENTAL
Brownfields
100-Year Floodplain
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NC PUBLIC & MANAGED LANDS
State, Local, or Federal Government Owned
Privately Owned
BOUNDARIES
Parcels
Duke Energy Transmission Easements
Park
Local Government
Municipal Boundaries
SECTION 1
SECTION 2
SECTION 3
SECTION 4
Explore opp. to use Conservation land if NCDOT ROW has too many grade/drainage crossing challenges
Intactness of bridge unknown
Moore's Mill Rd
Wonder if we should remove?
Leave unattended lack of landowner support
Show as thick arrow, potential connection
100' ROW
100' ROW from edge of pavement to ROW, typically
Flat Shoals
57
PERSON COUNTY TRAIL FEASIBILITY STUDY
Section 4



Route Selection Activity Results from Steering Committee Meeting 2, September 20, 2024

PERSON COUNTY TRAIL FEASIBILITY STUDY

Criteria for Route Selection



Which criteria do you feel are most important when considering the best trail route?

	TOP 3?	NOTES & RELEVANCE TO CORRIDOR
MAXIMIZING **Connectivity**	6	walkability
MAXIMIZING **Traffic Safety**	2	
MINIMIZING **Cost**	3	co-location
MINIMIZING **Property Impacts** → co-location	1	co location / sewer security ~ landowner concerns
MAXIMIZING **User Experience**	2	Highlight history preservation of history activation design for security
MINIMIZING **Environmental Impacts** / MAXIMIZE conservation	2	or
MAXIMIZING **Public Support**	3	authentic to Person County / ROI = not the ATT buy in from EMS
MAXIMIZING **Stakeholder Support**	0	
Econ. Development	4	activation ~ parks, art tourism ~ regional connections (ATT) parcel access
Equity / Park Eq.	3	connections
Ease of Maintainance	3	sewer considerations / floodplains

B

Order of Magnitude Cost Estimates for Alternatives

NOTE: FOR PLANNING-LEVEL COST ESTIMATES OF FINAL TRAIL PHASES, SEE APPENDIX C

Cost Disclaimer: These order of magnitude planning level costs were developed using the NCDOT Planning Cost Estimator Tool updated in 2023 for the SPOT Prioritization process. **This should not be used for construction cost estimates and is only intended for a cost comparison between alternatives. A contingency of +/- $500,000 should be considered for any cost.**

This cost opinion does not include detailed estimates on: permitting, inspection, construction management, temporary or permanent easements, detailed utility analysis of conflicts and specific relocation needs or the cost for ongoing maintenance, detailed design layout or grading model for quantities, detailed drainage and water quality analysis, detailed cost related to stream crossings, stormwater treatment, detailed utility relocation costs, and structural/geotechnical analysis.

It does consider certain costs at a broad planning level, if needed: Design, construction, right-of-way acquisition cost, signalizations and road crossings, stream crossings, and broad utility relocation cost.

The estimator tool assumes regional cost prices and average land values in North Carolina. This cost opinion is provided for cost comparison only and is adjusted for factors known at the time of preparation. Alta Planning + Design has no control over the cost of labor and material, competitive bidding, or market conditions; and makes no warranties, expressed or implied, concerning the accuracy of the opinion as compared to actual bids or cost.

Alternative 1B

SIT 7: Protected Linear Pedestrian Facility

Project Name: Person 1-B

SPOT ID:

Facility Type: Shared-Use Path, Multi-Use Path, Rail-Trail, or Sidepath



Start Over

① Project Length	17,194	ft
② Proposed Facility Width (Default is 10 feet)	12	ft
③ County	Person	
④ City	Roxboro	
⑤ Surrounding Development Type	Suburban	
⑥ Registered Historic District	☐ YES	☑ NO
⑦ Impacts to Existing Curb & Gutter	☐ YES	☑ NO
⑧ Number of FEMA Stream Crossings Impacted	4	
⑨ Percentage of ROW Area Needed	Total (80-100%)	
⑩ Impact to Active Railroad Track or Railroad ROW	☐ YES	☑ NO

⑪ Roadways Intersected

Interstate	0	Major Collector	0
Freeway	0	Collector	0
Major Arterial	0	Local Road	5
Arterial	1	Total	6

⑫ Signalized Intersections Crossed: 0

⑬ Level of Complexity for Signalized Intersections Crossed: N/A

⑭ Number of Utility Poles Requiring Relocation: 15

⑮ No Utilities Associated with This Project: ☐ No Utilities

Submitted by: KW

Generate Cost | Edit | Clear

Cost Estimate Summary

Total	$ 12,592,000
Design	$ 1,043,000
ROW	$ 190,000
Utilities	$ 960,000
Construction	$ 10,399,000

Go to Calculation Tab

Print PDF

Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next $1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

Alternative 2A

SIT 7: Protected Linear Pedestrian Facility

Project Name: Person 2-A

SPOT ID:

Facility Type: Shared-Use Path, Multi-Use Path, Rail-Trail, or Sidepath



Start Over

① Project Length	12,069 ft
② Proposed Facility Width (Default is 10 feet)	12 ft
③ County	Person
④ City	Roxboro
⑤ Surrounding Development Type	Suburban
⑥ Registered Historic District	☐ YES ☑ NO
⑦ Impacts to Existing Curb & Gutter	☐ YES ☑ NO
⑧ Number of FEMA Stream Crossings Impacted	3
⑨ Percentage of ROW Area Needed	Total (80-100%)
⑩ Impact to Active Railroad Track or Railroad ROW	☐ YES ☑ NO

⑪ Roadways Intersected

Interstate	0	Major Collector	0
Freeway	0	Collector	0
Major Arterial	0	Local Road	1
Arterial	1	Total	2

⑫ Signalized Intersections Crossed: 1

⑬ Level of Complexity for Signalized Intersections Crossed: Simple

⑭ Number of Utility Poles Requiring Relocation: 12

⑮ No Utilities Associated with This Project: ☐ No Utilities

Submitted by: KW

Generate Cost | Edit | Clear

Cost Estimate Summary

Total	$ 9,021,000
Design	$ 814,000
ROW	$ 133,000
Utilities	$ 722,000
Construction	$ 7,352,000

Go to Calculation Tab

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Enter Any Desired Notes in the Box Below

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This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

Alternative 2B

SIT 7: Protected Linear Pedestrian Facility

Project Name: 2-B

SPOT ID:

Facility Type: Shared-Use Path, Multi-Use Path, Rail-Trail, or Sidepath



Start Over

① Project Length	8,999 ft	
② Proposed Facility Width (Default is 10 feet)	12 ft	
③ County	Person	
④ City	Roxboro	
⑤ Surrounding Development Type	Industrial	
⑥ Registered Historic District	☐ YES	☑ NO
⑦ Impacts to Existing Curb & Gutter	☐ YES	☑ NO
⑧ Number of FEMA Stream Crossings Impacted	0	
⑨ Percentage of ROW Area Needed	Total (80-100%)	
⑩ Impact to Active Railroad Track or Railroad ROW	☐ YES	☑ NO

⑪ Roadways Intersected

Interstate	0	Major Collector	1
Freeway	0	Collector	0
Major Arterial	0	Local Road	2
Arterial	0	Total	3

⑫ Signalized Intersections Crossed: 2

⑬ Level of Complexity for Signalized Intersections Crossed: Complicated

⑭ Number of Utility Poles Requiring Relocation: 4

⑮ No Utilities Associated with This Project: ☐ No Utilities

Submitted by: KW

Generate Cost | Edit | Clear

Cost Estimate Summary

Total	$ 6,345,000
Design	$ 524,000
ROW	$ 99,000
Utilities	$ 375,000
Construction	$ 5,347,000

Go to Calculation Tab

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Enter Any Desired Notes in the Box Below

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This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

Alternative 3A

SIT 7: Protected Linear Pedestrian Facility

Project Name: Person 3-A

SPOT ID:

Facility Type: Shared-Use Path, Multi-Use Path, Rail-Trail, or Sidepath



Start Over

① Project Length	14,526 ft
② Proposed Facility Width (Default is 10 feet)	12 ft
③ County	Person
④ City	Roxboro
⑤ Surrounding Development Type	Rural
⑥ Registered Historic District	☐ YES ☑ NO
⑦ Impacts to Existing Curb & Gutter	☐ YES ☑ NO
⑧ Number of FEMA Stream Crossings Impacted	0
⑨ Percentage of ROW Area Needed	Large (25%-60%)
⑩ Impact to Active Railroad Track or Railroad ROW	☐ YES ☑ NO

⑪ Roadways Intersected

Interstate	0	Major Collector	0
Freeway	0	Collector	0
Major Arterial	0	Local Road	5
Arterial	0	Total	5

⑫ Signalized Intersections Crossed: 1

⑬ Level of Complexity for Signalized Intersections Crossed: Simple

⑭ Number of Utility Poles Requiring Relocation: 30

⑮ No Utilities Associated with This Project: ☐ No Utilities

Submitted by: KW

Generate Cost | Edit | Clear

Cost Estimate Summary

Total	$ 9,249,000
Design	$ 690,000
ROW	$ 96,000
Utilities	$ 1,252,000
Construction	$ 7,211,000

Go to Calculation Tab

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Enter Any Desired Notes in the Box Below

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This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

Alternative 3B

SIT 7: Protected Linear Pedestrian Facility

Project Name: Person 3-B

SPOT ID:

Facility Type: Shared-Use Path, Multi-Use Path, Rail-Trail, or Sidepath



Start Over

① Project Length	11,794	ft
② Proposed Facility Width (Default is 10 feet)	12	ft
③ County	Person	
④ City	Roxboro	
⑤ Surrounding Development Type	Suburban	
⑥ Registered Historic District	☐ YES	☑ NO
⑦ Impacts to Existing Curb & Gutter	☐ YES	☑ NO
⑧ Number of FEMA Stream Crossings Impacted	0	
⑨ Percentage of ROW Area Needed	Total (80-100%)	
⑩ Impact to Active Railroad Track or Railroad ROW	☐ YES	☑ NO

⑪ Roadways Intersected

Interstate	0	Major Collector	0
Freeway	0	Collector	0
Major Arterial	0	Local Road	2
Arterial	0	Total	2

⑫ Signalized Intersections Crossed: 0

⑬ Level of Complexity for Signalized Intersections Crossed: N/A

⑭ Number of Utility Poles Requiring Relocation: 0

⑮ No Utilities Associated with This Project: ☑ No Utilities

Submitted by: KW

Generate Cost | Edit | Clear

Cost Estimate Summary

Total	$ 7,315,000
Design	$ 580,000
ROW	$ 130,000
Utilities	$ 0
Construction	$ 6,605,000

Go to Calculation Tab

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Enter Any Desired Notes in the Box Below

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This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

Alternative 4A

SIT 7: Protected Linear Pedestrian Facility

Project Name: Person 4-A

SPOT ID:

Facility Type: Shared-Use Path, Multi-Use Path, Rail-Trail, or Sidepath



Start Over

① Project Length	33,969 ft
② Proposed Facility Width (Default is 10 feet)	12 ft
③ County	Person
④ City	Roxboro
⑤ Surrounding Development Type	Rural
⑥ Registered Historic District	☐ YES ☑ NO
⑦ Impacts to Existing Curb & Gutter	☐ YES ☑ NO
⑧ Number of FEMA Stream Crossings Impacted	7
⑨ Percentage of ROW Area Needed	Medium (15%-25%)
⑩ Impact to Active Railroad Track or Railroad ROW	☐ YES ☑ NO

⑪ Roadways Intersected

Interstate	0	Major Collector	0
Freeway	0	Collector	0
Major Arterial	0	Local Road	8
Arterial	0	Total	8

⑫ Signalized Intersections Crossed: 3

⑬ Level of Complexity for Signalized Intersections Crossed: N/A

⑭ Number of Utility Poles Requiring Relocation: 10

⑮ No Utilities Associated with This Project: ☐ No Utilities

Submitted by: KW

Generate Cost | Edit | Clear

Cost Estimate Summary

Total	$ 19,718,000
Design	$ 1,784,000
ROW	$ 94,000
Utilities	$ 942,000
Construction	$ 16,898,000

Go to Calculation Tab

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Enter Any Desired Notes in the Box Below

All costs are based on 2023 prices and cost components are rounded up to the next $1,000.

This tool assumes established ecoregion typologies, construction market regions, and average land values specific to North Carolina. They are determined within the tool based on user inputs for project location. This location-based information is used in ROW, construction, and environmental mitigation calculations.

This tool assumes a project impact area for ROW and environmental mitigation calculations based on chosen SIT, facility type, project length, and project facility width.

This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.

Alternative 4B

SIT 7: Protected Linear Pedestrian Facility

Project Name: Person 4-B

SPOT ID:

Facility Type: Shared-Use Path, Multi-Use Path, Rail-Trail, or Sidepath



Start Over

① Project Length	34,845	ft
② Proposed Facility Width (Default is 10 feet)	12	ft
③ County	Person	
④ City	Roxboro	
⑤ Surrounding Development Type	Rural	
⑥ Registered Historic District	☐ YES	☑ NO
⑦ Impacts to Existing Curb & Gutter	☐ YES	☑ NO
⑧ Number of FEMA Stream Crossings Impacted	5	
⑨ Percentage of ROW Area Needed	Total (80-100%)	
⑩ Impact to Active Railroad Track or Railroad ROW	☐ YES	☑ NO

⑪ Roadways Intersected

Interstate	0	Major Collector	0
Freeway	0	Collector	0
Major Arterial	0	Local Road	6
Arterial	0	Total	6

⑫ Signalized Intersections Crossed: 1

⑬ Level of Complexity for Signalized Intersections Crossed: Simple

⑭ Number of Utility Poles Requiring Relocation: 10

⑮ No Utilities Associated with This Project: ☐ No Utilities

Submitted by: KW

Generate Cost | Edit | Clear

Cost Estimate Summary

Total	$ 20,011,000
Design	$ 1,774,000
ROW	$ 384,000
Utilities	$ 628,000
Construction	$ 17,225,000

Go to Calculation Tab

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Enter Any Desired Notes in the Box Below

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This tool is limited in accuracy by user inputs and the complexity of questions presented for each project. If the inputs are incorrect, the tool's accuracy will be diminished.

This tool does not estimate costs associated with the purchase or taking of buildings within its ROW estimate calculations. It is assumed that projects would require land acquisition only.



C Planning-Level Cost Estimates for Project Phases

Phase 1

PLANNING ESTIMATE

PERSON COUNTY TRAIL FEASIBILITY STUDY

Alta Engineering SE, PLLC

LOCATION: SEGMENT 3B AND 4B

DESCRIPTION: 55900 LF 12' WIDE SHARED USE PATH FROM DURHAM RD AT PATTERSON DR TO THE SOUTH PERSON COUNTY LINE BETWEEN DURHAM RD AND HARRIS MILL RD

TOTAL LENGTH: 10.6 MILES

TOWN/CITY: SOMERSET AND TIMBERLAKE COUNTY: PERSON

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0000100000-N	800	MOBILIZATION	1	LS	$806,000.00	$806,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	$499,000.00	$499,000.00
0043000000-N	226	GRADING	1	LS	$5,678,000.00	$5,678,000.00
1121000000-E	520	AGGREGATE BASE COURSE	28,100	TON	$55.00	$1,545,500.00
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	8,390	TON	$140.00	$1,174,600.00
1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	505	TON	$900.00	$454,500.00
4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS	$140,000.00	$140,000.00
		RECTANGULAR RAPID FLASHING BEACON CROSSING (EA SIGN)	5	EA	$10,000.00	$50,000.00
		PEDESTRIAN BRIDGE 1 (INCLUDES REMOVAL OF EXISTING RAILROAD BRIDGE)	170	LF	$4,500.00	$765,000.00
		PEDESTRIAN BRIDGE 2	100	LF	$3,500.00	$350,000.00
		PEDESTRIAN BRIDGE 3 (INCLUDES REMOVAL OF EXISTING RAILROAD BRIDGE)	260	LF	$4,500.00	$1,170,000.00
		SIGNAL WORK - PATTERSON DR / DURHAM RD INTERSECTION - INSTALL PEDESTRIAN SIGNALS (2 LEGS)	1	LS	$20,000.00	$20,000.00
		SIGNAL WORK - ANTIOCH CHURCH RD / DURHAM RD INTERSECTION - INSTALL PEDESTRIAN SIGNALS (1 LEG)	1	LS	$25,000.00	$25,000.00
		MINOR TRAILHEAD WITHOUT PARKING - OFF OF DURHAM RD SOUTH OF BESSIE DANIEL RD (INCLUDES TRAIL ENTRY WITH BASIC AMMENITIES, AND 100 LF OF TRAIL CONNECTION)	1	LS	$35,000.00	$35,000.00
		MINOR TRAILHEAD WITH PARKING - BY THE INDUSTRIAL PARK (INCLUDES TRAIL ENTRY WITH BASIC AMMENITIES, 100 LF OF TRAIL CONNECTION, AND 6 PARKING SPACE LOT)	1	LS	$55,000.00	$55,000.00
		MINOR TRAILHEAD WITH PARKING - BY HELENA-MORIAH RD (INCLUDES TRAIL ENTRY WITH BASIC AMMENITIES, 700 LF OF TRAIL CONNECTION TO EX. HELENA PARK PARKING, AND NEW 6 PARKING SPACE LOT)	1	LS	$215,000.00	$215,000.00
		MAJOR TRAILHEAD WITH PARKING - OFF OF HILLSBOROUGH RD (INCLUDES TRAIL ENTRY WITH BASIC AMMENITIES, 800 LF OF TRAIL CONNECTION, AND NEW 15 PARKING SPACE LOT WITH ONE HORSE TRAILER SPACE)	1	LS	$250,000.00	$250,000.00
		EROSION CONTROL ALLOWANCE	1	LS	$835,000.00	$835,000.00
		MINOR ITEMS (5%)	1	LS	$663,000.00	$663,000.00
		CONSTRUCTION COST SUBTOTAL (2024)				$14,731,000.00
		CONTINGENCY			30%	$4,419,300.00
		TOTAL CONSTRUCTION COST (2024)				**$19,151,000.00**
		INFLATION FACTOR	4	YRS	8.0%	$6,904,000.00
		CONSTRUCTION COST TOTAL (2028)				**$26,055,000.00**
		DESIGN AND PERMITTING			15.0%	$3,909,000.00
		NCDOT ADMINISTRATION FEE (NA, SEE NOTE BELOW)			0.0%	$0.00
		CONSTRUCTION ENGINEERING INSPECTION (CEI)			15.0%	$3,909,000.00
		TOTAL ESTIMATED PROJECT COST (2028)				**$33,873,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- INFLATION ASSUMES CONSTRUCTION BID YEAR (2028).
- EXCLUDES RIGHT-OF-WAY COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.
- ASSUMES NO LAP FUNDING. IF PURSUING LAP FUNDING WITH FEDERAL GRANTS, ADD NCDOT ADMINISTRATION FEE (10%) TO PROJECT COST.

COMPUTED BY CJA

DATE 5/15/2024

Phase 2

PLANNING ESTIMATE

PERSON COUNTY TRAIL FEASIBILITY STUDY

Alta Engineering SE, PLLC

LOCATION: **PHASE 2 - FROM DURHAM RD / PATTERSON DR TO HENDERSON RD / N MADISON BLVD, AND SPURS TO TRAILHEADS**

DESCRIPTION: 19100 LF 12' WIDE ASPHALT SHARED USE PATH
12800 LF 12' WIDE CONCRETE SHARED USE SIDE PATH
150 LF PEDESTRIAN BRIDGES

TOTAL LENGTH: **6.1 MILES**

TOWN/CITY: SOMERSET AND TIMBERLAKE COUNTY: PERSON

ITEM NO. DESC. NO.	ITEM NO. SECT. NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	AMOUNT
0000100000-N	800	MOBILIZATION	1	LS	$519,000.00	$519,000.00
0000400000-N	801	CONSTRUCTION SURVEYING	1	LS	$287,000.00	$287,000.00
0043000000-N	226	GRADING	1	LS	$3,155,000.00	$3,155,000.00
1121000000-E	520	AGGREGATE BASE COURSE	9,600	TON	$55.00	$528,000.00
1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	2,860	TON	$140.00	$400,400.00
1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	175	TON	$900.00	$157,500.00
2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	6,170	LF	$40.00	$246,800.00
2591000000-E	848	4" CONCRETE SIDEWALK	16,140	SY	$70.00	$1,129,800.00
2605000000-N	848	CONCRETE CURB RAMP	27	EA	$3,500.00	$94,500.00
2612000000-E	848	6" CONCRETE DRIVEWAY	1,610	SY	$100.00	$161,000.00
4457000000-N	SP	TEMPORARY TRAFFIC CONTROL	1	LS	$490,000.00	$490,000.00
8801000000-E	SP	MSE RETAINING WALL NO ****	1,800	SF	$110.00	$198,000.00
		RECTANGULAR RAPID FLASHING BEACON CROSSING (EA SIGN)	10	EA	$10,000.00	$100,000.00
		PEDESTRIAN HYBRID BEACON (AT HENDERSON RD / VIRGILINA RD INTERSECTION)	1	EA	$150,000.00	$150,000.00
		CHAIN LINK FENCE	80	LF	$40.00	$3,200.00
		PEDESTRIAN BRIDGE FOR SOUTH ELEMENTARY SCHOOL TRAILHEAD	60	LF	$3,500.00	$210,000.00
		PEDESTRIAN BRIDGE NORTH OF NICHOLS AVE	30	LF	$3,500.00	$105,000.00
		PEDESTRIAN BRIDGE BETWEEN MOUNTAIN RD AND BARNETT AVE	60	LF	$3,500.00	$210,000.00
		SIGNAL WORK - GARRETT ST AND DURHAM RD INTERSECTION - INSTALL PEDESTRIAN SIGNALS (2 LEGS)	1	LS	$25,000.00	$25,000.00
		MINOR TRAILHEAD UTILIZING EXISTING PARKING - OPTIMIST PARK (INCLUDES TRAILHEAD KIOSK AND WAYFINDING SIGNAGE)	1	LS	$5,000.00	$5,000.00
		MINOR TRAILHEAD UTILIZING EXISTING PARKING - SOUTH ELEMENTARY SCHOOL (INCLUDES TRAILHEAD KIOSK AND WAYFINDING SIGNAGE)	1	LS	$5,000.00	$5,000.00
		MINOR TRAILHEAD WITH NEW PARKING - NICHOLS AVE (INCLUDES 6 PARKING SPACES, TRAILHEAD KIOSK, AND WAYFINDING SIGNAGE)	1	LS	$45,000.00	$45,000.00
		MINOR TRAILHEAD WITH NEW PARKING - SOUTH OF SLOAN RD (INCLUDES 6 PARKING SPACES, TRAILHEAD KIOSK, AND WAYFINDING SIGNAGE)	1	LS	$45,000.00	$45,000.00
		MINOR TRAILHEAD UTILIZING EXISTING PARKING - NORTH ELEMENTARY SCHOOL (INCLUDES TRAILHEAD KIOSK AND WAYFINDING SIGNAGE)	1	LS	$5,000.00	$5,000.00
		DRAINAGE ALLOWANCE	1	LS	$360,000.00	$360,000.00
		EROSION CONTROL ALLOWANCE	1	LS	$385,000.00	$385,000.00
		MINOR ITEMS (5%)	1	LS	$425,000.00	$425,000.00
					CONSTRUCTION COST SUBTOTAL (2024)	$9,446,000.00
		CONTINGENCY			30%	$2,833,800.00
		UTILITIES (ABOVE GROUND)				$535,000.00
					TOTAL CONSTRUCTION COST (2024)	**$12,815,000.00**
		INFLATION FACTOR	4	YRS	8.0%	$4,620,000.00
					CONSTRUCTION COST TOTAL (2028)	**$17,435,000.00**
		DESIGN AND PERMITTING			15.0%	$2,616,000.00
		NCDOT ADMINISTRATION FEE (NA, SEE NOTE BELOW)			0.0%	$0.00
		CONSTRUCTION ENGINEERING INSPECTION (CEI)			15.0%	$2,616,000.00
					TOTAL ESTIMATED PROJECT COST (2028)	**$22,667,000.00**

NOTE:
- ESTIMATE IS NOT BASED ON AN ENGINEERING DESIGN, AND IS FOR PLANNING PURPOSES ONLY.
- INFLATION ASSUMES CONSTRUCTION BID YEAR (2028).
- EXCLUDES RIGHT-OF-WAY COSTS.
- UNDERGROUND UTILITY COORDINATION/RELOCATION COSTS UNKNOWN AND NOT INCLUDED.
- ASSUMES NO LAP FUNDING. IF PURSUING LAP FUNDING WITH FEDERAL GRANTS, ADD NCDOT ADMINISTRATION FEE (10%) TO PROJECT COST.

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DATE 5/15/2024

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D Design Guidelines

Design Guidelines

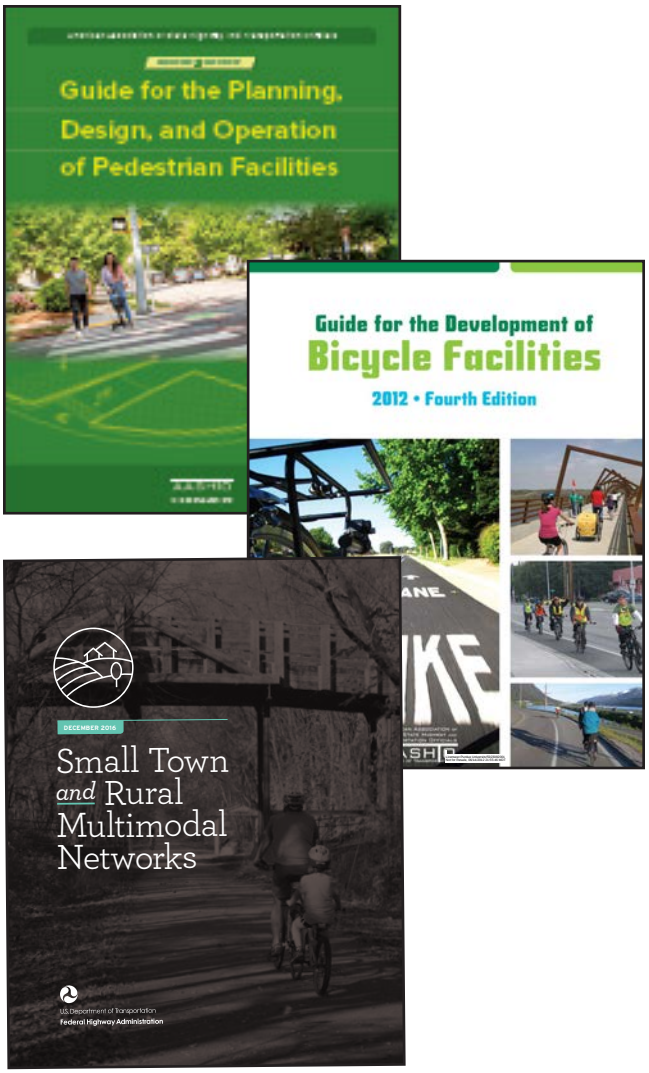
This toolbox presents guidance for local agency staff, elected officials and community advocates to create a more walkable and bicycle-friendly community for people of all ages and abilities. Planners and project designers should refer to these guidelines in developing the infrastructure projects recommended by this plan, but they should not be used as the sole reference for any detailed engineering design.

North Carolina Guidelines

As a starting point, the following list of resources are from the NCDOT website for “Bicycle & Pedestrian Project Development & Design Guidance," located here (resources listed are linked through this page; Last retrieved in December 2021): https://connect.ncdot.gov/projects/BikePed/Pages/Guidance.aspx

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT)

- WalkBikeNC: Statewide Pedestrian & Bicycle Plan
- Glossary of North Carolina Terminology for Active Transportation
- NCDOT Complete Streets: This policy directs the department to consider and incorporate several modes of transportation when building new projects or making improvements to existing infrastructure. The link below is a landing page with resources such as the Complete Streets policy, the Implementation Guide, Evaluation Methodology, Flowchart, FAQs, and more. https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx
- Evaluating Temporary Accommodations for Pedestrians
- NC Local Programs Handbook
- Traditional Neighborhood Development Guidelines



GREENWAY CONSTRUCTION STANDARDS

- Greenway Standards Summary Memo
- Design Issues Summary
- Greenway Design Guidelines Value Engineering Report
- Summary of Recommendations
- Minimum Pavement Design Recommendations for Greenways
- Steps to Construct a Greenway or Shared-Use Trail

National Guidelines

RAILS-TO-TRAILS CONSERVANCY

- General Design Guidance: https://www.railstotrails.org/build-trails/trail-building-toolbox/
- Rails-with-Trails: https://www.railstotrails.org/resource-library/resources/americas-rails-with-trails/
-

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

- Guide for the Development of Bicycle Facilities
- Guide for the Planning, Design, and Operation of Pedestrian Facilities

THE FEDERAL HIGHWAY ADMINISTRATION (FHWA)

- Accessibility Guidance
- Design Guidance
- Facility Design
- Facility Operations

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

- Part 4E: Pedestrian Control Features
- Part 7: Traffic Controls for School Areas
- Part 9: Traffic Controls for Bicycle Facilities

NATIONAL ASSOCIATION OF CITY TRANSPORTATION OFFICIALS (NACTO)

- Urban Bikeway Design Guide
- Urban Street Design Guide

SAFE ROUTES TO SCHOOL NON-INFRASTRUCTURE

- National Center for Safe Routes to School
- National Partnership for Safe Routes to School

US ACCESS BOARD

- ABA Accessibility Standards
- ADA Accessibility Guidelines
- ADA Accessibility Standards
- Public Rights-of-Way, Streets & Sidewalks, and Shared Use Paths

ADDITIONAL FHWA RESOURCES

- Achieving Multimodal Networks (2016): https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks/
- Small Town and Rural Multimodal Networks Design Guide (2017): https://ruraldesignguide.com/
- Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations (2018): https://safety.fhwa.dot.gov/ped_bike/step/docs/STEP_Guide_for_Improving_Ped_Safety_at_Unsig_Loc_3-2018_07_17-508compliant.pdf

Trail Surface Considerations

Trail surfaces vary widely in installation cost, user preference, maintenance requirements, aesthetics, and life cycle. These are some considerations for common trail surface types.



ASPHALT

LIFE CYCLE: 10-20 years

- Smooth surface can accommodate many types of uses
- May buckle from tree roots
- Can include a soft-surface shoulder to provide more options for trail users



CONCRETE

LIFE CYCLE: 25-35 years

- Higher initial cost than asphalt
- Durable and resilient to flooding
- Hard surface is not preferred by some users, including runners



CRUSHED STONE

LIFE CYCLE: 5-10 years

- Natural appearance
- Can be made from almost any type of stone
- Accessible for most user types if properly compacted

Sources:
Surface characteristics: Rails to Trails Conservancy. "Surfaces."
www.railstotrails.org/build-trails/trail-building-toolbox/design/surfaces/
Life cycle and cost info: Greenways Incorporated (2022) (except natural earth)
Photos: Crushed Stone: Rocky Branch Trail (Carolina Thread Trail)
Boardwalk: Rich Park Greenway (Piedmont Legacy Trails)

LIFE CYCLE: Constructed greenway facilities have a limited life cycle, or useful life. The life cycle varies based on environmental impact, use, and maintenance. The estimates provided are for the typical life cycle of each trail type.



BOARDWALK

LIFE CYCLE: 7-10 years

- Often used for parts of trails that cross wetlands
- Expensive to install and maintain
- Can be slippery when wet
- Allows drainage and reduces negative impacts on wetlands



NATURAL EARTH

LIFE CYCLE: 5-7 years

- Inexpensive to build and maintain (can often be maintained by volunteers)
- May have drainage issues
- Typically not accessible for wheelchairs, strollers, roller skates/scooters/skateboards, and some bikes

OTHER SURFACES

SOIL-CEMENT

- Uses soil combined with cement and water to stabilize the surface
- Must manage drainage to avoid trail erosion
- Less expensive than asphalt

RESIN-BASED STABILIZED MATERIAL

- Uses resin to bind soil or aggregate together
- Natural appearance
- Less environmental impact than asphalt
- Less expensive than asphalt

RECYCLED MATERIALS

- Uses discarded materials such as old tires mixed into concrete
- Not extensively studied; maintenance needs and costs are not well-documented

Background image: Example walking and biking trail in Arkansas

Working with Norfolk Southern

General Process

This guide is intended to be a high-level overview of the process of working with Norfolk Southern (NS) on any projects initiated by an outside party that may affect or be near the NS right-of-way. Communities should refer directly to Norfolk Southern's Public Improvement Projects Manual for detailed information on each of the steps below, as well as sample approval process and construction schedules and required forms. The Manual is located at: http://www.nscorp.com/content/nscorp/en/transportation-terms/other-requirements/public-project-guidelines.html

Additionally, Norfolk Southern requires payment for the costs associated with the project review and approval process. All expenses incurred by the party seeking review for attending meetings, reviewing plans, preparing correspondence, and travel expenses must be paid by that party. During construction, costs would also likely be incurred for the required flagman (railroad protective services).

PRELIMINARY ENGINEERING

The first step should be contacting NS's assigned Public Improvements Engineer for the state of North Carolina, George (Brian) Taylor, to provide initial project information. Next, a standard PE agreement should be completed. The outside party is required to submit initial plans to NS and make revisions as required before the submission of final plans. The submission process include a Concept, 30%, 60%, 90%, and 100% packages. Sponsors should reference the Special Provisions and Design Criteria contained in Appendices E, H, & I of the Manual to ensure compliance. NS will then complete a final review, execute a standard project agreement, and provide a Force Account Estimate detailing anticipated construction costs.

Additionally, any outside parties such as surveyors who must enter NS ROW as part of the process must complete a "Right of Entry" application and satisfy insurance requirements.

CONSTRUCTION

Force Account Work typically includes construction engineering, accounting, railroad protective services, communications changes, signal and electrical changes, track work, and T-cubed (changes to NS fiber optic communications facilities). All construction work must be performed in accordance with the Norfolk Southern Special Provisions for Protection of Railway Interests (Appendix E of the Manual). The full construction process steps are detailed in the NS Construction Checklist, which can be found in Appendix J of the Manual. No work may be performed on, under, over, or adjacent to NS property until NS insurance is approved and the contractor receives written authorization

from the Railroad Engineer. In addition, NS or its contracted engineering personnel will perform routine monitoring of the construction site and its activities.

In the event that NS anticipates expenses exceeding the original Force Account Estimate, it will provide a revised estimate for the sponsor's approval.

Pedestrian & Bicycle Projects

General NS policy is to not allow pathways that would permit pedestrian, bicycle, and other recreational traffic to move parallel to trains on NS right-of-way or to cross at grade. However, NS is committed to cooperating in the establishment of recreational paths, provided all of the general requirements described above are met, and with certain specific bike and pedestrian infrastructure requirements. These are as follows:

- Where a path and a NS rail line parallel each other, safety measures such as signage and fencing will be required. Installation and maintenance costs of these measures are the responsibility of the trail sponsor or agency.
- Trails may pass over or under railroad tracks, as long as appropriate measures are undertaken to ensure safety and the previously described preliminary engineering and construction monitoring process is followed. A license requirement will be required, which will assign ownership and maintenance responsibility of the trail to the sponsor.
- Over-/underpass structures may be required to be removed at the sponsor's expense if they are found to interfere with railroad operations or maintenance.
- Multi-use paths that utilize existing or proposed railroad drainage structures will not be permitted.
- If a trail crossing occurs at an established at-grade highway-rail crossing, it will be considered as long as it is within the highway easement and appropriately signed and protected. The crossing must be at a 90-degree angle and must meet the requirements of the MUTCD.
- At the preliminary engineering level, the concept, 30%, 60%, ROW, 90%, and 100% plan packages should be provided to NS for review and approval.
- Proposed structures that pass over NS must meet the requirements set forth in the NS Special Provisions and Overhead Bridge Design Criteria.
- Sponsor-developed plans must consider the constructability of the proposed overhead bridge, including site access, equipment requirements, girder splice locations, support tower requirements, overhead and under-grade utilities, as well as the NS facility type, number of tracks, and frequency of trains.
- Bicycle and pedestrian trails that run parallel to NS routes must be located off NS property and will require independent structures located off NS property where necessary to cross over any features such as creeks that require an elevated structure. Use of NS Underpass Structures is not permitted.
- Protective fencing and signage may be required at the discretion of NS.

E

Funding Sources

This appendix is intended to assist Person County stakeholders in identifying the most appropriate federal, state, and local funding sources that can be used for trail design, right-of-way acquisition, and construction.

When considering possible funding sources for bicycle, pedestrian, and trail projects, it is important to remember that not all construction activities or programs will be accomplished with a single funding source. Funding sources can be used for a variety of activities, including: programs, planning, design, implementation, and maintenance. This appendix outlines the most likely sources of funding from the federal, state, and local government levels as well as from the private and nonprofit sectors. Note that this reflects the funding available at the time of writing. Funding amounts, cycles, and the programs themselves may change over time.

Building Capacity for Grant Writing

The funding quilt needed to build the trail can take considerable hours in grant writing. Some ways to build capacity for grant writing include:

- **Working with Kerr Tar Council of Governments who regularly writes grants**
- **Coordinating with NCDOT IMD about any upcoming grant opportunities, as they often have all-call submissions for potential projects in which they will then help write or pay for professional grant writers, especially for larger federal grants**
- **Contract with professional grant writers that specialize in active transportation funding**

Federal Funding Sources

Federal funding is typically directed through state agencies to local governments either in the form of formula funds or discretionary grants. Federal funding typically requires a local match of five percent to 50 percent, but there are sometimes exceptions. The following is a list of possible Federal funding sources that could be used to support the construction of trail facilities.

Formula Funds (State DOT-administered)

TRANSPORTATION ALTERNATIVES PROGRAM (TAP)

The 2021 Infrastructure Investment and Jobs Act (IIJA) increased TAP from $850 million to $1.44 billion per year, an increase of 70% The North Carolina Department of Transportation (NCDOT) administers this funding for rural areas of the state that do not have a metropolitan planning organization.

In January 2020, NCDOT released the Transportation Alternatives Program (TAP) Bike/Ped Scoping Guide. This document provides detail and guidance on the Project Delivery Process and important elements to consider in bike/ped project development.

For more information: **https://connect.ncdot.gov/projects/BikePed/Documents/BikePed%20Project%20Scoping%20Guidance%20for%20Local%20Governments.pdf**

STBGP-DA & TASA-DA FUNDS

The Surface Transportation Block Grant Program Direct Attributable (STBGP-DA) and Transportation Alternative Set Aside Direct Attributable (TASA-DA) are federal funding sources distributed by metropolitan planning organizations (MPOs). Member jurisdictions of MPOs are eligible to apply for these funds through a competitive funding process that prioritizes locally administered projects. These projects are funded using the federal funding sources directly attributed to the region with a minimum 20% local match.

For more information: **https://www.kerrtarcog.org/departments/planning/kerr-tar-regional-transportation-planning-organization-ktrpo/**

CONGESTION MITIGATION AND AIR QUALITY IMPROVEMENT PROGRAM (CMAQ)

CMAQ increased by 10% to $13.2B with the passage of the IIJA. This program funds interchange improvements, local transit operations, and bike and pedestrian infrastructure to help meet the National Ambient Air Quality Standard in non-attainment areas. Each project is evaluated to quantify its air quality improvement benefits. Funds cannot be used to add capacity for single-occupancy vehicles. Funding is distributed to non-attainment areas by population and weighted by air quality severity.

For more information: **https://www.fhwa.dot.gov/environment/air_quality/cmaq/index.cfm**

HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

States where more than 15% of all fatalities involve cyclists or pedestrians (Vulnerable Road Users or VRU) are required to spend 15% of their HSIP funding on bicycle/pedestrian projects. This includes North Carolina, where about 15% of all fatalities involve VRUs. Projects are evaluated, prioritized, and selected at the NCDOT district level based on three years of crash data (targeted funds) or systemic approved projects as outlined in the HSIP guidance. Every state and MPO is required to use at least 2.5% of its apportioned funding to develop planning documents that can include but are not limited to, Complete Streets standards, a Complete Streets prioritization plan, multimodal corridor studies, or active transportation plans (among other uses).

For more information: **https://highways.dot.gov/safety/hsip**

Discretionary Grants (USDOT-administered)

ACTIVE TRANSPORTATION INFRASTRUCTURE INVESTMENT PROGRAM (ATIIP)

The ATIIP awards competitive grants “to plan, design, and construct networks of safe and connected active transportation facilities that connect between destinations within a community or metropolitan region” (FHWA). These grants are intended to support planning and active transportation implementation at the network scale, rather

than on a project-by-project basis. ATIIP grants may also fund projects to plan, design, and construct an active transportation "spine," or a facility that connects communities, regions, or states.

For more information: **https://www.fhwa.dot.gov/environment/bicycle_pedestrian/atiip/**

HEALTHY STREETS PROGRAM

The Healthy Streets Program is a new discretionary grant program to help expand the use of cool and porous pavement, and to expand tree cover. Goals of the program include mitigating urban heat islands, improving air quality, reducing the extent of impervious surfaces, reducing stormwater run-off and flood risks, and reducing heat impacts to infrastructure and road users. These goals can benefit active transportation by creating a more comfortable walking and biking environment.

For more information: **https://www.congress.gov/117/plaws/publ58/PLAW-117publ58.pdf**

REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND EQUITY (RAISE)

RAISE is a competitive grant program that allows the United States Department of Transportation (USDOT) to provide funds for road, rail, transit, and port projects. This grant program was previously known as the Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants. USDOT evaluates applications for this grant program on the requested infrastructure project's potential to improve safety, environmental sustainability, quality of life, mobility and community connectivity, economic competitiveness and opportunity (including tourism), state of good repair, partnership and collaboration, and innovation.

For more information: **https://www.transportation.gov/RAISEgrants**

RECONNECTING COMMUNITIES AND NEIGHBORHOODS (RCN) PROGRAM

The RCN program provides funding to transportation projects "1) to advance community-centered transportation connection projects, with a priority for projects that benefit disadvantaged communities[...], that improve access to daily needs such as jobs, education, healthcare, food, nature, and recreation, and foster equitable development and restoration, and 2) to provide technical assistance to further these goals" (FHWA).

The following types of grants are available under this program: Community Planning Grants and Capital Construction Grants, and Regional Partnership Challenge Grants. These are offered as part of two programs that are now under the umbrella of the RCN program: the Reconnecting Communities Pilot (RCP) Program and the Neighborhood Access and Equity (NAE) Program. A single application through the RCN program allows an applicant to be considered for both RCP and NAE grants.

For more information: **https://www.transportation.gov/grants/rcnprogram/about-rcp**

PROMOTING RESILIENT OPERATIONS FOR TRANSFORMATIVE, EFFICIENT, AND COST-SAVING TRANSPORTATION (PROTECT) PROGRAM

The PROTECT grant is a USDOT fund for projects that address the climate crisis by improving the resilience of all surface transportation. Projects should closely follow best available information and practices for climate change risks, impacts, and vulnerabilities. Projects can be funded for any level and scale of transportation, and this is reflected in that states, MPOs, local governments, federally recognized tribes and affiliated groups, and US territories can all apply directly for the grant. There are two types of grants: Planning and Resilience Grants. Resilience grants have four sub-types: Resilience Improvement, Community Resilience and Evacuation Routes, and At-Risk Coastal Infrastructure. Bicycle and pedestrian paths are eligible surface transportation facilities.

For more information: **https://www.transportation.gov/rural/grant-toolkit/promoting-resilient-operations-transformative-efficient-and-cost-saving**

Other Federal Funding Sources

SAFE ROUTES TO SCHOOL (SRTS) NON-INFRASTRUCTURE PROGRAM

SRTS enables and encourages children to walk and bike to school. The program helps make walking and bicycling to school a safe and more appealing method of transportation for children.

The North Carolina Department of Transportation's Safe Routes to School (SRTS) Program was established in 2005 through SAFETEA-LU as a federally funded program to provide an opportunity for communities to improve conditions for bicycling and walking to school. It is currently supported with Transportation Alternatives federal funding through the Surface Transportation Block Grant program established under the FAST Act. The SRTS Program has set aside $1,500,000 per year of Transportation Alternative Program (TAP) funds for non-infrastructure programs and activities over a three-year period. Eligible uses of funds include action plan development, road safety audits, hiring of staff, painting of bike parking lots or traffic gardens at schools, and other programming targeting education, encouragement, and evaluation. Funding requests may range from a yearly amount of $50,000 to $100,000 per project. Projects can be one to three years in length. Funding may be requested to support activities for community-wide, regional or statewide programs. Check the link below for information on the current funding cycle.

For more information: **https://connect.ncdot.gov/projects/BikePed/Pages/Non-Infrastructure-Alternatives-Program.aspx**

FEDERAL TRANSIT ADMINISTRATION ENHANCED MOBILITY OF SENIORS AND INDIVIDUALS WITH DISABILITIES

This program can be used for capital expenses that support transportation to meet the special needs of older adults and persons with disabilities, including providing access to an eligible public transportation facility when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs.

For more information: **https://www.transit.dot.gov/funding/grants/enhanced-mobility-seniors-individuals-disabilities-section-5310**

FEDERAL LANDS TRANSPORTATION PROGRAM (FLTP)

The FLTP funds projects that improve transportation infrastructure owned and maintained by the following Federal Lands Management Agencies: National Park Service (NPS), U.S. Fish and Wildlife Service (FWS), USDA Forest Service, Bureau of Land Management (BLM), U.S. Army Corps of Engineers, Bureau of Reclamation, and independent Federal agencies with land and natural resource management responsibilities. FLTP funds are available for program administration, transportation planning, research, engineering, rehabilitation, construction, and restoration of Federal Lands Transportation Facilities. Transportation projects that are on the public network that provide access to, adjacent to, or through Federal lands are also eligible for funding. Under the IIJA, $2.2 billion has been allocated to the program for FY 2022-2026.

For more information: **https://highways.dot.gov/federal-lands/transportation**

FEDERAL LAND AND WATER CONSERVATION FUND

The Land and Water Conservation Fund (LWCF) has historically been a primary funding source of the U.S. Department of the Interior for outdoor recreation development and land acquisition by local governments and state agencies. In North Carolina, the program is administered by the Department of Environment and Natural Resources.

Since 1965, the LWCF program has built a park legacy for present and future generations. In North Carolina alone, the LWCF program has provided more than $75 million in matching grants to protect land and support more than 875 state and local park projects. More than 38,500 acres have been acquired with LWCF assistance to establish a park legacy in our state. As of August 2020, the LWCF is now permanently funded by the federal government for $900 million every year. This is hundreds of millions more per year than the fund typically receives.

For more information: **https://www.ncparks.gov/about-us/grants/land-and-water-conservation-fund**

RIVERS, TRAILS, AND CONSERVATION ASSISTANCE PROGRAM

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program that provides technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and open space. The RTCA program only provides planning assistance; there are no implementation funds available. Projects are prioritized for assistance based on criteria, including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. Project applicants may be state and local agencies, tribes, nonprofit organizations, or citizen groups. National parks and other federal agencies may apply in partnership with other local organizations. This program may benefit trail development in North Carolina indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

For more information: **https://www.nps.gov/orgs/rtca/index.htm**

State & State-Administered Funding Sources

There are multiple sources for state funding of bicycle and pedestrian transportation projects. However, state transportation funds cannot be used to match federally funded transportation projects, according to a law passed by the North Carolina Legislature.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) STRATEGIC TRANSPORTATION INVESTMENTS (STI)

Passed in 2013, the Strategic Transportation Investments law (STI) allows NCDOT to use its funding more efficiently and effectively to enhance the state's infrastructure, while supporting economic growth, job creation and a higher quality of life. This process encourages thinking from a statewide and regional perspective while also providing flexibility to address local needs. STI also establishes a way of allocating available revenues based on data-driven scoring and local input. It is used for the State Transportation Improvement Program (STIP), which identifies the transportation projects that will receive funding during a 10-year period. STIP is a state and federal requirement, which NCDOT updates every two years.

STI's Quantitative Scoring Process

All independent bicycle and pedestrian projects are ranked based on a quantitative scoring process, with the following main steps:

- Initial Project Review (NCDOT Strategic Prioritization Office (SPOT))
- Review Projects and Data (NCDOT Integrated Mobility Division (IMD))
- Review Data (MPOs, RPOs, Divisions)
- Review Updates and Calculate Measures (NCDOT IMD)
- Score Projects (NCDOT SPOT)
- Bicycle and Pedestrian Project Eligibility Requirements
- Minimum total project cost = $100,000.
- Eligible costs include right-of-way, preliminary engineering, and construction.

Bicycle and pedestrian and public transportation facilities that appear in a state, regional or locally adopted transportation plan will be included as part of the proposed roadway project. NCDOT will fully fund the cost of designing, acquiring right of way, and constructing the identified facilities.

Specific Improvement Types:

- Grade-Separated Bicycle Facility (Bicycle)
- Off-Road/Separated Linear Bicycle Facility (Bicycle)
- On-Road; Designated Bicycle Facility (Bicycle)
- On-Road Bicycle Facility (Bicycle)
- Multi-Site Bicycle Facility (Bicycle)
- Grade-Separated Pedestrian Facility (Pedestrian)
- Protected Linear Pedestrian Facility (Pedestrian)
- Multi-Site Pedestrian Facility (Pedestrian)
- Improved Pedestrian Facility (Pedestrian)

Bundling Projects

- Allowed across geographies and across varying project types.
- Bundling will be limited by project management requirements rather than geographic limitations.
- Any bundled project must be expected to be under one project manager/ administrative unit (must be a TAP-eligible entity).
- Makes projects more attractive for LIPs and easier to manage/let.

More Information on Prioritization 7.0

(See Appendix F for more details.)

NCDOT's Prioritization Data page has training slides that explain the prioritization process: **https://connect.ncdot.gov/projects/planning/Prioritization%20Data/Forms/AllItems.aspx**. See the "Prioritization Training" folder and the following session information within:

- Session 3: Detailed information on overall scoring components, including local input points.
- Session 4: Features relevant project funding information.
- Session 7: Detailed slides explaining the bicycle and pedestrian project scoring.

High Impact/Low Cost Funds

Established by NCDOT in 2017 to provide funds to complete low-cost projects with

high impacts to the transportation system including intersection improvement projects, minor widening projects, and operational improvement projects. Funds are allocated equally to each Division.

Project Selection Criteria

Each Division is responsible for selecting their own scoring criteria for determining projects funded in this program. At a minimum, Divisions must consider all of the following in developing scoring formulas:

- The average daily traffic volume of a roadway and whether the proposed project will generate additional traffic.
- Any restrictions on a roadway.
- Any safety issues with a roadway.
- The condition of the lanes, shoulders, and pavement on a roadway.
- The site distance and radius of any intersection on a roadway.
- $1.5M max per project unless otherwise approved by the Secretary of Transportation.
- Projects are expected to be under contract within 12 months of funding approval by BOT.

NCDOT Technical Review & Approval

- Division Engineer completes project scoring and determines eligibility.
- Division Engineer determines projects to be funded and requests approval of funding from the Chief Engineer. Division Engineer shall supply all necessary project information including funding request forms, project designs and cost estimates.
- The Project Review Committee will make a recommendation for further investigation or to include on the Board Agenda for action by the Secretary, NCDOT.

Incidental Projects

Bicycle and Pedestrian accommodations such as bike lanes, wide paved shoulders, sidewalks, intersection improvements, bicycle and pedestrian safe bridge design, etc. are frequently included as “incidental” features of larger highway/roadway projects.

In addition, bicycle safe drainage grates and handicapped accessible sidewalk ramps are now a standard feature of all NCDOT highway construction. Most pedestrian safety accommodations built by NCDOT are included as part of scheduled highway improvement projects funded with a combination of federal and state roadway construction funds.

“Incidental Projects” are often constructed as part of a larger transportation project, when they are justified by local plans that show these improvements as part of a larger, multi-modal transportation system. Having a local bicycle or pedestrian plan is important, because it allows NCDOT to identify where bike and pedestrian improvements are needed, and can be included as part of highway or street improvement projects. It also helps local government identify what their priorities are and how they might be able to pay for these projects. Under the updated NCDOT Complete Streets Policy, NCDOT pays the full cost for incidental projects if the project is proposed in a locally adopted plan.

For more information: **https://connect.ncdot.gov/projects/BikePed/Documents/Complete%20Streets%20Implementation%20Guide.pdf**

NC HIGHWAY SAFETY IMPROVEMENT PROGRAM

The purpose of the North Carolina Highway Safety Improvement Program (HSIP) is to provide a continuous and systematic process that identifies reviews and addresses specific traffic safety concerns throughout the state. The program is structured in several distinct phases:

- A system of safety warrants is developed to identify locations that are possibly deficient.
- Locations that meet warrant criteria are categorized as potentially hazardous (PH) locations.
- Detailed crash analyses are performed on the PH locations with the more severe and correctable crash patterns.
- The Regional Traffic Engineering staff performs engineering field investigations.
- The Regional Traffic Engineering staff utilizes Benefit: Cost studies and other tools to develop safety recommendations.

Depending on the cost and nature of the countermeasures, the investigations may result in requesting Division maintenance forces to make adjustments or repairs, developing Spot Safety projects, developing Hazard Elimination projects, making adjustments to current TIP project plans or utilizing other funding sources to initiate countermeasures. Selected projects are evaluated to determine the effectiveness of countermeasures.

The ultimate goal of the HSIP is to reduce the number of traffic crashes, injuries and fatalities by reducing the potential for and the severity of these incidents on public roadways.

For more information: **https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-program-and-Projects.aspx**

HIGHWAY HAZARD ELIMINATION PROGRAM

The Hazard Elimination Program is used to develop larger improvement projects to address safety and potential safety issues. The program is funded with 90 percent federal funds and 10 percent state funds. The cost of Hazard Elimination Program projects typically ranges between $400,000 and $1 million. A Safety Oversight Committee (SOC) reviews and recommends Hazard Elimination projects to the Board of Transportation (BOT) for approval and funding. These projects are prioritized for funding according to a safety benefit to cost (B/C) ratio, with the safety benefit being based on crash reduction. Once approved and funded by the BOT, these projects become part of the department's State Transportation Improvement Program (STIP).

For more information: **https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-program-and-Projects.aspx**

GOVERNOR'S HIGHWAY SAFETY PROGRAM

The Governor's Highway Safety Program (GHSP) funds safety improvement projects on state highways throughout North Carolina. All funding is performance-based. Substantial progress in reducing crashes, injuries, and fatalities is required as a condition of continued funding. Permitted safety projects include checking station equipment, traffic safety equipment, and BikeSafe NC equipment. However, funding is not allowed for speed display signs. This funding source is considered to be "seed money" to get programs started. The grantee is expected to provide a portion of the project costs and is expected to continue the program after GHSP funding ends. Applications must include county level crash data. Local governments, including county governments and municipal governments, are eligible to apply.

For more information: **https://www.ncdot.gov/initiatives-policies/safety/ghsp/Pages/default.aspx**

THE NORTH CAROLINA DIVISION OF PARKS AND RECREATION - RECREATIONAL TRAILS PROGRAM GRANT

- Funding from the federal Recreational Trails Program (RTP), which is used for renovating or constructing trails and greenways, is allocated to states. The North Carolina Division of Parks and Recreation and the State Trails Program manages these funds with a goal of helping citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking, and horseback riding to river trails and off-highway vehicle trails. Grants are available to governmental agencies and nonprofit organizations. The maximum grant amount is $250,000 and requires a 25% match of RTP funds received. Permissible uses include:
- New trail or greenway construction
- Trail or greenway renovation
- Approved trail or greenway facilities
- Trail head/ trail markers
- Purchase of tools to construct and/or renovate trails/greenways
- Land acquisition for trail purposes
- Planning, legal, environmental, and permitting costs - up to 10% of grant amount
- Combination of the above

For more information: **https://trails.nc.gov/trail-grants**

NC PARKS AND RECREATION TRUST FUND (PARTF)

The Parks and Recreation Trust Fund (PARTF) provides dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the general public. Counties, incorporated municipalities, and public authorities, as defined by G.S. 159-7, are eligible applicants. A local government can request a maximum of $500,000 with each application. An applicant must match the grant dollar-for-dollar, 50 percent of the total cost of the project, and may contribute more than 50 percent. The appraised value of land to be donated to the applicant can be used

as part of the match. The value of in-kind services, such as volunteer work, cannot be used as part of the match. Property acquired with PARTF funds must be dedicated for public recreational use.

For more information: **https://www.ncparks.gov/more-about-us/parks-recreation-trust-fund/parks-and-recreation-trust-fund**

CLEAN WATER MANAGEMENT TRUST FUND

The Clean Water Management Trust Fund (CWMTF) is available to any state agency, local government, or non-profit organization whose primary purpose is the conservation, preservation, and restoration of North Carolina's environmental and natural resources. Grant assistance is provided to conservation projects that:

- enhance or restore degraded waters;
- protect unpolluted waters, and/or
- contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits;
- provide buffers around military bases to protect the military mission;
- acquire land that represents the ecological diversity of North Carolina; and
- acquire land that contributes to the development of a balanced State program of historic properties.

For more information: **http://www.cwmtf.net/#appmain.htm**

URBAN AND COMMUNITY FORESTRY GRANT

The North Carolina Division of Forest Resources Urban and Community Forestry grant can provide funding for a variety of projects that will help plan and establish street trees as well as trees for urban open space. The goal is to improve public understanding of the benefits of preserving existing tree cover in communities and assist local governments with projects which will lead to more effective and efficient management of urban and community forests.

For more information: **https://www.ncforestservice.gov/Urban/urban_grant_program.htm**

THE GREAT TRAILS STATE PROGRAM

The Great Trails State Program provides funding for new trail development and extension of existing trails, including paved trails or greenways, natural surface trails, biking trails, equestrian trails, or any other type of trail recognized by the DNCR. There will be one grant cycle distributing $25 million in non-recurring funding.

For more information: **https://www.ncparks.gov/about-us/grants/great-trails-state-program**

COMPLETE THE TRAILS PROGRAM

Legislation passed in 2021 created the Complete the Trail Program (CTP), which provides over $30 million of funding for the "planning, construction, promotion, and maintenance of state trails in North Carolina." The planned state trail system is over 3,500 miles, and a portion of CTP funds are designated to support the development of trails that will connect small communities to these trails.

For more information: **https://trails.nc.gov/state-trails/nc-complete-trails-program**

Local Funding Sources

Local governments often plan for the funding of bicycle and pedestrian infrastructure or improvements through development of Capital Improvement Projects (CIP) or occasionally, through their annual Operating Budgets. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows decision-makers to balance all capital needs. Typical capital funding mechanisms include the capital reserve fund, taxes, fees, and bonds. However, many will require specific local action as a means of establishing a program if it is not already in place.

Private and Nonprofit Funding Sources

Many communities have solicited funding assistance from private foundations and other conservation-minded benefactors. Below are examples of private funding opportunities.

RAILS-TO-TRAILS CONSERVANCY

Under the Doppelt Family Trail Development Fund, RTC will award approximately $85,000 per year, distributed among several qualifying projects, through a competitive process. Eligible applicants include nonprofit organizations and state, regional, and local government agencies. Two types of grants are available: community support grants and project transformation grants. Around three to four community support grants are awarded each year, ranging from $5,000-$10,000 each. Community Support Grants support nonprofit organizations or “Friends of the Trail” groups that need funding to get trail development or trail improvement efforts off the ground. Each year, 1-2 Project Transformation Grants are awarded that range from $15,000-$50,000. The intention of these grants is to enable an organization to complete a significant trail development or improvement project. For both types of grants, applications for projects on rail-trails and rails-with-trails are given preference, but rail-trail designation is not a requirement. The trail must serve multiple user types, such as bicycling, walking, and hiking, and must be considered a trail, greenway, or shared-use path.

For more information: **https://www.railstotrails.org/grants/doppelt/**

NATIONAL FISH AND WILDLIFE FOUNDATION (NFWF)

The National Fish and Wildlife Foundation (NFWF) is a private, nonprofit, tax-exempt organization chartered by Congress in 1984. The National Fish and Wildlife Foundation sustains, restores, and enhances the Nation's fish, wildlife, plants, and habitats. Through leadership conservation investments with public and private partners, the Foundation is dedicated to achieving maximum conservation impact by developing and applying best practices and innovative methods for measurable outcomes.

The Foundation provides grants through more than 70 diverse conservation grant programs. One of the most relevant programs for bicycle and pedestrian projects is Acres for America. Funding priorities include conservation of bird, fish, plants and wildlife habitats, providing access for people to enjoy outdoors, and connecting existing protected lands. Federal, state, and local government agencies, educational institutions, Native American tribes, and non-profit organizations may apply twice annually for matching grants. Due to the competitive nature of grant funding for Acres for America, all awarded grants require a minimum 1:1 match.

For more information: **https://www.nfwf.org/apply-grant**

THE TRUST FOR PUBLIC LAND

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the TPL is the only national non-profit working exclusively to protect land for human enjoyment and well-being. TPL helps acquire land and transfer it to public agencies, land trusts, or other groups that intend to conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

For more information: **https://www.tpl.org/**

THE CONSERVATION FUND

Through partnerships, technical assistance, and financial support, The Conservation Fund protects America's critical lands and waters to provide greater access to nature, strengthen local economies, and enhance climate resiliency. In particular, The Conservation Fund uses its capital resources to facilitate timely land acquisition, helping conservationists, government agencies, community leaders, and land trusts protect properties for wildlife, recreation (including parks and trails) and/or historic significance. In some scenarios, The Conservation Fund can leverage privately funded dollars to seize on conservation opportunities, working with local communities to ultimately purchase and own conservation/recreation lands. The Conservation Fund is currently working with many communities in North Carolina to preserve rail line corridors for trail use.

For more information: **https://www.conservationfund.org/our-work**

LAND FOR TOMORROW CAMPAIGN

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals, and community groups committed to securing support from the public and General Assembly for protecting land, water, and historic places. Land for Tomorrow works to enable North Carolina to reach a goal of ensuring that working farms and forests, sanctuaries for wildlife, land bordering streams, parks, and greenways, land that helps strengthen communities and promotes job growth, and historic downtowns and neighborhoods will be there to enhance the quality of life for generations to come.

For more information: **https://www.land4tomorrow.org/**

THE CONSERVATION ALLIANCE

The Conservation Alliance is a nonprofit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. Grants are typically about $35,000 each. Funding criteria states that:

- The project should seek to secure lasting and quantifiable protection of a specific wild land or waterway. We prioritize landscape-scale projects that have a clear benefit for habitat.
- The campaign should engage grassroots citizen action in support of the conservation effort. We do not fund general education, restoration, stewardship, or scientific research projects.
- All projects must have a clear recreational benefit.

For more information: **https://conservationalliance.com/grants/?yearly=2020**

BLUE CROSS BLUE SHIELD (BCBS) OF NORTH CAROLINA FOUNDATION

BCBS does not have a traditional grant cycle and announces grant opportunities on a periodic basis. Grants can range from small-dollar equipment grants to large, multi-year partnerships.

For more information: **https://www.bcbsncfoundation.org/overview-and-opportunities/**

DUKE ENERGY FOUNDATION

Funded by Duke Energy shareholders, this foundation makes charitable grants to nonprofit organizations and government agencies. Grant applicants must serve communities that are also served by Duke Energy. The grant program has several investment priorities that could potentially fund bicycle and pedestrian projects. The Duke Energy Foundation is committed to making strategic investments to build powerful communities where nature and wildlife thrive, students can excel and a talented workforce drives economic prosperity for all.

For more information: **https://www.duke-energy.com/community/duke-energy-foundation**

Z. SMITH REYNOLDS FOUNDATION

This Winston-Salem-based Foundation is committed to improving the quality of life for all North Carolinians. The Z. Smith Reynolds Foundation is a statewide, private, family foundation that has been a catalyst for positive change in North Carolina for more than 80 years. A variety of grant programs are available.

For more information: **http://www.zsr.org/grants-programs**

BANK OF AMERICA CHARITABLE FOUNDATION

The Bank of America Charitable Foundation supports a wide range of activities, including a focus on community greening efforts that create healthy neighborhoods and environmental sustainability through the preservation, creation or restoration of open space, parks and community gardens.

For more information: **https://about.bankofamerica.com/en-us/global-impact/charitable-foundation-funding.html**

LOCAL TRAIL SPONSORS

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

CORPORATE DONATIONS

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Local governments typically create funds to facilitate and simplify a transaction from a corporation's donation to the given locality. Donations are mainly received when a widely supported capital improvement program is implemented.

PRIVATE INDIVIDUAL DONATIONS

Private individual donations can come in the form of liquid investments (i.e. cash, stock, bonds) or land. Local governments typically create funds to facilitate and simplify a transaction from an individual's donation to the given locality. Donations are mainly received when a widely supported capital improvement program is implemented.

FUNDRAISING/CAMPAIGN DRIVES

Organizations and individuals can participate in a fundraiser or a campaign drive. It is essential to market the purpose of a fundraiser to rally support and financial backing. Often times fundraising satisfies the need for public awareness, public education, and financial support.

VOLUNTEER WORK

It is expected that many citizens will be excited about trail development. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fundraising, maintenance, and programming needs.

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NCDOT P7.0 SPOT Scoring Component Resources

Most opportunities for NCDOT funding must submit to be part of the Statewide Transportation Improvement Program and will receive a score. This can be done in partnership with The Kerr-Tar Rural Planning Organization, who serves as a local partner to NCDOT.

NCDOT's Strategic Transportation Prioritization process (also referred to as "SPOT") is a data-driven methodology used to develop the State Transportation Improvement Program (STIP). All projects, including roadway, public transportation, rail, aviation, bicycle, and pedestrian projects are scored according to the SPOT criteria. This appendix provides further detail on how to submit a project for bicycle and pedestrian project scoring.

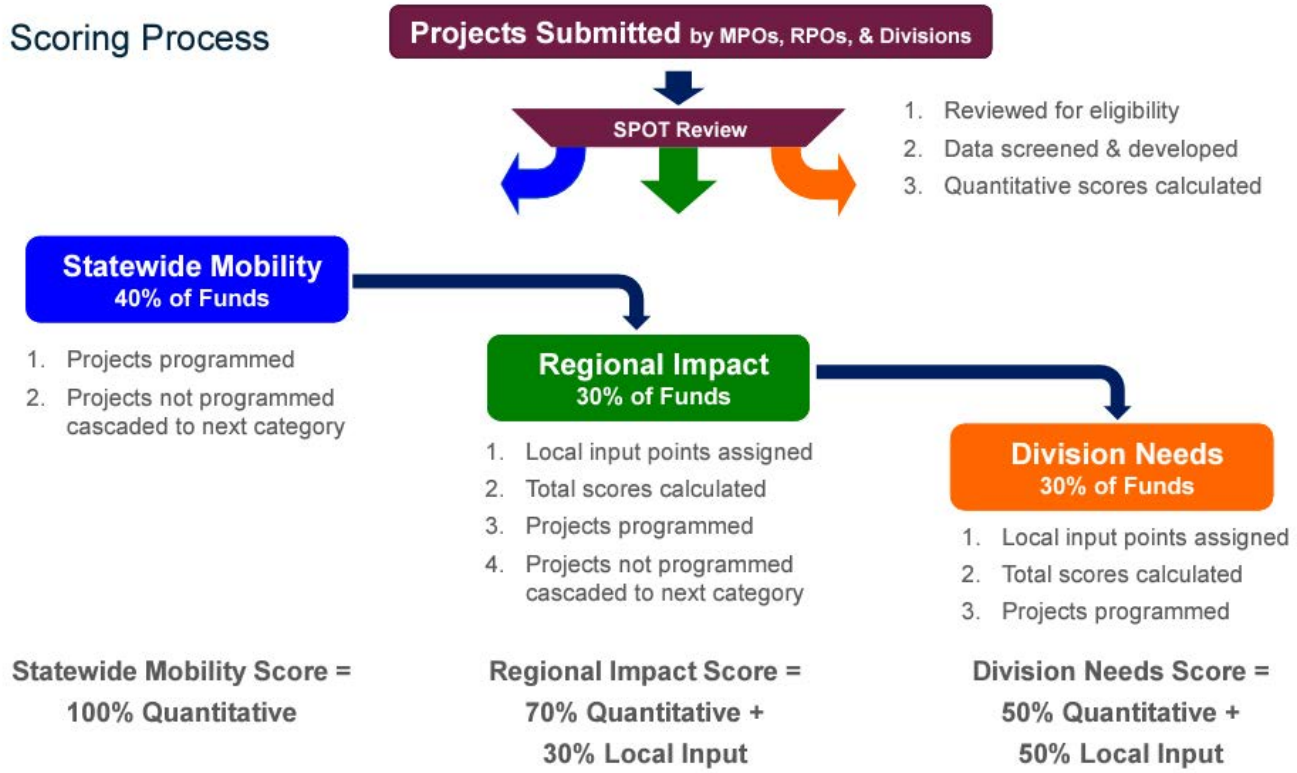
Scoring Process Overview

In order to be included in the State Transportation Improvement Program (STIP), projects are first submitted by MPOs, RPOs, and the 14 NCDOT Divisions. Projects are then reviewed for eligibility, quantitative scoring data is developed, and projects are scored. Selected projects receive a share of available funding from three categories: Statewide Mobility (40%), Regional Impact (30%), and Division Needs (30%).

Statewide Mobility projects are evaluated and selected using a 100% quantitative approach, while Regional Impact project scoring is 70% data and 30% local input. Division Needs project scores are based on 50% data and 50% local input (see below).

Bicycle & Pedestrian Project Scoring

The bicycle and pedestrian project scoring process has not changed from P6 (see figure on the facing page). Bicycle and pedestrian projects are programmed within the Division Needs category, and in order to be eligible, they must be included in a locally adopted plan and have a minimum cost of $100,000. Eligible project types include right-of-way acquisition, design, and construction;



Slide from NCDOT's 2023 STI training illustrating the scoring process for projects that are eventually included in the STIP.

Prioritization and Programming Basics

P6 Bicycle and Pedestrian Scoring

Criteria	Measure Description	Statewide Mobility (100%)	Regional Impact (70%)	Division Needs (50%)
Safety	(Number of crashes x 40%) + (Crash severity x 20%) + (Safety risk x 20%) + (Project safety benefit x 20%)	N/A	N/A	20%
Accessibility/ Connectivity	Points of Interest pts + Connections pts + Route pts	N/A	N/A	15%
Demand/Density	# of households and employees per square mile near facility	N/A	N/A	10%
Cost Effectiveness	(Safety + Accessibility/Connectivity + Demand/Density) / Cost to NCDOT	N/A	N/A	5%

Slide from NCDOT's 2023 STI training illustrating the bicycle and pedestrian project scoring components.

however, local governments must provide the 20% match for any federally funded projects. Project scoring criteria include safety, accessibility, connectivity, demand/density, and cost effectiveness.

Criteria Details

The **safety** criterion incorporates an analysis of safety risk and project safety benefit, as well as number of crashes and crash severity. **Safety risk** factors include location within an incorporated area (including ETJ), surrounding land uses, roadway configuration, posted speed limit, and annual average daily traffic (AADT).

Safety Benefit is an assessment of the Specific Improvement Types (SITs): the highest-scoring bicycle SITs are new bicycle/pedestrian bridges, new bicycle/pedestrian tunnels, rail trails, and shared-use/multi use paths. The highest-scoring pedestrian improvements are also new pedestrian bridges, new pedestrian tunnels, rail trails, and shared-use/multi use paths.

The **Points of Interest** component of the **Accessibility/Connectivity** criterion is measured using the Advancing Transportation through Linkages, Automation, and Screening (ATLAS) tool as well as other data layers. Points are counted if they are within a 1.5-mile buffer for bicycle projects

SPOT P7 ended in 2024 and will be replaced by P8 in the next round.

View the NCDOT STI training and find other scoring process resources on the NCDOT website.

(SITs 1-5) and a 0.5-mile buffer for pedestrian projects (SITs 6-9).

The SPOT Online tool automatically counts the following POI categories: Government buildings, fire/EMS, transit routes, schools/universities/colleges, parks, tourist destinations, medical, places of worship, and adult education centers. Project submitters can also manually add categories.

Link to ATLAS tool: https://connect.ncdot.gov/resources/Environmental/EAU/Project-Atlas/Pages/default.aspx

Link to SPOT Online: https://gis13.services.ncdot.gov/SpotOn!ine/login.aspx?ReturnUrl=%2fSpotOn!ine%2flogin

Projects receive additional connectivity points if they connect to existing or planned bicycle and pedestrian facilities, and if the project will improve a national/state/regional bike route or will be designated as a state or federal trail.

Project Bundling

Bundling projects is allowed across project types and geographies (meaning projects do not have to be contiguous or related. The project is limited by project management requirements, as the bundled projects will be under one project manager. Bundling makes projects more attractive for Local Input Points (LIP).

NCDOT Specific Improvement Types (SIT)

NUMBER	SIT	TYPE
1	Grade-Separated Bicycle Facility	Bicycle
2	Off-Road/Separated Linear Bicycle Facility	Bicycle
3	On-Road; Designated Bicycle Facility	Bicycle
4	On-Road Bicycle Facility	Bicycle
5	Multi-Site Bicycle Facility	Bicycle
6	Grade-Separated Pedestrian Facility	Pedestrian
7	Protected Linear Pedestrian Facility	Pedestrian
8	Multi-Site Pedestrian Facility	Pedestrian
9	Improved Pedestrian Facility	Pedestrian

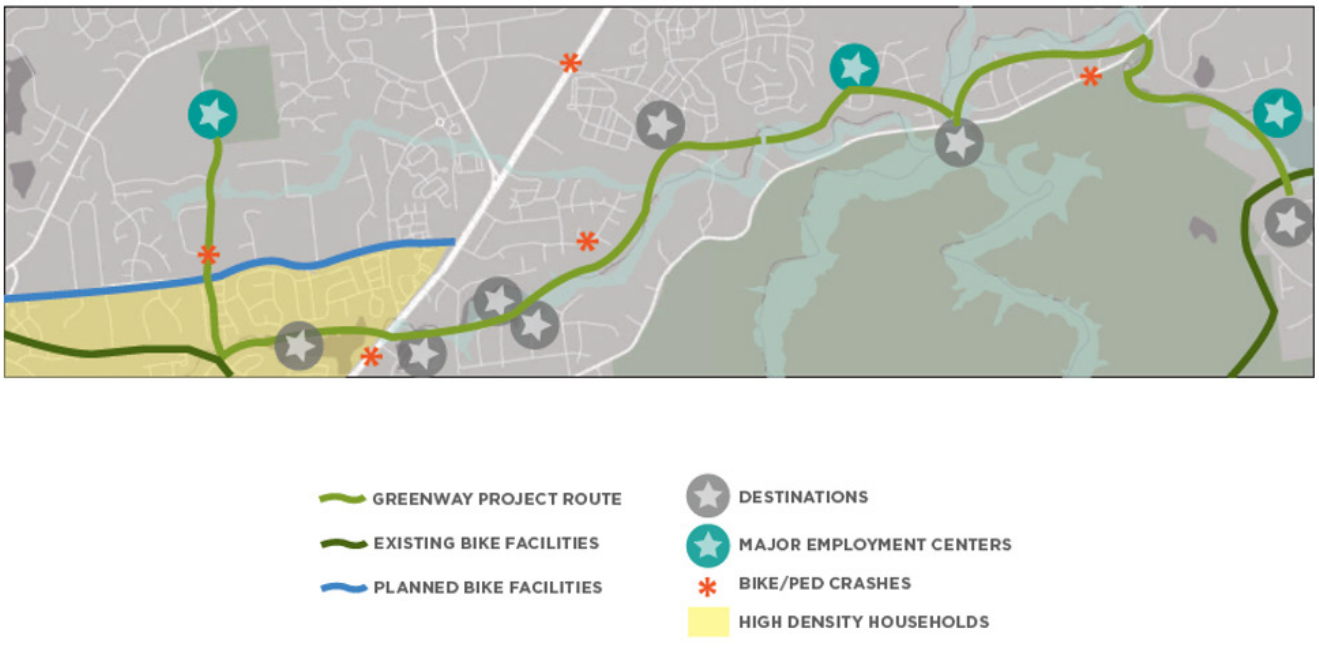
Project Scoring Example

The graphic below demonstrates how two different trail alignments might receive a low or high SPOT score depending on connections to existing and planned bike facilities, employment, and other destinations, as well as within high density residential areas and in areas where previous crashes have occurred.

Lower Score Example



Higher Score Example



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