

ROLESVILLE GREENWAYS

TOWN OF ROLESVILLE GREENWAY PLAN

AUGUST 2022



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TABLE OF CONTENTS

EXECUTIVE SUMMARY

p.4

01. INTRODUCTION

p.8

Project Overview
Vision + Goals
Greenway Benefits

02. EXISTING CONDITIONS

p.16

Demographics
Previous Planning Efforts
Policy Review
Existing Conditions Analysis
Peer Community Benchmarking
Opportunities & Constraints

03. COMMUNITY ENGAGEMENT

p.48

Steering Committee
Community Survey
Community Events
Public Meeting
Interjurisdictional Meetings

04. RECOMMENDATIONS

p.60

Greenway Network Recommendations
Priority Projects
Policy Recommendations

05. IMPLEMENTATION

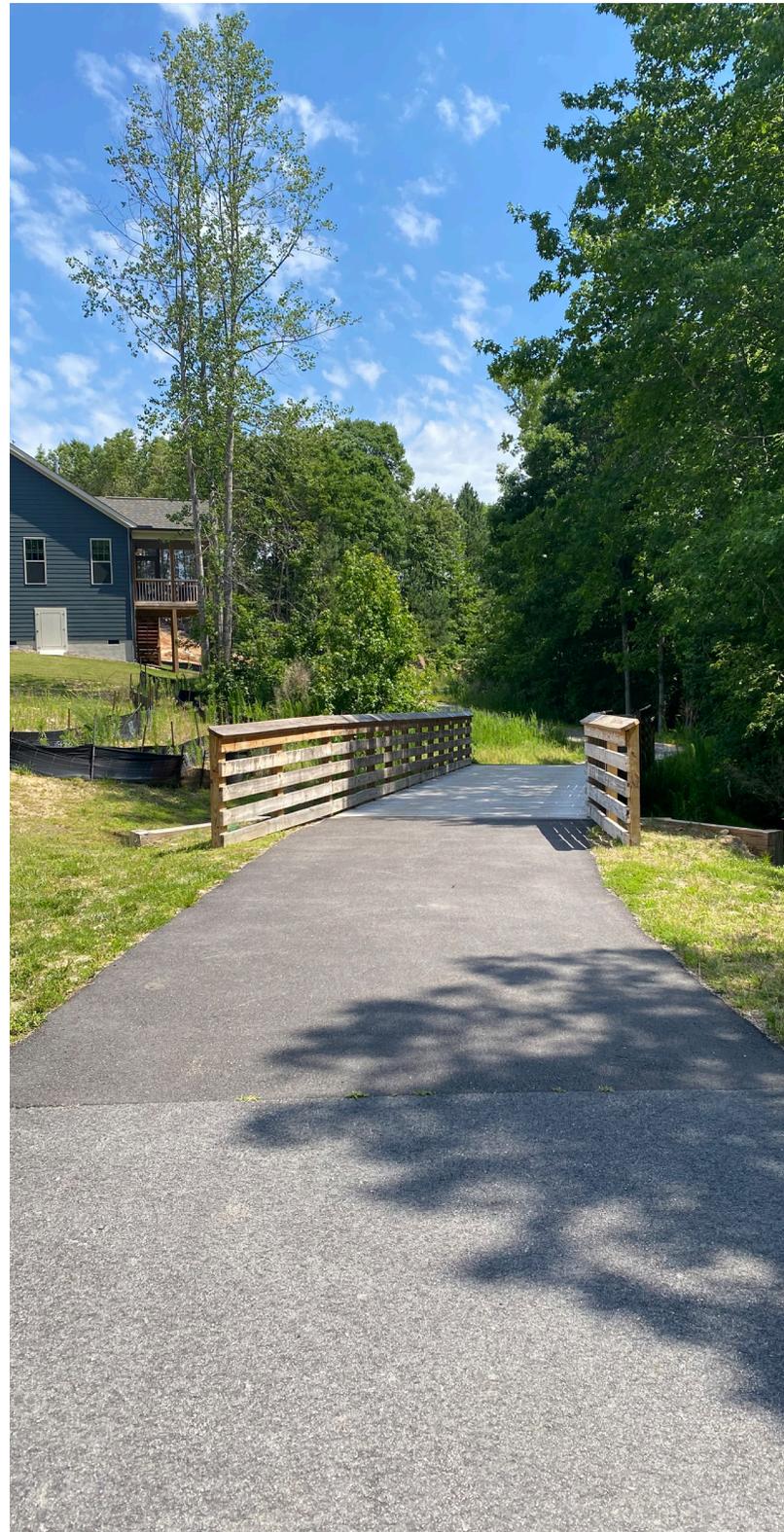
p.116

Partner Roles
Action Plan
Maintenance Guidance

APPENDIX

p.123

A. Funding Resources
B. Design Guidance
C. Community Input Materials
D. Priority Projects + Cost Estimates
E. Rolesville Outdoor Museum Plan



EXECUTIVE SUMMARY

PLAN OVERVIEW

Rolesville is one of the fastest growing towns in Wake County. As the Town continues to develop, the overall demand on recreational facilities and greenways continues to increase. This plan serves as an update to the 2020 Open Space and Greenway Plan, which primarily recommended greenways along creek corridors with a focus on protecting and conserving the Town's environmental assets. *Rolesville Greenways* expands on this initial planning effort to improve access to recreational centers, parks, and destinations, while still focusing on environmental protection. The plan provides a framework for town staff, residents, developers, and regional partners to create greenway network and policy recommendations that guide future development and enhance quality of life for residents.

PLAN RECOMMENDATIONS

Rolesville Greenways addresses the recreational needs of Rolesville residents and visitors by developing a comprehensive greenway network. The greenway plan builds off of network and policy recommendations

developed in the *Town of Rolesville Parks and Recreation Master Plan, Comprehensive Bike Plan, Open Space + Greenway Plan*, and recent greenway system updates recommended by the Open Space and Greenway Committee. This plan translates the vision for an accessible greenway system that connects people, parks, and destinations in the community into a strategic set of recommendations with proposed strategies for network, policy, and trail amenity development.

Rolesville's greenway facility recommendations establish a comprehensive greenway and trail system that compliments recent active transportation and parks planning efforts. Recommendations were developed based on community and stakeholder input, a review of existing conditions, key destinations and connections identified through the planning process, and a prioritization process. The proposed greenway system provides a network of greenways and sidepaths that is accessible and safe for people of all ages and abilities.

PLANNING PROCESS + SCHEDULE

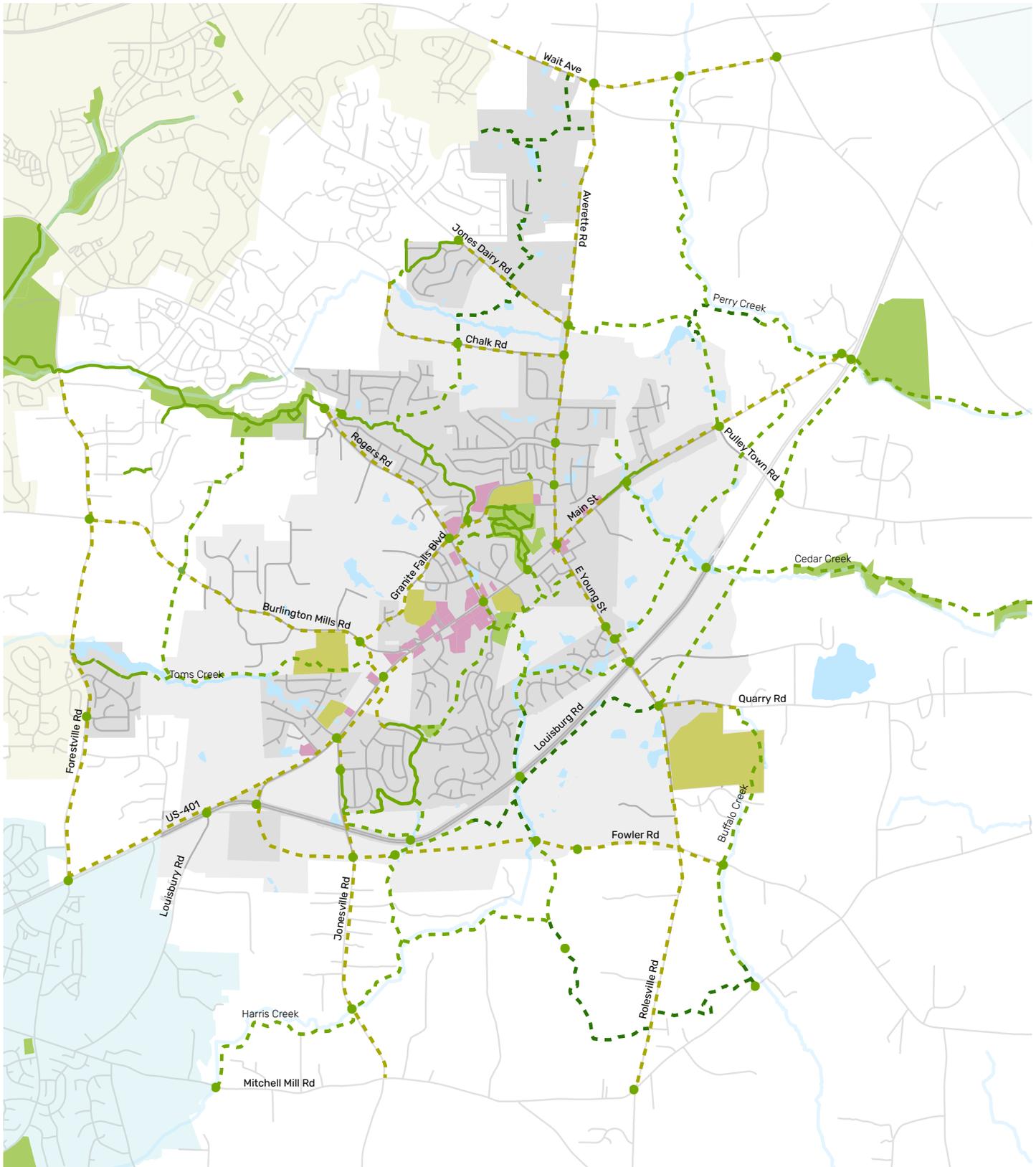


89%

of survey participants would use greenways more often if the network was expanded

"We would love to see Rolesville become more connected to the Triangle Greenway System - not only so we could bike to destinations, but so other folks could bike here and experience our wonderful little town!"

- Rolesville Resident



**TOWN OF ROLESVILLE
RECOMMENDED GREENWAY + SIDEPATH NETWORK**

- LEGEND**
- Proposed Greenways
 - - - Proposed Sidepaths
 - Developer-Built Greenways (in development)
 - Proposed Intersection Treatment
 - Existing Greenways
 - Civic/Commercial Centers
 - Schools
 - Roadways
 - Parks
 - Streams + Lakes
 - Rolesville Town Limits
 - Rolesville ETJ
 - Wake Forest
 - Raleigh
 - Wake County
 - Franklin County



JUST DO IT.

1994



01 INTRODUCTION

INTRODUCTION

Rolesville is one of the fastest growing towns in Wake County. As the Town continues to develop, the overall demand on recreational facilities and greenways continues to increase. This plan serves as an update to the 2020 Open Space and Greenway Plan, which primarily recommended greenways along creek corridors with a focus on protecting and conserving the Town’s environmental assets. Rolesville Greenways expands on this initial planning effort to improve access to recreational centers, parks, and active transportation corridors, while still focusing on environmental protection. The plan will also provide a framework for town staff, residents, developers, and regional partners to create greenway network, policy, and program recommendations that guide future development and enhance quality of life for residents.

WHAT IS A GREENWAY?

A greenway is a separated linear path that provides a low-stress recreational or transportation experience for bicyclists, pedestrians, equestrians, skaters, wheelchair users, joggers, and others. Greenways are also open space corridors that may protect environmental sensitive lands or stream corridors. Greenways can also be utilized as buffers, separating and protecting the natural environment from the built environment. Typically located in narrow strips of land where other uses are prohibited, greenways are often situated in a flood plain or between developments of differing land uses. Greenways are sometimes referred to as a trail or shared use path. Separated paths that are adjacent to roadway corridors are called sidepath but can be a part of a community’s greenway network.



Bicyclist along the Neuse River Trail, Raleigh, NC

ROLESVILLE GREENWAYS PURPOSE

Rolesville Greenways aims to address community priorities for the greenway network and trail-friendly policies and programs by evaluating responses from town staff, civic leaders, residents, business owners, and visitors to the following questions:

WHERE DO PEOPLE WANT TO GO VIA GREENWAY?

Rolesville Greenways will identify key locations that people want to travel to via greenway.

"We would love to see Rolesville become more connected to the Triangle Greenway System - not only so we could bike to destinations, but so other folks could bike here and experience our wonderful little town!"

- Rolesville Resident,
Community Survey Response

HOW DO WE CONNECT THOSE PLACES?

Rolesville Greenways will identify the facilities, standards, and wayfinding to connect key locations.

"I would like easier access to existing greenways. Right now, I have to drive to the park. It would be nice to have bicycle and pedestrian facilities or some other way to more easily access trails from Main Street."

- Rolesville Resident,
Community Survey Response

HOW DO WE BUILD THE NETWORK?

Rolesville Greenways will identify priority projects, costs, and funding opportunities.

"I would love to see a safer crossing for trail users across Rogers Rd from Heritage East Greenway over to Mill Bridge Nature Park. Most drivers just speed right on through without consideration of pedestrians or bikers."

- Rolesville Resident,
Community Survey Response

HOW DO PEOPLE PLAN TO USE THE GREENWAY NETWORK?

Rolesville Greenways will identify policies to promote recreational opportunities and active transportation along greenways.

"This plan can help get our greenways connected. I can't wait to bike and walk the greenways with all of my kids and grandkids."

- Rolesville Resident,
Community Survey Response



COMMUNITY VISION

The Town of Rolesville will have an accessible greenway system that connects people, parks, and destinations in the community while maintaining its small-town character and protecting the natural and cultural resources that residents value most.

GREENWAY PLAN GOALS

The goals of *Rolesville Greenways* focus on themes of accessibility, regional connectivity, safety, equity, and environmental protection and served as a guide throughout the planning process. These goals were created from input of community members and reflect the proposed outcomes and recommendations of the plan.



ACCESSIBILITY + CONNECTIVITY

Ensure that Rolesville's greenway network expands access for residents to outdoor recreation, parks, neighborhoods, schools, and commercial and employment centers.



REGIONAL CONNECTIVITY

Provide seamless connections between the greenway networks of Rolesville and neighboring communities throughout the Triangle Region.



SAFETY

Address safety needs of users of all ages and abilities in the development of Rolesville's greenway network and propose safety improvements at critical intersections and trail access points.



EQUITY

Prioritize the development of a greenway network that meets the recreational and active transportation needs of all community members, through public engagement, project delivery, and investment.



ENVIRONMENTAL PROTECTION

Ensure that Rolesville's greenway network protects and conserves environmentally sensitive lands and stream corridors and fosters sustainable and responsible development.

PLANNING PROCESS OVERVIEW



GREENWAY BENEFITS

Greenways and trails benefit a community in numerous ways. When created as a greenway system, the impacts on the community significantly increases due to the expanse of benefits distributed across a large contiguous area. Benefits achievable from greenway networks include:

- **Enhanced Health and Well:** access to facilities for active living and connecting with nature.
- **Environmental Stewardship:** support clean air and rivers; preserve habitat; mitigate flooding.
- **Catalyst for Economic Impacts:** attract talent, tourism, and business through public investment.
- **Increased Mobility Options:** create active transportation options.
- **Enhance Cultural Awareness:** define community identity through placemaking and public art.
- **Equity:** expand access to recreational and active transportation opportunities for all residents.



ENHANCED HEALTH + WELL-BEING

The ability to access nature and reduce the stress of everyday life such as traffic and other environmental elements of urban development enhances and promotes an improved state of well-being. Greenways and trails provide a safe and comfortable environment for physical

recreation opportunities such as running, jogging, biking, or simply going for a walk. Being able to rest or recharge along a greenway or in a park allow residents improve their mental and physical health.

Benefits range from short to long-term effects in both physical and mental health. Trails and parks provide a safe environment for activity and with long-term usage can improve cardiovascular health and reduce the chance of being diagnosed with cardiovascular, skeletal, and other potentially life-threatening ailments. A recent study on the cost-benefit analysis of physical activity using greenways and trails revealed that for every \$1 investment in trails for physical activity led to \$2.94 in direct medical benefit. The sensitivity analyses indicated the ratios ranged from 1.65 to 13.40. Therefore, building trails is cost beneficial from a public health perspective.

The American Diabetes Association cites walking as a powerful tool in the battle against diabetes. Walking can be done anywhere but when communities invest in trail networks walking becomes easier, safer and more fun. Greenway trails are free from the cost barriers of fitness center fees and equipment costs. Research has established that a modest two hours of walking per week lowers diabetes rates.

Other greenway-related exercises like running and cycling provide even greater health gains. When using greenway trails, users are more likely to interact with other members of the community, improving the social health of the individual and overall social health of the community. This has been proven to reduce stress and diminish depression while also promoting overall positive health outcomes.

Greenway also provide a critical opportunity to connect children with nature. Studies have shown that regular non-structured play in a natural setting reduced symptoms of ADHD. Connecting with nature allows children and adults alike to release stress, engage in physical activity and find space for contemplation.

ENVIRONMENTAL IMPACTS

Greenways located along stream corridors, utility easements and through natural habitats tend to coincide with the protection and enhancement of natural elements such as riparian buffers, wildlife habitats, and functional ecosystems. Where development has resulted in fragmentation of habitats, greenways allow for wildlife to traverse the landscape with minimum human interaction.

Greenways also create a “filter” between water bodies and development, filtering toxins and run-off from roads and developments to reduce the amount of toxins entering the local water systems. With the ability to reduce the velocity of water from rain events, greenways mitigate environmental degradation from erosion and sedimentation.

Greenways directly and indirectly purify the air, reducing the amount of fossil fuel exhaust and ozone being released into the atmosphere. Directly, the vegetation located within the greenway absorbs pollutants and then releases oxygen back into the atmosphere.

ECONOMIC IMPACTS

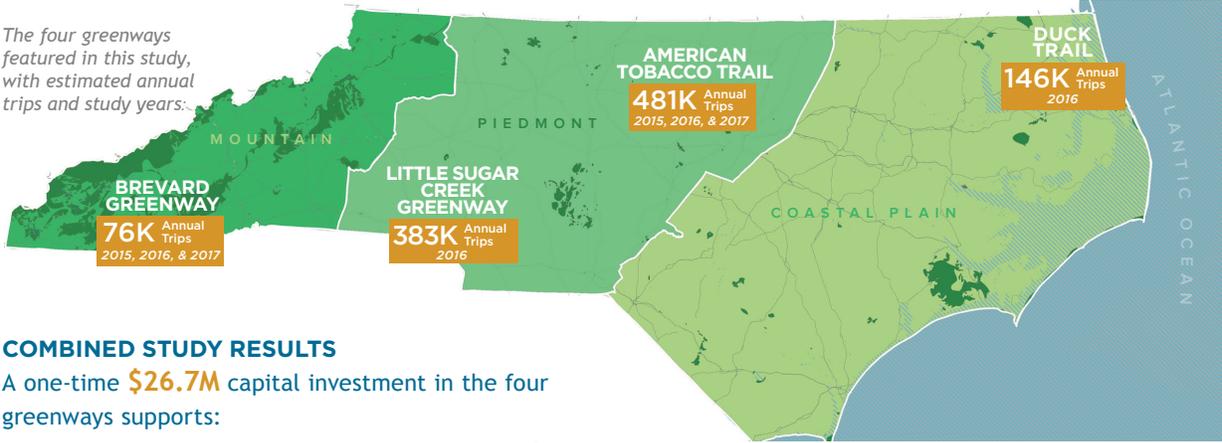
Comprehensive greenway systems bring new business and economic life to cities, towns, and communities. Regionally, the East Coast Greenway, a proposed trail connecting the eastern seaboard from Maine to Florida positively impacts the Triangle by generating over \$90 million in related revenue and taxes per year and 800 temporary and permanent jobs through tourism and trail development.

Greenways benefit the surrounding area on a micro-economic scale by increasing adjacent property values and enticing tourism and economic activity near trail corridors. Not only does proximity to a greenway trail provide a strong selling-point, but adjacent home and property values are statistically higher than comparable properties further from greenways.

INCREASED MOBILITY OPTIONS

More than 45% of all driving trips in the US are under 3 miles, and 60% of trips are less than 5 miles. These trips, which could be taken by bike or on foot in 20 to 30 minutes, represent opportunities for mode shifts to biking and walking in communities across the US. Communities that are increasing their active transportation mode shares invest in well connected, multi-modal networks that allow people of all ages and abilities to bike and walk to their desired destinations. Connectivity investments that focus on active transportation make better use of existing facilities and enable more users to connect to their destinations.

The four greenways featured in this study, with estimated annual trips and study years:



COMBINED STUDY RESULTS

A one-time **\$26.7M** capital investment in the four greenways supports:



\$19.4M

Estimated annual sales revenue at local businesses along the four greenways



\$684K

Estimated annual local and state sales tax revenue from businesses along the greenways



\$25.7M

Estimated annual savings due to more physical activity, less pollution and congestion, and fewer traffic injuries from use of the greenways



\$48.7M

Estimated business revenue from greenway construction



790 JOBS

Are supported annually through greenway construction

Trail Benefits Infographic from the NCDOT & ITRE Report, *Evaluating the Economic Impact of Shared Use Paths in North Carolina, 2018*

ENHANCED CULTURAL AWARENESS

Residents in rural and suburban communities often desire the space around them to be maintained to ensure a certain quality of life and preserve the historic and cultural perception of the area. The protection of natural and culturally significant places allows a community to maintain a sense of place for not only local residents, but for tourism and economic purposes.

Redevelopment of underutilized community resources with walking and biking infrastructure brings a new sense of identity, as observed at the American Tobacco Campus in Durham, North Carolina. Industrial-uses prohibited public use along the corridor until the development of the trail activated the rail corridor and adjacent neighborhoods. As a result, greenways can be a catalyst for urban revitalization and restoration of economic vitality in vacant or underused areas. The incorporation of interpretive signage and public art have the potential to capture and celebrate the community, past and present and enhance cultural awareness and connection to community identity.

Paired with economic benefits and community identity, greenways add and protect aesthetically pleasing aspects of a community. Not only is the natural environment accessible to the public, but with the addition of artwork such as commissioned sculptures and murals an added aesthetic is achievable. This improves the user experience and attracts users who would otherwise not regularly use greenways and trails.

EQUITY

Ensuring residents have access to recreational and active transportation opportunities that are affordable and convenient is fundamental to efforts reducing income inequality. Newly established bicycle, pedestrian and trail connections within Rolesville will expand access to parks, schools, employment centers, and medical centers. In the 2018 report on the impact of shared use paths in North Carolina, researchers found that trail users in the communities studied reduced their annual household costs by \$1.83 million by having access to greenways and trails to reach destinations by foot or bike.





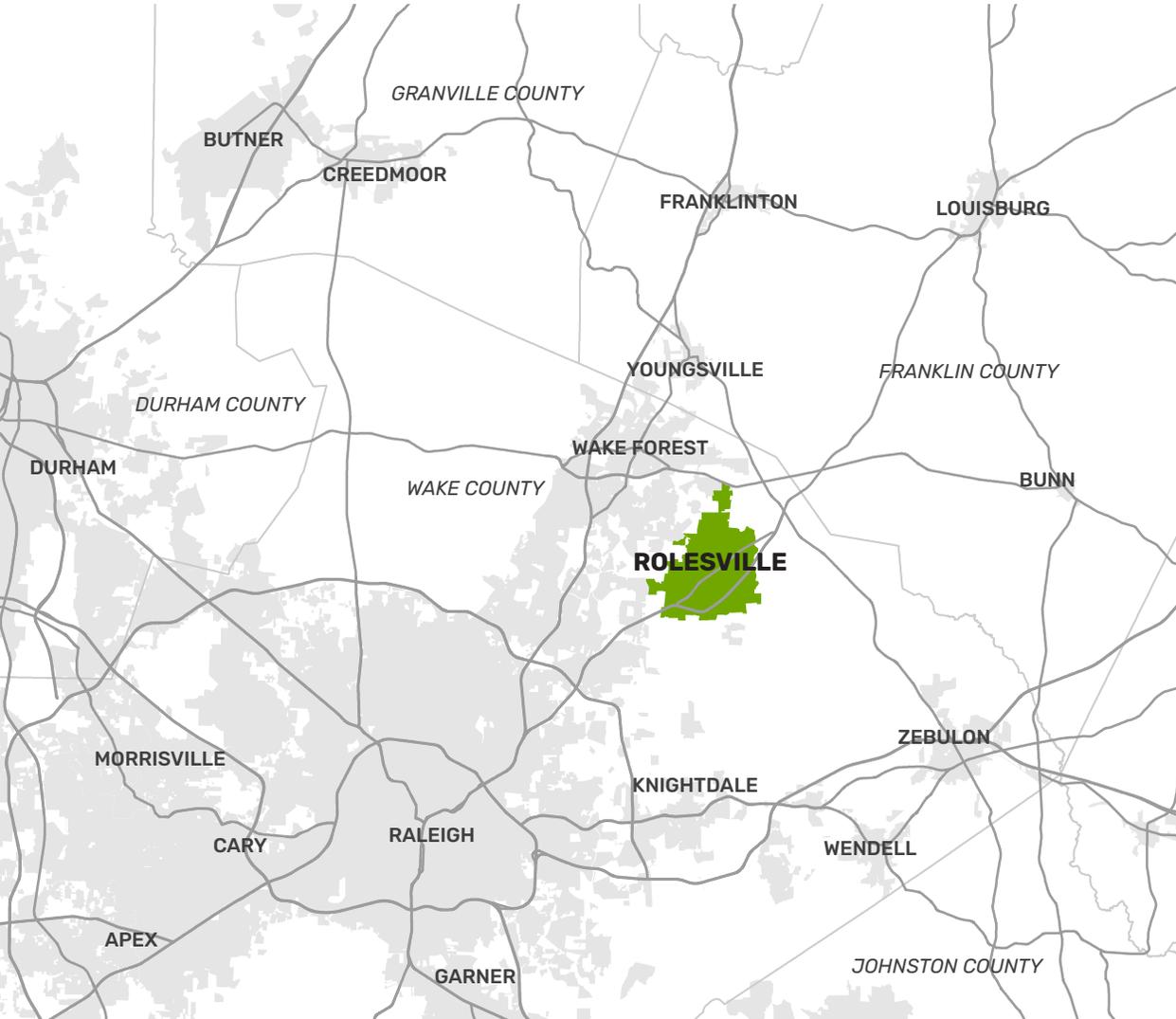
02 EXISTING CONDITIONS

EXISTING CONDITIONS

The Town of Rolesville, located in Northeast Wake County, is a residential community approximately 18 miles from Downtown Raleigh, which is one of the Triangle Region’s major employment centers. Rolesville has approximately 2,500 acres within its municipal boundaries, with another 700 acres of extraterritorial jurisdiction (ETJ). The study area for *Rolesville Greenways* consists of municipal limits, the ETJ, and surrounding acres in Wake County that are a part of the town’s planning boundary.

The existing greenway network demonstrates the potential to establish Rolesville as a bicycle and pedestrian-friendly community. Existing greenways connect to parks, schools, and neighborhoods in the town core. However, recently established neighborhoods north and south of Downtown lack adequate recreational facilities for residents and visitors. This chapters provides an overview of relevant planning efforts, state and local policies, and proposed roadway improvement projects that impact greenway development in Rolesville now and the future.

PLANNING CONTEXT





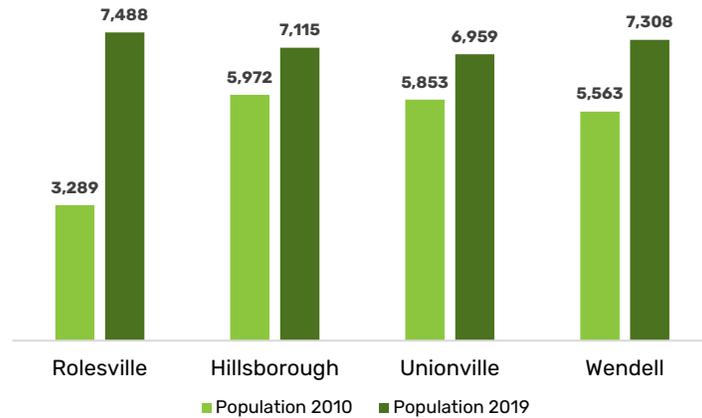
Greenway Wayfinding Signage in Rolesville

COMMUNITY DEMOGRAPHICS

Analyzing Rolesville’s demographic trends are essential to planning the community’s greenway network. This analysis helps to inform the public engagement approach and to ensure proposed recommendations meet the diverse needs of people residing in Rolesville. Demographic data was pulled from the 2019 American Community Survey 5-year estimates and was accessed through the US Census Bureau.

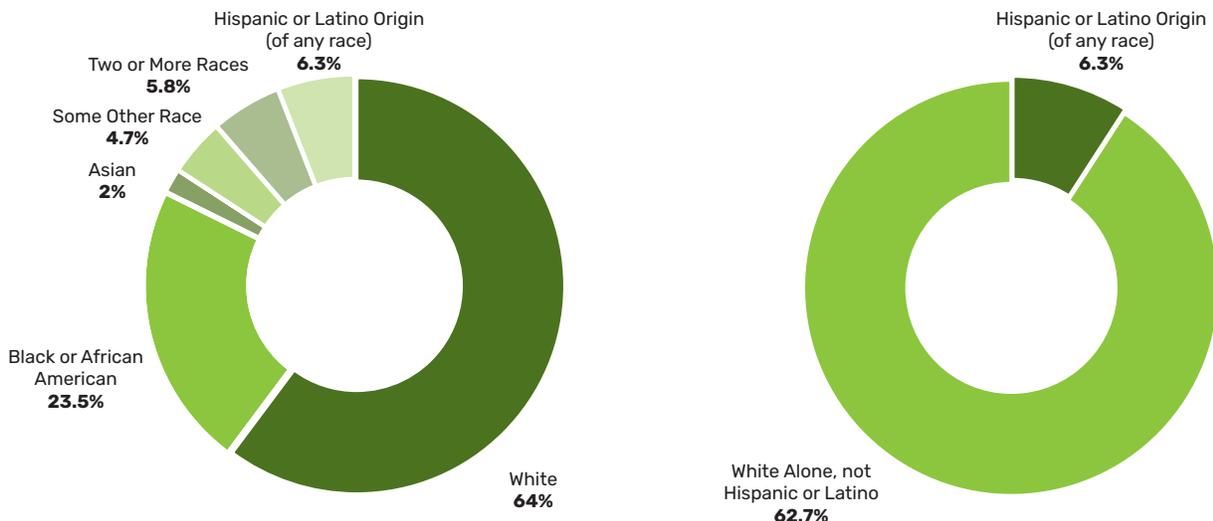
POPULATION

Rolesville has a population of 7,488 with a population density of 1,920 residents per square mile. Comparatively, the total population of the peer communities of Hillsborough, Unionville, and Wendell are 7,115, 6,959, and 7,308 respectively. Rolesville has a population growth rate of 127.7%, significantly outpacing growth rates of peer communities with Hillsborough at 19.1%, Unionville at 18.9%, and Wendell at 31.4%.



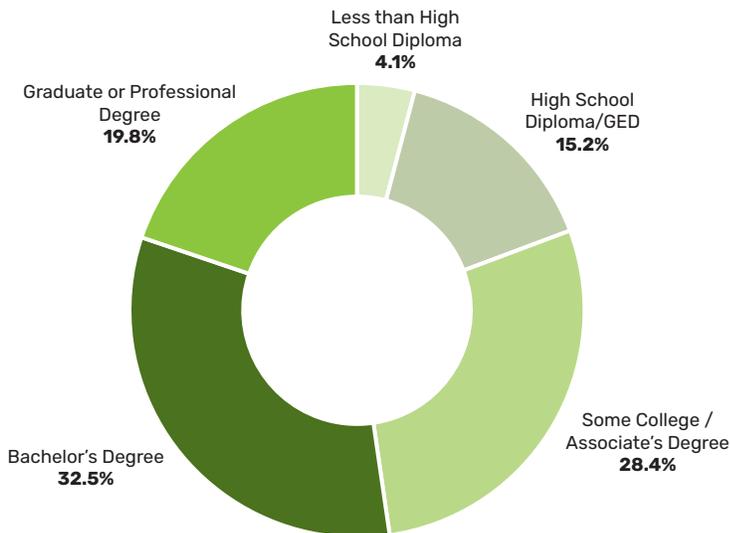
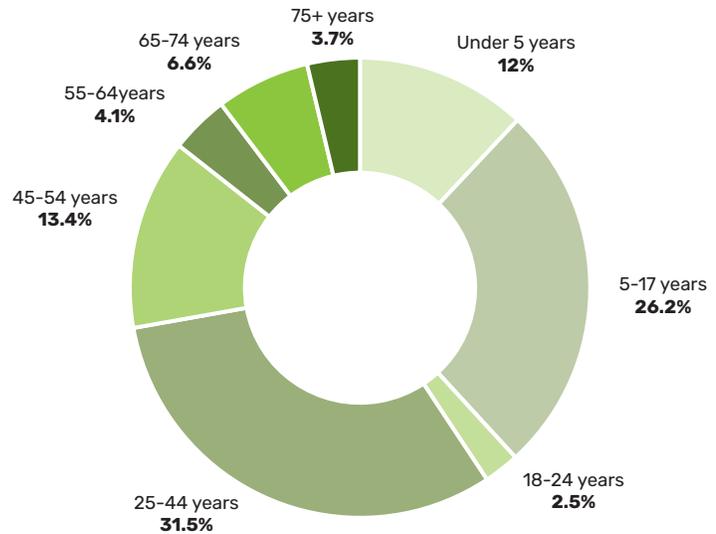
RACE + ETHNICITY

In North Carolina, approximately 66% of residents identify as “White alone”, and 22% of residents identify as “Black alone”. Rolesville mirrors this demographic spread, with 64% of the town identifying as “White alone” and approximately 23.5% of the population identifies as “Black alone”. Approximately 3% of the state’s population identifies as “Asian alone”, and similarly 2% of Rolesville’s population identifies as “Asian alone”. 6.3% of Rolesville residents identify as “Hispanic or Latinx of any race,” which is lower than North Carolina, in which 10% of the statewide population identifies as “Hispanic or Latinx of any race”.



AGE

Rolesville residents are younger on average than North Carolina overall. The median age in Rolesville is 35, while North Carolina has a median age of 38.9. Approximately 38.2% of the population is under the age of 18, and 10% of the population is over the age of 65. Therefore, 50.8% of the population is between the ages of 18 and 65.

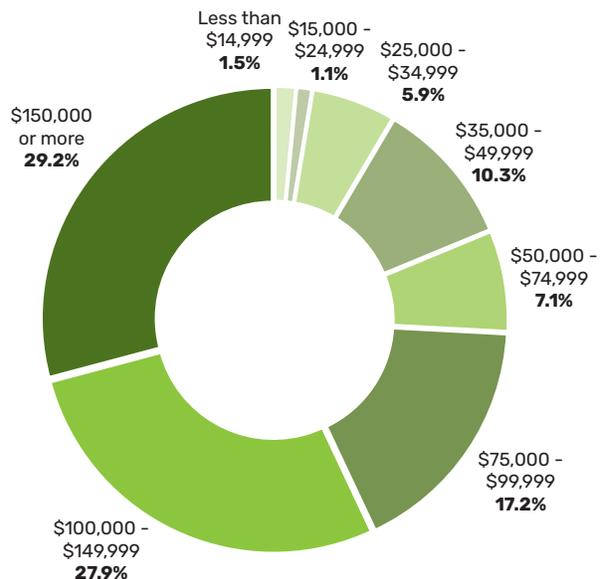


EDUCATION

More than half of Rolesville residents have a bachelor's degree or graduate degree. Town residents are well educated, compared to North Carolina, in which 10.3% of residents have a degree from a four-year institution.

HOUSEHOLD INCOME

Rolesville is an affluent community with 74.3% of the population having an annual household income greater than \$75,000. The median income of households within Rolesville is \$119,615, while the median income of North Carolina households is \$51,844.



PREVIOUS PLANNING EFFORTS

The Town of Rolesville and regional agencies in Wake County have prioritized greenway connectivity in planning efforts over the past decade. This table provides a summary of key greenway, bicycle, pedestrian, transit, and land use recommendations from previous plans and studies that are relevant to the development of *Rolesville Greenways*.

EXISTING PLAN / STUDY	KEY RECOMMENDATIONS RELATED TO <i>ROLESVILLE GREENWAYS</i>
<p>Town of Rolesville Parks and Recreation Master Plan, 2019</p>	<p>This plan aims to serve the growing recreational needs of Rolesville residents. The plan evaluates the existing park system, recreational programs, operations, and financial practices and provides guidance for improvements and expansion. Rolesville has 9.7 acres of developed parkland per 1,000 residents, which is slightly below the benchmarking median of 10.7 acres per 1,000. With the recent acquisition of Frasier Park at 116 acres, Rolesville has the potential to increase developed parkland acres. Rolesville provides 0.4 miles of trail per 1,000 residents, which is the median offering among peer communities. Given the projected population growth, this plan recommends that Rolesville increases its trails level of service between the best practice standard of 1.5 miles per 1,000 residents and the benchmarking and national standards of 0.4 miles per 1,000 residents.</p>
<p>Town of Rolesville Main Street Vision Plan. 2018</p>	<p>This plan outlines recommendations to reestablish Main Street as Rolesville’s town center following the construction of the US 401 Bypass. Guiding principles that inform design and planning elements for Main St include modal choices, safety for all, connectivity, attractive design, and quality redevelopment. For this planning effort, Main Street is segmented into three distinct zones based on roadway and adjacent building characteristics. The zones are Suburban Fringe (south entry to Burlington Mills Rd), Village Core (Burlington Mills Rd to Young St), and Rural Transition (from Young St to north entry).</p> <p>Suburban Fringe recommendations:</p> <ul style="list-style-type: none"> • Redesign Main St as a 2-lane divided roadway with a multi-use path. • Intersection improvements include a roundabout at Lonnie Dr, a traffic signal with high-visibility crosswalks at Jonesville Rd, and realignment of Burlington Mills Rd to create a new intersection with Main St. <p>Village Core recommendations:</p> <ul style="list-style-type: none"> • Redesign Main St as a 2-lane divided and 3-lane roadway with sidewalks and buffered bicycle lanes from Old Burlington Mills Rd to Young St. • Install high visibility sidewalks and greenway bike lanes across all intersections with Main St. • Install crosswalks with a pedestrian refuge and flashing beacons at Storage Dr, School St, and in front of Main St Park. • Young St Intersection improvements include high visibility crosswalks, pedestrian signals, protected intersection enhancements for bicyclists, and angled and/or parallel parking. <p>Rural Transition recommendations:</p> <ul style="list-style-type: none"> • Install a multi-use path along the north side of Main St from Young St to the US-401 Bypass. • Construct pedestrian crossovers with a pedestrian refuge along Main St, Waterstone Dr, and Pulley Town Rd.

EXISTING PLAN / STUDY	KEY RECOMMENDATIONS RELATED TO <i>ROLESVILLE GREENWAYS</i>
Town of Rolesville Economic Development Strategic Plan, 2018	<p>This plan evaluates the capacity for future growth within Rolesville with a focus on areas along Main St and the newly development US-401 Bypass. Economic development strategies are by three elements: build for the future, create community to attract talent, and market to build the local economy. Specific strategies include targeting growth areas for economic development, maintain an inventory of available space in targeted growth areas, implement the Main Street Program for business retention and expansion, implement gateway and wayfinding projects per the Main Street Corridor Study, and coordinate with NCDOT for signage along I-540 and US-401, expand tourism through branding and marketing efforts.</p>
Town of Rolesville Comprehensive Plan, 2017	<p>Key goals of the Comprehensive Plan are creating a walkable community; encouraging development that provides diverse shopping, dining, and entertainment experiences; investing in parks and active recreation opportunities; and prioritizing development that retains the “small-town” feel of Rolesville. Recommendations to achieve these goals include adopting a Complete Streets Policy, establishing a connectivity standard for Downtown, requiring greenway construction for all new developments, prioritizing multimodal activity in Downtown, ensuring open space is obtained in exchange for higher development densities, improving street network connectivity, creating a Main Street Corridor Plan, exploring a bond referendum to fund projects, expanding greenway connectivity, developing new parks and recreational facilities, and investing in proposed transit connections.</p>
Town of Rolesville Comprehensive Bike Plan, 2013	<p>The Bicycle Plan aims to improve multimodal connectivity, accessibility, and safety by developing on-road bicycle facilities and greenways throughout Town. The plan also proposes policies that consider bicycle accommodations in new developments and programmatic recommendations to foster an active and engaged bicycle community. Project recommendations include bike lanes along Jones Dairy Rd, Granite Falls Blvd, and Redford Place Dr; a complete street redesign of Main St; a sidepath along Burlington Mills Rd, a roadway extension with bike lanes along Granite Falls Blvd to Burlington Mills Rd; greenways along Harris Creek, Cedar Fork Creek, and Tom’s Creek; and the extension of the Sanford Creek Greenway to Main Street Park. Design and operational recommendations include bicycle facility design standards, a proposed maintenance plan, and implementation and funding strategies.</p>
Town of Rolesville Open Space and Greenway Plan, 2002	<p>The goals of Open Space and Greenway Plan are to identify parcels and corridors in need of protection and conservation and to establish a trail network that links greenspace to residential neighborhoods, commercial developments, and downtown. Open Space recommendations include the development of a central park at the site of the existing Rolesville Park and a seven satellite parks along Sanford Creek, Tom’s Creek, Harris Creek, Main St, Burlington Mills Road, and Jones Dairy Rd. Greenway recommendations are proposed along Harris Creek, Sanford Creek, Tom’s Creek, Buffalo Creek, Cedar Creek, and Perry Creek. Implementation strategies include establishing stream buffer zones along stream corridors and developing greenways and satellite parks along stream corridors through a phased approach beginning with Harris Creek.</p>

EXISTING PLAN / STUDY	KEY RECOMMENDATIONS RELATED TO <i>ROLESVILLE GREENWAYS</i>
Wake County Northeast Area Study, 2021	Developed by the Capital Area Metropolitan Planning Organization, this study is an update to the 2014 NEAS Study and identifies a cohesive transportation strategy for the growing communities of Wake Forest, Knightdale, Raleigh, Wendell, Zebulon, Rolesville, Bunn, Franklinton, and Youngsville. The proposed growth scenarios focus on increased walkability and bike-ability, reduced traffic congestion, revitalized downtowns, increased employment opportunities, and projection of farmland and natural resources in the region. Key recommendations for Rolesville include complete streets proposed for Main St and E. Young, roadway widening and intersection improvements with off-road bicycle and pedestrian facilities proposed along Burlington Mills Rd and Rodgers Rd; and greenways proposed along Austin Creek, Perry Creek, Harris Creek, and the Eastern Bypass.
Wake County Greenway System Plan, 2017	The vision of the Wake County Greenway Plan is to create a connected and comprehensive county-wide greenway network that enhances quality of life for Wake County residents. The overall system of recommendations is organized into the following project categories: Bridge the Gaps, Connect to Parks and Lakes, Connect the Communities, and Complete the System. Recommendations for the Town of Rolesville include Sanford Creek Greenway from the existing greenway in Wake Forest to Main St Park in Downtown Rolesville. Completion of the Sanford Creek Greenway is a priority project in the Bridge the Gaps category, and Greenway recommendations included in the Complete the System category are the proposed greenways in and surrounding Rolesville along Harris Creek, Cedar Creek, Perry Creek, and Buffalo Creek..
Wake Transit Plan, 2016	The goal of the Wake County Transit Plan is to expand and enhance transit connections throughout Wake County. Key recommendations include, a 37-mile commuter rail connecting Garner, Raleigh, NCSU, Cary, Morrisville, and RTP; Bus Rapid Transit throughout Downtown Raleigh, to Cary, to NC State, and Wake Med; 30-minute, 60-minute, and peak-only service to Wake County jurisdictions outside of Raleigh. Transit recommendations for Rolesville include peak-only service between Rolesville and Triangle Town Center with connections to Downtown Raleigh, Wake Forest, and RTP.
Wake County Multi-Jurisdictional Hazard Mitigation Plan, 2015	The goals of Open Space and Greenway Plan are to identify parcels and corridors in need of protection and conservation and to establish a trail network that links greenspace to residential neighborhoods, commercial developments, and downtown. Open Space recommendations include the development of a central park at the site of the existing Rolesville Park and a seven satellite parks along Sanford Creek, Tom’s Creek, Harris Creek, Main St, Burlington Mills Road, and Jones Dairy Rd. Greenway recommendations are proposed along Harris Creek, Sanford Creek, Tom’s Creek, Buffalo Creek, Cedar Creek, and Perry Creek. Implementation strategies include establishing stream buffer zones along stream corridors and developing greenways and satellite parks along stream corridors through a phased approach beginning with Harris Creek.

EXISTING PLAN / STUDY	KEY RECOMMENDATIONS RELATED TO <i>ROLESVILLE GREENWAYS</i>
Great Trails State Plan, 2022	The NCDOT statewide trail plan proposes a comprehensive network of greenways and sidepaths to connect all one-hundred counties via non-motorized transportation. Heritage East Greenway and Sanford Creek Greenway are included in the statewide trail network as critical connections between Rolesville and Wake Forest, which also connect to the proposed S-Line rail-with-trail corridor and Raleigh’s Capital Area Greenway System via the Wake Forest’s greenway network.

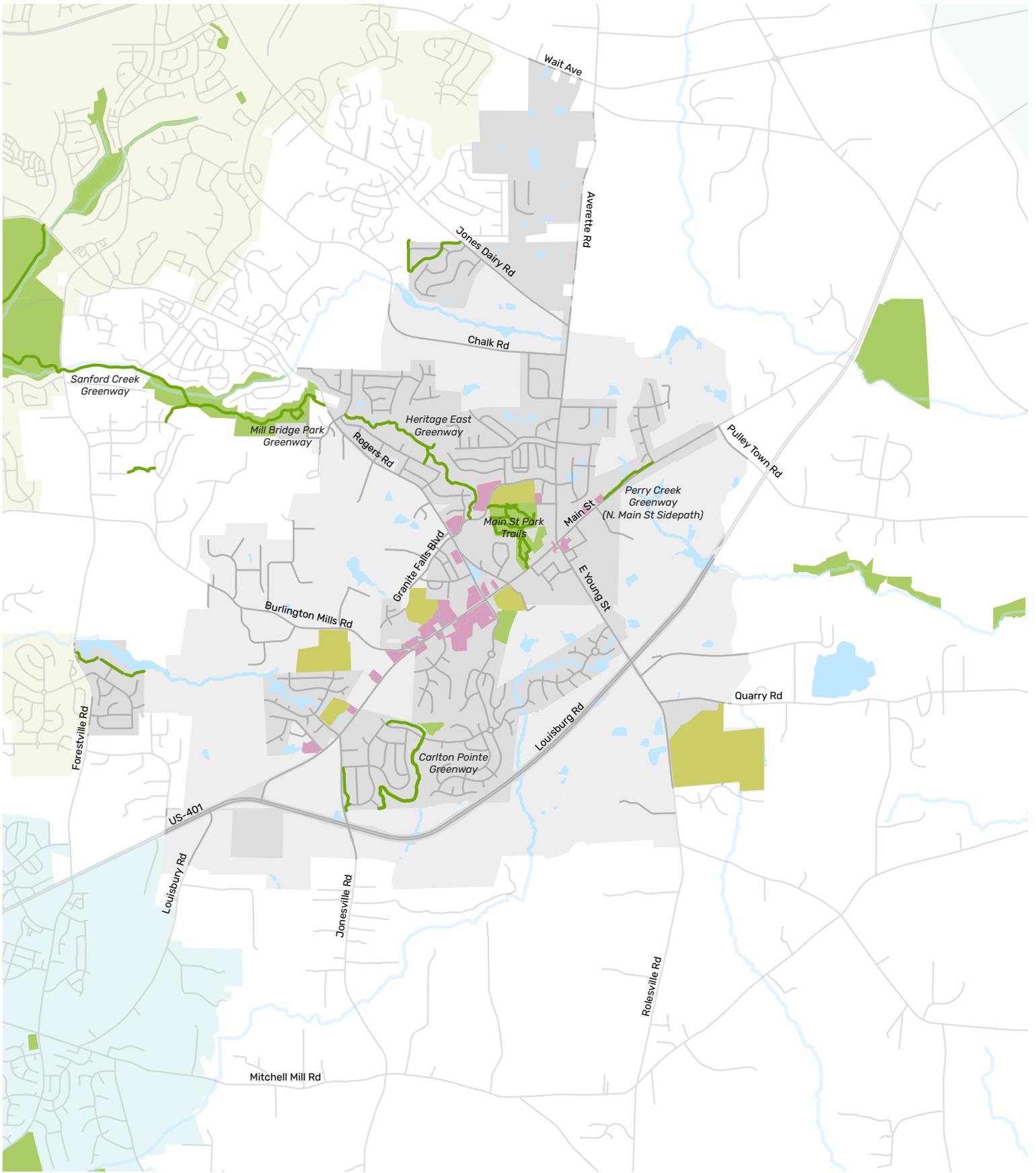
POLICY REVIEW

This table provides a summary of key state, and local policies from NCDOT, Wake County, and Town of Rolesville that may guide or impact the development of Rolesville’s greenway network.

EXISTING POLICY	KEY POLICIES TO GUIDE/IMPACT <i>ROLESVILLE GREENWAYS</i>
Town of Rolesville Land Development Ordinance (LDO), 2021	<p>The updated LDO states that development must be consistent with the adopted comprehensive plan, Rolesville Parks and Recreation Master plan, and other adopted town plans.</p> <p>Greenways: Land that is dedicated in fee-simple interest for the purpose of a greenway shall be credited toward density calculations. All greenways shall include a multi-use path of a minimum of 10 feet wide within a dedicated right-of-way or public easement of at least 50 feet. (An alternative may be granted to reduce the minimum easement of at least 50 feet to 30 feet if site constraints do not allow for 50 feet.) Greenways shall be constructed in conjunction with required improvements for any approved phase of a subdivision or development. Connections shall be provided to other greenways whether a connection is shown and/or required on the Recreation Master Plan and/or other adopted town plans. Greenways and connectors shall be ADA compliant where applicable. Greenways shall minimize removal of significant trees. All greenways shall be designed to accommodate a variety of users. Greenways shall be improved trails of impervious materials. All greenways and greenway connectors shall be maintained for public access by the owner, whether by easement or by public dedication. For land designated as part of the adopted greenway/bikeway system, greenways shall provide basic amenities for all targeted users. Such greenways shall provide at least three (3) of the following: Drinking fountains, restrooms, trash receptacles, benches, bicycle racks, and shade structures. Land area dedicated as a greenway shall be credited towards applicable open space percentage. Protected Open Space areas (100-year floodplain, riparian zones, wetlands, and other environmental sites) allow walking and biking trails, provided they are constructed of porous paving materials.</p> <p>Residential and Planned Unit Development District: is intended to be primarily a pedestrian-oriented residential community that also contains a limited mix of retail, office and professional, civic and government uses. Residential offerings are to be varied and include both detached and attached dwelling units.</p>

EXISTING POLICY	KEY POLICIES TO GUIDE/IMPACT ROLESVILLE GREENWAYS
<p>Town of Rolesville Land Development Ordinance (LDO), 2021, (Continued)</p>	<p>Development requirements: Sidewalks are required on both sides of all public streets, except for cul-de-sacs of 250 feet in length or shorter, and alleys. Residential sidewalks shall be a minimum of five feet wide. Bike Paths shall be a minimum of four feet wide and shall be installed along both sides of minor and major thoroughfares (minor and major arterials). Alternatively, an eight-foot-wide bike path may be installed paralleling the minor or major thoroughfare. In this instance, the bike path can replace the sidewalk normally required on the same side of the roadway.</p> <p>Residential III District: is established as a district in which the principal use of the land is for high density, pedestrian-friendly residential purposes. Development requirements: Sidewalks are required on both sides of all public streets, except for cul-de-sacs of 250 feet in length or shorter, and alleys. Residential sidewalks shall be a minimum of five feet wide. Bike Paths shall be a minimum of four feet wide and shall be installed along both sides of minor and major thoroughfares (minor and major arterials). Alternatively, an eight-foot-wide bike path may be installed paralleling the minor or major thoroughfare. In this instance, the bike path can replace the sidewalk normally required on the same side of the roadway.</p> <p>Conservation Subdivision Option: this development promotes construction of convenient landscaped walking trails and bike paths both within the subdivision and connected to neighboring communities, businesses, and facilities to reduce reliance on automobiles.</p> <p>Town Center Overlay District: allows for mixed-use, live/work developments for maintaining the character and quality of the Town’s commercial center. All buildings must be oriented toward the primary access street. Parallel parking is encouraged, and off-street parking shall be located behind or on the side of the buildings. Each building shall have a sidewalk along its primary access road. To ensure safe and comfortable pedestrian access, this sidewalk shall have a minimum width of at least six feet that is unobstructed. All sidewalks shall be buffered from the adjacent street by means of a six-foot-wide grassy strip. All commercial and mixed-use buildings shall have a first story that is at grade with the adjacent sidewalk.</p>
<p>Town of Rolesville Town Code, 2019</p>	<p>Impact Fees: allows the Town Board to provide for a system of impact fees to be paid by developers to help defray the costs to the Town of constructing certain capital improvements.</p>
<p>Wake County Land Development Ordinance, 2021</p>	<p>Chapter 8, Section 33 outlines Trail ordinances for Wake County. The regulations of this section are intended to implement county planning objectives by promoting pedestrian and bicycle mobility, as well as recreational opportunities for county residents. Different requirements and standards apply in Short-Range Urban Services Areas, Long-Range Urban Services Areas, and Non-Urban Areas in recognition of the different physical and built environments that exist throughout Wake County.</p> <p>Short-Range Urban Services: Off-Road Trail Improvements: Off-road trail improvements must be provided whenever: (a) Such improvements are shown on or otherwise</p>

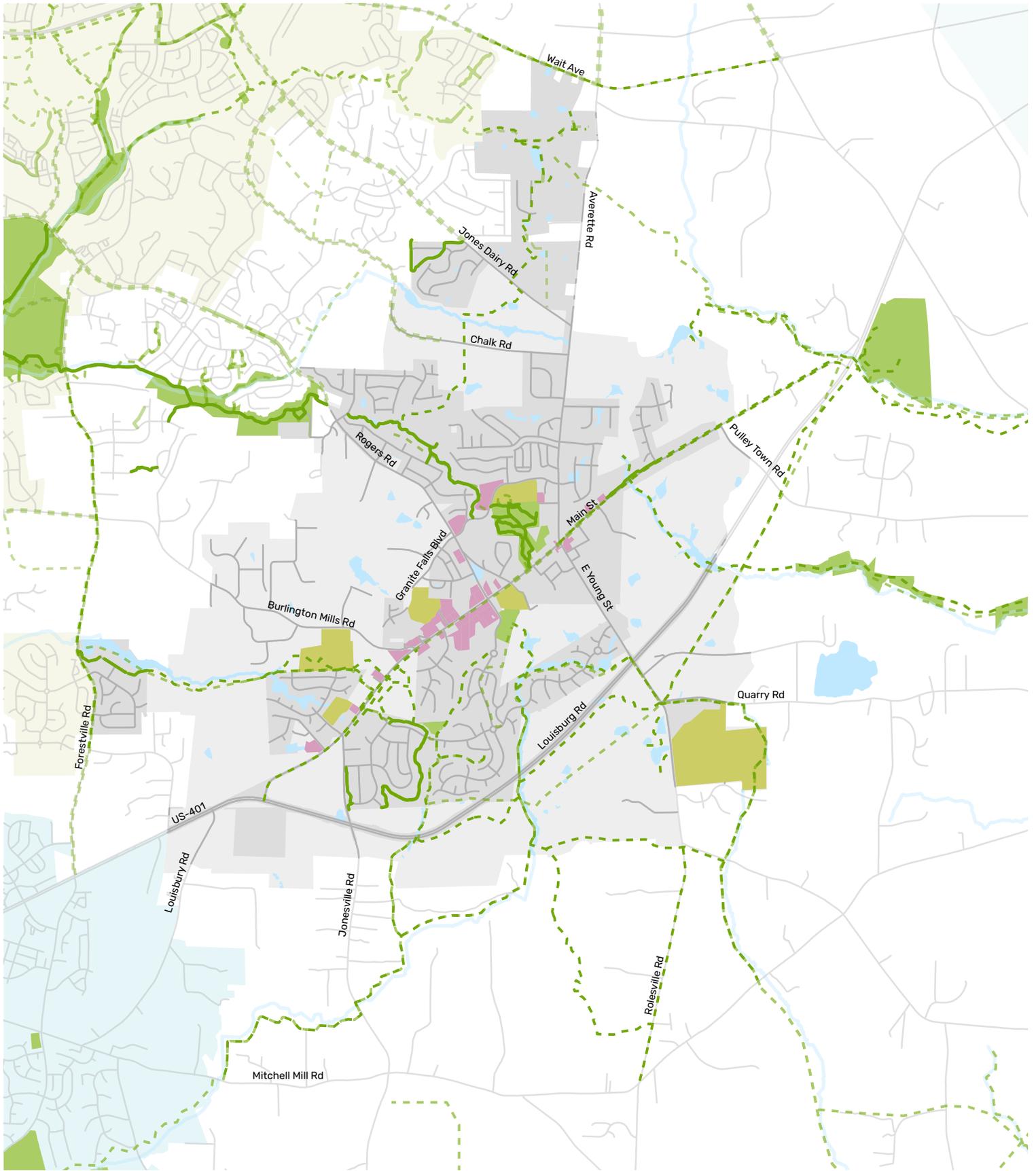
EXISTING POLICY	KEY POLICIES TO GUIDE/IMPACT ROLESVILLE GREENWAYS
<p>Wake County Land Development Ordinance, 2021 (Continued)</p>	<p>required by the Transportation Plan and/or the Consolidated Open Space Plan; (b) The subject subdivision has access to or is adjacent to existing or designated greenway corridors, in which case, access to such corridors must be incorporated into the overall subdivision design; or (c) The subject subdivision is adjacent to another subdivision or development that includes off-road trail improvements that could be readily connected to similar improvements within the subject subdivision.</p> <p>Long-Range Urban Service Areas: Off-Road Trail Improvements: Developers must provide off-road trail improvements whenever: (a) Such improvements are shown on or otherwise required by the Transportation Plan and/or the Consolidated Open Space Plan; (b) The subject subdivision has access to or is adjacent to existing or designated greenway corridors, in which case, access to such corridors must be incorporated into the overall subdivision design; or (c) The subject subdivision is adjacent to another subdivision or development that includes off-road trail improvements that could be readily connected to similar improvements within the subject subdivision.</p> <p>Maintenance: All streets, sidewalks, greenways, or other travel ways must be kept free from mud, dirt, dust or other material that may create a hazard to public safety or cause the travel way to be unreasonably muddy, as determined by the County.</p>
<p>NCDOT Complete Streets Policy, 2019</p>	<p>The NCDOT Complete Streets Policy Update was adopted by the Board of Transportation in August 2019. This policy requires NCDOT to consider and incorporate multimodal facilities in the design and improvement of all transportation projects in North Carolina. The adopted Comprehensive Transportation Plan (CTP) is considered the controlling plan for the identification of nonmotorized facilities to be evaluated as part of a roadway project. The CTP may include and/or reference locally adopted plans for public transportation, bicycle and pedestrian facilities, and greenways. Bicycle, pedestrian, and public transportation facilities that appear in the CTP directly or by reference will be included as part of the proposed roadway project, and NCDOT is responsible for the full cost of the project. Bicycle, pedestrian, and transit facilities incidental to a roadway project where a need has been identified through the project scoping process but not identified in an adopted plan may be included in the project. Inclusion of these incidental facilities requires the local jurisdiction to share the incremental cost of constructing the improvements based on population thresholds. The policy also establishes maintenance responsibility for active transportation facilities. Bicycle, pedestrian, and transit improvements inside a municipal boundary are subject to local maintenance. For bicycle, pedestrian, and transit improvements outside of a municipal boundary where a county maintenance agreement has not been not executed to maintain the facility, NCDOT will maintain the facility after construction if the bicycle or pedestrian facility lies within NCDOT right-of-way. Projects that have not completed environmental review prior to August 2019 are subject to the Complete Streets Policy.</p>



**TOWN OF ROLESVILLE
EXISTING GREENWAYS**

LEGEND

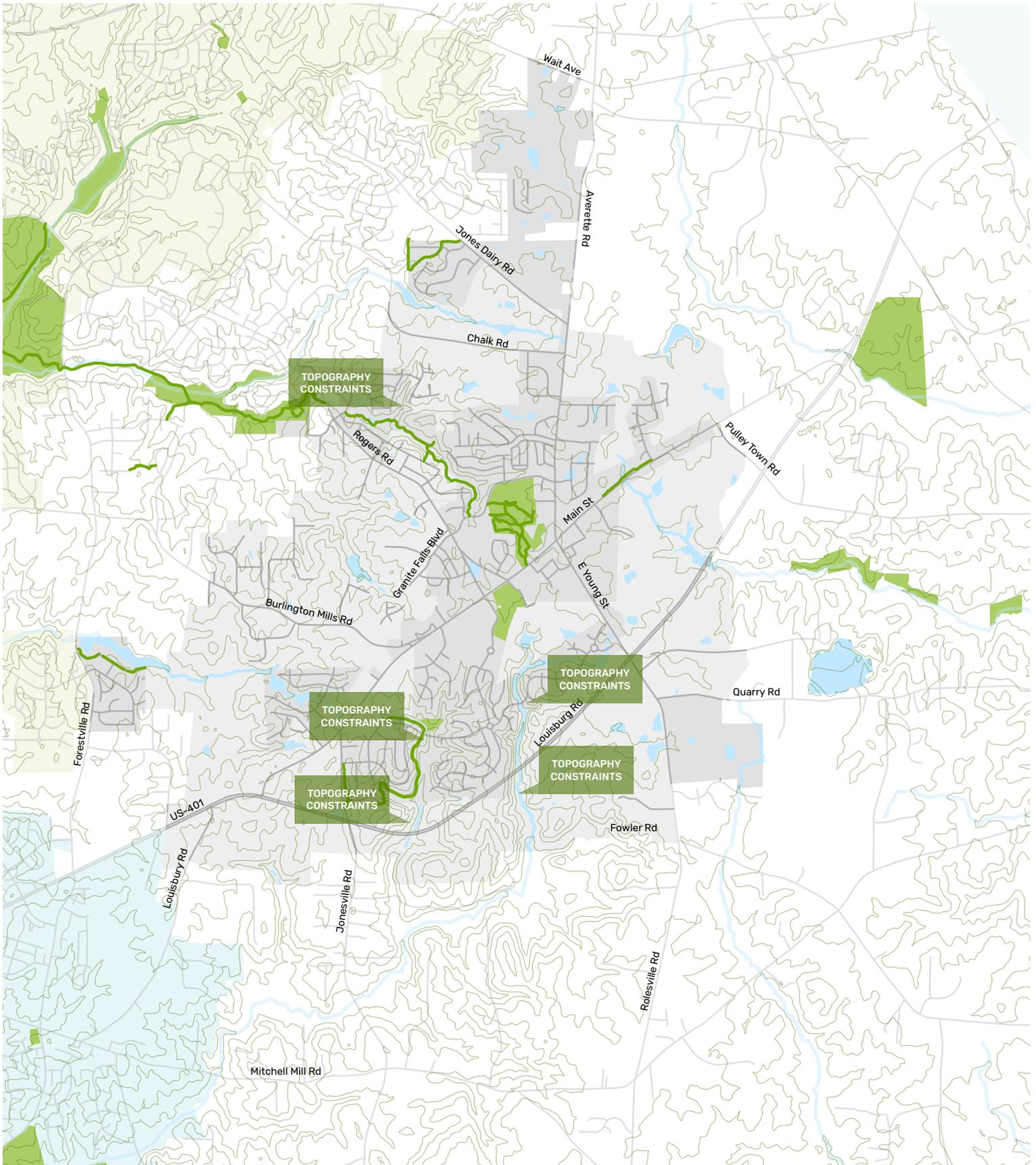
- Existing Greenways
- Civic/Commercial Centers
- Schools
- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County



**TOWN OF ROLESVILLE
PLANNED GREENWAYS**

LEGEND

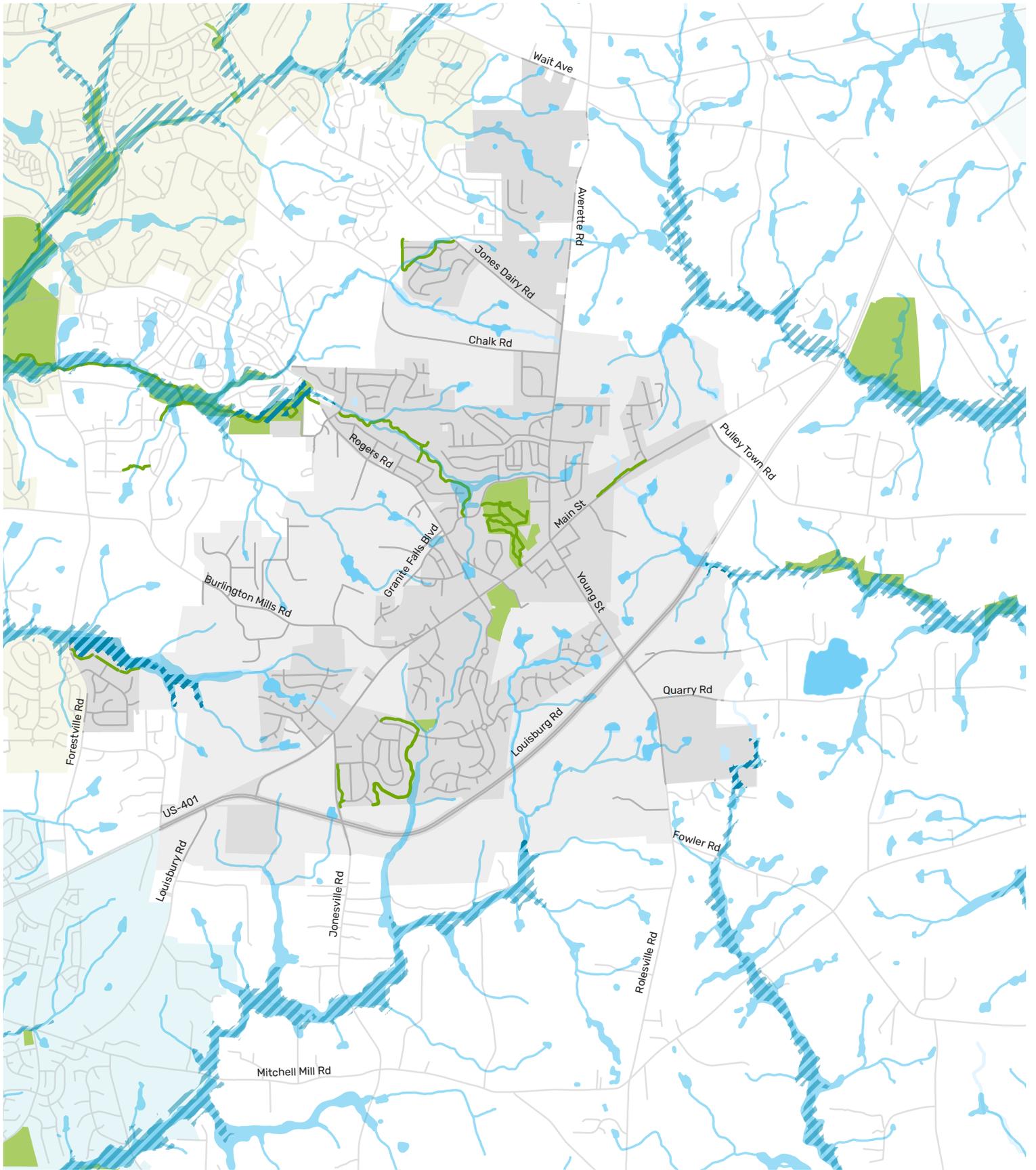
- Planned Greenways
- Existing Greenways
- Civic/Commercial Centers
- Schools
- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County



**TOWN OF ROLESVILLE
TOPOGRAPHY (20FT CONTOURS)**

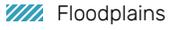
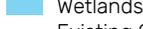
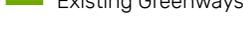
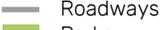
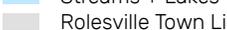
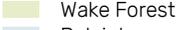
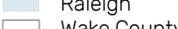
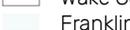
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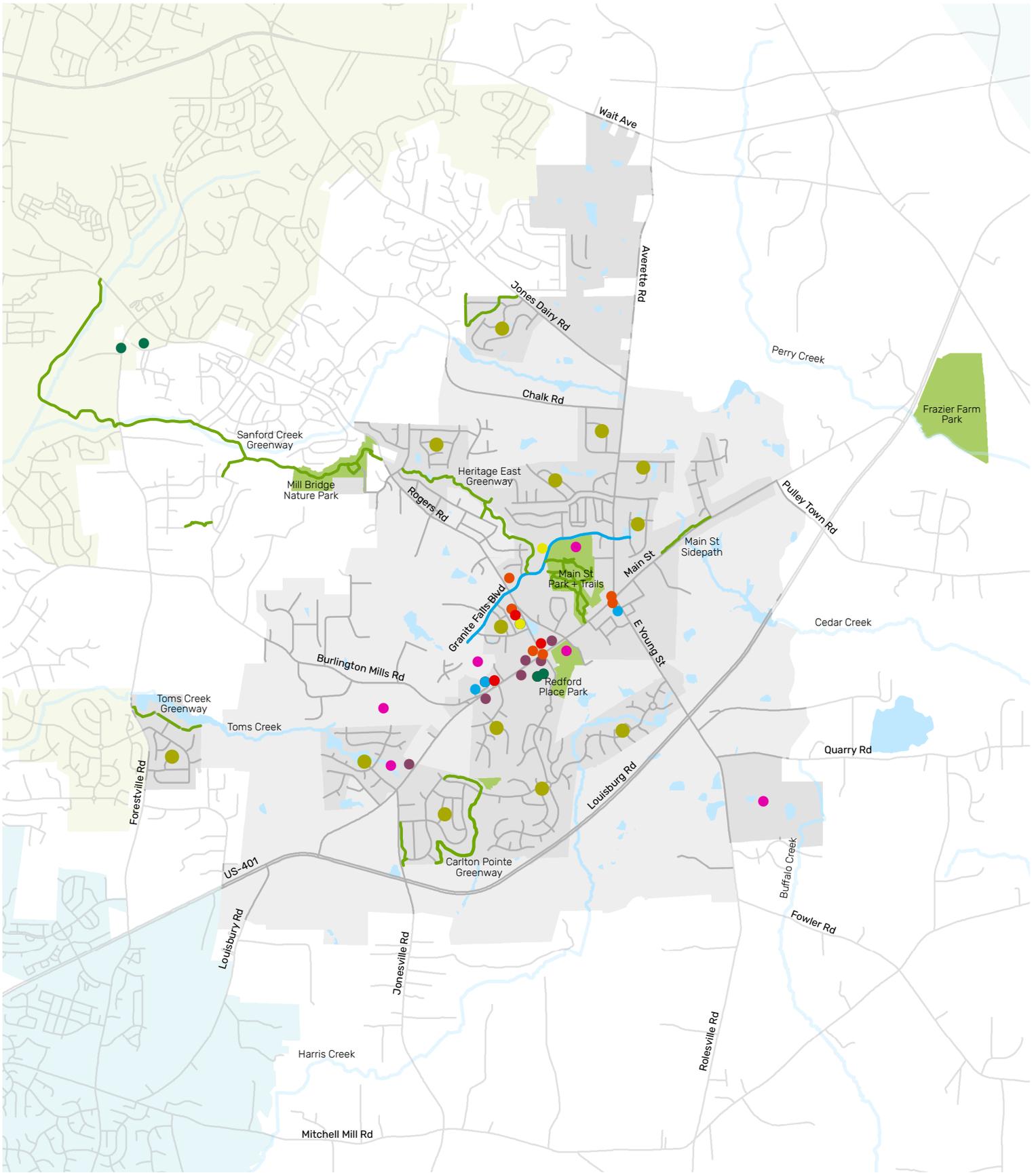
- Roadways
- Topography Contours
- Existing Greenways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County



**TOWN OF ROLESVILLE
FLOODPLAINS + WETLANDS**

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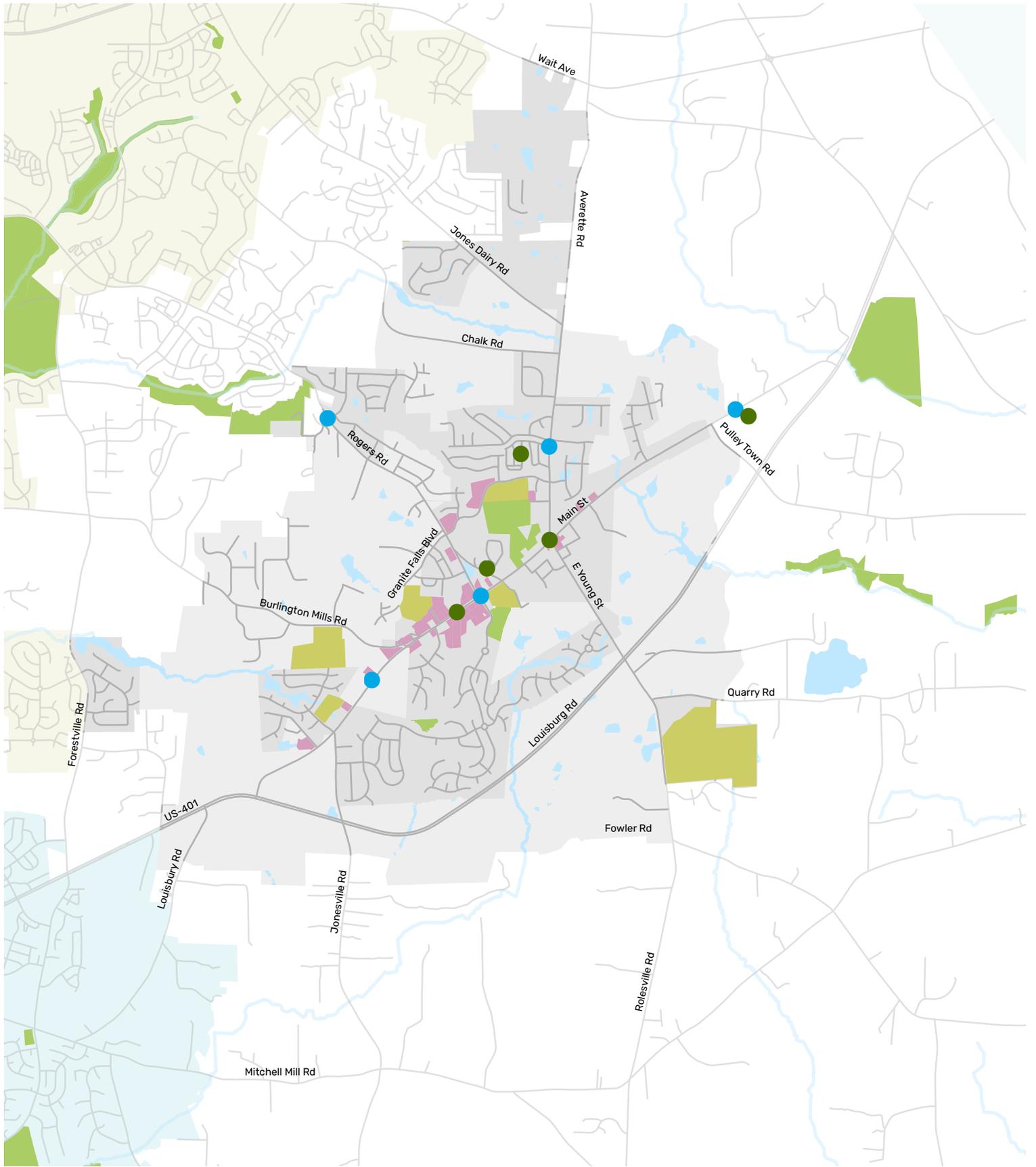
-  Floodplains
-  Wetlands
-  Existing Greenways
-  Roadways
-  Parks
-  Streams + Lakes
-  Rolesville Town Limits
-  Rolesville ETJ
-  Wake Forest
-  Raleigh
-  Wake County
-  Franklin County



**TOWN OF ROLESVILLE
DESTINATIONS**

LEGEND

- | | | |
|---|---|---|
| ● Neighborhoods | — Existing Greenways | Raleigh |
| ● Schools | — Existing Bike Lanes | Wake County |
| ● Medical Services | — Roadways | Franklin County |
| ● Civic Services | Parks | |
| ● Grocery Stores | Streams + Lakes | |
| ● Restaurants | Rolesville Town Limits | |
| ● Gyms | Rolesville ETJ | |
| ● Shops + Banks | Wake Forest | |



**TOWN OF ROLESVILLE
BICYCLE + PEDESTRIAN CRASHES
(2007-2020)**

LEGEND

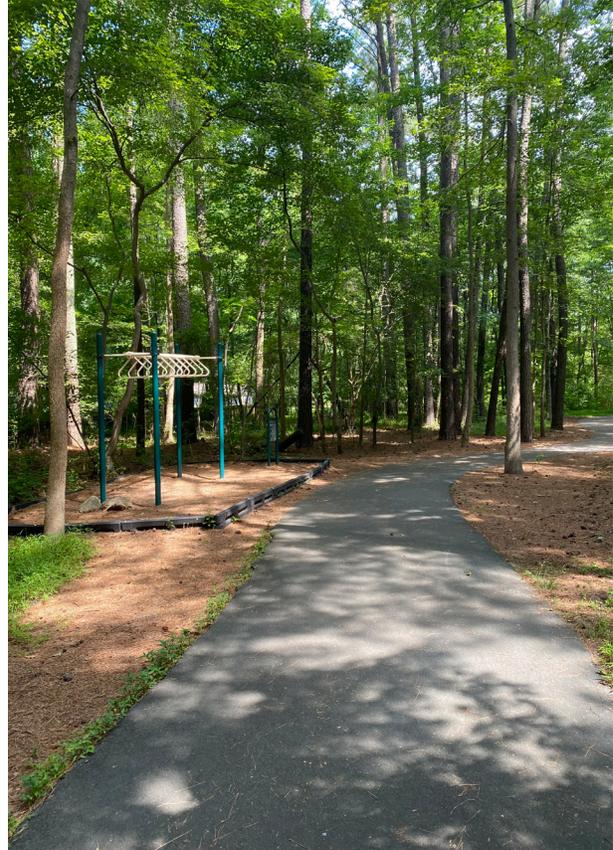
- Bicyclist Crash
- Pedestrian Crash
- Civic/Commercial Centers
- Schools
- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County

EXISTING GREENWAY CONDITIONS ANALYSIS

Greenways and multi-use trails are powerful economic development tools for towns of any size. In smaller towns, like Rolesville, these benefits are greatly felt. Research from the North Carolina Department of Transportation (NCDOT) and the Institute of Transportation Research & Education (ITRE) supports what many communities know intuitively: that using greenways to connect Town facilities and downtown areas to schools, employment centers, neighborhoods, retail, and larger trail networks brings predictable revenue. Public or private investments in greenways and trails offer an opportunity to transform community health, quality of life and prosperity. Currently the Town of Rolesville has a multi-use trail network at Main Street Park and Mill Bridge Nature Park, but few greenways connect parks, civic destinations, employment centers and residential communities. This plan will provide recommendations and implementation strategies to better plan for greenway connectivity.



Exercise amenities along Main St Park Greenway



Exercise amenities along Main St Park Greenway



Boardwalk bridge along Main St Park Greenway



Pedestrians walking along Heritage East Greenway



Boardwalk segment along Heritage East Greenway



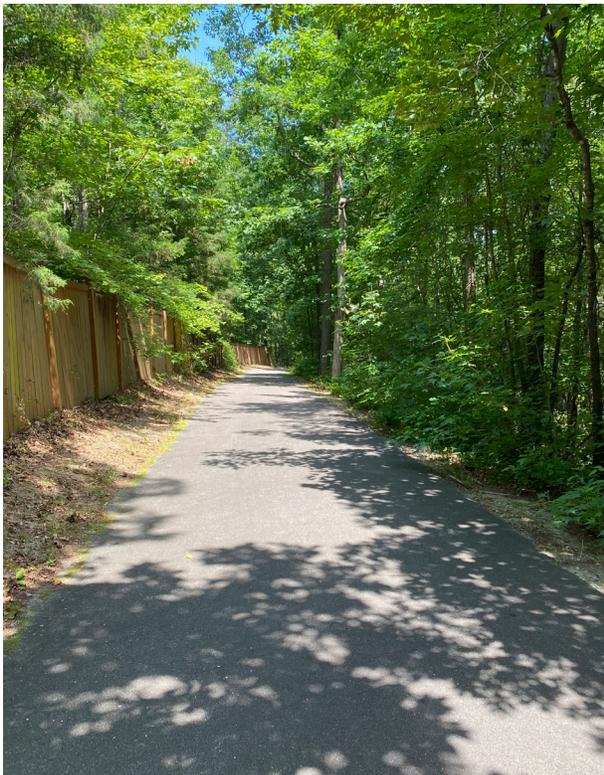
Heritage East Greenway trail access along Granite Falls Blvd



Heritage East Greenway trail access along Granite View Dr



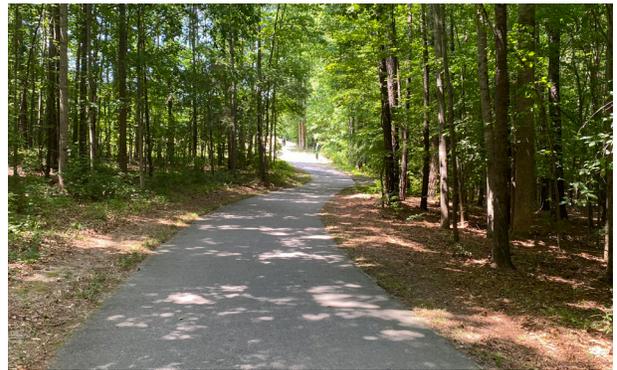
Boardwalk along Heritage East Greenway



Mill Bridge Park Greenway near Rogers Rd



Constrained Mill Bridge Park Greenway access, Rogers Rd



Mill Bridge Park Greenway



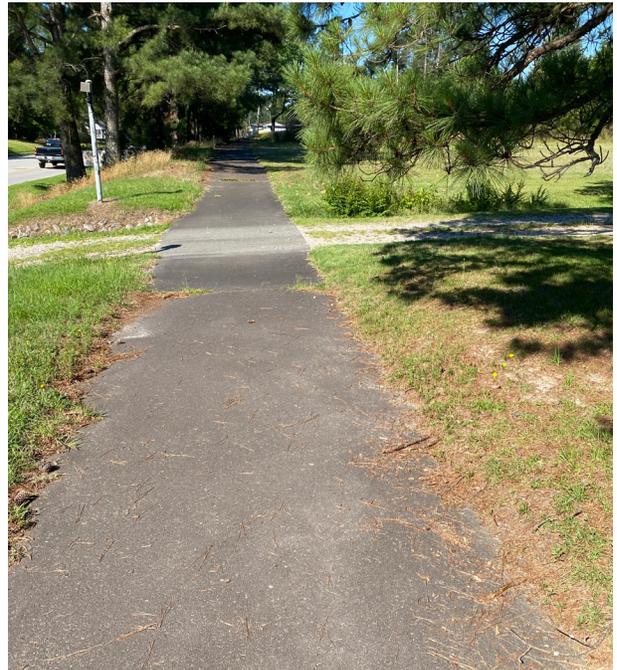
Amphitheater along Mill Bridge Park Greenway



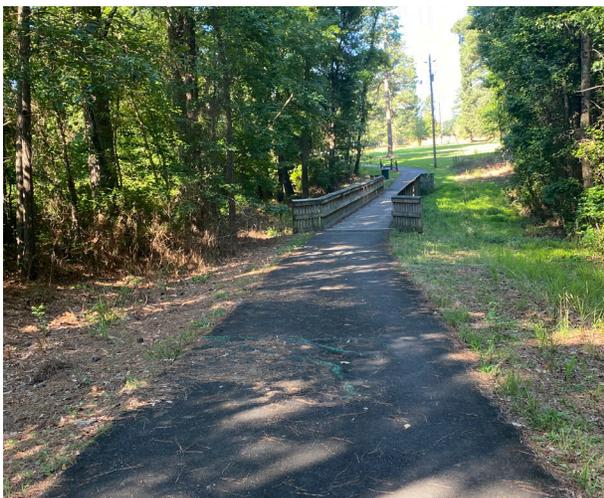
Kiosk and trash cans along Mill Bridge Park Greenway



Overgrown shrubs along Perry Creek Greenway, N. Main St



Driveway crossing along Perry Creek Greenway, N. Main St



Boardwalk along Perry Creek Greenway, N. Main St



Root damage along Perry Creek Greenway, N. Main St



Carlton Pointe Greenway



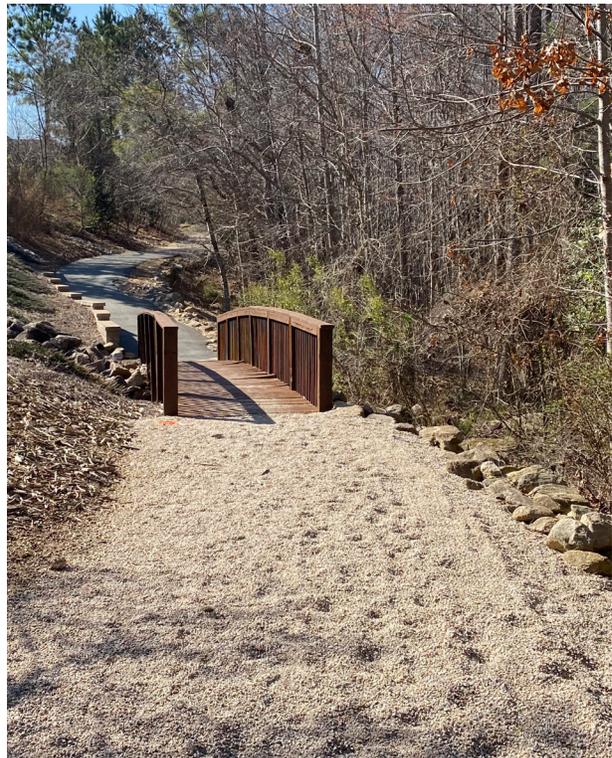
Pavement erosion along Carlton Pointe Greenway



Concrete segment of Carlton Pointe Greenway



Pavement erosion along Carlton Pointe Greenway



Natural surface segment along Carlton Pointe Greenway

EXISTING GREENWAY CONDITIONS

GREENWAY NAME	LOCATION	TO	FROM	LENGTH	WIDTH	SURFACE
MAIN ST PARK GREENWAY	Main St Park	S. Main St	Granite Falls Blvd	1.52 miles	10ft	Paved
HERITAGE EAST GREENWAY	Heritage Creek Corridor	Granite Falls Blvd	Heritage Gates Dr	1.34 miles	10ft	Paved
MILL BRIDGE PARK GREENWAY	Sanford Creek Corridor	Rogers Rd	Sanford Creek Greenway	0.79 miles	10ft	Paved
AVERETTE RIDGE GREENWAY	Averette Ridge Subdivision	Jones Dairy Rd	Tortuga St	0.57 miles	8ft	Paved
PERRY CREEK GREENWAY (NORTH MAIN ST SIDEPATH)	North Main St	Quality Care Automotive	Waterstone Ln	0.35 miles	10ft	Paved
CARLTON POINTE GREENWAY (SEGMENT 1)	Carlton Pointe Subdivision	Virginia Water Dr	Inglemoor Ln	1.03 miles	8-10ft	Paved & Unpaved
CARLTON POINTE GREENWAY (SEGMENT 2)	Carlton Pointe Subdivision	Bendemeer Ln	Prides Crossing	0.26 miles	8-10ft	Paved
DRAYTON RESERVE GREENWAY (SEGMENT 1)	Drayton Reserve Subdivision	Forestville Rd	Beaver Tan Ct	0.12 miles	10ft	Paved
DRAYTON RESERVE GREENWAY (SEGMENT 2)	Drayton Reserve Subdivision	Beaver Tan Ct West Cul-de-Sac	Beaver Tan Ct East Cul-de-Sac	0.14 miles	8ft	Paved
DRAYTON RESERVE GREENWAY (SEGMENT 3)	Drayton Reserve Subdivision	Beaver Tan Ct	Toms Creek	0.15 miles	10ft	Paved

SURFACE TYPE	SEGMENT CONDITION	CROSSINGS / CONDITIONS	BRIDGES / CONDITIONS	GREENWAY AMENITIES
Asphalt	Good, minor pavement cracks	No Crossings	1 Boardwalk Bridge, Good to fair condition	Exercise stations, pet waste stations, picnic shelters, benches, restrooms, trash cans, playgrounds, open space, parking, wayfinding signage
Asphalt	Good, minor pavement cracks	1 Crossing at Granite View Dr, at-grade and lacks crosswalk, signage, and wayfinding	3 Boardwalk Bridges, Excellent	Benches, waste stations, access to the creek, wayfinding signage
Asphalt	Good, minor pavement cracks, narrow transition from sidewalk to trail along Rogers Rd	No Crossings	1 Boardwalk Bridge, Good to fair condition	Parking, open space, amphitheatre, kiosk, benches, trash cans, pet waste stations
Asphalt	Good, minor pavement cracks	1 Crossing at Tortuga St, at-grade and lacks crosswalk and signage	No Bridges	Pet waste stations
Asphalt	Poor, significant pavement cracks, root growth and bumps, overgrown vegetation	2 Driveway Crossings, at-grade and lacks crosswalks and signage	1 Boardwalk Bridge, fair condition, worn decking	Benches, waste stations, access to the creek
Asphalt, Crushed Stone, Concrete	Fair - crushed stone segments are not compact, significant erosion issues	1 Crossing at Virginia Water Dr, at-grade with crosswalk	1 Boardwalk Bridge, poor condition, worn decking	No Greenway Amenities
Asphalt	Good, minor pavement cracks	No Crossings	No Bridges	No Greenway Amenities
Asphalt	Good condition	No Crossings	No Bridges	No Greenway Amenities
Concrete	Good condition	No Crossings	No Bridges	No Greenway Amenities
Asphalt	Good condition, minor patches and cracks	No Crossings	No Bridges	No Greenway Amenities

PEER COMMUNITY BENCHMARKING ANALYSIS

This benchmarking analysis provides a direct comparison among peer communities and greenway programs with similar characteristics. The analysis serves as an illustration of how the Town of Rolesville's greenway network is developed and maintained in comparison to those in other jurisdictions. Looking to peer communities is a valuable tool for decision-making, program evaluation, and goal setting.

The benchmarking analysis informs network and policy recommendations outlined in Chapter 4. These standards determine Rolesville's needs for greenway mileage and amenities across this plan's 10-year planning horizon. Benchmarking also informs recommendations related to greenway programming, maintenance, and finances. Using benchmarking to inform the level of service standards adds detail to national standards and provides appropriate context to determining level of service standards specifically tailored to the Town of Rolesville.

This analysis compares key performance measures of the five peer communities. Peer communities are jurisdictions that share similar characteristics to allow for a meaningful comparison, but still represent an array of circumstances and situations among the greenway programs. The project team identified peer communities based on the following characteristics:

- Community that have a population similar to Rolesville.
- Communities that serve as forward-looking benchmarks for Rolesville's growth.
- Communities that have similar greenway offerings.
- Suburban communities near a major population center.
- Communities with established greenway programs.
- Communities located in North Carolina.

Upon determination of peer communities, the project team distributed a questionnaire via email to each community. Follow up emails included links to the digital questionnaire. The project team received five responses for a total of six communities included in the analysis. The following questions were asked of each peer community:

- Has your jurisdiction completed any feasibility studies to determine greenway corridor alignments and guide greenway design?
- What is the total mileage of greenways and trails in your jurisdiction?
- What is the total mileage of paved greenways and trails in your jurisdiction?
- What is the total mileage of unpaved greenways and trails in your jurisdiction?
- Does your jurisdiction have dedicated funding for greenways and trails?
- If your jurisdiction has dedicated trail funding, how much funding is allocated annually?
- Which types of funding does your jurisdiction use to fund greenways and trails?
- Which types of policies are included in your jurisdiction's ordinances that encourage and support greenway development?
- Does your jurisdiction manage any encouragement programs or events for the greenway and trail system?
- Does your jurisdiction's greenway and trail network have a brand?
- Which types of wayfinding signage are installed along your jurisdiction's greenways and trails?
- Which types of amenities are provided along your jurisdiction's greenways and trails?
- How does your jurisdiction communicate information on the existing and proposed greenway network to the public via map and/or municipal website?
- What is your jurisdiction's annual maintenance budget for greenways and trails?
- Which department is responsible for greenway and trail maintenance in your jurisdiction?
- Which types of maintenance duties are conducted by your jurisdiction?
- Which types of maintenance duties are contracted/provided by an outside entity?
- How many staff hours per month are spent on greenway and trail maintenance?

The analysis reports the collected data at a per-population rate to normalize the data among peer communities. Rolesville’s performance measures will be compared to the median response for each measure. Greenway mileage accounts for paved mileage of greenways and paved walking loops, multi-use paths and unpaved or natural surface trail mileage. The rate of greenway mileage per 1,000 residents shows generally how much access residents have to greenways. A greater number indicates more greenway miles per resident, and therefore more access to greenways and trails. This number indicates whether a community’s greenway development is keeping pace with population growth.

Rolesville’s greenway mileage consists of greenways and walking trails located within parks and residential neighborhoods. The Town’s primary strategy for supplying greenway corridors between destinations is by requiring new developments to construct greenways as part of their infrastructure. The Town is currently working with developers to implement this strategy and has formalized greenway provisions in the June 2021 update to the land development ordinance.

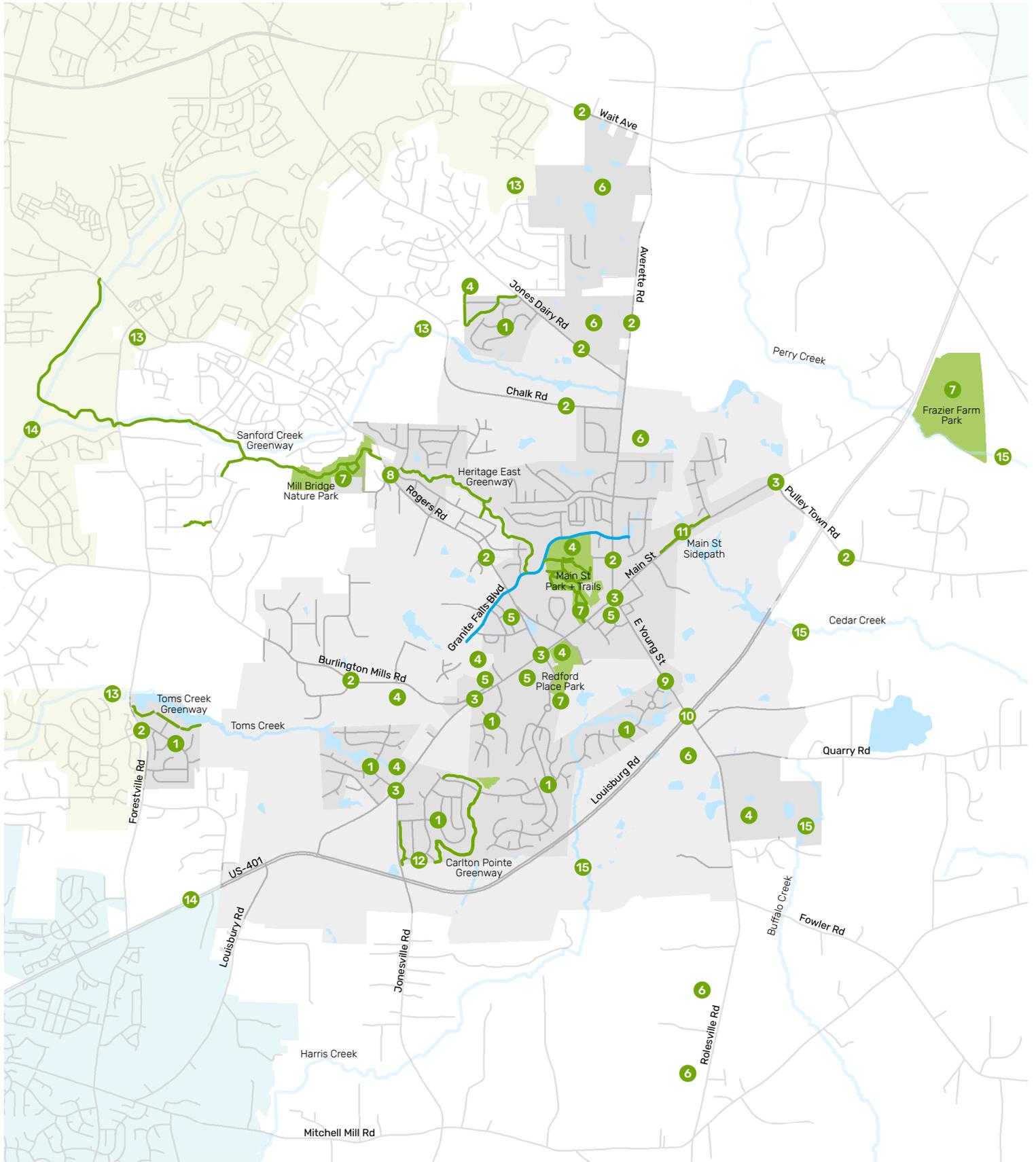
Rolesville currently offers 0.8 miles of greenways per 1,000 residents, which is the higher than the median offering of 0.6 miles among peer communities. Given Rolesville’s projected population growth, the Town should continue to actively pursue greenway development to ensure their greenway offerings continue to meet the community’s needs.

COMMUNITY	TRAIL MILEAGE	POPULATION	TRAIL MILEAGE PER 1,000 RESIDENTS
ROLESVILLE, NC	6.3	7,488	0.8
SMITHFIELD, NC	3.1	12,000	0.3
ZEBULON, NC	1.5	8,000	0.2
DAVIDSON, NC	22	13,000	1.7
HILLSBOROUGH, NC	3	7,200	0.4
WENDELL, NC	1	11,000	0.1

PEER COMMUNITY BENCHMARKING ANALYSIS

BENCHMARKING METRICS	ROLESVILLE	SMITHFIELD	ZEBULON
POPULATION	7,488	12,000	8,000
ADOPTED GREENWAY OR BIKE/PED PLAN	Yes	Yes	Yes
COMPLETED FEASIBILITY STUDY	Yes	No	No
GREENWAY MILEAGE	6.27	3.1	1.5
PAVED MILES	6.14	3.1	1.5
UNPAVED MILES	0.13	0	0
DEDICATED TRAIL FUNDING	No	No	Yes, 1/2 cent of property tax goes towards walkability
TYPES OF TRAIL FUNDING	General Fund, Developer Built, CIP Grants, Impact Fees	CIP, In-Lieu Fees, Developer Built Greenways, PARTF	CIP, In-Lieu Fees, Developer Built Greenways, Impact Fees, PARTF, CAMPO LAPP Funding
TRAIL SUPPORTIVE POLICIES	<p>Clear definitions of greenways, Requirements for development to enhance bicycle and pedestrian connectivity, Supports greenway development within flood-prone areas, Provides flexibility for developers through an in-lieu fee program that directly contributes to greenway funding, Establishes mechanisms to ensure quality of developer-built trails and amenities, Requirements for easement dedication allow for greenway development, and Requirements for development to provide connections to existing and proposed greenways.</p>	<p>Clear definitions of greenways and greenway corridors, Provides flexibility for developers through an in-lieu fee program that directly contributes to greenway funding, and Requirements for development to provide connections to existing and proposed greenways and trails.</p>	<p>Clear definitions of greenways Requirements for development to enhance bicycle and pedestrian connectivity, Provides flexibility for developers through an in-lieu fee program that directly contributes to greenway funding, Establishes mechanisms to ensure quality of developer-built trails and amenities, Incentivizes greenway-oriented development where appropriate, Requirements for easement dedication allow for greenway development, and Requirements for development to provide connections to existing and proposed greenways.</p>
GREENWAY NETWORK BRAND	No	No	No
TYPES OF WAYFINDING	Major entrance signs, decision point signage, kiosks, bollards at street crossings	Major entrance signs, informational signs, maps, kiosks, bollards at street crossings	Major entrance signs, blaze and/or stop signs at intersections, bollards at street crossings
GREENWAY AMENITIES	Seating, benches, restrooms, trash cans, pet waste stations, public exercise stations/equipments, bike parking	Seating, benches, restrooms, trash cans, pet waste stations, public exercise stations/equipments, public art & murals	Seating benches, drinking fountains, trash cans, bike parking, public exercise stations/equipment
GREENWAY MAP / WEBSITE	PDF Greenway Network Map	PDF Greenway Network Map	Provides descriptions of existing greenway facilities and provides greenway project updates
MAINTENANCE BUDGET / STAFF HOURS PER MONTH	\$5,000 / 22 hours	\$5,000 / 10 hours	Varies / 15-20 hours
JURISDICTIONAL MAINTENANCE	Parks and Recreation -Mowing, brush and tree trimming, trash removal, general bridge maintenance and repair	Parks and Recreation - mowing, trimming vegetation, picking up/emptying trash, maintaining amenities along greenways and trails, filling in pavement cracks, potholes, etc., resurfacing repaving, repairing and/or replacing bridges, repairing and/or replacing signage	Parks and Recreation - mowing, trimming vegetation, picking up/emptying trash, maintaining amenities along greenways and trails, snow or ice removal, resurfacing repaving, repairing and/or replacing bridges, repairing and/or replacing signage
CONTRACTED MAINTENANCE	Asphalt patch and resurfacing, bridge construction Mowing	Mowing	Filling in pavement cracks, resurfacing and repaving, repairing and/or replacing bridges

DAVIDSON	HILSBOROUGH	WENDELL
13,000	7,200	11,000
Yes	Yes	Yes
Yes	Yes	No
22	3	1
20	2	0
2	1	1
No	No	Yes (amount varies)
CIP, Bonds	CIP, CMAQ, RTP, PARTF	CIP
Clear definitions of greenways, Requirements for development to enhance bicycle and pedestrian connectivity, Supports greenway development within flood-prone areas, Establishes mechanisms to ensure quality of developer-built trails and amenities, Requirements for easement dedication allow for greenway development, and Requirements for development to provide connections to existing and proposed greenways.	Requirements for development to enhance bicycle and pedestrian connectivity, and Greenway standards in street standards document	Clear definitions of greenways and greenway corridors, Requirements for development to enhance bicycle and pedestrian connectivity, Supports greenway development within flood-prone areas, and Requirements for easement dedication allow for greenway development.
No	No	No
Major entrance signs	Major entrance signs, maps, kiosks, bollards at crossings, stop signs at intersections, directional signs	Informational signs, maps, kiosks
Seating, benches, restrooms, trash cans, pet waste stations, bike parking	Seating, benches, trash cans, pet waste stations, public art & murals	Seating, benches, public exercise stations/equipment
PDF Greenway Network Map, Printed Greenway Map/Brochure, Greenway Project Updates, Greenway Closure and Maintenance Updates	Provides an interactive (web-based) greenway network map, provides a printed greenway network map/ brochure	Provides descriptions of existing greenway facilities
N/A	\$7,000 / 10 hours	Varies
N/A	Public Space Division - trimming vegetation, picking up/emptying trash, maintaining amenities along greenways, filling in pavement cracks and potholes, resurfacing, repaving, drainage control, repairing and/or replacing bridges and signage	Parks and Recreation - duties vary
N/A	Mowing	Varies



TOWN OF ROLESVILLE GREENWAY PLAN OPPORTUNITIES + CONSTRAINTS

- 1. NEIGHBORHOOD CONNECTIVITY
- 2. MULTI-MODAL CONNECTIVITY
- 3. MAIN ST INTERSECTIONS
- 4. CONNECTIONS TO SCHOOLS
- 5. CONNECTIONS TO SHOPPING CENTERS
- 6. GREENWAYS IN NEW DEVELOPMENTS
- 7. CONNECTIONS TO PARKS
- 8. ROGERS RD INTERSECTION

- 9. VIRGINIA WATER DR / YOUNG ST INTERSECTION
- 10. LOUISBURG RD / YOUNG ST INTERSECTION
- 11. N. MAIN ST SIDEPATH MAINTENANCE ISSUES
- 12. CARLTON POINTE GREENWAY GAP
- 13. CONNECTIONS TO WAKE FOREST
- 14. CONNECTIONS TO NEUSE RIVER TRAIL
- 15. WAKE COUNTY PROPOSED GREENWAYS

LEGEND

- 1 Opportunities + Constraints
- Existing Greenways
- Existing Bike Lanes

- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County

OPPORTUNITIES + CONSTRAINTS

This table provides a summary of the opportunities and constraints of existing facilities that impact the development of Rolesville's greenway network.

OPPORTUNITIES + CONSTRAINTS	DESCRIPTION
1. Neighborhood Connectivity	The lack of bicycle and pedestrian connectivity between neighborhoods limits Rolesville residents' ability to walk and bike from their homes to local parks, schools, shops, and jobs. This is especially an issue for residents in the Drayton Reserve, Averette Ridge, and Hampton Pointe neighborhoods, where the only street access to downtown or other neighborhoods is via a major roadway that lacks adequate bicycle and pedestrian facilities. However, planned developments and subdivision expansions provide the opportunity for improved bicycle and pedestrian access via developer-built greenways and sidewalks.
2. Multi-Modal Connectivity	Rolesville's arterial and collector roadways such as Forestville Rd, Burlington Mills Rd, Rogers Rd, Chalk Rd, Jones Dairy Rd, Averette Rd, Young St, Wait Ave, and Pulley Town Rd lack bicycle and pedestrian facilities and serve as major barriers for residents to safety bike and walk to and from destinations.
3. Main St Intersection Improvements	Main St lacks adequate intersection facilities to safely walk and bike across the roadway from local neighborhoods and collector streets, creating a barrier for those biking and walking across town. However, Main St is in the process of being redesigned as a complete street and will undergo roadway improvements that include bike lanes, a shared-use path, sidewalks, crosswalks, and pedestrian signals at intersections.
4. Connections to Schools	While most schools have some pedestrian connectivity via sidewalks and Thales Academy and Sanford Creek Middle School have bicycle connectivity via the Granite Falls Blvd bike lanes, there is a lack of bicycle and pedestrian facilities that provide safe multi-modal connections for all ages and abilities. Residents have voiced a need to provide greenway connections from adjacent neighborhoods to schools, so students can safely bike or walk to school, as with the greenway connection provided to Jones Dairy Elementary from the Averette Ridge neighborhood. Multi-modal connectivity is especially a challenge for students attending Rolesville High School, which is located south of Louisburg Rd along Young St, which lacks sidewalks, shoulders, or a bicycle and pedestrian crossing over Louisburg Rd.
5. Connections to Shopping Centers + Bicycle Parking	The shopping and commercial centers along Main St and Rogers Rd lack safe bicycle and pedestrian connections from adjacent roadways and neighborhoods. These shopping centers also lack end-of-trip amenities such as bicycle parking, which further deter residents from biking to destinations downtown.

OPPORTUNITIES + CONSTRAINTS	DESCRIPTION
6. Opportunities for Greenway Development in New Subdivisions	New subdivisions along Wait Ave, Averette Rd, E. Young St, and Rolesville Rd will provide additional opportunities for developer-built greenways, which will further build-out the proposed greenway network in Rolesville.
7. Connections to Parks	Rolesville’s existing greenway network provides connections to Main St Park and Mill Bridge Nature Park via the Heritage East Greenway and Mill Bridge Greenway. However, residents have voiced a need for multi-modal connections to parks from their neighborhoods. Residents in the Wall Creek, Carlton Pointe, Villages of Rolesville, and Cedar Lakes lack bicycle access to nearby Redford Place Park and Main St Park. Residents from their neighborhoods. There is also an opportunity to provide greenway connections to the proposed Frazier Farm Park along the eastern edge of Town.
8. Rogers Rd Intersection - Safety Concerns for Greenway Connection	The connection between Heritage East Greenway and Mill Bridge Greenway via Heritage Gates Dr and Rogers Rd lacks adequate bicycle and pedestrian facilities and wayfinding signage. While a marked crosswalk is provided, the intersection of Rogers Rd and Heritage Gates Dr is a dangerous intersection as it is not signed or signalized. Vehicles often speed through this corridor, and many do not stop for bicyclists and pedestrians to safely cross Rogers Rd to access the greenways.
9. Virginia Waters Dr + E. Young St Intersection Safety Concerns	The intersection of Virginia Waters Dr and E. Young St lacks crosswalks, creating unsafe conditions for bicycle and pedestrians who need to access the GoRaleigh transit stop and/or sidewalk along the east side of Young St. The sidewalk along the east side of Young St continues north to Main St, making the crosswalk essential for multi-modal connectivity to Downtown.
10. Louisburg Rd + E. Young St Intersection Safety Concerns	The intersection of Louisburg Rd and E. Young Street restricts through-street movement along Young St, only allowing vehicles to make right turns along Louisburg Rd at the intersection. Vehicles making left turns must U-turn several hundred feet north and south of the intersection. Due the intersection’s design, there are no multi-modal crossings or accommodations. This intersection creates a significant barrier to bicycle and pedestrian connectivity north and south of Louisburg Rd, especially for those needing to bike or walk to Rolesville High School.
11. Perry Creek Greenway (N. Main St Sidepath Maintenance Issues	Perry Creek Greenway along N. Main St from Waterstone Ln to the Quality Care Automotive parking lot is in need of pavement resurfacing and repair. Cracks and exposed tree routes pose safety hazards for those biking and walking along the greenway.

OPPORTUNITIES + CONSTRAINTS	DESCRIPTION
12. Carlton Pointe Greenway Gap Improvements	The Carlton Pointe Greenway includes an on-road segment from Inglemoor Ln to the cul-de-sac on Bendemeer Ln as there is a missing link between the existing segments of greenway. The lack of wayfinding poses a challenge for those biking and walking between greenway segments. Residents have voiced a desire to fill in the gap to improve greenway connectivity for the Carlton Pointe neighborhood.
13. Connections to Wake Forest	Biking and walking to Wake Forest from Rolesville is possible on a combination of greenways, sidewalks, and neighborhood streets, but it is not direct. The lack of bicycle and pedestrian facilities along Rogers Rd, Forestville Rd, Jones Dairy Rd, and Wait Ave poses a challenge for those commuting to or running errands in Wake Forest, especially those needing to access grocery stores and services in Gateway Commons. There is also an opportunity to connect to Wake Forest via proposed Greenways along Toms Creek and Austin Creek.
14. Connections to Neuse River Trail	While Downtown Rolesville is just 4 miles from the Neuse River Trail, there are no safe and direct biking and walking routes to the Neuse River Trail. US-401/Louisburg Rd is a major barrier to bicycle and pedestrian access to the trail. Providing connections to the trail will also creates an opportunity to access Raleigh’s entire Capital Area Greenway System and other regional trail systems in the Triangle.
15. Greenway Development Along Creek Corridors in Wake County	The Wake County Greenway System Plan proposes greenways along stream corridors in Northeastern Wake County, which include Harris Creek, Buffalo Creek, Perry Creek, Cedar Creek, and the Little River. Providing greenway connections along these stream corridors within Rolesville creates opportunities to expand greenway connectivity to Wake County’s proposed greenway system. However, there are challenges to routing along these corridors due to environmental conditions and the lack of destinations and residential neighborhoods along these streams.

TOWN OF ROLESVILLE DRAFT GREENWAY + BICYCLE NETWORK

FEEDBACK ON THE DRAFT GREENWAY + BICYCLE NETWORK.
PLEASE COMMENT ON THE MAP.

Legend:

- Greenways
- Sidepaths
- Separated Bike Lanes
- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County

GREENWAY + BICYCLE FACILITIES

GREENWAYS
A greenway is a shared use path, provides a travel area separate from motorized traffic for bicyclists, pedestrians, and other non-motorized users.

MY PRIORITY GREENWAY PROJECTS ARE:

- Buffalo Creek Greenway
- Cedar Creek Greenway
- Perry Creek Greenway
- Sims Creek Greenway
- Tom's Creek Greenway
- Others: [Red dots]

SEPARATED BIKE LANES
A separated bicycle lane is adjacent to the roadway, separating the bicycle traffic by a buffered space.

MY PRIORITY SEPARATED BIKE LANE PROJECTS ARE:

- Bufford Place Park Greenway
- Others: [Red dots]

SIDEPATHS
A sidepath is a shared use path adjacent to a roadway that provides a travel area for bicyclists and pedestrians.

MY PRIORITY SIDEPATH PROJECTS ARE:

- Main St
- Burlington Mills Rd
- Rogers Rd
- Chalk Rd
- Jones Dairy Rd
- Averette Rd
- Young St
- Wait Ave
- Fowler Rd
- Quarry Rd
- Leisburg Rd
- Perkins Rd
- Others: [Red dots]

BUFFERED BIKE LANES
A buffered bicycle lane is adjacent to the roadway through use of a buffered space separating the bicycle traffic from the roadway.

MY PRIORITY BUFFERED BIKE LANE PROJECTS ARE:

- Averette Rd
- Young St
- Rogers Rd
- Burlington Mills Rd
- Others: [Red dots]



03 COMMUNITY ENGAGEMENT

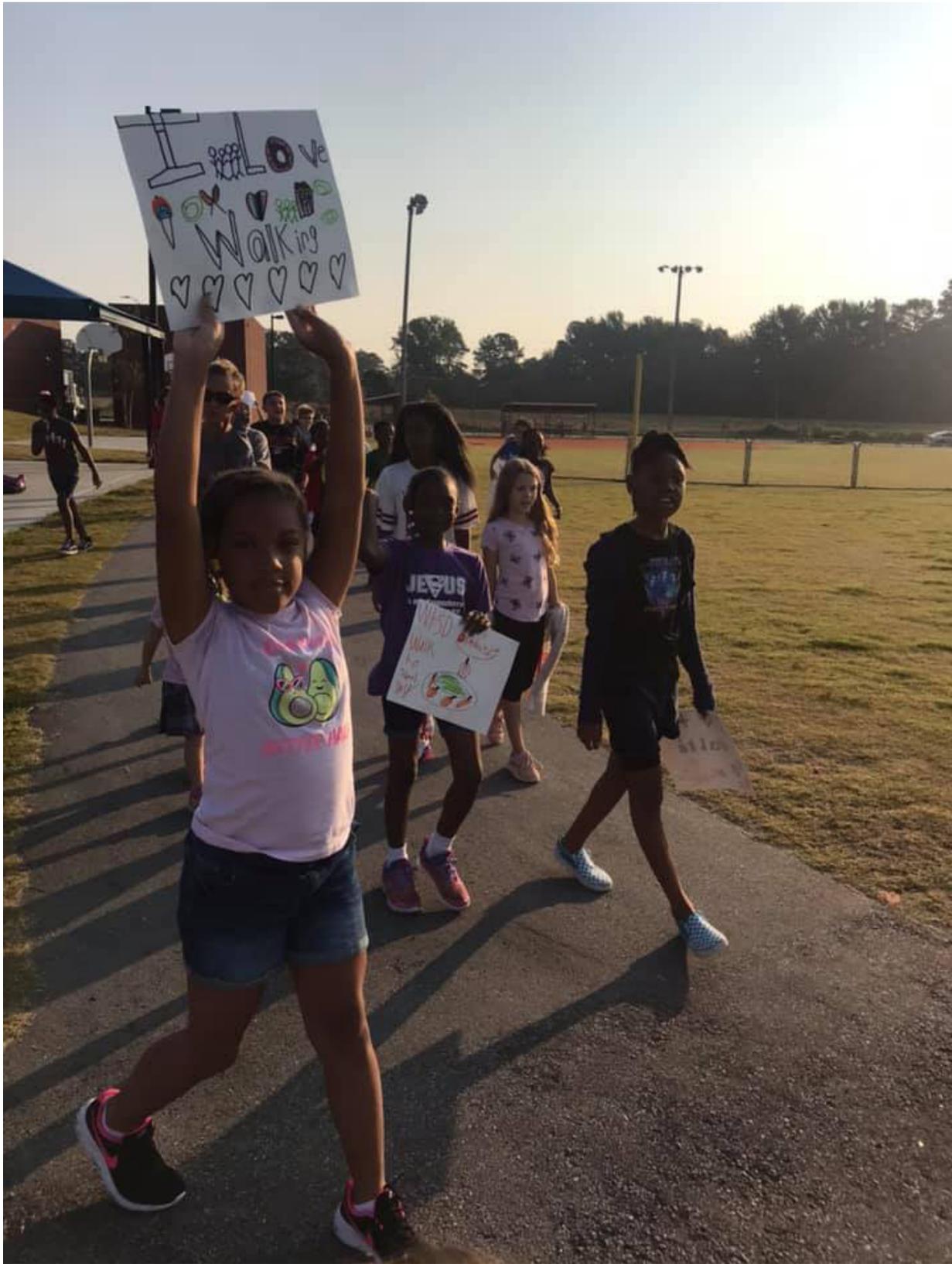
COMMUNITY ENGAGEMENT

COMMUNITY ENGAGEMENT APPROACH

Community engagement is an essential part of any planning process. The most effective plans are firmly rooted in the realities and visions of the communities that created them. This plan uses a combination of input from community members, the Open Space and Greenways Advisory Committee (OSAG), and Town staff to inform the development of Rolesville’s recommended greenway network, policies, project priorities, and action plan.

Rolesville Greenways and *Rolesville Bikes* were developed concurrently in order to maximize opportunities for input and feedback from the community and staff. As a result, the community engagement efforts for both plans were merged. The combined engagement process was intended to be inclusive, offering a variety of opportunities and methods for community members to have a platform for expressing their input on greenway and bicycle priorities. The process included the following elements: three steering committee meetings, a community survey, four interjurisdictional stakeholder meetings, Fall Fest pop-up event, an Open Space and Greenways Advisory Committee input meeting, a project prioritization survey, a Town Board input meeting, and a public meeting. Due to associated restrictions from the Covid-19 pandemic and comfort level from participants for public gatherings, some engagement elements were shifted to virtual platforms. The results from the community meetings and surveys for the greenway plan are summarized in this chapter.





Students in the Rolesville Elementary School Walking Club participate in Walk to School Day.

STEERING COMMITTEE

The *Rolesville Greenways* steering committee was composed of representatives from the Town of Rolesville, the Open Space and Greenway Advisory Committee, Chamber of Commerce, residents, local homeowner associations, the local school district, Wake County, Town of Wake Forest, Capital Area Metropolitan Organization, Triangle J Council of Governments, and NCDOT. Steering committee members met three times throughout the planning process and provided guidance for the plan by reviewing and sharing feedback on relevant data, community engagement efforts, greenway network recommendations, priority projects, policy recommendations, and implementation strategies. Steering committee members also supported the planning process by disseminating information and communication materials to the public.

STEERING COMMITTEE MEMBERS

JG Ferguson,

Town of Rolesville Parks and Recreation Director

Kelly Arnold,

Town of Rolesville Town Manager

Kristen Stafford,

Town of Rolesville Parks and Recreation

Meredith Gruber,

Town of Rolesville Planning Director

Shelly Raby,

Town of Rolesville Planning Department

Roy Holloway,

Rolesville Police Department

Donnie Lawrence,

Asst. Chief Rolesville Fire Dept.

Paul Vilga,

Rolesville Town Commissioner

Terry Marcellin-Little,

Rolesville OSAG Committee

Derek Versteegen,

Rolesville OSAG Committee

Monique Dismuke,

Granite Falls Community HOA

Erik Plesset,

HOA Representative

Lou Sellett,

Rolesville Community Representative

Betsy Wall,

Rolesville Community Representative

Mark Hayek,

Rolesville Community Representative

Vann Holland,

Rolesville Community Representative

Daralyn Sacarello,

Rolesville Chamber

Ellen Ransom,

Rolesville Chamber Foundation

Olga Dovoric,

Rolesville Rotary

Thad Sherman,

Rolesville Middle School

Kaley Huston,

Planner, Triangle J Council of Governments

Kenneth Withrow,

Capital Area Metropolitan Planning Organization

Jenisha Henneghan,

Triangle J COG Area Agency on Aging

Dylan Bruchhaus,

Wake Forest Planning Department

Deborah Fowler,

Wake County Parks, Recreation, & Open Space

Bob Deaton,

NCDOT Division 5

Jennifer Delcourt,

Wake Co. Safe Routes to School Coordinator

STEERING COMMITTEE MEETING #1

Held on June 23, 2021, the first steering committee meeting served as the project kick-off for the Rolesville greenway plan. The meeting included an overview of previous planning efforts, a project visioning exercise, a review of existing conditions, an overview of the community participation approach, and an exercise to identify key destinations and opportunities and challenges.

KEY TAKEAWAYS:

- Prioritize connections to Frazier Farm Park, Rolesville High School and Middle School.
- Greenway connections needed to neighboring communities, such as Wake Forest and Raleigh via Heritage East Greenway and Sanford Creek Greenway to Smith Creek and Neuse River Trail.
- Prioritize requirements for developers to build planned greenways as development occurs.
- Improve greenway crossings, especially along Rogers Rd, Louisburg Rd, and Young St.
- Committee members defined success for the greenway plan. Responses are included below.



STEERING COMMITTEE MEETING #2

Held on October 26, 2021, the second steering committee meeting provided an overview of draft recommendations for the Rolesville greenway plan. The meeting included a review of community survey results, draft vision and goals, draft network recommendations, proposed greenway facility types and intersection treatments, prioritization criteria, and draft policy recommendations. Steering Committee members were asked to provide feedback on network recommendations through an interactive mapping exercise.

KEY TAKEAWAYS:

- Proposed network recommendations improve overall greenway connectivity across Rolesville.
- Consider additional network connections between Sanford Creek and Toms Creek corridors.
- Continue coordination with neighboring jurisdictions on proposed greenways facilities across municipal and county boundaries, especially to Wake Forest along Jones Dairy and Chalk Rd.
- Consider a pedestrian bridge over Louisburg Rd at Young St to provide a safe connection to Rolesville High School and neighborhoods south of Downtown.

STEERING COMMITTEE MEETING #3

Held on May 24, 2022, the third steering committee meeting provided a review of the draft greenway plan, which included a review of greenway network recommendations, policy recommendations, priority projects, and implementation strategies. Steering committee members provided input on project priorities, the action plan, and general comments on the overall plan.

KEY TAKEAWAYS:

- Overall support of the draft greenway plan.
- Greenway network priorities provide guidance on next steps in project development.
- Consider adding to proposed policy recommendations to ensure that developers build planned greenways as they are mapped in the draft network.

COMMUNITY SURVEY

The purpose of the community survey for the Rolesville greenway plan was to introduce and gauge public support of the project, learn of the community's goals and objectives for the greenway plan, solicit feedback on the greenway network regarding opportunities and constraints, fulfill requests for information on the planning process, and develop an email contact list for those interested in staying involved in the planning process. The survey was launched on July 1, 2021, and was open for public comment through August 13, 2021. There were 284 survey responses and approximately 200 comments.

KEY TAKEAWAYS:

- Desire for improved greenway connections to neighborhoods such as Carlton Pointe, Cedar Lakes, the Villages, and Hampton Pointe; schools; commercial areas along Main St, Rogers Rd, and Granite Falls Blvd; parks such as Main St Park, Mill Bridge Nature Park, and the future Frazier Farm Park; and neighboring communities, such as Wake Forest and Raleigh.
- Need for safer greenway crossings at intersections and mid-block street crossings, especially along Rogers Rd to complete the missing link between Heritage Creek Greenway and Mill Bridge Park Greenway/Sanford Creek Greenway.

50%

of survey participants use greenways more than they did before the Covid-19 pandemic

69%

of survey participants use greenways in Rolesville at least a few times a month

89%

of survey participants would use greenways more often if the network was expanded



ROLESVILLE'S BICYCLE & GREENWAY NETWORKS ARE GROWING.
What would you like to see in the future?

TAKE OUR SURVEY.
www.surveymonkey.com/r/BikeRolesvilleGreenways

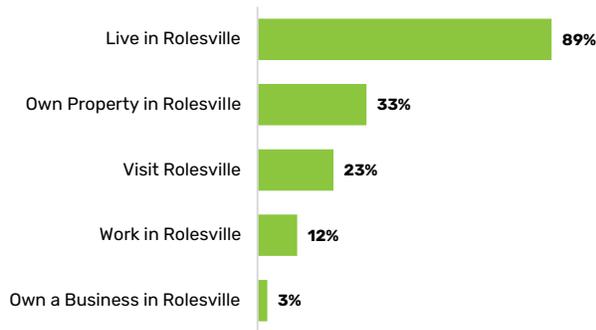


BICYCLE PLAN
OPEN SPACE + GREENWAY PLAN

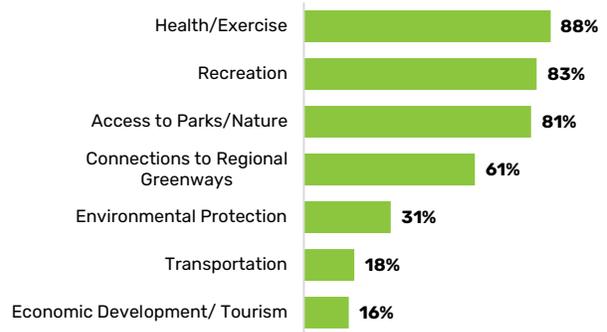
Scan this code
to take the survey.



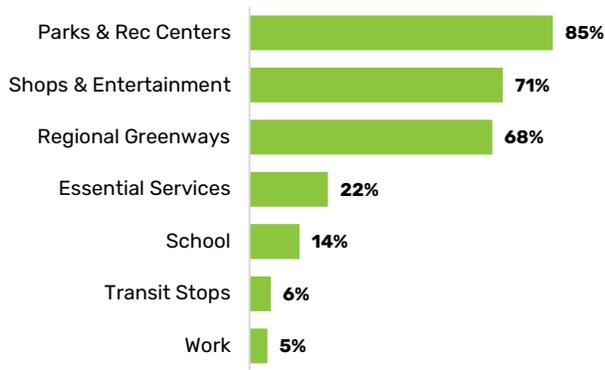
Relationship to Rolesville:



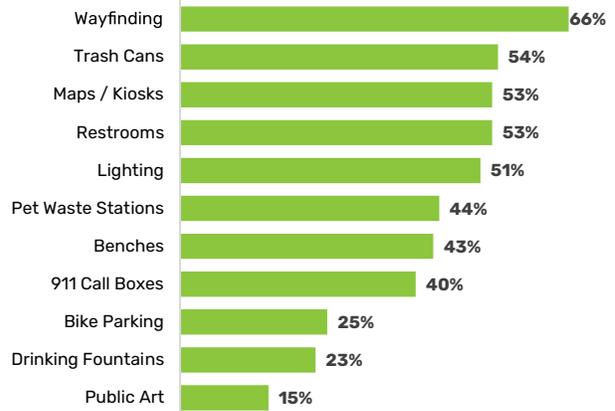
Benefits and Uses of Rolesville’s Greenway System Most Important to Participants:



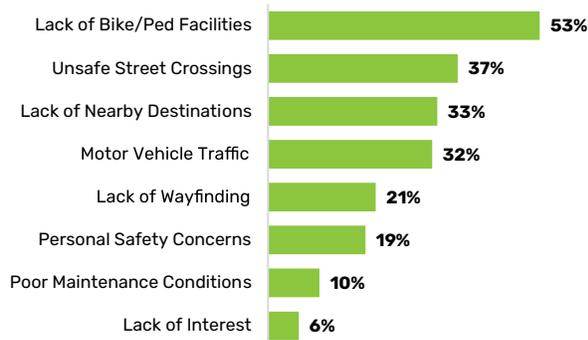
Destinations Rolesville Residents and Visitors would like to reach via Greenway:



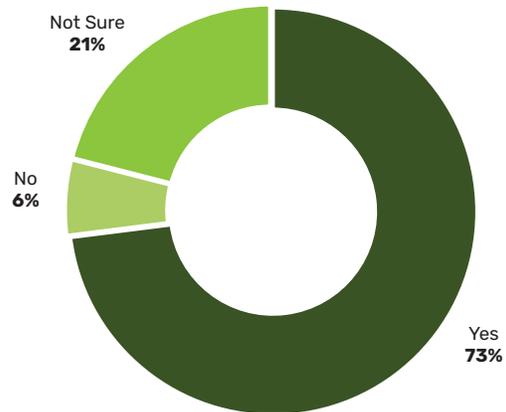
Important Greenway Amenities:



Factors that Discourage Greenway Usage in Rolesville:



Support for a Bond to Fund Greenways:



FALL FEST POP-UP EVENT + PROJECT PRIORITIZATION SURVEY

The Town of Rolesville's draft greenway and bicycle networks were released to the public in October 2021, as part of the planning process for the greenway plan and bicycle plan. On October 30, 2021, Town staff and the project team tabled at Fall Fest for community input on draft network recommendations. The project team spoke to approximately 100 residents and visitors of Rolesville and about 80 participants provided feedback on the draft network. Participants provided input on their priority projects and general comments on the overall network.

Following the public meeting, the project team created a plan webpage on the Town of Rolesville's website to provide project updates and to solicit additional feedback on draft network recommendations. The webpage includes a project overview, plan maps, meeting presentations, and a short survey for input on draft network recommendations and priority projects. The survey was open for public comment from November 19 - December 10, 2021. Approximately, 70 people filled out the survey. Participants provided general feedback and selected their priority on-street bicycle projects and priority greenway/sidepath projects.



Rolesville residents provide input on the Draft Bicycle and Greenway Networks at Fall Fest.

KEY TAKEAWAYS:

- Proposed greenway network is comprehensive – provides connections to schools, parks, existing greenways, Downtown, and the neighboring communities of Wake Forest and Raleigh. Support for moving forward with draft network recommendations.
- Proposed greenway network will provide increased access to the unique natural features in Rolesville.
- Community interest in creating more walkable areas with greenways and sidewalks, especially along Main St and Burlington Mills Rd.
- Support for sidepath recommendations along Rogers, Jones Dairy, and Chalk to provide direct connections to schools and neighborhoods.
- Support for greenway/sidepath connections to transit stops along Young St and Main St.
- Concerns for how connecting neighborhoods via greenway will impact the resident privacy and quiet feel of neighborhoods.
- Concerns about potential maintenance responsibilities and funding availability to implement the proposed greenway network.

**DRAFT GREENWAY NETWORK
KEY COMMUNITY PRIORITIES:**

- Rogers Rd Sidepath
- Redford Place Park Greenway
- Main St Sidepath
- Averette Rd Sidepath
- Heritage East-Mill Bridge Greenway Connector
- E. Young St Sidepath
- Harris Creek Greenway
- Burlington Mills Rd Sidepath
- Redford Place Park-Young St Connector
- Heritage East - Chalk Rd Greenway Connector

“Having greenway access and trails will make Rolesville a much more family-oriented town than it is now.”

- Survey Participant

PUBLIC MEETING

Held on May 25, 2022, the second public meeting provided community members with a project update and review of the draft greenway plan, which included a review of greenway network recommendations, policy recommendations, priority projects, and implementation strategies. Approximately 20 participants provided feedback on the draft plan. Participants provided input on project priorities and general comments on the plan.

KEY TAKEAWAYS:

- General support of the recommendations in the draft greenway plan.
- Business owners along Granite Falls Blvd are concerned about proposed separated bike lanes along Granite Falls Blvd and the impacts of the proposed facility on needed on-street parking.
- Community members voiced concerns about proposed greenways in environmentally-sensitive areas, especially within the Villages neighborhood.



**SHARE YOUR THOUGHTS ON THE TOWN OF ROLESVILLE
DRAFT BICYCLE PLAN + GREENWAY PLAN!
WEDNESDAY, MAY 25TH 4:30-6:30PM ROLESVILLE TOWN HALL**



The Town of Rolesville is seeking community input on the Draft Bicycle Plan and Greenway Plan. Attend the public meeting for project updates, review plan recommendations, and provide feedback. A virtual meeting option will also be available via Zoom. For meeting details, visit: <https://www.rolesvillenc.gov/parks-recreation/parks-and-facilities/bicycle-ped-plan-and-open-space-greenway-plan-update>

INTERJURISDICTIONAL MEETINGS

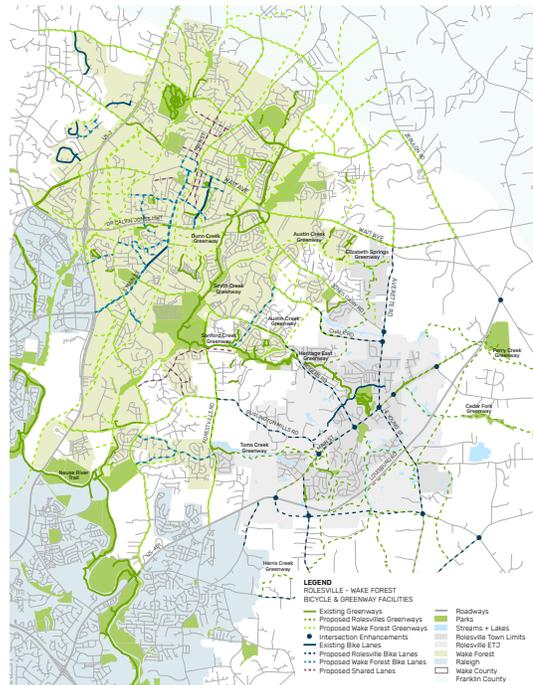
As a collaborative effort, *Rolesville Greenways* included coordination with neighboring jurisdictions on greenway connectivity across municipal boundaries. Municipal and county staff from the Town of Wake Forest, City of Raleigh, Wake County, and Franklin County provided an overview of their community's planned greenway networks, maintenance and resurfacing practices, design standards, and funding sources. At each meeting, the project team, Town staff, and partners discussed specific greenway connections, maintenance considerations, and implementation strategies. Key takeaways from the meetings are highlighted below.

TOWN OF WAKE FOREST

The project team met with Town of Wake Forest Planning, Transportation and Parks and Recreation staff on July 30, 2021 to discuss greenway and sidepath connections between Rolesville and Wake Forest.

KEY TAKEAWAYS:

- Planned bicycle and pedestrian connections, primarily as sidepath recommendations, will be development driven along the following corridors: Averette Rd, Zebulon Rd, Wake Ave, Chalk Rd, Burlington Mills Rd, Forestville Rd, and Rogers Rd.
- The highest priority corridor for Wake Forest is the completion of the Smith Creek Greenway, which will connect the Town of Wake Forest and Rolesville with the Neuse River Trail.
- Wake Forest assumes maintenance responsibility of developer-built greenways that are planned greenway connections.

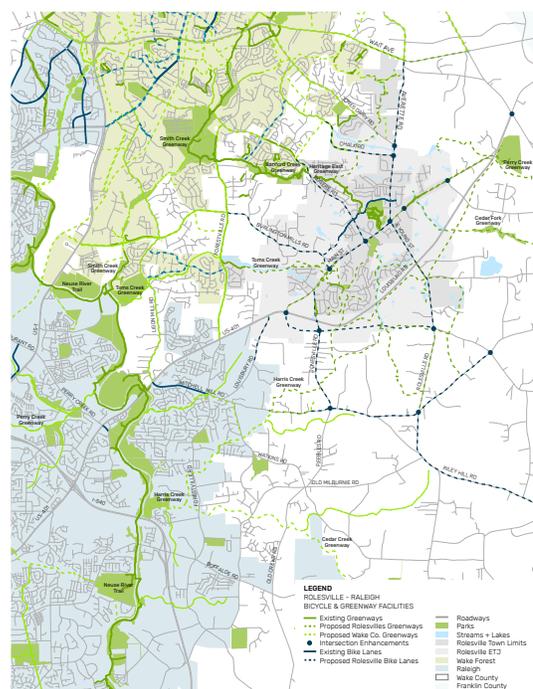


CITY OF RALEIGH

The project team met with City of Raleigh Transportation and Parks and Recreation staff on August 2, 2021 to discuss greenway connections between Rolesville and Raleigh.

KEY TAKEAWAYS:

- Harris Creek Greenway is a medium-to-high priority for Raleigh. This corridor will provide another connection to the Neuse River Trail.
- Raleigh is prioritizing a connection between the Neuse River Trail and existing Mitchell Mill Rd bike lanes.
- Raleigh is installing bike lanes along Forestville Rd with future roadway improvements. The proposed bike lanes may be upgraded to a sidepath in the future.
- Cedar Creek Greenway is medium-high priority for Raleigh.
- The US-401 sidepath proposed between Raleigh and Rolesville is included in Raleigh's Bike Plan.

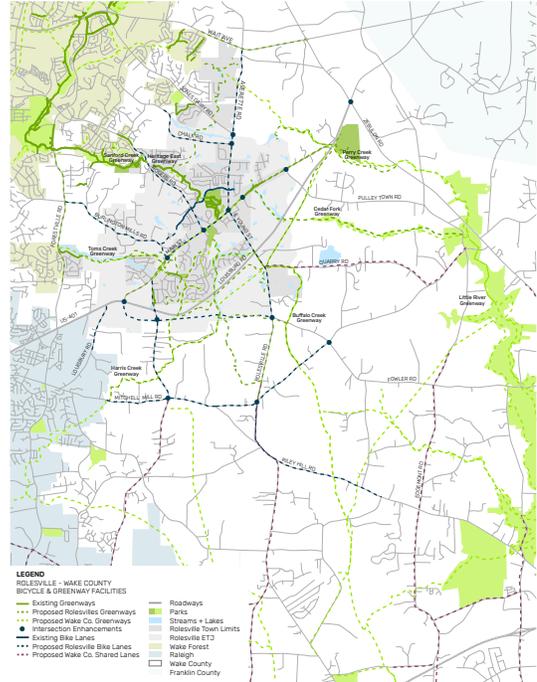


WAKE COUNTY

The project team met with Wake County Planning and Parks and Recreation staff on August 10, 2021 to discuss greenway connections between Rolesville and Wake County.

KEY TAKEAWAYS:

- High priority projects from the Wake County Greenway System Plan include Smith Creek Greenway to the Neuse River Trail. Longer-term priorities include Harris Creek Greenway, Cedar Fork Creek Greenway, Perry Creek Greenway, Buffalo Creek Greenway, and Little River Greenway.
- Wake County has funding for greenway development as part of the County's most recent bond. Available funding will likely focus on high-priority greenway segments in the county that connect communities.
- Wake County is exploring opportunities to develop the Little River Greenway, providing connections between Rolesville and Zebulon. Zebulon has expressed interest in the greenway connection.
- Wake County is currently exploring funding opportunities to address increasing maintenance responsibilities for bicycle and pedestrian facilities.

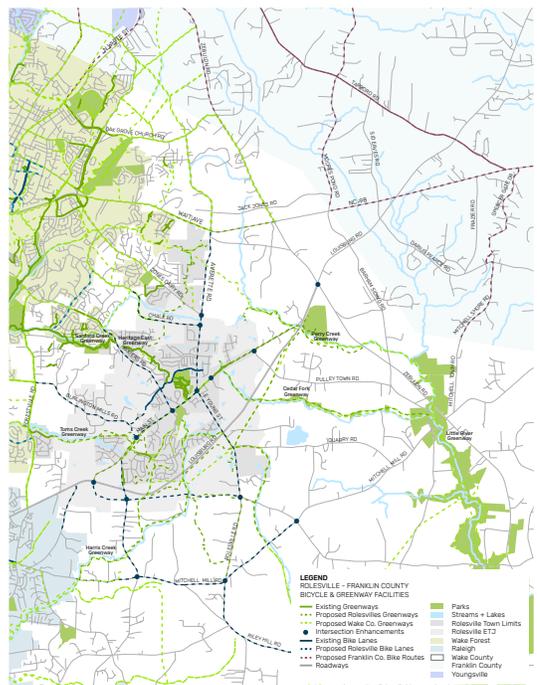


FRANKLIN COUNTY

The project team met with Franklin County Planning and Parks and Recreation staff on August 3, 2021 to discuss greenway connections between Rolesville and Franklin County.

KEY TAKEAWAYS:

- Franklin County recently adopted a County-wide bicycle and pedestrian plan in July 2021. Connections to newly proposed bicycle and pedestrian facilities in the county should be explored by the project team.
- The focus of the county greenway network is to connect municipalities within and adjacent to Franklin County. Key greenway connections include Frazier Farm Park and the Little River.
- The priority greenway corridors in Franklin County include connections between Wake Forest and Youngsville via Dunn Creek and the proposed rail-trail between Franklinton and Louisburg. Rolesville can explore connections this corridor via Wait Ave and Zebulon Rd.







04 RECOMMENDATIONS

RECOMMENDATIONS

As mentioned in the previous chapter, *Rolesville Greenways* and *Rolesville Bikes* were developed concurrently. While many elements of both plans are shared, the greenway plan primarily addresses the recreational needs of Rolesville residents and visitors by developing a comprehensive greenway network. The greenway plan builds off of network and policy recommendations developed in the *Town of Rolesville Parks and Recreation Master Plan*, *Comprehensive Bike Plan*, *Open Space + Greenway Plan*, and recent greenway system updates recommended by the Open Space and Greenway Committee. This chapter translates the vision for an accessible greenway system that connects people, parks, and destinations in the community into a strategic set of recommendations with proposed strategies for network, policy, and trail amenity development.

GREENWAY NETWORK RECOMMENDATIONS

Rolesville's greenway facility recommendations establish a comprehensive greenway and trail system that complements recent active transportation and parks planning efforts. Recommendations were developed based on community and stakeholder input, a review of existing conditions, key destinations and connections identified through the planning process, and a prioritization process. The proposed greenway system provides a network of greenways and sidepaths that is accessible and feels safe for people of all ages and abilities.

DESIGN STANDARDS + TYPICAL SECTIONS

The standards and methods in which greenways are designed impact the experience and safety of the diverse set of users that take to greenways and trails for a variety of recreational, utilitarian, health, and transportation purposes. This section illustrates aspects of facility design to help guide future actions by the Town of Rolesville and its partners in planning for, designing, constructing, and maintaining greenways that connect to a variety of destinations, promotes a diverse user experience, and is built to a maintainable scale.

MATERIALS SELECTION

Factors to be considered in the selection of materials for greenways include anticipated facility type (recreational versus commuter), expected use activities (i.e. walking/bicycling/running/roller blading), age and ability of trail users, environmental conditions, construction cost, maintenance burden and costs, and funding source requirements among others. A variety of materials are described and illustrated below.

PAVED SURFACE

Paved trail surfaces such as asphalt or concrete offer great accessibility to accommodate users of all ages and abilities. Asphalt pavement tends to be the most popular and cost effective for paved trails. Concrete pavement is more durable, but costs more than asphalt pavement. As such, concrete trails are typically more common in urban settings (where projected user volumes are high or the trail may be subject to vehicular loading more often) or in areas subject to heavy flooding forces that may cause damage to the trail.

NATURAL SURFACE

Compacted aggregates and compacted native soil are two types of natural surfaces considered for this study. Both are budget-friendly options that have been implemented in trail systems across North Carolina and beyond to provide a durable alternative to paved trails.

Compacted aggregates have proven to be a durable, affordable, and readily available means of providing a natural surface for trail construction. Granite fines are a commonly used material due to their availability from local quarries and their ability to achieve compaction of a level surface that is accessible to most users. Proper compaction and handling adjacent drainage are keys to the success of using this material. Annual maintenance is required to ensure that the trail's crown pitches to

drain. This typically includes laying and grooming additional aggregate as necessary to ensure that water rills and deep grooves do not form within the trail surface as a result of regular rain events. It is critical to establish drainage adjacent to the trail during construction to ensure concentrated runoff is not allowed to cross the trail perpendicularly. Over time these types of flows will erode the trail and surfacing.

One of the cheapest and most easily constructed natural surface options is compacted native soil. Similar to compacted aggregate, this surfacing method relies heavily on material compaction and adjacent drainage. The existing soil must be able to achieve compaction levels of 95-98% to ensure trail integrity. If native soil is unsuitable, material may be imported at an additional cost and installed with a roller and small excavating equipment depending on topography. Surface drainage should not be allowed to cross perpendicular to the trail to prevent washout and rills within the walking surface. Annual maintenance is required and includes re-compaction to ensure the trail remains crowned to properly pitch water to adjacent drainage features. Installation of additional soil in rain wash out areas may also be required.



Asphalt Trail - Lower McAlpine Greenway, Charlotte, NC



Concrete Trail - Downtown Greenway, Greensboro, NC



Compacted Aggregate Trail - Peavine Trail, Marion, NC



Compacted Soil Trail - American Tobacco Trail, Apex, NC

BOARDWALK

Material options for boardwalk decks include timber and concrete (cast-in-place or pre-cast). Timber has traditionally been used for its lower construction cost, but requires regular maintenance and deck repairs /replacement to extend its functional life. Concrete deck options typically cost more upfront but have lower life-cycle costs due to reduced maintenance requirements. Safety rails and handrails should be provided in accordance with applicable building codes. Timber, metal, and composite railing options are available depending on site conditions, desired aesthetics, and budget. Boardwalk substructure design and materials may vary depending upon specific site conditions and geotechnical recommendations.



Concrete Deck Boardwalk - Toby Creek Greenway, Charlotte



Timber Deck Boardwalk - White Oak Creek Greenway, Cary

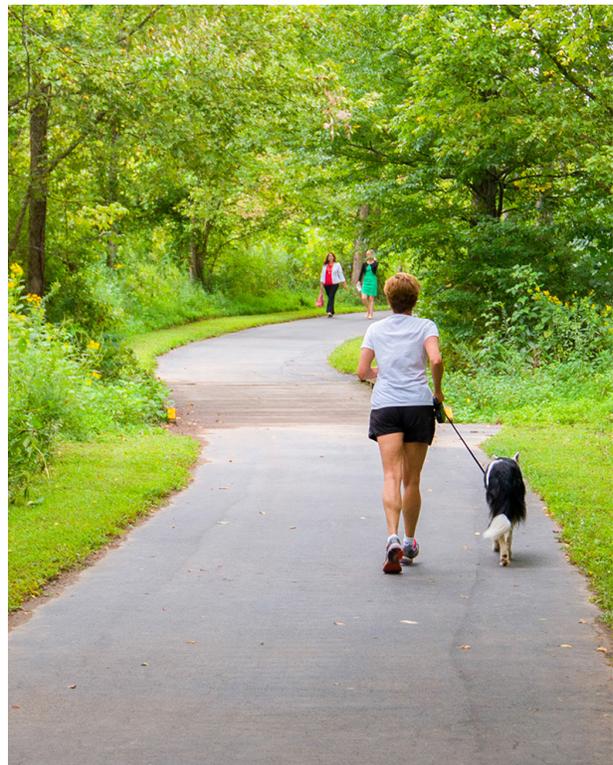
TYPICAL CROSS SECTIONS

GREENWAYS (PREFERRED)

A 10' wide paved trail is recommended for the preferred greenway typical section, as it requires the least amount of long-term maintenance and greater eligibility from the widest variety of funding sources.

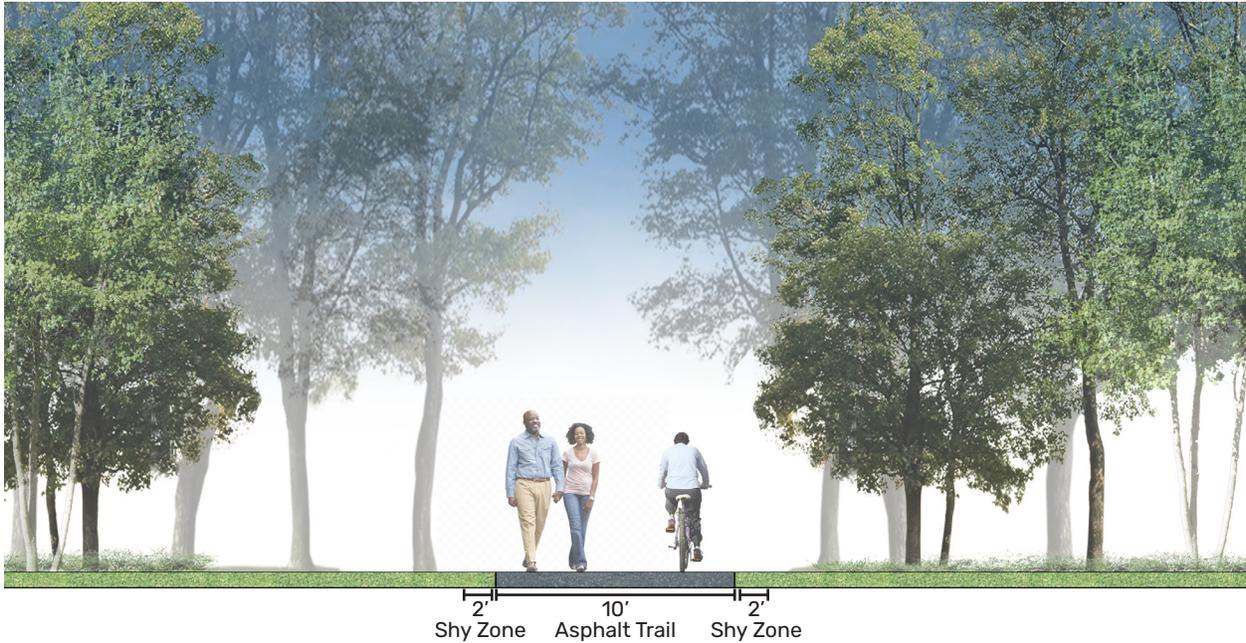
Asphalt pavement is recommended based on site conditions within Rolesville, anticipated greenway use, and cost considerations. Limited sections of concrete pavement may be required to accommodate site conditions as necessary.

Shoulders or shy zones of 2' or greater should be kept clear of any obstacles to ensure full greenway width remains usable.



Asphalt Surface Greenway - Mecklenburg County, NC

GREENWAYS (PREFERRED) TYPICAL SECTION



GREENWAYS (CONSTRAINED)

A slightly narrower 8' wide natural surface or asphalt trail may be considered for segments within the greenway network that are constrained due to environmental or right-of-way issues. This typical section may also be considered for neighborhood connections to greenway corridors.

When considering the use of natural surface for constrained or connector segments, it is important to evaluate the overall life-cycle costs of unpaved surfaces, which may be higher due to long-term maintenance requirements. As in the preferred typical section, shoulders or shy zones of 2' or greater should be kept clear of any obstacles to ensure full greenway width remains usable.

GREENWAYS (CONSTRAINED) TYPICAL SECTION



8' Compacted Aggregate Surface Greenway - Asheboro, NC

BOARDWALK

A 10' clear width elevated boardwalk is recommended in areas where greenways cross streams or wetland areas. For deck surface considerations, concrete provides greater friction to reduce the risks of slips and falls and reduces long-term maintenance burdens compared to those associated with other materials such as timber. Timber safety rails and handrails are shown with a timber pile substructure system the typical section below. Boardwalk substructure design and materials may vary depending upon specific site conditions and geotechnical recommendations.

BOARDWALK TYPICAL SECTION

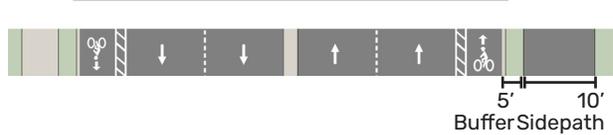


Concrete Deck Boardwalk on Lake Crabtree, Cary, NC

SIDEPATH

A 10' paved sidepath is recommended along roadway corridors where the greenway network connects with the transportation network, allowing residents and visitors to reach destinations in residential neighborhoods and commercial areas. Asphalt pavement is recommended based on site conditions within Rolesville, anticipated greenway use, and cost considerations. Limited sections of concrete pavement may be required to accommodate site conditions as necessary. A five-foot planting strip is provided to separate users from motorized traffic on the adjacent roadway. Planting strip width may be reduced in highly constrained areas where curb and gutter is present.

SIDEPATH TYPICAL SECTIONS



NC-54 Sidepath, Chapel Hill, NC

INTERSECTION TREATMENTS + CROSSINGS

Most conflicts between greenway users and motor vehicles occur at intersections. Current roadway design decisions increase exposure and risk for bicyclists and pedestrians, reduce user safety and comfort of the greenway network, and discourage biking and walking between destinations. As communities work to make facilities safer for users of all ages and abilities, intersection design is key.

CROSSWALK

A crosswalk is a designated place for pedestrians and greenway users to cross a road at an intersection or mid-block crossing. High-visibility crosswalk markings, such as bar pairs, continental, and ladder are recommended to alert motorists of greenway crossing points across roadways. Inlay or thermoplastic tape is also recommended for highly-reflective crosswalk markings. Crosswalks should be accompanied by MUTCD pedestrian warning and advance yield signs W11-2, W16-7P, and R1-6 to alert motorists of a crosswalk.



High-Visibility Mid-Block Greenway Crosswalk



Pedestrian Refuge Island Crossing



High-Visibility Greenway Crosswalk at a Street Intersection

RECTANGULAR RAPID FLASH BEACON (RRFB)

A Rectangular Rapid Flash Beacon is a pedestrian-actuated signal used in combination with pedestrian or trail crossing warning signage to improve safety at uncontrolled, marked crosswalks. The device includes two rectangular-shaped yellow indications, each with an LED-array-based light source, that flash with high frequency when activated. RRFBs should be accompanied by MUTCD pedestrian warning and advance yield signs W11-2 and W16-7P to alert motorists of a crosswalk.

RRFBs are placed on both ends of a crosswalk. If the crosswalk contains a pedestrian refuge island or other type of median, an RRFB should be placed to the right of the crosswalk and on the median (instead of the left side of the crosswalk). RRFBs typically draw power from standalone solar panel units but may also be wired to a traditional power source.



Rapid Flash Beacon Crosswalk along a Trail

HIGH INTENSITY ACTIVATED CROSSWALK (HAWK)

A High-Intensity Activated Crosswalk signal, also known as a Pedestrian Hybrid Beacon, is a traffic control signal designed to help pedestrians and greenway users safely cross streets. HAWK signals like other push-button activated traffic signals stop traffic with a red signal, allowing pedestrians to cross with a WALK signal. In addition to the signal head displays, stop lines, and marked crosswalks are required at HAWK crossings. Advance stop lines should be used on multi-lane crossings to reduce the potential for second threat crashes. HAWKs should be accompanied by MUTCD pedestrian warning and advance yield signs W11-2, W16-7P, R10-23, and R9-8 to alert motorists of the signalized pedestrian crossing.



High Intensity Activated Crosswalk Signal at a Street Intersection

SHARED USE BRIDGE

A 10' clear width bridge is recommended for grade-separated crossings over streams and roadways to connect greenway sections at either end of the bridge. A variety of design types are available including truss bridges, girder (beam) bridges, arch bridges, suspension bridges, and cable-stayed bridges among others. Bridge design type selection will vary depending on specific site conditions, cost constraints, and potential impacts to traffic during construction. Safety rails and handrails should be provided in accordance with applicable building codes and NCDOT Bridge Policy. Minimum vertical clearance over roadways shall be provided based on NCDOT Bridge Policy requirements. For deck surface considerations, concrete provides greater friction to reduce the risks of slips and falls and reduces long-term maintenance burdens compared to those associated with other materials such as timber.

BRIDGE TYPICAL SECTION

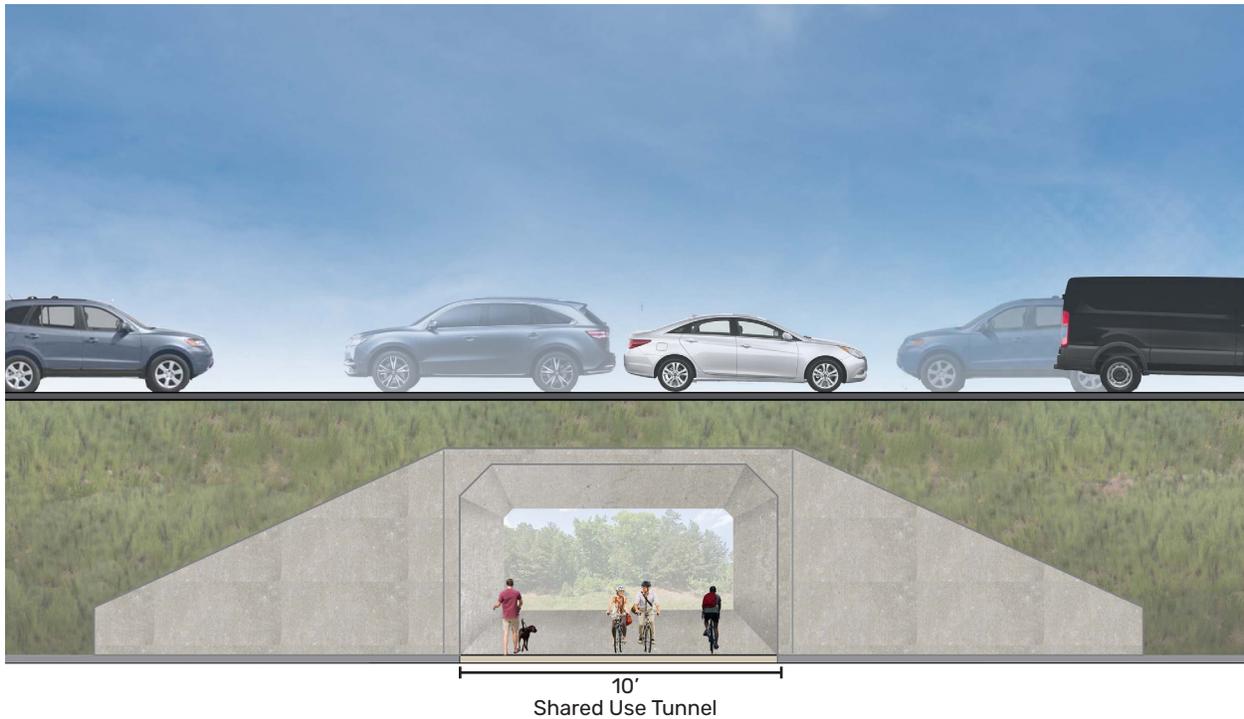


Concrete Deck Bridge along the Neuse River Trail, Raleigh, NC

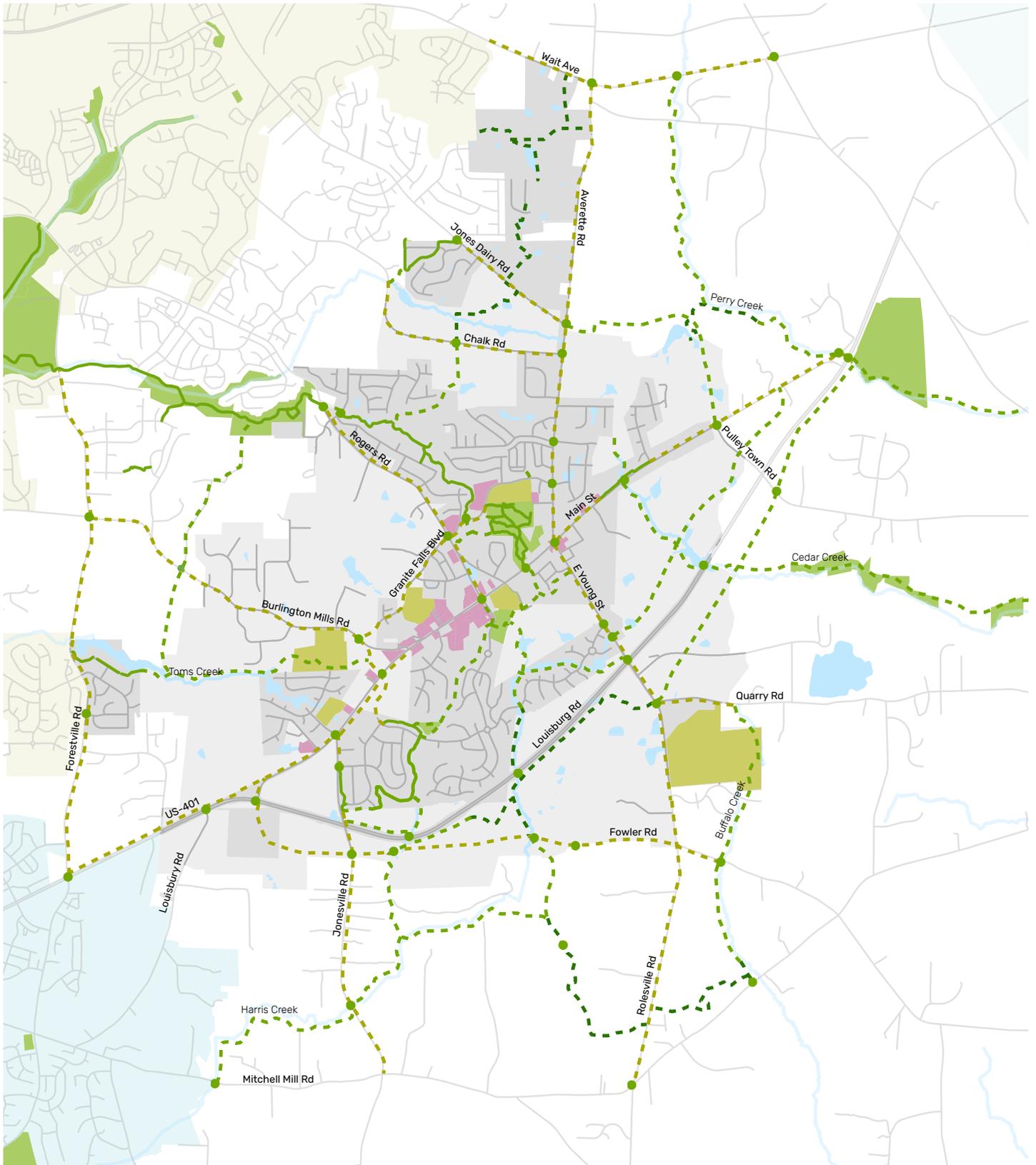
SHARED USE TUNNEL

A 10' clear width, concrete paved tunnel is recommended for grade-separated crossings under roadways to connect greenway sections at either end of the tunnel. The desired minimum vertical clearance inside the tunnel is 12 feet. Designs should maximize the vertical clearance within the tunnel to the extent practicable based on specific site constraints to maintain a sense of openness and security for users. Lighting inside the tunnel is recommended to ensure continual visibility and user safety. Consideration should also be given to potential incorporation of dynamic lighting, vibrant murals or other public art elements that create a comfortable and inviting environment for users.

BRIDGE TYPICAL SECTION



Davis Dr Side-Street Trail Greenway, Cary, NC



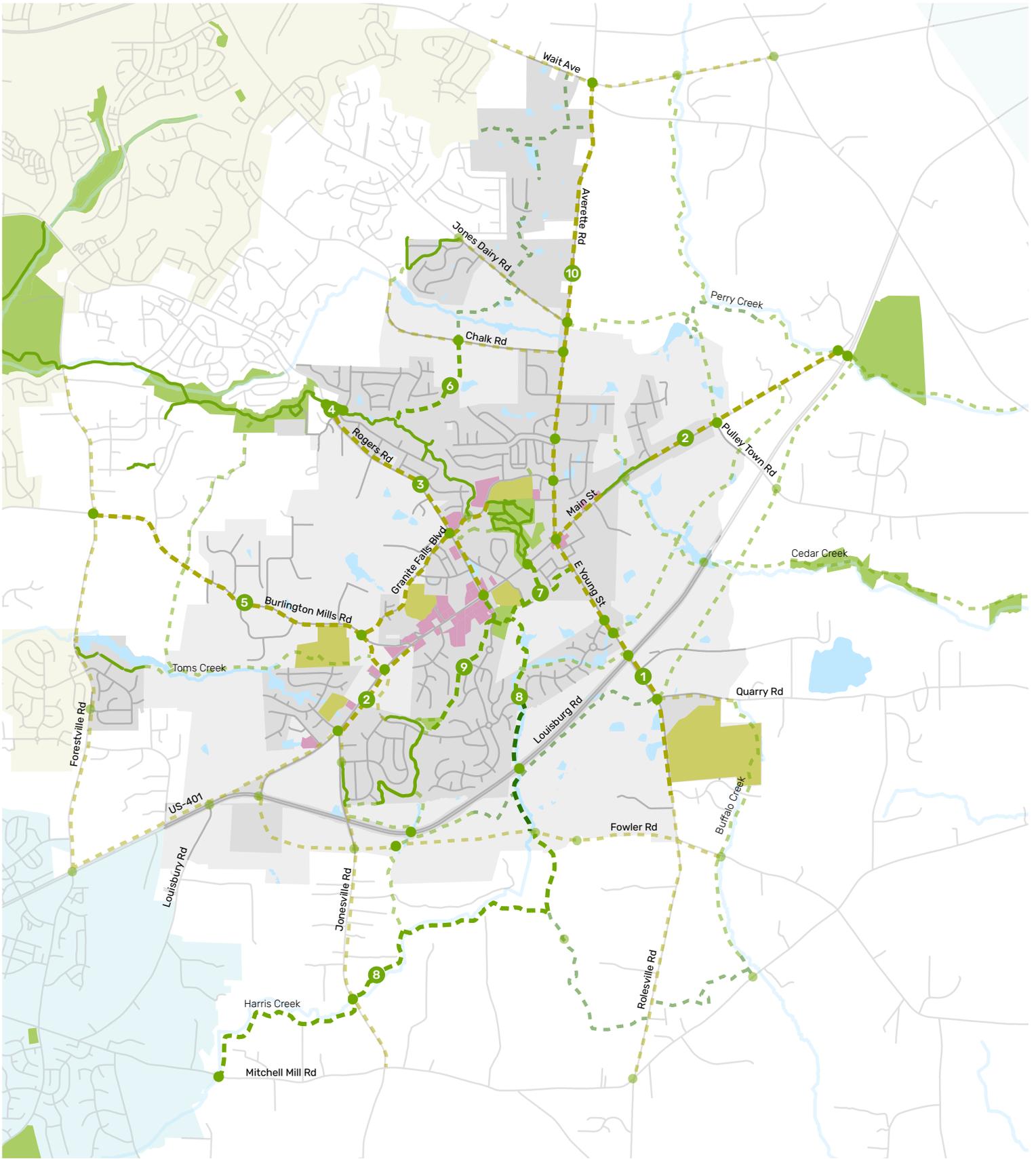
**TOWN OF ROLESVILLE
RECOMMENDED GREENWAY + SIDEPATH NETWORK**

LEGEND

- Proposed Greenways
- Proposed Sidepaths
- Developer-Built Greenways (in development)
- Proposed Intersection Treatment
- Existing Greenways
- Civic/Commercial Centers
- Schools
- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County

GREENWAY NETWORK RECOMMENDATIONS

GREENWAY/SIDEPATH RECOMMENDATION	INTERSECTION TREATMENTS
E. YOUNG ST	Super Street Crosswalk Accommodations, Crosswalks, RRFB
MAIN ST SIDEPATH	Crosswalks, Shared Use Tunnel, RRFB
ROGERS RD SIDEPATH	Crosswalks, RRFB
HERITAGE EAST- MILL BRIDGE GREENWAY CONNECTOR	Crosswalks, RRFB
BURLINGTON MILLS RD SIDEPATH	Crosswalks
HERITAGE EAST-CHALK RD GREENWAY CONNECTOR	Crosswalks, RRFB
CHALK RD SIDEPATH	Crosswalks
REDFORD PLACE PARK GREENWAY	Crosswalks
REDFORD PLACE PARK - YOUNG ST CONNECTOR	Crosswalks
HARRIS CREEK GREENWAY	Crosswalks, Shared Use Tunnel
CARLTON POINTE - HARRIS CREEK GREENWAY CONNECTOR	Crosswalks
POINT-KALAS FALLS GREENWAY CONNECTOR	Crosswalks, Shared Use Tunnel
W. YOUNG / AVERETTE RD SIDEPATH	Crosswalks, RRFB
FORESTVILLE RD SIDEPATH	Crosswalks
JONESVILLE RD SIDEPATH	Crosswalks
WAIT AVE SIDEPATH	Crosswalks
JONES DAIRY RD SIDEPATH	Crosswalks
JONES DAIRY RD EXTENSION SIDEPATH	Crosswalks
US-401 SIDEPATH	Crosswalks, Super Street Crosswalk Accommodations
LOUISBURG RD GREENWAY	Crosswalks
ROLESVILLE RD SIDEPATH	Crosswalks, RRFB
QUARRY RD SIDEPATH	Crosswalks
GRANITE FALLS BLVD SIDEPATH	Crosswalks
VIRGINA WATER DR SIDEPATH	Crosswalks
FOWLER RD SIDEPATH	Crosswalks, Super Street Crosswalk Accommodations
YOUNG ST-MAIN ST GREENWAY CONNECTOR	Crosswalks
BUFFALO CREEK GREENWAY	Crosswalks
TOMS CREEK GREENWAY	Crosswalks
TOMS CREEK - MILL BRIDGE GREENWAY CONNECTOR	Crosswalks, RRFB
PERRY CREEK GREENWAY	Crosswalks, Shared Use Tunnel
CEDAR CREEK GREENWAY	Crosswalks, Shared Use Tunnel



**TOWN OF ROLESVILLE
DRAFT GREENWAY NETWORK
PRIORITY PROJECTS**

LEGEND

- Proposed Greenways
- Developer Built Greenways (in development)
- Proposed Greenway Intersection Treatment
- Existing Greenways
- Civic/Commercial Centers
- Schools
- 1 Priority Project
- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County

PRIORITY PROJECTS

Eleven priority projects were identified with input from the community, steering committee members, and Town staff to guide the development of Rolesville's greenway network. Priority projects are listed in the adjacent call-out box and shown on the corresponding map on page 72. A feasibility analysis for the top three priority projects was developed to determine the recommended greenway corridor alignments, detailed cost estimates, and implementation needs. Project cut sheets were developed for the remaining priority projects, specifying project development details, design considerations, planning level-cost estimates, and proposed implementation partners. While these priority projects should be strongly considered for development in the near or mid-term, opportunities to develop other projects in the recommended greenway network should also be considered as they arise.

ROLESVILLE'S GREENWAY NETWORK PRIORITY PROJECTS:

1. Heritage East - Mill Bridge Park Greenway Connector
2. Harris Creek Greenway
3. **Granite Falls Blvd Sidepath**
4. **E. Young St Sidepath**
5. **Main St Sidepath**
6. **Rogers Rd Sidepath**
7. **Burlington Mills Rd Sidepath**
8. **Heritage East - Chalk Rd Greenway Connector**
9. **Redford Place Park - Young St Greenway Connector**
10. **Redford Place Park Greenway**
11. Averette Rd Sidepath

PRIORITIZATION METHODOLOGY + CRITERIA

Each project in Rolesville's greenway network was scored and ranked to determine how the project meets or does not meet each prioritization criteria. Projects that meet or strongly meet each criteria receive a score of 5 or 10, respectively. Projects that do not meet the criteria receive a score of 0. Projects can receive additional points under the Accessibility + Connectivity criteria if the project provides connections to destinations. Each project criteria corresponds to one of the five plan goals and are outlined below. Projects were also given additional points based on community input.



ACCESSIBILITY + CONNECTIVITY

Projects that provide connections and/or expand access to destinations, which include local recreation centers, parks, neighborhoods, schools, commercial centers, and employment centers.



REGIONAL CONNECTIVITY

Projects that provide connections between the greenway networks of Rolesville and neighboring communities (Wake Forest, City of Raleigh, Wake County, Franklin County).



SAFETY

Projects that address safety concerns along greenway corridors and propose safety improvements at crossings and trail access points.



EQUITY

Projects that prioritize the recreational and active transportation needs of vulnerable community members (children, seniors, persons with disabilities, and residents residing in underserved areas).



ENVIRONMENTAL PROTECTION

Projects that contribute to the protection and conservation of environmental sensitive lands and stream corridors and those that contribute to sustainable and responsible development.

PRIORITY PROJECTS FEASIBILITY ANALYSIS

A feasibility analysis for the top three priority projects was developed to determine the recommended greenway corridor alignments, detailed cost estimates, and implementation needs. These projects are Heritage East-Mill Bridge Park Greenway Connector (Segment 1), Harris Creek Greenway near Virginia Water Drive (Segment 2), and Granite Falls Blvd Sidepath (Segments 3/4/5). A feasibility study includes basic design elements, recommended cross sections, preliminary cost estimates, an assessment of the number of impacted properties, and an identification of opportunities and constraints for each recommended segment. The maps and tables on the following pages provide a high-level overview of all segments analyzed.

KEY CONSIDERATIONS

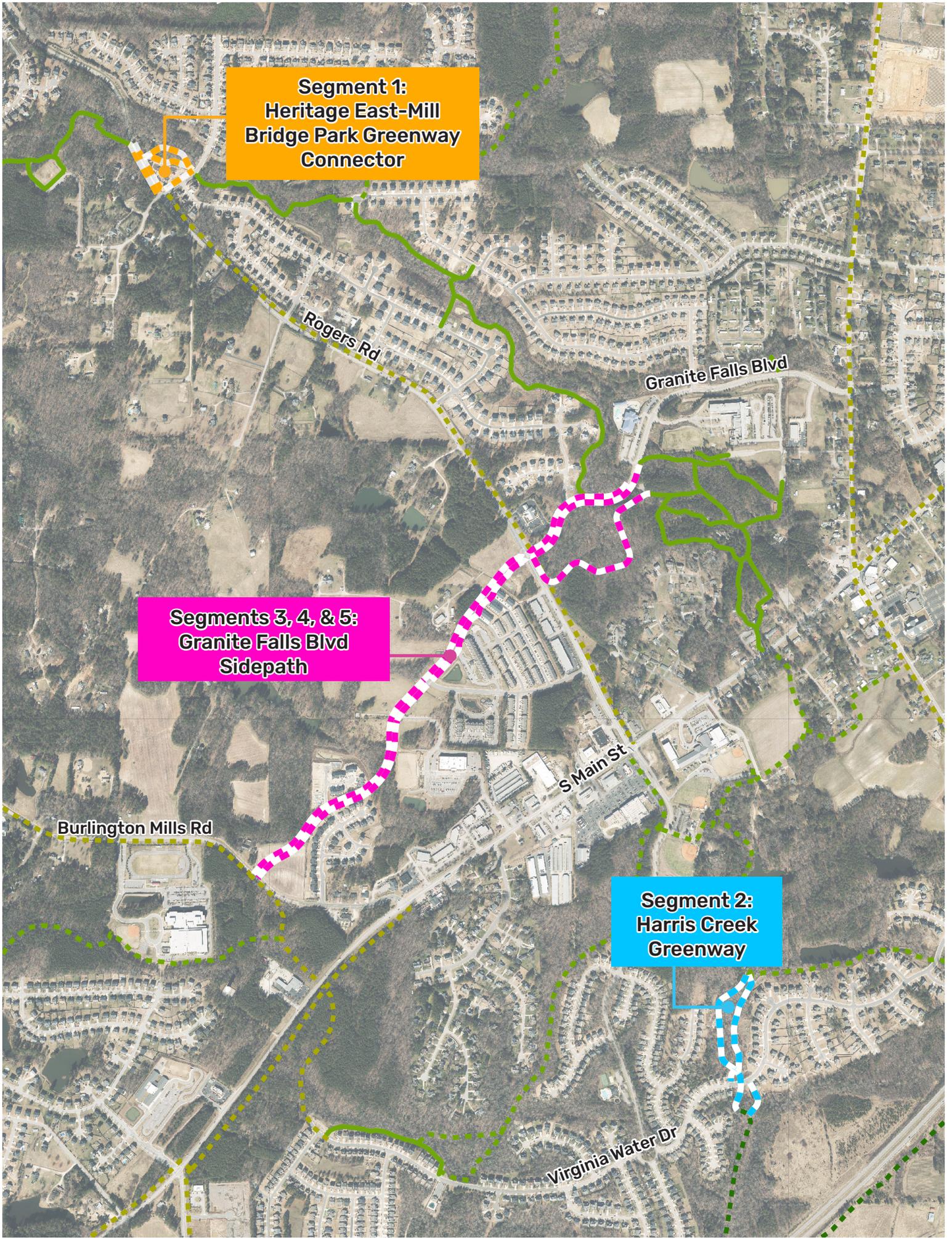
To support the development and evaluation of potential routes for these projects, an analysis of opportunities and constraints within each study area was performed. Key considerations included, but were not limited to the following:

- **ENVIRONMENT** - Connect users with natural resources while minimizing impacts to environmental features and habitat
- **SAFETY** - Address the safety needs of users of all ages and abilities in the route selection and roadway crossing recommendations.
- **PERMITTING** - Consider permitting requirements associated with the route and impacts to project cost and schedule.
- **REAL ESTATE** - Consider required permanent and temporary construction easements on publicly- and privately-owned land associated with the route.
- **CONNECTIVITY** - Make meaningful connections to transit and active transportation networks as well as employment centers and local neighborhoods.
- **CONSTRUCTIBILITY** - Evaluate route for ease of construction access, construction methods and impacts to traffic during construction.
- **ROUTE EFFICIENCY** - Consider directness of route to make user trips most time efficient and minimize overall facility length to reduce construction costs.
- **FUTURE PLANS** - Avoid conflicts with planned roadway projects and consider how route connects to future greenways /other planned bicycle and pedestrian infrastructure.

**Segment 1:
Heritage East-Mill
Bridge Park Greenway
Connector**

**Segments 3, 4, & 5:
Granite Falls Blvd
Sidepath**

**Segment 2:
Harris Creek
Greenway**



1. HERITAGE EAST - MILL BRIDGE PARK GREENWAY CONNECTOR (SEGMENT 1)

This project is poised to provide connectivity between the existing Sanford Creek and Heritage East greenways, provided that a greenway crossing of NCDOT-maintained Rogers Road can be facilitated. Alignments evaluated include both off-road sidepaths (along Rogers Rd and Heritage Gates Dr) and greenways (behind the Heritage Gates community playground). Other options such as improved wayfinding signage and pavement markings are also assessed.

SEGMENT ID & LIMITS	CONSTRUCTION ESTIMATE (2022)	KEY OPPORTUNITIES AND CONSTRAINTS
1a – Sanford Creek Greenway to potential mid-block crossing (west side)	\$46,000	Essential connection from Sanford Creek Greenway. Widen existing back of curb sidewalk to add sidepath. Minimal Right-of-Way acquisition anticipated.
1b – Sanford Creek Greenway to potential mid-block crossing (east side)	\$96,000	Current property owner not supportive of this route. Future development of property may provide an opportunity. Mid-block crossing required.
1c – Creekside at 1b to existing Heritage Creek Greenway	\$147,000	Current property owner not supportive of this route. Future development of property may provide an opportunity. Potential floodplain impacts.
1d – Playground at 1b to existing Heritage East Greenway	\$195,000	Sufficient space behind playground, would need to navigate existing stormwater outfall and climb grade to Heritage Gates Dr.
1e – Rogers Rd (east side) from 1b to Heritage Gates Dr	\$126,000	Mid-block crossing required. No existing curb and gutter on east side of Rogers Rd. Potential impacts to fire hydrant.
1f – Rogers Rd (west side) from 1a to Heritage Gates Dr	\$109,000	Widen existing back of curb sidewalk to add sidepath. Minimal Right-of-Way acquisition anticipated. Enhance pedestrian crossing at intersection to improve safety. Additional coordination with NCDOT needed.
1g – Rogers Rd to existing Heritage Creek Greenway	\$129,000	Installation of separated facility would impact street trees and streetlights. Shared on-road bicycle facility and utilize existing sidewalks for pedestrians may be most cost-effective solution. Mid-block crossing required for connection to Heritage East Greenway.



LEGEND

-  Routes Studied
-  Recommended Route
-  Existing Greenway
-  Proposed Greenway
-  Proposed Greenway by Developer
-  Proposed Sidepath
-  Crossing Location

PROJECT SNAPSHOT

LOCATION: Rogers Road and Heritage Gates Drive from Sanford Creek Greenway to Heritage East Greenway

TOTAL LENGTH: 0.17 miles

STAKEHOLDERS: NCDOT, Heritage Gates HOA, Adjacent Property Owners

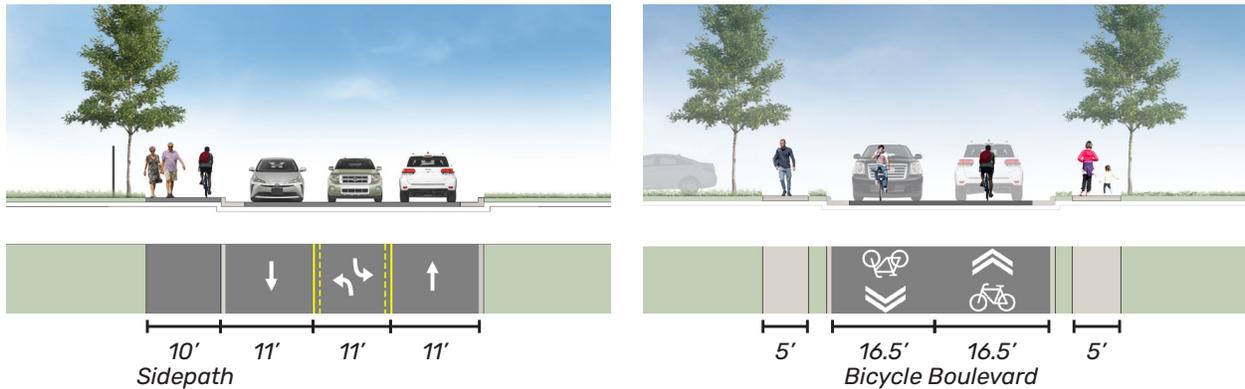
STRUCTURES: None

ROAD CROSSINGS: Rogers Rd (At-Grade), Heritage Gates Dr (At-Grade)

DESTINATIONS SERVED: Sanford Creek Greenway, Heritage East Greenway

RECOMMENDED CROSS SECTIONS + TREATMENTS

- > Sidepath - Segments 1a, 1f
- > Bicycle Boulevard, Wayfinding - Segment 1g



PLANNING LEVEL COST ESTIMATE

2022 Construction Cost Estimate (Basis for Calculations)	\$284,000
Escalated Construction Cost Estimate (FY 2027)	\$370,000
Additional 5% Contingency	\$19,000
Estimated Right-of-Way Costs	TBD
Estimated Survey + Design Services (12% of Construction Cost)	\$35,000
Estimated CEI Services (12% of Escalated Construction Cost)	\$45,000
TOTAL ESTIMATED BUDGET RECOMMENDATION	\$469,000

POTENTIAL PERMITTING NEEDS

- > Erosion Control
- > NCDOT Encroachment

POTENTIAL RIGHT-OF-WAY NEEDS

- > 3 Impacted Parcels
- > 3 Impacted Property Owners

EXISTING CONDITIONS



PROPOSED FACILITY RENDERING



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Sanford Creek Greenway, Heritage East Greenway, and adjacent neighborhoods.

REGIONAL CONNECTIVITY:

Connections to the Sanford Creek Greenway and the Heritage East Greenway provides connection to greenway and bicycle networks in Wake Co.

SAFETY:

Provides vertical separation for users traveling along Rogers Rd and improves the Heritage Gates Dr intersection.

EQUITY:

Provides a multimodal facility for all ages and abilities and access to nature and opportunities for recreation and commuting.

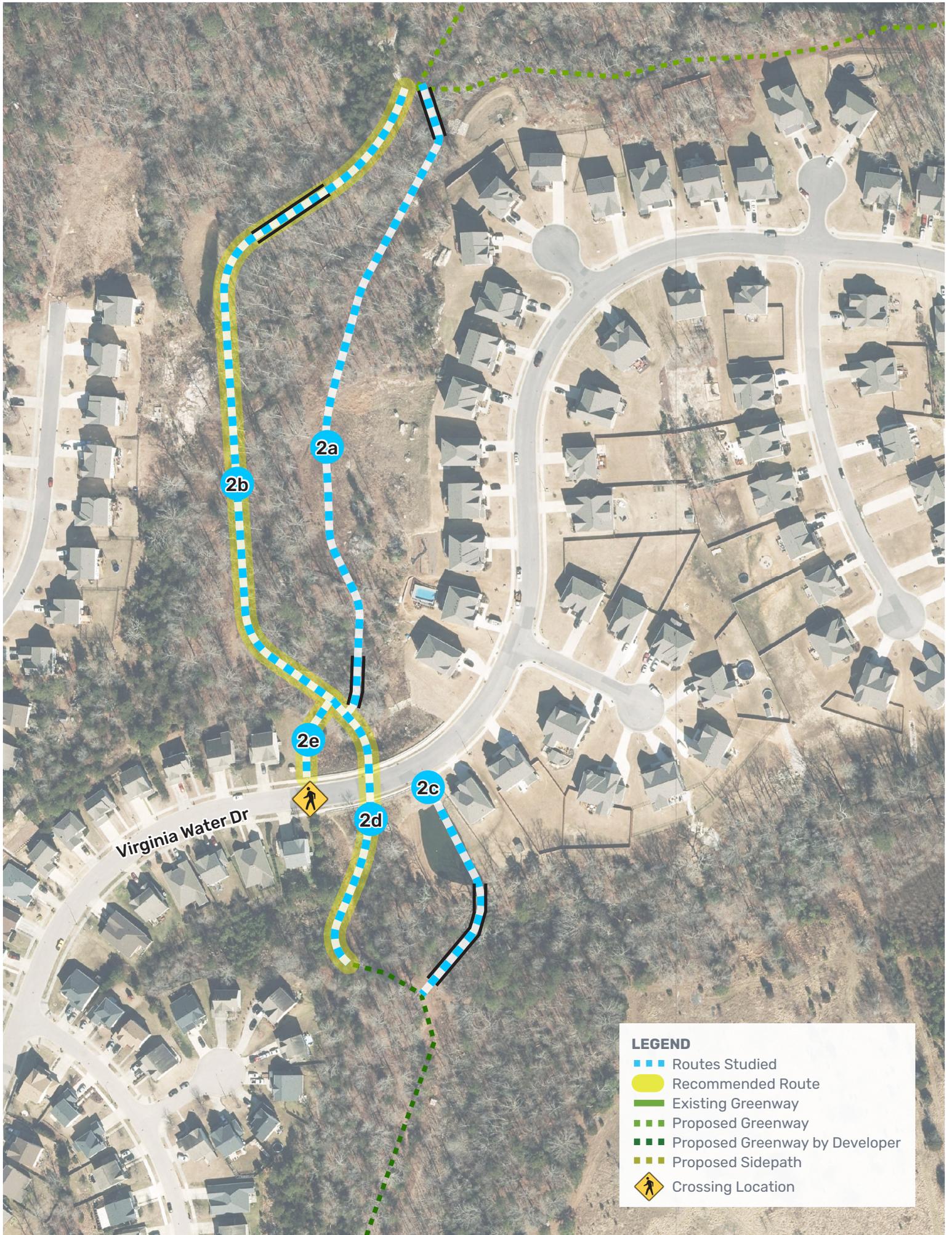
ENVIRONMENTAL PROTECTION:

Utilizes roadway corridor to minimize clearing and environmental impacts.

2. HARRIS CREEK GREENWAY (SEGMENT 2)

This project was identified as a gap in the greenway network between two future segments to be built by developers. Alignments evaluated include greenways on both the east and west sides of Harris Creek, neighborhood connections to Virginia Water Dr, and a grade separated, north-south greenway connection utilizing the culvert beneath the road.

SEGMENT ID & LIMITS	CONSTRUCTION ESTIMATE (2022)	KEY OPPORTUNITIES AND CONSTRAINTS
2a – Harris Creek from Virginia Water Dr north to future developer Greenway (east side)	\$430,000	Bridge required over creek to utilize existing Town greenway easement. Significant rock outcroppings and topography may increase construction costs.
2b – Harris Creek from Virginia Water Dr north to future developer greenway (west side)	\$375,000	Utilizes existing City of Raleigh sewer easement with favorable topography. Boardwalk required over small wetland area.
2c – Neighborhood connection to Virginia Water Dr from future developer greenway (south)	\$771,000	Utilizes existing Town greenway easement. Significant impacts to existing stormwater pond. Steep topography will require boardwalk and pedestrian bridge over creek to connect to future developer greenway on east side of creek. Significantly higher cost than alternative connection to neighborhood (Segment 2e).
2d – Harris Creek from Virginia Water Dr south to future developer greenway	\$217,000	Extends the future developer greenway north utilizing City of Raleigh sewer easement. Provides grade-separated crossing under Virginia Water Dr using existing roadway culvert.
2e – Neighborhood connection to Virginia Water Dr from Harris Creek (north)	\$94,000	Provides connection to neighborhood via the parcel owned by the Village at Rolesville HOA. Potential mid-block crossing to connect to sidewalk on south side of Virginia Water Dr.



LEGEND

- Routes Studied
- Recommended Route
- Existing Greenway
- Proposed Greenway
- Proposed Greenway by Developer
- Proposed Sidepath
- Crossing Location

PROJECT SNAPSHOT

LOCATION: Harris Creek at Virginia Water Drive

TOTAL LENGTH: 0.31 miles

STAKEHOLDERS: Villages at Rolesville HOA, Cedar Lakes HOA

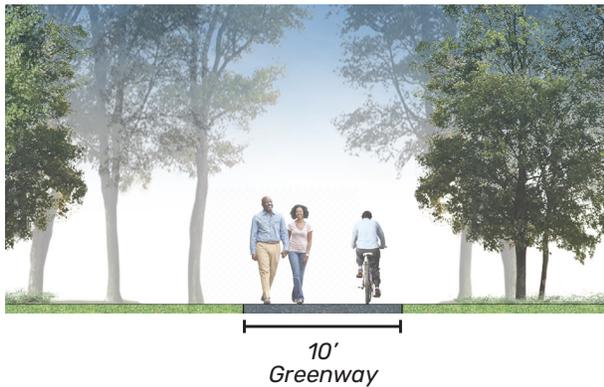
STRUCTURES: 1 Boardwalk (approx. 110 LF)

ROAD CROSSINGS: Virginia Water Dr (Grade-Separated)

DESTINATIONS SERVED: Sanford Creek Greenway, Heritage East Greenway

RECOMMENDED CROSS SECTIONS + TREATMENTS

- > Greenway - Segments 2b, 2d
- > Boardwalk - Segment 2b
- > Neighborhood Connection - Segment 2e



PLANNING LEVEL COST ESTIMATE

2022 Construction Cost Estimate (Basis for Calculations)	\$686,000
Escalated Construction Cost Estimate (FY 2027)	\$880,000
Additional 5% Contingency	\$44,000
Estimated Right-of-Way Costs	TBD
Estimated Survey + Design Services (12% of Construction Cost)	\$83,000
Estimated CEI Services (12% of Escalated Construction Cost)	\$106,000
TOTAL ESTIMATED BUDGET RECOMMENDATION	\$1,113,000

POTENTIAL PERMITTING NEEDS

- > Erosion Control
- > Wetland Impacts

POTENTIAL RIGHT-OF-WAY NEEDS

- > 4 Impacted Parcels
- > 2 Impacted Property Owners

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to future developer greenway/ pedestrian tunnel under Louisburg Rd, future Harris Creek Greenway phases that connect to Main St, and adjacent neighborhoods.

REGIONAL CONNECTIVITY:

As part of the Town's greenway network, it connects to greenway and bicycle networks in Wake Co.

SAFETY:

Provides off-road facility for bicyclists and pedestrians traveling between residential neighborhoods, schools, and parks.

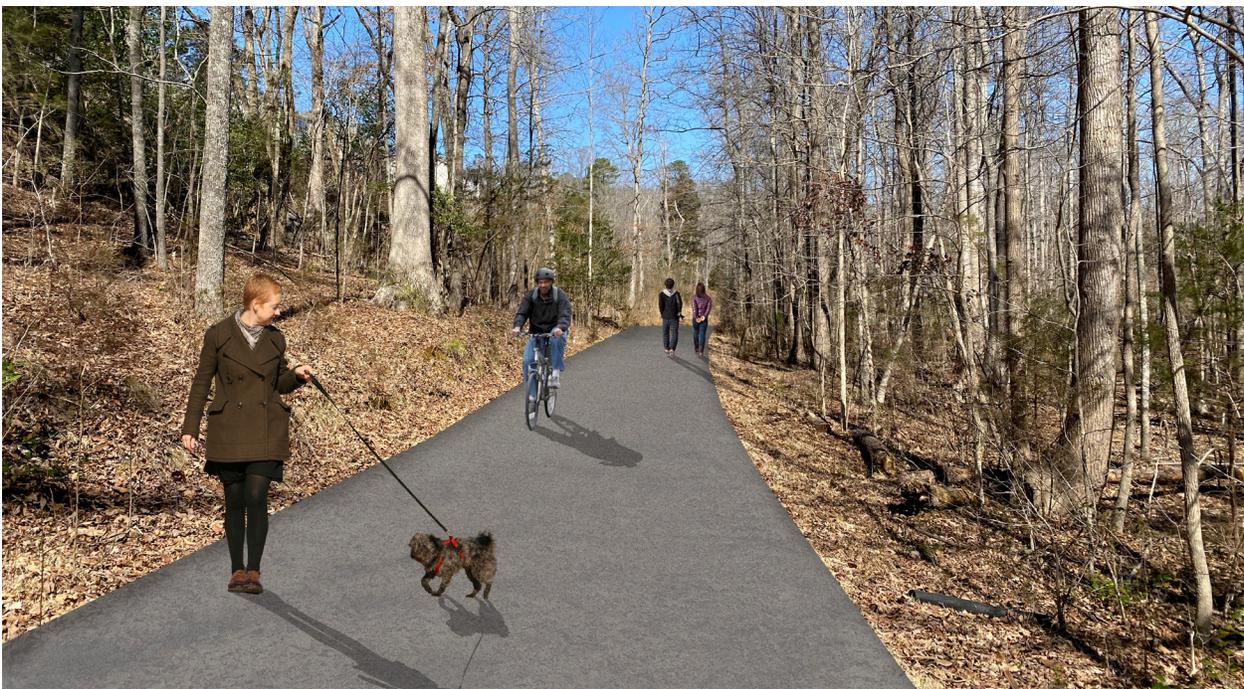
EQUITY:

Provides a multimodal facility for all ages and abilities and access to schools, parks, and employment centers.

ENVIRONMENTAL PROTECTION:

Contributes to the conservation of environmentally sensitive lands along the proposed greenway corridor.

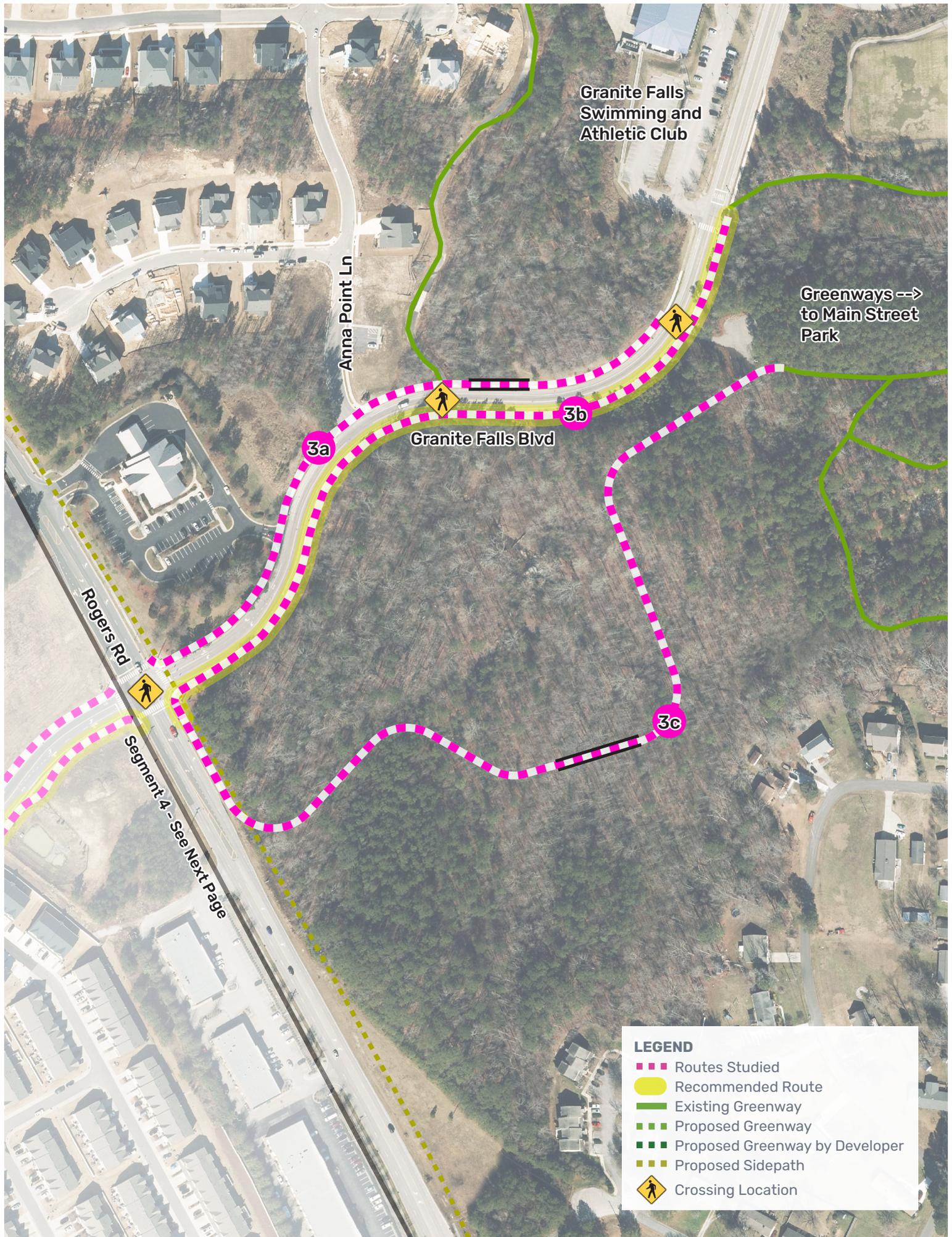
PROPOSED FACILITY RENDERING



3. GRANITE FALLS BLVD SIDEPATH (SEGMENT 3)

This project provides connectivity to the existing Main Street Park in the east, and the west end of the corridor is poised for future development. Alignments evaluated include off-road sidepath options along the length of the existing and planned roadway, with an additional greenway alignment providing connectivity between greenways from Main Street Park to Rogers Rd.

SEGMENT ID & LIMITS	CONSTRUCTION ESTIMATE (2022)	KEY OPPORTUNITIES AND CONSTRAINTS
3a – Park entrance to Rogers Rd (north side)	\$395,000	Mid-block crossing required. Potential impacts to utilities and street lights. Boardwalk required to cross stream. Use existing pedestrian signal to cross Rogers Rd.
3b – Swim Club to Rogers Rd (south side)	\$284,000	Provides direct connectivity to existing Main St Park greenways. Minimal Right-of-Way acquisition needed. Potential mid-block crossing to connect to existing Granite Falls Greenway. No existing driveway crossings. Use existing pedestrian signal to cross Rogers Rd.
3c – Off-road greenway from existing Main St Park greenway to Rogers Rd	\$567,000	Provides a consistent user experience from the Main St Park Greenway. Higher cost than other alternatives, rock outcroppings observed in alignment area may increase project cost. Requires the most right-of-way acquisition. Potential to acquire entire parcel and approx. 22 acres to Main St Park. Use existing pedestrian signal to cross Rogers Rd.



Granite Falls
Swimming and
Athletic Club

Anna Point Ln

Greenways -->
to Main Street
Park

3a

Granite Falls Blvd

3b

Rogers Rd

Segment 4 - See Next Page

3c

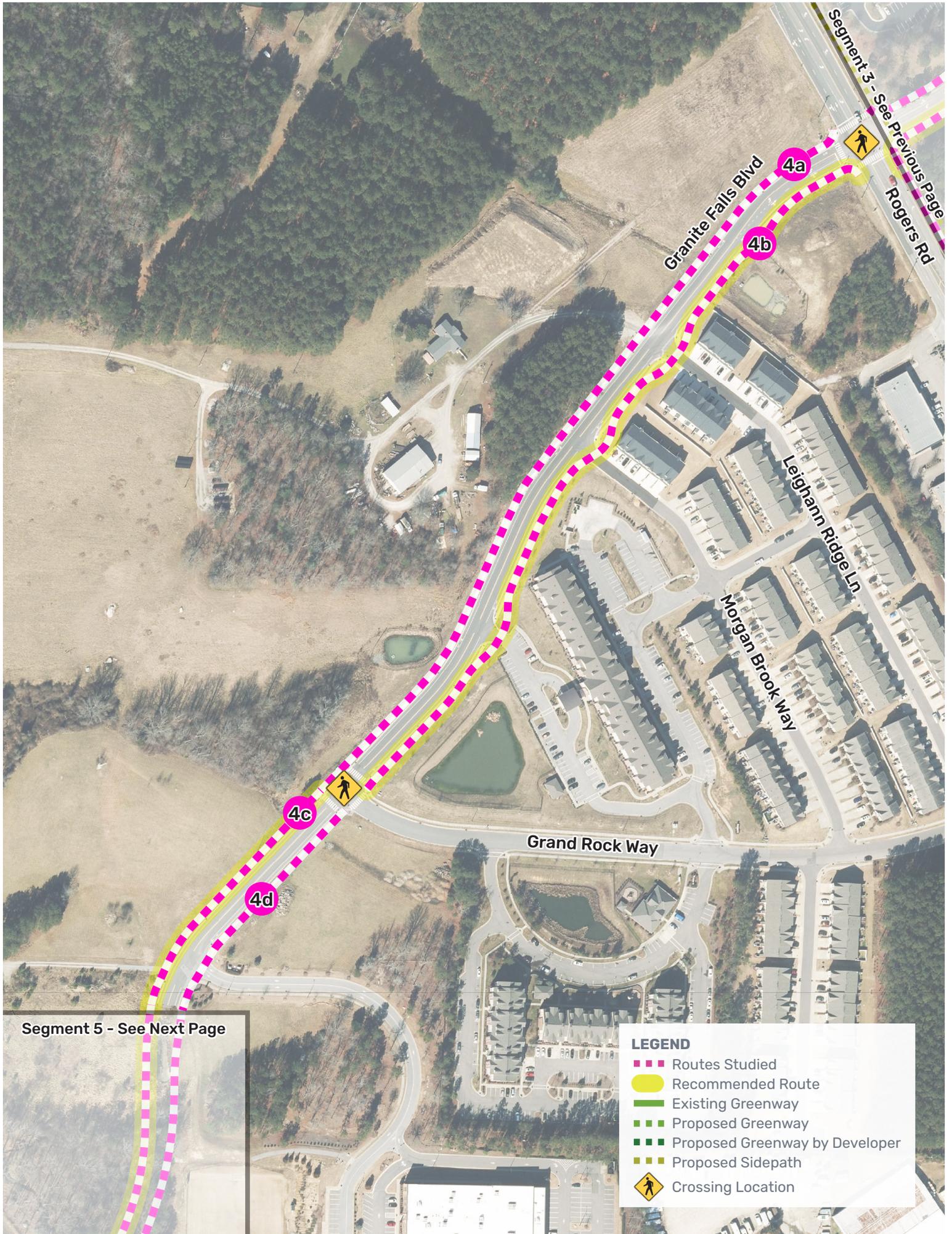
LEGEND

- Routes Studied
- Recommended Route
- Existing Greenway
- Proposed Greenway
- Proposed Greenway by Developer
- Proposed Sidepath
- ▲ Crossing Location

3. GRANITE FALLS BLVD SIDEPATH (SEGMENT 4)

This segment provides connectivity to Rogers Rd to the east and Thales Academy Rolesville to the west. Alignments evaluated include off-road sidepath options along both sides of Granite Falls Blvd.

SEGMENT ID & LIMITS	CONSTRUCTION ESTIMATE (2022)	KEY OPPORTUNITIES AND CONSTRAINTS
4a – Rogers Rd to Grand Rock Way (north side)	\$304,000	Potential impacts to street lights. Right-of-Way acquisition required. Residents of Granite Falls Apartments and Granite Ridge Townhomes required to cross Granite Falls Blvd to access this facility.
4b – Rogers Rd to Grand Rock Way (south side)	\$218,000	Need to route alignment around existing fire hydrants or consider relocation. Less Right-of-Way acquisition required than on north side. Residents of Granite Falls Apartments and Granite Ridge Townhomes would have direct access to this facility.
4c – Grand Rock Way to end of street (north side)	\$83,000	Potential impacts to street lights. Right-of-Way acquisition required. Residents of Granite Falls Apartments and Granite Ridge Townhomes required to cross Granite Falls Blvd to access this facility.
4d – Grand Rock Way to end of street (south side)	\$86,000	Potential need for retaining wall based on existing topography. Less Right-of-Way acquisition required than on north side.



Segment 5 - See Next Page

LEGEND

- - - Routes Studied
- Recommended Route
- Existing Greenway
- - - Proposed Greenway
- - - Proposed Greenway by Developer
- - - Proposed Sidepath
- Crossing Location

3. GRANITE FALLS BLVD SIDEPATH (SEGMENT 5)

This segment provides connectivity to Thales Academy Rolesville to the east and Burlington Mills Rd to the west. Alignments evaluated include off-road sidepath options along both sides of the future extension of Granite Falls Blvd.

SEGMENT ID & LIMITS	CONSTRUCTION ESTIMATE (2022)	KEY OPPORTUNITIES AND CONSTRAINTS
5a – Future Granite Falls Blvd Ext to Burlington Mills Rd (north side)	\$279,000	Utilizes existing Town streetscape/sidewalk easement as identified in construction plans. May be incorporated into future roadway construction.
5b – Future Granite Falls Blvd Ext to Burlington Mills Rd (south side)	\$295,000	May be incorporated into future roadway construction. May require additional Right-of-Way.

Segment 4 -
See Previous Page

Granite Falls Blvd

5a

5b

Future Granite Falls Blvd Ext

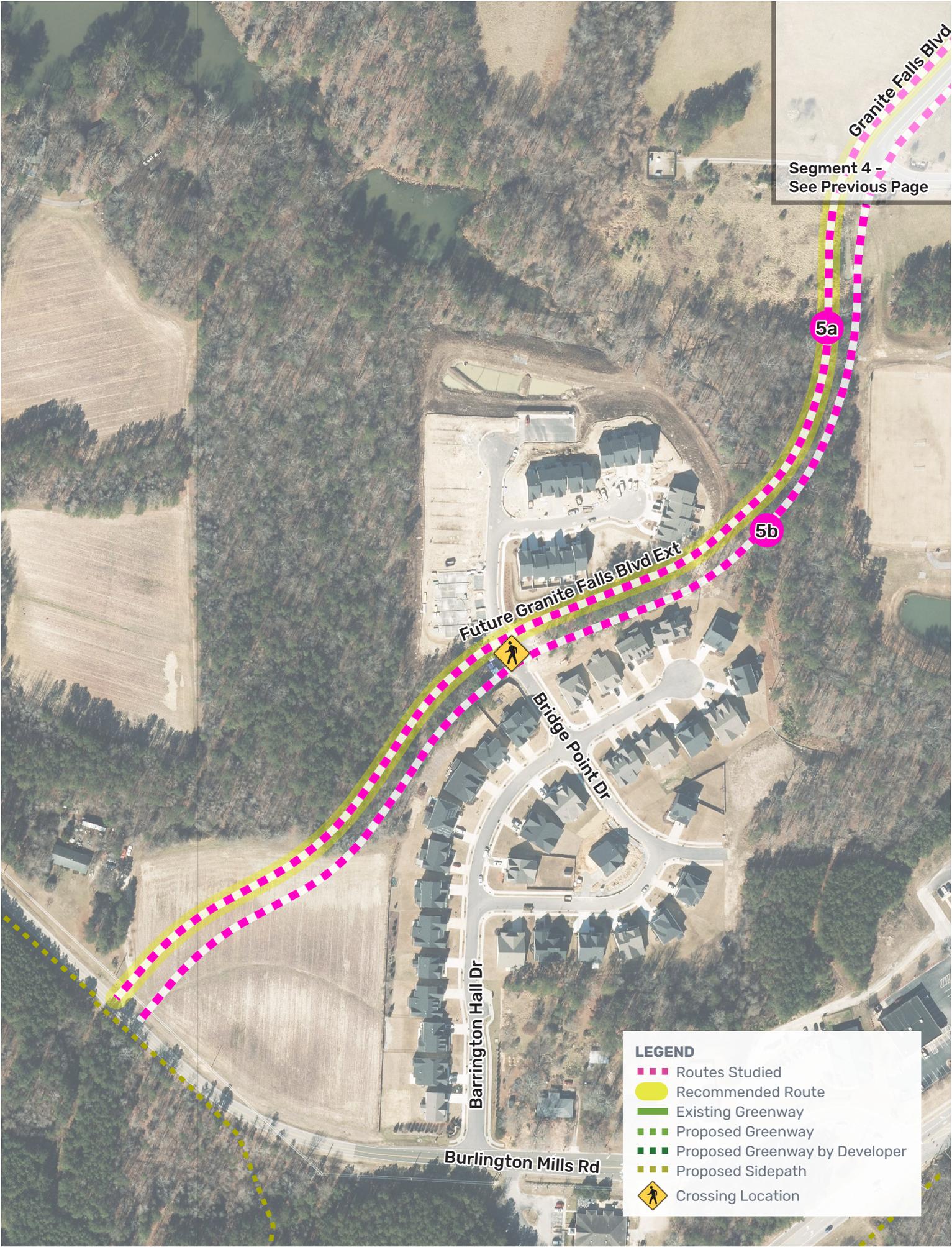
Bridge Point Dr

Barrington Hall Dr

Burlington Mills Rd

LEGEND

- Routes Studied
- Recommended Route
- Existing Greenway
- Proposed Greenway
- Proposed Greenway by Developer
- Proposed Sidepath
- Crossing Location



PROJECT SNAPSHOT

LOCATION: Granite Falls Blvd from Granite Falls Swim Club to Burlington Mills Rd

TOTAL LENGTH: 1.02 miles

STAKEHOLDERS: Granite Falls Swim Club, Thales Academy Rolesville, Barrington HOA, Granite Falls Apartments, Granite Ridge Townhomes

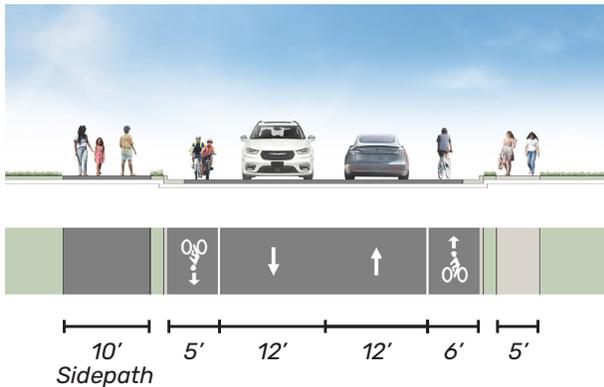
STRUCTURES: None

ROAD CROSSINGS: Rogers Rd (At-Grade), Grand Rock Way (At-Grade), Bridge Point Dr (At-Grade)

DESTINATIONS SERVED: Granite Falls Swim Club, Main St Park Greenway, Thales Academy Rolesville

RECOMMENDED CROSS SECTIONS + TREATMENTS

> Sidepath - Segments 3b, 4b, 4c, 5a



PLANNING LEVEL COST ESTIMATE

2022 Construction Cost Estimate (Basis for Calculations)	\$867,000
Escalated Construction Cost Estimate (FY 2027)	\$1,110,000
Additional 5% Contingency	\$56,000
Estimated Right-of-Way Costs	TBD
Estimated Survey + Design Services (12% of Construction Cost)	\$105,000
Estimated CEI Services (12% of Escalated Construction Cost)	\$134,000
TOTAL ESTIMATED BUDGET RECOMMENDATION	\$1,405,000

POTENTIAL PERMITTING NEEDS

> Erosion Control

POTENTIAL RIGHT-OF-WAY NEEDS

> 15 Impacted Parcels
> 11 Impacted Property Owners

EXISTING CONDITIONS



PROPOSED FACILITY RENDERING



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Main St Park Greenway, Granite Falls Swim Club, Rogers Rd retail/dining, and adjacent neighborhoods.

REGIONAL CONNECTIVITY:

As part of the Town's greenway network, it connects to greenway and bicycle networks in Wake Co.

SAFETY:

Provides off-road facility for bicyclists and pedestrians traveling between residential neighborhoods, schools, and parks.

EQUITY:

Provides a multimodal facility for all ages and abilities and access to schools, parks, and employment centers.

ENVIRONMENTAL PROTECTION:

Provides sustainable transportation options for those reaching destinations along the Granite Falls Blvd corridor.

4. E. YOUNG ST SIDEPATH

Young St is a priority sidepath corridor as it provides connections to Downtown, Rolesville High School, and residential neighborhoods. Converted to a super street within the last decade, Louisburg Rd creates a barrier to bicycle and pedestrian connectivity between north and south Rolesville. The proposed sidepath and intersection treatments aim to establish multi-modal access across Louisburg Rd from E. Young St. Bicycle lanes are also proposed along the corridor in the bicycle plan recommendations. For details on proposed bicycle facilities, reference *Rolesville Bikes*.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Main St, Rolesville High Schools and the proposed Town Hall development; provides access to adjacent neighborhoods and GoRaleigh 401x transit stop.

REGIONAL CONNECTIVITY:

Connections to the proposed Buffalo Creek Greenway and the Louisburg Rd sidepath provides connection to greenway networks in Raleigh and Wake and Franklin Co.

SAFETY:

Provides an off-road facility for bicyclists and pedestrians traveling along Young St and improves the Louisburg Rd intersection.

EQUITY:

Provides a multimodal facility for all ages and abilities and access to schools, essential services, employment centers, and transit.

ENVIRONMENTAL PROTECTION:

Provides sustainable transportation options for those reaching destinations along the E. Young St corridor.

PROJECT SNAPSHOT

LOCATION:

E. Young St from Main St to Fowler Rd

TOTAL LENGTH:

1.9 miles

FACILITY TYPE:

Sidepath

INTERSECTION TREATMENTS:

E. Young at Main St: Crosswalks and Pedestrian Signal Heads

E. Young St at Virginia Water Dr: Rectangular Rapid Flashing Beacon (RRFB) and Crosswalks

E. Young St at US-401: Crosswalk (Bike/Ped Super Street Accommodations) and Pedestrian Signal Heads

E. Young St at Quarry Rd and Fowler Rd: Intersection Crossing Markings

Accessible curb ramps are required by the Americans with Disabilities Act (ADA) at all crosswalks.

IMPLEMENTATION PARTNERS:

Lead: NCDOT Division 5, Town of Rolesville Parks & Rec Dept., Public Works Dept.

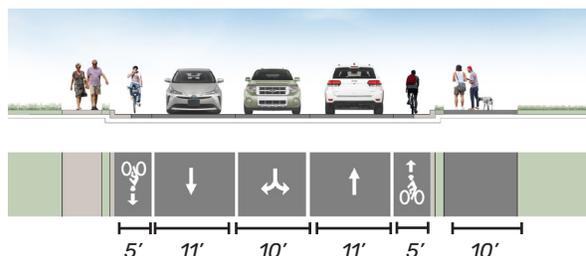
Supporting: NCDOT IMD, CAMPO

PLANNING LEVEL COST ESTIMATE:

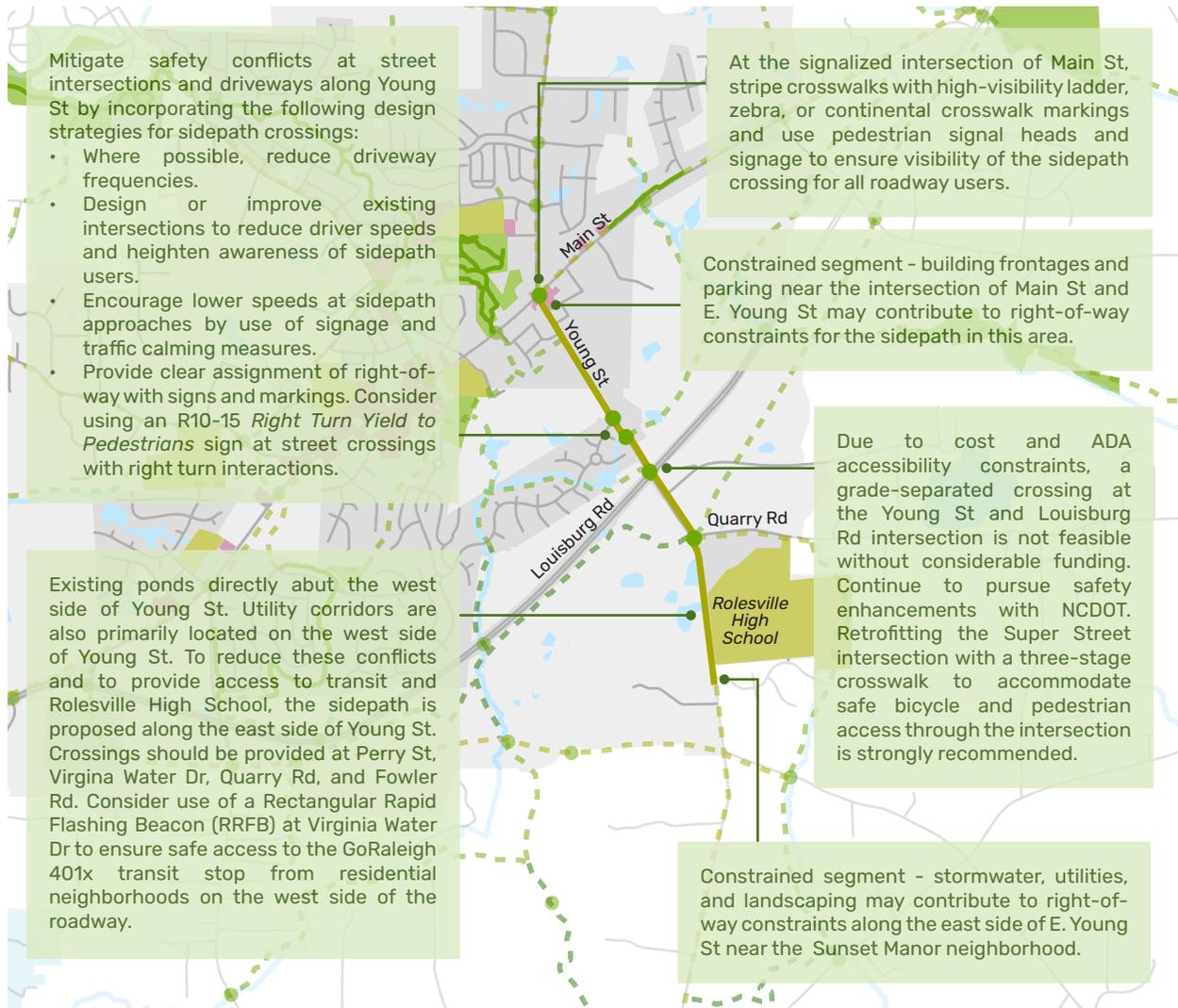
\$4,095,000

(The estimated planning level cost to construct the facility is provided in 2022 dollars. The estimate does not include costs for additional right-of-way acquisition or design).

PROPOSED TYPICAL CROSS SECTION



DESIGN CONSIDERATIONS



PROPOSED FACILITY RENDERING



5. MAIN ST SIDEPATH

Main Street from Jonesville Rd to Young St is currently being redesigned under NCDOT project U-6241 to incorporate roadway enhancements, conventional bike lanes, and a sidepath from Jonesville Rd to Southtown Circle. Proposed recommendations will provide safe bicycle and pedestrian access across Downtown to Frazier Farm Park. Separated bicycle lanes are also proposed along the corridor in the bicycle plan recommendations. For details on proposed bicycle facilities, reference *Rolesville Bikes*.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Frazier Farm Park; shopping centers, restaurants, and medical services along Main St; provides access to adjacent neighborhoods and proposed greenways connecting with Main St.

REGIONAL CONNECTIVITY:

Connections to Perry Creek Greenway, Cedar Creek Greenway, and Toms Creek Greenway, which provides connection to Wake Forest and Raleigh's greenway networks.

SAFETY:

Provides off-road facility for bicyclists and pedestrians traveling along Main St and connection between the Main St bike lanes.

EQUITY:

Provides a multimodal facility for all ages and abilities and access to schools, essential services, employment centers, and transit.

ENVIRONMENTAL PROTECTION:

Provides sustainable transportation options for those reaching destinations along the Main St corridor.

PROJECT SNAPSHOT

LOCATION:

Main St from Jonesville Rd to Southtown Cir and Main St from Young St to Louisburg Rd.

TOTAL LENGTH:

1.6 miles

FACILITY TYPE:

Sidepath

INTERSECTION TREATMENTS:

Main St at Burlington Mills Rd, at Young St, and at Louisburg Rd: Crosswalks and Pedestrian Signal Heads

Main St at Pulley Town Rd: Crosswalks and Rectangular Rapid Flash Beacons (RRFB)

Accessible curb ramps are required by the Americans with Disabilities Act (ADA) at all crosswalks.

IMPLEMENTATION PARTNERS:

Lead: Town Rolesville Public Works Dept., Parks and Recreation Dept., NCDOT Division 5

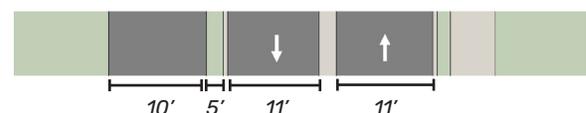
Supporting: NCDOT IMD and CAMPO

PLANNING LEVEL COST ESTIMATE:

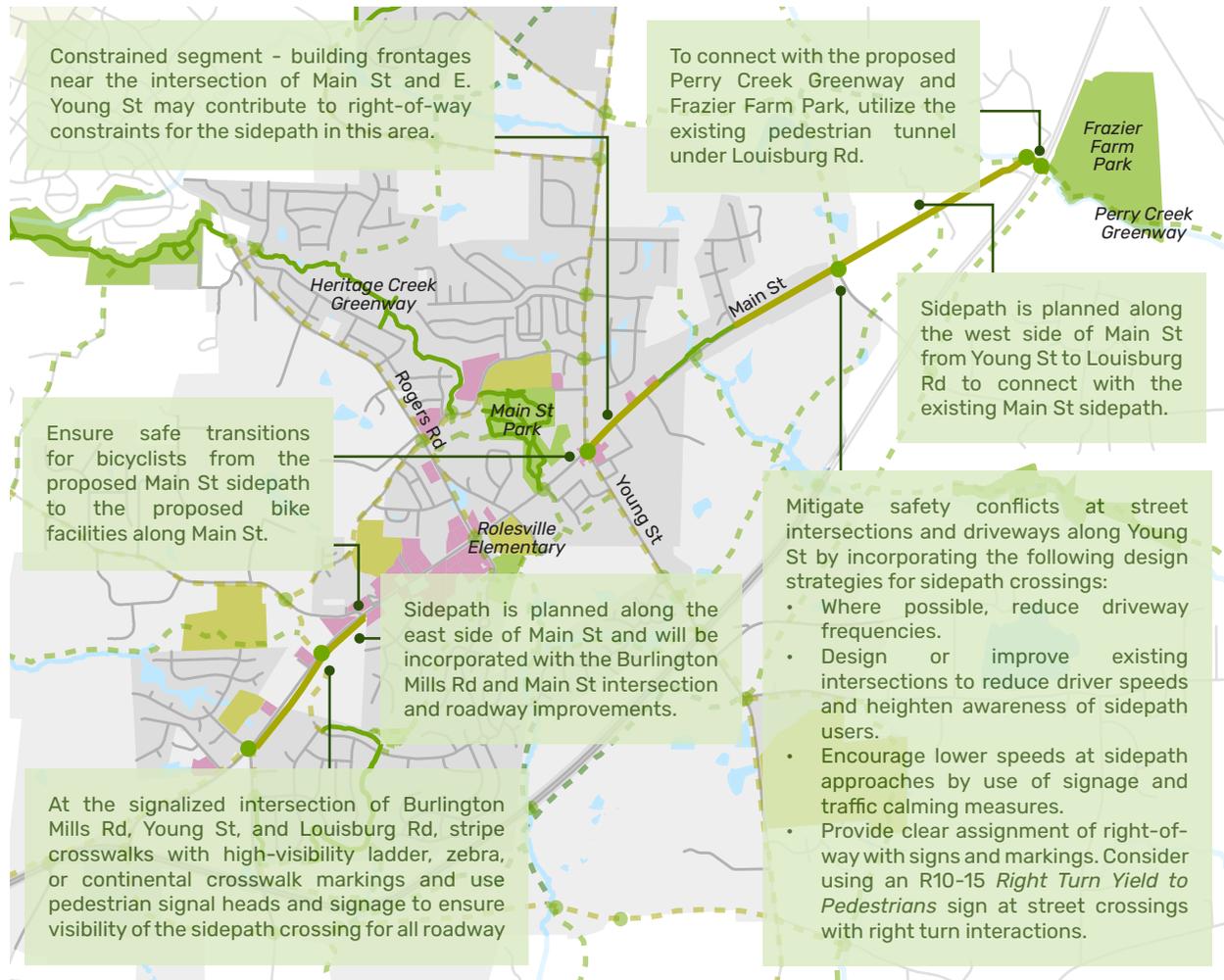
\$3,500,000

(The estimated planning level cost to construct the facility is provided in 2022 dollars. The estimate does not include costs for additional right-of-way acquisition or design).

PROPOSED TYPICAL CROSS SECTION



DESIGN CONSIDERATIONS



PROPOSED FACILITY RENDERING



6. ROGERS RD SIDEPATH

Rogers Rd is a priority sidepath corridor as it provides connections to existing greenways, Downtown, adjacent neighborhoods, and Wake Forest. The Town aims to prioritize the sidepath segment between Heritage Gates Dr and Sanford Creek Greenway to fill the missing link to Heritage East Greenway (priority project #1). The remaining Rogers Rd sidepath segment is proposed to be developed through a future NCDOT project. Bicycle lanes are also proposed along the corridor in the bicycle plan recommendations. For details on proposed bicycle facilities, reference *Rolesville Bikes*.

EXISTING FACILITY



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Main St, existing greenways, shopping centers along Rogers, and provides access to adjacent neighborhoods and the Town of Wake Forest.

REGIONAL CONNECTIVITY:

Connections to the Heritage East Greenway, and Sanford Creek Greenway, which provides connection to greenway networks in Wake Forest and Raleigh.

SAFETY:

Provides an off-road facility for bicyclists and pedestrians traveling along Rogers Rd and improves intersections along Rogers Rd.

EQUITY:

Provides a multimodal facility for all ages and abilities and access to essential services, employment centers, and neighboring communities.

ENVIRONMENTAL PROTECTION:

Provides sustainable transportation options for those reaching destinations along the Rogers Rd corridor.

PROJECT SNAPSHOT

LOCATION:

Rogers Rd from Main St to Rolesville Town Limits

TOTAL LENGTH:

1.8 miles

FACILITY TYPE:

Sidepath and Bike Lanes

If constraints arise during project development, the preferred, long-term facility is a sidepath.

INTERSECTION TREATMENTS:

Rogers Rd at Granite Falls Blvd and Main St: Crosswalks and Pedestrian Signal Heads

Accessible curb ramps are required by the Americans with Disabilities Act (ADA) at all crosswalks.

IMPLEMENTATION PARTNERS:

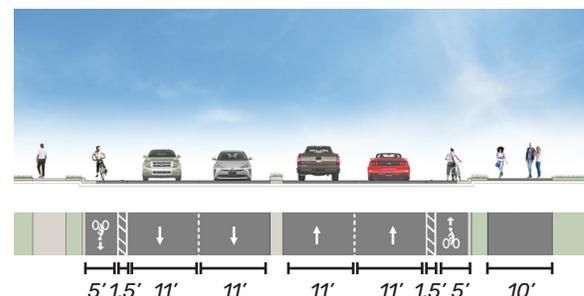
Town Rolesville Planning, Public Works, and Parks and Recreation Departments, NCDOT IMD, NCDOT Division 5, CAMPO

PLANNING LEVEL COST ESTIMATE:

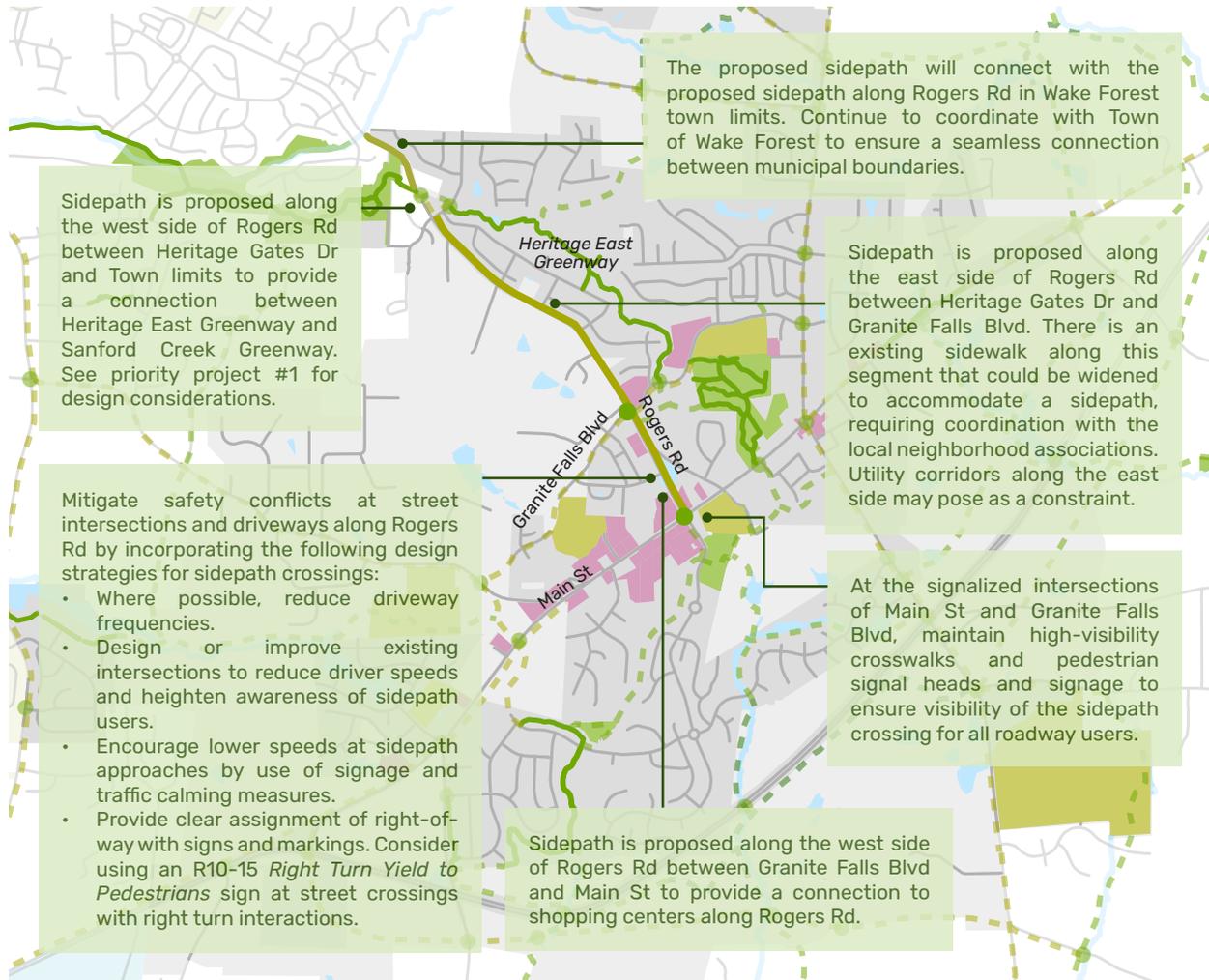
\$4,435,000

(The estimated planning level cost to construct the facility is provided in 2022 dollars. The estimate does not include costs for additional right-of-way acquisition or design).

PROPOSED TYPICAL CROSS SECTION



DESIGN CONSIDERATIONS



PROPOSED FACILITY RENDERING



7. BURLINGTON MILLS SIDEPATH

Burlington Mills Rd is a priority sidepath corridor as it provides connections to Downtown, Rolesville Middle School, and Wake Forest. The Burlington Mills Rd intersection with Main St will be realigned through NCDOT STIP project U-6241. Construction is slated to begin in 2022. In addition, Burlington Mills Rd will connect with multi-modal facilities in the Town core when the Granite Falls Blvd extension is completed. Bicycle lanes are also proposed along the corridor in the bicycle plan recommendations. For details on proposed bicycle facilities, reference *Rolesville Bikes*.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Main St, Rolesville Middle School and provides access to adjacent neighborhoods and the Town of Wake Forest.

REGIONAL CONNECTIVITY:

Connections to the proposed Forestville Rd sidepath and Toms Creek Greenway, which provides connections to greenway networks in Wake Forest and Raleigh.

SAFETY:

Provides off-road facility for bicyclists and pedestrians traveling along Burlington Mills Rd and improves intersections along the corridor to provide a safe connection to Rolesville Middle School.

EQUITY:

Provides a multimodal facility for all ages and abilities and access to essential services, schools, and neighboring communities.

ENVIRONMENTAL PROTECTION:

Provides sustainable transportation options for those reaching destinations along the Burlington Mills Rd corridor.

PROJECT SNAPSHOT

LOCATION:

Burlington Mills Rd from Main St to Forestville Rd

TOTAL LENGTH:

2.0 miles

FACILITY TYPE:

Sidepath

INTERSECTION TREATMENTS:

Burlington Mills Rd at Granite Falls Blvd and Forestville Rd: Crosswalks

Burlington Mills at Main St and Forestville Rd: Crosswalks and Pedestrian Signal Heads

Accessible curb ramps are required by the Americans with Disabilities Act (ADA) at all crosswalks.

IMPLEMENTATION PARTNERS:

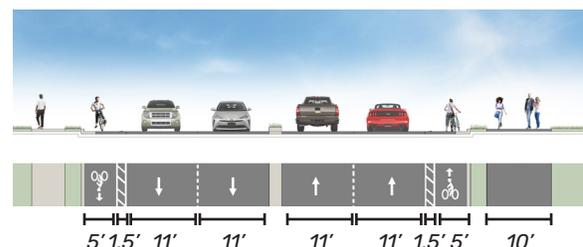
Town Rolesville Planning, Public Works, and Parks and Recreation Departments, NCDOT IMD, NCDOT Division 5, CAMPO

PLANNING LEVEL COST ESTIMATE:

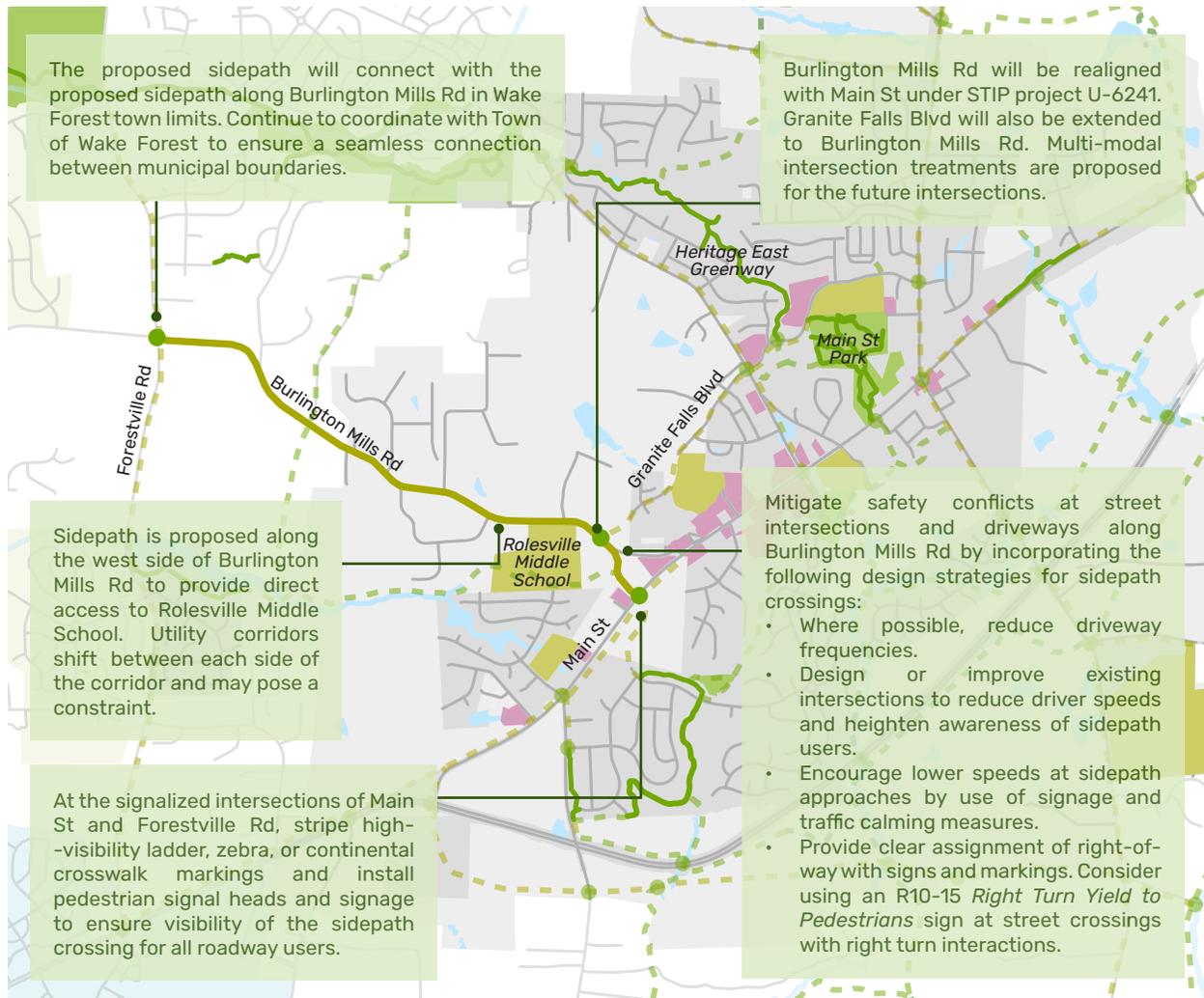
\$4,360,000

(The estimated planning level cost to construct the facility is provided in 2022 dollars. The estimate does not include costs for additional right-of-way acquisition or design).

PROPOSED TYPICAL CROSS SECTION



DESIGN CONSIDERATIONS



PROPOSED FACILITY RENDERING



8. HERITAGE EAST - CHALK RD GREENWAY CONNECTOR

The proposed Heritage East - Chalk Rd Greenway provides connections for residents in Heritage East, Granite Falls, Granite Crest, and the Preserve at Jones Dairy neighborhoods between Heritage East Greenway and Chalk Rd. This corridor will expand recreational activities within these respective neighborhoods and provide connections to Main St Park and Downtown. The greenway will also provide connections to Wake Forest via the Chalk Rd sidepath.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Heritage East Greenway and Chalk Rd and provides access to existing greenways and adjacent neighborhoods.

REGIONAL CONNECTIVITY:

Connects to the Heritage East Greenway, which provides connection to greenway networks in Wake Forest and Raleigh.

SAFETY:

Provides off-road facility for bicyclists and pedestrians traveling between Downtown and Chalk Rd

EQUITY:

Provides a multimodal facility for all ages and abilities and access to schools, essential services, and employment centers.

ENVIRONMENTAL PROTECTION:

Contributes to the conservation of environmentally sensitive lands along the proposed greenway corridor.

PROJECT SNAPSHOT

LOCATION:

Heritage East Greenway to Chalk Rd

TOTAL LENGTH:

0.8 miles

FACILITY TYPE:

Greenway

INTERSECTION TREATMENTS:

Chalk Rd: Crosswalks, Signage, Traffic Calming Measures

Accessible curb ramps are required by the Americans with Disabilities Act (ADA) at all crosswalks.

CORRIDOR TREATMENTS:

Shoulders or shy zones of 2' or greater should be kept clear of any obstacles to ensure full greenway width remains usable.

IMPLEMENTATION PARTNERS:

Town Rolesville Planning, Public Works, and Parks and Recreation Departments, NCDOT IMD, CAMPO, Wake County, Local Landowners

PLANNING LEVEL COST ESTIMATE:

\$1,700,000

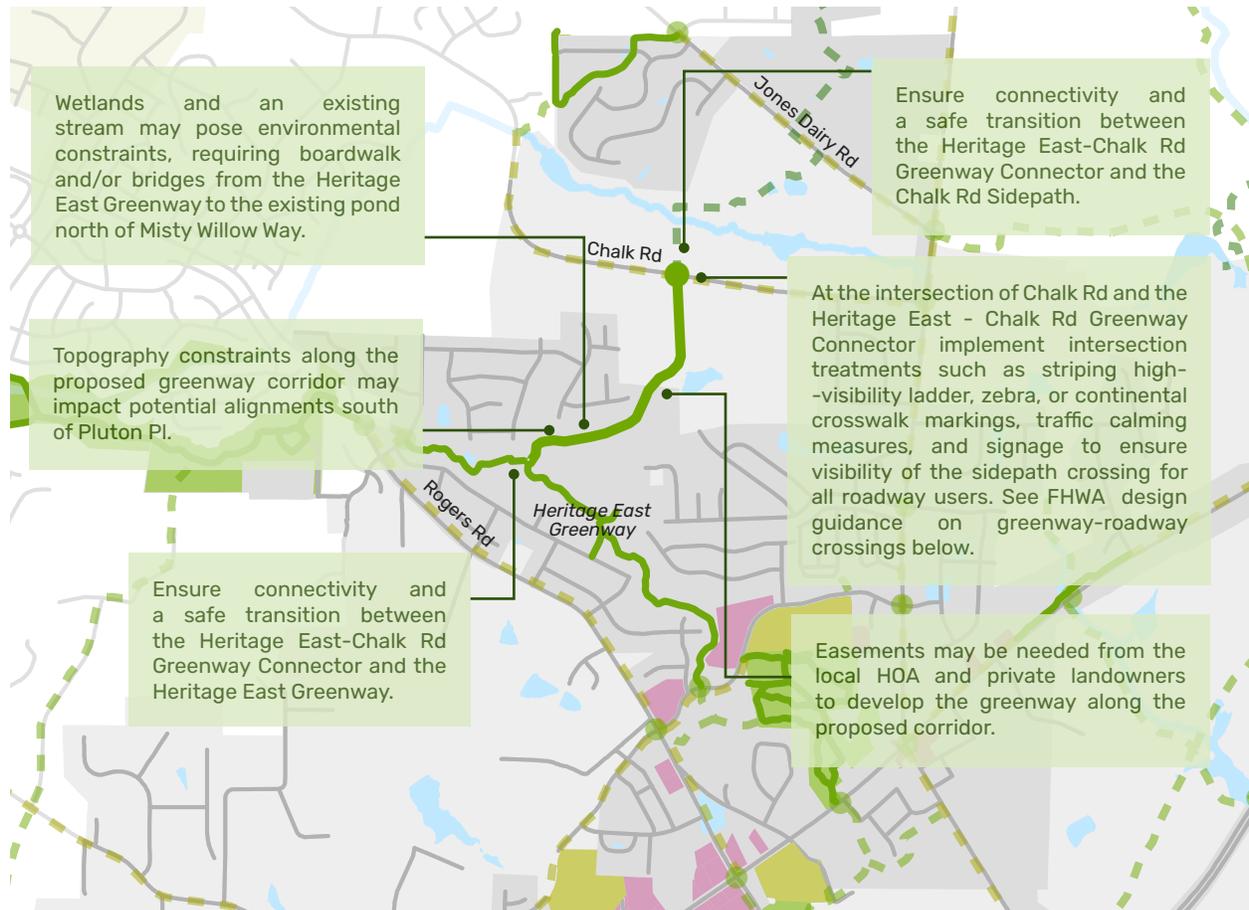
(The estimated planning level cost to construct the facility is provided in 2022 dollars. The estimate does not include costs for additional right-of-way acquisition or design).

PROPOSED TYPICAL CROSS SECTION

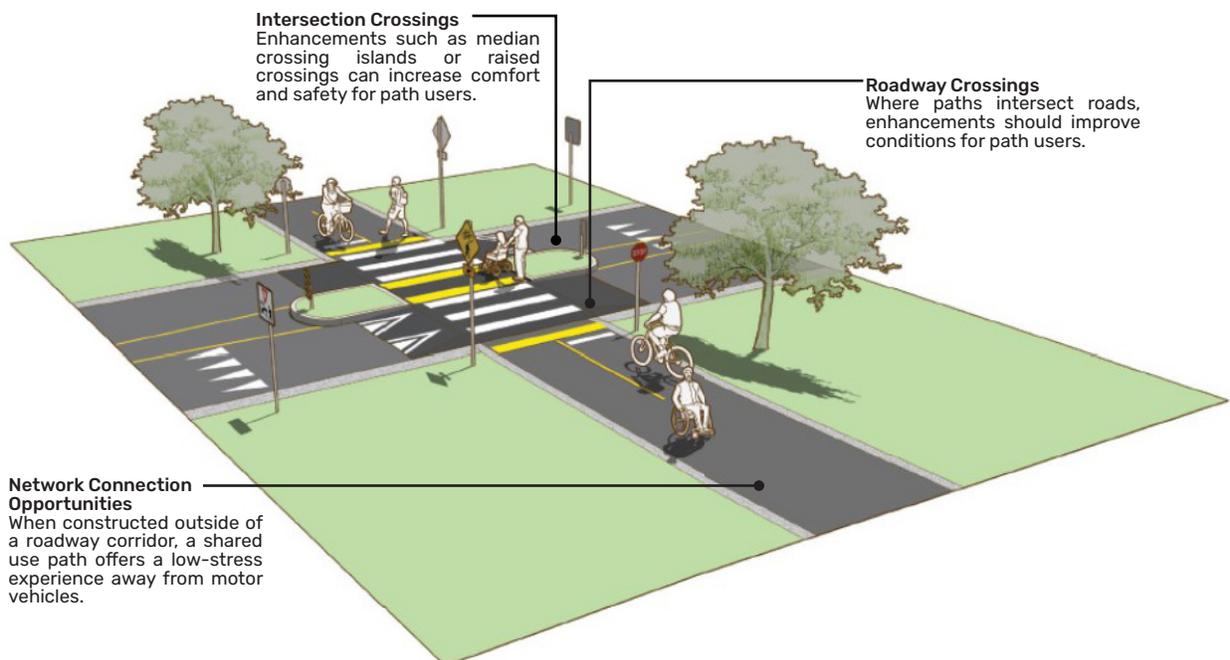


10'
Greenway

DESIGN CONSIDERATIONS



FHWA SMALL TOWN AND RURAL MULTIMODAL NETWORKS GREENWAY DESIGN GUIDANCE



9. REDFORD PLACE PARK - YOUNG ST GREENWAY CONNECTOR

The proposed Redford Place Park-Young St Greenway Connector provides a dedicated bicycle and pedestrian facility for those accessing Rolesville Elementary, Downtown, Redford Place Park, Main St Park, adjacent neighborhoods, and the proposed Harris Creek Greenway and Redford Place Park Greenway. In addition to these connections, the greenway will provide safe access to the planned Town of Rolesville municipal complex along Young St.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Rolesville Elementary School, Downtown, Redford Place Park Greenway, Harris Creek Greenway, Main St, and Young St, and provides access to existing greenways, parks, and adjacent neighborhoods.

REGIONAL CONNECTIVITY:

Connects to the Harris Creek Greenway and Main St Park Trails, which provide connection to greenway networks in Wake Forest and Raleigh.

SAFETY:

Provides off-road facility for bicyclists and pedestrians traveling between residential neighborhoods, schools, and parks.

EQUITY:

Provides a multimodal facility for all ages and abilities and access to schools, parks, and employment centers.

ENVIRONMENTAL PROTECTION:

Contributes to the conservation of environmentally sensitive lands along the proposed greenway corridor.

PROJECT SNAPSHOT

LOCATION:

Redford Place Dr to Main St to Young St

TOTAL LENGTH:

0.8 miles

FACILITY TYPE:

Greenway

INTERSECTION TREATMENTS:

Redford Place Dr, Main St, and Young St: Crosswalks, Signage, Traffic Calming Measures
Accessible curb ramps are required by the Americans with Disabilities Act (ADA) at all crosswalks.

CORRIDOR TREATMENTS:

Shoulders or shy zones of 2' or greater should be kept clear of any obstacles to ensure full greenway width remains usable.

IMPLEMENTATION PARTNERS:

Town Rolesville Planning, Public Works, and Parks and Recreation Departments, NCDOT IMD, CAMPO, Wake County, Local Landowners

PLANNING LEVEL COST ESTIMATE:

\$1,920,000

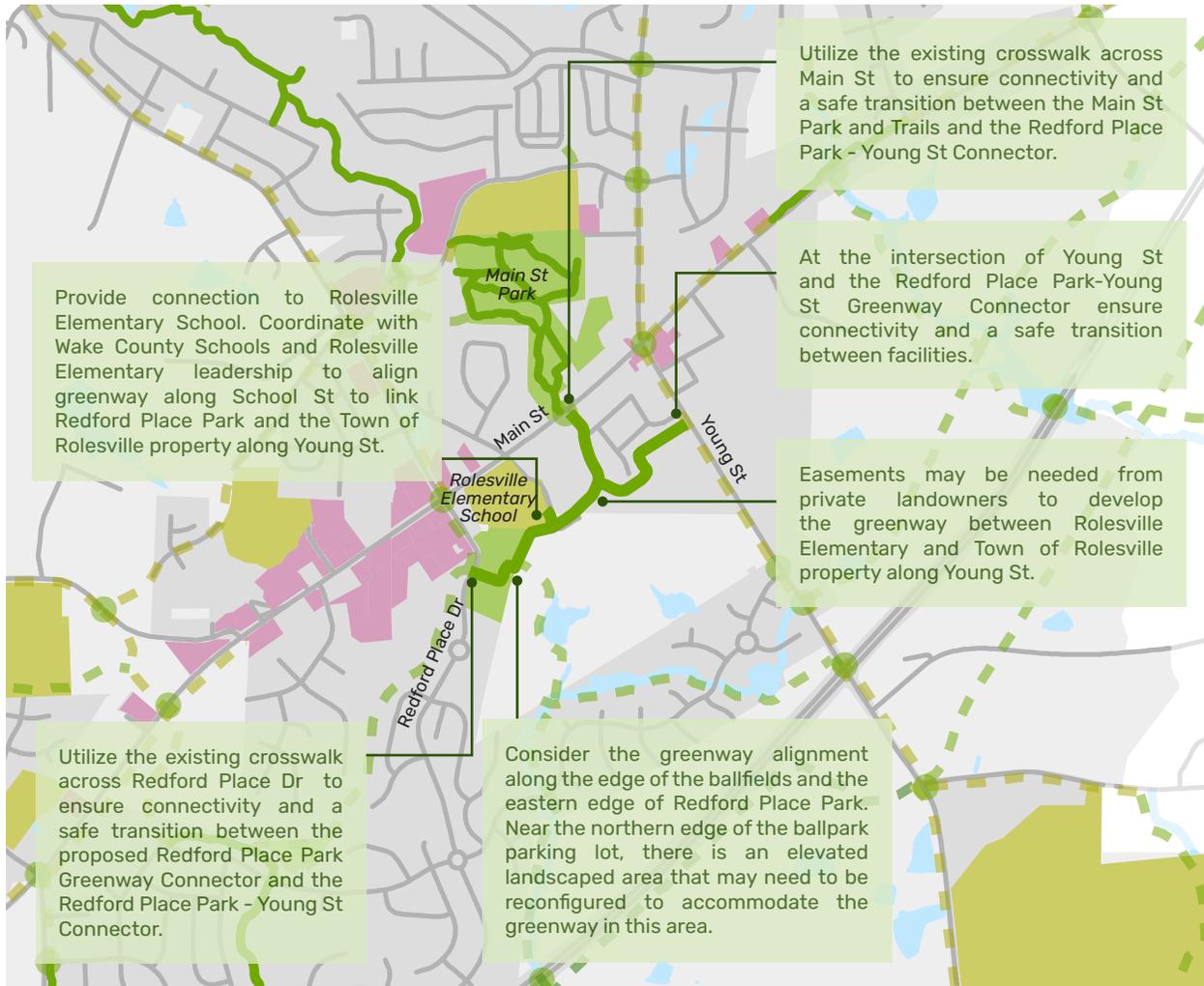
(The estimated planning level cost to construct the facility is provided in 2022 dollars. The estimate does not include costs for additional right-of-way acquisition or design).

PROPOSED TYPICAL CROSS SECTION



10'
Greenway

DESIGN CONSIDERATIONS



PROPOSED FACILITY RENDERING



10. REDFORD PLACE PARK GREENWAY

The proposed Redford Place Park Greenway provides a dedicated bicycle and pedestrian facility for those accessing adjacent neighborhoods, such as The Villages, Carlton Pointe, and Cedar Lakes and the proposed Harris Creek Greenway and Redford Place Park-Young St Greenway Connector. In addition to these connections, the greenway will provide safe access to the Redford Place Shopping Center and Downtown.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Downtown, Redford Place Park-Young St Greenway Connector, Carlton Pointe Greenway, Main St, and Virginia Water Dr and provides access to parks and adjacent neighborhoods.

REGIONAL CONNECTIVITY:

Connects to the Harris Creek Greenway and via adjacent greenways, which provide connection to greenway networks in Raleigh and Wake County.

SAFETY:

Provides off-road facility for bicyclists and pedestrians traveling between residential neighborhoods, schools, and parks.

EQUITY:

Provides a multimodal facility for all ages and abilities and access to schools, parks, and employment centers.

ENVIRONMENTAL PROTECTION:

Contributes to the conservation of environmentally sensitive lands along the proposed greenway corridor.

PROJECT SNAPSHOT

LOCATION:

Main St to Virginia Water Dr along Redford Place Dr

TOTAL LENGTH:

0.8 miles

FACILITY TYPE:

Greenway

INTERSECTION TREATMENTS:

Main St: Crosswalks, Signage, Pedestrian Head Signals

Accessible curb ramps are required by the Americans with Disabilities Act (ADA) at all crosswalks.

CORRIDOR TREATMENTS:

Shoulders or shy zones of 2' or greater should be kept clear of any obstacles to ensure full greenway width remains usable.

IMPLEMENTATION PARTNERS:

Town Rolesville Planning, Public Works, and Parks and Recreation Departments, NCDOT IMD, CAMPO, Wake County, Local Landowners

PLANNING LEVEL COST ESTIMATE:

\$1,980,000

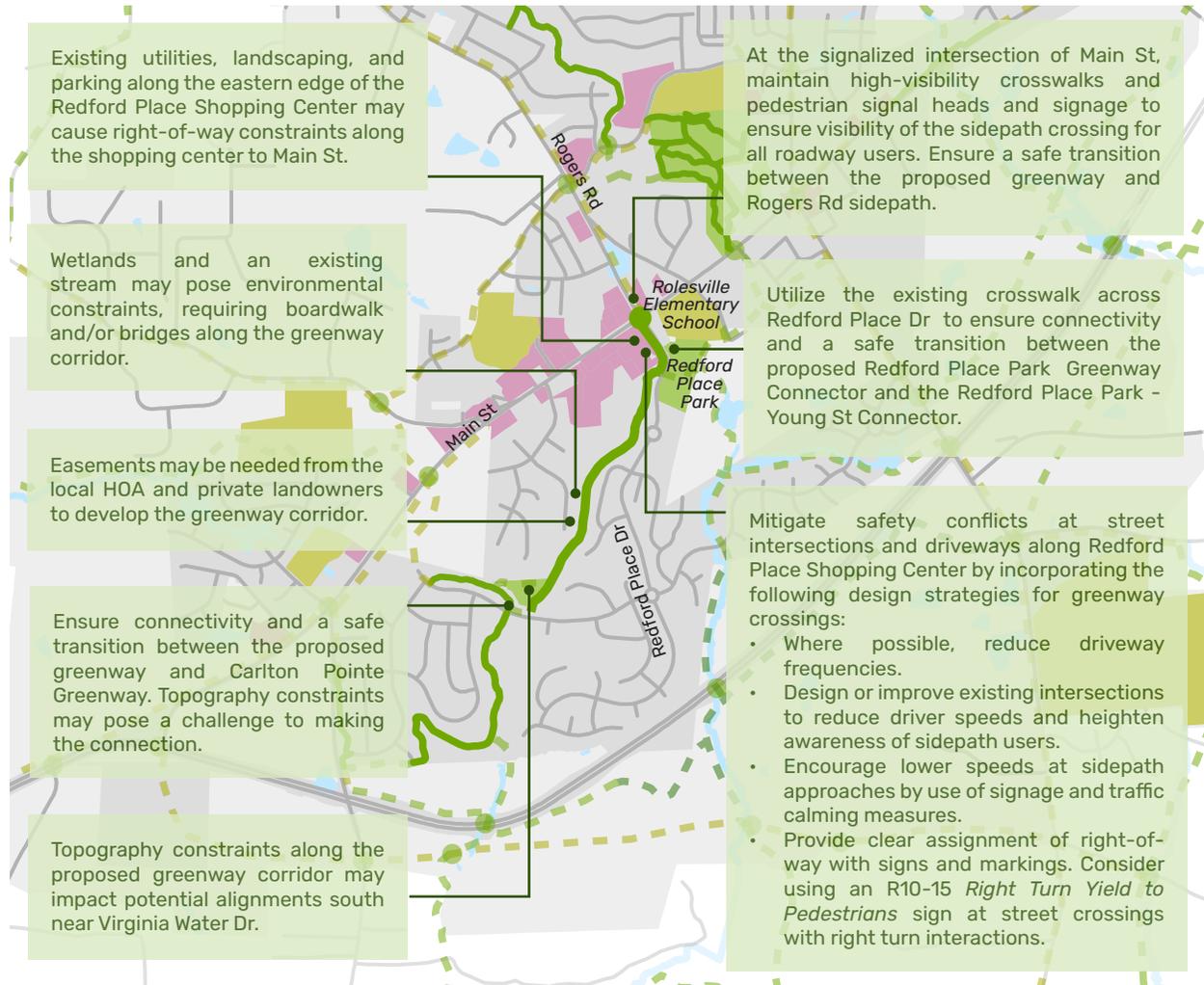
(The estimated planning level cost to construct the facility is provided in 2022 dollars. The estimate does not include costs for additional right-of-way acquisition or design).

PROPOSED TYPICAL CROSS SECTION

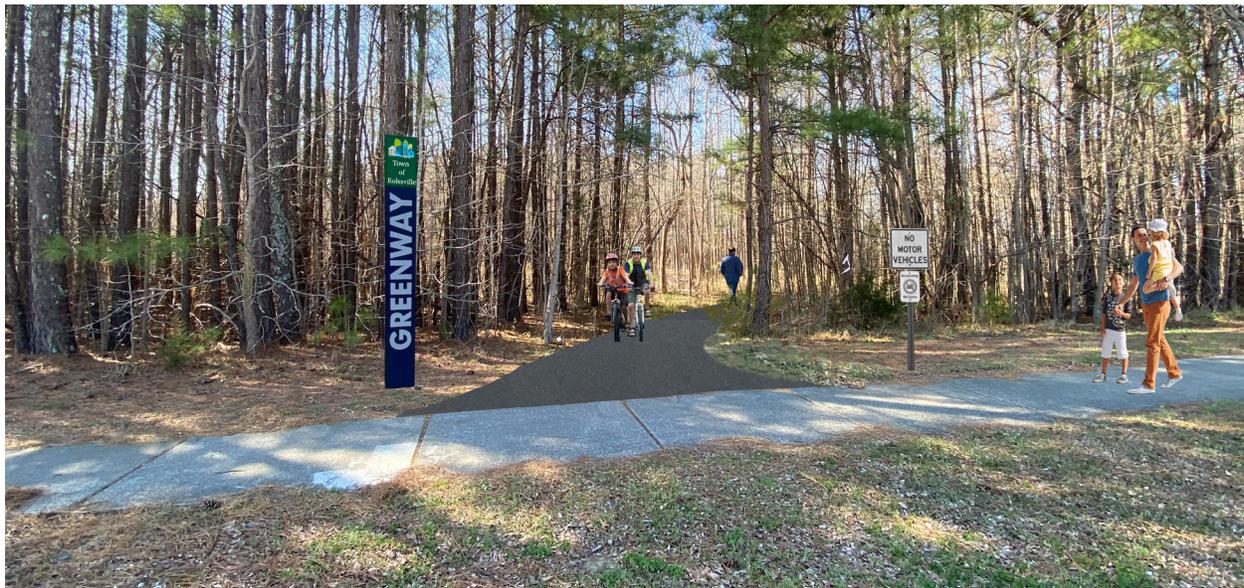


10'
Greenway

DESIGN CONSIDERATIONS



PROPOSED FACILITY RENDERING



11. AVERETTE RD / W. YOUNG ST SIDEPATH

Averette Rd / W. Young St is a priority sidepath corridor as it provides connections between Downtown and residential neighborhoods in North Rolesville. This corridor serves as the main north-south arterial for pedestrians and bicyclists between Wait Ave and Main St, connecting proposed multi-modal facilities along Jones Dairy Rd, Chalk Rd, Perry Creek, Granite Falls Blvd. Bicycle lanes are also proposed along the corridor in the bicycle plan recommendations. For details on proposed bicycle facilities, reference *Rolesville Bikes*.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Main St, adjacent neighborhoods in North Rolesville, and proposed greenways and sidepaths along Main St, Chalk Rd, Jones Dairy, and Wait Ave.

REGIONAL CONNECTIVITY:

Connections to the proposed Perry Creek Greenway and Wait Ave Sidepath, which provide connections to greenway networks in Wake Forest and Wake County.

SAFETY:

Provides an off-road bicycle and pedestrian facility and improves intersections along W. Young St / Averette Rd.

EQUITY:

Provides a multimodal facility and access to shopping centers, employment centers, parks, and schools.

ENVIRONMENTAL PROTECTION:

Provides sustainable transportation options for those reaching destinations along the Averette Rd and W. Young St corridor.

PROJECT SNAPSHOT

LOCATION:

Averette Rd from Wait Ave to Chalk Rd and W. Young from Chalk Rd to Main St

TOTAL LENGTH:

2.6 miles

FACILITY TYPE:

Sidepath

INTERSECTION TREATMENTS:

Averette Rd at Jones Dairy Rd: Crosswalks

W. Young at Chalk Rd and at Big Willow Way: Crosswalks

W. Young St at Granite Falls Blvd: Crosswalks and Rectangular Rapid Flashing Beacon (RRFB)

W. Young St at Main St and Wait Ave: Crosswalks and Pedestrian Signal Heads

Accessible curb ramps are required by the Americans with Disabilities Act (ADA) at all crosswalks.

IMPLEMENTATION PARTNERS:

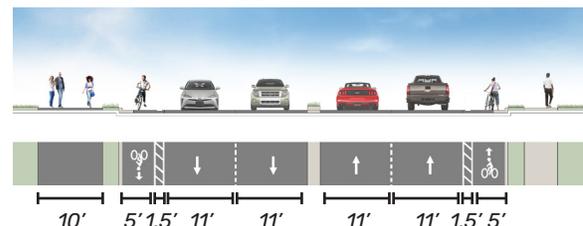
Town Rolesville Planning, Public Works, and Parks and Recreation Departments, NCDOT IMD, NCDOT Division 5, CAMPO

PLANNING LEVEL COST ESTIMATE:

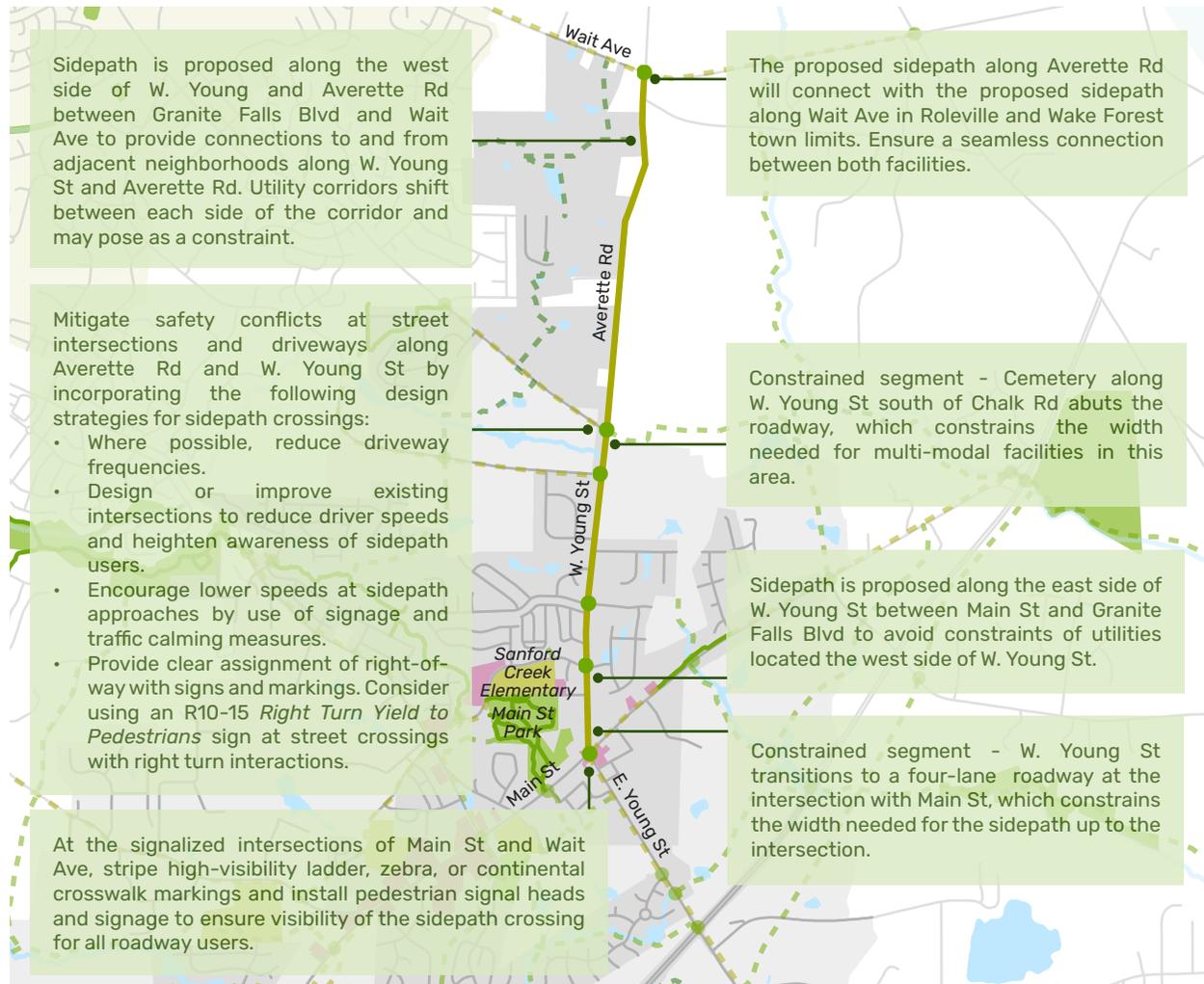
\$5,640,000

(The estimated planning level cost to construct the facility is provided in 2022 dollars. The estimate does not include costs for additional right-of-way acquisition or design).

PROPOSED TYPICAL CROSS SECTION



DESIGN CONSIDERATIONS



PROPOSED FACILITY RENDERING



RECOMMENDED POLICIES + TRAIL AMENITIES GUIDANCE

In tandem with infrastructure recommendations, greenway policies and trail amenities improve user safety and experience and enhance recreational and multi-modal accommodations in town ordinances and codes. A summary of recommended policies and an overview of key trail amenities for the Town of Rolesville are provided below and on subsequent pages.

POLICY RECOMMENDATION	DESCRIPTION
<p>Establish dedicated funding in the CIP for greenways and trails.</p>	<p>The Town of Rolesville should consider a dedicated funding allocation for greenway infrastructure and trail amenities in the Town budget to implement recommendations in this plan and to leverage other state and federal funding for greenways and trail facilities.</p>
<p>Establish a greenway maintenance policy and operations plan.</p>	<p>The Town of Rolesville should consider establishing a greenway maintenance policy and plan that specifies greenway and sidepath maintenance tasks, frequency of tasks schedule, cost and time to complete tasks, responsible departments, and the annual maintenance budget. Greenway and sidepath maintenance tasks include structure repair, drainage repair, clearing vegetation, resurfacing, as well as routine and special maintenance of pedestrian signals, greenway signage, and trail amenities.</p>
<p>Expand the definition of a greenway in the Land Development Ordinance (LDO).</p>	<p>The Town of Rolesville should consider expanding the definition of greenways to include sidepaths. Per FHWA guidance, a sidepath is defined as a bidirectional shared use path located immediately adjacent and parallel to a roadway.</p>
<p>Expand requirements for sidewalk development to include sidepaths in the Land Development Ordinance (LDO).</p>	<p>The Town of Rolesville should consider expanding sidewalk development requirements to allow sidepaths to be constructed in the roadway right-of-way in place of sidewalks where sidepaths are proposed in the greenway plan. The LDO currently requires planned sidewalks to be constructed in the roadway right-of-way during roadway improvement projects or when new developments are constructed.</p>
<p>Include a Provision of Public Access policy in the Land Development Ordinance (LDO).</p>	<p>The Town of Rolesville should consider including a provision within the LDO to allow public access greenways within easements or right-of-way of all new utility, sewer, and stormwater corridors. Establishing this policy provides an avenue for greenways to be incorporated into new developments as services are established, as opposed to retroactively granting public access to easements.</p>
<p>Require developers to show greenway trails to be constructed on the PD Plan, Master Subdivision Plan, or Site Plan.</p>	<p>The Town of Rolesville should require developers to include designated greenways and sidepaths to be constructed as part of a development on the Planned Development Plan, Master Subdivision Plan, or Site Plan. Detailed drawings for all improvements, including plan and profile for greenways and/or sidepaths should be required for Construction Plan approval.</p>

LIGHTING

Well placed and properly maintained lighting can improve visibility, increase overall greenway access, and give users a greater sense of security. Consider the following lighting guidance for Rolesville's greenway network:

- Meet the American Association of State Highway and Transportation Officials' (AASHTO) Guide for the Development of Bicycle Facilities requirements for shared-use paths.
- Light only what's needed and comply with dark-sky requirements to help minimize light pollution, which impacts people, animals, and the environment.
- Be of appropriate scale and spacing to ensure adequate coverage.
- Be placed where recommended for safety at tunnels and overpasses; trailheads; bridges; gathering places; along streets; crosswalks; where a greenway crosses another path or sidewalk; and on signage.

A variety of lighting types are available including wired, battery-powered, and solar-powered each of which offers unique advantages or disadvantages regarding cost, maintenance burden, and environmental impacts.

Use of colored and/or dynamic lighting schemes in select areas (such as tunnels and bridges) can enhance the user experience, contribute to the overall brand/identity of the greenway network, and raise awareness of the facility to the traveling public.



Lighted Tunnel under Edwards Mill Rd along Richland Creek Trail, Raleigh, NC

WAYFINDING

Wayfinding consists of comprehensive signage, mapping, and marking systems that help inform and educate users as they make their way to, from, and within a greenway network.

While Rolesville has an established wayfinding system for the town's greenway network, expansion and enhancement of existing wayfinding may improve access, provide a greater sense of security and comfort, promote desired user behaviors, improve awareness of regional trail systems, and reinforce the brand/identity of the greenway network. The following principles should guide the expansion of Rolesville's wayfinding system as the greenway network continues to develop:

- **CONSISTENCY** - User experience should feel consistent and continuous across the greenway network.
- **CONNECTIVITY** - A primary function of wayfinding is to connect users to destinations and other routes. It should clearly communicate current locations, access points, adjacent streets, distances, directions, destinations, estimated travel times, and historical/cultural/environmental information where applicable.
- **IDENTITY** - A strong wayfinding identity will make the greenway network more recognizable and memorable to visitors and local residents alike. Custom designs and graphics should be used to create a unique identity which reflects the goals of the greenway network and the character of the community it will serve.
- **PREDICTABILITY** - Apply wayfinding in a predictable manner (including sign placement, design, and content) to allow users to quickly understand the information being presented. For users, this builds trust, increases comfort, reduces stress, and provides a welcoming and low-stress experience as they navigate local greenways.
- **SIMPLICITY** - Present information in a clear, logical, universal way to reach the widest possible demographic. The longer it takes to understand the information presented, the less likely the system will be used or relied upon.



Rolesville's Existing Wayfinding Signage



BeltLine Trail Mile Marker, Atlanta, GA



Centennial Greenway Wayfinding Signage, St. Charles, MO

BRANDING

Popular trail and greenway systems establish strong brands and identities to drive recognition at the local and regional levels and beyond to attract users. A consistent, high-quality user experience may be achieved through repeating brand elements such as typical sections (including materials selection), wayfinding (including logos, graphics, and color palette), lighting, furnishings, and other amenities. At a minimum, good signage will increase the awareness of trails within a community, even outside of the system itself. Effective network signage should strike a balance between establishing a consistent look and feel, promoting the system, and respecting individual greenway corridors.

There are a variety of methods available to improve the branding and wayfinding of a trail network beyond the installation of traditional signage. Logos can be painted on greenway surfaces, and smaller signs or stickers can be added to existing streetscape elements like benches, bike racks, trash receptacles and street signs to catch the attention of passers-by and entice new users into the system. These efforts can complement the installation of dedicated network signage, or in some cases, make more expensive signage unnecessary. A branding study is recommended with community input to establish these elements to be used across Rolesville's greenway network.



Brand Signage for the Fonta Flora Trail, McDowell County, NC



Brand Signage for the Wolf River Greenway, Memphis, TN



Brand Signage for the Downtown Greenway, Greensboro, NC

TRAILHEADS

Trailheads provide public access point to trails and greenways. They are typically in places where users begin or end their journeys and where they get oriented to the greenway or greenway network. While there are minor access points along greenways such as road crossings, within neighborhoods, or where two greenways intersect, a trailhead tends to be a developed site, purposefully designed to provide amenities to greenway users such as parking, signage, information kiosks, restrooms, drinking fountains, bike racks, bike repair stations, seating, public art, landscaping, and trash receptacles.

Guidance for trailhead placement includes:

- Endpoints are natural places to locate trailheads, but any place where a large volume of users is expected should be considered as a possible trailhead location.
- Utilize areas where amenities already exist, such as parks.
- Consider placing a trailhead where greenways intersect.
- Consider placing a trailhead within residential neighborhoods. Trailheads that are located within neighborhoods should be designed to be compatible with their surrounding uses.
- Consult with the community and seek public input on locations. Residents may have insights or preferences for areas that best meet trail user needs.

At all greenway access points, including trailheads, enhance user safety by implementing access management tools. Bollards, gates, fences, landscaping, and signage can prevent motorized vehicles from accessing the greenway. These barriers should be accessible for persons with disabilities to ensure that users of all ages and abilities can access the greenway. Barriers should also allow emergency or maintenance vehicles to access the greenway.



New Hope Church Road Trailhead - American Tobacco Trail, Cary, NC



Reedy Creek Road Trailhead - Black Creek Greenway, Cary, NC

DATA COLLECTION

Bicycle and pedestrian count data are an essential tool to justify investments in greenway and active transportation infrastructure and communicate needs with the public, elected officials, and other stakeholders. Collecting this data provides insights into temporal user volume trends (time of day and seasonal), user type trends (biking vs. walking), and user volume trends by geographic location (which sections are most frequently used). This information can also help identify potential areas of need as municipalities plan their future pedestrian and bicycling infrastructure projects.

A variety of counting technologies and products are available depending on the specific application and budget. These range from inductive loop detectors, pneumatic tube detectors, and passive infrared detectors among others.

Mobile counters provide the flexibility to collect data in one location before moving to another collection location and are typically battery-powered. Fixed counters are used at locations where long-term data collection is desired and may be wired or battery-powered. Some blend in with their surroundings and others utilize real-time display totems to present daily and yearly counts and engage directly with those users being counted.

Depending on the specific product, count data may be retrieved manually from the counter or may streamline the process via wireless transmission, reducing trips to the field. Online, easy-to-use data platforms are also offered to analyze and visualize the data. Features include dashboards and interfaces to provide access to count data for the development of custom websites and mobile applications. The emerging use of “Big Data” crowd-sourced from mobile phone users, via services such as Streetlight and Strava, may also be an option for collecting user count data.



Inductive Loop Counter on a Trail in Arlington, VA





05 IMPLEMENTATION

IMPLEMENTATION

Recommendations outlined in *Rolesville Greenways* present major investments in greenway infrastructure that will significantly expand recreational opportunities for Rolesville residents, employees, and visitors travel. Successful implementation of this plan will require a coordinated and consistent effort with a wide range of community partners. Key agencies and partners include the Rolesville Town Board, Town of Rolesville Parks & Recreation Department, Town of Rolesville Public Works Department, Town of Rolesville Planning Department, Wake County, Capital Area Metropolitan Planning Organization (CAMPO), NCDOT Division 5, NCDOT Integrated Mobility Division (IMD), as well as advocacy organizations, private partners, and members of the community.

This chapter outlines partner roles and action steps to guide key agencies and stakeholders in the funding, design, and construction of greenway network recommendations as well as the implementation of recommended policies and amenities. Action steps prioritize implementation strategies over a 10-year planning horizon. Funding resources available to the Town of Rolesville for implementation are outlined in *Appendix A: Funding*.

KEY PARTNERS IN IMPLEMENTATION

Achieving success in the development of *Rolesville Greenways* relies on collaboration with community partners and stakeholders at the local, regional, and state levels. Implementation will require both individual and coordinated efforts by all project stakeholders. Key roles in the implementation of this plan are outlined below.

ROLE OF THE ROLESVILLE TOWN BOARD

The Town of Rolesville operates under a Board-Manager form of government. The Town Board, which includes the Mayor of Rolesville establishes policies, and the Town Manger is responsible for the implementation and administration of established policies. Therefore, the Town Board is responsible for adopting this plan, establishing recommended policies, and supporting the action steps required to implement plan recommendations. By adopting the plan, the Town Board expresses its commitment to expanding greenway infrastructure, policies, and amenities in Rolesville. They also demonstrate their intent to support the efforts of other key partners, such as Town departments and Wake County.

ROLE OF THE TOWN DEPARTMENTS

Town departments lead or support the development of greenway projects in Rolesville. On projects they play a leading role, municipal staff are the primary coordinators for project development, community engagement, policy development, funding strategies, and maintenance. Town departments involved in the implementation of *Rolesville Greenways* include the Parks and Recreation, Planning, and Public Works departments. The Parks and Recreation Department is responsible for the planning, design, and maintenance of existing and future parks and providing recreation services and programs. The Planning Department advises citizens, staff, and elected officials on policies for land use, housing, transportation, zoning, and growth management, and the Public Works Department is responsible for the maintenance and repair of Town-owned roadways, buildings, and grounds.

ROLE OF NCDOT

North Carolina Department of Transportation (NCDOT) allocates federal and state funding and establishes policies for transportation improvements in communities across North Carolina. Every two years, NCDOT develops the State Transportation Improvement Program (STIP), which identifies projects that will receive funding during a 10-year period. NCDOT policies, such as Complete Streets provide guidance and oversight for permitting and implementing bicycle and pedestrian projects. The Complete Streets Policy, adopted in August 2019, requires NCDOT to consider and incorporate bicycle and pedestrian facilities in the design and improvement of the state's transportation projects. As the lead state agency allocating funding, guiding implementation of the Complete Streets policy, and

approving activities along NCDOT-maintained roadway corridors, NCDOT plays a critical role in the implementation of *Rolesville Greenways*. NCDOT Divisions involved in project development include Division 5 and the Integrated Mobility Division (IMD).

ROLE OF THE REGIONAL & COUNTY STAKEHOLDERS

Other governmental organizations that have jurisdictional authority or administer services in Rolesville play a key role in project implementation by working with lead agencies to advance shared goals of improving multi-modal connectivity and expanding travel choices in the region. Key agency partners include Capital Area Metropolitan Planning Organization (CAMPO) and Wake County. CAMPO allocates federal funds to local projects through the Locally Administered Projects Program (LAPP). CAMPO also ranks and prioritizes projects submitted to the Strategic Transportation Prioritization (SPOT), which is the methodology NCDOT uses to develop the State Transportation Improvement Program (STIP). Wake County Parks, Recreation, and Open Space administers funding to municipalities in the County to develop greenways through the 2018 Parks, Greenways, Recreation and Open Space Bond, and Wake County Public School System administers a county-wide Safe Routes to School Program to develop encouragement and safety programs for students walking and biking to school.

ROLE OF THE TOWN OPEN SPACES & GREENWAY COMMITTEE

The Open Space & Greenways Committee (OSAG) guides the implementation of recommended greenway infrastructure, policies, and amenities outlined in *Rolesville Greenways* for the Town Board and staff. The OSAG Committee is a subcommittee of the Parks & Recreation Advisory Board, whose members provide guidance on recreational policies, facilities, finances, programs, long-range plans, and the acquisition and disposition of land. The OSAG Committee creates a check for elected officials and agency staff, provides constructive guidance on greenway system issues, and ensures that residents have an opportunity to give input and receive a response by Town staff.

ROLE OF THE LOCAL RESIDENTS & COMMUNITY GROUPS

Residents and community groups that promote greenway and trail system expansion serve a key role in advocating for greenway infrastructure investment. Community members and groups generate support for projects by raising awareness amongst the public, advocating to elected officials to prioritize funding for greenways and trail amenities, and fostering collaboration amongst jurisdictional partners. Key advocacy organizations that may also support implementation of *Rolesville Bikes* include BikeWalkNC, Triangle Trails Initiative, and Live Well Wake.

ROLE OF PRIVATE DEVELOPERS

Private developers play an important role in greenway development. Developers construct planned greenways, sidepaths, and sidewalks as a requirement to development in municipal limits, as specified in the *Rolesville Next: Land Development Ordinance*. Town Planning staff should coordinate with developers to provide guidance on LDO requirements and processes, on greenway and sidepath design standards, as well as the Town of Rolesville's complete street policy. Developers should be prepared to include greenways and trail facilities in future developments that provide connections to Rolesville's overall greenway network.

ROLESVILLE GREENWAYS ACTION PLAN

ACTION	DESCRIPTION	LEAD	SUPPORT	TIMELINE
Adopt <i>Rolesville Greenways</i> as the Town of Rolesville's Greenway Plan Update.	Plan adoption establishes <i>Rolesville Greenways</i> as the guiding planning document for greenways and sidepaths.	Town Board	Town Departments, Steering Committee	2022
Develop a work plan and designate Town staff to lead implementation of plan recommendations.	The Town Manager and Department Directors of Planning, Public Works, and Parks & Rec should identify their staff leads and duties for plan implementation. Staff leads should be selected to guide project development, complete streets, data collection, programs, and maintenance.	Town Manager, Town Department Directors	Town Staff	2022-2023
Provide staff resources and training related to greenway infrastructure and trail amenities.	Provide resources and funding for staff involved in plan implementation to attend webinars, trainings, and conferences on greenway planning, design, and programming Invest in guidance materials available from FHWA, NCDOT, NACTO, AASHTO, Rails to Trails Conservancy, and American Trails.	Town Manager, Town Department Directors	Town Staff	Ongoing (Beginning 2022)
Continue to convene the Open Space and Greenways (OSAG) Committee to guide plan implementation.	Continue to convene the OSAG Committee to guide Town staff in the implementation of recommended infrastructure, amenities, and policies. OSAG representatives should include of trail users of all ages and abilities.	Town Board	Town Departments, OSAG, Steering Committee	2022
Amend <i>Rolesville Next: Land Development Ordinance</i> to incorporate recommended policies.	Policy recommendations such as inclusion of sidepaths in the greenway definition, provision of public access, and inclusion of sidepaths in sidewalk development requirements should be incorporated into the LDO to ensure implementation of planned greenways and sidepaths as development occurs.	Town Planning Department, Town Board	Town Departments	2022-2023
Ensure that greenway infrastructure recommendations are incorporated into new developments.	The Planning Department should coordinate closely with developers during the development review process on inclusion of planned greenways in new developments where required.	Town Planning Department	Town Board, Town Departments	Ongoing (Beginning in 2022)
Develop a Landowner and Developer Outreach Program	In efforts to coordinate with developers and private landowners to construct planned greenways, Town staff should develop a program with strategies to build relationships and maintain consistent contact with developers and willing landowners to work towards acquiring property/easements for greenways and to ensure greenways are constructed in new developments.	Town Planning and Parks and Recreation Departments	Town Board, OSAG Committee	Ongoing (Beginning in 2022)
Develop funding strategies for greenway plan implementation.	Review funding resources provided in Appendix A and coordinate with Town Staff, CAMPO, Wake County, and NCDOT IMD to determine funding strategies for plan recommendations.	Town Manager and Department Directors	Town Staff, Town Board, CAMPO, NCDOT IMD, Wake County	Ongoing (Beginning in 2022)

ACTION	DESCRIPTION	LEAD	SUPPORT	TIMELINE
Conduct feasibility studies for priority greenway projects.	Coordinate with NCDOT, regional partners, and adjacent municipalities to conduct feasibility studies for priority greenway projects to determine corridor alignments with 30% design and detailed cost estimates.	Town Department Directors and Staff	CAMPO, NCDOT Division 5, NCDOT IMD, Wake County, Wake Forest, Raleigh	Ongoing (beginning in late 2022-early 2023)
Coordinate with NCDOT Division 5 on future STIP projects to include sidepaths and intersection treatments in roadway projects.	Coordinate with NCDOT Division 5 and IMD on future State Transportation Improvement Program (STIP) projects to incorporate sidepaths and intersection treatments in roadway enhancements, especially along Burlington Mills Rd, Rogers Rd, Averette Rd, Young St, and Rolesville Rd, and Main St.	Town Department Directors and Staff, NCDOT Division 5	NCDOT IMD, CAMPO	Ongoing (beginning in 2022)
Coordinate with NCDOT IMD to participate in the Bicycle and Pedestrian Count Program.	Coordinate with NCDOT IMD to be involved in the NC State Institute for Transportation Research and Education (ITRE) Non-Motorized Volume Data Program to collect bicycle and pedestrian counts along greenways.	Town Parks & Recreation and Public Works Department	NCDOT IMD, NCDOT Division 5	Ongoing (beginning in 2022-2023)
Expand the Town of Rolesville Wayfinding Standards to improve the existing trail wayfinding system.	Expand existing wayfinding standards to foster consistent placement, use, and design of wayfinding signage. Signage should clearly communicate current locations, access points, adjacent streets, distances, directions, destinations, and estimated travel times/mileage.	Town Parks & Recreation and Public Works Department	Town Manager, Town Board, OSAG	2023-2024
Develop a Greenway Maintenance & Operations Plan.	Develop a greenway and trail amenities maintenance plan to define maintenance responsibilities, budget, and staff resources required to maintain facilities.	Town Parks & Recreation and Public Works Department	Town Manager, Town Board, OSAG	2023-2024
Develop a Greenway System Branding Study to establish a cohesive brand for the network.	Develop a greenway branding study to create cohesive brand elements such as logos, graphics, and color palette for wayfinding, lighting, furnishings, and other amenities to create a consistent, high-quality user experience along the greenway system.	Town Parks & Recreation and Public Works Department	Town Manager, Town Board, OSAG	2023-2024
Conduct a Greenway Lighting Study to determine lighting needs.	Conduct a greenway system lighting study to evaluate strategic locations for trail lighting to improve user safety and security.	Town Parks & Recreation and Public Works Department	Town Manager, Town Board, OSAG	2024-2025
Create a dedicated webpage for the Rolesville Greenway System on the Town of Rolesville's website.	Create a dedicated webpage for Rolesville's greenway system that includes plan and development updates, and an interactive greenway map that includes existing and planned facilities, trail access points, and greenway closures. Continue to update greenway network maps as facilities are constructed.	Town Parks & Recreation Department	Town Manager, OSAG	Ongoing (beginning in 2022)
Evaluate performance of the greenway network annually.	Develop performance measures and conduct annual reviews of the greenway system to understand facility needs, funding and resource needs, and usage rates.	Town Parks & Recreation Department	Town Manager, OSAG	Ongoing (beginning in 2023)

MAINTENANCE

Maintenance of Rolesville’s greenways is essential to the long-term viability of the network. Greenways that are consistently maintained have lower costs over time and provide a safe and positive trail user experience than greenways that require major rehabilitation work from a lack of consistent maintenance. Good maintenance practices also prolong the useful life of greenways, promote positive relationships with adjacent landowners, and create a sense of stewardship in the community.

This plan recommends a comprehensive approach to maintenance with the development of a maintenance plan to prioritize funding and responsibilities amongst Town departments. The maintenance plan should be reviewed and updated annually, responding to lessons learned and changes in tasks, operational policies, standards, and maintenance goals. Key considerations for the Rolesville’s greenway system maintenance plan include:

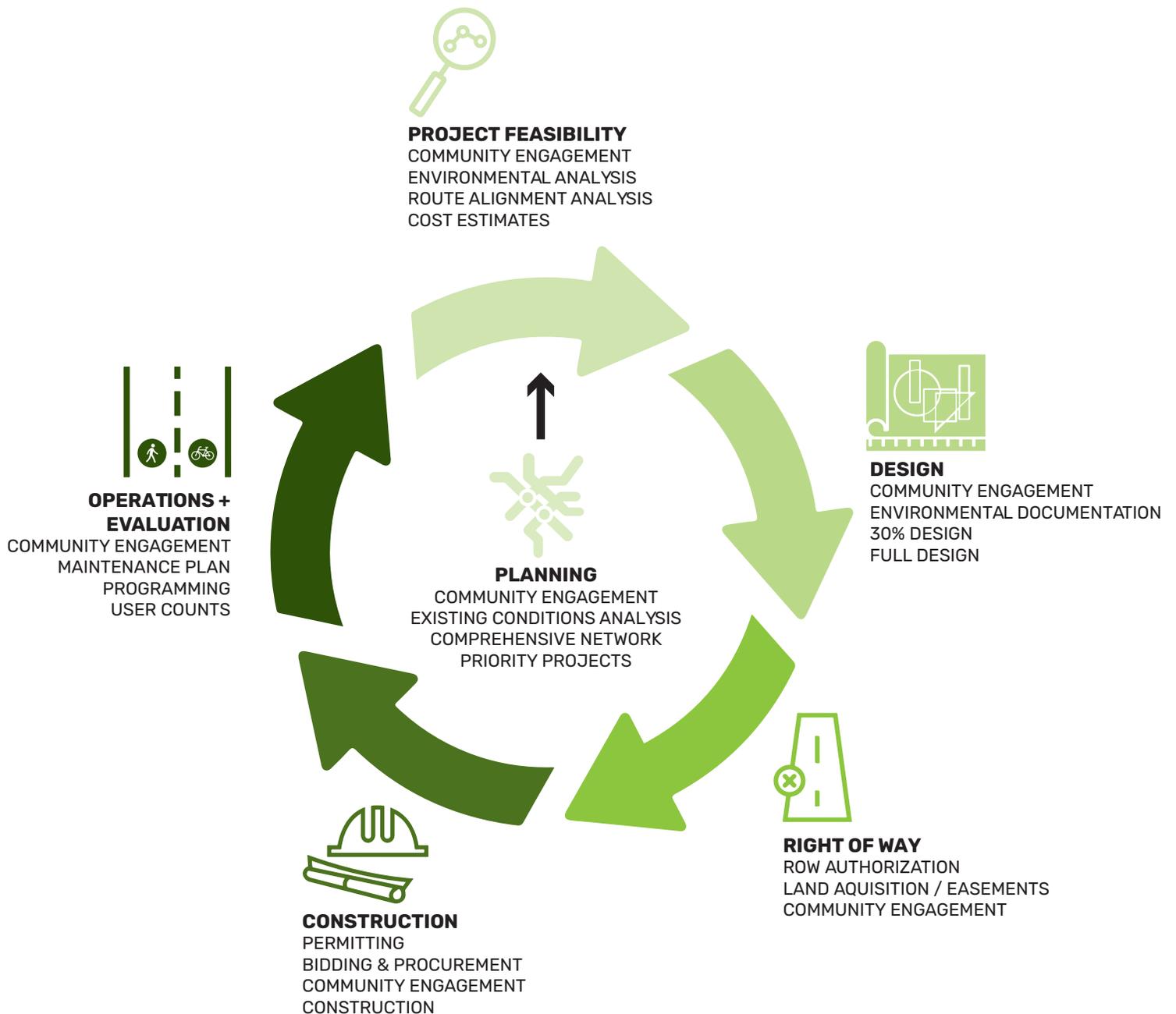
- Understanding the anticipated needs of the greenway system and assessing the capacity of Town staff to meet those maintenance needs.
- Developing a facility inventory to understand the routine and substantial maintenance needs of greenway signs, amenities, bridges, culverts, and pavement conditions.
- Estimation of baseline maintenance costs by determining necessary maintenance activities, such as mowing, edging, landscaping, trash removal, debris clearing, lighting, drainage, seasonal maintenance needs, sealcoating, repaving, patching, and bridge repair.
- Consideration of labor costs based on which maintenance activities can be completed in-house versus contracted out.
- Assessment of available technologies to collect data on facility conditions and facilitate maintenance functions.
- Developing methodology to prioritize annual maintenance needs based on facility conditions and available funding.
- Consideration of emergency services including designated ingress/egress locations, mile-marker signage along the facility for location identification, and emergency notification systems.

MAINTENANCE TASK	TASK TYPE	RECOMMENDED FREQUENCY
Tree/Brush Trimming Mowing Trail Sweeping Signage/Map/Kiosk Updates/Replacement Trash Removal/Litter Clean-Up Planting, Pruning, Landscaping Flooding Repairs Repainting/Restriping Minor Patching Minor Bridge Repairs Lighting Replacement Bollard Locks/Replacement Pest Management	Routine	On-Going / Annually
Greenway and Sidepath Sealcoating	Minor Repairs	Every 5 Years
Greenway and Sidepath Resurfacing: Asphalt Concrete Boardwalk	Major Reconstruction	Every 10-15 Years Every 20 Years 10 Years
Complete Greenway and Sidepath Replacement, Regrading, and Resurfacing	Major Reconstruction	Every 20 Years

Best Practices in Trail Maintenance: A Manual by the Ohio River Greenway, Perdue University

KEY STEPS IN THE PROJECT DEVELOPMENT PROCESS

While *Rolesville Greenways* provides an overall framework for development of greenways and trail amenities, it is only the first step in a larger process. As a living document, recommendations and priorities outlined in the greenway plan may evolve with changing development pressures, funding opportunities, and community growth trends. Further, Rolesville may need to conduct feasibility studies to understand the environmental conditions, routing challenges, and costs of priority corridors. This detailed analysis allows design and right-of-way acquisition to be finalized, which is followed by construction. Operational and programming plans are developed once greenways are constructed to determine maintenance and evaluation needs. The diagram below illustrates the typical planning, design and construction process for greenways and trail amenities with key phases and individual tasks.





APPENDIX

A. FUNDING

Below are several funding sources that can be leveraged to provide the necessary dollars to plan, design, and/or construct bicycle, pedestrian, and greenway facilities. The following sources of funding have been instrumental in the successful development of bicycle and pedestrian networks in North Carolina communities.

FEDERAL FUNDING

North Carolina communities have partnered with Federal agencies to build multi-use paths, greenways, sidewalks, bike lanes and improve crossings. Federal funding is primarily distributed to municipalities through state agencies and Metropolitan Planning Organizations (MPO), as well as through discretionary grant programs.

The Fixing America's Surface Transportation (FAST) Act authorizes transportation funding for highway, transit, rail, bicycle and pedestrian, and safety programs and infrastructure. FAST Act funding is administered by the Federal Highway Administration (FHWA). FHWA distributes funding to NCDOT and directly to MPOs through the Locally Administered Projects Program (LAPP). Communities wishing to access Federal funding must submit their candidate projects to their MPO or RPO to then be entered into the NCDOT's Strategic Transportation Investment (STI) Mobility Formula. This formula ranks projects and identifies those to be funded in the State Transportation Improvement Program (STIP). These funds require a 20% match from the municipality. Federal transportation funds for bicycle and pedestrian projects are primarily distributed through four programs: Transportation Alternatives (TA), Congestion Mitigation & Air Quality (CMAQ), Recreational Trails Program, (RTP), and Highway Safety Improvement Program (HSIP).

Additional federal funding sources for bicycle and pedestrian projects are administered through the Department of Housing and Urban Development (HUD) with the Community Development Block Grant (CDBG) Program, and several discretionary grant programs administered by the US Department of Transportation (USDOT), National Park Service (NPS), and the National Endowment for the Arts (NEA).

STATE & MPO ADMINISTERED FUNDING TRANSPORTATION ALTERNATIVES (TA)

Transportation Alternatives provides federal funds for community-based projects that expand travel choices and enhance the transportation experience by integrating modes and improving the cultural, historic, and environmental aspects of our transportation infrastructure. In North Carolina, TA funds are administered by NCDOT. Program-eligible projects must be submitted through STI and require a 20 percent local match.

Project types include:

- On and off-road pedestrian and bicycle facilities.
- Infrastructure projects for improving non-driver access to public transportation and enhanced mobility.
- Community improvement activities.
- Environmental mitigation
- Safe routes to school projects
- Streetscape improvements
- Refurbishment of historic transportation facilities
- Other investments that enhance communities

NCDOT has created a bicycle and pedestrian scoping guidance document for local governments that have been awarded Transportation Alternatives funding. The Bike/Ped Project Scoping Guidance for Local Governments provides an overview of the four scoping tools used for locally managed, federally funded transportation projects in North Carolina. The document provides guidance on the project delivery process, scoping, identifying project risks, and project cost estimation. The document is available at the link below.

<https://connect.ncdot.gov/projects/BikePed/Documents/BikePed%20Project%20Scoping%20Guidance%20for%20Local%20Governments.pdf>

https://www.fhwa.dot.gov/environment/transportation_alternatives/

CONGESTION MITIGATION & AIR QUALITY (CMAQ)

CMAQ is a federal program that funds transportation projects and programs in air quality nonattainment and maintenance areas to help achieve and maintain national standards for air quality. In North Carolina, NCDOT serves as the administrator for this program. Funding is apportioned to North Carolina based on the population in non-attainment and maintenance areas of the state and the severity of air quality problem. North Carolina's allocation of CMAQ funding is split in three pots available for funding, as follows:

- Statewide CMAQ funds are administered by NCDOT and are awarded to prioritized NCDOT-driven CMAQ eligible projects either on a statewide tier facility or involving a system wide improvement within nonattainment and maintenance areas. Statewide CMAQ funds are not subject to regional or subregional allocations or the allocation formula. This category accounts for 35% of the total North Carolina CMAQ apportionment.
- Regional CMAQ funds are locally administered and awarded to projects spanning more than one air quality region that cannot be considered subregional projects. Air quality regions are Catawba, Great Smoky Mountains National Park, Metrolina, Rocky Mount, the Triad, and the Triangle. The local project sponsor is responsible for providing the required match. This category accounts for 5% of the total North Carolina CMAQ apportionment.
- Subregional CMAQ funds are locally administered and awarded at the MPO/RPO level to projects within eligible counties. The local project sponsor is responsible for providing the required match and meeting federal funding requirements. This category accounts for 60% of the total North Carolina CMAQ apportionment.

https://www.fhwa.dot.gov/environment/air_quality/cmaq/

HIGHWAY SAFETY IMPROVEMENT PROGRAM (HSIP)

The purpose of the North Carolina Highway Safety Improvement Program (HSIP) is to provide a continuous and systematic procedure that identifies and reviews specific traffic safety concerns throughout the state. The goal of the HSIP process is to reduce the number of traffic

crashes, injuries, and fatalities by reducing the potential for these incidents on public roadways. Areas with bicycle and pedestrian safety concerns are primarily analyzed based on bicycle and pedestrian crash data.

<https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx>

RECREATIONAL TRAILS PROGRAM (RTP)

The Recreational Trails Program provides funds to state agencies to develop and maintain recreational trails and trail-related facilities for both non-motorized and motorized recreational trail uses. RTP is an assistance program of the Department of Transportation's Federal Highway Administration (FHWA). In North Carolina, the Recreational Trails Program is a \$1.5 million grant program that funds trails and trail-related recreational needs identified by the Statewide Comprehensive Outdoor Recreation Plan. Grant funding is available for trail planning, construction of new trails; maintenance and repair of existing trails; land acquisition; purchase of trail tools; and legal, environmental, and permitting costs. RTP is a reimbursement grant program. Municipalities must provide project funds upfront and are reimbursed upon completion of deliverables. Eligible applicants are state, federal, or local government agencies or qualified nonprofit organizations. Grants range from \$10,000 - \$100,000 and require a 25% match by the municipality.

https://www.fhwa.dot.gov/environment/recreational_trails/

<https://trails.nc.gov/trail-grants>

COMMUNITY DEVELOPMENT BLOCK GRANT (CDBG)

The Community Development Block Grant Program provides annual grants on a formula basis to states, cities, and counties to develop viable urban communities by providing decent housing, suitable living environments, and expanding economic opportunities for low- and moderate-income persons. The program is authorized under Title 1 of the Housing and Community Development Act of 1974. CDBG funds are allocated at the federal level by HUD and at the state level by the NC Department of Commerce. All municipalities are eligible to receive State CDBG funds except for entitlement communities, which receive funds directly from

HUD. North Carolina's 24 entitlement municipalities are: Asheville, Burlington, Cary, Chapel Hill, Charlotte, Concord, Durham, Fayetteville, Gastonia, Goldsboro, Greensboro, Greenville, Hickory, High Point, Jacksonville, Kannapolis, Lenoir, Morganton, New Bern, Raleigh, Rocky Mount, Salisbury, Wilmington, and Winston-Salem. In addition, all counties are eligible to receive State CDBG funds except Mecklenburg County, Wake County, Union, and Cumberland County, which have been designated by HUD as urban entitlement counties.

CDBG funds may be used for activities which include, but are not limited to:

- Acquisition of real property.
- Relocation and demolition.
- Rehabilitation of residential and non-residential structures.
- Construction of public facilities and improvements, such as water and sewer facilities, streets, neighborhood centers, and the conversion of school buildings for eligible purposes.
- Public services, within certain limits.
- Activities relating to energy conservation and renewable energy resources.
- Provision of assistance to profit-motivated businesses to carry out economic development and job creation/retention activities.

https://www.hud.gov/program_offices/comm_planning/communitydevelopment

DISCRETIONARY GRANTS REBUILDING AMERICAN INFRASTRUCTURE WITH SUSTAINABILITY AND EQUITY (RAISE)

The Infrastructure Investment and Jobs Act appropriated \$1.5 billion to be awarded by the Department of Transportation (DOT) for National Infrastructure Investments, formerly known as TIGER and BUILD Grants and now as Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants. RAISE Grants are for capital investments in surface transportation that will have a significant local or regional impact. The FY2022 RAISE Notice reflects the current Administration's priorities for creating good-paying jobs, improving safety, applying transformative technology, and explicitly addressing climate change and advancing racial equity. Consistent with the FY 2022 Appropriations Act requirement, the Secretary shall award projects based solely on the selection

criteria. The primary selection criteria are safety, environmental sustainability, quality of life, economic competitiveness, and state of good repair, and the secondary selection criteria are partnership and innovation. The Federal share of project costs may not exceed 80 percent for a project located in an urban area. The Secretary may increase the Federal share of costs above 80 percent for projects located in rural areas and for planning projects located in areas of persistent poverty.

Project Awards:

- Total Funding: \$1.5 billion.
- Minimum Project Awards: Urban Projects: \$5 million, Rural Projects: \$1 million.
- Planning Grants: \$75 million total funding; No project minimum required.
- Maximum Awards: Urban/Rural Projects: \$25 million, Per State: \$225 million.
- Geographic Distribution: 50% of total funds (\$750 million) awarded to both urban and rural projects.

<https://www.transportation.gov/RAISEgrants>

FEDERAL LANDS ACCESS PROGRAM (FLAP)

The Federal Lands Access Program (FLAP) provides funds for projects to improve Federal Lands Access Transportation Facilities that provide access to, are adjacent to, or are located within federal lands. This can include public roads, bridges, paved trails, or transit systems that are owned and/or maintained by the state, county, town, township, tribal, municipal, or local government. Funds may be used for the costs of transportation planning, research, engineering, preventive maintenance, rehabilitation, restoration, construction, and reconstruction of transportation facilities located on or adjacent to, or that provide access to, federal lands. Applicable activities include parking areas; acquisition of scenic easements or historic sites; bicycle and pedestrian provisions; environmental mitigation; public safety; and roadside rest areas. Other eligible activities include the operation and maintenance of transit facilities, and any transportation project that is within, adjacent to, or provides access to federal land. The program requires a minimum 20% local match.

<https://highways.dot.gov/federal-lands/programs-access/nc>

FEDERAL LAND AND WATER CONSERVATION FUND (LWCF)

The Land and Water Conservation Fund was established by Congress in 1964 to fulfill a bipartisan commitment to safeguard natural areas, water resources and cultural heritage, and to provide recreation opportunities to all Americans. The LWCF program is divided into the “State Side” which provides grants to State and local governments for the acquisition and development of public outdoor recreation areas and facilities, and the “Federal Side” which is used to acquire lands, waters, and interests therein necessary to achieve the natural, cultural, wildlife, and recreation management objectives of federal land management agencies. State Side funds are distributed by the State and Local Assistance Programs Division of the National Parks Service. Funding is available as 50/50 matching grants to states and territories to plan, acquire, and develop public lands for outdoor recreation. Projects are selected by states and submitted to NPS for approval. In North Carolina, grants are selected by the Parks and Recreation Division in the NC Department of Cultural and Natural Resources. To be eligible for LWCF assistance, every state must prepare and regularly update a statewide comprehensive outdoor recreation plan (SCORP). Applicants can request a maximum grant of \$500,000. An applicant must match the grant with a minimum of 50 percent. Due to a federal share cap of \$500,000, a greater match is required for projects that exceed total costs of \$1 million.

<https://www.nps.gov/subjects/lwcf/stateside.htm>

<https://www.ncparks.gov/more-about-us/grants/lwcf-grants>

RIVERS, TRAILS, AND CONSERVATION ASSISTANCE PROGRAM (RTCA)

The National Parks Service (NPS) Rivers, Trails and Conservation Assistance Program supports community-led natural resource conservation and outdoor recreation projects across the nation. Although RTCA is not a traditional funding program, NPS staff provide planning, design and technical expertise for trails and outdoor recreation projects. Depending on the project scale, RTCA can invest up to four years of planning and project development assistance. Eligible entities include community groups, nonprofit organizations, tribes, and governments.

Technical Assistance Services:

- Define project vision and goals.
- Set priorities and build consensus.
- Inventory and map community resources.
- Identify funding strategies.
- Identify and analyze key issues and opportunities.
- Design community outreach, participation, and partnerships plans.
- Create project management and strategic action plans.
- Develop concept plans for trails, parks, and natural areas.

<https://www.nps.gov/orgs/rtca/index.htm>

NATIONAL ENDOWMENT FOR THE ARTS (NEA) OUR TOWN PROGRAM

Our Town is the National Endowment for the Arts’ creative placemaking grants program. Through project-based funding, the NEA supports projects that integrate arts, culture, and design activities into efforts that strengthen communities by advancing local economic, physical, and/or social outcomes. These projects require a partnership between a local government entity and nonprofit organization, one of which must be a cultural organization; and should engage in partnership with other sectors (such as agriculture and food, economic development, education and youth, environment and energy, health, housing, public safety, transportation, and workforce development). Cost share/matching grants range from \$25,000 to \$150,000, with a minimum cost share/match equal to the grant amount.

<https://www.arts.gov/grants/our-town>

STATE FUNDING

North Carolina communities have partnered with state agencies to build bicycle and pedestrian facilities. State agency funding sources for bicycle and pedestrian planning, infrastructure, and programs are administered primarily through the North Carolina Department of Transportation (NCDOT), North Carolina Department of Natural and Cultural Resources, and North Carolina Department of Commerce. Discretionary grant programs focusing on public health and community development are administered by the North Carolina Department of Health and Human Services (DHHS), North Carolina Department of Environmental Quality (NCDEQ), and the North Carolina Department of Agriculture when funding is available.

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

The Strategic Transportation Investments law, passed in 2013, establishes the Strategic Mobility Formula, which allocates available funding based on data-driven scoring and local input. The Strategic Mobility Formula is used to develop the State Transportation Improvement Program (STIP), which identifies projects that will receive funding during a 10-year period. The STIP is state and federally mandated and updated by NCDOT every 2 years. The Strategic Mobility Formula

groups projects in three categories: Division Needs, Regional Impact, and Statewide Mobility.

Independent bicycle and pedestrian projects are programmed in the Division Needs category. Eligible bicycle and pedestrian projects submitted for prioritization must be included in a locally adopted plan and have a minimum project cost of \$100,000. Eligible activities include right-of-way acquisition, design, and construction. Additionally, the STI law prohibits the use of state funding for bicycle and pedestrian projects, requiring municipalities to provide the 20% match for federally funded projects.

FUNDING CATEGORY	FUNDING DISTRIBUTION	OVERVIEW
Division Needs	30%	Funding in this category is shared equally between NCDOT's 14 transportation divisions. Project scores are based 50% on data and 50% on rankings by MPOs and RPOs and the NCDOT Divisions.
Regional Impact	30%	Projects on this level compete within regions made up of two NCDOT Divisions with funding based on population. Project scores are based 70% on data and 30% on rankings by MPOs and RPOs and the NCDOT Divisions.
Statewide Mobility	40%	Projects in this category are of statewide significance and are based 100% on data.

Bicycle and Pedestrian STI Prioritization Qualitative Scoring:

Local input points represent 50% of the scoring for bicycle and pedestrian projects. 25% of local input points are assigned by MPOs and

RPOs, which are determined by municipal and county project priorities and public comment. The remaining 50% of the local input points are assigned by NCDOT Division Engineers.

CRITERIA	MEASURE	DIVISION NEEDS (50%)
Safety	(Number of crashes x 40%) + (Crash severity x 20%) + (Safety risk x 20%) + (Safety benefit x 20%)	20%
Accessibility / Connectivity	Points of Interest pts + Connection pts + Route pts	15%
Demand / Density	# of households and employees per square mile near project	10%
Cost Effectiveness	(Safety + Accessibility / Connectivity + Demand / Density) / Cost to NCDOT	5%

Project Bundling:

Multiple bicycle and pedestrian projects can be bundled to better compete with other projects submitted in the Division Needs category. Bundled projects are allowed across various geographies and project types. Projects do not have to be contiguous or related, and projects can be within a single municipality or across multiple jurisdictions. Bundled projects must be under one project manager, which must be a TAP eligible entity.

<https://www.ncdot.gov/initiatives-policies/Transportation/stip/Pages/strategic-transportation-investments.aspx>

INCIDENTAL BICYCLE AND PEDESTRIAN FACILITIES WITH ROADWAY PROJECTS

The NCDOT Complete Streets Policy Update was adopted by the Board of Transportation in August 2019. This policy requires NCDOT to consider and incorporate multimodal facilities in the design and improvement of all transportation projects in North Carolina. The adopted Comprehensive Transportation Plan (CTP) is considered the controlling plan for the identification of nonmotorized facilities to be evaluated as part of a roadway project. The CTP may include and/or reference locally adopted plans for public transportation, bicycle and pedestrian facilities, and greenways. Bicycle, pedestrian, and public transportation facilities that appear in the CTP directly or by reference will be included as part of the proposed roadway project, and NCDOT is responsible for the full cost of the project. Bicycle, pedestrian, and transit facilities incidental to a roadway project where a need has been identified through the project scoping process but not identified in an adopted plan may be included in the project. Inclusion of these incidental facilities requires the local jurisdiction to share the incremental cost of constructing the improvements based on population thresholds. Projects that have not completed environmental review prior to August 2019 are subject to the Complete Streets Policy.

<https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx>

STATEWIDE PROJECTS FUNDS

Small Construction Funds: These funds were established in 1985 to fund small projects in and around cities and towns that could not be funded in the Statewide Transportation Improvement Program (STIP). Funds are allocated equally to

each of 14 Transportation Divisions. Funds can be used on a variety of transportation projects for municipalities, counties, businesses, schools, and industries throughout the State. Funds projects up to \$250,000 per fiscal year, unless otherwise approved by the Secretary of Transportation. Right-of-way and utility relocations should be provided and accomplished at no cost to NCDOT. Funding requests should be submitted to the Division Engineer providing technical information such as location, improvements being requested, and project timeline.

Statewide Contingency Funds: These funds were created for statewide rural or small urban highway improvements and related transportation enhancements to public roads/public facilities, industrial access roads, and spot safety projects. The President Pro Tempore of the Senate, the Speaker of the House, and the Secretary of Transportation sponsor project requests from this fund. \$12 million in funds are administered by the Secretary of Transportation. Requests can be submitted from municipalities, counties, businesses, schools, citizens, legislative members, and NCDOT staff. Request should include a clear description and justification of the project.

Economic Development Funds: These funds were created to expedite transportation projects that promote commercial growth as well as either job creation or job retention. \$2500 per job (new & retained) allowed unless waived by the Secretary of Transportation. Funds projects up to \$400,000 per fiscal year, unless otherwise approved by the Secretary of Transportation. New access roads must be approved by NCDOT and serve multiple property owners or government owned property; roads will become part of the State Highway System or serve as public roads maintained by a government agency.

High Impact / Low-Cost Funds: This program provides 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 of 14 Transportation Divisions. 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: (1) The average daily traffic volume of a roadway and whether the proposed project will generate additional traffic. (2) Any restrictions on a roadway. (3) Any safety issues with a roadway. (4) The condition of the lanes, shoulders, and pavement on a roadway. (5) The site distance and radius of any intersection on a roadway. Funds projects up to \$1.5 million per fiscal year, unless otherwise approved by the Secretary of Transportation. Projects are expected to be under contract within 12 months of funding approval by the Board of Transportation.

<https://connect.ncdot.gov/projects/planning/Economic%20Development/Small%20Project%20Fund%20Request.docx>

SPOT SAFETY PROGRAM

The Spot Safety Program is used to develop smaller improvement projects to address safety and potential safety and operational issues. The program is funded with state funds and currently receives approximately \$9 million per fiscal year. Other monetary sources (such as Small Construction or Contingency funds) can assist in funding Spot Safety projects, however, the maximum allowable contribution of Spot Safety funds per project is \$400,000. A Safety Oversight Committee (SOC) reviews and recommends Spot Safety projects to the Board of Transportation (BOT) for approval and funding. Criteria used by the SOC to select projects for recommendation to the BOT include, but are not limited to, the frequency of correctable crashes, severity of crashes, delay, congestion, number of signal warrants met, effect on pedestrians and schools, division and region priorities, and public interest.

<https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx>

STATE PLANNING & RESEARCH FUNDS (SPR)

The State Planning and Research Program funds States' statewide planning and research activities. This program funds metropolitan and statewide planning for future highway programs and local public transportation systems. The FAST Act expanded the statewide transportation planning process' scope of consideration to include projects, strategies, and services that will improve transportation system resiliency and reliability; reduce (or mitigate) the stormwater impacts of surface transportation; and enhance travel and tourism. In 2017,

NCDOT extended the use of SPR funds to Rural Planning Organizations (RPOs) by establishing an annual call for proposals to fund planning and research projects for rural communities. Since the program expansion, RPOs have used SPR funds for a range of transportation planning activities, including to develop greenway and trail feasibility studies. SPR funding requires a 20% local match. However, the local match is 5% for Tier 1 Counties with NCDOT contributing 15% of the local match and 10% for Tier 2 Counties with NCDOT contributing 10% of the local match. RPOs must administer the funds. Since 2017, RPOs have used SPR funds for a range of transportation planning activities, including to develop bicycle and pedestrian facility and trail feasibility studies.

<https://www.fhwa.dot.gov/fastact/factsheets/statewideplanningfs.cfm>

<https://connect.ncdot.gov/projects/planning/Pages/Transportation-Planning-Program-and-Services.aspx>

SAFE ROUTES TO SCHOOL (NON-INFRASTRUCTURE TRANSPORTATION ALTERNATIVES PROGRAM)

NCDOT'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. 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. 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.

<https://connect.ncdot.gov/projects/BikePed/Pages/Non-Infrastructure-Alternatives-Program.aspx>

POWELL BILL FUNDS

The State Street Aid to Municipalities Program, also known as Powell Bill Funds, assists local governments with transportation system improvements. The Powell Bill requires municipalities to use the money primarily for street resurfacing, but it can also be used for the construction and maintenance of roads, bridges, drainage systems, sidewalks, and greenways.

Funding amounts for each municipality are based on a formula set by the N.C. General Assembly, with 75 percent of the funds based on population, and 25 percent based on the number of locally maintained street miles.

<https://connect.ncdot.gov/municipalities/State-Street-Aid/Pages/default.aspx>

NORTH CAROLINA DEPARTMENT OF NATURAL AND CULTURAL RESOURCES

PARKS AND RECREATION TRUST FUND (PARTF)

PARTF provides dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the public. PARTF is the primary source of funding to build and renovate facilities in the state parks as well as to buy land for new and existing parks.

<https://www.ncparks.gov/more-about-us/parks-recreation-trust-fund/parks-and-recreation-trust-fund>

NORTH CAROLINA LAND & WATER FUND (NCLWF)

The NCLWF (formerly known as the Clean Water Management Trust Fund) was created in 1996 by the General Assembly to conserve North Carolina's streams, rivers, and open space. The NCLWF funds land acquisition, stream restoration, stormwater, and planning projects that protect and conserve riparian buffers for the purpose of providing environmental protection for surface waters and urban drinking water supplies and establishing a network of riparian greenways for environmental, educational, and recreational uses. NCLWF also funds mini grants of up to \$25,000 for donated property or the value of the conservation donation to pay transaction costs associated with the donation of property in fee simple, or a permanent conservation agreement. NCLWF has one grant cycle per year. Applications are available in early December and close in February. Final award decisions are made in the fall.

<https://nclwf.nc.gov/apply>

NORTH CAROLINA DEPARTMENT OF COMMERCE

MAIN STREET SOLUTIONS FUND

The Main Street Solutions Fund supports small businesses in designated micropolitans located in Tier 2 and Tier 3 counties or designated North Carolina Main Street communities. The grants assist planning agencies and small businesses with efforts to revitalize downtowns by creating

jobs, funding infrastructure improvements and rehabilitating buildings.

<https://www.nccommerce.com/grants-incentives/downtown-development-funds>

RURAL INFRASTRUCTURE PROGRAM

The Rural Economic Development Division provides grants and loans to local government units to support economic development activity that will lead to the creation of new, full-time jobs. The program gives priority to projects located in the 80 most distressed counties in the state; and resident companies as defined in N.C.G.S. 143B-472 (a) 4. The Rural Infrastructure Program funding is available for publicly owned infrastructure including water, sewer, electric, broadband, rail, and road improvements that will lead to the direct creation of new, full-time jobs. Eligible applicants are units of local government with priority given to the Tier 1 and Tier 2 counties. A cash match equivalent to at least 5% of the grant amount is required for all projects.

Eligible project activities include:

- Construct public infrastructure improvements
- Upgrade or repair of public drinking water or wastewater treatment plants
- Upgrade, extensions, or repair of public water or sewer lines
- Publicly owned natural gas lines (requires an executed Pipeline Construction, Operating and Resale Agreement)
- Installation or extension of public broadband infrastructure
- Construction of public rail spur improvements
- Construction of publicly owned access roads not funded or owned by the Department of Transportation

<https://www.nccommerce.com/grants-incentives/public-infrastructure-funds/infrastructure-state-rural-grants>

NORTH CAROLINA NEIGHBORHOOD REVITALIZATION PROGRAM

The NC Neighborhood Program offers non-entitlement municipalities and counties the opportunity to tailor a project to meet the community development needs specific and most critical to their locality, primarily for their low- and moderate-income residents. NC Neighborhood Program projects must incorporate at least one of the following three livability principles as an area of focus:

- Promote equitable, affordable housing. Expand location and energy-efficient housing choices for people of all ages, incomes, races, and ethnicities to increase mobility and lower the combined cost of housing and transportation.
- Support existing communities. Target federal funding toward existing communities - through strategies like transit-oriented, mixed-use development, and land recycling - to increase community revitalization and the efficiency of public works investments and safeguard rural landscapes.
- Value communities and neighborhoods. Enhance the unique characteristics of all communities by investing in health, safe, and walkable neighborhoods - rural, urban, or suburban.

All municipalities are eligible to receive State CDBG funds except for entitlement communities, which receive funds directly from HUD. The maximum grant amount is \$750,000 per grantee with some restrictions for specific activities. There is no minimum grant amount, and the program does not have a matching fund requirement.

<https://www.nccommerce.com/grants-incentives/community-housing-grants#neighborhood-revitalization-/-federal-cdbg>

LOCAL FUNDING

BONDS

Wake County, City of Raleigh, City of Wilmington, Town of Chapel Hill, Town of Cornelius, and City of Greenville have all passed bonds to protect open space corridors and build greenway networks. Multi-use paths and greenways are also frequently included in municipal transportation bond packages. Successful bond campaigns require a well-defined plan with specific projects supported by the community. Bond campaigns should be well organized with a community's public affairs department and thoroughly coordinated across all internal departments. Public outreach during the campaign is essential to educate residents about the benefits of infrastructure investment and to understand which projects garner the highest community support.

DEVELOPER BUILT TRAILS/IN-LIEU FEES

The Town of Cary built its first greenway 40 years ago and now has more than 80 miles of greenway trails. A significant portion of their network development has been the result of developer-built trails. The Town of Cary requires developers to set aside important open space providing trail connectivity, wildlife habitat corridors, and water quality protection. Per the Cary Land Use Ordinance, developers must dedicate land or make payment in-lieu of public park and/or greenway development to serve the recreational needs of residents. Land dedications for greenways are required for both residential and commercial development for those locations indicated in the Town's greenway master plan.

IMPACT FEES

Impact fees represent financial payments made to a local government by a developer to fund certain off-site capital improvements needed to accommodate future growth. Many communities impose impact fees for transportation, parks and recreation, and open space facility needs. The City of Durham imposes transportation impact fees to fund for a portion of the costs for new streets and sidewalks, paving, grading, resurfacing, and widening of existing streets, traffic control signals and markings, lighting, and crosswalks. The City's development fees for open space and parks and recreation are used for the acquisition of park land and the provision of facilities, including athletic fields, parks, playgrounds, courts, recreation centers, shelters, stadiums, arenas, swimming pools, lighting, trail construction, and bike paths.

CAPITAL IMPROVEMENT PROGRAM (CIP)

A Capital Improvement Program (CIP) is one element in a municipality's long-term planning process. It is a bridge between the municipality's Comprehensive Plan and short-term planning for infrastructure and operations. A Capital Improvement Program analyzes major facility and equipment needs, establishes priorities, estimates fiscal resources, and schedules the development of funded projects. The City of Raleigh funds parks, greenways, and active transportation facilities through the city's Capital Improvement Program. The Parks, Recreation and Cultural Resources Department's CIP primary sources of funding come from Parks and Recreation Bonds, Facility Fees, General Fund (Tax Base), grants, and donations.

MUNICIPAL SERVICE DISTRICTS (MSD)

Municipal Service Districts provide an equitable method for funding special improvements to public right-of-way areas because property owners share in the cost. The Town of Morrisville uses Municipal Service Districts in several neighborhoods to perform pavement, curb and gutter, and sidewalk enhancements and repairs on the public streets throughout neighborhoods in the MSD.

PUBLIC/PRIVATE PARTNERSHIPS

The City of Greensboro is leading North Carolina in leveraging public-private partnerships to complete their Downtown Greenway Loop. Through the Action Greensboro Foundation, the project has raised over \$10 M in private funds by working with foundations and private givers. This money leverages over \$21 M in local and federal funds.

PRIVATE FUNDING

NORTH CAROLINA LAND TRUSTS AND CONSERVANCIES

North Carolina land trusts partner with landowners and local communities to permanently protect natural resources with agricultural, cultural, recreational, ecological, and scenic value across the state. In Watauga County, the Blue Ridge Conservancy is leading the effort to develop the Middle Fork Greenway along the Middle Fork New River to connect Boone and Blowing Rock via trail. The Blue Ridge Conservancy has purchased property and easements along the Middle Fork New River to preserve the corridor and develop the greenway in partnership with Watauga County, the Town of Blowing Rock, and the Town of Boone. The conservancy is also leading planning, design, and construction of each phase of the greenway's development.

Provided below is a list of Land Trusts & Conservation Organizations in North Carolina:

- Conservation Trust for North Carolina
- Blue Ridge Conservancy
- Carolina Mountain Land Conservancy
- Catawba Lands Conservancy
- Davidson Lands Conservancy
- Eno River Association
- Foothills Conservancy of North Carolina
- Land Trust for Central North Carolina
- Land Trust for the Little Tennessee
- National Committee for the New River
- NC Coastal Land Trust

- Tar River Land Conservancy

<https://www.presnc.org/nc-land-trusts-conservation-organizations/>

NORTH CAROLINA COMMUNITY FOUNDATION (NCCF)

The NCCF is the statewide community foundation serving North Carolina and sustains more than 1,200 endowments established to provide long-term support of a broad range of community needs, nonprofit organizations, institutions, and scholarships. The NCCF partners with a network of affiliate foundations to provide local resource allocation and community assistance across the state. NCCF's community grantmaking programs are advised by its network of affiliate foundations. Each affiliate is advised by a local board who help to assemble resources through their unique knowledge and understanding of local needs and opportunities. Organizations must be qualified as tax-exempt public charities under Section 501(c)(3) of the Internal Revenue Code or be classified as a unit of local government or public school.

<https://www.nccommunityfoundation.org/apply/grants>

GOLDEN LEAF FOUNDATION

The Golden LEAF Foundation is a nonprofit organization established in 1999 to receive a portion of North Carolina's funding received from the 1998 Master Settlement Agreement with cigarette manufacturers. Golden LEAF works to increase economic opportunity in North Carolina's rural and tobacco-dependent communities through leadership in grantmaking, collaboration, innovation, and stewardship as an independent and perpetual foundation. Golden LEAF's grantmaking focuses on the following priorities: Job creation and economic investment; workforce preparedness; agriculture; and community competitiveness, capacity, and vitality. Golden LEAF has two standard programs open to eligible entities seeking grants: Open Grants Program and Economic Catalyst Program. These programs complement other ongoing initiatives of the Foundation, such as the Community-Based Grants Initiative.

Open Grants Program: The Open Grants Program is open to all governmental entities and 501(c)(3) organizations that propose projects in Golden LEAF's priority areas. This program funds economic development projects aligned with the Golden LEAF priority areas. Most awards will be for \$200,000 or less.

Economic Catalyst Program: The Economic Catalyst process is open to governmental entities and 501(c)(3) organizations with projects that will create jobs at risk without Golden LEAF funding. Grants include funds for public infrastructure, job training, upfit for buildings owned by governmental or nonprofit entities, or equipment acquisition where the building or equipment will be leased or sold at fair-market value to a company creating jobs. Grants are available only for projects that include a specific company's commitment to create full-time jobs in NC.

Community-Based Grants Initiative: Each year, the Golden LEAF Foundation invites organizations from counties from a different Prosperity Zone to participate in the Community-Based Grant Initiative (CBGI). The process is competitive, but organizations from all counties within the Prosperity Zone will have an opportunity to apply. The CBGI is designed to identify projects with the potential to have a significant impact. It is a focused process with grants targeted toward investments in the building blocks of economic growth. Funds are limited to projects that address economic development, agriculture, workforce preparedness, infrastructure, and capital costs necessary to create health care jobs. County managers serve a key role in the process. Each county manager will submit a slate of up to four projects for consideration. Applicants must be 501(c)(3) organizations or governmental entities (county and municipal governments, community colleges, universities, etc.) Funds do not have to be administered or implemented by the county government. Awards are limited to no more than three projects per county and will total no more than \$1.5 million per county.
<https://www.goldenleaf.org/>

THE CONSERVATION FUND

The Conservation Fund works with public, private, and nonprofit partners to protect land and water resources through land acquisition, sustainable community and economic

development, and leadership training. The City of Durham partnered with the Conservation Fund to assist with negotiations to purchase the Durham Belt Line rail corridor from Norfolk Southern to convert the rail line into an urban trail. In 2017 the Conservation Fund successfully purchased the property as the interim owner while the city secured the necessary funding. The property was transferred to the City of Durham in 2018, which allowed for the rail-trail's development.

<https://www.conservationfund.org/where-we-work/north-carolina>

BLUE CROSS BLUE SHIELD OF NORTH CAROLINA FOUNDATION

The Blue Cross Blue Shield of North Carolina Foundation funds a range of programs from targeted, mini grants to multi-year partnerships. Their grantmaking supports initiatives that focus on early childhood, healthy communities, healthy food, and oral health. The Foundation does not operate regular grant cycles. Instead, the Foundation invites applications based on specific strategic objectives or announces broader opportunities to apply for funding on a periodic basis.

<https://www.bcbsncfoundation.org/grants-programs/grantmaking-overview/>

NATIONAL ASSOCIATION OF REALTORS SMART GROWTH AND PLACEMAKING GRANTS

The National Association of Realtors (NAR) funds placemaking and smart growth grants to make communities better places to live by transforming unused or underutilized sites into welcoming destinations accessible to everyone in a community.

Smart Growth Grants: Smart Growth Grants fund efforts to engage in local land-use, growth, and transportation policy issues with other stakeholders and elected officials. Eligible projects include Better Block events, placemaking visioning processes, charettes, pop-up workshops, project mock-ups, developer open houses, public open houses, utility roundtables, Main Street analysis, walkable community workshops/audits, assistance with updating land use ordinances and codes and community plans, and hosting conferences and webinars. Applications can only be submitted by a state or local REALTOR® association, and grants provide up to \$5,000 per award.

Placemaking Grants: Placemaking Grants fund the creation of new, outdoor public spaces and destinations in a community. Funds can be used for amenities such as street furniture, paint, signage, materials, landscaping, murals, site preparation, and artist fees. Applications can only be submitted by a state or local REALTOR® association, and grants provide up to \$5,000 per award.

<https://realtorparty.realtor/community-outreach/>

AARP COMMUNITY CHALLENGE GRANT

The AARP Community Challenge provides small grants to fund quick-action projects that can help communities become more livable for people of all ages. Applications are accepted for projects to improve public spaces, housing, transportation, civic engagement, coronavirus recovery, diversity, and inclusion, and more. Project types include those that provide permanent physical improvements in the community, temporary demonstrations that lead to long-term change, and innovative programming or services. The program is open to 501(C)(3), 501(C)(4) and 501(c)(6) nonprofits and government entities. Grants can range from several hundred dollars for smaller, short-term activities to several thousand or tens of thousands of dollars for larger projects.

<https://www.aarp.org/livable-communities/community-challenge/info-2021/2021-challenge.html>

B. DESIGN RESOURCES

OVERVIEW

Below are several design resources that can be used to inform greenway and sidepath design decisions. Organizations such as Federal Highway Administration (FHWA), American Association of State Highway and Transportation Officials (AASHTO), National Association of City Transportation Officials (NACTO), and North Carolina Department of Transportation (NCDOT) offer general guidelines and project-specific tools to help professionals make design decisions. These guidelines promote flexibility to ensure context-sensitive applications.

AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES

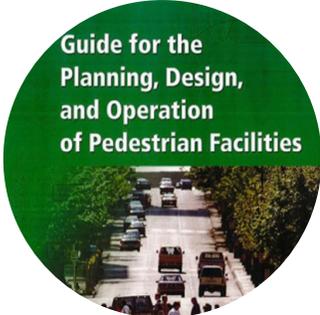
The AASHTO Guide for the Development of Bicycle Facilities is the authoritative national standard for bikeway design. The document provides guidance to designers and planners by referencing a recommended range of design values and describing alternative design approaches. The guide provides information on how to accommodate bicycle travel and operations in most environments. Sufficient flexibility is permitted to encourage designs that are sensitive to local context and incorporate the needs of bicyclists, pedestrians, and motorists.

Guide for the Development of Bicycle Facilities
2012 • Fourth Edition



AASHTO GUIDE FOR THE PLANNING, DESIGN AND OPERATION OF PEDESTRIAN FACILITIES

The AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities provides guidance for pedestrian facilities along streets and highways. The primary audiences for this manual are planners, roadway designers, and transportation engineers, whom make decisions on a daily basis that affect pedestrians. The guide focuses on identifying effective measures for accommodating pedestrians on public rights-of-way, and it recognizes the effect that land use planning and site design have on pedestrian mobility and addresses these topics as well.



MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

The Manual on Uniform Traffic Control Devices for Streets and Highways, or MUTCD defines the standards used by road managers nationwide to install and maintain traffic control devices on all public streets, highways, bikeways, and private roads open to public travel. The MUTCD is published by the Federal Highway Administration (FHWA) and is a compilation of national standards for all traffic control devices, including road markings, roadway signs, and traffic signals.



NCDOT ROADWAY DESIGN GUIDE

The North Carolina Department of Transportation (NCDOT) Roadway Design Guide defines standards for roadways owned and maintained by NCDOT, including typical sections for roadways. Typical sections establish design elements that emphasize safety, mobility, complete streets, and accessibility for multiple modes of travel. Typical sections also provide guidelines for comprehensive transportation planning, project planning, and project design activities.



NCDOT COMPLETE STREETS IMPLEMENTATION GUIDANCE

The North Carolina Department of Transportation (NCDOT) Complete Streets Implementation Guide is designed to assist NCDOT staff engineers, project managers and designers in implementing the Complete Streets Policy adopted by the Board of Transportation in August 2019. This document provides comprehensive guidance for incorporating a complete streets approach into NCDOT's planning, programming, design, and maintenance processes.



PENNSYLVANIA TRAIL DESIGN & DEVELOPMENT PRINCIPLES: GUIDELINE FOR SUSTAINABLE, NON-MOTORIZED TRAILS

This document compiles the best practices and guidelines for the planning, design, construction, and management of trails. Techniques are presented for developing trails that create desirable and enjoyable experiences for trail users. These techniques employ sustainable design elements and construction practices that allow the trail to make use of natural systems so that the trail remains both physically and environmentally sustainable.

Pennsylvania Trail Design & Development Principles
Guidelines for Sustainable, Non-motorized Trails



NACTO URBAN STREETS DESIGN GUIDE

The Urban Street Design Guide charts the principles and practices of the nation's foremost engineers, planners, and designers working in cities today. A blueprint for designing 21st century streets, the guide unveils the toolbox and the tactics cities use to make streets safer, more livable, and more economically vibrant. The Guide outlines both a clear vision for complete streets and a basic road map for how to bring them to fruition.



NACTO URBAN STREET STORMWATER GUIDE

The Urban Street Stormwater Guide advances the discussion about how to design and construct sustainable streets. The guide provides cities with national best practices for sustainable stormwater management in the public right-of-way, including core principles about the purpose of streets, strategies for building inter-departmental partnerships around sustainable infrastructure, technical design details for siting and building bioretention facilities, and a visual language for communicating the benefits of such projects. The guide sheds light on effective policy and programmatic approaches to starting and scaling up green infrastructure, provides insight on innovative street design strategies, and proposes a framework for measuring performance of streets comprehensively.



FHWA SMALL TOWN & RURAL MULTIMODAL NETWORKS

The Federal Highway Administration (FHWA) Small Town and Rural Multimodal Networks applies existing national design guidelines in a rural setting and highlights small town and rural case studies. It addresses challenges that are specific to rural areas and focuses on opportunities to make improvements despite the geographic, fiscal, and other challenges that many rural communities face. It also includes several design concepts applicable to National Scenic and Historic Trails.



BEST PRACTICES IN TRAIL MAINTENANCE: A MANUAL BY THE OHIO RIVER GREENWAY

This manual is intended for practical use by trail maintenance managers. It will also be useful for policy makers who are tasked with anticipating and planning for maintenance budget and personnel needs. The recommendations included in this manual were chosen, in part, to facilitate widespread adoption by other trail operators. They are cost-effective solutions that require minimal technological or financial commitments. This manual also provides guidance for trail construction and design where a maintenance issue can best be resolved by constructing new trail segments.



FHWA ACHIEVING MULTIMODAL NETWORKS: APPLYING DESIGN FLEXIBILITY AND REDUCING CONFLICTS

This publication is resource for practitioners seeking to build multimodal transportation networks. It highlights ways that planners and designers can apply the design flexibility found in current national design guidance to address common roadway design challenges and barriers. It focuses on reducing multimodal conflicts and achieving connected networks so that walking and bicycling are safe, comfortable, and attractive options for people of all ages and abilities.



RAILS TO TRAILS CONSERVANCY (RTC) RAIL WITH TRAILS: BEST PRACTICES AND LESSONS LEARNED

This updated USDOT Rails-with-Trails: Lessons Learned report documents how the state of the practice, perspectives, and context for rails-with-trails have evolved since the first report in 2002 and includes updated effective practices. Best practices are based on extensive research into existing and planned rails with-trails that involved interviews with railroad officials and trail managers; a literature review of previous rail-with-trail studies; a review of trail planning guidance documents; and input from various railroad and trail professionals.



ADA STANDARDS FOR ACCESSIBLE DESIGN

This guide explains requirements in the current editions of the Americans with Disabilities Act (ADA) Standards issued by the Department of Justice (DOJ) and the Department of Transportation (DOT). It provides the scoping and technical requirements for new construction and alterations resulting from the adoption of revised 2010 Standards in the final rules for Title II and Title III.



RESOURCES:

AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES

https://nacto.org/wp-content/uploads/2015/04/AASHTO_Bicycle-Facilities-Guide_2012-toc.pdf

AASHTO GUIDE FOR THE PLANNING, DESIGN AND OPERATION OF PEDESTRIAN FACILITIES

[https://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07\(263\)_FR.pdf](https://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-07(263)_FR.pdf)

MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD)

<https://mutcd.fhwa.dot.gov/>

NCDOT ROADWAY DESIGN GUIDE

<https://connect.ncdot.gov/projects/Roadway/pages/roadway-design-manual.aspx>

NCDOT COMPLETE STREETS IMPLEMENTATION GUIDANCE

<https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx>

PENNSYLVANIA TRAIL DESIGN & DEVELOPMENT PRINCIPLES: GUIDELINE FOR SUSTAINABLE, NON-MOTORIZED TRAILS

<https://www.americantrails.org/resources/pennsylvania-trail-design-development-principles>

NACTO URBAN STREETS DESIGN GUIDE

<https://nacto.org/publication/urban-street-design-guide/>

NACTO URBAN STREET STORMWATER GUIDE

<https://nacto.org/publication/urban-street-stormwater-guide/>

FHWA SMALL TOWN & RURAL MULTIMODAL NETWORKS

https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/small_towns/

BEST PRACTICES IN TRAIL MAINTENANCE: A MANUAL BY THE OHIO RIVER GREENWAY

<https://www.railstotrails.org/resourcehandler.ashx?name=best-practices-in-trail-maintenance-a-manual-by-the-ohio-river-greenway&id=21221&fileName=Best%20Practices%20in%20Trail%20Maintenance.pdf>

FHWA ACHIEVING MULTIMODAL NETWORKS: APPLYING DESIGN FLEXIBILITY & REDUCING CONFLICTS

https://www.fhwa.dot.gov/environment/recreational_trails/publications/rwt2021/

RTC RAIL WITH TRAILS: BEST PRACTICES AND LESSONS LEARNED

https://www.fhwa.dot.gov/environment/recreational_trails/publications/rwt2021/

ADA STANDARDS FOR ACCESSIBLE DESIGN

https://www.ada.gov/2010ADASTandards_index.htm

C. COMMUNITY INPUT MATERIALS



Town of Rolesville Bike Plan and Greenway + Open Space Plan Steering Committee Meeting #1

**June 23, 2021
12:00pm - 1:30pm**

Zoom Meeting

<https://mcadamsco.zoom.us/j/99667236667?pwd=dWdlQ2VRNVZwZEFmTjcvQmVWbTl5dz09>

Meeting ID: 996 6723 6667

Passcode: 595543

Meeting Notes

Meeting Participants:

- JG Ferguson, Parks and Recreation Director, Town of Rolesville
- Daralyn Sacarello, Rolesville Chamber
- Shelly Raby, Town of Rolesville Planning
- Olga Dovoric, Rolesville Rotary
- Kaley Huston, Planner, Triangle J Council of Governments
- Kenneth Withrow, Capital Area Metropolitan Planning Organization (CAMPO)
- Kristen Stafford, Town of Rolesville Parks and Recreation
- Paul Vilga, Rolesville Town Commissioner
- Jenisha Henneghan, Triangle J Council of Governments/ Area Agency on Aging
- Donnie Lawrence, Asst. Chief Rolesville Fire Dept.
- Dylan Bruchhaus, Wake Forest Planning Department
- Roy Holloway, Rolesville Police Department
- Bob Deaton, NCDOT Division 5
- Terry Marcellin-Little, Rolesville Open Space and Greenways Committee
- Monique Dismuke, Granite Falls Community Homeowners Association
- Ellen Ransom, Rolesville Chamber Foundation
- Derek Versteegen, Rolesville Open Space and Greenways Committee
- Jennifer Delcourt, Wake County Safe Routes to School Coordinator
- Kathryn Zeringue, McAdams
- Andrew Hickling, McAdams
- Erich Melville, McAdams

Introductions:

The Steering Committee and Project Team introduced themselves and shared the organization they represent.

Planning Process:

Project Overview: Bicycle Plan Update + Greenway Plan Update – the project team provided an overview of the plan update process centered around the following:

- *Where do people want to go by bike/via greenway?* – Identify key desired destinations.
- *How do we connect those places?* – Identify the facilities, standards, and wayfinding to connect key locations.
- *How do we build the network?* – Identify priority projects, costs, and funding opportunities.
- *How do people plan to use the network?* – Identify programs and policies to promote bicycling, recreational opportunities, and transportation along greenways.

Project Schedule – Both plans will be developed concurrently with the schedule divided into four phases as follows:

- **VISION:** (May – June 2021) – Includes Kick-off Meeting, Steering Committee Meeting #1, Visioning Exercise, and Mapping Exercise.
- **ASSESSMENT** (May – August 2021) – Includes Data Gathering, Site Visit, Existing Plans + Ordinance Review, Public Survey, and Focus Group Meetings.
- **RECOMMENDATIONS** (August – December 2021) – Includes Network Analysis & Priority Corridors, Facility & Intersection Recommendations, Policy Recommendations, Steering Committee Meeting #2, and Public Meeting #1.
- **ACTION PLAN** (January – March 2022) – Includes Plan & Plan Refinement, Funding, Action Plan, Steering Committee Meeting #3, Public Meeting #2, and Plan Adoption.

Public Engagement Overview – Public engagement for both plans will be combined as the plans are being developed concurrently. Engagement elements and schedule are summarized in the graphic below:

Outreach Task	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Steering Comm. Mtgs.	Blue			Blue				Blue		
Public Survey		Green	Green							
Public Workshops				Dark Blue				Dark Blue		
Focus Group Meetings		Light Blue	Light Blue				Light Blue			
Draft Plan Review								Green	Green	
Optional Pop-Ups		Light Green	Light Green							
Plan Adoption										Green

Questions/Discussion:

- Ellen – Why are steering committee meetings virtual? (First meeting is virtual, and we can discuss options for in person meetings moving forward).
- Derek – asked for opportunity to review/provide input on the Survey (input is due on Friday, June 25th. The survey will launch on July 1st).

- Kenneth – NE Area Study wrapping up that also included greenway/bikeway recommendations, check with Brandon Watson for updates. (The project team reviewed the NE Study and will coordinate with Brandon for additional information).
- Dylan – When will focus groups with municipalities be scheduled? (Late July/early August). Wake Forest recently updated their CTP, can provide most up to date shapefiles, data, etc.

Interactive Exercise – “What does success look like for the project?”

Bicycle Plan Vision + Goals

- Comprehensive Bicycle Plan (2013) – themes of plan goals included connectivity, regional connectivity, greenway and trail system growth, safety, and complete street approach to development.
- Goals identified for the bicycle plan in interactive Menti exercise are summarized in the word cloud below:



Greenway Plan Vision + Goals

- Open Space and Greenway Plan (2002) – themes of plan goals included environmental protection and conservation, connectivity, and environmentally responsible development.
- Goals identified for the greenway plan in interactive Menti exercise are summarized in the word cloud below:



Questions/Discussion:

- Ellen –Have we looked at previous planning efforts? Because the town is still developing, we could have a fantastic plan if we required developers to build greenways around their developments. Greenways typically follow streams like through my land, but I have no intention of allowing a greenway through my property. Need to look at greenways/trails outside of creek corridors. Concerned about natural features/trees that aren't saved when developers come in since they aren't required to preserve them. (A previous planning review has been conducted, and the project team will incorporate recommendations from previous plans into the plan updates. Policy recommendations will also include ordinance recommendations for developer-built greenways and will explore greenway opportunities outside of stream corridors to ensure the greenway network is well connected to town destinations).
- Derek – LDO/UDO rewrite includes some rules about tree preservation/etc so we are heading in the right direction.

Existing Conditions Review:

Previous Plans Review – Previous plans by the town and regional/statewide plans that were reviewed included the following:

Town of Rolesville Plans

- Open Space + Greenway Plan, 2002
- Thoroughfare Plan, 2002
- Comprehensive Bicycle Plan, 2013
- Rolesville Comprehensive Plan, 2017
- Main Street Vision Plan, 2018 – Noted Main St Redesign/Construction Plans
- Economic Development Strategic Plan, 2018
- Rolesville Parks + Recreation Plan, 2019
- Community Transportation Plan, 2020

Regional + Statewide Plans

- Wake County Multi-Jurisdictional Hazard Mitigation Plan, 2015
- Wake Transit Plan, 2016
- Wake County Greenway Plan, 2017
- 2045 CAMPO-DCHC MPO Metropolitan Transportation Plan, 2019
- Wake County Northeast Area (NEAS) Study, 2021
- Great Trails State Plan, 2021

Community Demographics – Demographic data was presented to the committee including:

- Population Growth
- Education
- Ethnicity
- Vulnerable Populations
- Location of Work
- Commute Time
- Age
- Race
- Household Income
- Commute Mode
- Vehicle Access

Questions/Discussion:

- Ellen – where did you get the demographic data? (2019 American Community Survey data from the US Census Bureau).
- Monique – Census Bureau is constantly gathering data throughout the year every year (not just every 10 years).

Existing Conditions Mapping – Maps were shared with the committee highlighting the following items:

- Existing Bicycle + Pedestrian Facilities
- Existing Roadway Traffic Volumes
- Transit Stops + Routes
- New Developments + Proposed Collector Streets
- Proposed Greenways
- Existing Access + Utility Easements
- Pedestrian Crashes
- Proposed Bicycle + Greenway Facilities
- Existing Roadway Speed Limits
- Bicycle Crashes
- Existing Greenways
- Existing Floodplain + Wetland Areas
- Topography

Mapping Exercise:

Participants were invited to review existing conditions maps using Conceptboard (a virtual collaboration tool) and leave thoughts/comments related to opportunities, challenges, and desired destinations. Comments received are summarized below:

Opportunities

- Bike/Pedestrian accommodations needed along Quarry Rd between Rolesville Rd and Quarry Rd.
- Excited about the possible connection to Wake Forest along Wait Ave.
- Prioritize connectivity to Frazier Farm Park – are we prioritizing connection sooner rather than later?
- How are we prioritizing connections to the Little River Reservoir? Cedar Fork v. Perry Creek corridors? What are Wake County's priorities. At first, they bought up Cedar and then went to Perry?
- Add Safe Routes to School improvements around Rolesville Middle School area (including surrounding neighborhoods).
- Greenway connection along Tom's Creek Corridor – how does the Rolesville proposed route coordinate with the Town of Wake Forest's plans along the corridor?
- Modernize Rolesville Road between Mitchell Mill Rd and US-401 Bypass into a complete street facility.
- What are Raleigh's current plans for the Buffalo Creek Corridor? It may not be a priority for Raleigh due to the stream's poor water quality.
- What are Raleigh's current plans for Harris Creek Corridor – especially in regard to the sewer running underneath the lakes south of our area? Swamp areas also require boardwalk.
- Rogers Road should be bike friendly all the way! It leads to the middle school and high school, to the Factory and many great businesses.
- Greenway connectivity needed to connect existing and proposed greenways between Pulley Town Rd and Chalk Rd.

Challenges

- Parking along Granite Falls Blvd – especially at the Swim Club – cars are frequently parked in the Bike Lane.
- Connections to Franklin County. This seems difficult in planning yet critical for the future– possibly explore old rail corridors in this new planning effort.
- How will we get to Cedar Fork corridor culvert – given the topography and swamp?
- Lack of connection along Granite Falls Blvd between Rogers Rd and Burlington Mills Rd – will Granite Falls Blvd be extended to Burlington Mills. This connection is needed for pedestrians and bicyclists to get through before getting to Forestville Rd.
- General concern for lighting/safety of long pedestrian path culverts at Harris, Cedar, and Perry Creeks.
- Topography is key in the pocket park in the Carlton Pointe neighborhood. Are the greenway recommendations in this area based on most recent planning discussions?
- Safe connection from Town to Rolesville High School is vital.
- Private lake, dam, and spillway at the end of Upchurch Lane – have there been discussions/negotiations with the property owners?

- Connecting to Frazier Farm Park is important to establish early on. Electric bikes and self-service bike rentals could make this park more easily accessible.
- Where is Wake Forest in plans for Smith Creek connectivity to Neuse - is the golf course still an obstacle? We prioritized this as the quickest path to the Neuse, is that still realistic?
- The greenway crossing of Rogers Rd at the Nature Park is dangerous (traffic, visibility, and speed) and needs careful consideration.
- Connection needed between the Heritage East Greenway and Sandford Creek Greenway - current gap is a challenge at Rogers Rd.
- Along Rogers Rd, there is another dangerous surface crossing. A pedestrian bridge would be ideal here for safety, aesthetics, and for establishing a gateway transition point to separate Rolesville from Wake Forest.
- Young St and Louisburg Rd Intersection - Surface Crossing should be short term - pedestrian bridge should be seriously considered so the main town can access the high school and the new developments on the south/east side of the bypass can access the main downtown areas.

Key Destinations

- Frazier Farm Rd
- Rolesville High School
- Rolesville Middle School
- Little River Reservoir

Questions/Discussion:

- Ellen - Pulley Town Road label incorrect (The street label will be corrected).
- Derek - We need to make sure we are looking at network connectivity from two perspectives, access to regional trails as well as internal access to local destinations to reduce the need for driving within Town. Frazier Farm Park land extremely important for Town to focus on for transition from Neuse River Trail system to future Little River Trail system. Frazier Farm could be key destination for visitors to Rolesville.

Next Steps:

- Public Survey Launch (July)
- Focus Group Meetings (Late July - August)
- Bicycle + Greenway Network Analysis
- Steering Committee Meeting #2 (September - in person?)
- Virtual Public Meeting #1 (September)

Town of Rolesville Bike Plan and Greenway Plan Steering Committee Meeting #2

**October 26, 2021
12:00pm - 1:30pm
Zoom Meeting**

MEETING NOTES

Meeting Participants:

- JG Ferguson, Parks and Recreation Director, Town of Rolesville
- Shelly Raby, Town of Rolesville Planning
- Kenneth Withrow, Capital Area Metropolitan Planning Organization (CAMPO)
- Meredith Gruber, Town of Rolesville Planning
- Paul Vilga, Rolesville Town Commissioner
- Dylan Bruchhaus, Wake Forest Planning Department
- Roy Holloway, Rolesville Police Department
- Bob Deaton, NCDOT Division 5
- Nick Morrison, NCDOT IMD
- Derek Versteegen, Rolesville Open Space and Greenways Committee
- James Carter, Town of Rolesville
- Eric M., Rolesville
- Kathryn Zeringue, McAdams
- Andrew Hickling, McAdams

Meeting Notes:

- Attendees briefly introduced themselves.
- Kathryn briefly reviewed the project schedule, noting the project visioning in May-June 2021, existing conditions in May-Aug 2021, plan recommendations in Aug-Dec 2021 and implementation and final plan in Jan-April 2022.
- Kathryn reviewed the results from the community survey. Highlights included:
 - 287 respondents
 - Needs for improved walking and biking connections for neighborhoods, schools, commercial areas along Main St and Rogers Rd, parks and neighboring communities and greenway networks.
 - Results highlighted a need for improved on-street bicycle facilities and better multimodal accommodations at intersections to increase user safety and comfort levels.
 - 89% of survey respondents were residents
 - 51% of respondents bike at least a couple times a month
 - 40% of respondents bike more now than they did before the pandemic
 - Primary reasons for biking are for recreation and for health/exercise

-
- 33% of respondents believe the current network is not safe for users of all ages and abilities
 - 68% of respondents use the existing greenways at least a few times a month
 - 50% of respondents use greenways more now than they did before the pandemic
 - 89% of respondents said they would use the greenway system more often if it were more connected
 - 53% are discouraged from using the existing greenways due to a lack of safe multimodal facilities to greenways
 - 73% of respondents would support a bond fund to further develop the greenway network (6% were opposed, remainder were unsure)
- Kathryn reviewed the draft bicycle plan vision statement that was developed during the first steering committee meeting.
 - Kathryn reviewed the draft bicycle plan goals, which were centered around:
 - Accessibility + Connectivity
 - Regional Connectivity
 - Safety
 - Equity
 - Project Feasibility
 - Kathryn reviewed the draft greenway plan vision statement.
 - Kathryn reviewed the draft greenway plan goals, which were centered around:
 - Accessibility
 - Regional Connectivity
 - Safety
 - Equity
 - Environmental Protection
 - Kathryn defined facility types that will be proposed in draft network recommendations including:
 - Greenways
 - Sidepaths
 - Separated Bicycle Lane
 - Buffered Bicycle Lane / Bicycle Lane
 - Bicycle Boulevard / Shared Lane Markings
 - Kathryn sent attendees to Concept Board for review/comment on maps of:
 - Desired Destinations
 - Opportunities and Constraints for the Bicycle Plan
 - Opportunities and Constraints for the Greenway Plan
 - Draft Greenway Network Recommendations
 - Draft Bicycle Network Recommendations
 - Combined Draft Network Recommendations (Greenway and Bicycle)
 - Attendee comments/questions:

-
- Derek marked on the map – black lines are facilities that don't make as much sense due to topography, property, or other constraints; orange lines are desired alternatives
 - Derek asked about including natural surface trails in the plan
 - Kenneth asked about coordinating with neighboring communities for continuity of facilities across jurisdictions, particularly along Jones Dairy Rd. Kathryn detailed the coordination that has happened to date and mentioned the final maps in the plan may also include lines for the recommendations from neighboring jurisdiction plans to illustrate that continuity.
- Kathryn mentioned public involvement efforts starting this Saturday at Fall Fest.
 - Kelly and Paul discussed taking the draft recommendations to the Open Space and Greenway Committee and the Board.
 - Kathryn discussed project prioritization per NCDOT bicycle plan standards, need to identify top 5 – 10 projects using criteria guided by plan goals and other criteria for consideration.
 - Kathryn discussed project prioritization for the greenway plan as McAdams has also been tasked with taking a deeper dive with feasibility studies for some of the priority projects.
 - Kathryn briefly touched on draft policy recommendations, noting the LDO adopted earlier this year in combination with existing policies are very robust. Looking for input on whether OSAG can be expanded to include on-street bicycle infrastructure or if a separate Bicycle and Pedestrian Advisory Committee (BPAC) is a more viable option.
 - Kathryn briefly described program recommendations including education programs, encouragement programs, project-based programs and evaluation programs.
 - Kathryn summarized next steps including public meeting #1 (10/30/21), identifying priority corridors/projects, refine draft network recommendations, steering committee meeting #3 (Jan/Feb 2022), virtual public meeting # 2 for draft plan review (Jan/Feb 2022) and final plan/plan adoption (Mar/Apr 2022).

Rolesville Bicycle Plan + Greenway Plan Survey

284

Total Responses

Date Created: Tuesday, June 29, 2021

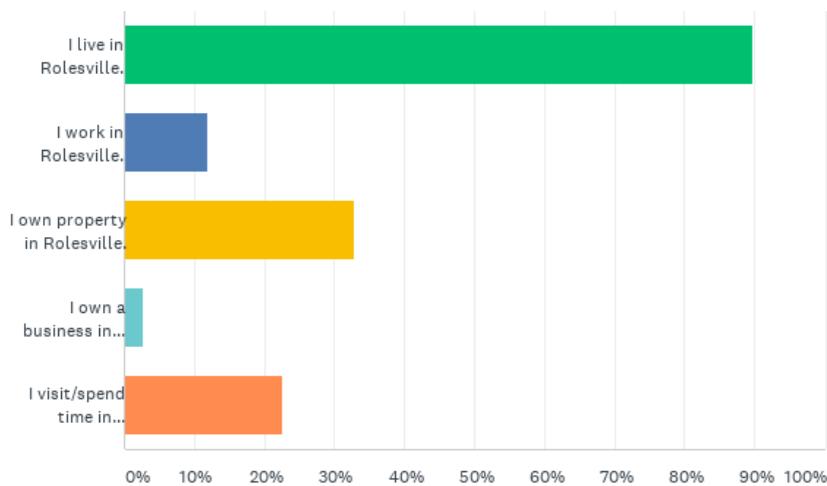
Complete Responses: 284

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1

Q1: What is your relationship to Rolesville? (Select all that apply.)

Answered: 284 Skipped: 0



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2

Q1: What is your relationship to Rolesville? (Select all that apply.)

Answered: 284 Skipped: 0

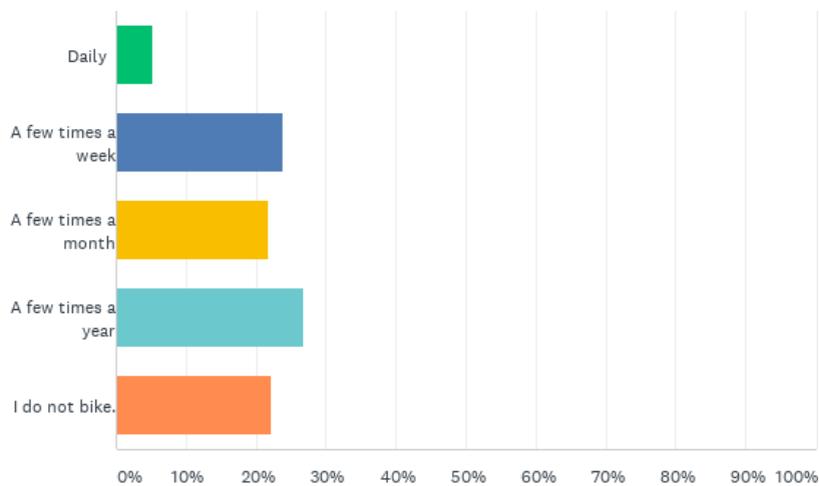
ANSWER CHOICES	RESPONSES	
I live in Rolesville.	89.79%	255
I work in Rolesville.	11.97%	34
I own property in Rolesville.	32.75%	93
I own a business in Rolesville.	2.82%	8
I visit/spend time in Rolesville.	22.54%	64
Total Respondents: 284		

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3

Q2: How frequently do you bike in Rolesville?

Answered: 284 Skipped: 0



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4

Q2: How frequently do you bike in Rolesville?

Answered: 284 Skipped: 0

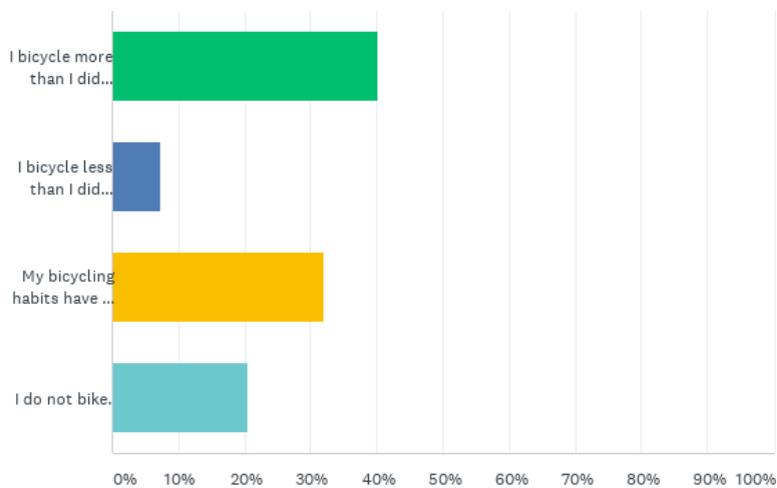
ANSWER CHOICES	RESPONSES	
Daily	5.28%	15
A few times a week	23.94%	68
A few times a month	21.83%	62
A few times a year	26.76%	76
I do not bike.	22.18%	63
TOTAL		284

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5

Q3: How have your bicycling habits changed during the COVID-19 pandemic?

Answered: 284 Skipped: 0



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6

Q3: How have your bicycling habits changed during the COVID-19 pandemic?

Answered: 284 Skipped: 0

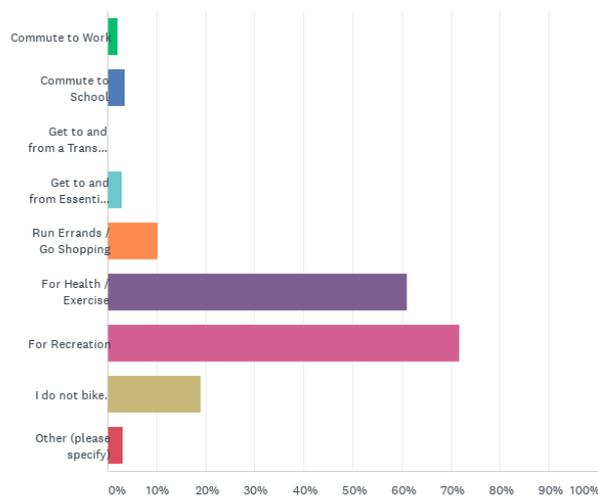
ANSWER CHOICES	RESPONSES	
I bicycle more than I did before the pandemic.	40.14%	114
I bicycle less than I did before the pandemic.	7.39%	21
My bicycling habits have not changed.	32.04%	91
I do not bike.	20.42%	58
TOTAL		284

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7

Q4: What are the primary reasons that you or members of your household bike in Rolesville? Select all that apply.

Answered: 283 Skipped: 1



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8

Q4: What are the primary reasons that you or members of your household bike in Rolesville? Select all that apply.

Answered: 283 Skipped: 1

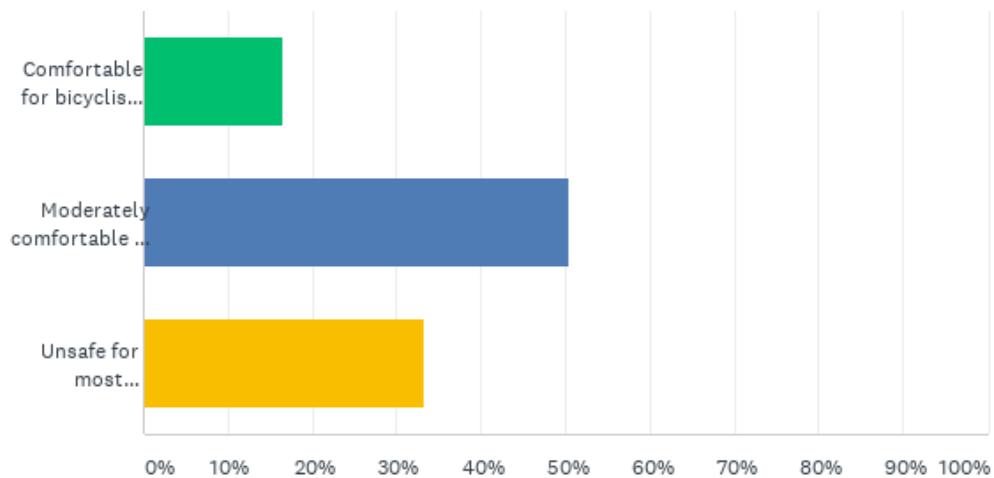
ANSWER CHOICES	RESPONSES
Commute to Work	2.12% 6
Commute to School	3.53% 10
Get to and from a Transit Stop	0.00% 0
Get to and from Essential Services (Civic Centers, Medical Centers, Libraries, etc.)	2.83% 8
Run Errands / Go Shopping	10.25% 29
For Health / Exercise	61.13% 173
For Recreation	71.73% 203
I do not bike.	19.08% 54
Other (please specify)	3.18% 9
Total Respondents: 283	

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9

Q5: How do you rate levels of comfort for those currently biking in Rolesville?

Answered: 280 Skipped: 4



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10

Q5: How do you rate levels of comfort for those currently biking in Rolesville?

Answered: 280 Skipped: 4

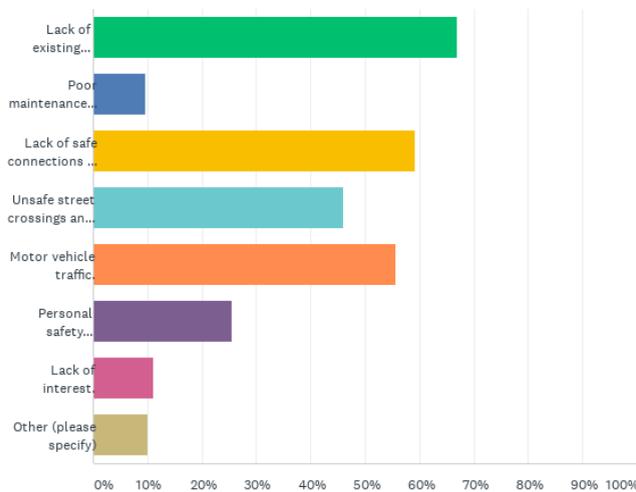
ANSWER CHOICES	RESPONSES	
Comfortable for bicyclists of all ages and abilities.	16.43%	46
Moderately comfortable for experienced bicyclists.	50.36%	141
Unsafe for most bicyclists.	33.21%	93
TOTAL		280

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11

Q9: What factors discourage you from biking in Rolesville? Select all that apply.

Answered: 270 Skipped: 14



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12

Q9: What factors discourage you from biking in Rolesville? Select all that apply.

Answered: 270 Skipped: 14

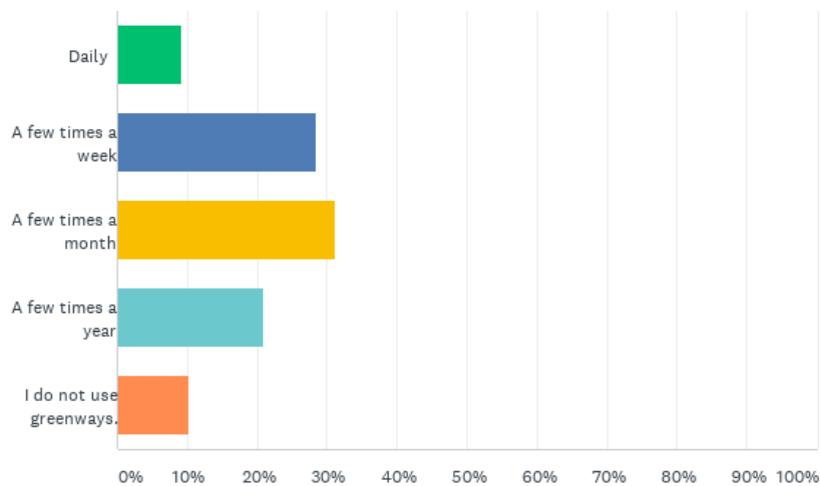
ANSWER CHOICES	RESPONSES	
Lack of existing bicycle facilities (bike lanes, multi-use paths, bike parking, etc.)	67.04%	181
Poor maintenance conditions of existing bicycle facilities and/or greenways.	9.63%	26
Lack of safe connections to and from destinations.	59.26%	160
Unsafe street crossings and intersections.	45.93%	124
Motor vehicle traffic.	55.56%	150
Personal safety concerns.	25.56%	69
Lack of interest.	11.11%	30
Other (please specify)	10.00%	27
Total Respondents: 270		

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13

Q10: How often do you use the existing greenways in Rolesville?

Answered: 282 Skipped: 2



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14

Q10: How often do you use the existing greenways in Rolesville?

Answered: 282 Skipped: 2

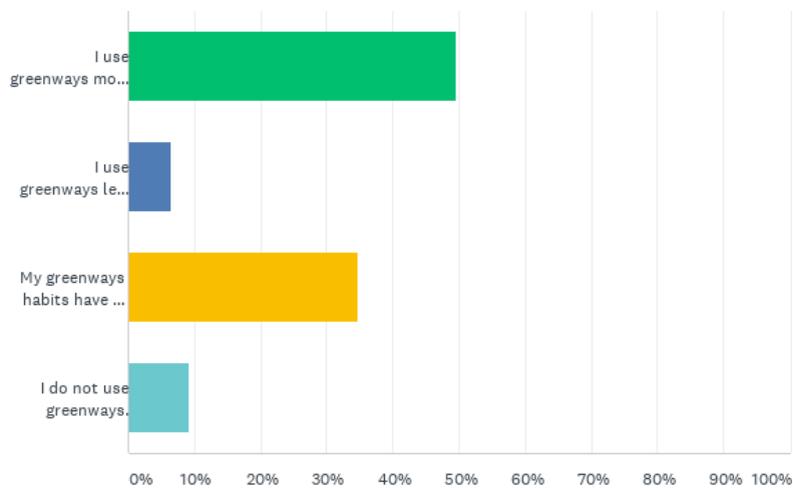
ANSWER CHOICES	RESPONSES	
Daily	9.22%	26
A few times a week	28.37%	80
A few times a month	31.21%	88
A few times a year	20.92%	59
I do not use greenways.	10.28%	29
TOTAL		282

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15

Q11: How has your use of greenways changed during the COVID-19 pandemic?

Answered: 282 Skipped: 2



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16

Q11: How has your use of greenways changed during the COVID-19 pandemic?

Answered: 282 Skipped: 2

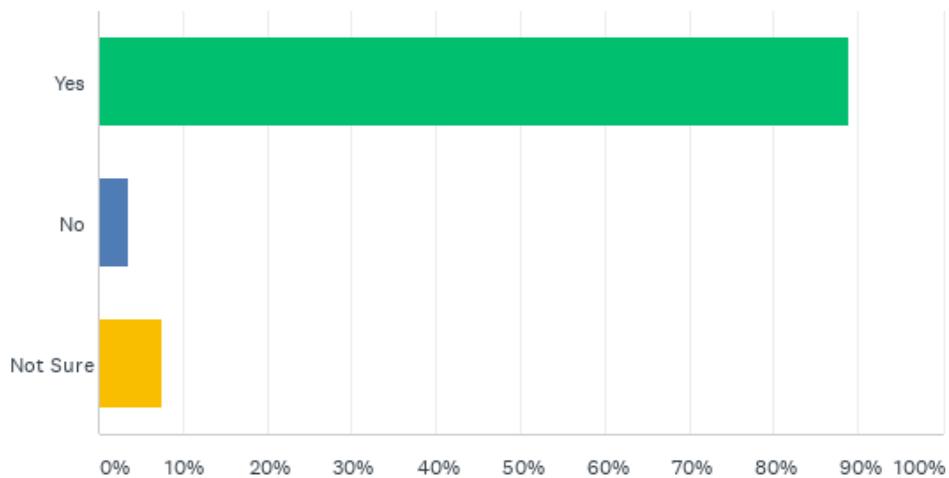
ANSWER CHOICES	RESPONSES	
I use greenways more than I did before the pandemic.	49.65%	140
I use greenways less than I did before the pandemic.	6.38%	18
My greenways habits have not changed.	34.75%	98
I do not use greenways.	9.22%	26
TOTAL		282

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17

Q12: Would you use greenways more often if Rolesville had an expanded greenway network?

Answered: 282 Skipped: 2



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18

Q12: Would you use greenways more often if Rolesville had an expanded greenway network?

Answered: 282 Skipped: 2

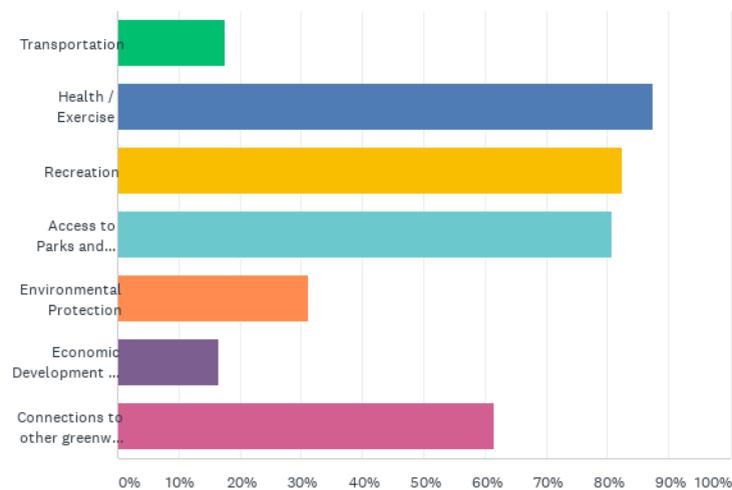
ANSWER CHOICES	RESPONSES	
Yes	89.01%	251
No	3.55%	10
Not Sure	7.45%	21
TOTAL		282

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19

Q13: Which benefits and uses of Rolesville's greenway network are most important to you? Select all that apply.

Answered: 280 Skipped: 4



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20

Q13: Which benefits and uses of Rolesville's greenway network are most important to you? Select all that apply.

Answered: 280 Skipped: 4

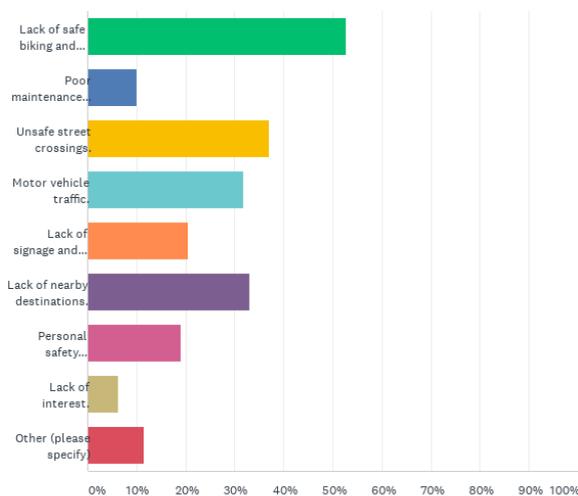
ANSWER CHOICES	RESPONSES	
Transportation	17.50%	49
Health / Exercise	87.50%	245
Recreation	82.50%	231
Access to Parks and Nature	80.71%	226
Environmental Protection	31.07%	87
Economic Development / Tourism	16.43%	46
Connections to other greenways in the Triangle Region	61.43%	172
Total Respondents: 280		

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21

Q14: Which factors discourage you from using the greenways in Rolesville? Select all that apply.

Answered: 267 Skipped: 17



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22

Q14: Which factors discourage you from using the greenways in Rolesville? Select all that apply.

Answered: 267 Skipped: 17

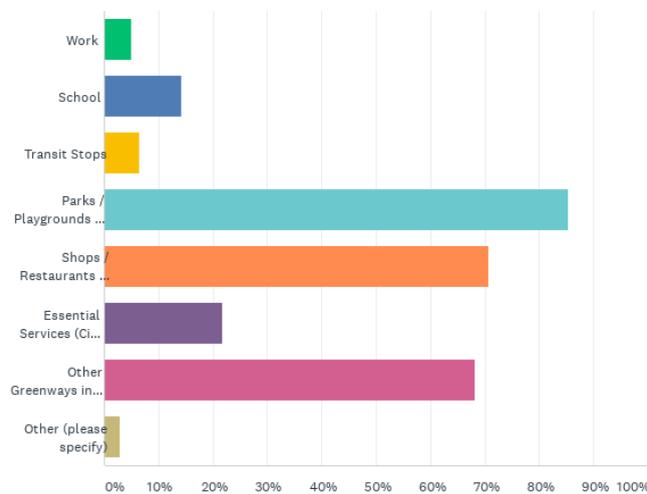
ANSWER CHOICES	RESPONSES	
Lack of safe biking and walking connections to and from greenways.	52.81%	141
Poor maintenance conditions of existing greenways.	10.11%	27
Unsafe street crossings.	37.08%	99
Motor vehicle traffic.	31.84%	85
Lack of signage and wayfinding.	20.60%	55
Lack of nearby destinations.	32.96%	88
Personal safety concerns.	19.10%	51
Lack of interest.	6.37%	17
Other (please specify)	11.61%	31
Total Respondents: 267		

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23

Q15: Which destinations would you like to get to by greenway? Select all that apply.

Answered: 280 Skipped: 4



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24

Q15: Which destinations would you like to get to by greenway? Select all that apply.

Answered: 280 Skipped: 4

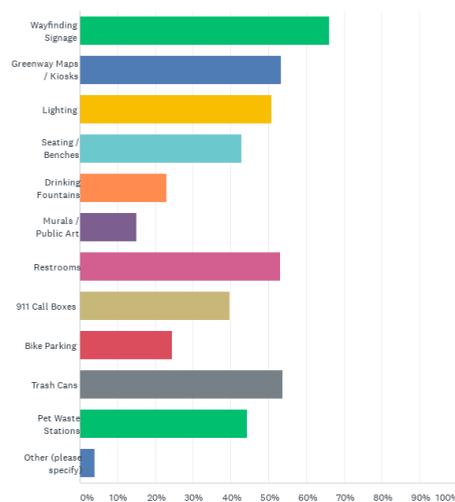
ANSWER CHOICES	RESPONSES	
Work	5.00%	14
School	14.29%	40
Transit Stops	6.43%	18
Parks / Playgrounds / Recreation Centers	85.36%	239
Shops / Restaurants / Entertainment	70.71%	198
Essential Services (Civic Centers, Medical Centers, Libraries, etc.)	21.79%	61
Other Greenways in the Triangle Region	68.21%	191
Other (please specify)	2.86%	8
Total Respondents: 280		

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25

Q16: Which amenities are most important to you along greenways? Select all that apply.

Answered: 277 Skipped: 7



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26

Q16: Which amenities are most important to you along greenways? Select all that apply.

Answered: 277 Skipped: 7

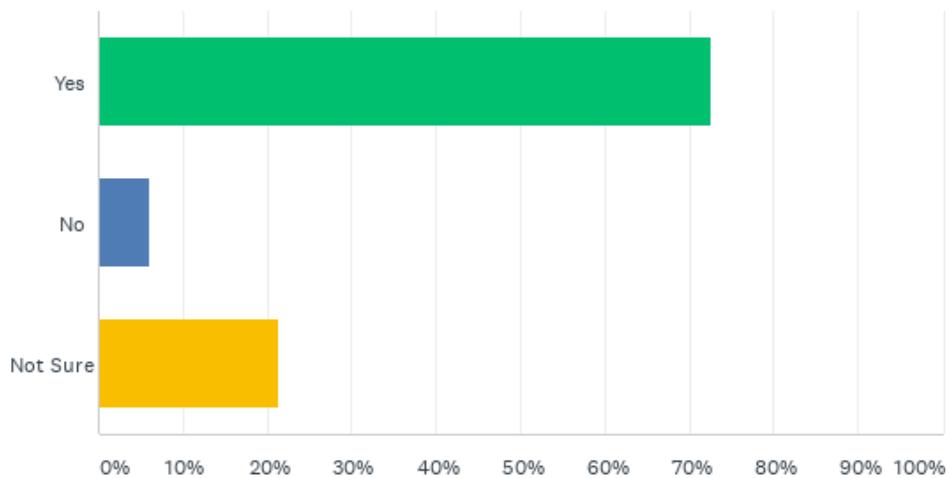
ANSWER CHOICES	RESPONSES	
Wayfinding Signage	66.06%	183
Greenway Maps / Kiosks	53.43%	148
Lighting	50.90%	141
Seating / Benches	42.96%	119
Drinking Fountains	23.10%	64
Murals / Public Art	15.16%	42
Restrooms	53.07%	147
911 Call Boxes	39.71%	110
Bike Parking	24.55%	68
Trash Cans	53.79%	149
Pet Waste Stations	44.40%	123
Other (please specify)	3.97%	11
Total Respondents: 277		

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27

Q17: Greenways are often funded through bonds. Would you support a bond fund to further develop Rolesville's greenway network.

Answered: 281 Skipped: 3



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28

Q17: Greenways are often funded through bonds. Would you support a bond fund to further develop Rolesville's greenway network.

Answered: 281 Skipped: 3

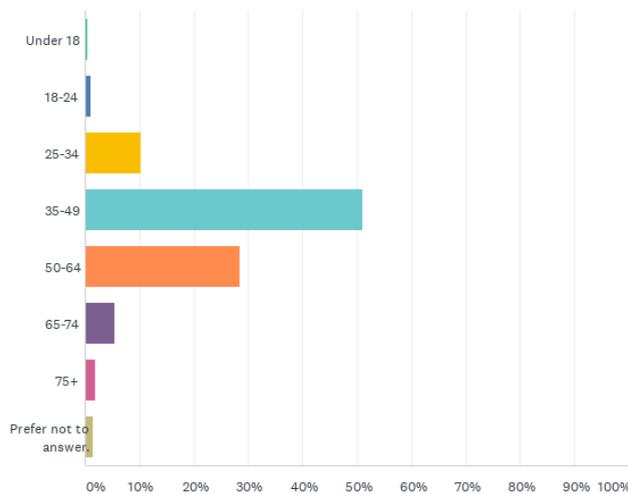
ANSWER CHOICES	RESPONSES	
Yes	72.60%	204
No	6.05%	17
Not Sure	21.35%	60
TOTAL		281

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29

Q19: What is your age?

Answered: 274 Skipped: 10



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30

Q19: What is your age?

Answered: 274 Skipped: 10

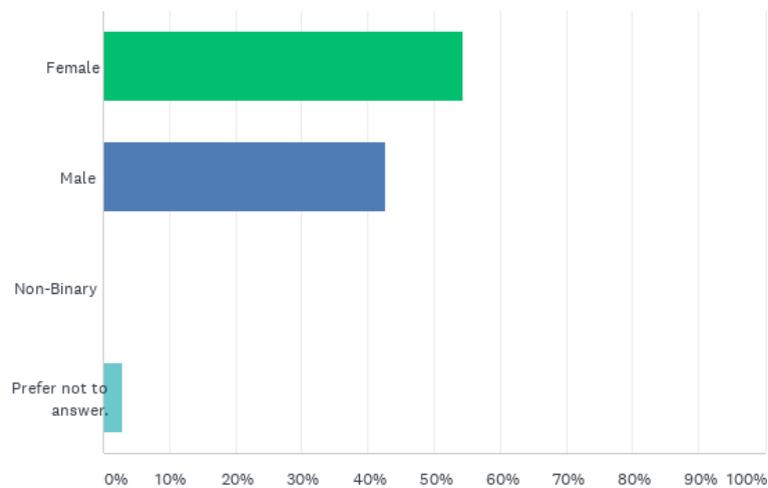
ANSWER CHOICES	RESPONSES	
Under 18	0.36%	1
18-24	1.09%	3
25-34	10.22%	28
35-49	51.09%	140
50-64	28.47%	78
65-74	5.47%	15
75+	1.82%	5
Prefer not to answer.	1.46%	4
TOTAL		274

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31

Q20: What is your gender?

Answered: 274 Skipped: 10



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32

Q20: What is your gender?

Answered: 274 Skipped: 10

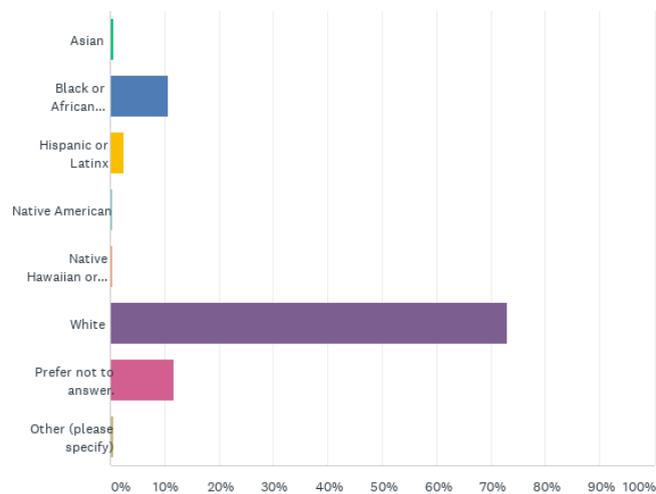
ANSWER CHOICES	RESPONSES	
Female	54.38%	149
Male	42.70%	117
Non-Binary	0.00%	0
Prefer not to answer.	2.92%	8
TOTAL		274

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33

Q21: What is your race / ethnicity?

Answered: 274 Skipped: 10



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34

Q21: What is your race / ethnicity?

Answered: 274 Skipped: 10

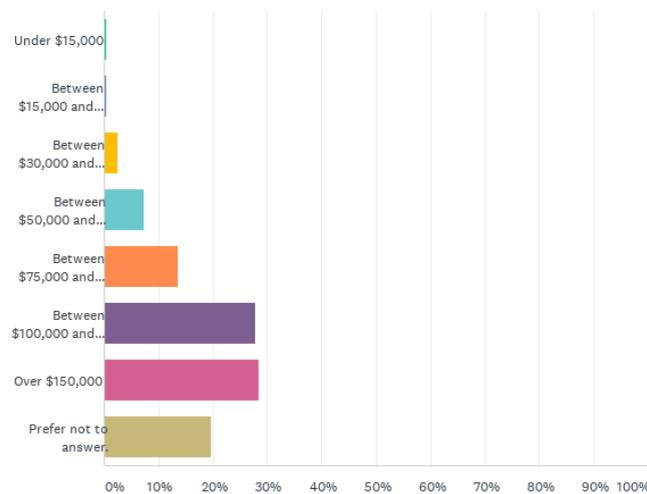
ANSWER CHOICES	RESPONSES	
Asian	0.73%	2
Black or African American	10.58%	29
Hispanic or Latinx	2.55%	7
Native American	0.36%	1
Native Hawaiian or Pacific Islander	0.36%	1
White	72.99%	200
Prefer not to answer.	11.68%	32
Other (please specify)	0.73%	2
TOTAL		274

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35

Q22: What is your household income?

Answered: 274 Skipped: 10



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36

Q22: What is your household income?

Answered: 274 Skipped: 10

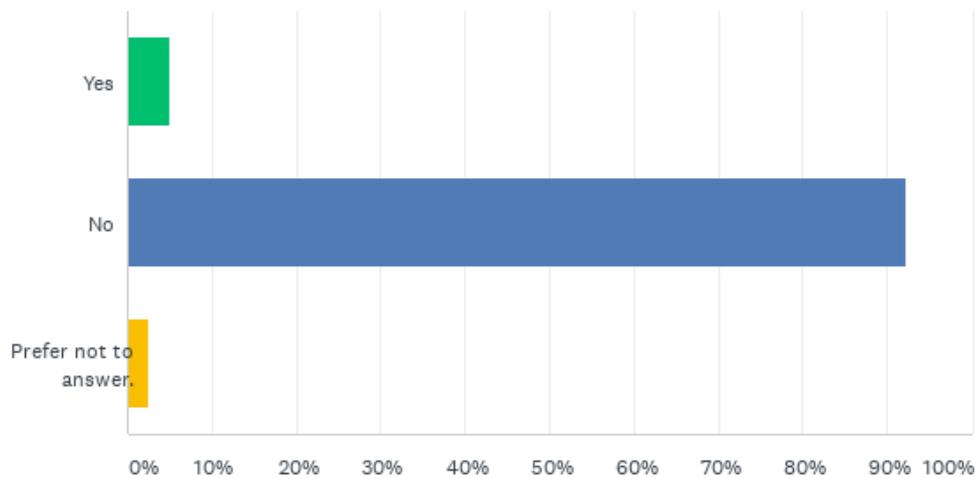
ANSWER CHOICES	RESPONSES	
Under \$15,000	0.36%	1
Between \$15,000 and \$29,999	0.36%	1
Between \$30,000 and \$49,999	2.55%	7
Between \$50,000 and \$74,999	7.30%	20
Between \$75,000 and \$99,999	13.50%	37
Between \$100,000 and \$150,000	27.74%	76
Over \$150,000	28.47%	78
Prefer not to answer.	19.71%	54
TOTAL		274

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37

Q23: Do you have a disability?

Answered: 274 Skipped: 10



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38

Q23: Do you have a disability?

Answered: 274 Skipped: 10

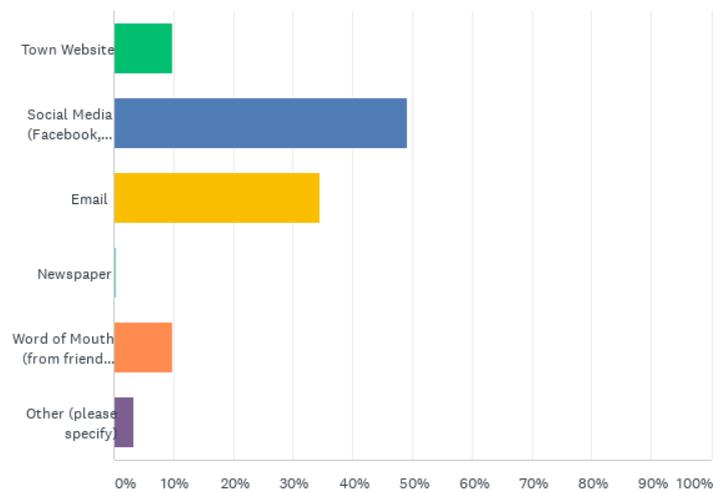
ANSWER CHOICES	RESPONSES	
Yes	5.11%	14
No	92.34%	253
Prefer not to answer.	2.55%	7
TOTAL		274

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39

Q25: How did you hear about the survey? Select all that apply.

Answered: 267 Skipped: 17



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40

Q25: How did you hear about the survey? Select all that apply.

Answered: 267 Skipped: 17

ANSWER CHOICES	RESPONSES	
Town Website	9.74%	26
Social Media (Facebook, Instagram, Twitter, etc.)	49.06%	131
Email	34.46%	92
Newspaper	0.37%	1
Word of Mouth (from friends, family, co-workers)	9.74%	26
Other (please specify)	3.37%	9
Total Respondents: 267		

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Town of Rolesville

Bike Plan and Greenway + Open Space Plan

Community Survey Themes + Comments

List destinations that you currently bike to in Rolesville.

- Greenways
- Parks
- Main St Park
- Granite Falls Swim & Athletic Club
- Mill Bridge Park
- Averette Ridge Neighborhood
- Redford Place Park & Ball Fields
- Main St
- Virginia Waters Neighborhood
- Sonic
- Local Neighborhoods
- Villages Neighborhood
- Cedar Lakes Neighborhood
- Mountain Bike Trails through the woods
- Heritage Neighborhoods
- Carlton Pointe Neighborhood
- NC-98 to Downtown Rolesville
- From Bojangles down Forestville towards greenways in Wake Forest
- Cedar Lakes to E. Young St to Main St to Main St Park and through park back to Redford Place Dr
- Sidewalks around town
- Susan's Antiques
- Heritage Park ball fields
- Granite Falls SAC to Heritage East Greenway to Heritage Park, then across Rogers Rd and take Sandford Creek Greenway to Heritage High School
- Granite Falls Blvd
- Downtown Rolesville
- Greenways in Wake Forest
- Bike Routes to Bunn, Youngsville, Wake Forest
- Rolesville Town Hall
- Shops / Main St Businesses
- Food Lion
- Mill Bridge Nature Park
- Rolesville High School
- Rogers Rd
- Young St
- Through Carlton Pointe, Villages of Rolesville and Cedar Lakes, and to the fire station on E. Young, and Down Main St to Redford Place Dr
- Rolesville Elementary School

-
- Grocery Stores
 - Neuse River Trail
 - Granite Falls SAC from Averette, W. Young, and Chaulks Rd
 - Pie-Zano's Pizzeria
 - Greenway Beer & Wine
 - Coffee Shops - Bike & White Coffee, the Coffee Lodge
 - Hampton Pointe Neighborhood
 - Barrington Hall Dr Neighborhood
 - Bojangles
 - State Employees Credit Union (SECU)
 - Lakes of Rolesville Neighborhood
 - Baraham Siding Rd, Mitchell Mill Rd, Pulley Town Rd
 - Wake Forest from Jones Dairy to Young St to Averette to Oak Grove Church Rd
 - Burlington Mills to Forestville Rd
 - Shops along Rogers Rd - CVS, Post Office
 - Shops along - Dollar General, McDonalds, Ace Hardware
 - Doctor's Offices

List destinations that you would like to bike to in Rolesville if bicycling conditions were improved.

- Greenways - all paths connected
- S Main St
- Main St Park
- Parks
- Trails to Wake Forest
- Local Businesses
- Safe bike crossing along Main St
- Rolesville Main St Park to Ball Fields
- Cedar Lake Neighborhood
- Schools
- Ball Fields
- Grocery Stores
- Coffee Shops
- Connections to Wake Forest
- Neuse River Trail
- Better Connectivity through Town
- Rolesville High School
- Downtown Rolesville
- Rogers Rd
- Connect to US-401 and NC-98 Bus Routes - connections to transit
- Food Lion
- Ace Hardware
- Main St Shopping Center
- All subdivisions in Rolesville
- Bike Belt Line around Rolesville
- Mill Bridge Nature Park
- Rolesville Middle School

-
- Nature Trails – more mountain bike trails
 - Upper Neuse River Trail (near Falls Lake)
 - Harris Teeter on Roger Rd
 - Mill Ridge Park
 - Restaurants
 - Jones Dairy Rd area
 - More overall connections
 - Town Hall
 - Frazier Farm
 - Little River Reservoir
 - Shoppes of Heritage – Wake Forest
 - Banking and dining at Forestville/Rogers Rd intersection
 - Jonesville (traditionally African American Community southeast of Town)
 - Virginia Water Dr
 - CVS
 - Rolesville Barbershop
 - Black & White Coffee
 - Heritage Nature Park
 - Granite Falls Swim & Athletic Club
 - Gateway Commons in Wake Forest
 - Downtown Wake Forest
 - Rolesville Middle School
 - Sheetz on Rogers Rd
 - Wide Loop around Town with trailheads in all the major neighborhoods
 - NC-96/98 towards Franklinton
 - All roads in Rolesville need bike lanes
 - Chalk Rd
 - Jones Dairy Rd
 - Averette & Young St.
 - East side of US-401
 - Connect Forestville, Burlington, and Main St to be able to bike to destinations (shops, coffee, restaurants)
 - Connection between Rolesville Town Center and Rolesville High School
 - Mountain Bike Trails
 - Bike lanes on Main St
 - Bike lanes, safer way to get to Mill Bridge Park
 - Bike lanes on Redford Place Dr and Young St from Cedar Lakes into Downtown
 - From Rolesville Furniture to Carlton Pointe
 - The Villages Neighborhood
 - Extend the trail from Inglemoor Ln in Carlton Pointe to connect the trail to the end of Bendemere Ln.
 - Hampton Pointe neighborhood – lack of connections to bike/walk to parks
 - Need more bike racks at shopping centers
 - Connection to trails across from Bojangles
 - Farmers Market
 - Greenway Beer & Wine
 - Thales Academy

- Pulley Town Rd
- Jonesville Rd to Main St/Downtown
- Quarry Rd
- Wall Creek neighborhood
- Connections to Knightdale, Wendell, and Louisburg
- Pie-Zanos Pizzeria
- Improve crossing over Rogers Rd between Heritage East Greenway and Mill Bridge Nature Park/Sandford Creek Greenway (bridge, tunnel, or way to stop traffic across the road)
- Horseshoe Nature Preserve

Which locations need the most bicycle infrastructure improvement in Rolesville?

- Rodgers Rd
- Any of the connecting streets to Main St
- Burlington Mills Rd
- Main St intersection with Rogers Rd
- Food Lion area
- Connections to the ball fields
- Cedar Lakes
- Young St
- Jones Dairy Rd
- Crosswalks at E. Young and Virginia Water Rd
- Connecting Hampton Pointe along Main St to Shopping Center
- Main St and Young St intersection with the US-401 Bypass
- Eastern side of Rolesville towards US-401 Bypass
- Connecting Hampton Pointe to Main St Park and Granite Fall SAC
- Connection to Neuse River Trail
- Pulley Town Rd
- Crossing Main St
- Intersection of E Young St and Louisburg Rd
- Redford Place Rd
- Jeffreys Ln and Rogers Rd
- Averette Ridge neighborhood – connections to other neighborhoods south and west
- Forestville Rd
- Perimeter around Heritage developments
- Main access roads adjacent to Wake Forest town limits
- Main St Sidepath needs maintenance improvements
- Connection between the Villages to Rolesville High School
- Averette Ridge neighborhood to Jones Dairy Elementary
- Burlington Mills to Middle School
- Drayton Reserve in need of bike/ped/trail connections
- Brandi Dr
- Burlington Mills Rd to connect to the neighborhoods south of Main St – Wall Creek, Carlton Pointe, and Villages of Rolesville
- Granite Falls neighborhood
- Connection between Gateway Commons and Main St
- Wait Ave

- Chalk Rd
- Re-do the Granite Falls Blvd Bike Lanes – traffic traveling too fast,
- Granite Falls Blvd Bike Lanes – parking in bike lanes near the Granite Falls SAC
- Intersection of Hampton Pointe & Jonesville Rd
- Connections to all Rolesville schools
- Bike parking at Town Hall, Ball Fields, shopping centers, Food Lion
- Wall Creek – cars parking on streets – difficult to bike on neighborhood streets
- Need separated bike lanes, and greenway networks similar to Raleigh, Knightdale, and Wake Forest
- Carlton Pointe – trail is short – extend to connect to other facilities
- Drayton Reserve connections to greenways

Quotes:

- *Crossing Rogers to get to the Mill Ridge Park is dangerous - we run across. I have seen motorists NOT stop and it is scary.*
- *I can only bike in my neighborhood and the one across the street. It is unsafe beyond that.*
- *Mainly in our neighborhood and a nearby neighborhood, since they are relatively safe to ride with my eleven year old son. I would not feel safe cycling further afield.*
- *If you can make it safe for students to ride their bikes to all the schools that will be in a big improvement but it's not right no.*
- *I would love an easily accessible connection to the Wake Forest Greenway for longer rides.*
- *My family and I only bike on the greenway trails. The roads/traffic are too dangerous to ride a bicycle on.*
- *We need actual separate trails from the roads because cars still drive in "bicycle lanes". We need the greenway system to connect with Wake Forest's, Raleigh's, Knightdale's, greenway systems.*
- *Throughout Rolesville, connecting into Wake Forest and Neuse River Trail. Would love to see more connections between neighborhoods and better/safer bike lanes and crossings (where necessary). Would love to see a safer crossing for trail users crossing over Rogers Rd from Heritage over to Mill Bridge Nature Park (either bridge, tunnel or way for bikers/walkers to stop traffic in order to cross. Current crossings need to require vehicles to stop and not just flash yellow caution lights. Most drivers just speed right on through without consideration of the pedestrians or bikers.*
- *I would like easier access to the greenway. Right now I have to drive to the park. It would be nice to have a bike lane on Rogers or some other way to more easily access it from Main Street.*
- *Unable to get to downtown Rolesville safely on a bike from where I live.*
- *Thank you for this survey and giving us a voice. I love our town! Let us know what we can do to help.*
- *As a small town, proper speed and proper intersections for pedestrian and cyclist are very important. I actively ride my bike alone and with my children. Some of the crossings are a little intimidating due to motorist not yielding and speeding.*
- *Maintaining over growth on the greenways/sidewalks, Not exactly an amenity, but very important to me. There is a clear difference in the Town of Rolesville's side and the Town of Wake Forest side in regards to that.*
- *We have some great destinations to the south and west, but more physical challenges due to swamp, steep hills, inadequate narrow roadways lacking adequate infrastructure. I would*

like our town to think about connectivity to Youngsville, Bunn and Louisburg as we consider the other more obvious Wake County destinations. In-town connectivity to town greenways and parks, access to the Neuse River (existing greenway) and (future) Little River Reservoir, over to Wake Forest, plus just generally getting across the bypass seems to me the most obvious short term priorities.

- *With so much new housing developments being added, we need safe bike trails so kids and adults can bike safely. Kids love being able to ride when the weather is nice, whether it's to school, sports activities, or friends houses. We need to provide a safe way for them to do this.*
- *Rolesville has been an amazing town to live in. As a 5+ year resident, my kids and I have enjoyed the small town feel and love seeing the growth. Expanding the trail system will not only preserve the natural aspect of the town and area but will provide safety for cyclists of all ages to transport around the town as it continues to grow.*
- *Help get our greenways up and connected, I can't wait to bike and walk them all with my kids and grandkids.*
- *We would love to see Rolesville become more connected to the Triangle Greenway System - not only so we could bike to destinations, but so other folks could bike here and experience our wonderful little town!*
- *The biggest feature to help with making biking a daily activity is making it simple to safely stow your bike at destinations.*
- *I think there'd be a good opportunity to highlight local artists along some of the greenways, whether it's a free expression tunnel like NC State has or just different sculptural elements like the Art Museum in Raleigh.*



ROLESVILLE DRAFT BICYCLE + GREENWAY NETWORK COMMUNITY INPUT + PROJECT PRIORITIES

The Town of Rolesville's draft bicycle and greenway networks were released to the public in October 2021, as part of the planning process for the Bicycle Plan and Greenway Plan. On October 30, 2021 Town staff and the project team tabled at Fall Fest for community input on draft network recommendations. The project team spoke to approximately 100 residents and visitors of Rolesville and about 80 participants provided feedback on the draft plan. Participants provided input on their priority projects and general comments on the overall network.

Following the public meeting, the project team created a plan webpage on the Town of Rolesville's website to provide project updates and to solicit additional feedback on draft network recommendations. The webpage includes a project overview, plan maps, meeting presentations, and a short survey for input on draft network recommendations and priority projects. The survey was open for public comment from November 19 -December 10, 2021. Approximately, 70 people filled out the survey. Participants provided general feedback and selected their priority on-street bicycle projects and priority greenway/sidepath projects.

The combined community input from Fall Fest and the public survey is provided below.

COMMUNITY INPUT (SUMMARY OF GENERAL COMMENTS)

Positive Feedback

- Agree with the proposed bicycle and greenway networks and support moving forward with the draft network recommendations.
- Excited about increased walkability and bikeability through network expansion - to improve safety and connectivity and provide residents with accessible multimodal transportation options.
- Incorporate additional bicycle boulevards in the Perry Farms and Preserve at Jones Dairy neighborhoods to provide wayfinding and connections to developer-built greenways, major roadways, and adjacent Wake Forest neighborhoods.
- Interest in creating more walkable areas with greenways and sidewalks along Main St and Burlington Mills.
- Extensive network recommendations - especially supportive of recommendations along Rogers, Jones Dairy, and Chalk to provide connections to schools and neighborhoods.
- Supportive of network recommendations along and adjacent to Pulley Town Rd - will provide residents on the eastside with improved access to Downtown.
- Proposed facilities providing connections to transit stops for bicyclists and pedestrians is a great improvement.
- The proposed greenway network will provide increased access to the unique natural features in Rolesville.
- "Having greenway access and safe bicycle lanes and trails will make Rolesville a much more family-oriented town than it is now. Biking is something families can enjoy together and promotes healthy living, respect for the outdoor environment and it's fun!"
- "I think this would be an amazing amenity for residents. It appears it would be possible to bike to Mill Bridge & beyond between bike lanes & greenways. Great plan!"



-
- “I absolutely love the plan. As a frequent cyclist living off Mitchell Mill, I would frequent both a greenway extension and bike lanes into Rolesville! I would love easier access to town where my family could accompany me.”

Critical Feedback

- Concerns of proposed Harris Creek Greenway through the Cedar Lakes neighborhood – concerns center on resident privacy, maintenance responsibilities, and environmental constraints, such as floodplain impacts.
- Concerns of how connecting the neighborhoods of Hampton Pointe and Drayton Reserve via greenway and bicycle boulevard will impact the quiet feel of both neighborhoods – concerns that the connections will lead to increased traffic and flooding.
- Draft Bike Network – concerns over bike lanes along major roads adding to increasing congestion – more supportive of off-road bike facilities rather than on-street bike facilities.
- Draft Bike Network – safety and congestion concerns over shared street network of bicycle boulevards.
- Concerns about potential maintenance responsibilities of the greenway network and availability of Town resources to address growing maintenance needs.
- Concerns about availability of funding to implement these networks.



ROLESVILLE DRAFT BICYCLE NETWORK COMMUNITY NETWORK PRIORITIES

Map ID	Road Name	Recommendation	Public Priorities
1	Main St	Separated Bike Lane	28
2	Granite Falls Blvd	Separated Bike Lane	9
3	Wait Ave	Bike Lane	1
4	Averette Rd	Bike Lane	21
5	Rogers Rd	Bike Lane	27
6	Burlington Mills Rd	Bike Lane	12
7	Hampton Lake Dr	Bike Lane	7
8	Jonesville Rd	Bike Lane	3
9	E. Young St	Bike Lane	25
10	Redford Place Dr	Bike Lane	19
11	Mitchell Mill Rd	Bike Lane	7
12	Louisbury Rd	Bike Lane	1
13	Fowler Rd	Bike Lane	6
14	Pulley Town Rd	Bike Lane	4
15	Rolesville Rd / Riley Hill Rd	Bike Lane	8
16	Quarry Rd	Bike Lane	4
17	Zebulon Rd	Bike Lane	3
18	Proposed Collector St #1	Bike Lane	3
19	Proposed Collector St #2	Bike Lane	5
20	Proposed Collector St #3	Bike Lane	0
21	Proposed Collector St #4	Bike Lane	0
22	Proposed Collector St #5	Bike Lane	0
23	Preserve at Jones Dairy	Bicycle Boulevard	1
24	Averette Ridge	Bicycle Boulevard	4
25	Granite Falls	Bicycle Boulevard	11
26	Chandlers Ridge	Bicycle Boulevard	2
27	Drayton Reserve/Hampton Pointe	Bicycle Boulevard	7
28	Carlton Point/Villages/Cedar Lakes	Bicycle Boulevard	18
29	The Point	Bicycle Boulevard	2



ROLESVILLE DRAFT GREENWAY NETWORK COMMUNITY NETWORK PRIORITIES

Map ID	Greenway / Sidepath	Recommendation	Public Priorities
1	Perry Creek Greenway	Greenway	8
2	Cedar Creek Greenway	Greenway	9
3	Buffalo Creek Greenway	Greenway	5
4	Harris Creek Greenway	Greenway	16
5	Toms Creek Greenway	Greenway	12
6	Young St - Main St Rd Greenway Connector	Greenway	11
7	Louisburg Rd Greenway	Greenway	7
8	Redford Place Park Greenway	Greenway	26
9	Redford Place Park - Young St Connector	Greenway	13
10	Point - Kalas Fall Greenway Connector	Greenway	2
11	Heritage East - Mill Bridge Greenway Connector	Greenway	18
12	Main St Sidepath	Sidepath	24
13	US-401 Sidepath	Sidepath	10
14	Forestville Rd Sidepath	Sidepath	12
15	Burlington Mills Rd Sidepath	Sidepath	14
16	Rogers Rd Sidepath	Sidepath	33
17	Averette Rd Sidepath	Sidepath	21
18	Chalk Rd Sidepath	Sidepath	12
19	Heritage East - Chalk Rd Greenway Connector	Greenway	13
20	Jones Dairy Rd Sidepath	Sidepath	9
21	Jones Dairy Rd Extension Sidepath	Sidepath	5
22	Wait Ave Sidepath	Sidepath	2
23	E. Young St Sidepath	Sidepath	17
24	Rolesville Rd Sidepath	Sidepath	3
25	Virginia Waters Sidepath	Sidepath	3
26	Jonesville Rd Sidepath	Sidepath	3
27	Carlton Pointe-Harris Creek Greenway Connector	Sidepath	2
28	Quarry Rd Sidepath	Sidepath	2
29	Fowler Rd Sidepath	Sidepath	3

**Town of Rolesville
Bike Plan and Greenway + Open Space Plan
Rolesville – Raleigh Interjurisdictional Meeting**

**August 2, 2021
3pm-4pm**

MEETING PARTICIPANTS

- JG Ferguson, Town of Rolesville
- Kris Nikfar, City of Raleigh
- Paul Black, City of Raleigh
- Kathryn Zeringue, McAdams
- Emily Love, NCDOT IMD

MAP ACCESS (VIA CONCEPT BOARD)

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AGENDA

- Coordination of Planned/Proposed Network Recommendations
 - Connections between Jurisdictions
 - Priority Greenway and Bicycle Facility Projects
- Greenway Maintenance / Resurfacing Coordination
 - Maintenance Budget/Staff
 - Department Responsible for Maintenance
 - Maintenance duties conduction by jurisdiction vs. contracted out.
 - Resurfacing – Complete Streets approach.
- Greenway Design Standards
 - Minimum widths
 - Surface material
- Opportunities for Policy / Funding Coordination

MEETING NOTES:

Greenway / Bicycle Facility Connections:

- Harris Creek Greenway – medium-high priority – longer term priority for City of Raleigh.
- Mitchel Mill Rd and Louisbury Rd – proposed bike lanes within Raleigh City Limits.
- Greenway Project 23 (between Neuse River Trail and Mitchell Mill Rd) – medium-high priority.
- Neuse Crossing Dr – conventional bike lanes are programmed along roadway.
- Neighborhood south of Neuse Crossing – HOA asked for bike lanes.

-
- Old Falls of Neuse Rd/Old Durham Rd – priority bike lane project – to fill gap between the bike lanes along Falls of Neuse Rd in Raleigh and the sidepath along Durham Rd in Wake Forest.
 - Forestville Bike Lanes – planned by the City of Raleigh and will likely be implemented with future roadway improvements. The proposed bike lanes may be upgraded to a sidepath in the future.
 - Cedar Creek Greenway – medium-high priority – longer term priority for City of Raleigh.
 - US-401 sidepath proposed for US-401 between Raleigh and Rolesville in Raleigh’s Bike Plan.

Maintenance:

- Greenway Maintenance – maintenance staff handles smaller maintenance issues, but larger projects are programmed in CIP and contracted out.
- Greenway maintenance staff: 10 staff on grounds, 6 on vegetation, 6 on structure, and 6 on construction, includes supervisors.
- Bike Lane Maintenance – maintenance handled by Public Works, and major resurfacing projects are contracted out.
- Raleigh takes a complete streets approach to resurfacing – striping bike lanes during roadway resurfacing.

Design Standards / UDO Recommendations

- In the update to the Raleigh Greenways Master Plan, the plan recommends policy updates to allow /require developer-built greenways.
- Raleigh Greenways – 10ft minimum width, 12ft preferred.
- Raleigh Bike Lanes – 5ft minimum, 2ft buffer minimum, 1.5ft buffer allowed in specific contexts.
- Surface standards – Greenways – preferred surface material for bridges in concrete.
- Surface standards – Sidepaths – asphalt preferred but concreted allowed as well.
- Bike Facilities – preferred cross section is the facility along Blue Ridge Rd in front of NCMA.

**Town of Rolesville
Bike Plan and Greenway + Open Space Plan
Rolesville – Wake Forest Interjurisdictional Meeting**

**July 30, 2021
10am-11am**

MEETING PARTICIPANTS

- JG Ferguson, Town of Rolesville
- Dylan Bruchhaus, Town of Wake Forest
- Randy Hoyle, Town of Wake Forest
- Ruben Wall, Town of Wake Forest
- Kathryn Zeringue, McAdams
- Emily Love, NCDOT IMD

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- Opportunities for Policy / Funding Coordination
 - LDO/UDO Policies
 - Requirements for developments to provide connections to existing and proposed greenways.
 - Requirements for developments to enhance bicycle and pedestrian connections.
 - Provides developer flexibility through an in-lieu fee program that contributes to greenway funding.
 - Support greenway development in flood-prone areas.
 - Requirements for easement dedication to allow greenway development.

- Overlay districts that support mixed-use, walkable/bikeable development.
- Funding Opportunities
 - STIP – project bundling for bike/ped projects across jurisdictions.
 - Grants – Wake County Bond

MEETING NOTES:

Greenway / Bicycle Facility Connections:

- Averette Rd
 - Wake Forest – development driven – within the next 5 years at least 2/3 will be developed.
 - Rolesville – facilities will be a sidewalk in short/medium term and will be development driven – will also be filled in with the Perry Farm and The Preserve developments. Bike Lanes may be incorporated as well. Shared Use Path as long-term considerations.
- Zebulon Rd
 - Wake Forest - development driven - In the NEAS Study – the proposed NC-98 roadway improvement is 4 lanes with multi-use path. Confirm with Franklin County.
- Wait Ave
 - Gateway Commons to Ligon Mill Rd– development driven, and vacant parcels are prime for development, other segments are further out – not a high priority.
- Elizabeth Springs Greenway / Austin Creek Greenway
 - Rolesville - Elizabeth Spring Greenway – developer driven, will be developed within the next 5 years.
 - Wake Forest – Austin Creek Greenway – the subdivision is in the late stages of development. As for the connection to Smith Creek, the Town has ROW acquired and development is a medium-term priority, following connection to Neuse River via the Smith Creek Greenway, which is the highest priority for Wake Forest.
- Jones Dairy Rd
 - Rolesville - roadway improvements are underway by NCDOT – will have bike lane and sidewalk. A shared use path will be considered for long-term recommendations.
- Chalk Rd
 - Rolesville – shared use path can be considered for long-term recommendations.
 - Wake Forest – will be development driven and a longer-term priority.
- Rogers Rd
 - Rolesville - existing sidewalks, bike lanes are long-term priority, will be development driven. Intersection of Rogers Rd and Heritage Gates Dr - NCDOT wants to realign crosswalk and has deemed the current crosswalk unsafe. The Town proposed a pedestrian signal/HAWK Beacon at the current intersection, but NCDOT requires the crosswalk to be realigned before any improvements are made.
- Burlington Mills Rd
 - Wake Forest - longer-term priority and improvements will be developer driven. Near US-1, bike/ped facility improvements will be developed by NCDOT through roadway improvements. Smith Creek Greenway is the priority connection to the Neuse River Trail.
- Forestville Rd
 - Wake Forest and Rolesville – proposed shared use path will be developer driven and a longer-term priority.
- Toms Creek Greenway (to Forestville Rd/Bike Lanes along Coach Lantern Ave)

- Wake Forest – bike lane will be implemented by the Town along Coach Lantern Ave. The Town is working on evaluating bike facilities recommendations for priority projects.
- Rolesville – Toms Creek Greenway will be developer driven.
- US-401 to Neuse River Trail
 - Rolesville – not under consideration by the Town as a connection to the Neuse River. The priority connection to the Neuse is via Wake Forest along Smith Creek Greenway. Consider discussion with Raleigh.

Maintenance:

- Wake Forest is in the process of establishing a maintenance plan for new bike/ped facilities that will be developed within the next 5 years – to prepare for additional maintenance responsibilities.
- Wake Forest takes over maintenance of developer-built greenways that are planned greenway connections. Wake Forest does not maintain open spaces in development – the HOA's are responsible for open space maintenance.
- For developer-built greenways, Wake Forest maintains the entire easement. If the easement is 50ft, then Town maintains 50ft. However, there are some buffers that are not maintained by the Town, depending on conditions of easement.
- Parks & Rec Maintenance Team – 11-12 staff with an annual budget to maintain park and greenway facilities.
- Some greenway maintenance tasks are contracted out – major maintenance duties – rebuilding boardwalk, some of paving and concrete work, etc.
- Street Maintenance Team –under evaluation to incorporate road diets / complete streets approach to resurfacing.

Design Standards / Funding Opportunities:

- Wake Forest Greenway Design Standards – 10 ft minimum.
- Funding Opportunities:
 - STIP – project bundling as an opportunity for future greenway and bike/ped projects.
 - Wake County Bond – joint grant opportunity for cross-jurisdictional greenway projects.

**Town of Rolesville
Bike Plan and Greenway + Open Space Plan
Rolesville – Wake Co. Interjurisdictional Meeting**

**August 10, 2021
11am-12pm**

MEETING PARTICIPANTS

- JG Ferguson, Town of Rolesville
- Tim Gardiner, Wake County
- Chris Snow, Wake County
- Kathryn Zeringue, McAdams
- Emily Love, NCDOT IMD

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 - Support greenway development in flood-prone areas.
 - Requirements for easement dedication to allow greenway development.
 - Overlay districts that support mixed-use, walkable/bikeable development.

MEETING NOTES:

Greenway / Bicycle Facility Connections:

Wake County Greenway Master Plan Priorities:

- Bridge the Gaps (High Priorities 1-5 years from 2017):
 - Smith Creek Greenway to Neuse River Trail
 - Heritage East Greenway to Sandford Creek Greenway (completed)
- Complete the Communities (Long-Term Priorities 10+ years out):
 - Harris Creek Greenway
 - Cedar Fork Creek Greenway
 - Perry Creek Greenway
 - Buffalo Creek Greenway
 - Little River Greenway
- Wake County: The 2017 plan primarily approached recommendations and priorities from a recreational greenways and regional connectivity standpoint, and so there are missing greenway connections in the plan, which need to be evaluated.
- Rolesville: Subdivision under development near the Perry Creek corridor along Averette Rd, and a segment of greenway with a connection to Perry Creek will be completed in the next couple of years by developers. The culvert under US-401 will provide the connection to Frazier Farm Park.
- Zebulon has interest in developing the Little River Greenway, and there may be opportunities to propose connections between Rolesville and Zebulon via the Little River corridor.
- Wake County: Little River Greenway – funding would primarily be sourced from recreational / trails funding rather than being funding via transportation sources because few developments along the Little River corridor make it difficult to advocate for transportation funding.
- Trail proposed along US-401 Bypass is a priority connection for Rolesville with development occurring south of Louisburg Rd. The greenway is currently proposed outside of NCDOT right-of-way, and will connect to Perry Creek Greenway and Buffalo Creek Greenway.
- Cedar Fork Greenway – lower priority for Rolesville than Perry Creek Greenway, US-401 shared use path, and Buffalo Creek Greenway – greenways will be built as development occurs along these corridors.
- Wake County has funding for greenway as part of the Bond –next fiscal year, Wake County proposed to fund \$15 million in greenway projects. There will be an RFP process to select awarded greenways. The County will likely focus on signature greenways and connections to communities.
- Buffalo Creek Greenway – Wake County has 700 acres on Buffalo Creek – important for Wake County to connect Robertson Mill Pond on Buffalo Creek and Sandy Pines Nature Preserve and to connect into the Town of Rolesville.
- Greenway planned parallel north of Old Bunch Rd – that connects to Roberts Mills Pond to Sandy Pines Preserve.
- Harris Creek another important connection for Rolesville as a way to connect into Raleigh’s greenway network and directly to the Neuse River Trail.
- Wake County plans to revisit older proposed greenway corridors – like connection from Little River to Fowlers Mill to Buffalo Creek – may need to remove this section.
- Recommendations in Rolesville Bike Plan and Greenway Plan through Wake County to make bicycle and greenway connections between jurisdictions. – Connect proposed bike lanes – extend proposed bike lanes along Fowler to connect to Mitchell Mill Rd. Also evaluate bike lane connections along Quarry Rd and Pulley Town Rd.

-
- Perry Creek Greenway – consider impactful naming conventions – East Wake Greenway – to improve opportunities for funding – consider planning a network to speak to bigger picture transportation and recreational connections, and how we want to brand it.

Maintenance:

- American Tobacco Trail – Wake County does not own or manage any other greenways besides the ATT.
- Swift Creek Greenway – Wake County may consider managing the corridor when development occurs.
- NCDOT Share Use Paths and the Complete Streets Policy – the County will review the policy and how it ties into maintenance greenways in unincorporated areas of the County. Wake County is exploring funding opportunities to solve maintenance responsibilities.

Design Standards /Policies / Funding Opportunities:

- Moving in the direction to update UDO requirements for bike/ped/trail improvements in commercial developments.
- Wake County – does not have greenway standards – the County defers to the municipality's standards.
- Maintenance standards – Wake County – evaluating standards if they do have to manage greenways.

**Town of Rolesville
Bike Plan and Greenway + Open Space Plan
Rolesville – Franklin Co. Interjurisdictional Meeting**

**August 3, 2021
1pm-1:30pm**

MEETING PARTICIPANTS

- JG Ferguson, Town of Rolesville
- Oliver Greene, Franklin County
- Scott Hammerbacher, Franklin County
- Kathryn Zeringue, McAdams
- Emily Love, NCDOT IMD

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 - Support greenway development in flood-prone areas.
 - Requirements for easement dedication to allow greenway development.
 - Overlay districts that support mixed-use, walkable/bikeable development.

- Funding Opportunities
 - STIP – project bundling for bike/ped projects across jurisdictions.

MEETING NOTES:

Greenway / Bicycle Facility Connections:

- Priority Greenway Projects in Franklin County – greenway connection between Wake Forest and Youngsville via Dunn Creek and the proposed rail-trail between Franklinton and Louisburg.
- The focus of the countywide greenway network is to connect municipalities via greenway – along sewer easements, which are primarily along riparian corridors.
- Priority bikeway project – NC Bike Route 2 Mountains to Sea.
- Discussion of the abandoned rail line between Rolesville and Bunn – much of the right of way is no longer in place due to rail corridor reverting back to previous landowners. This project may not be feasible due to right-of-way constraints, but it could be explored during Rolesville’s network analysis.
- Franklin County recently adopted (7/14/21) a countywide bicycle and pedestrian plan. The project team will review for other potential connections between Franklin County and Rolesville.
- Rolesville will also evaluate connections to Franklin County via Frazier Farm Park – review potential to route via the Perry Creek Greenway, the Little River to connect to proposed bike facilities in the southwest portion of the County, especially to the NC Bike Route 2 Mountains to Sea.

Maintenance:

- Trails in Franklin County are maintained by the Franklin County Parks and Recreation, existing trails are maintained in Owens Park. Most facilities are maintained in-house, except for some landscaping that is contracted out.
- NCDOT maintains Franklin County roadways. The County coordinates with NCDOT on resurfacing and takes a Complete Streets approach to roadway maintenance. The County recently installed a road-diet along a state route, which allowed for bike lanes.

Design Standards /Policies / Funding Opportunities:

- Design Standards – Greenways are 8ft minimum in width. Rails-to-Trails project between Franklin and Louisburg is proposed as a 10ft wide trail.
- Trail Surface Materials: existing trails in Owen Park are concrete and natural surface. Franklin County will likely use asphalt for trails as well, moving forward.
- Franklin County UDO – The County just passed the countywide UDO in June and requires easements to allow for greenway development and establishes an in-lieu fee program to fund greenways. The UDO also supports greenway development in flood-prone areas.
- Funding – Franklin County is open to partnering on funding opportunities for greenways and connections with Rolesville in the future, especially if the opportunity arises to bundle bike/ped projects for the STIP.

D. PROJECT PRIORITIZATION + COST ESTIMATES

TOWN OF ROLESVILLE GREENWAY PLAN - PROJECT PRIORITIZATION CRITERIA

Please score each proposed greenway project listed below to determine the priority projects of the Rolesville Greenway Plan. Scores are based on how the project meets or does not meet each prioritization criteria guided by plan goals. Projects that meet or strongly meet each prioritization criteria receive a score of 5 or 10, respectively. Projects that do not meet the criteria receive a score of 0 for that criteria. Projects can receive additional points under the Accessibility Criteria if the project provides connections to destinations. Each project can receive a score of up to 58. Please review the accompanying map for project details.

Criteria (Guided Plan Goals)	Project Does Not Meet Criteria	Project Meets Criteria	Project Strongly Meets Criteria
Accessibility - projects that provide connections and/or expand access to destinations, which include local recreation centers, parks, neighborhoods, schools, commercial centers, and employment centers. <i>Projects receive additional points for connections to the specific destinations below.</i>	0	5	10
Provides connections and/or expands access to Parks & Recreation Centers	0	1	2
Provides connections and/or expands access to Neighborhoods	0	1	2
Provides connections and/or expands access to Schools	0	1	2
Provides connections and/or expands access to Commercial/Civic Centers	0	1	2
Regional Connectivity - projects that provide connections between the greenway networks of Rolesville and neighboring communities (Wake Forest, City of Raleigh, Wake County, Franklin County).	0	5	10
Safety - projects that address safety concerns along greenway corridors and propose safety improvements at crossings and trail access points.	0	5	10
Equity - projects that prioritize the recreational and active transportation needs of vulnerable community members (children, seniors, persons with disabilities, and residents residing in underserved areas).	0	5	10
Environmental Protection - projects that contribute to the protection and conservation of environmental sensitive lands and stream corridors and those that contribute to sustainable and responsible development.	0	5	10

Map ID	Greenway / Sidepath	Recommendation	Accessibility Criteria Score (0, 5, or 10, and up to 8 additional points)	Regional Connectivity Criteria Score (0, 5, or 10)	Safety Criteria Score (0, 5, or 10)	Equity Criteria Score (0, 5, or 10)	Environmental Protection Criteria Score (0, 5, or 10)	Total	Public Prioritization Score (0, 5, 10)	Total Prioritization Score
23	E. Young St Sidepath	Sidepath	18	10	10	10	5	53	10	63
12	Main St Sidepath	Sidepath	17	10	10	10	5	52	10	62
16	Rogers Rd Sidepath	Sidepath	16	10	10	10	5	51	10	61
11	Heritage East - Mill Bridge Greenway Connector	Greenway	15	10	10	10	5	50	10	60
15	Burlington Mills Rd Sidepath	Sidepath	14	10	10	10	5	49	10	59
19	Heritage East - Chalk Rd Greenway Connector	Greenway	14	5	10	10	10	49	10	59
9	Redford Place Park - Young St Connector	Greenway	18	5	10	10	5	48	10	58
4	Harris Creek Greenway	Greenway	12	10	10	5	10	47	10	57
8	Redford Place Park Greenway	Greenway	17	5	5	10	10	47	10	57
17	Averette Rd Sidepath	Sidepath	16	5	10	10	5	46	10	56
14		Sidepath	14	10	10	10	5	49	5	54
22	Wait Ave Sidepath	Sidepath	14	10	10	10	5	49	5	54
20	Jones Dairy Rd Sidepath	Sidepath	13	10	10	10	5	48	5	53
13	US-401 Sidepath	Sidepath	12	10	10	10	5	47	5	52
18	Chalk Rd Sidepath	Sidepath	12	10	10	10	5	47	5	52
24	Rolesville Rd Sidepath	Sidepath	14	10	10	5	5	44	5	49
26	Jonesville Rd Sidepath	Sidepath	14	5	10	10	5	44	5	49
28	Quarry Rd Sidepath	Sidepath	13	5	10	10	5	43	5	48
30	Granite Falls Blvd Sidepath	Greenway	18	5	10	10	5	48	0	48
25	Virginia Waters Sidepath	Sidepath	16	5	5	10	5	41	5	46
29	Fowler Rd Sidepath	Sidepath	11	5	10	10	5	41	5	46
6	Young St - Main St Rd Greenway Connector	Greenway	9	5	10	5	10	39	5	44
3	Buffalo Creek Greenway	Greenway	8	10	5	5	10	38	5	43
21	Jones Dairy Rd Extension Sidepath	Sidepath	13	5	10	5	5	38	5	43
27	Carlton Pointe-Harris Creek Greenway Connector	Sidepath	8	5	10	10	5	38	5	43
10	Point - Kalas Fall Greenway Connector	Greenway	7	5	10	5	10	37	5	42
5	Toms Creek Greenway	Greenway	10	5	5	5	10	35	5	40
1	Perry Creek Greenway	Greenway	8	10	5	0	10	33	5	38
7	Louisburg Rd Greenway	Greenway	8	5	10	5	5	33	5	38
2	Cedar Creek Greenway	Greenway	7	10	5	0	10	32	5	37

SIT 2: Off-Road/Separated Linear Bicycle Facility Start Over



Project Name:

SPOT ID:

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

1 Total Project Length: feet

2 Proposed Facility Width (Default is 10 feet) ⁱ: feet

3 Project Located on Both Sides of the Road ⁱ: YES NO

4 County:

5 City:

6 Surrounding Development Type ⁱ:

7 Registered Historic District: YES NO

8 Existing Curb & Gutter within Project Area: YES NO

9 Number of Stream Crossings ⁱ:

10 Percentage of ROW Area Needed ⁱ:

11 Impact to Active Railroad Track or Railroad ROW: YES NO

12 Roadways Intersected ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="1"/>
Arterial	<input type="text" value="0"/>
Major Collector	<input type="text" value="1"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="8"/>
Total	10

13 Signalized Intersections Crossed (Number within Total Roadways Intersected) ⁱ:

14 Number of Existing Bridges ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="0"/>
Arterial	<input type="text" value="0"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="0"/>
Small Stream	<input type="text" value="0"/>
Medium Stream	<input type="text" value="0"/>
Large Stream	<input type="text" value="0"/>
Railroad	<input type="text" value="0"/>
Total	0

15 Submitted by: Date: 5/17/2022

Cost Estimate Summary

Total	\$ 5,270,000
Design	\$ 640,000
ROW	\$ 360,000
Utilities	\$ 175,000
Construction	\$ 4,095,000

Enter Any Desired Notes in the Box Below

Disclaimers

All costs are based on 2019 prices and cost components are rounded to the nearest \$5,000, with a minimum of \$5,000 per component. This tool assumes that 10% of the utilities located within the project area would need to be relocated.

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, project 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.

Estimates for the construction of new and/or the modification of existing structures (bridges or tunnels) have been simplified to estimate an assumed width of each structure based on the type of feature crossed and other factors. The construction of new and/or modification of existing structures can be exponentially complex based on project specifications. A separate feasibility study is highly recommended to address the high variability associated with structure costs.

SIT 7: Protected Linear Pedestrian Facility Start Over



Project Name:

SPOT ID:

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

1 Total Project Length: feet

2 Proposed Facility Width (Default is 10 feet) ⁱ: feet

3 Project Located on Both Sides of the Road ⁱ: YES NO

4 County:

5 City:

6 Surrounding Development Type ⁱ:

7 Registered Historic District: YES NO

8 Existing Curb & Gutter within Project Area: YES NO

9 Number of Stream Crossings ⁱ:

10 Percentage of ROW Area Needed ⁱ:

11 Impact to Active Railroad Track or Railroad ROW: YES NO

12 Roadways Intersected ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="0"/>
Arterial	<input type="text" value="0"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="4"/>
Total	4

13 Signalized Intersections Crossed (Number within Total Roadways Intersected) ⁱ:

14 Number of Existing Bridges ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="0"/>
Arterial	<input type="text" value="0"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="0"/>
Small Stream	<input type="text" value="0"/>
Medium Stream	<input type="text" value="0"/>
Large Stream	<input type="text" value="0"/>
Railroad	<input type="text" value="0"/>
Total	0

15 Submitted by: Date: 5/19/2022

Cost Estimate Summary

Total	\$ 4,380,000
Design	\$ 545,000
ROW	\$ 150,000
Utilities	\$ 175,000
Construction	\$ 3,510,000

Enter Any Desired Notes in the Box Below

From Young St to Frazier Farm Park

Disclaimers

All costs are based on 2019 prices and cost components are rounded to the nearest \$5,000, with a minimum of \$5,000 per component. This tool assumes that 10% of the utilities located within the project area would need to be relocated.

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, project 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.

Estimates for the construction of new and/or the modification of existing structures (bridges or tunnels) have been simplified to estimate an assumed width of each structure based on the type of feature crossed and other factors. The construction of new and/or modification of existing structures can be exponentially complex based on project specifications. A separate feasibility study is highly recommended to address the high variability associated with structure costs.

SIT 2: Off-Road/Separated Linear Bicycle Facility Start Over



Project Name:

SPOT ID:

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

1 Total Project Length: feet

2 Proposed Facility Width (Default is 10 feet) ⁱ: feet

3 Project Located on Both Sides of the Road ⁱ: YES NO

4 County:

5 City:

6 Surrounding Development Type ⁱ:

7 Registered Historic District: YES NO

8 Existing Curb & Gutter within Project Area: YES NO

9 Number of Stream Crossings ⁱ:

10 Percentage of ROW Area Needed ⁱ:

11 Impact to Active Railroad Track or Railroad ROW: YES NO

12 Roadways Intersected ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="1"/>
Arterial	<input type="text" value="0"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="10"/>
Total	11

13 Signalized Intersections Crossed (Number within Total Roadways Intersected) ⁱ:

14 Number of Existing Bridges ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="0"/>
Arterial	<input type="text" value="0"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="0"/>
Small Stream	<input type="text" value="0"/>
Medium Stream	<input type="text" value="0"/>
Large Stream	<input type="text" value="0"/>
Railroad	<input type="text" value="0"/>
Total	0

15 Submitted by: Date: 5/17/2022

Cost Estimate Summary

Total	\$	5,460,000
Design	\$	715,000
ROW	\$	145,000
Utilities	\$	165,000
Construction	\$	4,435,000

Enter Any Desired Notes in the Box Below

Disclaimers

All costs are based on 2019 prices and cost components are rounded to the nearest \$5,000, with a minimum of \$5,000 per component. This tool assumes that 10% of the utilities located within the project area would need to be relocated.

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.

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Estimates for the construction of new and/or the modification of existing structures (bridges or tunnels) have been simplified to estimate an assumed width of each structure based on the type of feature crossed and other factors. The construction of new and/or modification of existing structures can be exponentially complex based on project specifications. A separate feasibility study is highly recommended to address the high variability associated with structure costs.

SIT 2: Off-Road/Separated Linear Bicycle Facility Start Over



Project Name:

SPOT ID:

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

1 Total Project Length: feet

2 Proposed Facility Width (Default is 10 feet) ⁱ: feet

3 Project Located on Both Sides of the Road ⁱ: YES NO

4 County:

5 City:

6 Surrounding Development Type ⁱ:

7 Registered Historic District: YES NO

8 Existing Curb & Gutter within Project Area: YES NO

9 Number of Stream Crossings ⁱ:

10 Percentage of ROW Area Needed ⁱ:

11 Impact to Active Railroad Track or Railroad ROW: YES NO

12 Roadways Intersected ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="1"/>
Arterial	<input type="text" value="1"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="10"/>
Total	12

13 Signalized Intersections Crossed (Number within Total Roadways Intersected) ⁱ:

14 Number of Existing Bridges ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="0"/>
Arterial	<input type="text" value="0"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="0"/>
Small Stream	<input type="text" value="0"/>
Medium Stream	<input type="text" value="0"/>
Large Stream	<input type="text" value="0"/>
Railroad	<input type="text" value="0"/>
Total	0

15 Submitted by: Date: 5/17/2022

Cost Estimate Summary

Total	\$ 5,600,000
Design	\$ 680,000
ROW	\$ 380,000
Utilities	\$ 180,000
Construction	\$ 4,360,000

Enter Any Desired Notes in the Box Below

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SIT 7: Protected Linear Pedestrian Facility

Start Over



Project Name: Heritage East - Chalk Rd Greenway Connector

SPOT ID: [Empty]

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

1 Total Project Length: 4,224 feet

2 Proposed Facility Width (Default is 10 feet): 10 feet

3 Project Located on Both Sides of the Road: YES NO

4 County: Wake

5 City: Rolesville

6 Surrounding Development Type: Suburban

7 Registered Historic District: YES NO

8 Existing Curb & Gutter within Project Area: YES NO

9 Number of Stream Crossings: 3

10 Percentage of ROW Area Needed: Total (80-100%)

11 Impact to Active Railroad Track or Railroad ROW: YES NO

12 Roadways Intersected

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

13 Signalized Intersections Crossed (Number within Total Roadways Intersected): 0

14 Number of Existing Bridges

Interstate	0
Freeway	0
Major Arterial	0
Arterial	0
Major Collector	0
Collector	0
Local Road	0
Small Stream	0
Medium Stream	0
Large Stream	0
Railroad	0
Total	0

15 Submitted by: AJH

Date: 5/19/2022

Generate Cost

Clear

Cost Estimate Summary

Go to Calculation Tab

Total	\$ 2,450,000
Design	\$ 420,000
ROW	\$ 255,000
Utilities	\$ 75,000
Construction	\$ 1,700,000

Print PDF

Enter Any Desired Notes in the Box Below

[Empty text box for notes]

Disclaimers

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Estimates for the construction of new and/or the modification of existing structures (bridges or tunnels) have been simplified to estimate an assumed width of each structure based on the type of feature crossed and other factors. The construction of new and/or modification of existing structures can be exponentially complex based on project specifications. A separate feasibility study is highly recommended to address the high variability associated with structure costs.

SIT 7: Protected Linear Pedestrian Facility Start Over



Project Name:

SPOT ID:

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

1 Total Project Length: feet

2 Proposed Facility Width (Default is 10 feet) ⁱ: feet

3 Project Located on Both Sides of the Road ⁱ: YES NO

4 County:

5 City:

6 Surrounding Development Type ⁱ:

7 Registered Historic District: YES NO

8 Existing Curb & Gutter within Project Area: YES NO

9 Number of Stream Crossings ⁱ:

10 Percentage of ROW Area Needed ⁱ:

11 Impact to Active Railroad Track or Railroad ROW: YES NO

12 Roadways Intersected ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="1"/>
Arterial	<input type="text" value="1"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="1"/>
Total	3

13 Signalized Intersections Crossed (Number within Total Roadways Intersected) ⁱ:

14 Number of Existing Bridges ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="0"/>
Arterial	<input type="text" value="0"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="0"/>
Small Stream	<input type="text" value="0"/>
Medium Stream	<input type="text" value="0"/>
Large Stream	<input type="text" value="0"/>
Railroad	<input type="text" value="0"/>
Total	0

15 Submitted by: Date: 5/19/2022

Cost Estimate Summary

Total	\$	2,495,000
Design	\$	350,000
ROW	\$	150,000
Utilities	\$	75,000
Construction	\$	1,920,000

Enter Any Desired Notes in the Box Below

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SIT 7: Protected Linear Pedestrian Facility Start Over



Project Name:

SPOT ID:

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

1 Total Project Length: feet

2 Proposed Facility Width (Default is 10 feet) ⁱ: feet

3 Project Located on Both Sides of the Road ⁱ: YES NO

4 County:

5 City:

6 Surrounding Development Type ⁱ:

7 Registered Historic District: YES NO

8 Existing Curb & Gutter within Project Area: YES NO

9 Number of Stream Crossings ⁱ:

10 Percentage of ROW Area Needed ⁱ:

11 Impact to Active Railroad Track or Railroad ROW: YES NO

12 Roadways Intersected ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="1"/>
Arterial	<input type="text" value="0"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="2"/>
Total	3

13 Signalized Intersections Crossed (Number within Total Roadways Intersected) ⁱ:

14 Number of Existing Bridges ⁱ

Interstate	<input type="text" value="0"/>
Freeway	<input type="text" value="0"/>
Major Arterial	<input type="text" value="0"/>
Arterial	<input type="text" value="0"/>
Major Collector	<input type="text" value="0"/>
Collector	<input type="text" value="0"/>
Local Road	<input type="text" value="0"/>
Small Stream	<input type="text" value="0"/>
Medium Stream	<input type="text" value="0"/>
Large Stream	<input type="text" value="0"/>
Railroad	<input type="text" value="0"/>
Total	0

15 Submitted by: Date: 5/19/2022

Cost Estimate Summary

Total	\$ 2,715,000
Design	\$ 455,000
ROW	\$ 205,000
Utilities	\$ 75,000
Construction	\$ 1,980,000

Enter Any Desired Notes in the Box Below

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SIT 2: Off-Road/Separated Linear Bicycle Facility

Start Over



Project Name: Averette Rd / W Young St Sidepath

SPOT ID: [Empty]

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

1 Total Project Length: 13,728 feet

2 Proposed Facility Width (Default is 10 feet): 10 feet

3 Project Located on Both Sides of the Road: YES NO

4 County: Wake

5 City: Rolesville

6 Surrounding Development Type: Rural

7 Registered Historic District: YES NO

8 Existing Curb & Gutter within Project Area: YES NO

9 Number of Stream Crossings: 0

10 Percentage of ROW Area Needed: Large (25%-60%)

11 Impact to Active Railroad Track or Railroad ROW: YES NO

12 Roadways Intersected

Interstate	0
Freeway	0
Major Arterial	1
Arterial	1
Major Collector	1
Collector	0
Local Road	15
Total	18

13 Signalized Intersections Crossed (Number within Total Roadways Intersected): 2

14 Number of Existing Bridges

Interstate	0
Freeway	0
Major Arterial	0
Arterial	0
Major Collector	0
Collector	0
Local Road	0
Small Stream	0
Medium Stream	0
Large Stream	0
Railroad	0
Total	0

15 Submitted by: AJH

Date: 5/17/2022

Generate Cost

Clear

Cost Estimate Summary

Go to Calculation Tab

Total	\$	7,235,000
Design	\$	865,000
ROW	\$	495,000
Utilities	\$	235,000
Construction	\$	5,640,000

Print PDF

Enter Any Desired Notes in the Box Below

[Empty text box for notes]

Disclaimers

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E. ROLESVILLE OUTDOOR MUSEUM PLAN

June 3, 2022

Town of Rolesville
Parks and Recreation Advisory Board

Open Space and Greenway Committee

Derek Versteegen (Chair), Terry Marcellin-Little, Lou Sellett, Betsy Wall, Mark Hayek, Vann Holland
Reviewed by Eddie Henderson – Project and Facilities Coordinator - Town of Rolesville Parks and Recreation

Rolesville's Outdoor Museum

Purpose Statement

The Rolesville Outdoor Museum (ROM) is a collection of outdoor sites located throughout the Town of Rolesville that highlight specific artistic, archeological, and geological points of interest. Using the Town's public greenway network, the Outdoor Museum is easy to access, provides a unique opportunity for a variety of recreation programming, and creates a connection between the user and the history of the town.

Outdoor Museum Elements (OME)

Historical Artifact

As an Outdoor Museum Element, a historic artifact is defined as "an object made by a human being with some cultural or historical interest." The piece can range from a coin to a cowbell or a button from a Civil War jacket. Alternatively, property owners can submit a historical narrative of their property. The Historic Rolesville Society serves as the primary source for determining what locations qualify for the designation of this type.

Geological Feature

A geological feature as an Outdoor Museum Element is "any natural feature that has not been disturbed and has some local significance or is simply an impressive natural occurrence to be preserved and treasured." The most common features in the area are small waterfalls or large granite outcroppings that are part of the Rolesville Diorite Batholith. Members of the Open Space and Greenway Committee will identify these and determine which qualify for the designation of this type.

Outdoor Art

A sculpture or any form of outdoor art available for public display can be defined as an Outdoor Museum Element. The piece can be temporary, on loan, or ideally a permanent asset of the town. Members of the Open Space and Greenway Committee will identify locations where geological and historical features are not present and therefore warrant the consideration of this type of designation.

Outdoor Museum Station (OMS)

The Outdoor Museum Station is a designated area on or near the location of an Outdoor Museum Element. Visitors can rest, explore, and/or learn more about the

significance of the site by reading the Outdoor Museum Monument. Outdoor Museum Stations are found along soft surface or hard surface trails and the presentation of content differs slightly between the three types. Stations take up about 50 square feet of space each.

Soft Surface

Contains a plaque with a picture and/or description detailing the relevance of the location, such as a historical relic, geological feature, or outdoor art piece. The plaque is located at or very near the point of interest, for example in the woods or an open field, and will be accessible by a natural trail.

Hard Surface

A hard landscaped site serves as a trailhead to a soft trail or can be a station itself. Whether it is a trailhead or its own site, each has an Outdoor Museum Monument installed containing a description of the relevance of the location. The trailhead will outline features found on the natural trail, have a bench, provide a bike rack, and in some cases even provide a remote bike repair station.



Outdoor Museum Monument (OMM)

The sections below illustrate an example of what might be written/engraved at one of any Outdoor Museum Stations

Granite Rock

This rock is part of a geological feature called a batholith - a large mass of intrusive igneous rock. The Town of Rolesville happens to be situated on top of one of the largest bodies of granite in the southern Appalachian region. The Rolesville Diorite Batholith, as it is officially

named, measures about 15 miles wide by 50 miles long and occupies the eastern third of Wake County. Although much of it is buried just underneath the surface, there are several examples of rock that are exposed as seen here. The exposed rock of this feature is roughly 185 ft long and 90 ft wide - about one and a half times the size of a professional football field and the second largest exposed feature found within the town limits. The largest (located 1/4-mile due east of here) is roughly 215 feet long and 155 ft wide. This 300-million-year-old feature as well as some others in the area are believed to have been used by travelers as landmarks and gathering points.

Family Farm

The Tucker-Wilkens subdivision, where this Outdoor Museum Station is located, was built in 2022 on 25.5 acres of two adjoining lots purchased by the Scarboro family in 1947 and 1951. Prior to the Scarboro family's purchase, the Hopkins and Duke families owned the land. In fact, Duke's Crossroads (the intersection of Rolesville Road and Mitchell Mill Road) is named after the Duke family. The farmland primarily produced tobacco, soy beans, and cotton as well as the family's vegetable garden.

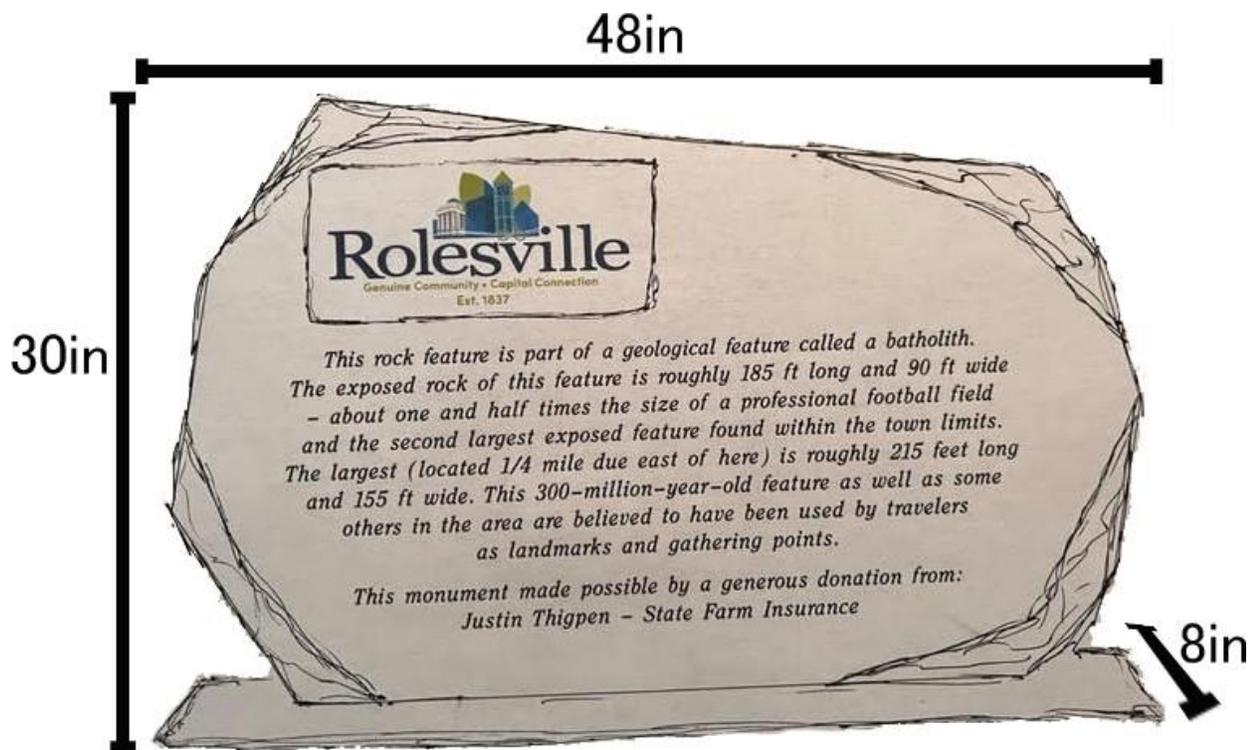
Discovered Artifact

Near this site, several late 1800s and early 1900s artifacts from downtown Rolesville were found! Of particular interest is a "V" nickel, wheat penny, and ornate, silver washed-copper artifacts. At present, it is believed that the silver plate artifact was from a saddle embellishment. The melted glass observed and noted in the area was likely from when the Town of Rolesville burned down in the early 1900s.

Sculpture

Joan Miró's Lunar Bird resembles ancient votive sculptures and reflects the artist's interest in the cosmos, as illustrated by its moon-shaped face and arms reaching toward the sky. A figure in the early 20th-century surrealist art movement, Miró saw art as a way for the subconscious mind to express itself.

This is an example of a stone monument structure located at an Outdoor Museum Station:



The option shows the monument structure on the base foundation. The town logo will be in color as an inset porcelain piece.

Outdoor Museum Station Identification (OMSI)

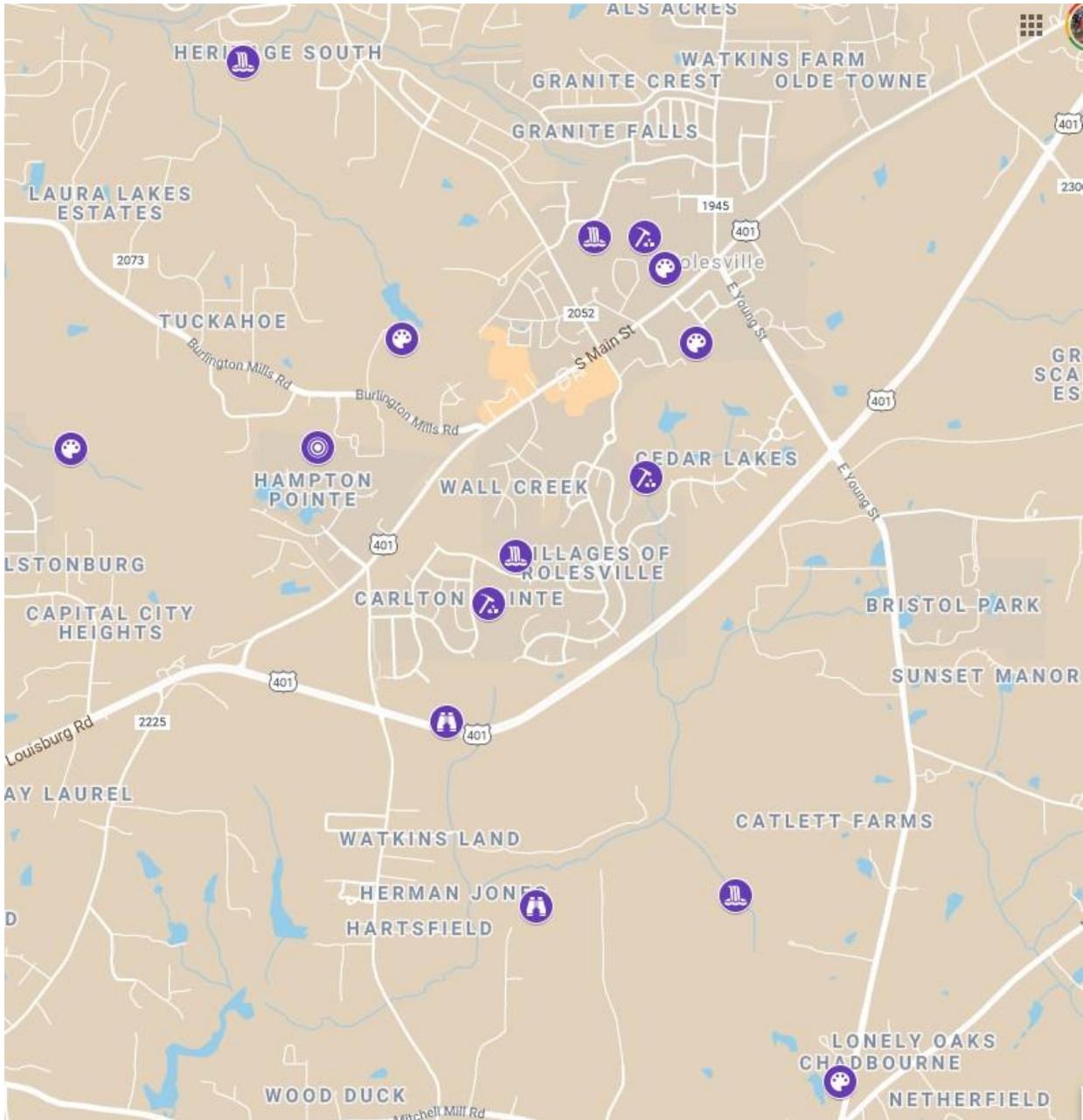
An identification system is used to keep track of the various Outdoor Museum Stations. Each station is identified with a serial number, i.e. OMS-001. The town will record this information in a database and be used in a variety of ways - to report damage or vandalism, to help locate lost individuals, to inventory assets built in association with the respective Outdoor Museum Station (i.e. sponsorships), and any unforeseen items or issues. Each station will have a QR code linking to the town (or Historic Rolesville Society) website where details on that station and the rest of the Outdoor Museum can be reviewed.

Proposed Sites

This following list describes the first few sites that can be installed once the proposal is adopted. Additional sites along approved but not yet built greenway paths are also detailed below.

- 1) Granite Outcropping in Main Street Park (near the Cobblestone Village reroute)
- 2) Waterfalls in Mill Bridge Nature Preserve (near the Boy Scout bench)
- 3) Granite Outcropping in Carlton Point (at the concrete rock crossing)

- 4) Outdoor Art at Cobblestone Apartments (at the fork, stub out to the library)
- 5) Outdoor Art at the Wilkins/Tucker trailhead (property monument)
- 6) Waterfalls in the Kalas Falls development
- 7) Pollinator Pond (retention pond Elizabeth Springs and Preserve at Jones Dairy North)
- 8) Late 19th Century Chimney (Wallbrook Development Roudabout)
- 9) Native American Artifacts (West of Rolesville Middle School - Tom's Creek)



Selection Process

The Open Space and Greenway Committee continually evaluates the various opportunities for Outdoor Museum Stations as a recurring agenda item for meetings. New locations are identified, evaluated, and planned accordingly.

As new development applications are submitted to the town, the Open Space and Greenway Committee works with the developer to determine the type and location of an Outdoor Museum Station when one is already planned for the location or if there are other justifications for a site to be considered on the property.

For unidentified sites, a public application can be submitted to the Open Space and Greenway Committee to evaluate the location, significance, and funding source.

All site applications are initially reviewed by the Open Space and Greenway Committee. Once all qualifications are met, the Open Space and Greenway Committee presents the application to the Parks and Recreation Advisory Board. If the PARAB approves the application, it will be forwarded as a recommendation for the Town Commissioners to vote on.

Funding

Each Outdoor Museum Station will be funded by donations to the Town in accordance with the Town of Rolesville Memorial and Donation Policy. This donation will cover the cost of the hardscaped trail head, park bench, bike rack, monument footer (all installed to provided specifications) and the stone monument itself (installed by Wake Monument Company). For outdoor art pieces, stipends or a purchase price are negotiated separately.

Maintenance of the sites are funded and provided by the Town of Rolesville through the Parks and Recreation Department budget.

All Outdoor Museum Stations are open to a one-time sponsorship which is aimed to cover the cost of the installation. The sponsor will have a single line message on the monument crediting the source for the donation.

At the time of this proposal, two private businesses and three developers have verbally committed to participating in this project.

Summary

As a great amount of effort and importance is being placed on the Town's greenway network and historic preservation efforts, the Outdoor Museum concept enhances that

system. The Outdoor Museum adds a great deal of value to the trail system and is a great preservation vehicle while it highlights a variety of features that are unique to the Town. The Outdoor Museum can be the first, real tourist attraction for the town. With our integrated greenway network, the Outdoor Museum will be one of the most exciting town features that so much can be built off of.

Disclaimer

The Rolesville Outdoor Museum is designed specifically to highlight the observations and discoveries of physical elements within the town. The Rolesville Outdoor Museum does NOT attempt to offer, intend to suggest, or imply any particular historical storyline or rhetoric, as some artifacts may be connected to or be viewed as outdated, biased, offensive, or divisive views and opinions. These materials are being preserved for their historical significance only.

Appendix

Contacts

The following individuals are included here as a point of reference for future use. These people play an integral role in bringing the Outdoor Museum Concept to fruition.

Dave Bartholomew

Wake Monument Company, Inc.

213 N. Main Street | Rolesville, NC 27571

(o) 919-556-3422 | (m) 919-749-8197 | indoordave@gmail.com

Michael Bailey

Historic Rolesville Society

P.O. Box 54 | Rolesville, NC 27571

919-616-5389 | historicrolesville@gmail.com

Jenn Hales

Public Art Coordinator, Raleigh Arts

City of Raleigh, Parks, Recreation and Cultural Resources Department

222 W Hargett St | Raleigh, NC 27601

919-656-8713 | jenn.hales@raleighnc.gov

Adam Walls, M.F.A. Professor

The University of North Carolina at Pembroke

Locklear Hall, 201 | 910.521.6217 | adam.walls@uncp.edu

Commitments

The following individuals/businesses have verbally committed to funding at least one outdoor museum station.

Justin Thigpen

State Farm Insurance

Jay Gilleece

American Engineering

Adam Brooke

Giant Wake Forest

Austin Williams

Crosland Southeast

Outdoor Art - Sculpture Submission from Adam Walls



On the left is an image of a sculpture I called Community. On the right is a sketch hinting at the look of a potential sculpture of similar design and intent.

The first is powder coated steel and stands roughly seven and a half feet tall, four and a half feet wide, and two feet deep. The wall thickness on the square tube, the spheres, and base are one eighth inch thick steel. Each steel tube is one and a half inch by one and a half inch.

The artist statement that accompanies the piece is as follows:
"We are all interconnected. The connections that bind each of us to others tend to make us stronger as a people, or rather as a community. The sculpture titled Community has a series of differently sized forms that are all interconnected to make each one stronger as a group."

This sculpture works well in the public realm, but I would like to propose a taller piece that would incorporate more interconnected pieces. This piece could stand ten to twelve feet in height and could be left as raw steel to give a rustic finish that might better denote the concept of permanence. Being unpainted would also make upkeep easier and would still last for many decades to come.

I believe that signage may be useful to those who want to stop and enjoy the sculpture. This signage could be separate from the piece or incorporated into the base. My name and title of the sculpture could appear on the signage, but I believe that more importantly, the intent could appear there.

"Connections that bind each of us together make us stronger as a community. We reach our greatest heights when we support one another."

