

ROLESVILLE BIKES

TOWN OF ROLESVILLE BICYCLE PLAN

AUGUST 2022



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EXECUTIVE SUMMARY

PLAN OVERVIEW

Rolesville Bikes is a community-led initiative that expands on the town's proposed bicycle network, first envisioned in 2013 with the adoption of the Rolesville Bike Plan. Since the plan's adoption, Rolesville has experienced tremendous growth due to its family-focused amenities and proximity to Raleigh and the major employment centers within the Triangle Region. To ensure that Rolesville grows responsibly and sustainably, residents and Town leadership have prioritized bicycle and pedestrian network expansion through recent planning efforts.

In 2019, Rolesville applied for a Bicycle and Pedestrian Planning Grant from the NCDOT Integrated Mobility Division. The Town was awarded funding in 2020 to develop a comprehensive bicycle plan. *Rolesville Bikes* provides a framework for town staff, residents, NCDOT, developers, and regional partners to create network, policy, and program recommendations to improve travel by bicycle throughout town.

NETWORK RECOMMENDATIONS

The bicycle plan builds off of recommendations developed in *Rolesville Moves: Community Transportation Plan (CTP)*, which was recently vetted by Rolesville residents and adopted by the Town Board in May 2021. The CTP integrates a complete streets approach to network recommendations to ensure the future transportation network is safe and convenient for users of all ages and abilities and provides mode choices based on the surrounding land use context. To best align with the complete streets approach of the CTP, on-road bicycle facilities are key recommendations in this plan alongside recommended off-road facilities in the bicycle network.

Rolesville's bicycle facility recommendations establish a robust active transportation network, providing residents with safe, comfortable and direct travel choices. 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. This plan outlines on-road and sidepath recommendations that comprise the proposed bicycle network.

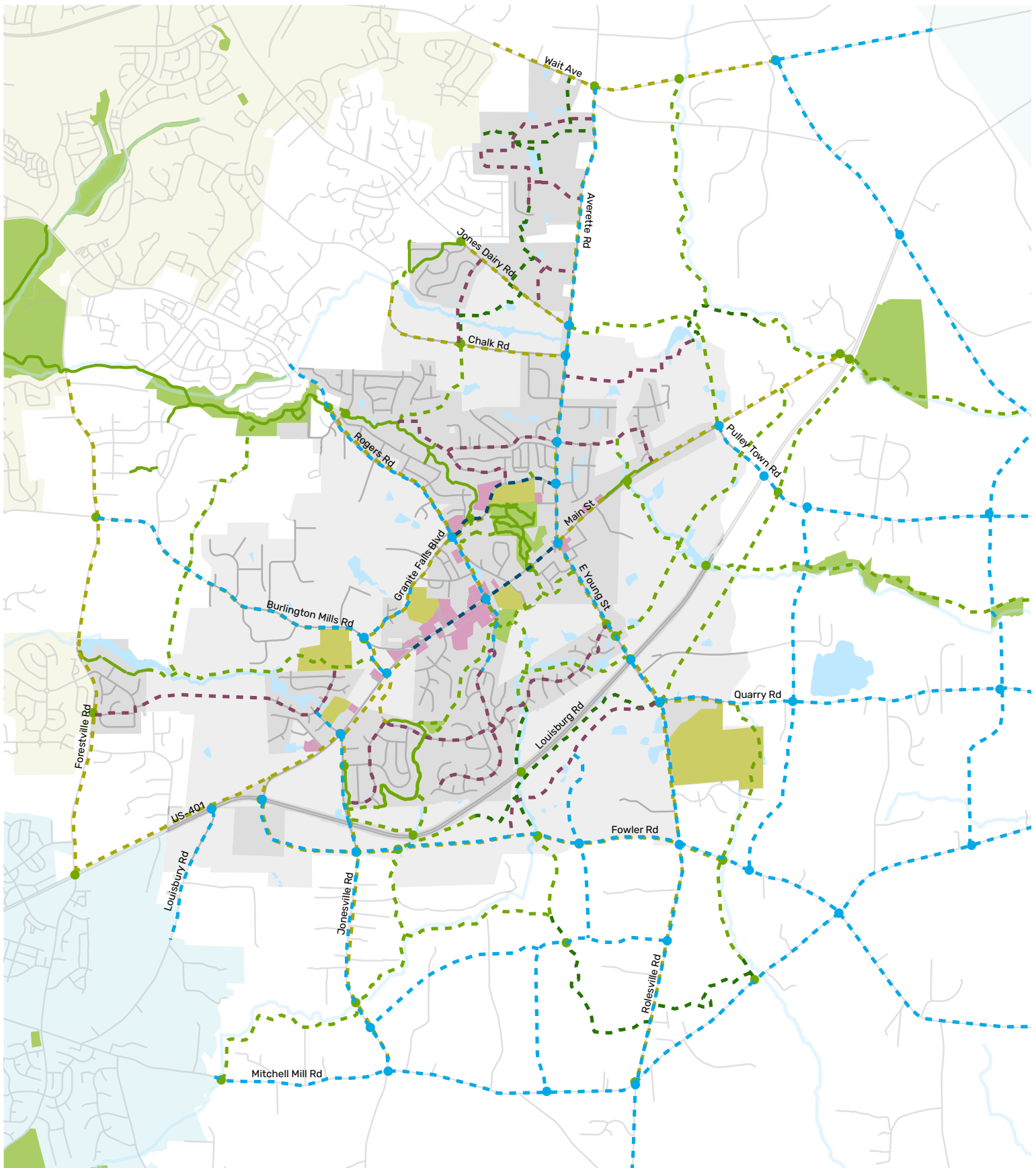
PLANNING PROCESS + SCHEDULE



51%
of survey participants bike
in Rolesville at least a few
times a month

"Having 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!"

- Rolesville Resident



TOWN OF ROLESVILLE RECOMMENDED BICYCLE + GREENWAY NETWORK

LEGEND

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> ▬▬▬ Proposed Separated Bike Lanes ▬▬▬ Proposed Bike Lanes ▬▬▬ Proposed Bicycle BLVDs ● Proposed Bicycle Intersection Treatment ▬▬▬ Proposed Greenways ▬▬▬ Proposed Sidepaths ▬▬▬ Developer-Built Greenways ● Proposed Greenway Intersection Treatment | <ul style="list-style-type: none"> ▬▬▬ Existing Bike Lanes ▬▬▬ Existing Greenways ▭ Civic/Commercial Centers ▭ Schools | <ul style="list-style-type: none"> ▬▬▬ Roadways ▭ Parks ▭ Streams + Lakes ▭ Rolesville Town Limits ▭ Rolesville ETJ ▭ Wake Forest ▭ Raleigh ▭ Wake County ▭ Franklin County |
|--|---|--|



01. INTRODUCTION

INTRODUCTION

Rolesville Bikes is a community-led initiative that expands on the Town’s proposed bicycle network, first envisioned in 2013 with the adoption of the Rolesville Bike Plan. Since the plan’s adoption, Rolesville has experienced tremendous growth due to its family-focused amenities and proximity to Raleigh and the major employment centers within the Triangle Region. To ensure that Rolesville grows responsibly and sustainably, residents and Town leadership have prioritized bicycle and pedestrian network expansion through recent planning efforts.

In 2019, Rolesville applied for a Bicycle and Pedestrian Planning Grant from the NCDOT Integrated Mobility Division. The Town was awarded funding in 2020 to develop a comprehensive bicycle plan. *Rolesville Bikes* will provide a framework for town staff, residents, NCDOT, developers, and regional partners to create network, policy, and program recommendations to improve travel by bicycle throughout town.

ROLESVILLE BIKES PURPOSE

Rolesville Bikes aims to address community priorities for the bicycle network and bicycle-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 BY BIKE?

Rolesville Bikes will identify key locations to which people want to bike.

“With so many 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 Resident, Community Survey Response

HOW DO WE BUILD THE NETWORK?

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

“As a frequent cyclist living off Mitchell Mill Rd, 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.”

- Rolesville Resident, Project Prioritization Survey Response

HOW DO WE CONNECT THOSE PLACES?

Rolesville Bikes will identify the facilities and standards to connect key locations.

“As a small town, proper speed and proper intersections for pedestrians and cyclists 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.”

- Rolesville Resident, Project Prioritization Survey Response

HOW DO WE BUILD A BICYCLE FRIENDLY COMMUNITY?

Rolesville Bikes will identify programs and policies to promote biking.

“Having 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!”

- Rolesville Resident, Community Survey Response

COMMUNITY VISION

Rolesville will be a town that is safe and accessible for community members of all ages and abilities to ride a bicycle throughout the transportation system that connects neighborhoods, parks, schools, commercial centers, and neighboring communities via active modes.

ROLESVILLE BIKES GOALS

The goals of Rolesville Bikes focus on themes of accessibility, regional connectivity, safety, equity, and feasibility and served as 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 active transportation network expands access for bicyclists to commercial centers, essential services, local neighborhoods, employment centers, and transit routes.



REGIONAL CONNECTIVITY

Provide seamless connections between the bicycle 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 bicycle network and propose safety improvements at critical intersections and access points.



EQUITY

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



PROJECT FEASIBILITY

Prioritize the development of a bicycle network that can be implemented and maintained with Town resources.

PLANNING PROCESS OVERVIEW



ACTIVE TRANSPORTATION BENEFITS



ENVIRONMENTAL

Bicycle and pedestrian facilities contribute to a reduction in greenhouse gas emissions, reduction in vehicle miles traveled (VMT), preserves wildlife habitats and natural areas, and improves water quality.



SAFETY

Bicycle and pedestrian facilities contribute to a reduction in bicycle and pedestrian crashes and lead to an increase in biking and walking as a result of safety enhancements.



ECONOMIC

Bicycle and pedestrian facilities contribute to increased tourism, increased sales revenue, and increased property values, which lead to job creation and business growth.



TRANSPORTATION

Bicycle and pedestrian facilities contribute to an increase in multi-modal network connectivity and modes shifts to bicycle and pedestrian commuting and travel.



HEALTH

Bicycle and pedestrian facilities provide access to biking and walking, which lead to increased physical activity, improved mental well-being, decreased risks of chronic disease, and a reduction in healthcare costs.



EQUITY

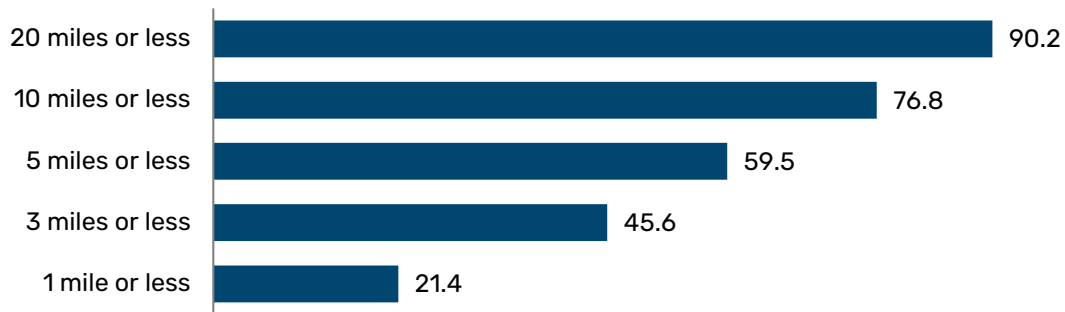
Bicycle and pedestrian facilities contribute to a reduction of household transportation costs; expand access to jobs, services, and recreation; and provide first and last mile connections to transit.

TRANSPORTATION

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.

PERCENT OF DAILY DRIVING TRIPS BY DISTANCE



SAFETY

The lack of bicycle and pedestrian infrastructure in communities across North Carolina poses safety risks for those who commute by active modes. In 2019 alone, there were 3,275 pedestrian crashes that resulted in 237 fatalities and 914 bicycle crashes that resulting in 20 fatal collisions. Factors that contribute to unsafe road conditions for bicyclists and pedestrians include the lack of separation from vehicular traffic, unprotected intersections, and poor bicycle and pedestrian connectivity.

When transportation networks are designed for all modes, bicyclists and pedestrians become less vulnerable to collisions with motorists and rates of bicycling and walking increase. In a NACTO study of seven cities that expanded their bikeway networks by 50% between 2007–2014, ridership more than doubled while risk of death and serious injury to people biking was halved.

PEDESTRIAN + BICYCLE FACILITIES WITH CRASH COUNTERMEASURES

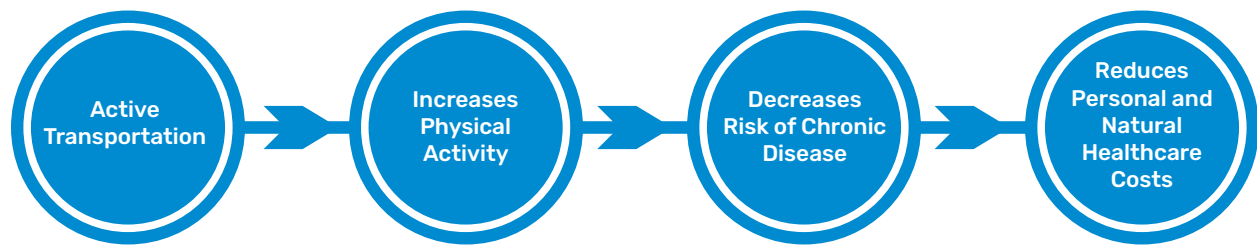
DESIGN TREATMENT	CRASH REDUCTION RATE
Provide minimum 4' paved shoulder to avoid walking along roadway	71% (pedestrian crashes)
Install sidewalk to avoid walking along roadway	65-89% (pedestrian crashes)
Install pedestrian refuge islands	56% (pedestrian crashes)
Install raised median + crosswalk	46% (pedestrian crashes)
Improve lighting at intersections	42% (pedestrian injury crashes)
Add exclusive pedestrian phasing to signalized intersection	34% (pedestrian crashes)
Restrict parking near intersections	30% (pedestrian crashes)
Convert unsignalized intersection to roundabout	27% (pedestrian crashes)
Improve/install pedestrian crossing	25% (pedestrian crashes)
Install pedestrian countdown signal heads	25% (pedestrian crashes)
Provide bike lanes	36% (bicycle crashes)
Provide a bicycle box (advance stop bar to leave space for cyclists)	35% (bicycle crashes)

HEALTH

North Carolina has the nineteenth highest adult obesity rate in the nation, a leading factor resulting from insufficient physical activity. In 2019, the obesity rate was 34.0%, increasing from 20.9% in 2000 and from 12.3% in 1990. Nationwide, obesity spending has been estimated at \$147 billion annually, and obesity-related health issues account for \$17.6 billion in annual healthcare costs in North Carolina.

As most North Carolinians lack access to safe and convenient places to be active, bicycle and pedestrian facilities can significantly improve the ability of residents to live more healthy

lifestyles. In the 2018 report on the impact of shared use paths in North Carolina, researchers found that trail users generated an estimated 21.2 million miles of bicycling and 9.8 million miles of walking, spurring 5.4 million hours of physical activity per year. This activity is estimated to save approximately \$300,000 in healthcare related costs annually in the communities studied. In addition to reducing obesity rates, the CDC states that increased physical activity helps adults stay mentally fit and reduces the risk of coronary heart disease, stroke, diabetes, cancer, and high blood pressure.



ECONOMIC

North Carolina communities, especially those in rural areas, face a multitude of challenges in attracting sustainable economic development. Greenways and bicycle and pedestrian facilities are proven economic generators and create unique opportunities for communities to expand their tourism industry, create jobs, and support local businesses. In the 2018 report on the impact of shared use paths in North Carolina, researchers found that greenways provide significant economic benefits to communities. Trail users along the American Tobacco Trail, Brevard Greenway, Little Sugar Creek Greenway, and Duck Trail made purchases at businesses along these trails, which increased sales revenue and contributed to job creation in local communities. The sale revenue generated from these purchases is \$19.5 million annually and helps support 261 jobs each year. Additionally, the study found for every \$1 spent on trail

construction, the return of investment from those benefits is \$1.72 annually.

Another inspiring example of the economic impact of trails is the Great Allegheny Passage (GAP), a 150-mile rail-trail connecting cities and towns between Pittsburgh, PA and Cumberland, MD. The 2015 Trail Towns Program report on trail usage and business growth along the GAP found that the estimated direct economic impact is \$50 million annually. With an estimated 1 million visitors per year, the regional economy is thriving. Residents who once had limited access to jobs and economic opportunities are now able to invest in local businesses along the trail. When over 100 continuous miles of the GAP were completed in 2007, there was a net gain of 65 new businesses and 25 business expansions from 2007 to 2014, which resulted in the creation of over 270 new jobs.



RETURN ON INVESTMENT: Every **\$1.00** of trail construction supports **\$1.72 annually** from local business revenue, sales tax revenue, and benefits related to health and transportation.

ENVIRONMENTAL

The transportation sector is the largest contributor to greenhouse gas emissions in the US. Between 1990 and 2018, greenhouse gas emissions due to transportation increased more than any other sector. Twenty-eight percent of all emissions are attributed to transportation-related activities. Passenger cars and trucks account for 60% of those emissions.

Investing in active transportation expands access to bicycle and pedestrian facilities and leads to a reduction in vehicle miles traveled and CO2 emissions. In the 2018 report on the impact of shared use paths in North Carolina, researchers found that low-impact travel along the Duck Trail, Brevard Greenway, and Little Sugar Creek Greenway leads to annual reduction

of 53.7 million pounds of CO2 emissions and 686,000 pounds of motor vehicle emissions, resulting in an annual environmental cost savings of \$707,000.

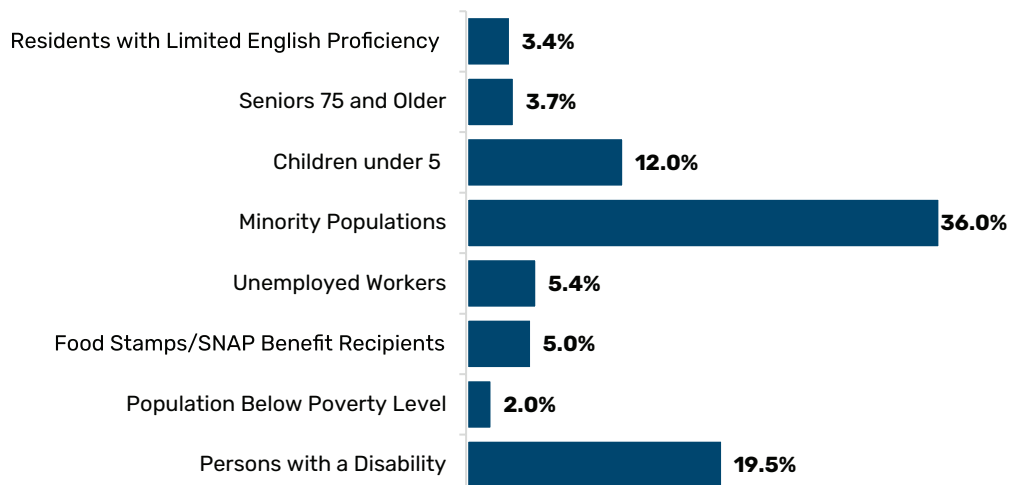
Additionally, trails and greenways minimize the impact on biodiverse lands across North Carolina. Greenways along natural corridors and within floodplains protect streams, rivers, and lakes by filtering out pollution carried by storm water and by reducing stormwater velocity that causes erosion and sedimentation. Many greenways are also forested or vegetated and provide protective buffers for wildlife habitat areas. These buffers are critical to supporting wildlife populations that require safe routes for migration.

EQUITY

Shortfalls of the transportation network in most North Carolina communities disproportionately impact vulnerable residents. People who rely on transit, biking, and walking live in areas that often lack access to safe and convenient multi-modal infrastructure, which diminishes access and opportunity to employment, services, and recreation. In Rolesville 2% of households live near or below the poverty line, placing them at a significant disadvantage for accessing local jobs and services.

Ensuring residents have access to transportation that is affordable and convenient is fundamental to efforts reducing income inequality. Newly established bicycle and pedestrian connections within Rolesville will expand access to employment centers, medical centers, schools, and parks. 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 transportation costs by \$1.83 million by having access to multimodal facilities to travel more frequently and safely by foot or by bike.

ROLESVILLE'S VULNERABLE RESIDENTS



RESOURCES:

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NCDOT Communications Office. (2019) NCDOT Annual Performance Report: Bicycle and Pedestrian Performance Profile. <https://www.ncdot.gov/about-us/our-mission/Pages/annual-reports.aspx>

Kate Fillin-Yeh & Ted Graves. Equitable Bike Share Means Building Better Places for People to Ride. National Association of City Transportation Officials (2016). <https://nacto.org/equitable-bike-share-means-building-better-places-for-people-to-ride/>

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US Environmental Protection Agency. (2020) US Transportation Section Greenhouse Gas Emissions 1990-2018. <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100ZK4P.pdf>



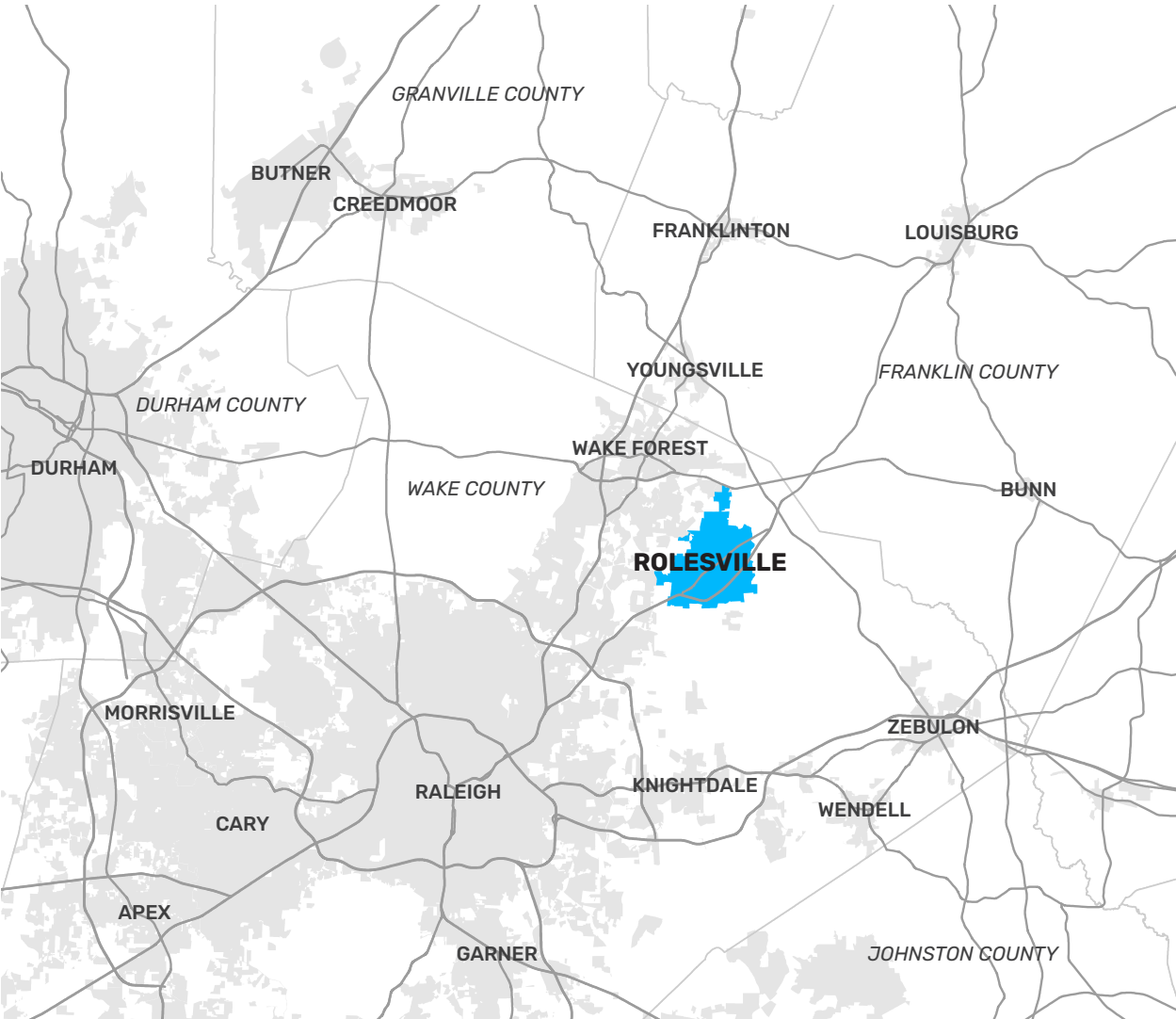
02. EXISTING CONDITIONS

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 Bikes* consists of municipal limits, the ETJ, and surrounding acres in Wake County that are part of the town’s planning boundary.

The existing bicycle network demonstrates the potential to establish Rolesville as a bicycle-friendly community. Existing on-street bicycle facilities and greenways connect to parks, schools, and neighborhoods in the town core. However, recently established neighborhoods north and south of Downtown lack adequate active transportation facilities for residents and visitors to safely bike or walk to their destinations. This chapters provides an overview of relevant planning efforts, state and local policies, and proposed roadway improvement projects that impact bikeability in Rolesville now and the future.

PLANNING CONTEXT

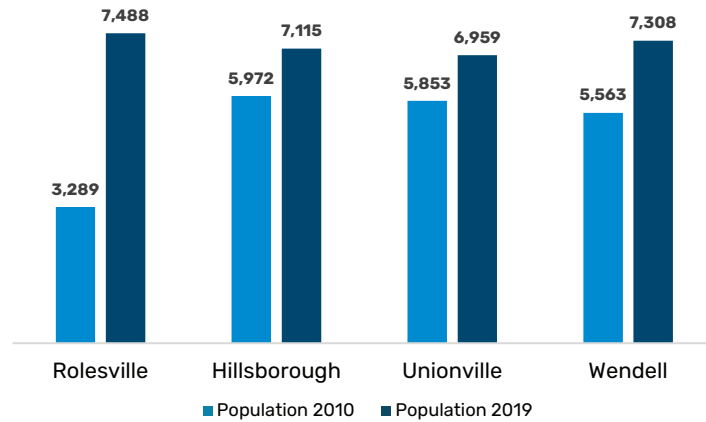


COMMUNITY DEMOGRAPHICS

Analyzing Rolesville’s demographic trends are essential to planning the community’s active transportation 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.

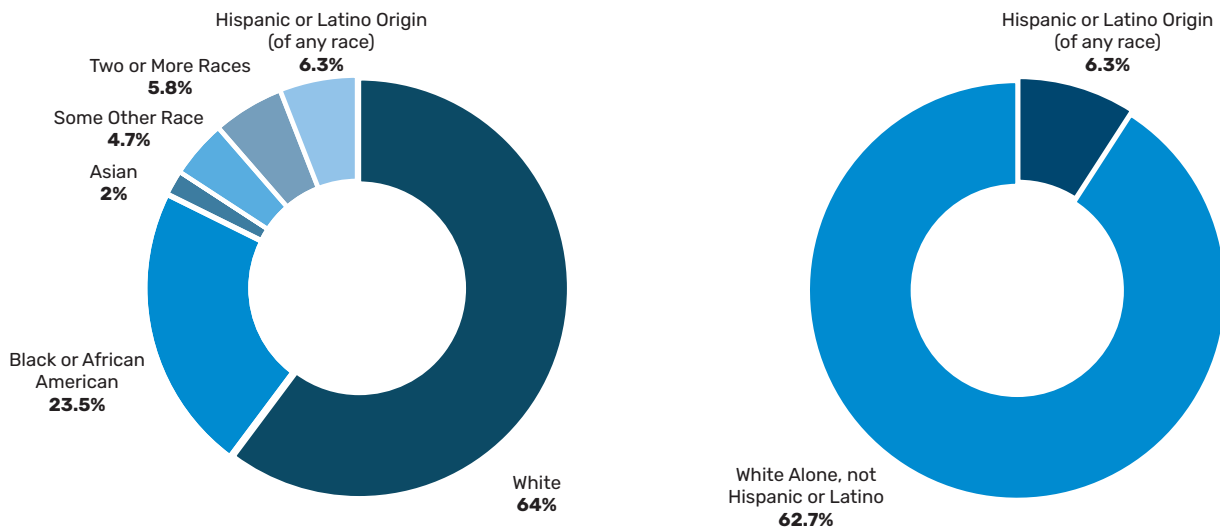
POPULATION

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%.



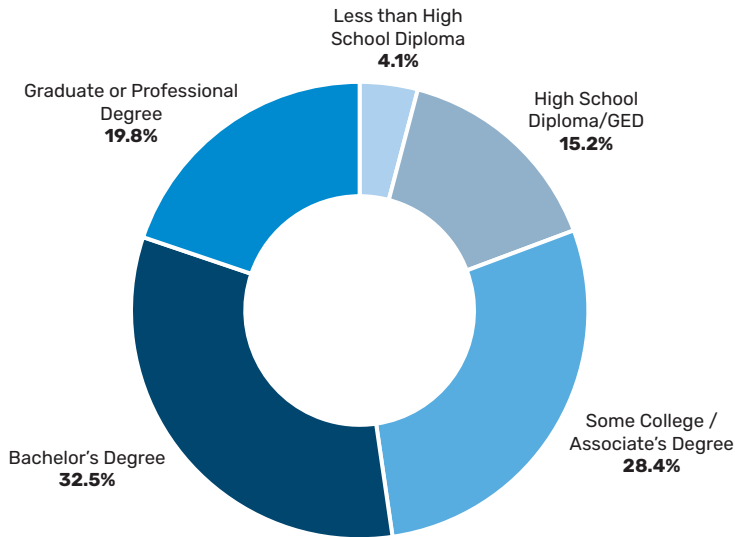
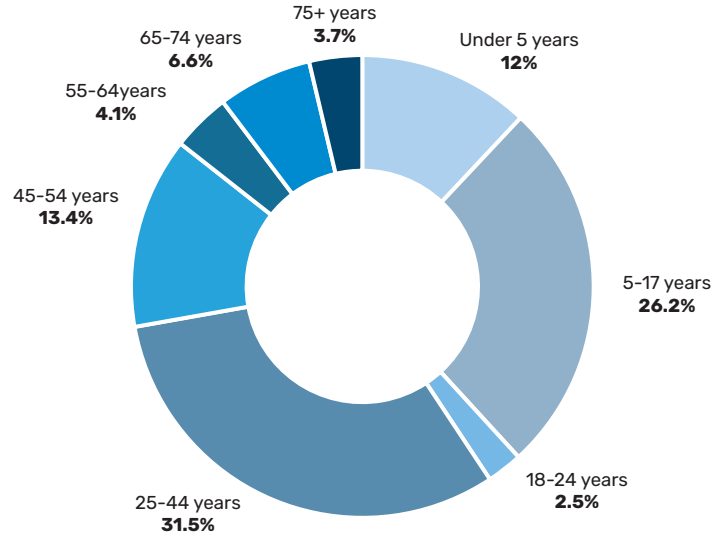
RACE + ETHNICITY

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.

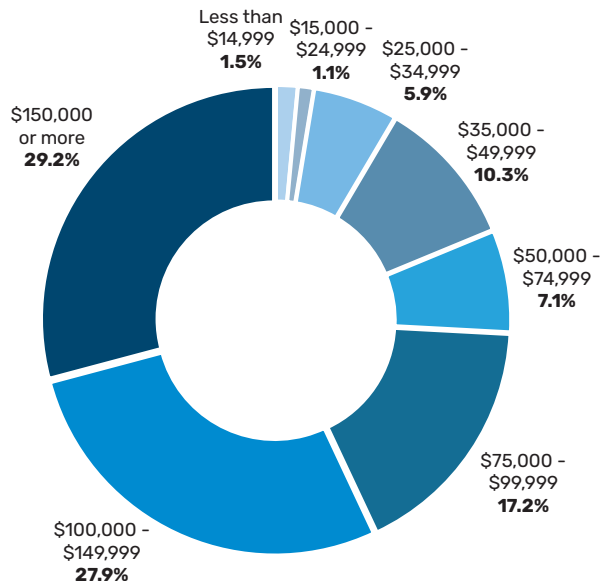


EDUCATION

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

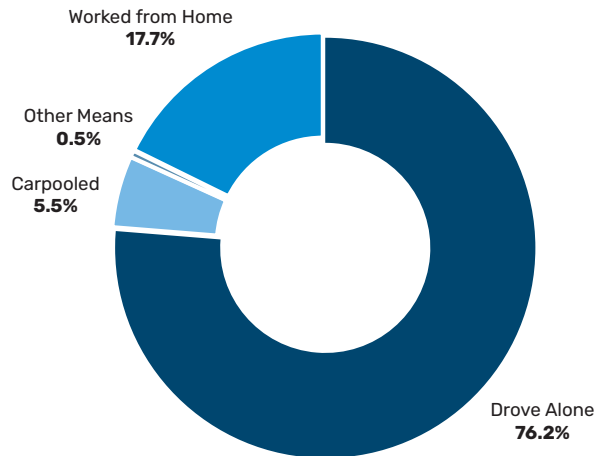
Rolesville is an affluent community with 74.3% of the population having an annual household income greater than \$75,000. The median income of households within Rolesville is \$119,615, while the median income of North Carolina households is \$51,844.



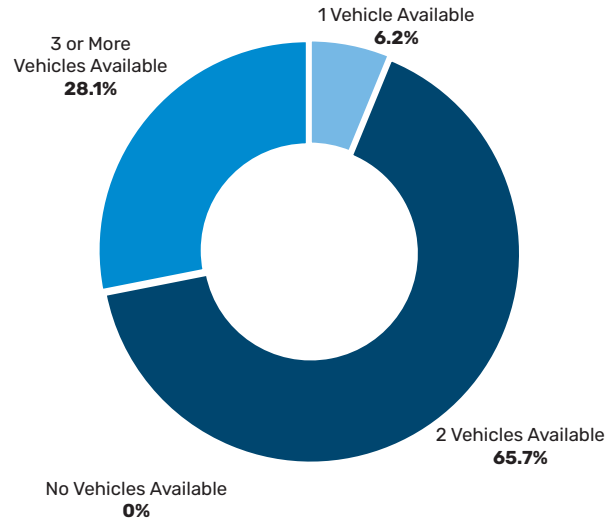
COMMUTING RATES

Rolesville residents predominantly commute by single-occupancy vehicle, with 76.2% of workers driving alone to work, and of those workers, 87.5% have a commute of 20 minutes or longer. Only 0.5% of workers commute by riding a bike, walking, or taking transit. As there is a strong correlation between investments in multi-modal transportation and higher active commute mode shares, development of Rolesville’s bicycle network may increase active transportation commute rates for the 22% of residents who work within town limits, and especially for the 6.2% of households who only have access to one vehicle and may have limited commuting options.

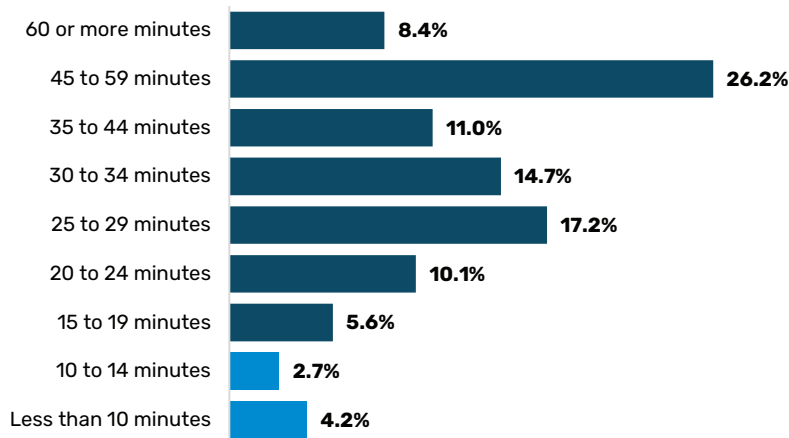
COMMUTE MODE SHARE

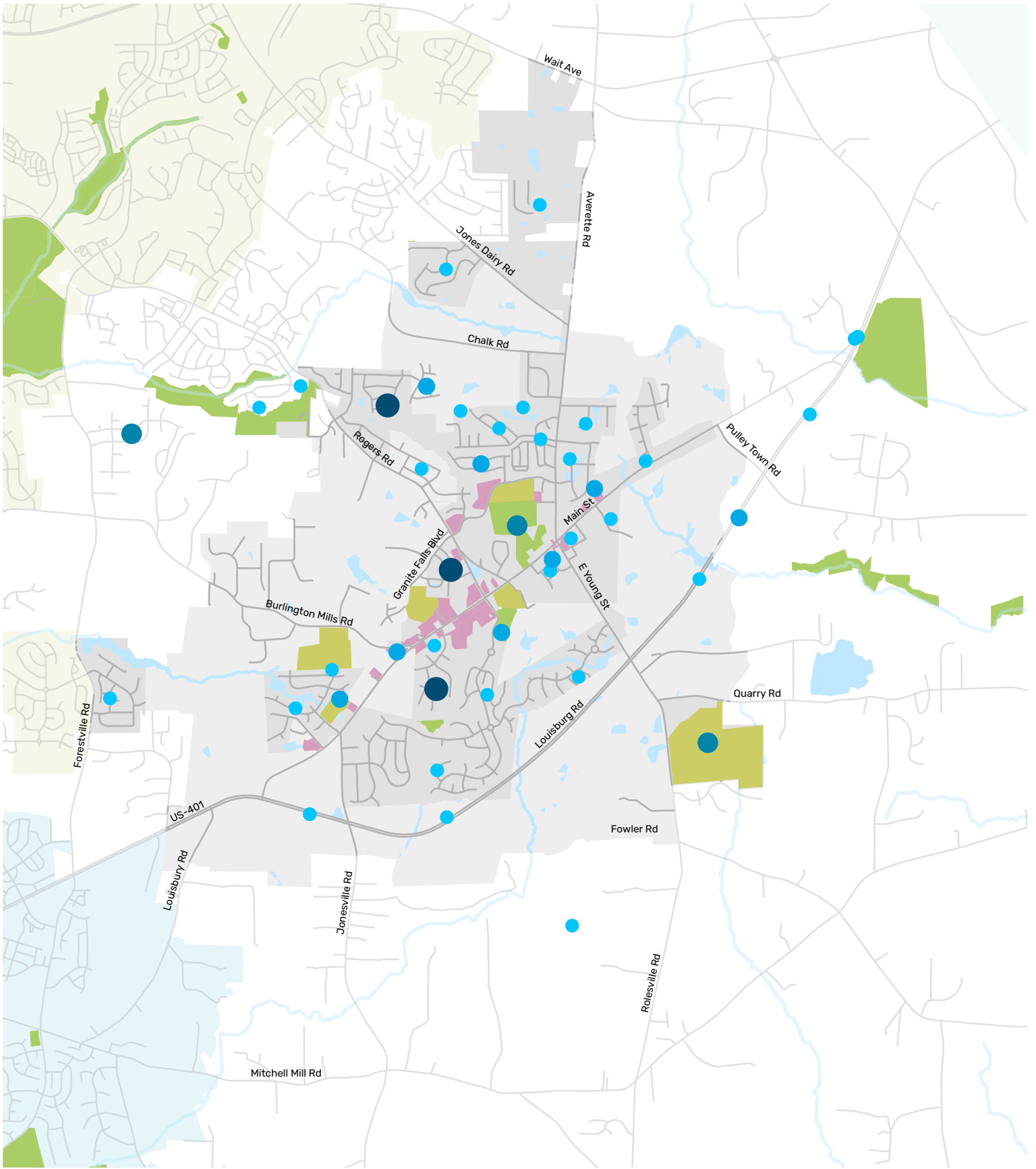


VEHICLE ACCESS



COMMUTE TIME





**TOWN OF ROLESVILLE
EMPLOYMENT DENSITY**

LEGEND

- < 25 Jobs
- 26 - 75 Jobs
- 76 - 150 Jobs
- 151 - 300 Jobs
- Civic/Commercial Centers
- Schools
- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County

PREVIOUS PLANNING EFFORTS

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

EXISTING PLAN / STUDY	KEY RECOMMENDATIONS RELATED TO <i>ROLESVILLE BIKES</i>
<p>Rolesville Moves: Community Transportation Plan (CTP), 2020</p>	<p>The CTP is a community driven effort that identifies transportation needs and recommendations for multimodal facilities. The proposed network combines thoroughfare, collector street, and intersection recommendations with multimodal facilities such as sidewalks, bike lanes, and sidepaths to ensure the roadway network is accessible to all ages and abilities. A key policy recommendation guiding plan development is the adoption of a complete streets policy and integration of complete streets design principles into project recommendations.</p> <p>Thoroughfare Recommendations:</p> <ul style="list-style-type: none"> • 2-lane roadways with sidewalks, sidepath, bike lanes, and/or paved shoulders proposed along Main St, Chalk Rd, Fowler Rd, Jones Dairy Rd Ext, Louisbury Rd, Granite Falls Blvd, Jonesville Rd, Pulley Town Rd, Young St, and Rolesville Rd (north of Mitchell Rd). • 4-lane roadways with sidewalks, sidepath, bike lanes, and/or paved shoulders proposed along Jones Dairy Rd, Wait Ave, Averette Rd, Rogers Rd, Burlington Mills Rd, Forestville Rd, Fowler Rd Ext, Rolesville Rd (south of Mitchell Rd), and US 401 Bypass. <p>Collector recommendations expand on the roadway network to provide connections between existing arterials and collectors and future development. The plan also proposes intersection improvements along existing intersections to enhance signalization, connectivity, and bicycle and pedestrian crossings.</p> <p>Transit Recommendations:</p> <ul style="list-style-type: none"> • Peak-hour and mid-day fixed route connector between Rolesville and Wake Forest. • Micro transit Option 1: Dedicated demand response service. • Micro transit Option 2: Demand response ridesharing service and GoWake access ADA supplement service.
<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>

EXISTING PLAN / STUDY	KEY RECOMMENDATIONS RELATED TO <i>ROLESVILLE BIKES</i>
<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. • Construct 6ft sidewalks from Jonesville Rd to Burlington Mills Rd. <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. • Install a sidewalk along the southside 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. <p>Policy recommendations include establishing a form-based overlay district to guide the development along Main St that creates a walkable place, implement on-street parking for Downtown, reserve the frontage along Main St for mixed use buildings, and encourage mixed-income infill housing withing the Village Core.</p>
<p>Town of Rolesville Economic Development Strategic Plan, 2018</p>	<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>

EXISTING PLAN / STUDY	KEY RECOMMENDATIONS RELATED TO <i>ROLESVILLE BIKES</i>
<p>Town of Rolesville Comprehensive Plan, 2017</p>	<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>
<p>Town of Rolesville Comprehensive Bike Plan, 2013</p>	<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 Sandford Creek Greenway to Main Street Park. The plan also proposes a network of shared lane markings and wide shoulders for roadways within town limits. Design and operational recommendations include bicycle facility design standards, a proposed maintenance plan, and implementation and funding strategies.</p>
<p>Town of Rolesville Open Space and Greenway Plan, 2002</p>	<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, Sandford 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>
<p>Town of Rolesville Thoroughfare Plan, 2002</p>	<p>The Rolesville Thoroughfare Plan proposes to improve the existing transportation network through roadway widenings, intersection enhancements, and new streets to accommodate projected growth. Key recommendations include the development of the US-401 Bypass, Main St roadway improvements, and a network of collector streets to connect existing roadways and planned residential developments.</p>

EXISTING PLAN / STUDY	KEY RECOMMENDATIONS RELATED TO <i>ROLESVILLE BIKES</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	This plan provides guidance on mitigation strategies to reduce the effects of natural disasters and hazards impacting communities in Wake County. Severe thunderstorms, flooding, high winds, and tornadoes are hazards of concern within Rolesville. Areas in the 100-year floodplain are especially susceptible to flooding. Hazard mitigation recommendations include continuing to provide stream and creek buffers and floodplain and wetland projection through the UDO; continue to provide protection for residential areas by not allowing residential lots in the floodplain; develop an Open Space Ordinance to protect wildlife habitat; and maintain town transportation corridors for evacuation routes.

EXISTING PLAN / STUDY	KEY RECOMMENDATIONS RELATED TO <i>ROLESVILLE BIKES</i>
2045 CAMPO-DCHC MPO Metropolitan Transportation Plan, 2019	While the 2045 MTP defers to local and regional transportation plans for bicycle and pedestrian recommendations, key multi-modal recommendations are on-road bicycle facilities proposed along the US-401 corridor including through Downtown Rolesville. The MTP also provides roadway and intersection improvements along US-401 and Rolesville Rd. Additionally, the Rolesville Peak Express is included in CAMPO’s recommended transit improvements.
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 Sandford 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 federal, state, and local policies from FHWA, NCDOT, and municipalities along the project corridor that may guide or impact the development of Rolesville’s bicycle network.

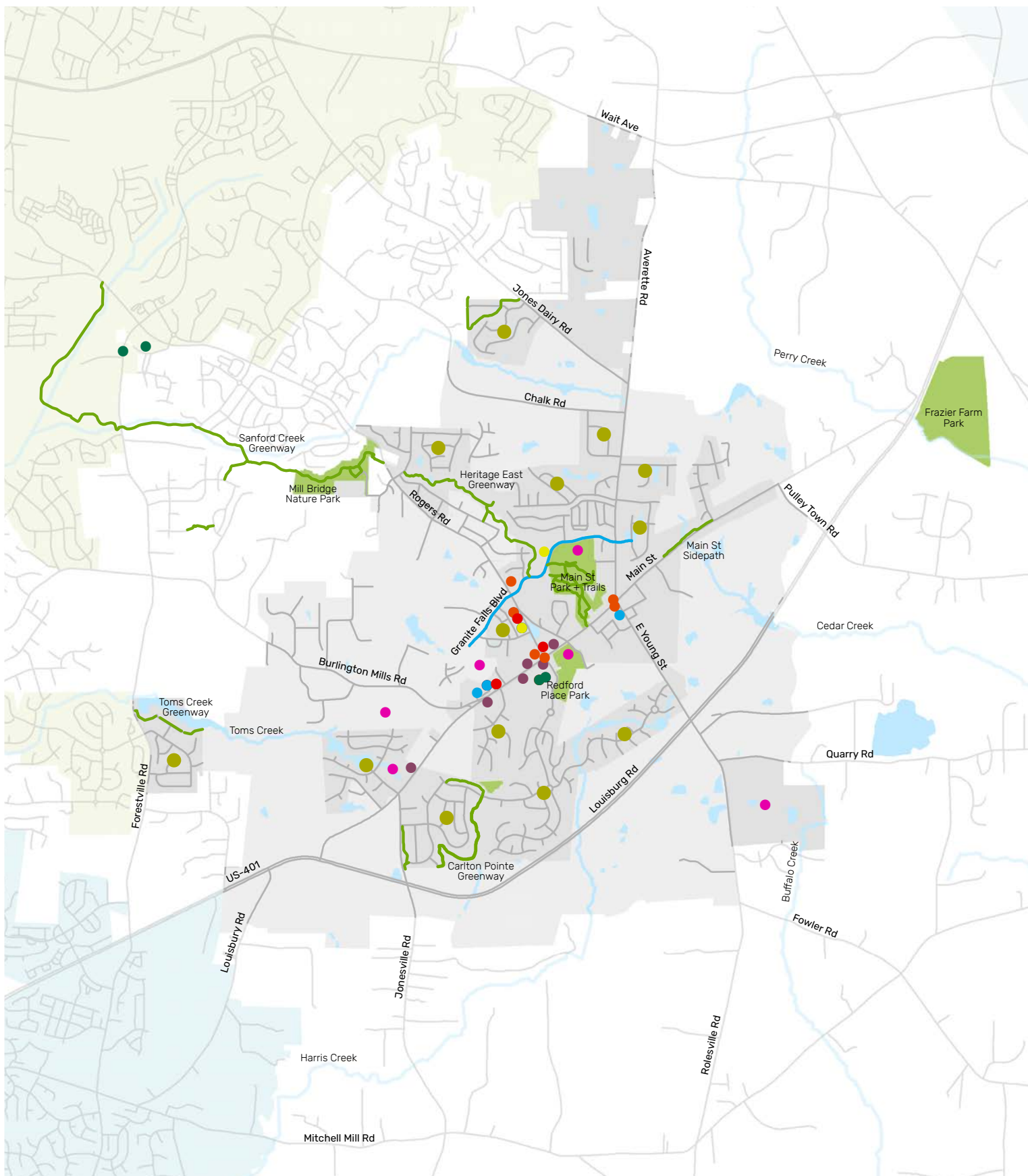
EXISTING POLICY	KEY POLICIES TO GUIDE/IMPACT <i>ROLESVILLE BIKES</i>
FHWA Guidance on Bicycle and Pedestrian Accommodations, 2011	<p>Under the US Department of Transportation Policy Statement on Bicycle and Pedestrian Accommodation, “The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems... transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.”</p> <p>Under 23 U.S.C. 217(g), transportation plans must consider bicycle and pedestrian accommodations.</p> <p>In General. --Bicyclists and pedestrians shall be given due consideration in the comprehensive transportation plans developed by each metropolitan planning organization and State in accordance with sections 134 and 135, respectively. Bicycle transportation facilities and pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation facilities, except where bicycle and pedestrian use are not permitted.</p> <p>Safety considerations -- Transportation Plans and projects shall provide due consideration for safety and contiguous routes for bicyclists and pedestrians. Safety considerations shall include the installation, where appropriate, and maintenance of audible traffic signals and audible signs at street crossings.</p>

EXISTING POLICY	KEY POLICIES TO GUIDE/IMPACT ROLESVILLE BIKES
<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 non-separated facilities 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. In most cases, seperated facillitiles, such as sidewalks, sidepaths, and multi-use paths will require a maintenance agreement with the county. Projects that have not completed environmental review prior to August 2019 are subject to the Complete Streets Policy.</p>
<p>NCDOT Roadway Design Manual, 2021</p>	<p>The Roadway Design Manual provides general design information, design criteria, and plan preparation guidance for NCDOT roadways. Guidance on multimodal design elements can be referenced in Part 1, Chapter 4 Sections 4.14, 4.15, and 4.16.</p> <p>Guidance states that bicycle lane is a designated portion of the road specifically for use by bicyclists generally denoted by pavement markings and signs. The bicycle traffic is typically one way and in the same direction as that of the adjacent roadway. Bicycle lane width recommendations:</p> <ul style="list-style-type: none"> • Desirable width – 6 to 7 feet, especially adjacent to on-street parking • Minimum width – 5 feet, not inclusive of gutter pan <p>Guidance states that a separated bicycle lane is an exclusive facility for bicyclists located in or directly adjacent to the roadway but physically separated from vehicle traffic with a vertical element. Separated bicycle lanes can be one-way or two-way. Facility width recommendations:</p> <ul style="list-style-type: none"> • Desired lane width – 6.5 feet, exclusive of gutter pan (one-way) • Minimum lane width – 5 feet, exclusive of gutter pan (one-way) <p>Guidance states that shared-use paths, often referred to as greenways, are paths physically separated from motor vehicle traffic and used by pedestrians, bicyclists, and other non-motorized users. The width of a shared-use path may vary, based on expected user volumes and context.</p> <ul style="list-style-type: none"> • Desirable width – 12 to 14 feet • Minimum width – 10 feet; 8 feet in exceptionally constrained areas • Vertical clearance, minimum – 8 feet

EXISTING POLICY	KEY POLICIES TO GUIDE/IMPACT ROLESVILLE BIKES
<p>NCDOT Bridge Policy, 2000</p>	<p>This policy establishes design elements of new and reconstructed bridges on the North Carolina Highway System. Vertical clearances for new structures shall be designed above all sections of pavement including the useable shoulder. Future widening and pavement cross slope will be considered in design clearance. Vertical clearances for facilities are as follows: over interstates, freeways, and arterials: 16'-6" to 17'-0"; over local and collector roads and streets: 15'-0" to 15'-6"; over all railroads: 23'-0" to 23'-6" or less if approved by Railroads; pedestrian overpasses and sign structures vertical clearance: 17'-0" to 17'-6". When a bikeway is required on a bridge, the structure shall be designed in accordance with AASHTO standard design accommodations to give safe access to bicycles. A minimum handrail height of 54" is required where bicyclist will be riding next to the handrail. Sidewalks shall be included on new bridges with curb and gutter approach roadways that are without control of access. A minimum handrail height of 42" is required</p>
<p>Town of Rolesville Land Development Ordinance (LDO), 2021</p>	<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>Transportation Plans: Where a proposed subdivision includes any part of a thoroughfare or collector street which has been designated as such upon the officially adopted transportation plan of the Town, such part of such thoroughfare or collector street shall be platted by the subdivider in the location shown on the plan and at the width specified in this ordinance.</p>

EXISTING POLICY	KEY POLICIES TO GUIDE/IMPACT ROLESVILLE BIKES
<p>Town of Rolesville Land Development Ordinance (LDO), 2021 (Continued)</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. 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>Traffic Code: Town-wide speed limit is 35mph unless provided notice of speeds other than 35mph. Vehicles turning left or right shall yield the right-of-way for pedestrians lawfully in the intersection or an adjacent crosswalk.</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>

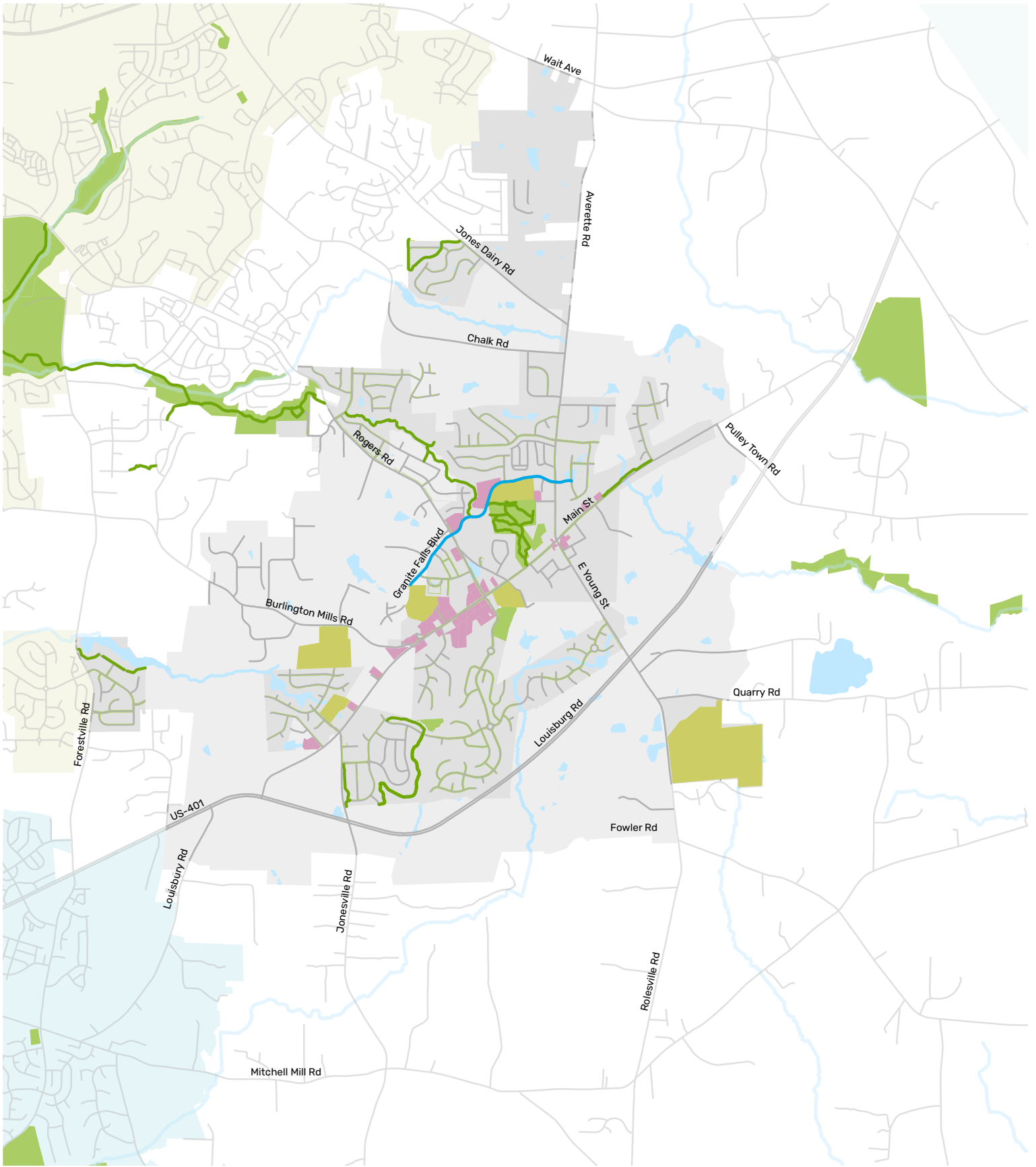
EXISTING POLICY	KEY POLICIES TO GUIDE/IMPACT ROLESVILLE BIKES
<p>Wake County Land Development Ordinance, 2021</p>	<p>Chapter 8, Section 33 outlines the Pedestrian, Bicycle and Trail ordinance for Wake County. The regulations of this section are intended to implement county planning objectives by promoting 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: Bicycle Improvements: Bicycle improvements in the form of wide outside travel lanes or dedicated bike lanes within the right-of-way of collector and thoroughfare roads must be provided whenever such improvements are shown on or otherwise required by the Transportation Plan.</p> <p>Off-Road Trail Improvements: Off-road trail improvements must be provided 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>Long-Range Urban Service Areas: Bicycle Improvements: Developers must provide bicycle improvements within the right-of-way of collector and thoroughfare roads whenever such improvements are shown on or otherwise required by the Transportation Plan.</p> <p>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>



TOWN OF ROLESVILLE DESTINATIONS

LEGEND

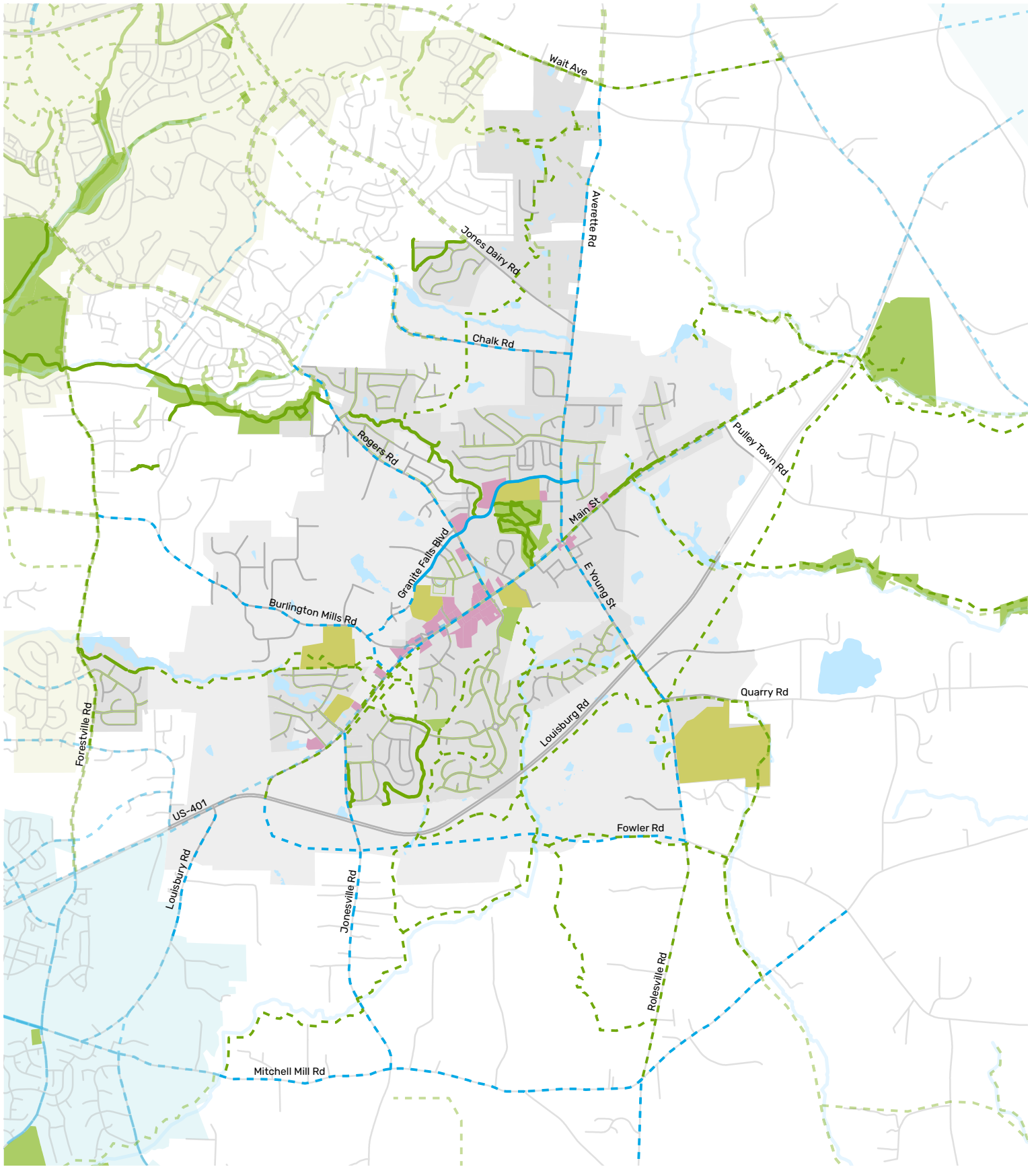
- | | | |
|---|--|---|
| ● Neighborhoods | — Existing Greenways | Raleigh |
| ● Schools | — Existing Bike Lanes | Wake County |
| ● Medical Services | — Roadways | Franklin County |
| ● Civic Services | Parks | |
| ● Grocery Stores | Streams + Lakes | |
| ● Restaurants | Rolesville Town Limits | |
|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



**TOWN OF ROLESVILLE
EXISTING BICYCLE + PEDESTRIAN FACILITIES**

LEGEND

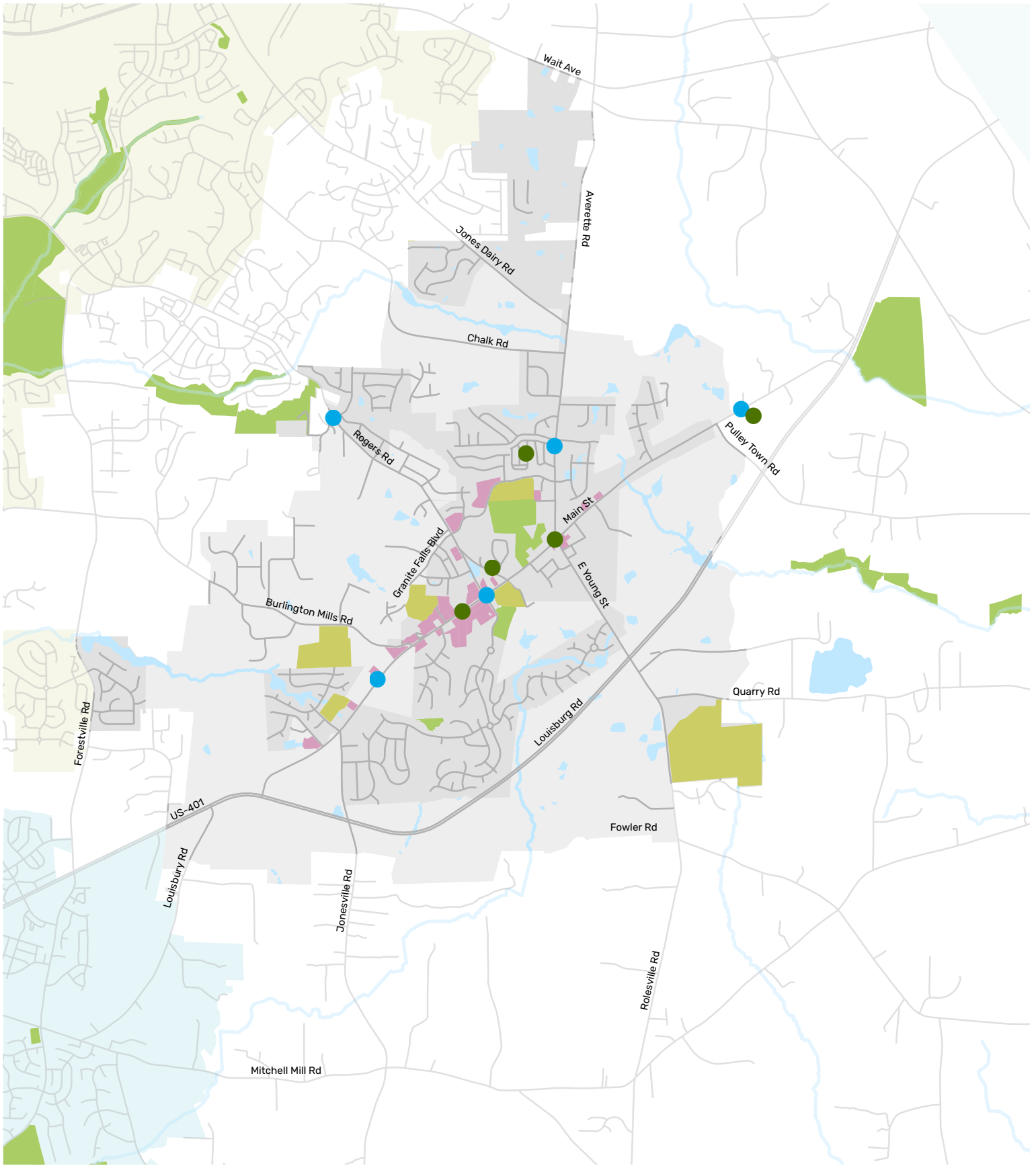
- Existing Bike Lanes
- Existing Greenways
- Existing Sidewalks
- Civic/Commercial Centers
- Schools
- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County



**TOWN OF ROLESVILLE
PLANNED BICYCLE + PEDESTRIAN FACILITIES**

LEGEND

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



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

LEGEND

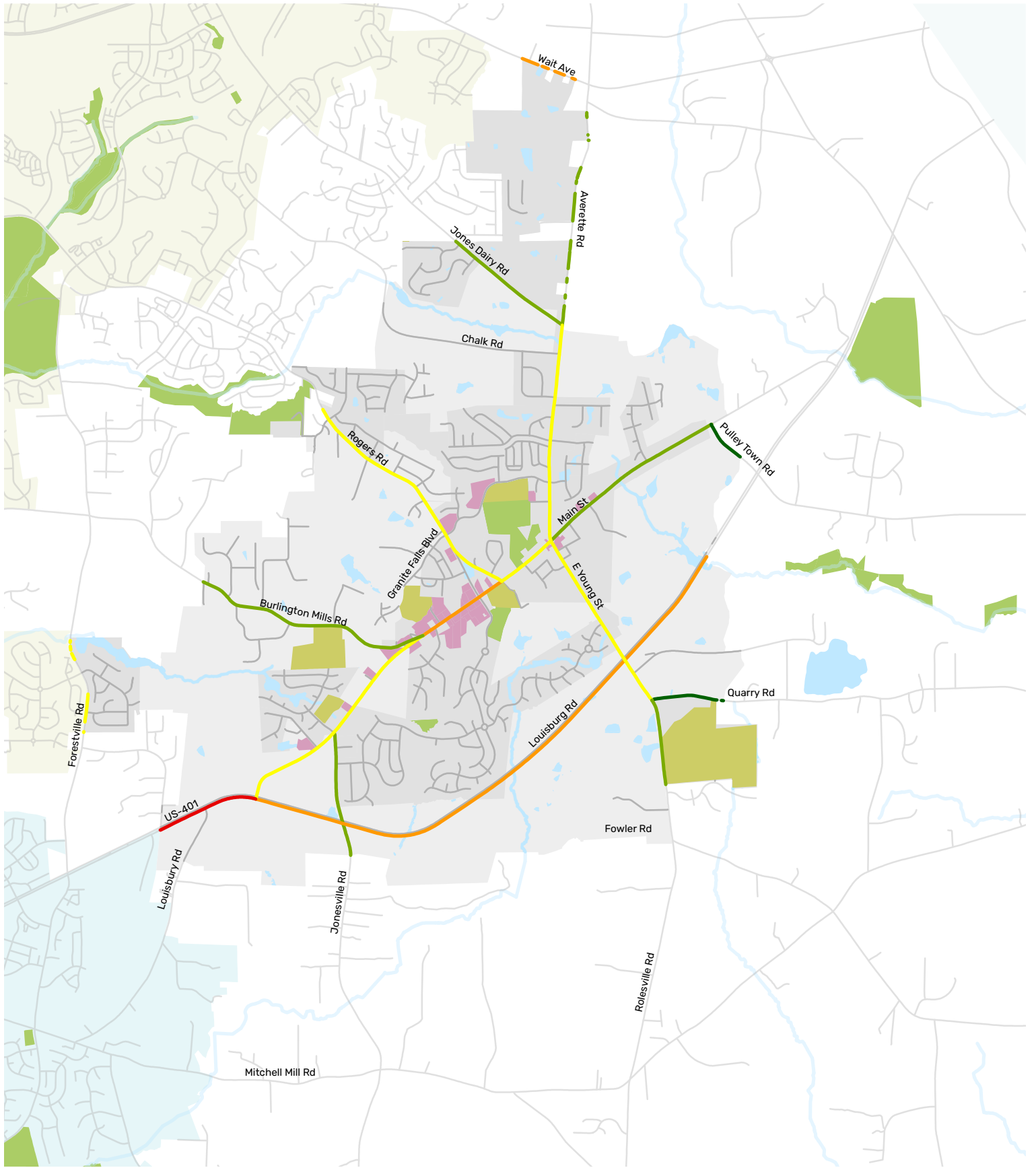
- Bicyclist Crash
- Pedestrian Crash
- Civic/Commercial Centers
- Schools
- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County



**TOWN OF ROLESVILLE
EXISTING TRANSIT FACILITIES**

LEGEND

- GoRaleigh 401X Stops
- GoRaleigh 401X Route
- Existing Bike Lanes
- Existing Greenways
- Existing Sidewalks
- Civic/Commercial Centers
- Schools
- Roadways
- Parks
- Streams + Lakes
- Rolesville Town Limits
- Rolesville ETJ
- Wake Forest
- Raleigh
- Wake County
- Franklin County

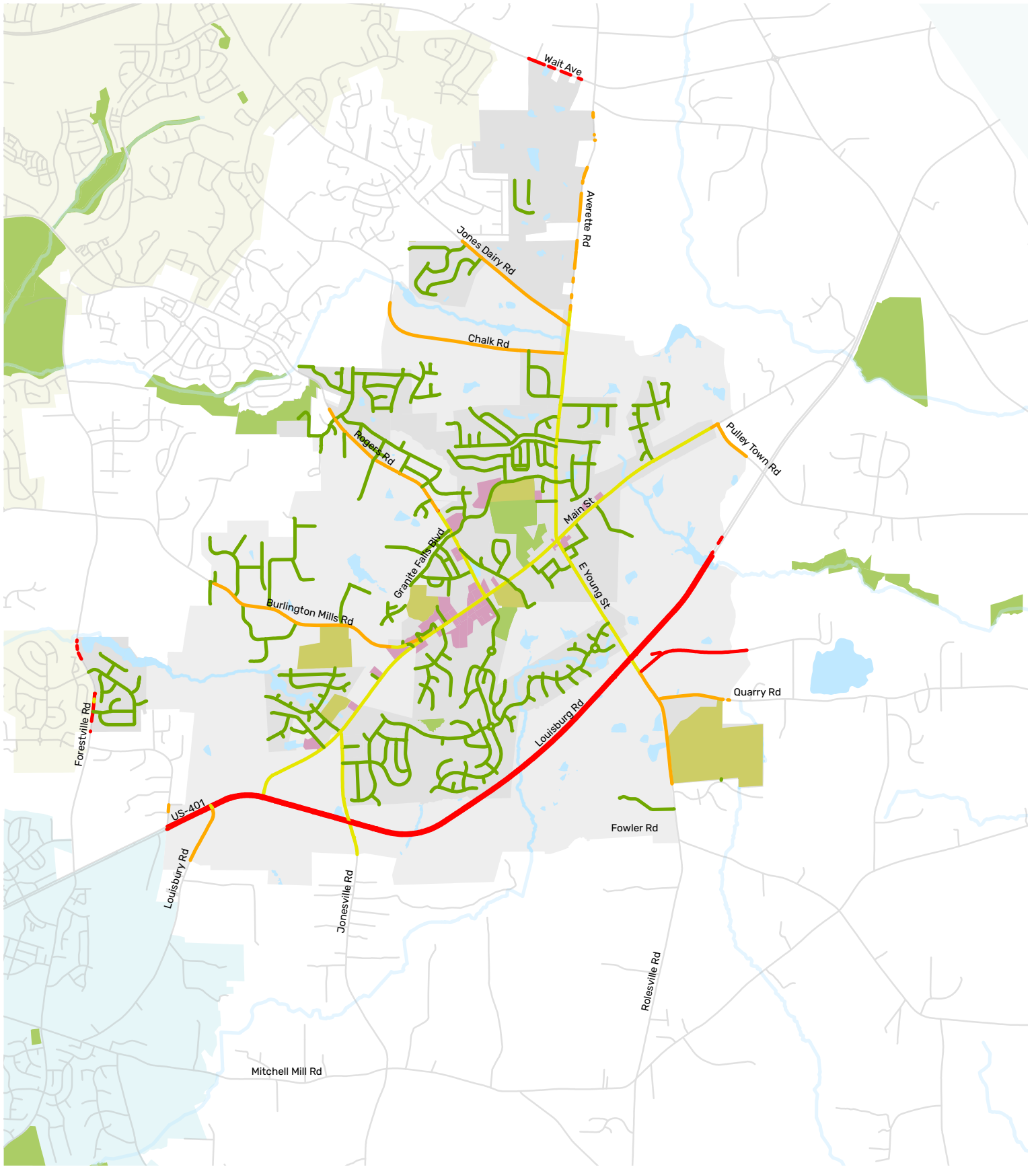


**TOWN OF ROLESVILLE
TRAFFIC VOLUMES (AADT)**

LEGEND

- AADT 650 - 1,100
- AADT 1,101 - 5,400
- AADT 5,401 - 12,000
- AADT 12,001 - 17,500
- AADT 17,501 - 27,500
- Civic/Commercial Centers
- Schools

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

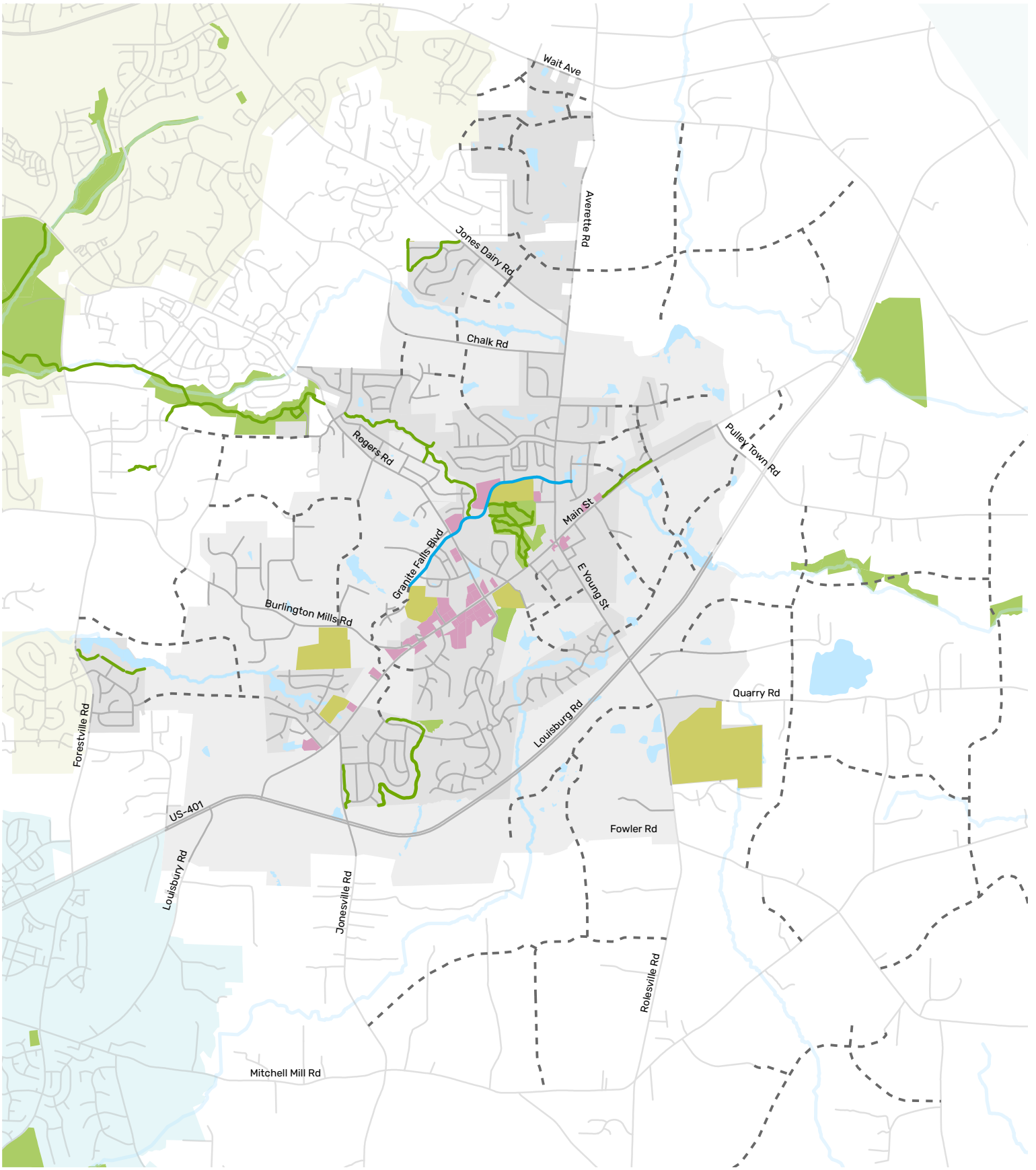


**TOWN OF ROLESVILLE
ROADWAY SPEED LIMITS**

LEGEND

- 15 - 25 mph
- 30 - 35 mph
- 40 - 45 mph
- 50 - 55 mph
- Civic/Commercial Centers
- Schools

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



**TOWN OF ROLESVILLE
PLANNED COLLECTOR STREETS**

- LEGEND**
- Planned Collector Streets
 - Existing Bike Lanes
 - Existing Greenways
 - Civic/Commercial Centers
 - Schools
 - Roadways
 - Parks
 - Streams + Lakes
 - Rolesville Town Limits
 - Rolesville ETJ
 - Wake Forest
 - Raleigh
 - Wake County
 - Franklin County

EXISTING CONDITIONS



A bicyclist biking along a worn path adjacent to Rogers Rd.



Bicyclists crossing the W. Young and Main St intersection.



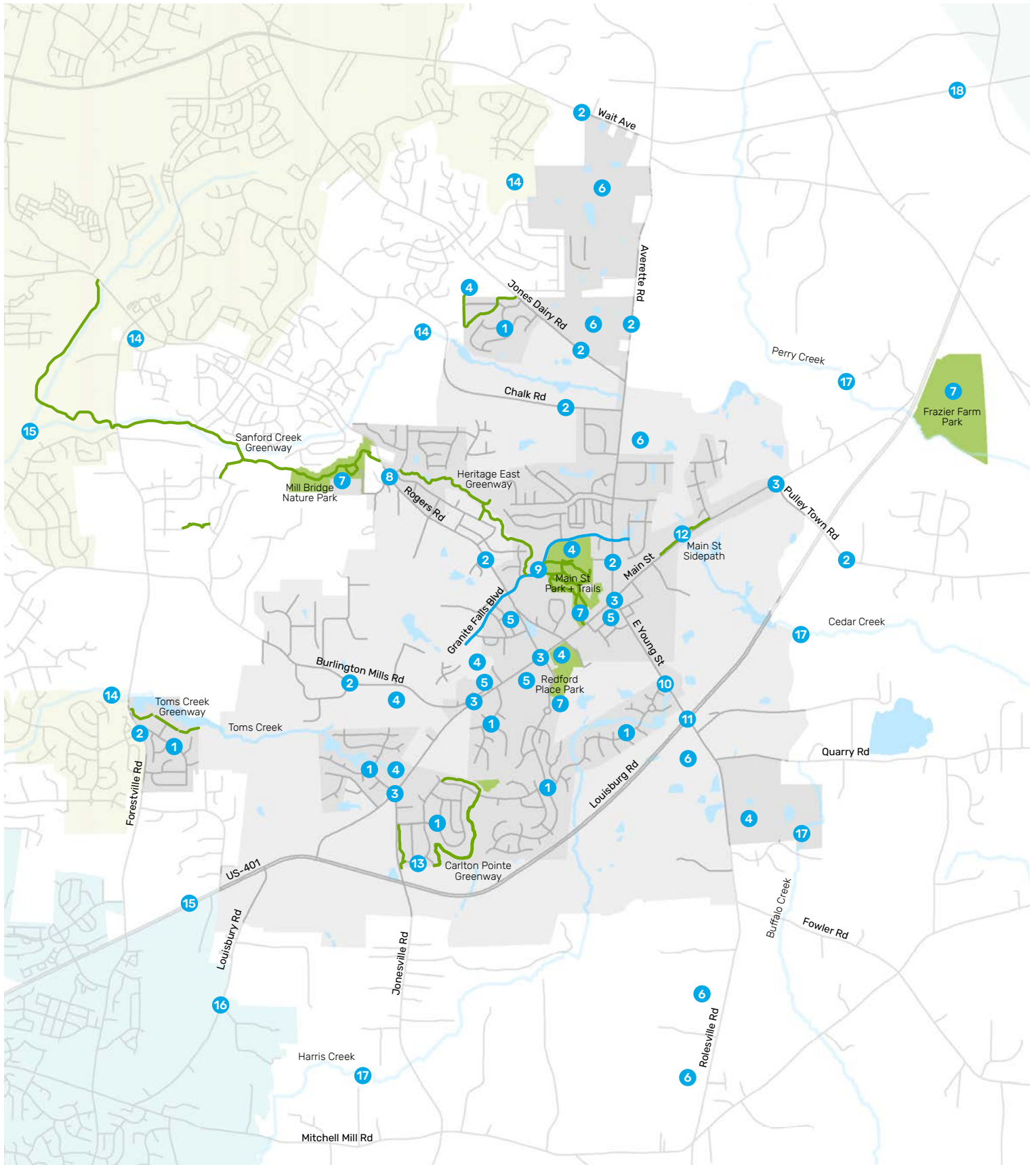
A shared lane marking at Granite Falls Blvd and W. Young St.



A sidepath along N. Main St.



GoRaleigh 401x transit stop along E. Young St.



TOWN OF ROLESVILLE BICYCLE PLAN OPPORTUNITIES + CONSTRAINTS

- | | |
|------------------------------------|---|
| 1. NEIGHBORHOOD CONNECTIVITY | 10. VIRGINIA WATER DR / YOUNG ST INTERSECTION |
| 2. MULTI-MODAL CONNECTIVITY | 11. LOUISBURG RD / YOUNG ST INTERSECTION |
| 3. MAIN ST INTERSECTIONS | 12. N. MAIN ST SIDEPATH MAINTENANCE ISSUES |
| 4. CONNECTIONS TO SCHOOLS | 13. CARLTON POINTE GREENWAY GAP |
| 5. CONNECTIONS TO SHOPPING CENTERS | 14. CONNECTIONS TO WAKE FOREST |
| 6. GREENWAYS IN NEW DEVELOPMENTS | 15. CONNECTIONS TO NEUSE RIVER TRAIL |
| 7. CONNECTIONS TO PARKS | 16. CONNECTIONS TO RALEIGH'S BIKE NETWORK |
| 8. ROGERS RD INTERSECTION | 17. WAKE COUNTY PROPOSED GREENWAYS |
| 9. GRANITE FALLS BLVD BIKE LANES | 18. CONNECTIONS TO NC BIKE ROUTES |

LEGEND

- | | |
|---|------------------------|
| 1 Opportunities + Constraints | Roadways |
| Existing Greenways | Parks |
| Existing Bike Lanes | 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 the existing transportation network that impacts the development of Rolesville's bicycle 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 safely 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 Sandford 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 neighborhoods lack bicycle access to nearby Redford Place Park and Main St Park. There is also an opportunity to provide greenway connections to the proposed Frazier Farm Park along the eastern edge of Town.
8. Rodgers 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. Granite Falls Blvd Bike Lanes - Safety Concerns with On-Street Parking	The bicycle lanes along Granite Falls Blvd are often blocked by vehicles parking along Granite Falls Blvd to access the Granite Falls Swim & Athletic Club. The bike lanes along this segment of Granite Falls Blvd provide an on-street connection to Heritage East Greenway and Main St Park and Trails from adjacent neighborhoods. Vehicles parked in the bike lanes create unsafe conditions and deter bicyclists from using the bike lanes along Granite Falls Blvd.
10. 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 eastside 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.
11. 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.

OPPORTUNITIES + CONSTRAINTS	DESCRIPTION
<p>12. Perry Creek Greenway (N. Main St Sidepath Maintenance Issues</p>	<p>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.</p>
<p>13. Carlton Pointe Greenway Gap Improvements</p>	<p>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.</p>
<p>14. Connections to Wake Forest / Gateway Commons</p>	<p>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.</p>
<p>15. Connections to Neuse River Trail / Raleigh’s Greenway Network</p>	<p>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 create an opportunity to access Raleigh’s entire Capital Area Greenway System and other regional trail systems in the Triangle.</p>
<p>16. Connections to Raleigh’s Bicycle Network</p>	<p>Biking to Raleigh from Rolesville is possible on a combination of greenways and neighborhood streets, but it is not direct. The lack of bicycle facilities along Louisbury Rd, Forestville Rd, and Mitchel Mill Rd poses a challenge for those commuting to or running errands in Raleigh.</p>
<p>17. Greenway Development Along Creek Corridors in Wake County</p>	<p>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.</p>
<p>18. Connections to NC Bike Routes</p>	<p>NC Bike Route 2 Mountains to Sea routes along Tarboro Rd in adjacent Franklin County. Providing bicycle facilities and accommodations to NC Bike Route 2 from Rolesville creates opportunities to establish Rolesville as a bicycle tourism destination.</p>



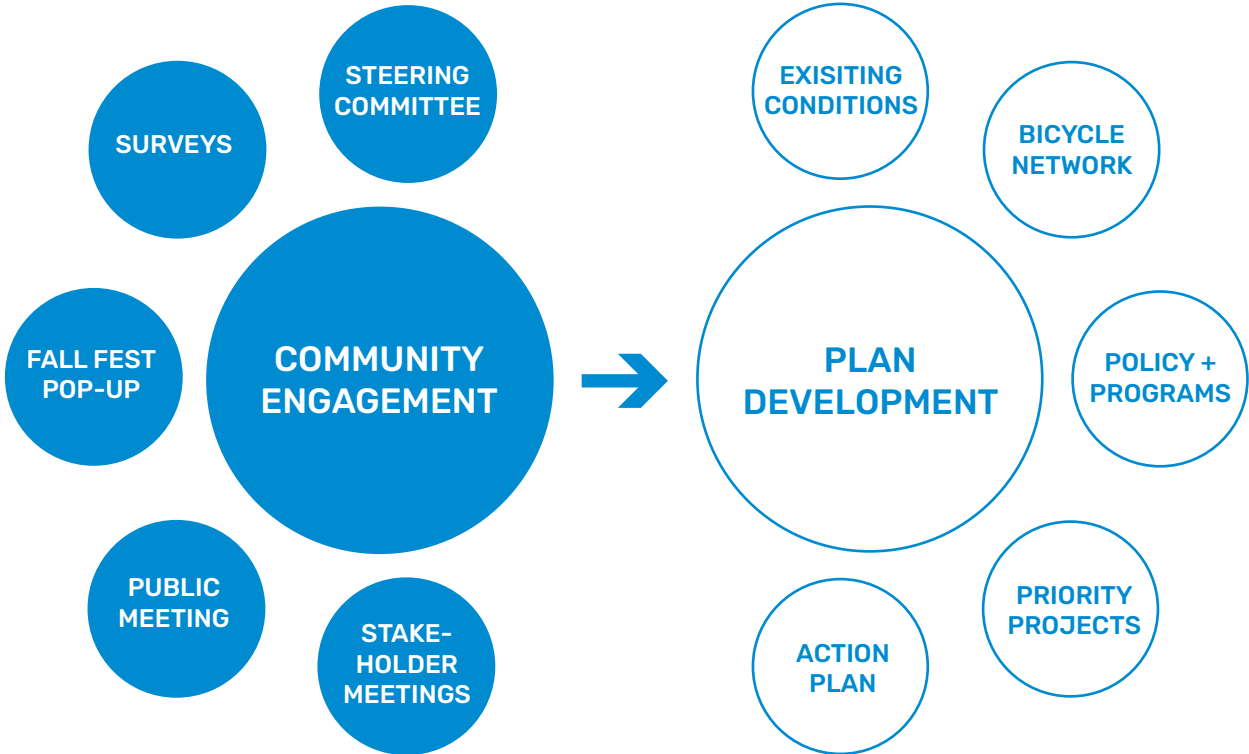
03. COMMUNITY ENGAGEMENT

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 bicycle network, programs, policies, project priorities, and action plan.

Rolesville Bikes and the *Town of Rolesville Open Space + Greenway Plan* 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 bicycle and greenway 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 bicycle plan are summarized in this chapter.



STEERING COMMITTEE

The *Rolesville Bikes* 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, bicycle network recommendations, priority projects, program and 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 bicycle plan. The meeting included an overview of previous bicycle and pedestrian 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 schools, parks, and residential neighborhoods.
- Bicycle connections needed to neighboring communities - Wake Forest and Raleigh.
- Bike facility improvements needed along Granite Falls Blvd, Young St, and Rogers Rd.
- Prioritize intersection improvements along Rogers Rd, Louisburg Rd, and Young St.
- Committee members defined success for the bicycle 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 bicycle plan. The meeting included a review of community survey results, draft vision and goals, draft network recommendations, proposed bicycle facility types and intersection treatments, prioritization criteria, and draft program and 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 bicycle connectivity across Rolesville.
- Continue coordination with neighboring jurisdictions on proposed bicycle facilities across municipal boundaries.
- 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 bicycle plan, which included a review of bicycle network recommendations, policy and program 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 bicycle plan.
- Bicycle network priorities provide guidance on next steps in project development.
- Continue to coordinate with NCDOT on proposed bike facilities and how they can be incorporated in NCDOT roadway improvement projects.

COMMUNITY SURVEY

The purpose of the community survey for the Rolesville bicycle plan was to introduce and gauge public support of the project, learn of the community's goals and objectives for the bicycle plan, solicit feedback on the bicycle 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 biking 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 improved on-street bicycle facilities throughout Rolesville, especially along Young St, Averette Rd, Rolesville Rd, Burlington Mills Rd, S. Main St, Chalk Rd, and Redford Place Dr.
- Need for multi-modal improvements at intersections and mid-block street crossings.

40%

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

51%

of survey participants
bike 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

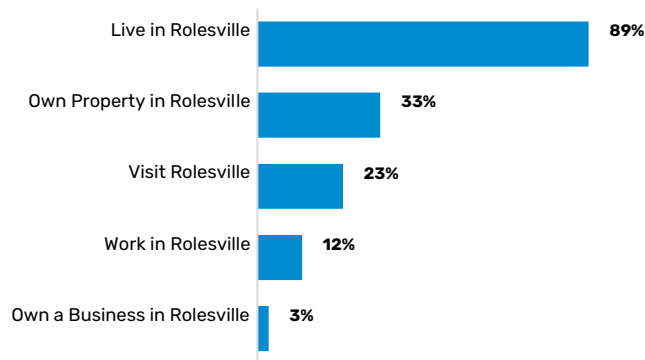


BICYCLE PLAN
OPEN SPACE + GREENWAY PLAN

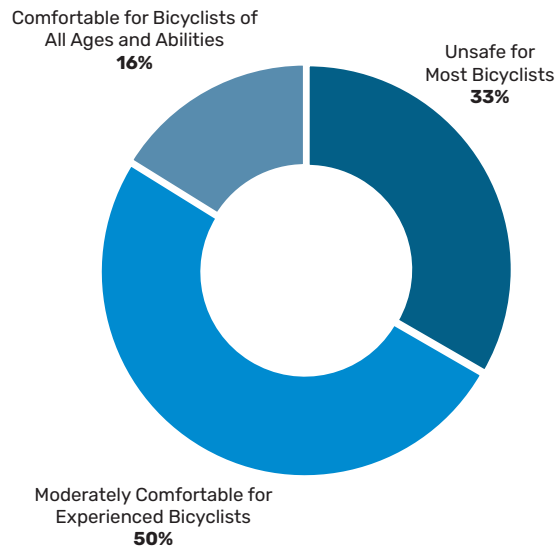
Scan this code
to take the survey.



Relationship to Rolesville:



Comfort Level Biking in Rolesville:



“I can only bike in my neighborhood and the one across the street. It is unsafe beyond that.”

- Survey Participant

“My family and I only bike on the greenway trails. The roads and traffic are too dangerous to ride a bicycle on.”

- Survey Participant

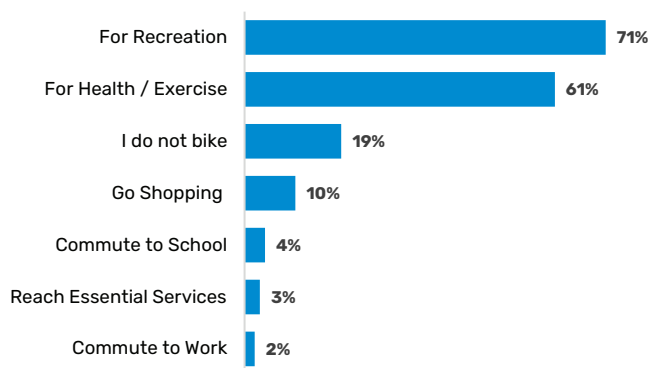
“If you can make it safe for students to ride their bikes to all the schools that will be a big improvement.”

- Survey Participant

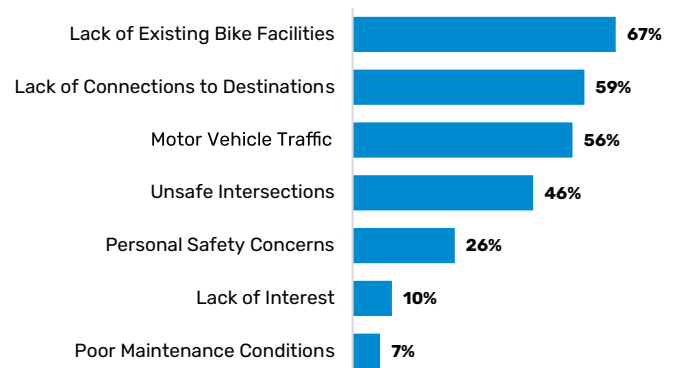
“We would love to see Rolesville become more connected to the Triangle Greenway System - not only so we could bike to destinations, but so other folks could bike here and experience our wonderful little town!”

- Survey Participant

Primary Reasons for Biking in Rolesville:



Factors that Discourage Biking in Rolesville:



FALL FEST POP-UP EVENT + PROJECT PRIORITIZATION SURVEY

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 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 web page on the Town of Rolesville's website to provide project updates and to solicit additional feedback on draft network recommendations. The web page 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 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.
- Supportive of bike lanes along major roadways, especially along Rogers Rd and Burlington Mills where bicyclists need to access destinations along these roadways.
- 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.
- Proposed facilities providing connections to transit stops for bicyclists and pedestrians improves multi-modal access.
- Concerns for how connecting neighborhoods via greenway and bicycle boulevards will impact the resident privacy and quiet feel of neighborhoods.
- Safety and congestion concerns for proposed on-street bicycle facilities.

DRAFT ON-ROAD BICYCLE NETWORK KEY COMMUNITY PRIORITIES:

- Main St Separated Bike Lanes
- Granite Falls Blvd Separated Bike Lanes
- Averette Rd Bike Lanes
- Rogers Rd Bike Lanes
- E. Young St Bike Lanes
- Redford Place Dr Bike Lanes
- Mitchell Mill Rd Bike Lanes
- Rolesville Rd Bike Lanes
- Granite Falls Bicycle Blvd
- Virginia Waters Dr Bicycle Blvd

“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!”

- 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 bicycle plan, which included a review of bicycle network recommendations, policy and program 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 overall plan.

KEY TAKEAWAYS:

- General support of the recommendations in the draft bicycle 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

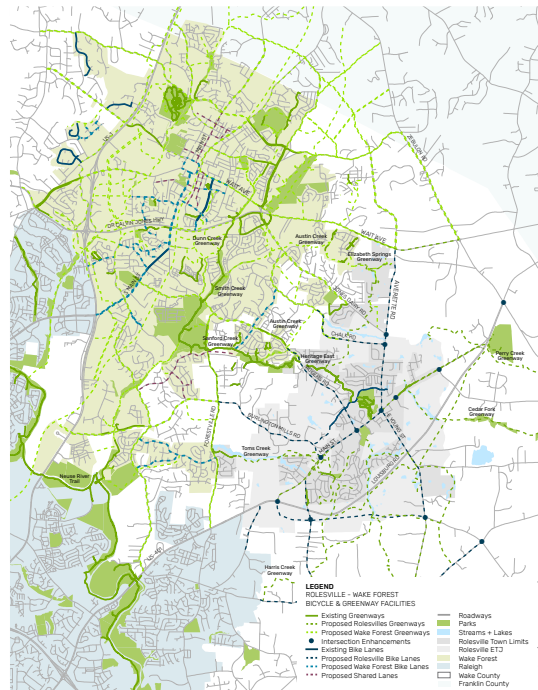
As a collaborative effort, *Rolesville Bikes* included coordination with neighboring jurisdictions on bicycle connectivity across municipal boundaries. Municipal and county staff from the Town of Wake Forest, City of Raleigh, Wake County, and Franklin County provided an overview of their community's planned bicycle and greenway networks, maintenance and resurfacing practices, design standards, and funding sources. At each meeting, the project team, Town staff, and partners discussed specific bicycle 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 active transportation 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 is in the process of developing a maintenance plan for new bicycle and pedestrian facilities.

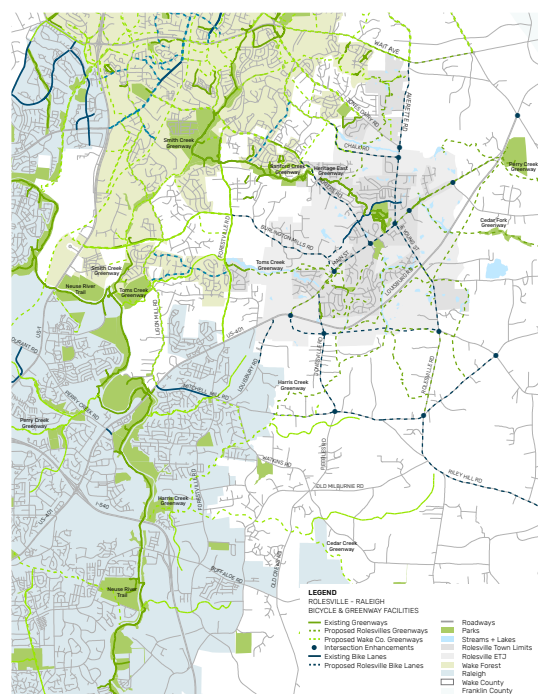


CITY OF RALEIGH

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

KEY TAKEAWAYS:

- Proposed bike lanes along Mitchell Mill Rd, Forestville Rd, and Neuse Crossing Dr will likely be implemented with future roadway improvements.
- Bike lanes along Old Falls of Neuse Rd is a priority project for Raleigh to close the gap between the existing bike lanes along Old Falls of Neuse Rd in Raleigh and the sidepath along Durham Rd in Wake Forest.
- 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.

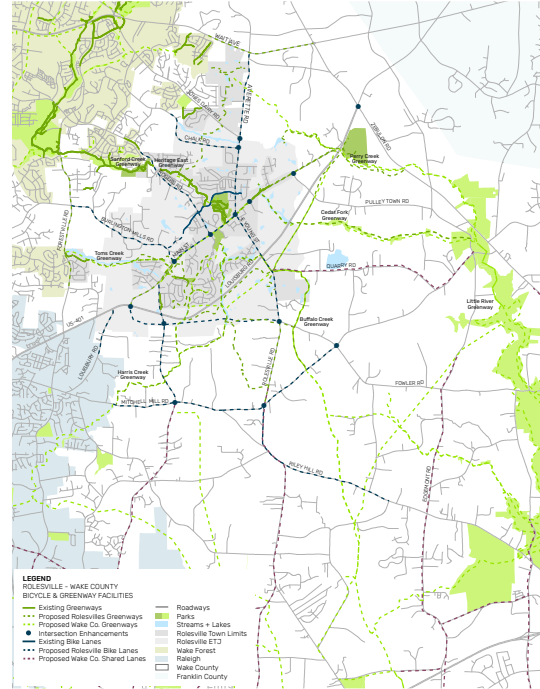


WAKE COUNTY

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

KEY TAKEAWAYS:

- Proposed bike lanes in Wake County aim to improve connections between jurisdictions. Rolesville should consider extending proposed bike lanes along Fowler Rd to Mitchell Mill Rd, Quarry Rd and Pulley Town Rd.
- 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 currently exploring funding opportunities to address increasing maintenance responsibilities for bicycle and pedestrian facilities.

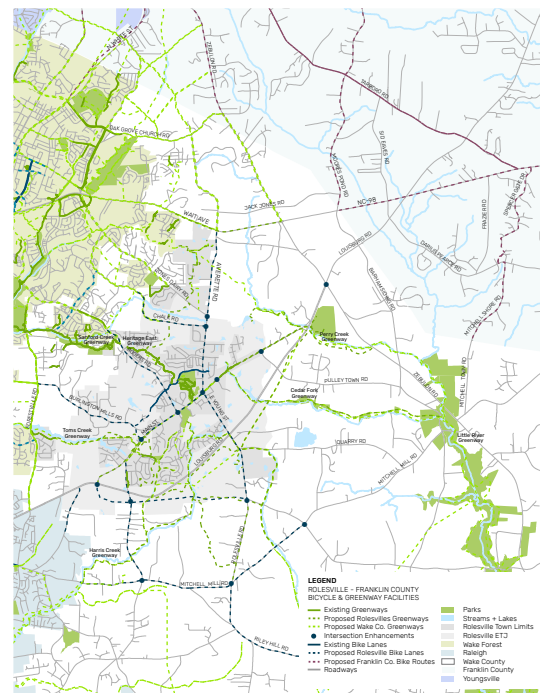


FRANKLIN COUNTY

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

KEY TAKEAWAYS:

- The NC Bike Route 2: Mountains to Sea is a priority bicycle corridor in Franklin County. Proposed bike facilities in Rolesville should consider connections to NC Bike Route 2.
- Franklin County recently adopted a County-wide bicycle and pedestrian plan in July 2021. Connections to newly proposed bicycle 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.





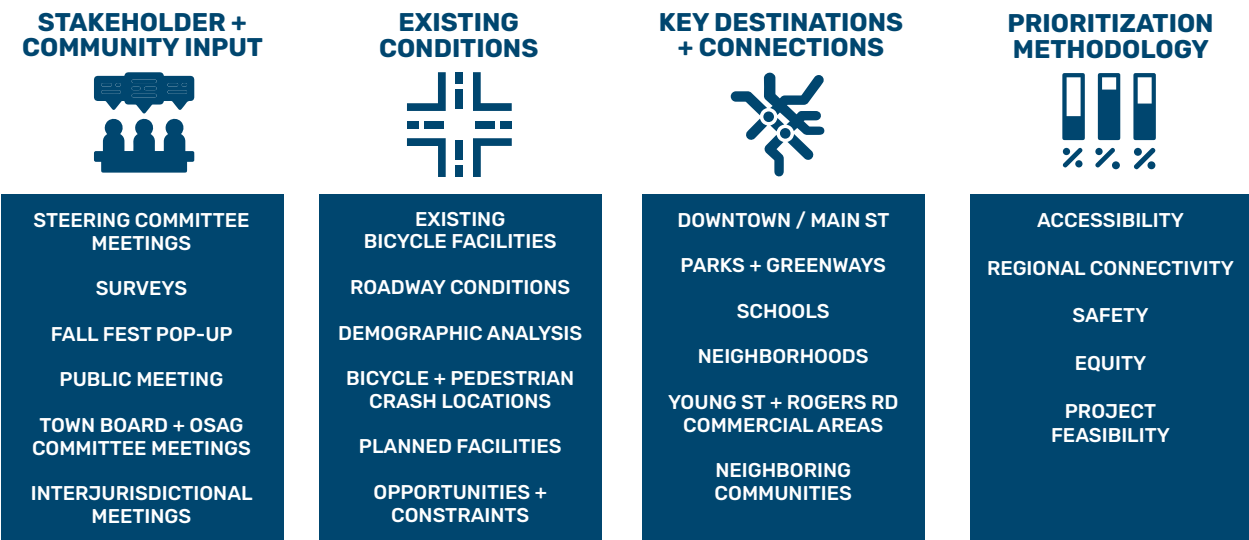
04. NETWORK RECOMMENDATIONS

NETWORK RECOMMENDATIONS

As mentioned in the previous chapter, *Rolesville Bikes* and the *Town of Rolesville Open Space + Greenway Plan* were developed concurrently. While many elements of both plans are shared, the bicycle plan primarily addresses the transportation needs of Rolesville residents and visitors. The bicycle plan builds off of recommendations developed in *Rolesville Moves: Community Transportation Plan (CTP)*, which was recently vetted by Rolesville residents and adopted by the Town Board in May 2021. The CTP integrates a complete streets approach to network recommendations to ensure the future transportation network is safe and convenient for users of all ages and abilities and provides mode choices based on the surrounding land use context. To best align with the complete streets approach of the CTP, on-road bicycle facilities are key recommendations alongside recommended off-road facilities in the bicycle network. Some on-road recommendations are included where off-road facilities may be constrained or not feasible. Most importantly, on-road bicycle network recommendations are an integral part of this plan because community members have voiced a need and desire for on-road facilities to safely reach destinations by bike.

Rolesville’s bicycle facility recommendations establish a robust active transportation network, providing residents with safe, comfortable and direct travel choices. 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. This chapter outlines on-road and sidepath recommendations that comprise the proposed bicycle network. For a detail overview of the proposed greenway network, please reference the *Town of Rolesville Open Space + Greenway Plan*.

BICYCLE NETWORK RECOMMENDATION INPUTS



MULTI-MODAL FACILITY TYPES

Determining which multi-modal facilities are appropriate for a community's active transportation network involves a context-sensitive approach that considers roadway design, network connectivity, and land use. Roadway speeds and traffic volumes are key considerations in selecting bicycle and pedestrian facilities along a roadway. The greater the speed and volume of motor vehicle traffic, the greater the amount of separation is desired for biking and walking comfortably. Network considerations focus on interconnected bicycle and pedestrian

facilities that allow people of all ages and abilities to safely and conveniently get to where they want to go. Land use considerations focus on an area's density. High-density areas allow for a range of bicycle and pedestrian amenities, while low-density areas require bicycle and pedestrian facilities that support longer-distance travel between destinations. The bicycle and pedestrian facilities defined below are the primary facility types recommended in this plan. For additional information on facility design, please review *Appendix B: Design Resources*.



GREENWAY / SHARED USE PATH

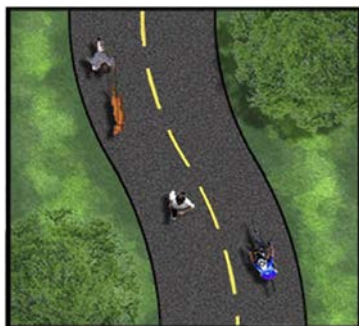
A greenway, or shared use path, provides a travel area separate from motorized traffic for bicyclists, pedestrians, wheelchair users, skaters, joggers, and other users. Greenways offer network connectivity opportunities beyond the roadway network, as they are often located along streams, in utility corridors and parks.

CONTEXT CONSIDERATIONS: ROADWAY SPEED + VOLUME:

Greenways operate independently of roadway corridors and are fully separated from traffic. However, when selecting bicycle and pedestrian facilities, greenways and shared use paths should be considered as multimodal alternatives for roadway corridors that exceed traffic volumes of 6,000 vehicles per day and speed limits higher than 35 miles per hour.

NETWORK CONNECTIVITY + ADJACENT LAND USE:

Greenways may provide network alternatives to arterial and collector roadway connections and are appropriate in low-density areas as well as high-density areas to serve as a corridor connection.



Open Space 10-12'



SIDEPATH

A sidepath is a bidirectional shared use path adjacent and parallel to a roadway. Sidepaths offer a low-stress experience for bicycle and pedestrians along network routes with high-speed or high-volume traffic.

CONTEXT CONSIDERATIONS: ROADWAY SPEED + VOLUME:

Sidepaths are used along roads with high volumes that exceed 6,000 vehicles per day and moderate to high speeds over 35 miles per hour.

NETWORK CONNECTIVITY + ADJACENT LAND USE:

Sidepaths are used along arterial and collector roadways and are generally recommended in high-density areas to provide dedicated space for bicyclists and pedestrians.



Travel Lane 5' 10-12'



A family bikes along the Main St Park Greenway in Rolesville, NC.

MULTI-MODAL FACILITY INTERSECTION TREATMENTS

Most conflicts between greenway users and motor vehicles occur at intersections. Current roadway design decisions increase exposure and risk for bicyclists and pedestrians, reduce the safety and comfort of the multi-modal network, and discourage biking and walking between destinations. As communities work to make streets 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. Crosswalk markings also serve to alert motorists of a sidewalk and/or greenway crossing point across roadways.



MID-BLOCK CROSSWALK / HYBRID BEACON

Mid-block crosswalks facilitate sidewalk and/or greenway crossings to destinations along a roadway. Similarly, a pedestrian hybrid beacon is a traffic control device to increase motorists' awareness of sidewalk and/or greenway crossings at mid-block and/or uncontrolled crosswalks.



PEDESTRIAN REFUGE ISLAND

A pedestrian refuge island is a protected space placed in the center of the street to facilitate sidewalk and/or greenway crossings. A pedestrian safety island reduces the exposure time experienced by pedestrians and bicyclists in an intersection.



SEPARATED BICYCLE LANE

A separated bicycle lane is a facility for exclusive use by bicyclists that is located within or directly adjacent to the roadway and is physically separated from motor vehicle traffic by a buffered space with a vertical separation element. Separated bicycle lanes can be designed to accommodate one-way and bi-directional travel.

CONTEXT CONSIDERATIONS:

ROADWAY SPEED + VOLUME:

Separated bicycle lanes are recommended along roadways with high volumes that exceed 6,000 vehicles per day and moderate to high speeds over 35 miles per hour.

NETWORK CONNECTIVITY + ADJACENT LAND USE:

Separated bicycle lanes are recommended along major roadways and collectors that serve as primary connections to destinations. Separated bicycle lanes are appropriate in areas with moderate to high volumes of bicycle and pedestrian activity. In high-density areas, design treatments should consider potential conflicts with transit stops and driveway crossings to mitigate safety concerns for bicyclists.



Travel Lane 3' 5-7'



BUFFERED BICYCLE LANE

A buffered bicycle lane designates a travel space for bicyclists within the roadway corridor through use of pavement markings, optional signage, and a buffer space separating the bicycle lane from the adjacent travel lane.

CONTEXT CONSIDERATIONS:

ROADWAY SPEED + VOLUME:

Buffered bicycle lanes are recommended along roads with moderate volumes and speeds. Buffered bicycle lanes are appropriate treatments for roadways with traffic volumes between 3,000 and 6,000 vehicles per day and moderate speeds between 25 and 35 miles per hour.

NETWORK CONNECTIVITY + ADJACENT LAND USE:

Buffered bicycle lanes are appropriate treatments along arterial and collector roadways that connect local bikeway routes to regional corridors. Buffered bicycle lanes are recommended in areas with increased bicycle and pedestrian activity.



Travel Lane 1.5-4' 5-7'



A separated bicycle lane in Uptown Charlotte, NC.



BICYCLE LANE

A bicycle lane designates a travel space for bicyclists within the roadway corridor through use of pavement markings and optional signage to provide accommodations in the absence of more separated facilities.

CONTEXT CONSIDERATIONS:

ROADWAY SPEED + VOLUME:

Bicycle lanes may be used along roads with moderate traffic volumes and speeds. Bicycle lanes are appropriate treatments along roads with traffic volumes between 3,000 and 6,000 vehicles per day and moderate speeds between 25 and 35 miles per hour.

NETWORK CONNECTIVITY + ADJACENT LAND USE:

Bicycle lanes are appropriate treatments along arterial and collector roadways that connect local bikeway routes to regional corridors. Bicycle lanes are recommended in areas with increased bicycle and pedestrian activity and in areas where right-of-way constraints limit the ability to provide buffered bicycle lanes.



Travel Lane 5-7'



BICYCLE BOULEVARD / SHARED LANE MARKING

A bicycle boulevard is a low-stress, shared street accommodation designed to offer priority for bicyclists operating within a roadway shared with motor vehicle traffic. Bicycle boulevards use a combination of signage, traffic calming measures, and pavement markings, such as shared lane markings to prioritize bicyclists through the corridor.

CONTEXT CONSIDERATIONS:

ROADWAY SPEED + VOLUME:

Bicycle boulevards are recommended for local streets with low traffic volumes and speeds. Bicycle boulevards are recommended along streets with traffic volumes less than 3,000 vehicles per day and speeds less than 25 miles per hour.

NETWORK CONNECTIVITY + ADJACENT LAND USE:

Bicycle boulevards are recommended for local residential roadways within neighborhoods and are not appropriate for collector or arterial roadways.



Shared Travel Lane



A bicycle boulevard in a residential neighborhood in Minneapolis, MN.

BICYCLE FACILITY INTERSECTION TREATMENTS

Intersections are the place where the most conflicts occur between bicyclists and motor vehicles. Current roadway design decisions increase exposure and risk for people biking, reduce the safety and comfort of the bicycle network, and discourage bicycling. As communities work to make streets safer for bicyclists of all ages and abilities, intersection design is critical.



BIKE BOX

A bike box is a designated area at the head of a traffic lane at a signalized intersection that provides bicyclists with a safe and visible way to get ahead of traffic during the red signal phase.



TWO-STAGE TURN QUEUE BIKE BOX

Two-stage turn queue boxes offer bicyclists a safe way to make left turns at multi-lane signalized intersections from a right side bicycle lane, or right turns from a left side separated bicycle lane. Two-stage turn queue boxes may also be used at unsignalized intersections to simplify turns from a bicycle lane.



MEDIAN REFUGE ISLAND

Median refuge islands are protected spaces placed in the center of the street to facilitate bicycle and pedestrian crossings. Crossings of two-way streets are facilitated by allowing bicyclists and pedestrians to navigate only one direction of traffic at a time.



LEADING BICYCLE INTERVAL

A leading bicycle interval gives bicyclists a head start in front of turning vehicles at a signalized intersection, providing a priority position in the right of way.



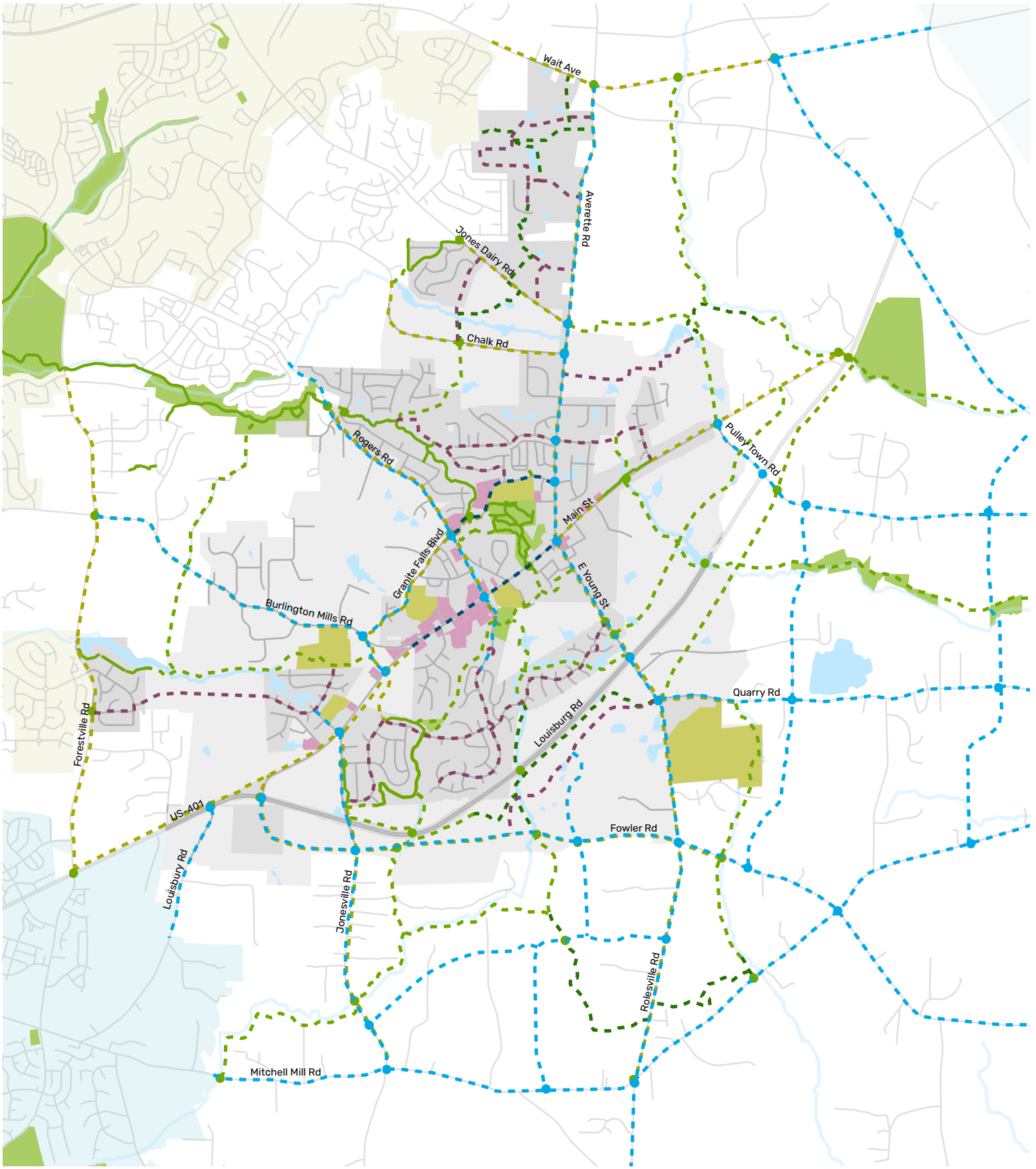
THROUGH BICYCLE LANE

A through bicycle lane provides a path across a turn lane, which allows bicyclists to correctly position themselves to avoid conflicts with turning vehicles.



DEDICATED INTERSECTION

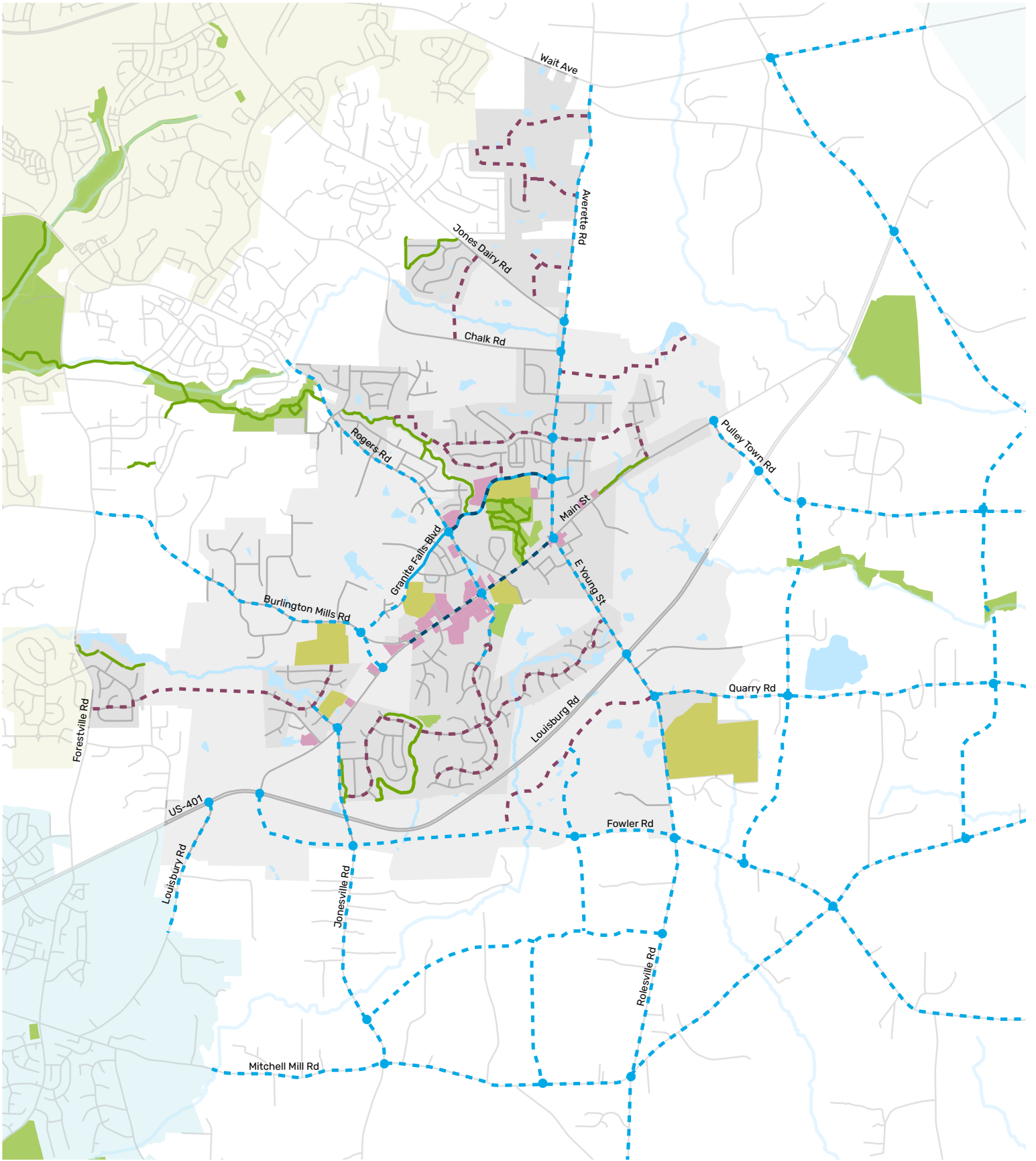
A dedicated intersection provides a path for bicyclists through an intersection, which allows bicyclists to correctly position themselves to avoid conflicts with turning vehicles.



TOWN OF ROLESVILLE RECOMMENDED BICYCLE + GREENWAY NETWORK

LEGEND

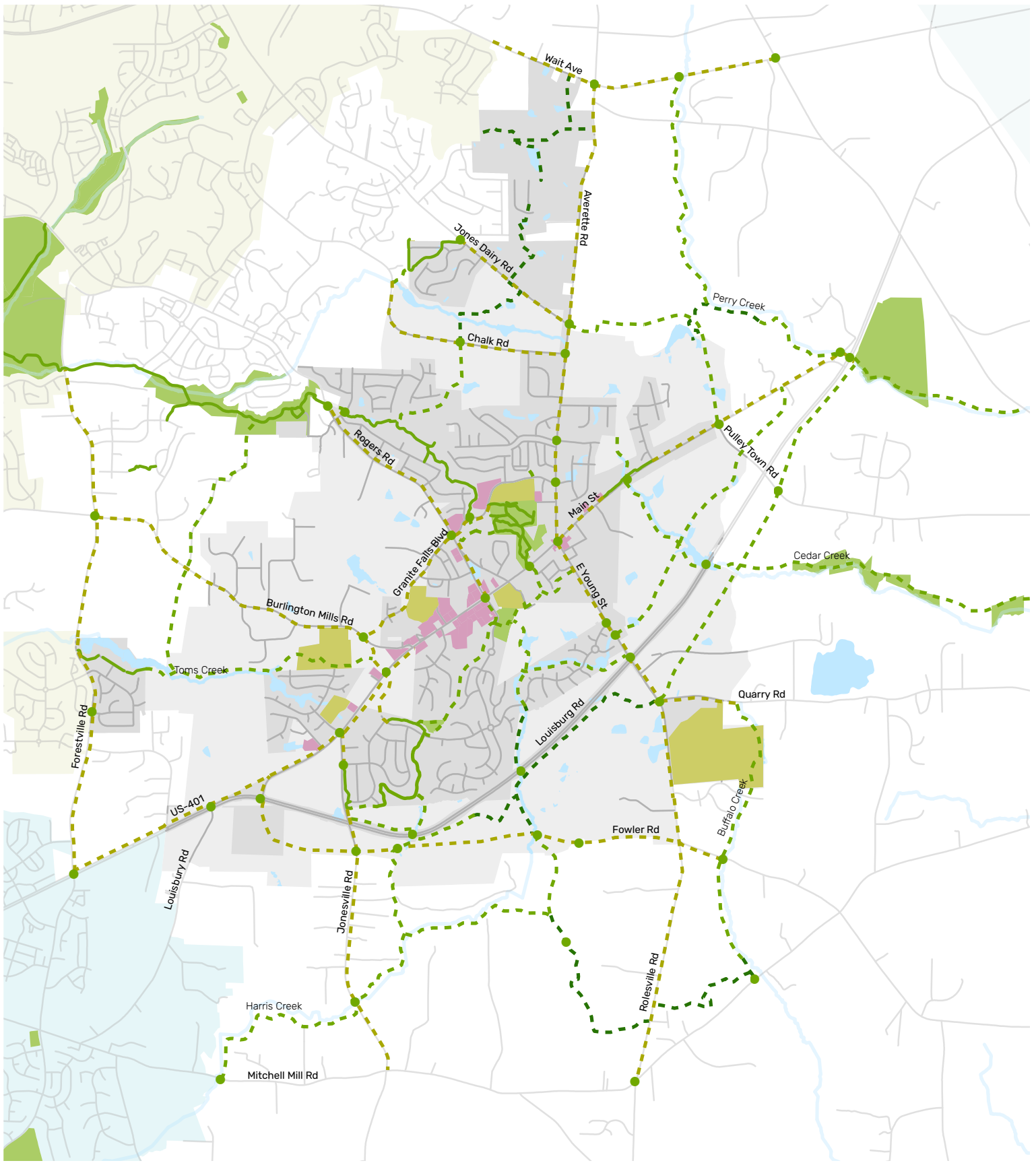
- | | | |
|---|---|--|
| <ul style="list-style-type: none"> --- Proposed Separated Bike Lanes --- Proposed Bike Lanes --- Proposed Bicycle Blvds ● Proposed Bicycle Intersection Treatment --- Proposed Greenways --- Proposed Sidepaths --- Developer-Built Greenways ● Proposed Greenway Intersection Treatment | <ul style="list-style-type: none"> --- Existing Bike Lanes --- Existing Greenways --- Civic/Commercial Centers --- Schools | <ul style="list-style-type: none"> --- Roadways --- Parks --- Streams + Lakes --- Rolesville Town Limits --- Rolesville ETJ --- Wake Forest --- Raleigh --- Wake County --- Franklin County |
|---|---|--|



**TOWN OF ROLESVILLE
RECOMMENDED ON-STREET BICYCLE NETWORK**

LEGEND

- Proposed Separated Bike Lanes
- ... Proposed Bike Lanes
- Proposed Bicycle Blvds
- Proposed Intersection Treatment
- Existing Bike Lanes
- 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
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

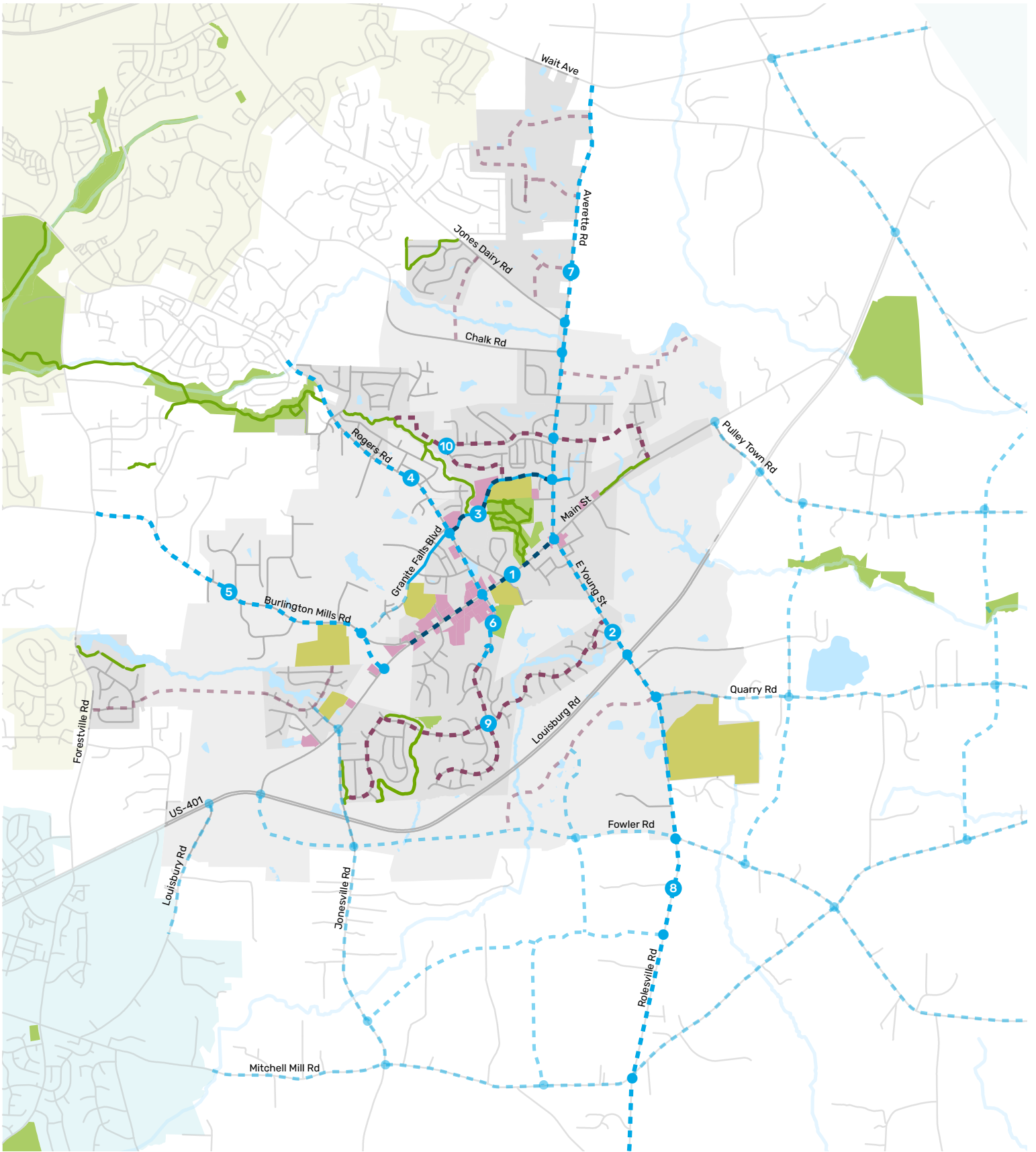
ROADWAY CHARACTERISTICS TABLE + ON-ROAD BICYCLE RECOMMENDATIONS

ROAD NAME	TO	FROM	ROADWAY WIDTH	# TRAVEL LANES
LOUISBURG RD	Forestville Rd	Main St	60 - 115ft	4 - 5
MAIN ST	Louisburg Rd	Burlington Mills Rd	30 - 60ft	2 - 3
MAIN ST	Burlington Mills Rd	Young St	36 - 60ft	3 - 5
MAIN ST	E. Young St	Louisburg Rd	24 - 46ft	2 - 3
BURLINGTON MILLS RD	Main St	Forestville Rd	24 - 50ft	2 - 4
ROGERS RD	Main St	Mill Bridge Park Greenway	24 - 60ft	2 - 5
W. YOUNG ST / AVERETTE RD	Main St	Wait Ave	26 - 46ft	2 - 3
CHALK RD	W. Young St	Town Limits	20ft	2
JONES DAIRY RD	Averette Rd	Town Limits	20 - 42ft	2 - 3
WAIT AVE	Town Limits	Zebulon Rd	26 - 44ft	2 - 3
WAIT AVE	Zebulon Rd	Moore's Pond Rd	26ft	2
GRANITE FALL BLVD	W. Young St	Rogers Rd	40ft	2 - 3
GRANITE FALL BLVD	Rogers Rd	Burlington Mills Rd	26ft	2
GRANITE CREEK DR	Granite View Dr	Granite Peak Dr	28 - 34ft	2
BIG WILLOW WAY	Granite Creek Dr	W. Young St	34ft	2
PRESERVE AT JONES DAIRY / PERRY FARMS	Averette Rd	Jones Dairy Rd	24ft	2
HAMPTON LAKE DR	Main St	Pristine Ln	40 - 64ft	2 - 5
JONESVILLE RD	Main St	Mitchell Mill Rd	22 - 42ft	2 - 3

AADT	SPEED LIMIT	CURB + GUTTER	RECOMMENDATION	INTERSECTION TREATMENTS
27,500	55mph	No	Sidepath	Super Street Crosswalk Accommodations
10,500	35 - 45mph	No	Sidepath	Crosswalks
11,500 - 14,000	35mph	Yes	Separated Bike Lane	Through Bike Lanes / Bike Boxes
3,800	35 - 45mph	Yes	Sidepath	Crosswalks
4,500	45mph	Partially	Sidepath (preferred long-term) & Bike Lanes	Through Bike Lanes, Bike Boxes, Crossing Markings
9,000	35 - 45mph	Partially	Sidepath (preferred long-term) & Bike Lanes	Through Bike Lanes, Bike Boxes, Crossing Markings
3,600 - 8,600	35 - 45mph	Partially	Sidepath (preferred long-term) & Bike Lanes	Through Bike Lanes, Bike Boxes, Crossing Markings
4,200	45mph	No	Sidepath	Bicycle Intersection Crossing Markings
4,700	45mph	Partially	Sidepath	Crosswalks
17,500	55mph	No	Sidepath	Crosswalks
12,500	55mph	No	Bike Lane	Shared Lane Markings (through Roundabout)
N/A	25mph	Yes	Separated Bike Lane	Intersection Crossing Markings / Bike Boxes
N/A	25mph	Yes	Sidepath (preferred long-term) & Bike Lanes	Through Bike Lanes, Bike Boxes, Crossing Markings
N/A	25mph	Yes	Bicycle Boulevard	Bicyclists Priority
N/A	25mph	Yes	Bicycle Boulevard	Bicycle Intersection Crossing Markings
N/A	25mph	Yes	Bicycle Boulevard	Bicyclists Priority
N/A	25mph	Yes	Bike Lane	Through Bike Lanes / Bike Boxes
3,200	35 - 45mph	Partially	Bike Lane	Through Bike Lanes, Bike Boxes, Crossing Markings

ROAD NAME	TO	FROM	ROADWAY WIDTH	# TRAVEL LANES
REDFORD PLACE DR	Main St	Littleport Dr	40 - 68ft	3 - 6
REDFORD PLACE DR	Littleport Dr	Shefford Town Dr	34ft	2
VIRGINIA WATER DR	E. Young St	Main St	34ft	2
E. YOUNG ST	Main St	Fowler Rd	20 - 60ft	2 - 3
MITCHELL MILL RD	Town Limits	Zebulon Rd	26ft	2
LOUISBURY RD	Louisburg Rd	Town Limits	20ft	2
FORESTVILLE RD	Louisburg Rd	Burlington Mills Rd	26 - 70ft	2 - 5
FOWLER RD EXTENSION	Louisburg Rd	Rolesville Rd	N/A	N/A
FOWLER RD	Rolesville Rd	Pulley Town Rd	20ft	2
PULLEY TOWN RD	Main St	Mitchell Mill Rd	20 -28ft	2
ROLESVILLE RD / RILEY HILL RD	Fowler Rd	Riley Hill School Rd	22ft	2
QUARRY RD	E. Young St	Mitchell Mill Rd	20 - 40ft	2 - 3
PROPOSED COLLECTOR STREET #1	Pulley Town Rd	Fowler Rd	N/A	N/A
PROPOSED COLLECTOR STREET #2	Pulley Town Rd	Mitchell Mill Rd	N/A	N/A
PROPOSED COLLECTOR STREET #3	Fowler Rd	Collector St #4	N/A	N/A
PROPOSED COLLECTOR STREET #4	Rolesville Rd	Jonesville Rd	N/A	N/A
PROPOSED COLLECTOR STREET #5	Collector St #4	Mitchell Mill Rd	N/A	N/A

AADT	SPEED LIMIT	CURB + GUTTER	RECOMMENDATION	INTERSECTION TREATMENTS
N/A	25mph	Yes	Bike Lane	Through Bike Lanes / Bike Boxes
N/A	25mph	Yes	Bicycle Boulevard	Shared Lane Markings (through Roundabout)
N/A	25mph	Yes	Bicycle Boulevard	Bicyclists Priority
4,300 - 7,000	35 - 45mph	Partially	Sidepath (preferred long-term) & Bike Lanes	Through Bike Lanes / Bike Box / Super St Crosswalk
1,900 - 4,300	45mph	No	Bike Lane	Bicycle Intersection Crossing Markings
N/A	45mph	No	Bike Lane	Super Street Crosswalk Accommodations
12,000	45mph	Partially	Sidepath	Crosswalks
N/A	N/A	N/A	Sidepath (preferred long-term) & Bike Lanes	Through Bike Lanes, Bike Boxes, Crossing Markings
1,100	45mph	No	Bike Lane	Bicycle Intersection Crossing Markings
650	45 - 55mph	No	Bike Lane	Crossing Markings, Super Street Crosswalk
4,200	45mph	No	Bike Lane	Bicycle Intersection Crossing Markings
1,100	35 - 45mph	Partially	Bike Lane	Bicycle Intersection Crossing Markings
N/A	N/A	N/A	Bike Lane	Bicycle Intersection Crossing Markings
N/A	N/A	N/A	Bike Lane	Bicycle Intersection Crossing Markings
N/A	N/A	N/A	Bike Lane	Bicycle Intersection Crossing Markings
N/A	N/A	N/A	Bike Lane	Bicycle Intersection Crossing Markings
N/A	N/A	N/A	Bike Lane	Bicycle Intersection Crossing Markings



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

LEGEND

- Proposed Separated Bike Lanes
- - - Proposed Bike Lanes
- - - Proposed Bicycle Boulevards
- Proposed Bicycle Intersection Treatment
- Existing Greenways
- Existing Bike Lanes
- 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

Ten priority projects were identified with input from the community, steering committee members, and Town staff to guide the development of Rolesville's bicycle network. Priority projects are listed in the adjacent call-out box and shown on the corresponding map on page 66. Project cut sheets for each priority project, specifying project development details, design considerations, planning level-cost estimates, and proposed implementation partners are provided on pages 67-87. While these priority projects should be strongly considered for development in the near or mid-term, opportunities to develop other projects in the recommended bicycle network should also be considered as they arise. For details on priority greenway projects, please reference the *Town of Rolesville's Open Space + Greenway Plan*.

ROLESVILLE'S BICYCLE NETWORK PRIORITY PROJECTS:

1. Main St Separated Bike Lanes
2. E. Young St Sidepath + Bike Lanes
3. Granite Falls Blvd Separated Bike Lanes
4. Rogers Rd Sidepath + Bike Lanes
5. Burlington Mills Sidepath + Bike Lanes
6. Redford Place Dr Bike Lanes
7. Averette Rd/W. Young St Sidepath + Bike Lanes
8. Carlton Pointe/Villages/Cedar Lakes Neighborhood Bicycle Boulevard
9. Rolesville Rd Bike Lanes
10. Granite Falls Neighborhood Bicycle Boulevard

PRIORITIZATION METHODOLOGY + CRITERIA

Each project in Rolesville's bicycle 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 neighborhoods, schools, parks, recreation centers, shopping centers, government services, medical services, employment centers, and transit stops.



REGIONAL CONNECTIVITY

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



SAFETY

Projects that address safety concerns along roadway corridors and propose safety improvements at critical intersections and access points.



EQUITY

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



PROJECT FEASIBILITY

Projects that can be implemented and maintained with available resources (local, regional, state, and federal funding sources).

1. MAIN ST SEPARATED BIKE LANES

Main Street, from Jonesville Rd to Young St is currently being redesigned under NCDOT project U-6241 to incorporate roadway enhancements and conventional bike lanes. Proposed recommendations in this planning effort build off of draft design plans to incorporate separated bike lanes along Main St in the future, which will provide safe bicycle access across Downtown to transition from the proposed sidepaths on the east and west sides of Main St.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Rolesville Elementary, Main St Park; Rolesville Town Hall; shopping centers, restaurants, and medical services along Main St; provides access to adjacent neighborhoods and GoRaleigh 401x transit stop.

REGIONAL CONNECTIVITY:

Connections to Main St Park provide access to Heritage East Greenway and Stanford Creek Greenway, which provides connection to Wake Forest and Raleigh's greenway networks.

SAFETY:

Provides physical and vertical separation for bicyclists traveling along Main St and connection between the Main St sidepaths.

EQUITY:

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

PROJECT FEASIBILITY:

While this project may require minor retrofitting following the Main St redesign, re-stripping and installation of delineators are cost-effective.

PROJECT SNAPSHOT

LOCATION:

Main St from Burlington Mills Rd to Young St.

TOTAL LENGTH:

1.0 miles

FACILITY TYPE:

Separated Bike Lane

INTERSECTION TREATMENTS:

Main St at Rogers Rd and at Young St: Through Bike Lanes and Bike Boxes

Striped green bicycle intersection crossing markings are proposed for each driveway and minor street crossing to alert motorists for bicyclists traveling in the bike lane across the intersection.

IMPLEMENTATION PARTNERS:

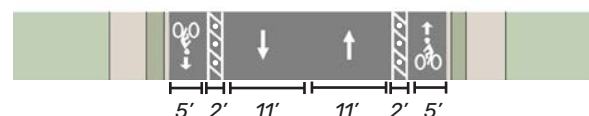
Lead: Town of Rolesville Public Works Dept., Parks and Recreation Dept., NCDOT Division 5
Supporting: NCDOT IMD and CAMPO

PLANNING LEVEL COST ESTIMATE:

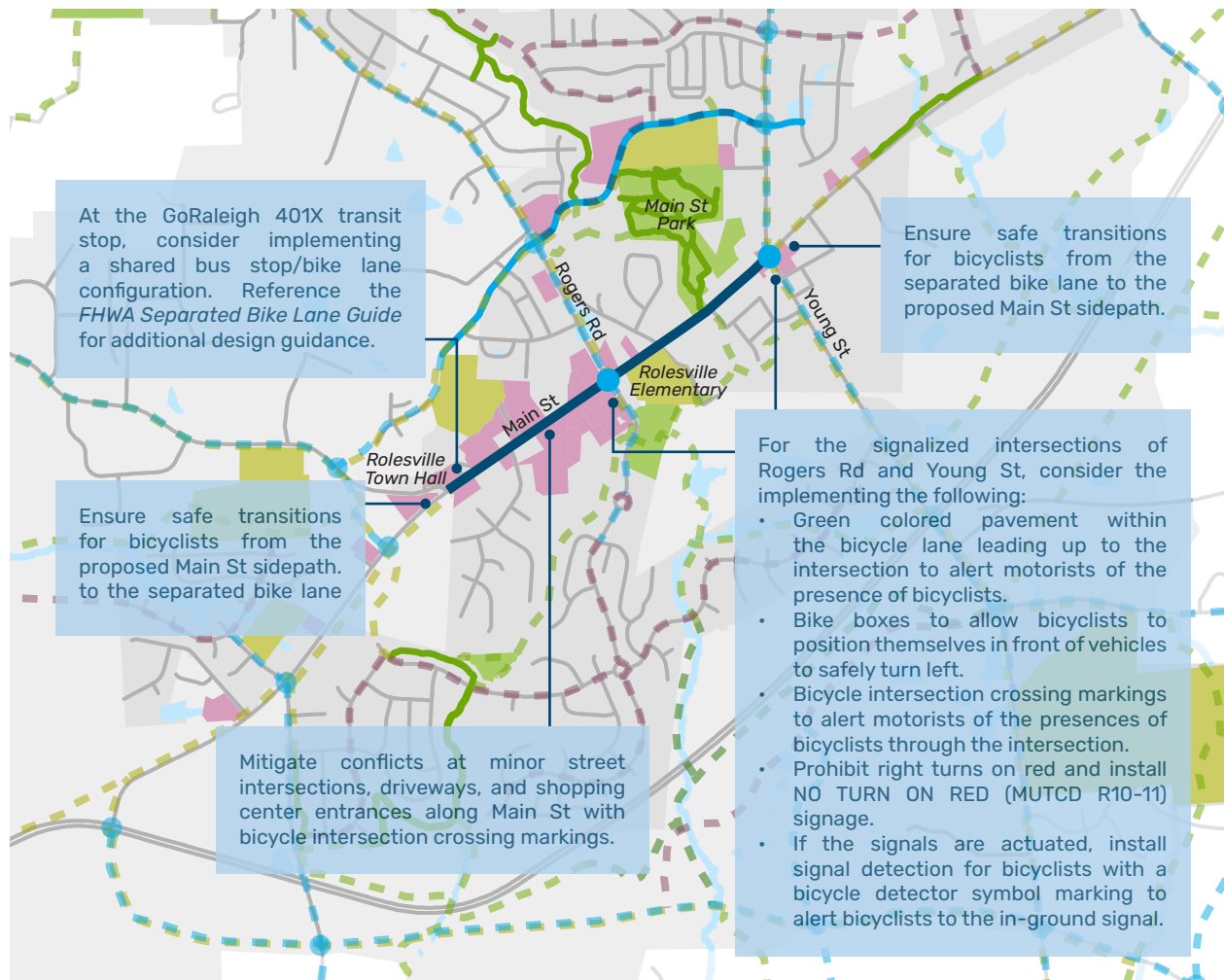
\$298,000

(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).

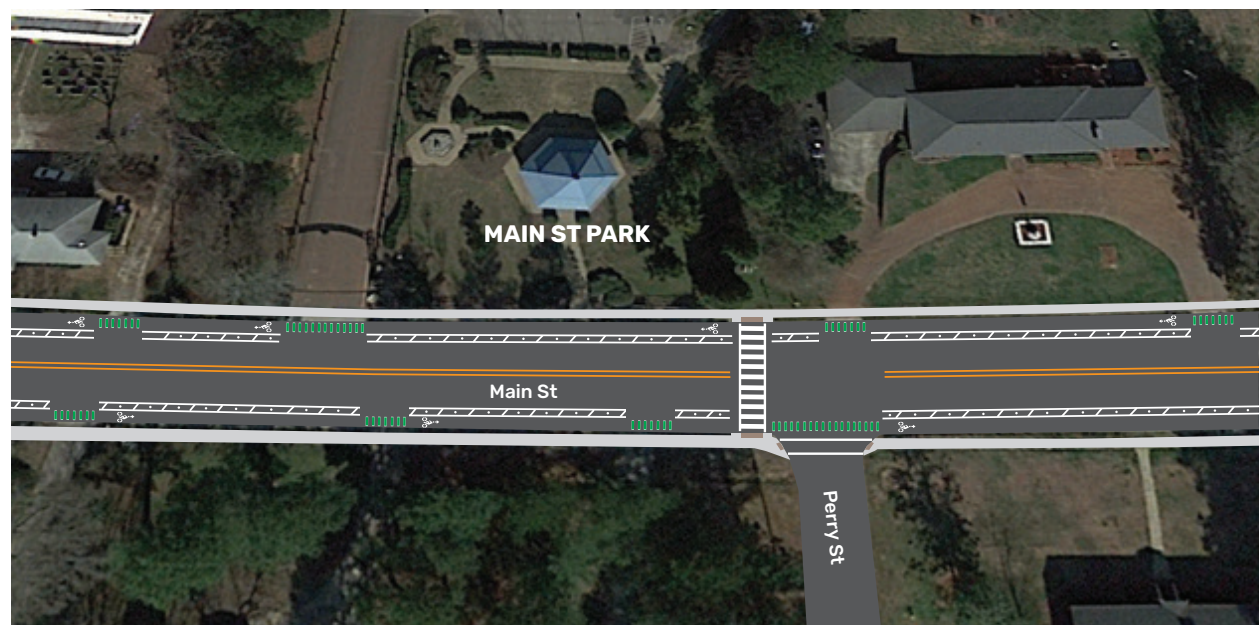
PROPOSED TYPICAL CROSS SECTION



DESIGN CONSIDERATIONS



PROPOSED FACILITY RENDERING



2. E. YOUNG ST SIDEPATH + BIKE LANES

Young St is a priority bicycle corridor as it provides connections between Downtown and neighborhoods in the Town core with Rolesville High School and newer residential and commercial development occurring south of Louisburg Rd. 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, bike lanes, and intersection treatments aim to establish multi-modal access.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Main St, Rolesville High School 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 and bicycle networks in Raleigh and Wake and Franklin Co.

SAFETY:

Provides physical and vertical separation for bicyclists traveling along Young St and improves the Louisburg Rd intersection.

EQUITY:

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

PROJECT FEASIBILITY:

This project is proposed to be implemented with future NCDOT roadway enhancements of Young St, which will reduce Town costs for bicycle and pedestrian facilities.

PROJECT SNAPSHOT

LOCATION:

E. Young St from Main St to Fowler Rd

TOTAL LENGTH:

1.9 miles

FACILITY TYPE:

Sidepath and Bike Lanes

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

INTERSECTION TREATMENTS:

E. Young St at Main St: Through Bike Lane & Bike Boxes

E. Young St at US-401: Crosswalk (Bike/Ped Super Street Accommodation)

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

Striped green bicycle intersection crossing markings are proposed for each driveway and minor street crossing to alert motorists of bicyclists traveling in the bike lane across the intersection.

IMPLEMENTATION PARTNERS:

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

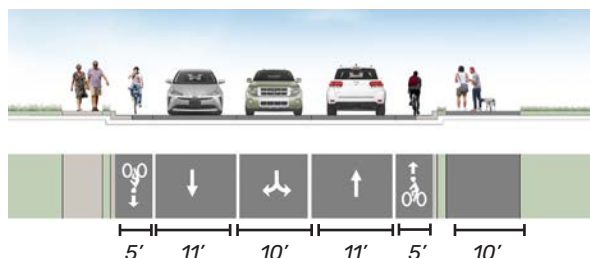
Supporting: NCDOT IMD, CAMPO

PLANNING LEVEL COST ESTIMATE:

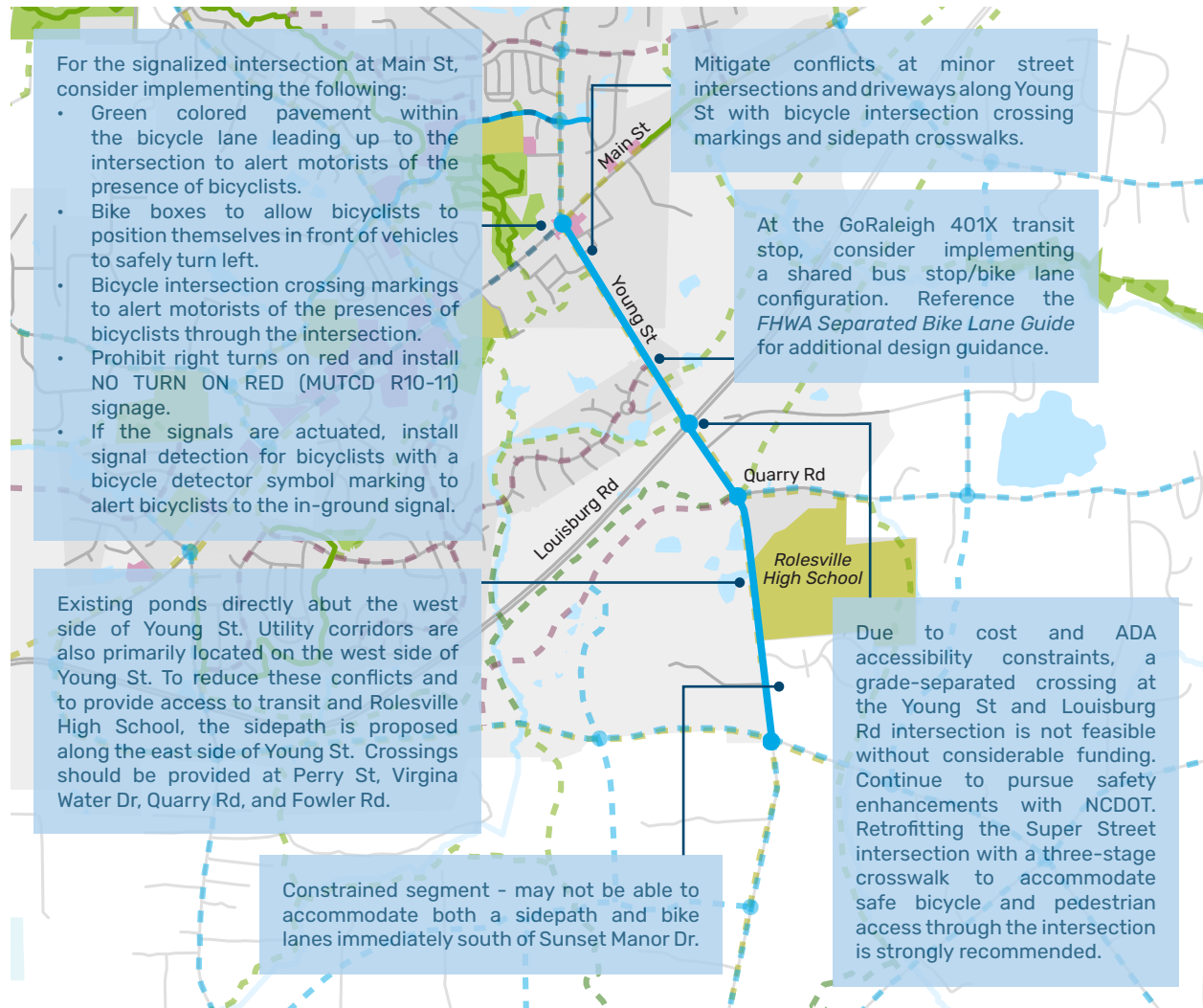
\$4,095,000 - Sidepath

\$2,535,000 - Bike Lanes/Road Improvements
(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



3. GRANITE FALLS BLVD SEPARATED BIKE LANES

The proposed Granite Falls Blvd separated bike lanes retrofit the existing bike lanes along the corridor to provide an all ages and abilities facility for those accessing Sanford Creek Elementary School, Main St Park, the Heritage East Greenway, and adjacent neighborhoods. In addition to connecting to existing greenways, the facility will provide connections to proposed sidepaths along the western segment of Granite Falls Blvd, Rogers Rd, and W. Young St.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Sanford Creek Elementary School, Main St Park, Swim and Athletic Club, and provides access to existing greenways and adjacent neighborhoods.

REGIONAL CONNECTIVITY:

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

SAFETY:

Provides physical and vertical separation for bicyclists traveling along Granite Falls Blvd and improves intersections and crossings.

EQUITY:

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

PROJECT FEASIBILITY:

While this project may require minor retrofitting at the Rogers Rd intersection, re-striping and installation of delineators are cost-effective.

PROJECT SNAPSHOT

LOCATION:

Granite Falls Blvd from Rogers Rd to Young St.

TOTAL LENGTH:

0.8 miles

FACILITY TYPE:

Separated Bike Lane

INTERSECTION TREATMENTS:

Granite Falls Blvd at Rogers Rd: Intersection Crossing Markings and Bike Box

Granite Falls Blvd at W. Young St: Intersection Crossing Markings

Striped green bicycle intersection crossing markings are proposed for each driveway and minor street crossing to alert motorists of bicyclists traveling in the bike lane across the intersection.

IMPLEMENTATION PARTNERS:

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

PLANNING LEVEL COST ESTIMATE:

\$241,000

(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

For the signalized intersection at Rogers Rd, consider implementing the following:

- Green colored pavement within the bicycle lane leading up to the intersection to alert motorists of the presence of bicyclists.
- Bike boxes to allow bicyclists to position themselves in front of vehicles to safely turn left.
- Bicycle intersection crossing markings to alert motorists of the presences of bicyclists through the intersection.
- Prohibit right turns on red and install NO TURN ON RED (MUTCD R10-11) signage.
- If the signals are actuated, install signal detection for bicyclists with a bicycle detector symbol marking to alert bicyclists to the in-ground signal.

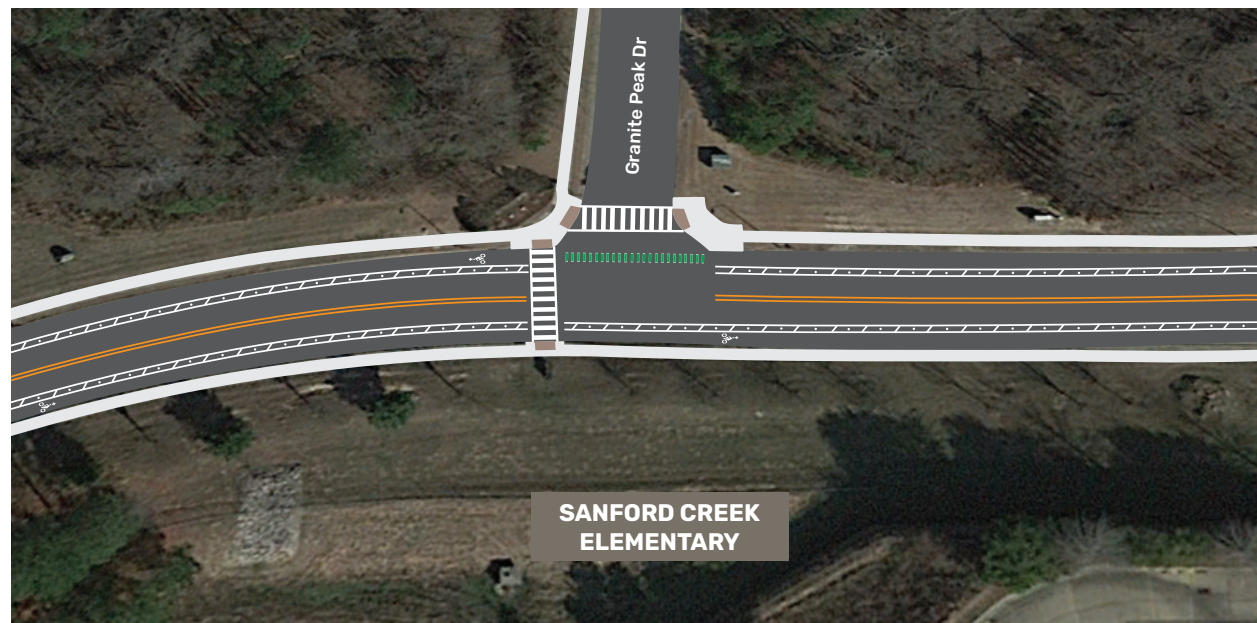
Existing bike lanes are 7ft wide, which allows for 5ft bike lanes with 2ft separated buffers, eliminating the need of additional right-of-way or moving curb and gutter.

Constrained segment - the left turn lane for Rogers Rd constrains the width needed for the separated bike lane up to the intersection.

Mitigate conflicts at minor street intersections and driveways along Granite Falls Blvd with bicycle intersection crossing markings and sidepath crosswalks.

Parking for the Swim and Athletic Club along Granite Falls Blvd is an issue in the warmer months. Vehicles frequently park in the bike lane, as shown in the picture below. If on-street parking is needed in the future, the Town may consider a buffered bicycle lane in one direction and a shared lane in the other direction to accommodate additional parking.

PROPOSED FACILITY RENDERING



4. ROGERS RD SIDEPATH + BIKE LANES

Rogers Rd is a priority bicycle 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, which will eventually provide a connection to the Neuse River Trail in Raleigh. The remaining sidepath segment and bike lanes are proposed to be developed through a future NCDOT project.

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 along Rogers Rd and improves intersections along Rogers Rd.

EQUITY:

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

PROJECT FEASIBILITY:

This project is proposed to be implemented with future NCDOT roadway enhancements of Rogers Rd, which will reduce Town costs for bicycle and pedestrian facilities.

PROJECT SNAPSHOT

LOCATION:

Rogers Rd from Main St to Sanford Creek Greenway

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: Intersection Crossing Markings

Rogers Rd at Main St: Through Bike Lane and Bike Boxes

Striped green bicycle intersection crossing markings are proposed for each driveway and minor street crossing to alert motorists of bicyclists traveling in the bike lane across the intersection.

IMPLEMENTATION PARTNERS:

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

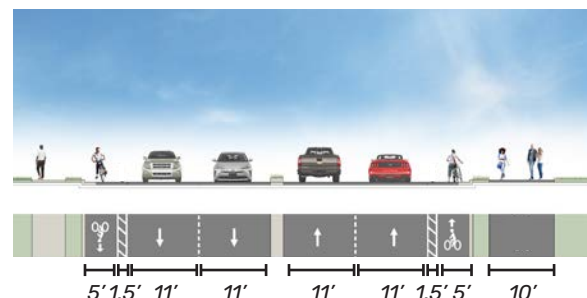
PLANNING LEVEL COST ESTIMATE:

\$4,435,000 - Sidepath

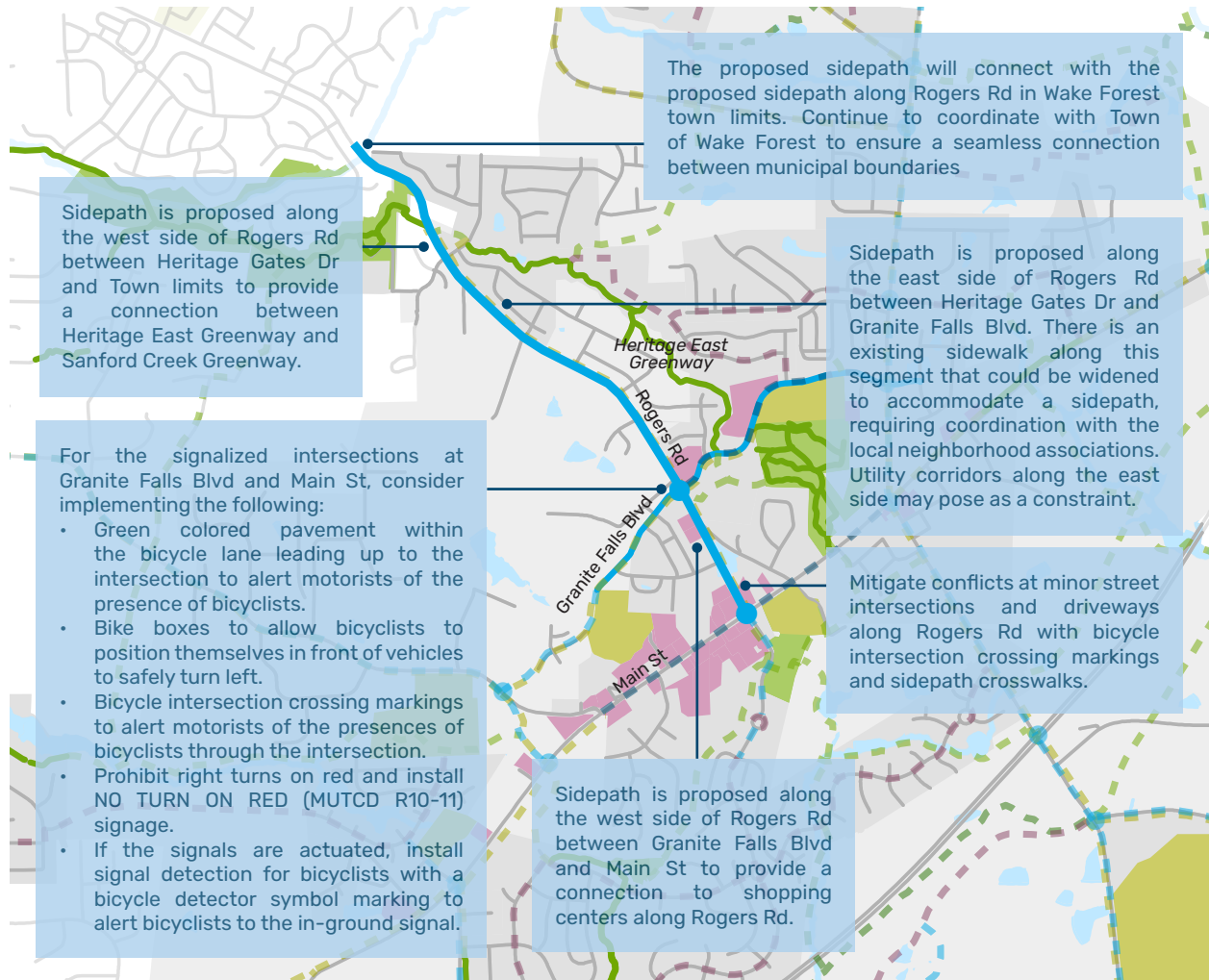
\$7,735,000 - Bike Lanes/Road Improvements

(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. BURLINGTON MILLS SIDEPATH + BIKE LANES

Burlington Mills Rd is a priority bicycle 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. The bicycle facilities are proposed to be developed through a future NCDOT project. In addition, Burlington Mills Rd will connect with multi-modal facilities in the Town core when the Granite Falls Blvd extension is completed.

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 and bicycle networks in Wake Forest and Raleigh.

SAFETY:

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

EQUITY:

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

PROJECT FEASIBILITY:

This project is proposed to be implemented with future NCDOT roadway enhancements of Burlington Mills Rd, which will reduce Town costs for bicycle and pedestrian facilities.

PROJECT SNAPSHOT

LOCATION:

Burlington Mills Rd from Main St to Forestville Rd

TOTAL LENGTH:

2.0 miles

FACILITY TYPE:

Sidepath and Bike Lanes

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

INTERSECTION TREATMENTS:

Burlington Mills Rd at Granite Falls Blvd: Intersection Crossing Markings and Bike Boxes
 Burlington Mills at Main St: Through Bike Lane and Bike Boxes

Striped green bicycle intersection crossing markings are proposed for each driveway and minor street crossing to alert motorists of bicyclists traveling in the bike lane across the intersection.

IMPLEMENTATION PARTNERS:

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

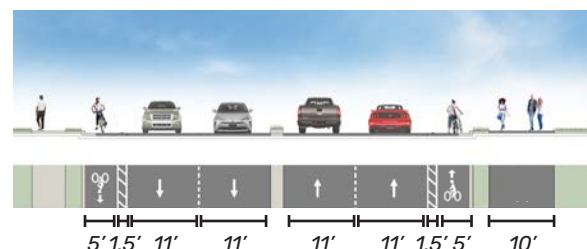
PLANNING LEVEL COST ESTIMATE:

\$4,360,000 - Sidepath

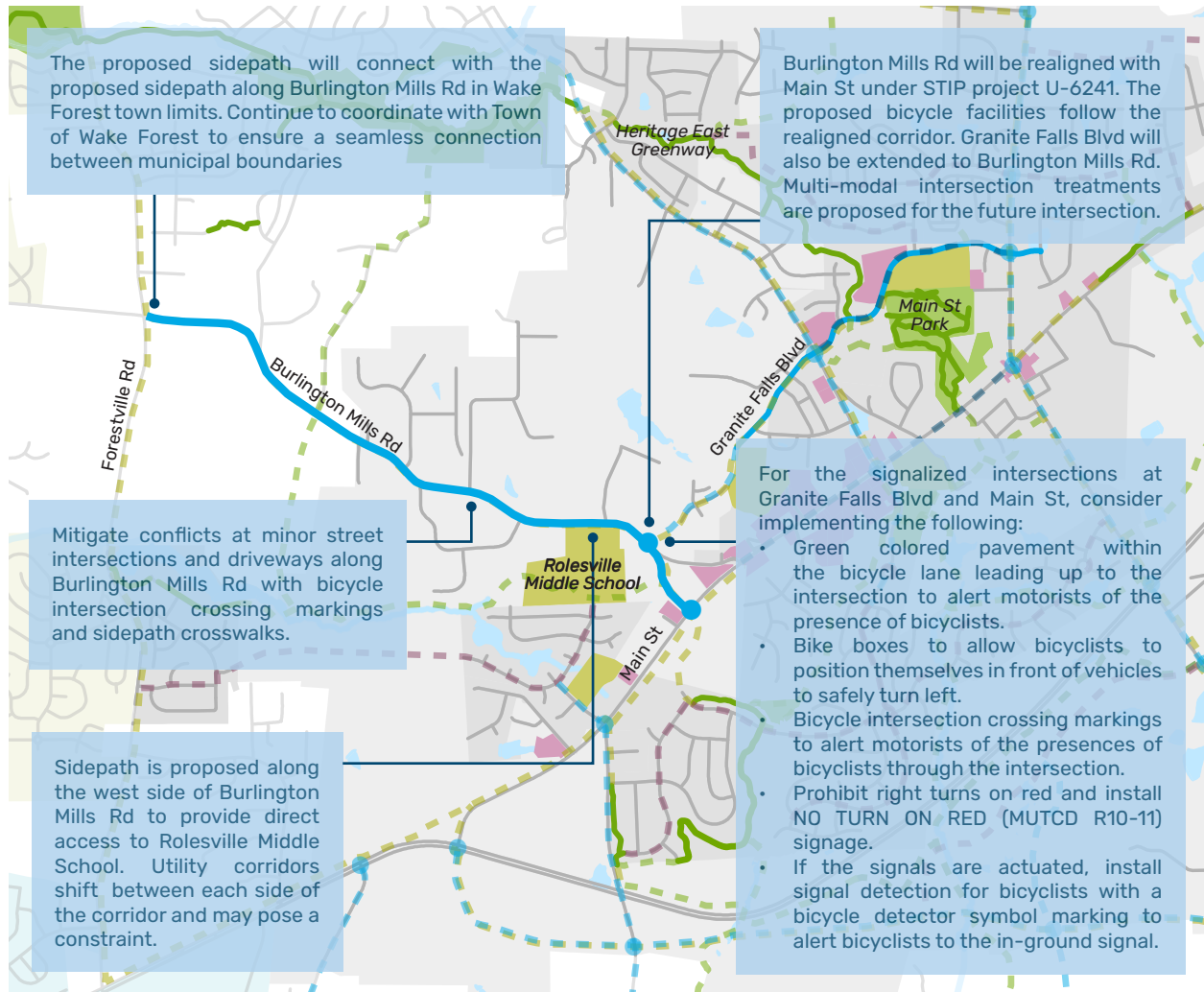
\$8,120,000 - Bike Lanes/Road Improvements

(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. REDFORD PLACE DR BIKE LANES

The proposed Redford Place Dr bike lanes retrofit the existing roadway to provide a dedicated bicycle facility for those accessing Redford Place shopping center, Downtown, Redford Place Park, and adjacent neighborhoods and schools. In addition to these connections, the bicycle facility will provide safe bicycle access from the Villages, Cedar Lakes, and Carlton Pointe to Downtown via the proposed bicycle boulevard network in these neighborhoods.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to the Redford Place shopping center, Redford Place Park, Downtown, and provides access to adjacent neighborhoods and Rolesville Elementary via Redford Place Park.

REGIONAL CONNECTIVITY:

Connects to the proposed Harris Creek Greenway and Redford Place Greenway via Redford Place Park, which provides connection to greenway networks in Raleigh and Wake Co.

SAFETY:

Provides a dedicated facility for bicyclists traveling along Redford Place Dr and improves intersections and crossings.

EQUITY:

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

PROJECT FEASIBILITY:

While this project may require minor retrofitting at the Redford Place Dr intersection, restriping the roadway with bike lanes is cost-effective.

PROJECT SNAPSHOT

LOCATION:

Redford Place Dr from Main St to Littleport Dr

TOTAL LENGTH:

0.5 miles

FACILITY TYPE:

Bike Lane

INTERSECTION TREATMENTS:

Redford Place Dr at Main St: Through Bike Lane and Bike Boxes

Redford Place Dr Roundabout: Shared Lane Markings

Striped green bicycle intersection crossing markings are proposed for each driveway and minor street crossing to alert motorists of bicyclists traveling in the bike lane across the intersection.

IMPLEMENTATION PARTNERS:

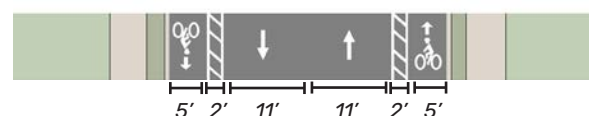
Town of Rolesville Planning, Public Works, and Parks and Recreation Departments, NCDOT IMD, NCDOT Division 5, CAMPO

PLANNING LEVEL COST ESTIMATE:

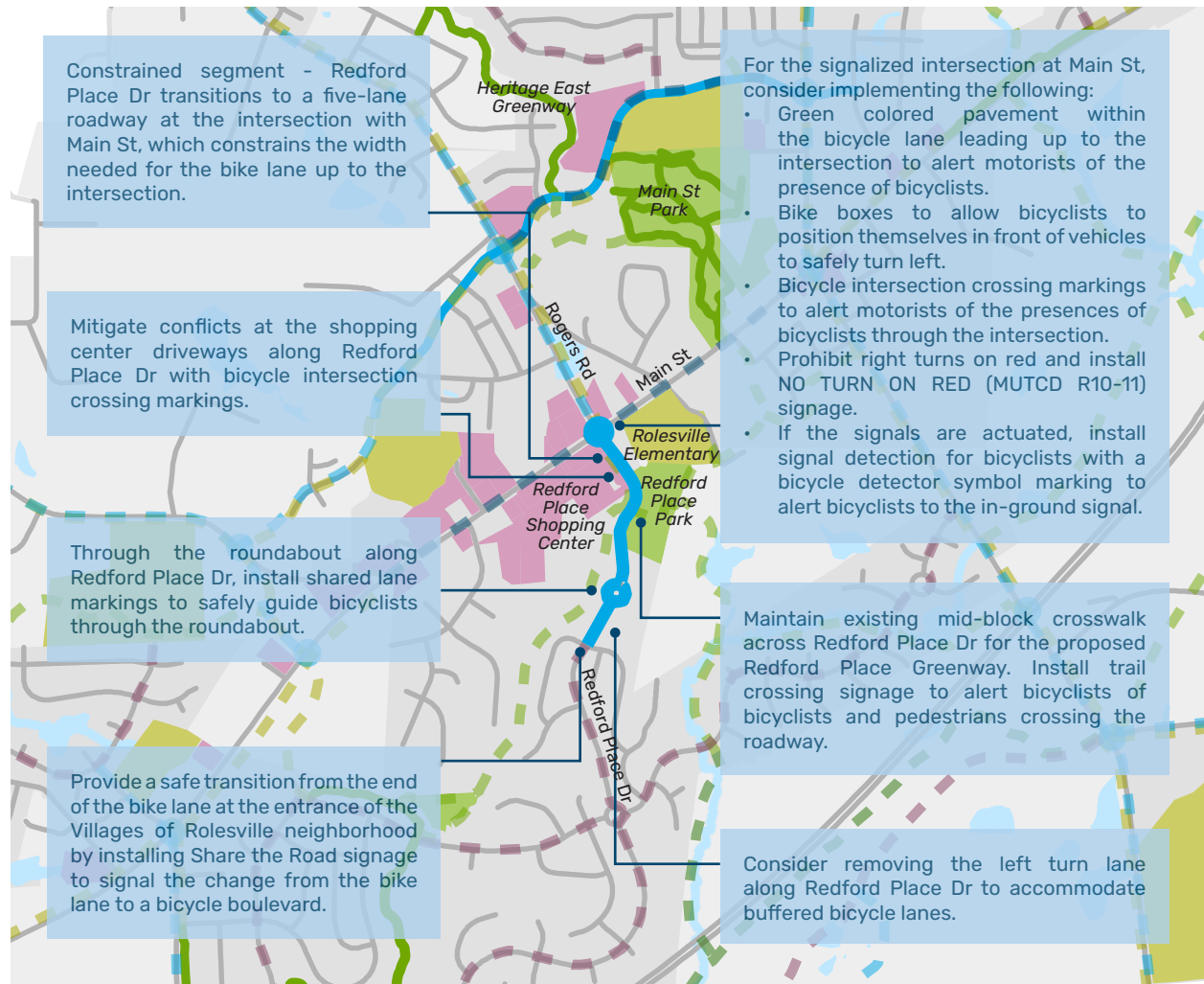
\$101,000

(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. AVERETTE RD / W. YOUNG ST SIDEPATH + BIKE LANES

Averette Rd / W. Young St is a priority bicycle corridor as it provides connections between Downtown and residential neighborhoods in North Rolesville. This corridor serves as the main north-south arterial for bicyclists and pedestrians between Wait Ave and Main St, connecting proposed multi-modal facilities along Jones Dairy Rd, Chalk Rd, Perry Creek, Granite Falls Blvd, and the bicycle boulevards proposed in Granite Falls, Granite Crest, Averette Farms, and the Preserve at Jones Dairy.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to Main St, adjacent neighborhoods in North Rolesville, and proposed bicycle facilities along Granite Falls Blvd, Chalk Rd, Jones Dairy, 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 facility and improves intersections along W. Young St / Averette Rd.

EQUITY:

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

PROJECT FEASIBILITY:

This project is proposed to be implemented with future NCDOT roadway enhancements of W. Young St / Averette Rd, which will reduce Town costs for bicycle and pedestrian facilities.

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 and Bike Lanes

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

INTERSECTION TREATMENTS:

Averette Rd at Jones Dairy Rd: Intersection Crossing Markings

W. Young at Chalk Rd, at Big Willow Way, and at Granite Falls Blvd: Intersection Crossing Markings

W. Young St at Main St: Through Bike Lane and Bike Boxes

Striped green bicycle intersection crossing markings are proposed for each driveway and minor street crossing to alert motorists of bicyclists traveling in the bike lane across the intersection.

IMPLEMENTATION PARTNERS:

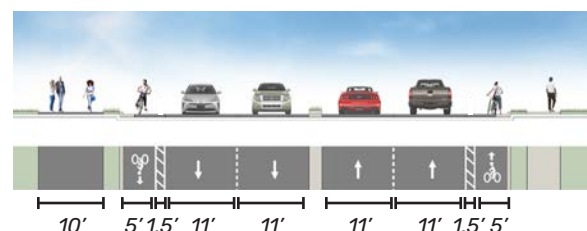
Town of Rolesville Planning, Public Works, and Parks and Recreation Departments, NCDOT IMD, NCDOT Division 5, CAMPO

PLANNING LEVEL COST ESTIMATE:

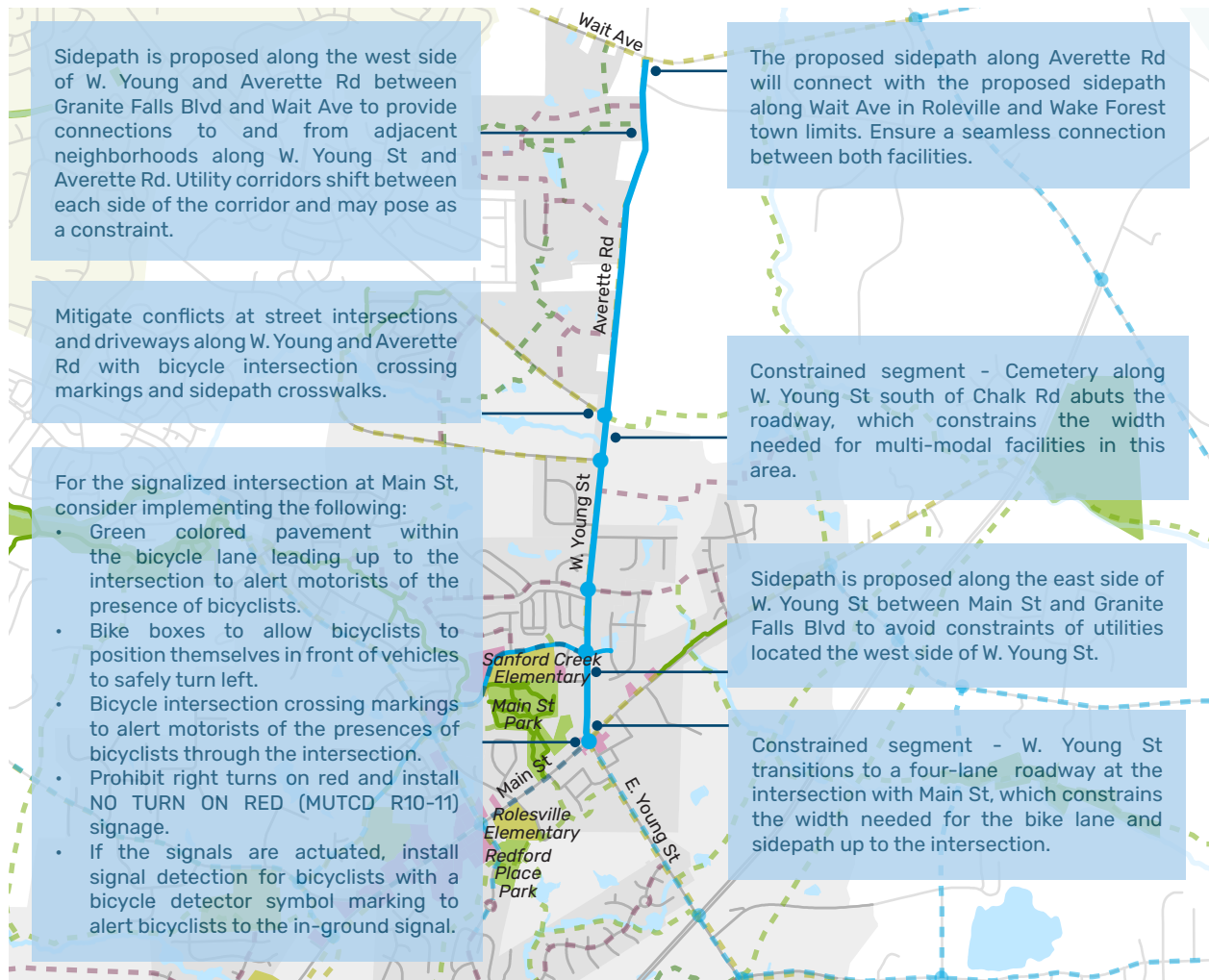
\$5,640,000 - Sidepath

\$10,520,000 - Bike Lanes / Road Improvements
(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. ROLESVILLE RD BIKE LANES

The proposed Rolesville Rd bike lanes retrofit the existing roadway to provide a dedicated bicycle facility for those accessing adjacent neighborhoods in South Rolesville, such as Kalas Falls and Rolesville Crossing, proposed greenways, such as the Buffalo Creek Greenway, and Rolesville High School, which is north of the corridor. In addition to these connections, the bicycle facility will provide safe bicycle access to proposed bike lanes along Riley Hill Rd, Mitchell Mill Rd, and Fowler Rd.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to adjacent neighborhoods in South Rolesville, Rolesville High School, and proposed bicycle facilities along Riley Hill Rd, Mitchell Mill Rd, and Fowler Rd.

REGIONAL CONNECTIVITY:

Connections to the proposed bike lanes in Wake County and the Buffalo Creek Greenway, which provides connections to greenway networks in Wake County.

SAFETY:

Provides a dedicated bicycle facility and improves intersections along Rolesville Rd.

EQUITY:

Provides a dedicated bicycle facility and access to Rolesville High School and the future commercial corridor of Fowler Rd.

PROJECT FEASIBILITY:

Widening the corridor to accommodate bicycle facilities may require significant funding, but if the project is developed with a future NCDOT project, it will reduce Town costs for multi-modal facilities.

PROJECT SNAPSHOT

LOCATION:

Rolesville Rd from Fowler Rd to Mitchell Mill Rd

TOTAL LENGTH:

1.4 miles

ACILITY TYPE:

Bike Lane

INTERSECTION TREATMENTS:

Rolesville Rd at Fowler Rd, at the proposed collector street, and at Mitchell Mill Rd: Intersection Crossing Markings
Striped green bicycle intersection crossing markings are proposed for each driveway and minor street crossing to alert motorists of bicyclists traveling in the bike lane across the intersection.

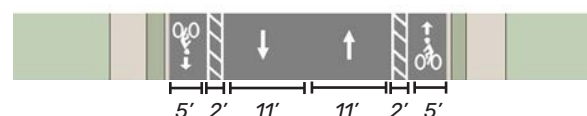
IMPLEMENTATION PARTNERS:

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

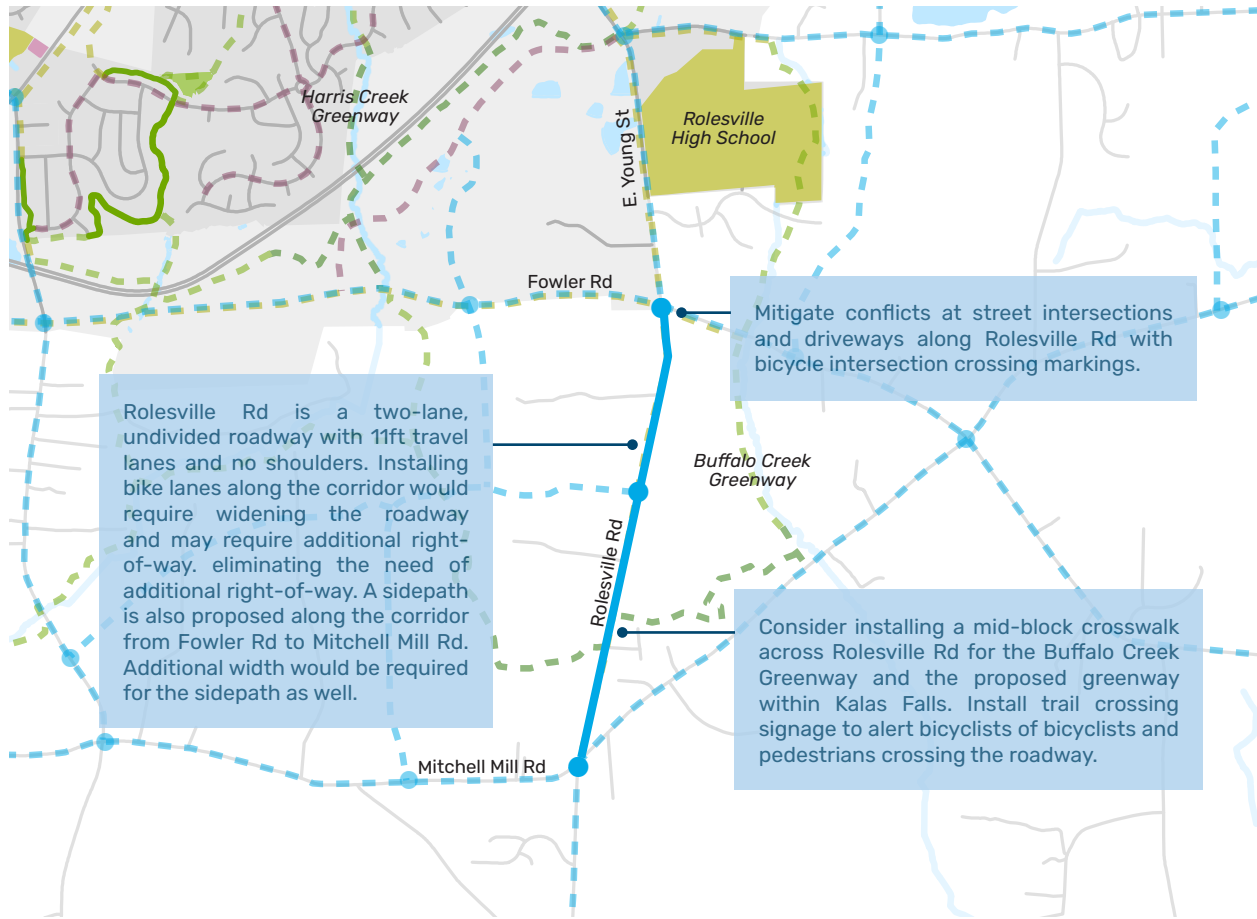
PLANNING LEVEL COST ESTIMATE:

\$5,385,000 - Bike Lanes/Road Improvements
(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).

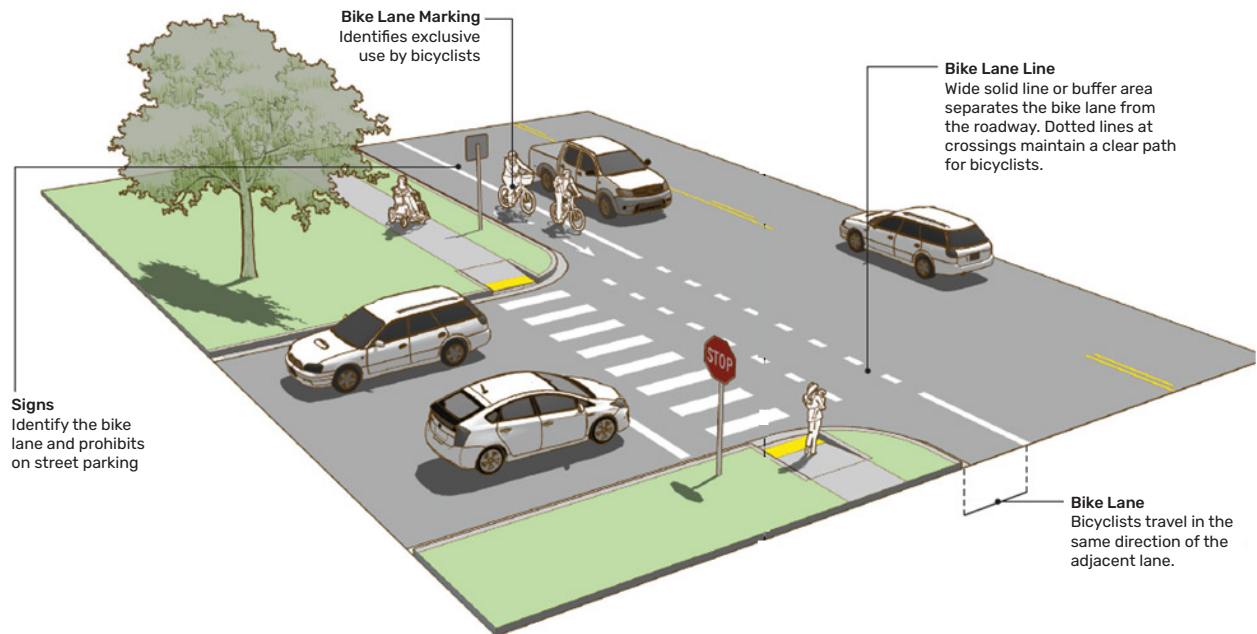
PROPOSED TYPICAL CROSS SECTION



DESIGN CONSIDERATIONS



BIKE LANE DESIGN GUIDANCE FROM FHWA SMALL TOWN + RURAL MULTIMODAL NETWORKS



9. CARLTON POINTE / THE VILLAGES / CEDAR LAKES BICYCLE BOULEVARD

The proposed bicycle boulevards in the neighborhoods of Carlton Pointe, the Villages, and Cedar Lakes provide a low-stress, shared street accommodation to offer priority for bicyclists along Virginia Water Dr, Redford Place Dr, and Bendemeer Ln. The proposed bicycle boulevard use a combination of shared lane markings, wayfinding, and traffic calming measures to allow bicyclists to comfortably travel withing the neighborhoods, to greenways and sidepaths, Downtown, and adjacent parks and schools.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to adjacent neighborhoods and greenways and provides access to Rolesville Elementary and Redford Place Park via the proposed Redford Place greenway and Redford Place Dr bike lanes.

REGIONAL CONNECTIVITY:

Connects to the proposed Harris Creek Greenway and Redford Place Greenway via Redford Place Park, which provides connection to greenway networks in Raleigh and Wake Co.

SAFETY:

Provides a shared-street accommodation for bicyclists traveling within the local neighborhoods.

EQUITY:

Provides a shared-street accommodation and access to shopping centers, employment centers, parks, and schools.

PROJECT FEASIBILITY:

Striping shared lane markings and installing wayfinding signage and traffic calming measures are cost-effective.

PROJECT SNAPSHOT

LOCATION:

Virginia Water Dr from E. Young St to Bendemeer Ln; Redford Place Dr from Littleport Dr to Shefford Town Dr; Bendemeer Ln from Virginia Waters Dr to Kew Gardens Way

TOTAL LENGTH:

2.5 miles

FACILITY TYPE:

Bicycle Boulevard (Shared Lane Markings and Bicycle Wayfinding Signage)

INTERSECTION TREATMENTS:

At stop controlled intersections along Redford Place Dr, consider turning the stop signs to stop the cross traffic to maximize through bicycle connectivity and preserving bicyclist momentum.

IMPLEMENTATION PARTNERS:

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

PLANNING LEVEL COST ESTIMATE:

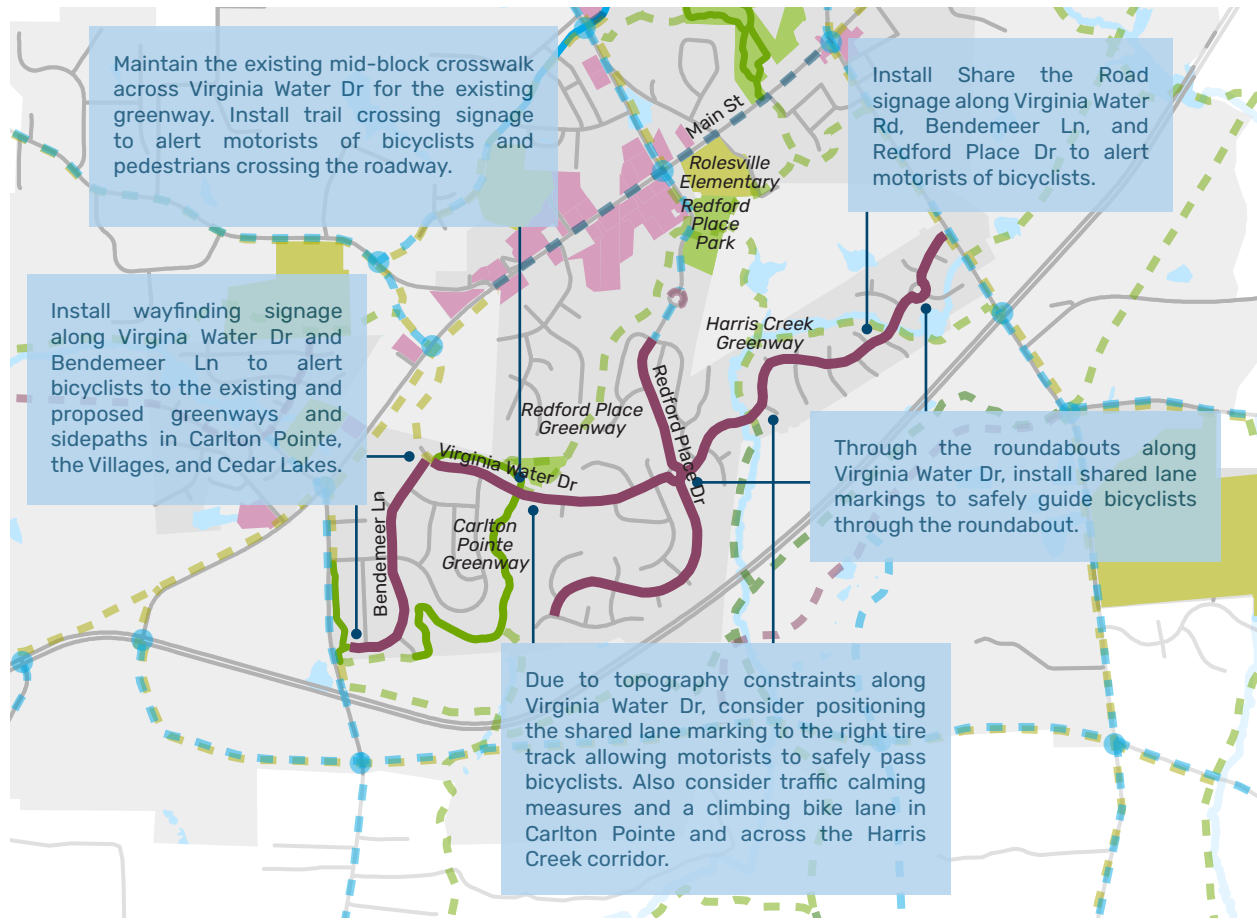
\$93,000

(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



10. GRANITE FALLS NEIGHBORHOOD BICYCLE BOULEVARD

The proposed bicycle boulevards in the neighborhoods of Granite Falls, Granite Crest, Terrell Plantation, and Old Towne provide a low-stress, shared street accommodation to offer priority for bicyclists along Granite Creek Dr, Big Willow Way, Weathers St, and Waterstone Ln. The proposed bicycle boulevard use a combination of shared lane markings, wayfinding, and traffic calming measures to allow bicyclists to comfortably travel within the neighborhoods, to greenways, parks, schools, and Downtown.

EXISTING CONDITIONS



PRIORITIZATION FACTORS

ACCESSIBILITY + CONNECTIVITY:

Connects to adjacent neighborhoods and Heritage Creek Greenway and provides access to Sanford Creek Elementary and Main St Park via the proposed bike facilities along Granite Falls Blvd.

REGIONAL CONNECTIVITY:

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

SAFETY:

Provides a shared-street accommodation for bicyclists traveling within the local neighborhoods.

EQUITY:

Provides a shared-street accommodation and access to shopping centers, employment centers, parks, and schools.

PROJECT FEASIBILITY:

Striping shared lane markings and installing wayfinding signage and traffic calming measures are cost-effective.

PROJECT SNAPSHOT

LOCATION:

Granite View Dr from Heritage East Greenway to Granite Creek Dr; Granite Creek Dr from Granite View Dr to Big Willow Way; Big Willow Way from Granite Creek Dr to W. Young St; Weathers St from W. Young St to Waterstone Ln; Waterstone Ln from Weathers St Extension to N Main St.

TOTAL LENGTH:

2.1 miles

FACILITY TYPE:

Bicycle Boulevard (Shared Lane Markings and Bicycle Wayfinding Signage)

INTERSECTION TREATMENTS:

Big Willow Way / Weathers St at W. Young St: Intersection Crossing Treatments

IMPLEMENTATION PARTNERS:

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

PLANNING LEVEL COST ESTIMATE:

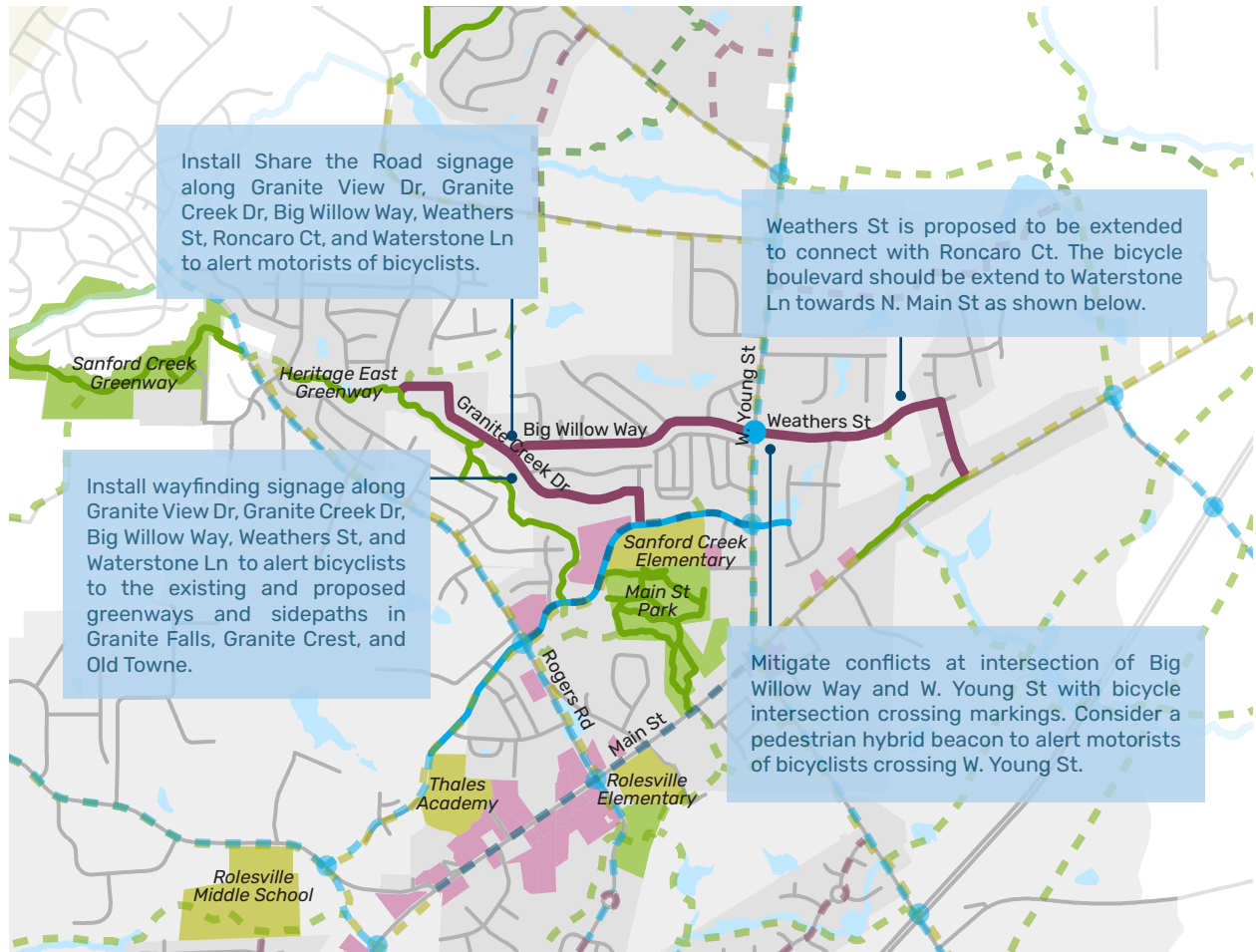
\$74,000

(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).

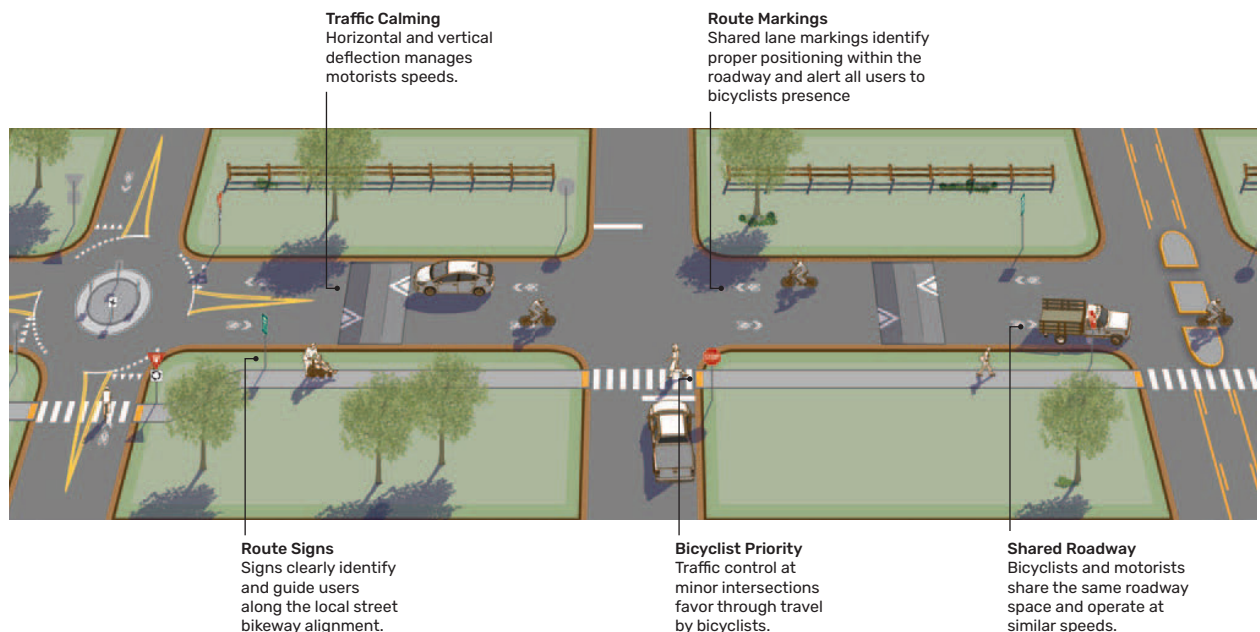
PROPOSED TYPICAL CROSS SECTION



DESIGN CONSIDERATIONS



BICYCLE BLVD DESIGN GUIDANCE FROM FHWA SMALL TOWN + RURAL MULTIMODAL NETWORKS





05. POLICIES + PROGRAMS

PROGRAMS + POLICIES

PROGRAMS OVERVIEW

Bicycle programs encourage and strengthen culture for bicycling within a community. Investments in these programs, when coupled with infrastructure improvements, frequently lead to an increase in biking among residents and visitors. A summary of established multi-modal programs and initiatives are provided below.

EDUCATIONAL PROGRAMS

WATCH FOR ME NC

Watch for Me NC is a comprehensive statewide safety and awareness campaign administered by NCDOT geared toward bicycle and pedestrian safety, education, and enforcement. Combining multimedia with public engagement, Watch for Me NC promotes safety messages at local events, followed by targeted enforcement in areas with heightened risk of crashes involving bicyclists and pedestrians. A key component of the program includes training law enforcement officers on existing laws and how to enforce them.

<https://www.watchformenc.org/>



LET'S GO NC

Let's Go NC! A Pedestrian and Bicycle Safety Skills Program for Healthy, Active Children is an NCDOT sponsored, all-in-one package of lesson plans, materials, activities and instructional videos for instructors to teach and encourage children to practice and develop safe pedestrian and bicycle behaviors while promoting healthy transportation choices and active lifestyles that can be carried into adulthood.

<https://www.ncdot.gov/initiatives-policies/safety/lets-go-nc/Pages/default.aspx>



SAFE ROUTES TO SCHOOL

Through the NC Safe Routes to School program, NCDOT works to make walking and riding a bicycle to school safe for all children. The program facilitates the planning, development and implementation of programs and activities to improve safety near schools and increase walking and biking rates to school. The program includes initiatives such as, Let's Go NC, and the Safe Routes to School Non-Infrastructure Transportation Alternatives Program.

<https://www.ncdot.gov/initiatives-policies/safety/safe-routes-school/Pages/default.aspx>



ENCOURAGEMENT PROGRAMS

BICYCLE NETWORK MAP AND/OR MOBILE APP

Bicycle network maps and mobile apps are developed to guide bicyclists along preferred routes with existing bicycle facilities and greenways or routes that are suitable for bicyclists of all skill levels. Maps and mobile apps are also helpful resources that assist new residents and visitors to safely navigate the transportation network via preferred routes.



WAYFINDING SIGNAGE

Bicycle wayfinding systems consist of comprehensive signing and/or pavement markings to guide bicyclists to their destinations along preferred bicycle routes. Signs are typically placed at decision points along bicycle routes – typically at the intersection of two or more bikeways and greenways and at other key locations leading to and along designated routes. There are three types of wayfinding signs: confirmation signs, turn signs, and decision signs. Pavement markings can also be installed to help reinforce routes and directional signage and to provide route branding benefits.



MICROMOBILITY AND/OR BIKE SHARE

Bike share and shared micromobility have rapidly emerged as new transportation options that can increase bicycling and walking, improve mobility, and bolster public transit usage. These systems can also play an important role in communities' safety, livability, and sustainability efforts by making it easier for people to get around without a personal vehicle.



BICYCLE PARKING

Bicycle parking is a critical strategy for promoting bicycling for transportation and recreation. Convenient, easily used, and secure bicycle parking encourages people to replace some of their car trips with bicycle trips and helps legitimize bicycling as a transportation mode by providing parking opportunities equal to motorized modes. Guidance on bike parking, including site planning for short and long-term parking, rack selection, and placement can be found in the Association of Pedestrian and Bicycle Professionals (APBP) Essentials of Bike Parking. https://www.apbp.org/assets/docs/EssentialsofBikeParking_FINA.pdf



BICYCLE REPAIR STATIONS

Bicycle repair stations include all the tools necessary to perform basic bike repairs and maintenance, from changing a flat tire to adjusting brakes. The tools are securely attached to the stand by cables with tamper-proof fasteners, and an air pump can be attached to the base of the repair station. Bicycle repair stations should be placed in areas highly trafficked by bicyclists, such as university campuses, Downtown, trailheads, and employment and shopping centers.



BIKE TO SCHOOL DAY EVENTS

Bike to School Days are energizing events that remind adults and students alike of the health and environmental benefits of bicycling to school. For many communities, these events lead to more bicycling throughout the school year, sometimes because the event draws attention to safety concerns that need to be addressed or because children and families get inspired to use a bike for the school commute more often. National Bike to School Day occurs every May as part of Bike Month.



BIKE TO WORK DAY EVENTS

Bike to Work Day is an annual event that promotes bicycling as an option for commuting to work. Bike to Work Day is held every May during Bike Month. Bike to Work Day events usually include pit stops along popular biking routes to provide commuters with free breakfast, prizes, and education materials on active transportation. For many communities, these events lead to an increase in bicycling for transportation and recreation.



THEMED BIKING EVENTS

Biking events encourage active transportation and present opportunities for residents to socialize over shared experiences. Local advocacy groups and/or the Town can promote biking by hosting themed bike rides. Events can be centered around holidays, local festivals, or coincide with national events such as Earth Day and National Trails Day. For many communities, these events lead to regularly scheduled bike rides.



BICYCLE FRIENDLY COMMUNITY DESIGNATION

The Bicycle Friendly Community program provides a roadmap to improving conditions for bicycling and guidance to help make a community's vision for a better, bikeable community a reality. The Bicycle Friendly Community program is sponsored by the League of American Bicyclists. Applications for the programs are accepted twice a year.

<https://www.bikeleague.org/community>



PROJECT BASED PROGRAMS

POP-UP DEMONSTRATIONS / PILOT PROJECTS

Pop-up demonstrations or pilot projects for proposed multi-modal facilities, such as plazas, parklets, and pop-up bike lanes create an action-based approach to transforming the local bicycle and pedestrian network by using short-term, low-cost, and scalable interventions to propel long-term change. Demonstrations or pilot projects can be led by the Town or local advocates and residents to experiment with and gather input on potential street design improvements.

<http://tacticalurbanismguide.com/about/>



OPEN STREETS EVENTS

Open streets initiatives temporarily close streets to automobile traffic, so that people may use them for other activities, such as walking, jogging, bicycling, skating, and dancing. Inspired by the "Ciclovias" in Central and South America, open streets events are designed to encourage residents to rethink public spaces, understanding that our streets can have a multitude of uses.

<https://openstreetsproject.org/>



PAINT THE PAVEMENT PROGRAM

Paint the Pavement programs allow mural painting on public streets to encourage community building and public art as a means to transform roadway public space into neighborhood assets. Street murals implemented as part of the program also serve as an important traffic calming solutions in residential neighborhoods. Paint the Pavement programs are sponsored by governmental agencies, but mural design and painting are led by volunteers.



SHARED STREETS PROGRAM

Shared streets provide pedestrians with the right-of-way and remove the formal distinctions between spaces dedicated to pedestrians, cyclists, and motorized vehicles. During the COVID-19 pandemic, shared streets pilot programs were initiated by municipalities to help people find safe, healthy ways to enjoy outdoor activities while supporting social distancing. Most programs implement soft street closures on designated residential streets to allow for residents to safely walk and bike in their neighborhood.



EVALUATION PROGRAMS

BICYCLE COUNT PROGRAM

Bicycle count programs provide non-motorized travel information for roadways, paths, and intersections. Count programs assist municipalities to understand existing bicycle traffic and plan for future non-motorized infrastructure needs. Agencies who show clear evidence of use are more likely to receive funding for projects. NCDOT sponsors the North Carolina Non-Motorized Volume Data Program, which is managed by NC State University.

<https://itre.ncsu.edu/focus/bike-ped/nc-nmvdpr/>



BIKE AUDITS

Bicycling audits are processes that involve the systematic gathering of data about environmental conditions that affect bicycling. Audits are typically performed by personnel with experience in local bicycle infrastructure issues and focus on a school site, a corridor popular for bicycling or an intersection that residents find unsafe. Guidance on conducting bicycling audits is provided by the Safe Routes to School Online Guide.

http://guide.saferoutesinfo.org/engineering/walking_and_bicycling_audits.cfm



311 SERVICE / SEE-CLICK-FIX

311 service is a governmental program that allows citizens to report maintenance issues, such as street debris in bike lanes, potholes, damaged sidewalks, or malfunctioning traffic signals. Similarly, See-Click-Fix is an online platform and mobile app that allows residents to report maintenance issues via interactive map to precisely pinpoint and describe the issue. Municipalities can partner with See-Click-Fix as their local 311 provider.



POLICIES OVERVIEW

In tandem with program and infrastructure recommendations, bicycle-friendly policies improve bicyclist safety and enhance multi-modal accommodations in town ordinances and codes. A summary of recommended policies for the Town of Rolesville are provided below.

POLICY RECOMMENDATION	DESCRIPTION
Establish dedicated funding in the CIP for bicycle and pedestrian facilities.	The Town of Rolesville should consider a dedicated funding allocation for bicycle and pedestrian improvement programs and facilities in the Town budget to implement recommendations in this plan and to leverage other state and federal funding for bicycle and pedestrian facilities.
Establish bicycle wayfinding standards.	The Town of Rolesville should consider establishing on-road bicycle wayfinding standards to foster consistent placement, use, and design of wayfinding signage (including route confirmation, directional, and kiosk signage) Bicycle wayfinding standards should complement the existing greenway wayfinding standards to create a comprehensive multi-modal wayfinding system.
Establish a bicycle facility maintenance policy and operations plan.	The Town of Rolesville should consider establishing a bicycle facility maintenance plan that includes debris and snow removal policies and schedule for bike lanes and sidepaths, routine and special maintenance of bicycle signals and signage, and re-striping and resurfacing schedules for bicycle facilities along Rolesville-maintained roadways.
Establish a Bicycle & Pedestrian Advisory Committee or expand role of the Open Space & Greenways (OSAG) Committee.	The Town of Rolesville should consider establishing a bicycle and pedestrian advisory committee or expand the role of the Open Space & Greenways Committee to guide the implementation of recommended bicycle infrastructure, programs, and policies outlined in <i>Rolesville Bikes</i> for the Town Board and staff.
Expand the Complete Streets Policy in the LDO to require implementation of on-road bicycle facilities.	The Town of Rolesville should consider expanding the Complete Streets Policy in the LDO to require implementation of planned bicycle and pedestrian facilities along proposed thoroughfares and collectors upon development. The current policy requires implementation of multi-modal facilities along existing rights-of-way when streets are redeveloped.
Reduce Town-wide speed limit to 25mph.	The Town of Rolesville should consider lowering the Town-wide speed limit from 35mph to 25mph to improve the safety of bicyclists traveling along on-road bicycle facilities or shared street accommodations. Reducing the speed limit to 25mph significantly lowers the risk of injury for bicyclists in crashes with motorists.
Expand design standards in the LDO to include bicycle facility design standards.	The Town of Rolesville should consider expanding the established design standards for bicycle and pedestrian facilities to include design standards for bicycle facilities in addition to the existing standards for sidewalks, greenways, and shared use paths. Bicycle facility design standards should include typical facility sections, minimum and preferred widths of facilities, intersection treatments, and connectivity requirements.
Implement signal detection for bicyclists at signalized intersections.	The Town of Rolesville should consider incorporating standards for bicycle signal detection at actuated signals to alert signal controls of bicyclists intending to cross signalized intersections. Reference <i>NACTO's Urban Bikeway Design Guide</i> for resources on bicycle signal detection.



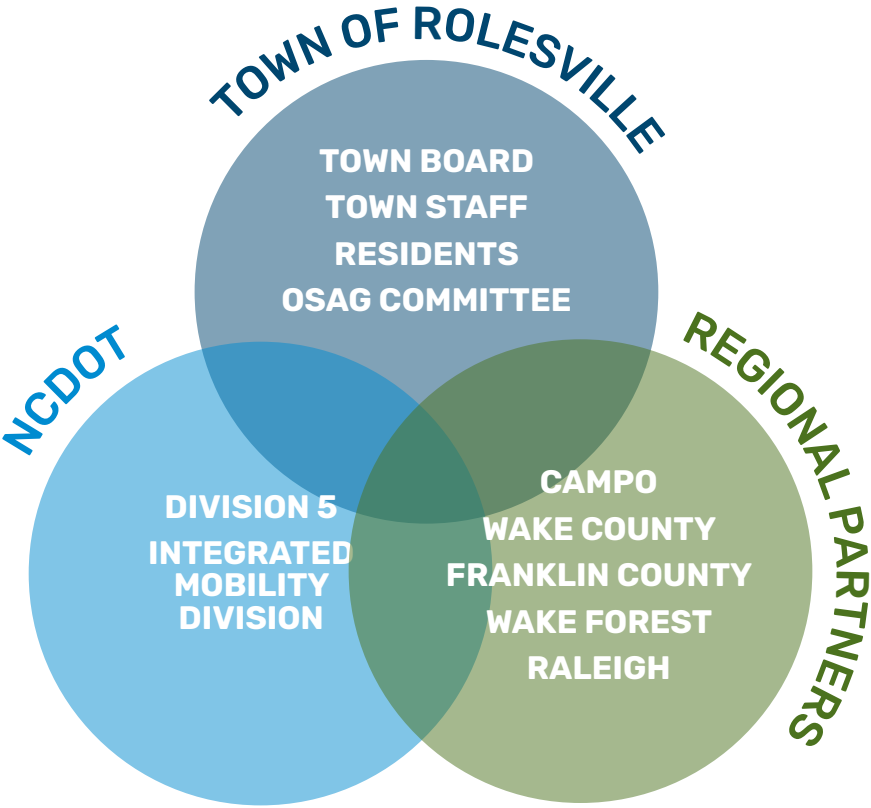
06. IMPLEMENTATION

IMPLEMENTATION

Recommendations outlined in *Rolesville Bikes* present major investments in multimodal transportation that will positively impact the way in which residents, employees, and visitors travel throughout Rolesville. 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 Public Works Department, Town of Rolesville Parks & Recreation 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 bicycle network recommendations as well as the implementation of recommended policies and programs. Action steps prioritize implementation strategies over a 10-year planning horizon. Funding resources available to Town of Rolesville for implementation are outlined in *Appendix A: Funding*.

ROLESVILLE BIKES IMPLEMENTATION PARTNERS



KEY PARTNERS IN IMPLEMENTATION

Achieving success in the development of *Rolesville Bikes* 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 bicycle infrastructure and bicycle-friendly programs in Rolesville. They also demonstrate their intent to support the efforts of other key partners, such as Town departments and NCDOT.

ROLE OF THE TOWN DEPARTMENTS

Town departments lead or support the development of active transportation 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 Bikes* include the Planning, Public Works, and Parks and Recreation departments. The Planning Department advises citizens, staff, and elected officials on policies for land use, housing, transportation, zoning, and growth management. The Public Works Department is responsible for the maintenance and repair of Town-owned roadways, buildings, and grounds, and the Parks and Recreation Department is responsible for the planning, design, and maintenance of existing and future parks and providing recreation services and programs.

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 active transportation projects. The Complete Streets Policy, adopted in August 2019, requires NCDOT to consider and incorporate multimodal 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 Bikes*. 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 maintains the federally-compliant Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP), which prioritizes federal transportation funding for the region. 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 BICYCLE & PEDESTRIAN ADVISORY COMMITTEE OR OPEN SPACES & GREENWAY COMMITTEE

The proposed Town of Rolesville Bicycle and Pedestrian Advisory Committee (BPAC) and existing Open Space & Greenways Committee (OSAG) may guide the implementation of recommended bicycle and pedestrian infrastructure, programs, and policies outlined in *Rolesville Bikes* for the Town Board and staff. Development of a BPAC would create a check for elected officials and agency staff, provide constructive guidance on bicycle and pedestrian issues, and ensure that residents have an opportunity to give input and receive a response by Town staff. The Open Space & Greenways 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. With its recreational focus, the role of the existing OSAG Committee would need to be expanded to include recommendations on active transportation facilities and programs if a BPAC is not established.

ROLE OF THE LOCAL RESIDENTS & COMMUNITY GROUPS

Residents and community groups that promote bicycling and walking as viable forms of transportation serve a key role in advocating for project and program investment. Community members and groups generate support for projects by raising awareness amongst the public, advocating to elected officials to prioritize funding for active transportation, and fostering collaboration amongst jurisdictional partners. Key advocacy organizations that may also support implementation of *Rolesville Bikes* include BikeWalkNC, Triangle Trails Initiative, Live Well Wake, and Wake Up Wake County.

ROLE OF PRIVATE DEVELOPERS

Private developers play an important role in bicycle facility development. Developers construct planned sidepaths, greenways, bike lanes, 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 bicycle and pedestrian design standards, as well as the Town of Rolesville's complete street policy. Developers should be prepared to include bicycle and pedestrian facilities in future developments that provide connections to Rolesville's overall bicycle network.

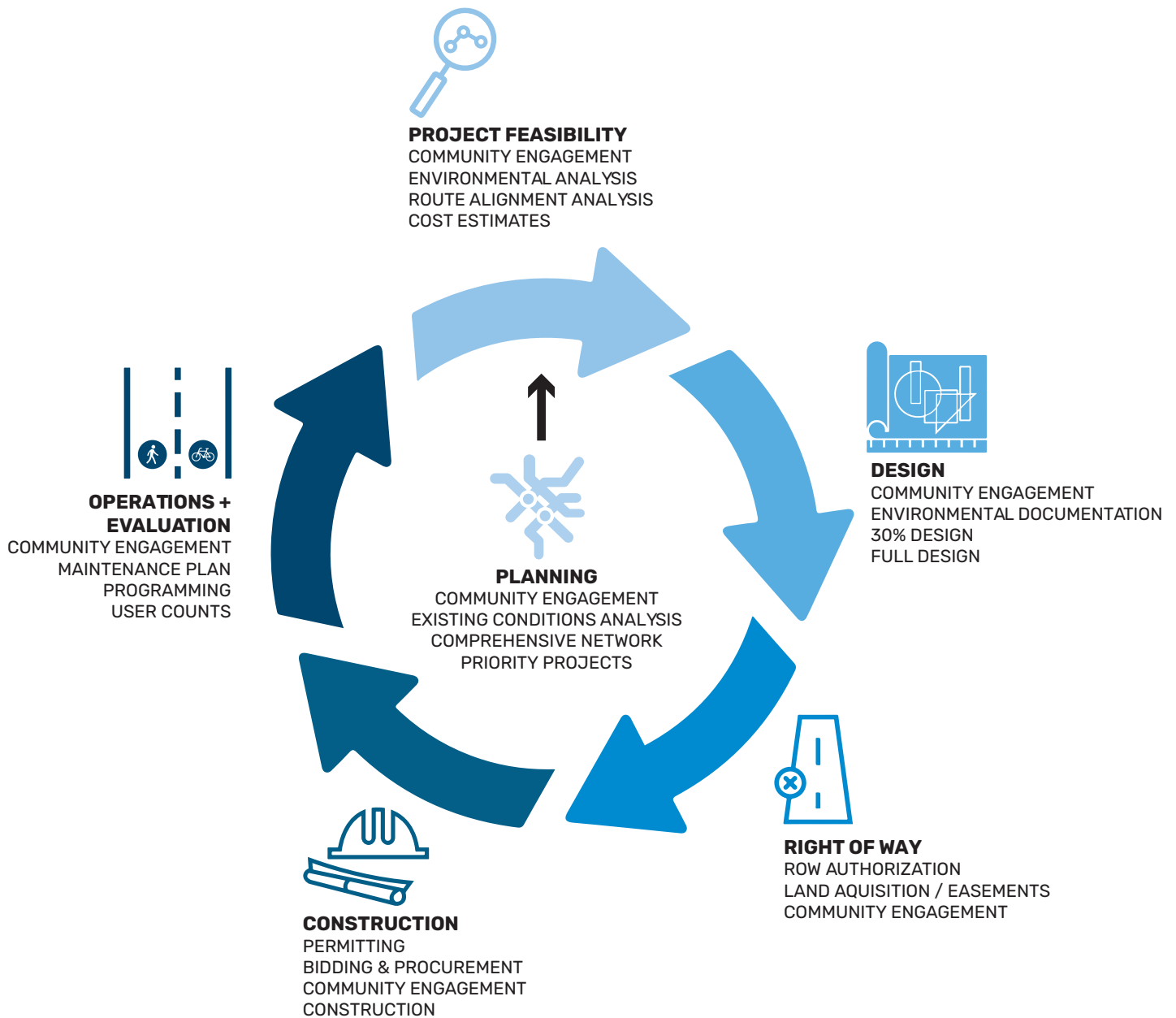
ROLESVILLE BIKES ACTION PLAN

ACTION	DESCRIPTION	LEAD	SUPPORT	TIMELINE
Adopt <i>Rolesville Bikes</i> as the Town of Rolesville's Bicycle Plan Update.	Plan adoption establishes <i>Rolesville Bikes</i> as the guiding planning document for bicycle transportation.	Town Board	Town Departments, Steering Committee	2022
Amend <i>Rolesville Moves: Community Transportation Plan (CTP)</i> to include updated bicycle facility recommendations.	Plan recommendations should be incorporated into the CTP to ensure consistency and inclusion of multi-modal facilities in proposed transportation projects.	Town Board	Town Planning Department	2022
Coordinate with CAMPO to amend <i>Connect 2050 Metropolitan Transportation Plan (MTP)</i> to include <i>Rolesville Bikes</i> recommendations.	The NCDOT Complete Streets Policy requires recommendations from locally adopted plans to be incorporated into the regional MTP in order for bicycle and pedestrian facilities to be evaluated as part of NCDOT roadway projects.	CAMPO, Town Board	NCDOT Transportation Planning Division, NCDOT IMD, Town Planning Department	2022
Establish a Bicycle and Pedestrian Advisory Committee (BPAC) or expand the OSAG Committee to guide plan implementation.	Establish a BPAC or expand the role of OSAG to guide Town staff in the implementation of recommended infrastructure, programs, and policies. BPAC should have representation from the local bicycling community and members should be representative of bicyclists of all ages and abilities.	Town Board	Town Departments, OSAG, Steering Committee	2022
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 bicycle infrastructure and programming.	Provide resources and funding for staff involved in plan implementation to attend webinars, trainings, and conferences on bicycle planning, design, and programming. Invest in guidance materials available from FHWA, NACTO, AASHTO, and NCDOT.	Town Manager, Town Department Directors	Town Staff	Ongoing (Beginning 2022)
Amend <i>Rolesville Next: Land Development Ordinance</i> to incorporate recommended policies.	Policy recommendations such as expansion of the Complete Streets Policy, reduction of Town-wide speed limit, and development of bicycle facility design standards should be incorporated into the LDO to ensure implementation of planned bicycle facilities as development occurs.	Town Planning Department, Town Board	Town Departments	2022-2023
Ensure that bicycle infrastructure recommendations are incorporated into new developments.	The Planning Department should coordinate closely with developers on inclusion of planned bicycle facilities in new developments where required.	Town Planning Department	Town Board, Town Departments	Ongoing (Beginning in 2022)

ACTION	DESCRIPTION	LEAD	SUPPORT	TIMELINE
Develop funding strategies for bicycle facility 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. Consider prioritizing dedicated funding for multi-modal facilities in the Town budget.	Town Manager and Department Directors	Town Staff, Town Board, CAMPO, NCDOT IMD, Wake County	Ongoing (beginning in 2022)
Coordinate with implementation partners on the development of priority projects.	Coordinate with NCDOT, regional partners, and adjacent municipalities on the development of priority projects. Consider conducting feasibility studies to determine implementation for projects that need further study.	Town Department Directors and Staff	CAMPO, NCDOT Division 5, NCDOT IMD, Wake County, Franklin County, Wake Forest, Raleigh	Ongoing (beginning in 2022)
Coordinate with NCDOT Division 5 on future STIP projects to include bicycle and pedestrian facilities.	Coordinate with NCDOT Division 5 and IMD on future State Transportation Improvement Program (STIP) projects to incorporate bicycle facilities in roadway enhancements, especially along Burlington Mills Rd, Rogers Rd, Averette Rd, Young St, and Rolesville Rd.	Town Department Directors and Staff, NCDOT Division 5	NCDOT IMD, CAMPO	Ongoing (beginning in 2022)
Coordinate with NCDOT Division 5 on their roadway resurfacing schedule to implement bike lanes and shared street accommodations.	Coordinate with NCDOT Division 5 on proposed Highway Maintenance Improvement Program (HMIP) projects to incorporate bike lanes, intersection improvements, and shared street accommodations in resurfacing projects.	Town Public Works Department	Town Departments and staff, NCDOT IMD	Ongoing beginning in 2023
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 on multi-modal facilities.	Town Parks & Recreation and Public Works Department	NCDOT IMD, NCDOT Division 5	Ongoing (beginning in 2022-2023)
Develop a Bicycle Wayfinding Plan and Standards Guide.	Develop on-road bicycle wayfinding standards to foster consistent placement, use, and design of wayfinding signage.	Town Parks & Recreation and Public Works Department	Town Manager, Town Board	2023-2024
Develop a Bicycle Facility Maintenance & Operations Plan.	Develop a bicycle facility 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	2023-2024
Continue to coordinate with Wake County on local Safe Routes to School programming.	Coordinate with Wake County Safe Routes to School staff to continue and expand Safe Routes to School programming in Rolesville schools.	Town Staff	Wake County Schools, NCDOT IMD	Ongoing (beginning in 2022)
Seek designation as a Bicycle Friendly Community.	Apply to be designated as a Bicycle Friendly Community as progress is made on program, policy and infrastructure recommendations. This program is administered by the League of American Bicyclists (www.bikeleague.org).	Town Department Directors and Staff	NCDOT IMD	2025-2026

KEY STEPS IN THE PROJECT DEVELOPMENT PROCESS

While *Rolesville Bikes* provides an overall framework for development of multimodal facilities, it is only the first step in a larger process. As a living document, recommendations and priorities outlined in the bicycle and pedestrian 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 the facility is constructed to determine maintenance and evaluation needs. The diagram below illustrates the typical planning, design and construction process for bicycle and pedestrian facilities 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. CDGB 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. Total Funding: \$1.5 billion.

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

SAFE STREETS & ROADS FOR ALL GRANT

This new \$5 billion competitive grant program at the US Department of Transportation will provide funding directly to and exclusively for local governments to support their efforts to advance "vision zero" plans and other complete street improvements to reduce crashes and fatalities, especially for cyclists and pedestrians. Applications are expected to open in May 2022.

<https://www.whitehouse.gov/build/>

NATIONAL INFRASTRUCTURE PROJECT ASSISTANCE (MEGA) GRANT

This \$5 billion competitive grant program supports multi-modal, multi-jurisdictional projects of regional or national significance. Communities are eligible to apply for funding to complete critical large projects that would otherwise be unachievable without assistance. Selection criteria for the program will be released by the US Department of Transportation in February 2022.

<https://www.whitehouse.gov/build/>

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>

BICYCLE HELMET INITIATIVE

NCDOT's Bicycle Helmet Initiative Program is funded by proceeds from North Carolina's "Share the Road" specialty license plate and distributes helmets to government and non-government agencies conducting bicycle safety events for underprivileged children. The program is administered by the NCDOT Integrated Mobility Division. The selection process encourages applicants to partner with community groups to extend bicycle safety awareness outreach. Helmets are distributed by NCDOT IMD in the spring each year, and awardees will have the remainder of the calendar year to host their program.

<https://www.ncdot.gov/initiatives-policies/safety/bicycle-helmets/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 micropolitan areas 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

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/>

PEOPLE FOR BIKES COMMUNITY GRANTS

The People For Bikes Community Grant Program supports bicycle infrastructure projects and targeted advocacy initiatives that make it easier and safer for people of all ages and abilities to ride. People For Bikes accepts grant applications from non-profit organizations with a focus on bicycling, active transportation, or community development; city or county agencies or departments, and state or federal agencies

working locally. People For Bikes focuses most grant funds on bicycle infrastructure projects, such as bike paths, lanes, trails and bridges, mountain bike facilities, bike parks and pump tracks, BMX facilities, and end-of-trip facilities such as bike racks, bike parking, bike repair stations and bike storage. Advocacy projects funded through the program include open street events and campaigns to increase investment in bicycle infrastructure. People For Bikes accepts requests for funding up to \$10,000. People For Bikes does not require a specific percentage match, but they will not consider requests in which the grant funding would amount to 50% or more of the project budget.

<https://www.peopleforbikes.org/grant-guidelines>

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 bicycle and pedestrian 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.

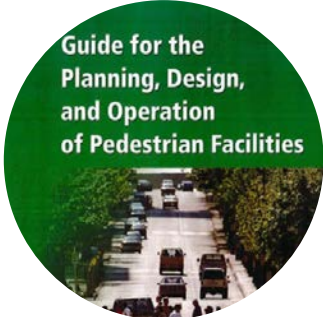
Guide for the Development of Bicycle Facilities
2012 • Fourth Edition



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.

Guide for the Planning, Design, and Operation of Pedestrian Facilities



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.



NACTO URBAN BIKEWAY DESIGN GUIDE

The NACTO Urban Bikeway Design Guide provides cities with state-of-the-practice solutions that can help create complete streets that are safe and enjoyable for bicyclists. Design treatments included in the guide offer required, recommended, and optional design elements to address the complexity of individual streetscape situations. In August 2013, the FHWA issued a memorandum officially supporting the use of this document. All of the NACTO Urban Bikeway Design Guide treatments are in use internationally and in many cities around the US.



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,



FHWA BIKEWAY SELECTION GUIDE

A resource to help transportation practitioners consider the trade-offs relating to the selection of bikeway types. The document builds upon other FHWA resources that promote design flexibility and support connected, safe, and comfortable bicycle networks. The Bikeway Selection Guide outlines a process for identifying the desired bikeway type and assessing and refining potential options based on real-world conditions and decision-making factors. This process is intended to accelerate the delivery of high-quality multimodal projects that improve safety for everyone and meet the transportation needs of people of all ages and abilities.



FHWA SEPARATED BIKE LANE PLANNING AND DESIGN GUIDE

The Separated Bike Lane Planning and Design Guide outlines planning considerations for separated bike lanes and provides a menu of design options covering typical one and two-way scenarios. It highlights different options for providing separation, while also documenting intersection treatments and mid-block design considerations for driveways, transit stops, accessible parking, and loading zones. Case studies highlight best practices and lessons learned



FHWA ACHIEVING MULTIMODAL NETWORKS: APPLYING DESIGN FLEXIBILITY AND REDUCING CONFLICTS

This publication is a 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>

NACTO URBAN BIKEWAY DESIGN GUIDE

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

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/

FHWA BIKEWAY SELECTION GUIDE

https://safety.fhwa.dot.gov/ped_bike/tools_solve/docs/fhwasa18077.pdf

FHWA SEPARATED BIKE LANE PLANNING AND DESIGN GUIDE

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

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