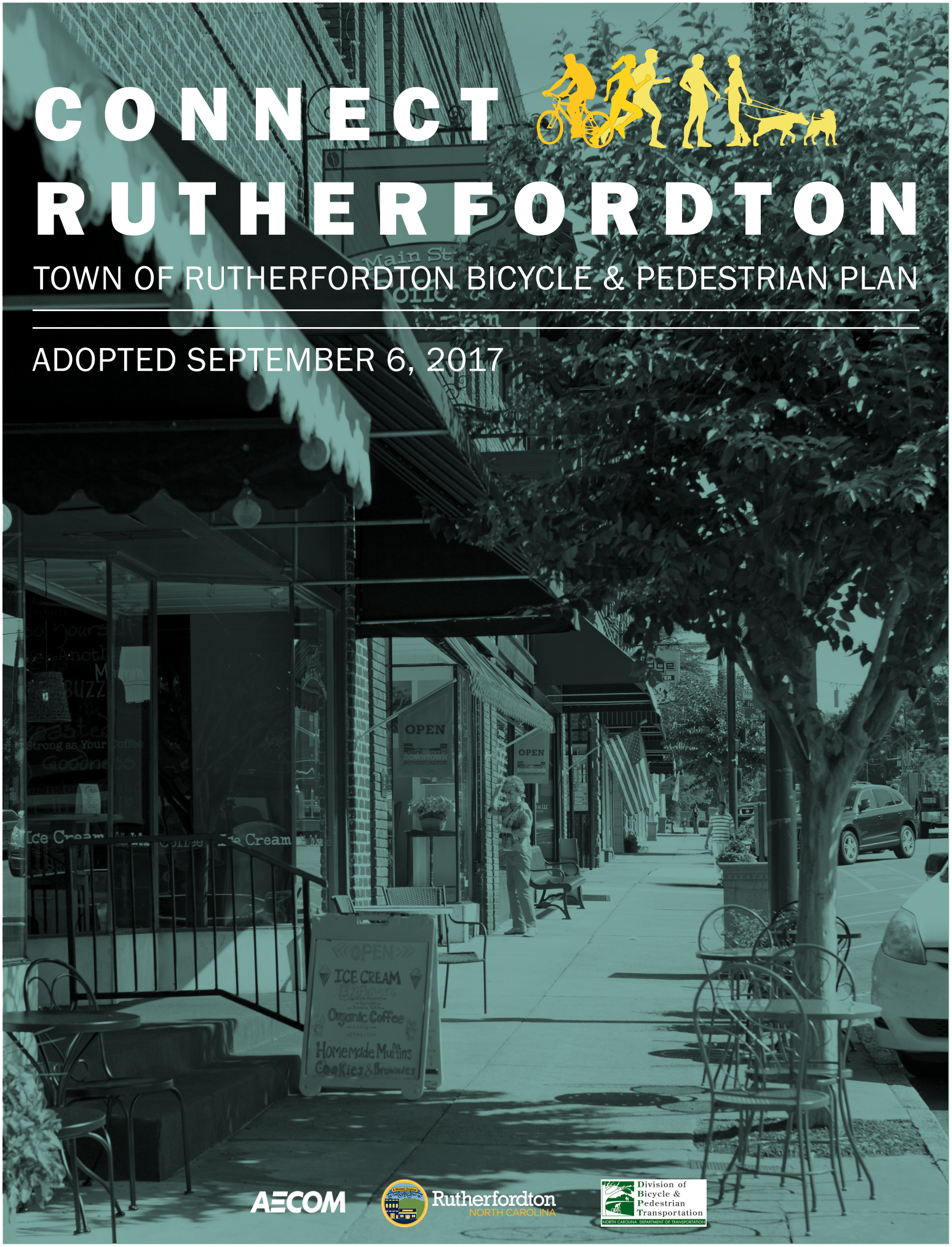
CONNECT RUTHERFORDTON

TOWN OF RUTHERFORDTON BICYCLE & PEDESTRIAN PLAN

ADOPTED SEPTEMBER 6, 2017



AECOM

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NORTH CAROLINA

Division of Bicycle & Pedestrian Transportation
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

Acknowledgements

Thank you to the Steering Committee and local residents of the Town of Rutherfordton for their involvement and support in this planning process and commitment to bicycle and pedestrian planning. This plan was funded through the North Carolina Department of Transportation Bicycle and Pedestrian Planning Grant Initiative.

Key Partners

The Town of Rutherfordton
Isothermal Rural Planning Organization
The North Carolina Department of Transportation (NCDOT)
NCDOT Division of Bicycle and Pedestrian Transportation (DBPT)

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Christy Bare, Council Member
Terry D. Cobb, Council Member
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EXECUTIVE SUMMARY

TOWN OF RUTHERFORDTON BICYCLE & PEDESTRIAN PLAN

Executive Summary

Brief History and Overview of the Community

The Town of Rutherfordton Bicycle and Pedestrian Plan is the culmination of a planning process to improve bicycle and pedestrian safety, connectivity, and health and well-being through infrastructure projects and community policies and programs. This effort was led by NCDOT's Division of Bicycle and Pedestrian Transportation, AECOM as the project consultant, and the locally appointed Steering Committee.

Downtown Rutherfordton (AECOM, 2016)

The Town of Rutherfordton is located in the foothills of western North Carolina, approximately 60 miles west of the City of Charlotte. The town was established in 1787 and has served as the County Seat for Rutherford County since the county was formed in 1779.

The town was also the site of a private mint, which is credited for producing the nation's first $1 gold coin. In 1995, much of downtown Rutherfordton was listed on the National Register of Historic Places, including more than 45 commercial and public structures. In addition, six other properties in town are listed independently on the National Register.

Past Planning Efforts

In 2006, the Town of Rutherfordton completed its Master Plan. The plan identifies projects and recommendations that highlight key areas targeted for potential future development; to expand active transportation connections, support downtown vitality, and foster a good quality of life by emphasizing the town's history and community.

Historic Church (AECOM, 2016)

The Land Use Plan for Rutherford County was developed by the Isothermal Planning and Development Commission and addresses the county's growth while preserving the natural and cultural heritage. The plan outlines the need for planned development, supporting economic development through land use planning, a mix of land uses, and promotion of recreational opportunities.

The Comprehensive Plan for Rutherford County is currently being developed and will assess existing demographic, land use, and traffic-

related conditions of the county. Future land use and suggested multimodal transportation needs, including bicycle and pedestrian accommodations, will also be addressed.

Downtown Rutherfordton is listed on the National Register of Historic Places, and in 2016 received National Main Street Center accreditation, a program of the National Trust for Historic Preservation. This accreditation supports economic vitality in following best practices for historic preservation, community revitalization, and offers a metric for state downtown development assistance.

With a strong dedication to improving bicycle and pedestrian safety and connectivity, the Town of Rutherfordton applied for a planning grant from the NCDOT Division of Bicycle and Pedestrian Transportation to develop a bicycle and pedestrian plan.

Purpose and Process of This Plan

The Town of Rutherfordton Bicycle and Pedestrian Plan (plan) was developed with the purpose to evaluate existing bicycle and pedestrian conditions in order to recommend strategic projects, policies, and programs to improve or expand safety, connectivity, and quality of life in the town. The NCDOT Division of Bicycle and Pedestrian Transportation, a project consultant, and a Steering Committee worked collaboratively to develop this plan.

The Steering Committee (Committee) was formed by the town and comprised of local officials, representatives from local organizations, and community members. Through the planning and development of this plan, the Committee approved goals and objectives that guided the set of recommendations for infrastructure projects, policies, and programs. Public meetings were also conducted for town residents to provide input on planning efforts.

Key Findings and Recommendations

According to input from three Steering Committee meetings and two public workshops, the plan confirmed that the community views bicycle and pedestrian facilities as very important to improving the safety and well-being of the community and that there is widespread support for implementing infrastructure projects as well as policies, ordinances, and programs. Members of the Steering Committee and public emphasized safe connections to parks and trails, downtown, the hospital and schools along with adopting local ordinances that promote bicycling and pedestrianism.

Infrastructure Projects

Spot improvements are infrastructure projects at specific locations to improve bicycle and pedestrian conditions while linear facilities are projects along roadways or trails such as bike lanes, sidewalks, streetscape improvements, or multiuse paths or greenways.

These projects were prioritized according to stakeholder and public input, constraints, safety, existing conditions, demand, connectivity, and equity. Both the Steering Committee and residents during the public

meetings provided direct input that contributed to the overall development of projects. The projects were grouped into three groups: high priority, medium priority, and low priority projects.

Spot Improvements

Spot improvements are recommended at intersections and mid-block crossings to improve safety. Recommendations include: marked crosswalks, high-visibility crosswalks, pedestrian signals, street lighting, and bicycle route signage. Locations of these intersection and crossing improvements include downtown Rutherfordton and along roads connecting to the Rutherford Regional Medical Center and parks and trails, such as the Thermal Belt Rail Trail and Purple Martin Trail.

Linear Facilities

Bicycle and pedestrian linear facilities were also evaluated for Rutherfordton. Projects include shared lane markings, wide paved shoulders, and sidewalks (both new construction and repair). Linear facility recommendations emphasized connections between downtown Rutherfordton outward to locations like the Rutherford Regional Medical Center, the Purple Martin Trail, and Thermal Belt Rail Trail. Key corridors for linear facilities include the following: South Main Street to connect to parks and trails to downtown, Mountain Street to provide safer bicycling connections to the Thermal Belt Rail Trail.

Policies, Ordinances, and Programs

Critical to a successful bicycle and pedestrian plan are policies, ordinances, and programs to complement infrastructure projects. Not only is safety dependent upon such physical elements as shared lane markings, sidewalks, and spot improvements, it is also dependent upon education, reducing speed limits, enforcement of laws, and ordinances created to encourage bicycle and pedestrian-friendly development. This plan makes several programmatic recommendations to improve safety and encourage physical activity. Whereas infrastructure projects can be expensive to construct, programs are comparatively inexpensive to implement and can provide a tremendous benefit to the community. Recommended policies include adopting or modifying local ordinances to facilitate multi-modal transportation options making existing roadways safe and accessible to pedestrians, bicyclists, and vehicles. To lead these efforts promoting bicycling and pedestrianism, a Bicycle and Pedestrian Advisory Committee (BPAC) was encouraged.

Key Action Steps

The success of this plan depends on its implementation. A Bicycle and Pedestrian Advisory Committee (BPAC) should be formed or a Town Council member or interested citizen appointed to continue in the efforts for improving bicycle and pedestrian safety and connectivity in Rutherfordton. Once the committee is formed, it will meet regularly (as determined by the Town Council), and report to the Town Council. It will be comprised of members from the plan Steering Committee as well as additional residents who reflect the demographics of Rutherfordton.

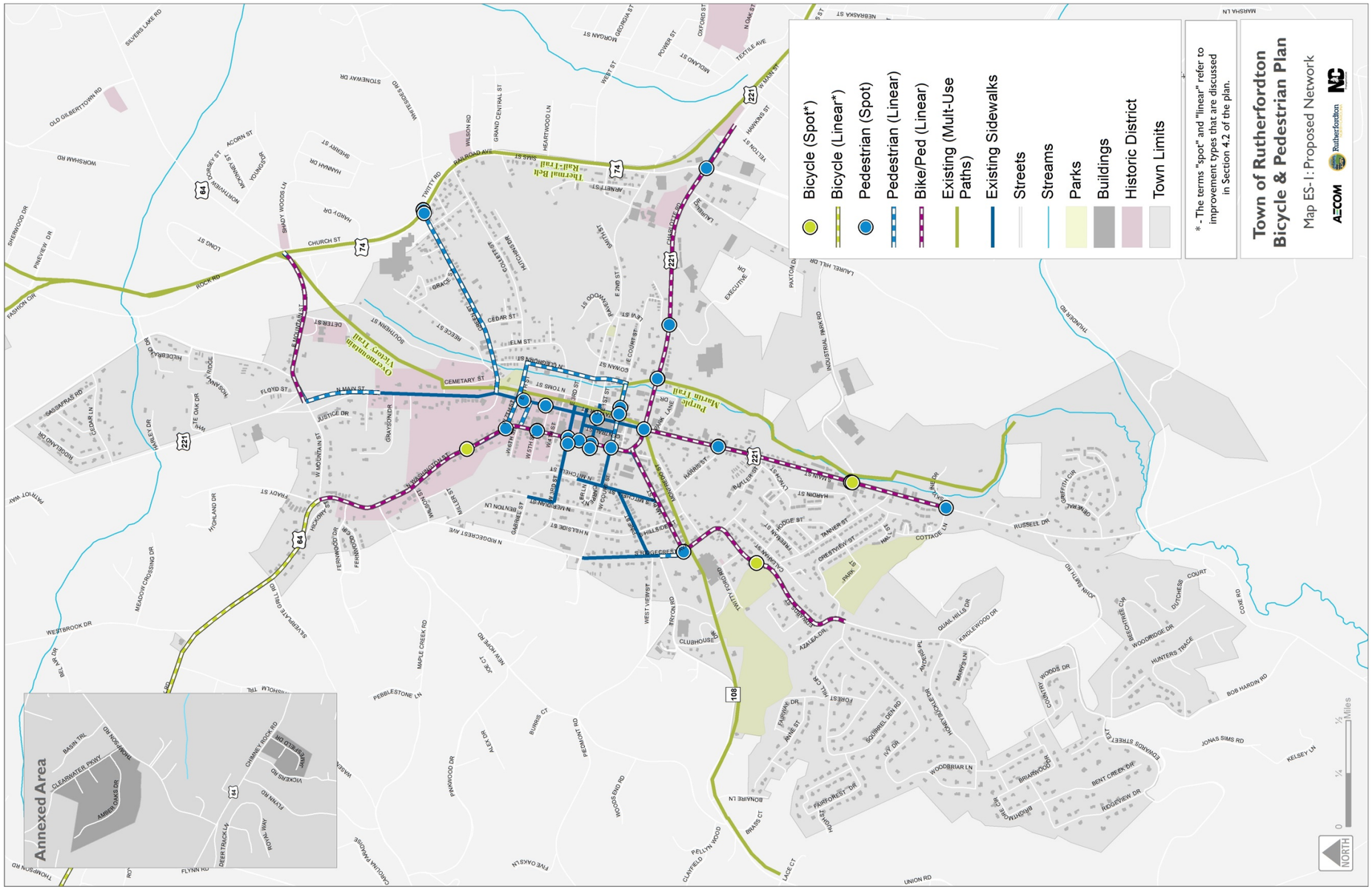
A primary responsibility of the BPAC will be to prepare an annual report provided to the Town Council detailing the progress made on implementing the plan as well as the BPAC's goals and objectives for the coming year.

Key Action Steps

1. Adopt the Town of Rutherfordton Bicycle and Pedestrian Plan.
2. Establish a Bicycle and Pedestrian Advisory Committee or appoint a Town Council member or interested citizen who will be responsible for overseeing the implementation of the plan.
3. Strengthen partnerships with Rutherford County counties and the Isothermal Rural Planning Organization (RPO).
4. Coordinate with NCDOT Division 13 to incorporate projects on a regional scale.
5. Coordinate with Isothermal RPO to include infrastructure projects in the regional planning process.
6. Coordinate with local bicycle organizations and clubs such as the Rutherford Outdoor Coalition.
7. Include bicycle and pedestrian facilities in town ordinances.
8. Establish a sidewalk maintenance program.
9. Apply for funding sources and develop local funding for match requirements for the plan's projects and programs.
10. Coordinate with the Foothills Conservancy of North Carolina.
11. Partner with NC Department of Commerce and others to promote ecotourism.
12. Carry out programs that educate residents on the health benefits of bike and walking.
13. Program local funds for bicycle and pedestrian projects.
14. Coordinate with Region 2 Active Routes to School Coordinator.
15. Develop a wayfinding program.
16. Apply and participate in NCDOT's Watch for Me NC campaign to raise awareness and provide educational details.
17. Prepare the first Rutherfordton Bicycle and Pedestrian Annual Report.

Further details on these Key Action Steps are found on pages 93 through 96 of Section 5.

Map ES-1: Town of Rutherfordton



INTRODUCTION

PROJECT OVERVIEW

1.0 Introduction and Project Overview

1.1 Background

Rutherfordton (AECOM, 2016)

The Town of Rutherfordton has a strong commitment to improving its bicycle and pedestrian planning efforts and has identified these goals in the town's Comprehensive Plan and its Small Town Economic Prosperity (STEP) initiative. The Town of Rutherfordton Bicycle and Pedestrian Plan (plan) is the town's latest effort to promote multi-modal mobility and will help guide these efforts for the town, the Isothermal Rural Planning Organization (RPO), the North Carolina Department of Transportation (NCDOT), and associated local and regional partners. The focus of the development of this bicycle and pedestrian plan is to define the vision and goals, outline recommendations, and identify programs and policies for implementing bicycle and pedestrian infrastructure and amenities to increase active lifestyles and quality of life elements.

The Rutherfordton Bicycle and Pedestrian Plan has been funded through a matching grant from the NCDOT Division of Bicycle and Pedestrian Transportation (DPBT) with the Town of Rutherfordton providing the matching funds. The grant provides funding for local governments to develop comprehensive bicycle plans and pedestrian plans.

The Town of Rutherfordton is located in the foothills of western North Carolina, approximately 60 miles west of the City of Charlotte. The town is named after General Griffith Rutherford, a Revolutionary War-era politician. The town was established in 1787 and has served as the County Seat for Rutherford County since the county was formed in 1779, when the town was known as Gilbert Town.

During the American Revolution, the Overmountain Men marched through present day Rutherfordton to fight in the Battle of Kings Mountain, where they defeated the British troops on October 1780. The Overmountain Men were frontiersmen from west of the Appalachian Mountains who organized to fight in the war. Today, the route that they used to reach Kings Mountain is part of the National Park Service's Overmountain Victory National Historic Trail which stretches 330 miles over four states. In Rutherfordton, the trail follows Tryon Road and Maple Street (NC 108), Main Street (US 221), and East Mountain Street (US 64).

The town was also the site of a private mint which is credited with producing the nation's first $1 gold coin. In 1995, much of downtown Rutherfordton was listed on the National Register of Historic Places, including more than 45 commercial and public structures. In addition, six other properties in town are listed independently on the National Register.

Today the town is home to just over 4,200 residents and is centered on a thriving downtown. In addition to historic buildings, the downtown is comprised of many traditional and specialty shops and businesses.

1.2 Community Vision

During the first Steering Committee meeting, a community vision was developed through an exercise in which committee members provided their response to the question "What does Rutherfordton mean to you?" on notecards. These cards were completed anonymously and used in drafting the word cloud and vision statement, below. The word cloud was formed using the most common words from the notecard-response exercise (the size of the word represents a greater frequency of the word in the completed exercise).

During the second Steering Committee meeting, the following vision was developed. The vision applies to this plan and the desired outcome for its implementation of bicycle and pedestrian projects, policies, and programs in the Town of Rutherfordton.

> *"The Town of Rutherfordton is a historic community that will be a place where all of its diverse citizens will have access to bicycle and pedestrian facilities and programs that meet the needs for connecting the community and surrounding communities, providing alternative modes of transportation, encouraging healthy recreation and lifestyle, promoting safety, and supporting Rutherfordton's vibrant history and progress in moving forward."*

1.3 Goals and Objectives

A series of goals were developed during the first Steering Committee meeting and adopted during the second Steering Committee meeting. These goals are both the foundation of objectives and strategies that guide the creation and implementation of the Bicycle and Pedestrian Plan, and the strategic framework for developing

and improving bicycle and pedestrian mobility in the Town of Rutherfordton. In alignment with the North Carolina Statewide Bicycle and Pedestrian Plan, *WalkBikeNC*, these goals, objectives, and strategies were developed to further encourage consistency among the plans and are indicative of both the state and local desire for safe and abundant bicycle and pedestrian facilities.

Downtown Rutherfordton
(AECOM, 2016)

Improve Mobility through Bicycle and Pedestrian Networks

Improve mobility by creating and providing safe bicycle and pedestrian networks, removing barriers and enhancing connections between residential neighborhoods and destinations such as schools, stores, houses of worship, and other institutions. Provide active transportation (bicycle and pedestrian) options to the residents of Rutherfordton.

Provide Bicycle and Pedestrian Education

Educate the community as to the benefits of bicycle and pedestrian activity, applicable rules, and regulations.

Promote Environmental, Public Health, and Safety Benefits of Biking and Walking

Emphasize a safe and attractive environment through programs, policies, and partnerships: Recognize the environmental and public health benefits of biking and walking by providing active living environments with safe, connected, accessible facilities along with programs that encourage bicycling and walking.

Encourage Economic Benefits of Biking and Walking

Educate the community as to the economic benefits that improved bicycle and pedestrian infrastructure can have on surrounding businesses and residences. Recognize the secondary benefits resulting from bicycle and pedestrian infrastructure including: household savings from alternative transportation modes, tourism, development goals, and property values.

Connect Cultural Sites and Natural Resources

Develop facilities and programs that enhance the connection between local and regional cultural sites and natural resources through bicycle and pedestrian facilities such as greenways or trails.

1.4 Purpose and Scope of the Plan

The purpose of this plan is to evaluate the existing bicycle and pedestrian conditions within the Town of Rutherfordton and recommend programmatic and infrastructure projects to improve safety, connectivity, and well-being. This effort was led by NCDOT's DBPT, AECOM as the project consultant, and the locally

appointed Steering Committee. Public meetings were also conducted for town residents to provide input on planning efforts. Engineering studies and construction were not included in the scope.

The scope of the plan included the following tasks:

- Analysis of existing conditions and demographics
- Review of existing plans and policies
- Policy and program recommendations
- Infrastructure improvements and cost estimates
- Identification of possible funding sources
- Public input through a Steering Committee and meetings
- Implementation strategies

1.5 Benefits of a Bicycle-Friendly and Walkable Community

There are many benefits to bicycle and pedestrian planning and the resulting programs and infrastructure projects. A bicycle-friendly and walkable community provides many benefits for residents, creates a valuable resource for future generations, and enhances the sense of community through the promotion of improved health, economy, transportation, and environment.

WalkBikeNC, the statewide bicycle and pedestrian plan, established a vision for North Carolina centered around five key benefits: safety, health, economic, mobility, and stewardship. The statistics and benefits discussed in this section were compiled from several sources: the *WalkBikeNC* plan, the Pedestrian and Bicycle Information Center based at the University of North Carolina Highway Safety Research Center, the NC Bicycle and Pedestrian Safety Summit 2011, and the *2014 Benchmarking Report* by the Alliance for Biking and Walking.

Health

Infrastructure such as sidewalks, bicycle lanes, and trails promote active living and improve health by providing residents with opportunities to exercise and integrate physical activity into their daily lives, while programs such as Active Routes to School provide education and encouragement for more physical activity. Improving health is of critical importance in North Carolina as 65 percent of adults are either overweight or obese. The state is ranked as the 5th worst in the nation for childhood obesity.[1]

[1] NCDOT. (2013). *WalkBikeNC*: North Carolina Statewide Pedestrian and Bicycle Plan Summary Document, page 12.

Economic Competitiveness

Investing in bicycle and pedestrian infrastructure returns economic benefits to communities through increased property values, patronage of local businesses, and tourism. Improving transportation choices in a community encourages better connectivity between people and places and is tied strongly to public health, access to jobs and resources, and business opportunities. As mobility options, bicycling and walking reduce transportation costs and give households more disposable income to spend in the local economy.

Safety

The need to improve safety for pedestrians and bicyclists is urgent. Each year in NC more than 2,000 pedestrians and 1,000 bicyclists are involved in police-reported crashes with motor vehicles. Between 150 and 200 pedestrians are killed, and an additional 200 to 300 are seriously injured. On average, approximately 20 bicyclists are killed and an additional 60 are seriously injured annually.[2]

Mobility/Transportation Efficiency and Connectivity

Mobility/Transportation efficiency describes the effectiveness of the transportation system, which includes roads, rail, public transit, and bicycle or bicycle facilities, to move people and goods safely and quickly. As roads become increasingly congested, one way that communities can improve transportation efficiency is by offering bicycle and pedestrian alternatives to automobiles and designing Complete Streets that accommodate all modes.

[2] NCDOT. (2015). North Carolina Pedestrian and Bicycle Crash Data Tool. http://www.pedbikeinfo.org/pbcat_nc/index.cfm

Stewardship/Environmental

Transportation is responsible for nearly 80 percent of carbon monoxide and 55 percent of nitrogen oxide emissions in the US.[3] Bicycle and pedestrian infrastructure encourages stewardship of our natural resources by providing residents with a fossil fuel-free alternative model of transportation. Greenways and trails help connect residents with the outdoors, foster an appreciation for nature, and protect natural resources. Taking more vehicles off the road by providing safe and efficient bicycle and walking conditions can help reduce fuel consumption and vehicle emissions, improve the environment including the quality of water and wildlife habitat, and encourage overall energy conservation and independence.

Quality of Life Benefits

Quality of life is influenced by factors that include, but are not limited to; commute options, access to recreation including parks and trails, safety, and economic competitiveness. Bicycle and pedestrian amenities have a positive contribution to the overall quality of life of a community.

[3] Pedestrian and Bicycle Information Center. (2015). Environmental Benefits of Bicycling and Walking. Retrieved from: http://www.pedbikeinfo.org/data/factsheet_environmental.cfm

EXISTING CONDITIONS

EVALUATION

2.0 Existing Conditions

2.1 Overview

Assessing existing conditions in the Town of Rutherfordton is important to understand the broader scope of those living in the area, where transportation planning plays a key role in connecting community resources, and planning for future development and growth. This can enable more efficient and sustainable movement to and from resources within the town. The following information on existing conditions is used to formulate and prioritize the policies and programs recommended in this plan.

2.2 Demographic Analysis

Demographic characteristics were investigated to gain a better understanding of the population living in Rutherfordton, the community's transportation needs, and any vulnerable populations for compliance with federal policy. Vulnerable populations are those citizens of the community who are disadvantaged by ethnicity or race, age, gender, socio-economic status, or other distinguishing factors that disproportionately impact access to resources.

Title VI of the Civil Rights Act of 1964 requires that each federal agency ensure that no person is excluded, denied, or discriminated based on race, color, national origin, age, sex, disability. Executive Order 12898 signed by President Bill Clinton in 1994 requires that each federal agency shall make achieving environmental justice part of its mission. This is relevant to Rutherfordton in that the town would coordinate with federal agencies and apply for federal funds in order to implement the programs and projects recommended by this plan.

Datasets studied include: population, age, race characteristics, Hispanic/Latino and minority populations, poverty rates, limited English proficiency (LEP) populations, and zero car households. The demographic analysis was based on 2000 and 2010 U.S. Decennial Census data and 2010-2014 American Community Survey (ACS) 5-Year estimate data analyzed at the place, county, and state levels.

Population and Age

The Town of Rutherfordton is in Rutherford County. With an area of 4.2 square miles, according to the U.S. Census Bureau, the population was 4,131 people in 2000 and grew to 4,213 people in 2010. Rutherford County's population was 62,900 in 2000 and 67,810 people in 2010. In the most recent 2010-2014 ACS 5-year estimate data, these statistics fell slightly with Rutherfordton's population at 4,208 and Rutherford County's population at 67,181. These shifts are below statewide population changes, which experienced an 18.5 percent growth from 2000 to 2010 (8,049,313 people in 2000 and 9,535,483 people in 2010 statewide).

Flat or slightly declining population for the town and county suggests a need for continual dedication to quality of life benefits, such as bicycle and pedestrian infrastructure, to attract both people and business to the

area. In recent years, the town has dedicated many efforts toward these types of improvements, including the development of multiuse trails.

Based on 2010-2014 ACS data, the median age was 51 in Rutherfordton, while Rutherford County is younger with a median age of 43. Rutherford County is comparable to the state median age of 42.9. The largest age group in both Rutherfordton and Rutherford Country are ages 40 to 60, at 34.0 percent and 28.6 percent respectively. The smallest age groups in both Rutherfordton and Rutherford Country are between the ages of 70-74 at 8.9 percent, and ages 80 years and over at 4.9 percent. This data suggests that both Rutherfordton and Rutherford County have a larger proportion of working-age individuals most likely due to job opportunities and access to family services such as good schools and hospitals.

Improved bicycle and pedestrian infrastructure can help to retain or attract younger populations while also serving current age groups in Rutherfordton interested in different modes of transportation. Those populations living in the community currently and those aging in place can gain health benefits from bicycle and pedestrian facilities while also benefitting from a greater quality of life.

Minority and Race

The minority population[4] in Rutherfordton is approximately 19.5 percent of the total population (822 people). The minority population for the Rutherford County is significantly lower at 3.8 percent (2,536 people).

The Town of Rutherfordton is predominantly white (83.4 percent), with a small percentage of African-American (11.6 percent), Asian (0.8 percent), some other race (0.7 percent), and two or more races (3.4 percent). The Hispanic/Latino population comprises approximately 3.9 percent of Rutherfordton. Rutherford County has a higher composition of predominantly white (85.8 percent) and lower African-American (9.9 percent) populations, with the remainder of its population defined as American Indian/Alaska Native (0.4 percent), Asian (0.6 percent), some other race (1.6 percent), and two or more races (1.7 percent). The Hispanic/Latino population comprises approximately 3.8 percent of Rutherford County, similar to the Town of Rutherfordton. In the state of North Carolina, the white (69.6 percent) and African-American (21.5 percent) populations define the majority with the remainder of the population defined as American Indian, Asian, Hawaiian/Pacific Islander, or other (approximately 6.7 percent). The Hispanic/Latino population represents 8.7 percent of the population in the state.

Such minority and racial compositions indicate a minimally diverse composition of people living in both Rutherfordton and Rutherford County.

[4] Calculated by subtracting White, Non-Hispanic population totals from the Total Population based on 2010-2014 ACS data.

Regional Poverty Rates

Individuals living below the poverty line in Rutherfordton comprise approximately 8.2 percent of the population. This is lower than the county populations living below the poverty line at 21.0 percent, and lower than the North Carolina poverty rate of 15.6 percent. The Town of Rutherfordton appears to have a more robust economic environment as compared to both the county and state.

Limited English Proficiency (LEP)

The populations in Rutherfordton that speak English "less than very well" comprise approximately 0.8 percent of adult individuals age 18 and older. Of those in this category, the predominant language spoken other than English is Spanish (0.2 percent of the adult population over 18 years of age). In Rutherford County, LEP populations are approximately 2.0 percent. Of those that speak English "less than very well," Spanish is the predominant language (1.5 percent of the adult population over 18 years of age).

Vehicles per Household

In Rutherfordton, 6.0 percent of households have no vehicle available, 34.8 percent of households have one vehicle available and 59.1 percent of households have two or more vehicles available. In Rutherford County, 6.0 percent of households have no vehicle available, 32.2 percent of households have one vehicle available and 61.8 percent of households have two more vehicles available. Statewide, 6.4 percent of households have no vehicle available, 32.5 percent of households have one vehicle available and 61.1 percent of households have two more vehicles available. Bicycle and pedestrian infrastructure projects would particularly benefit residents that do not have access to vehicles or share vehicles within a household.

Means of Transportation to Work

The overwhelming majority of Rutherfordton's residents commute to work using a car, truck, or van with a total of 91.6 percent of the working population 16 years and older who commute alone using one of these modes. Only 4.9 percent commute using a car, truck, or van carpool, 1.0 percent walk, and 0.1 percent use a taxi, motorcycle, or bicycle. Approximately 2.3 percent of the population work from home.

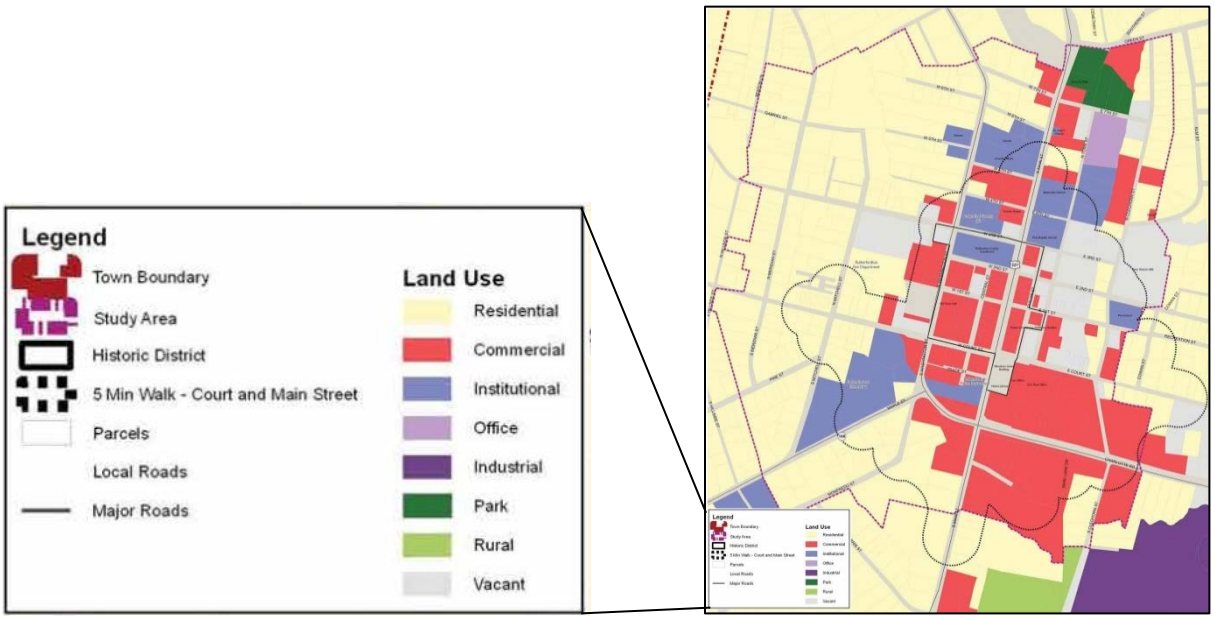
These figures are slightly higher as compared to Rutherford County and the state of North Carolina, where 81.7 percent and 81.2 percent use a car, truck, or van as a means of transportation to work, respectively. In Rutherford County, a total of 12.5 percent of workers carpool using a car, truck, or van, while only 10.2 percent of the state uses a similar mode of transportation. In the county, 0.1 percent use public transportation, 1.0 percent walks to work, 1.1 percent uses a taxi, motorcycle, or bicycle, and 3.6 percent work from home. Similarly, statewide 1.1 percent use public transportation, 1.8 percent walks to work, 1.3 percent uses a taxi, motorcycle, or bicycle and 4.5 percent work from home.

These statistics show a higher dependency on vehicle usage in Rutherfordton as compared to both county and statewide figures. Supporting the development and use of transportation networks for active modes (bike and pedestrian travel) may provide an opportunity for a more diverse selection of commuting options to work as well as enabling workforce participation by people with reduced access to vehicles.

2.3 Land Use and Development

The Town of Rutherfordton has a strong commitment to expanding its already vibrant community through development opportunities. The town has a historic, downtown core with a wide variety of retail, office, civic, and mixed uses in and throughout the municipal limits, many of which are historic buildings that have been adaptively reused. Civic uses in the downtown core include the courthouse, jail, governmental offices, town hall, post office, community hall, library, and many churches. Institutional uses within the town include Rutherford Hospital, medical offices, and law firms. Single family residential neighborhoods dominate the majority of the towns land uses, located primarily in the farther extents of the town limits. The majority of open space in Rutherfordton is underutilized, with the exception of Crestview Park. See Figure 2-1 of existing land uses in downtown Rutherfordton.

Figure 2-1: Existing Land Use in the Town of Rutherfordton

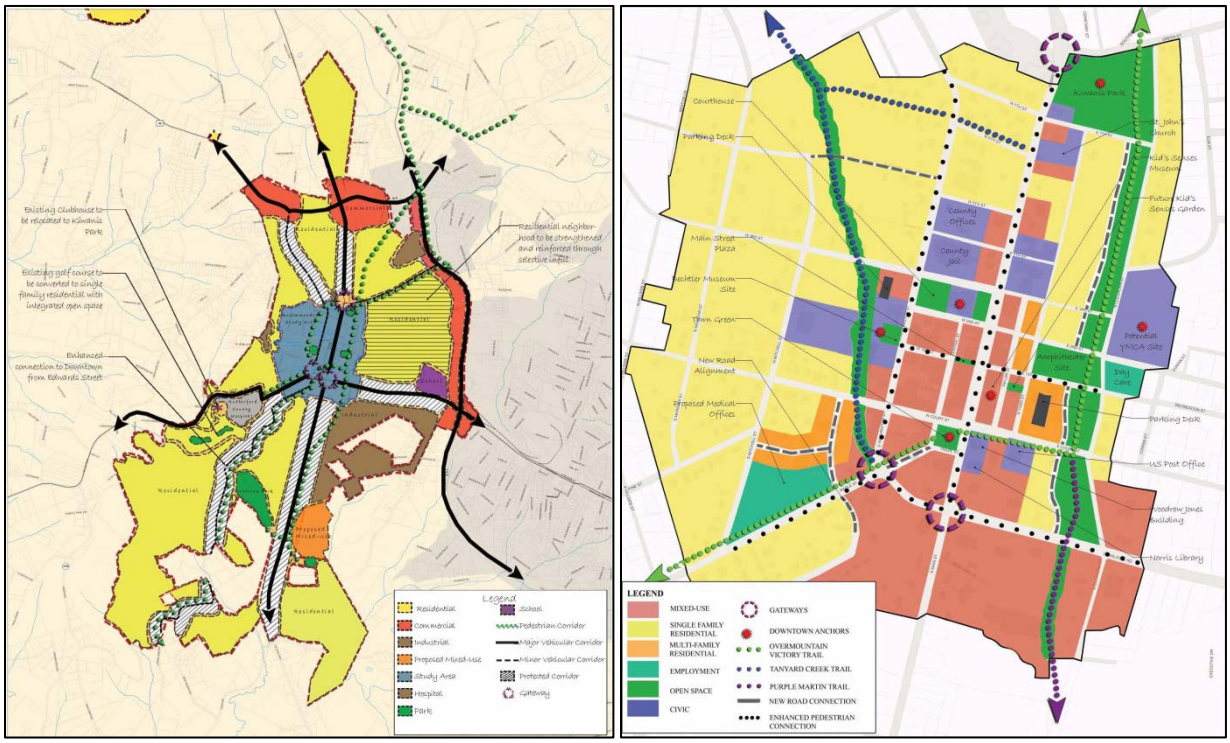


Source: *Town of Rutherfordton Master Plan*, 2006

Rutherfordton Master Plan

The *Town of Rutherfordton Master Plan* (2006) highlights key development areas and potential for future development. Broadly, the Master Plan recommends expanding the mix of residential land uses, particularly near Main Street to both single and multi-family residential units. The downtown edges are targeted to promote development and redevelopment to support a diverse mix of land uses including retail and residential. Concentrating commercial development in key locations and maintaining and improving development along major corridors, including along Main Street, are central to the plan in order to encourage economic development in the town. See Figure 2-2 of future land uses in downtown Rutherfordton.

Figure 2-2: Future Land Use in the Town of Rutherfordton

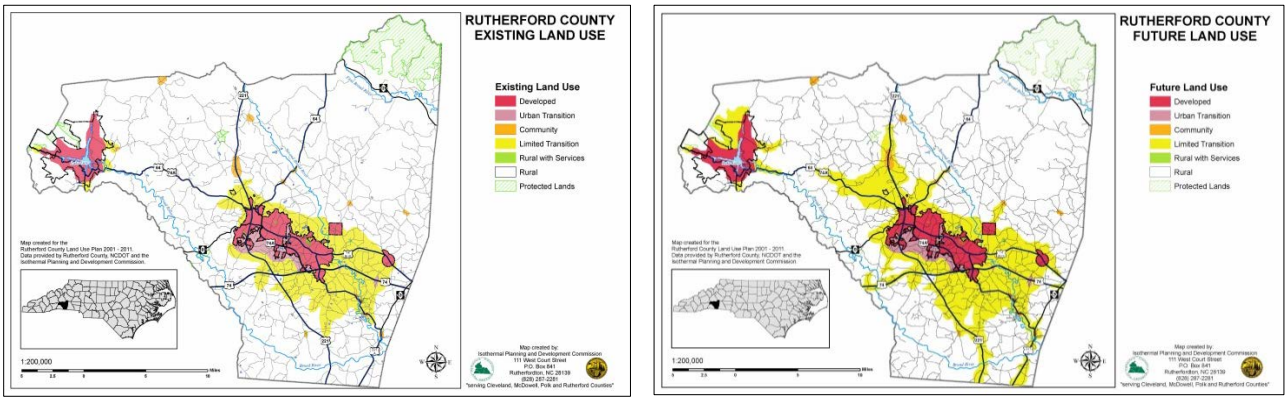


Source: *Town of Rutherfordton Master Plan*, 2006

Rutherford County Land Use Plan

The *Rutherford County Land Use Plan* (2001) developed by the Isothermal Planning and Development Commission addresses the county's growth while preserving the natural and cultural heritage. The primary highlights of the plan include the need for preventing un-orderly development, supporting economic development through land use, providing services for a mix of land uses, and supporting more recreational opportunities throughout the county. The Town of Rutherfordton is located in the "developed" land use designation in the county with urban transitional areas surrounding it (see Figure 2-3). The future land use continues to support the development in the town and its neighboring towns (see Figure 2-3).

Figure 2-3: Existing and Future Land Use in Rutherford County



Source: *Rutherford County Land Use Plan*, 2001

2.4 Existing Plans and Programmed Projects

The *Town of Rutherfordton Master Plan* (2006) and the *Rutherford County Comprehensive Transportation Plan* (in progress) are the primary guiding plans for the town's development of multimodal transportation recommendations.

Rutherfordton Master Plan

The *Town of Rutherfordton Master Plan,* in addition to outlining existing and future land use, focuses on creating a destination for recreational activities including businesses and residences through strategic project recommendations. The plan focuses on the following themes:

- Establish a sense of place, safety, affordability, and environmental responsibility.
- Create sidewalks and trails that connect neighborhoods and public spaces.
- Encourage a creative, artistic downtown that encompasses extensive shopping and dining options.
- Preserve the significant history and heritage that is unique to the area.

Using these as guidance, the plan outlines a series of recommendations to support quality of life expand and support pedestrian and vehicular connections, foster thriving business and residence locations downtown while retaining the town's history and community. These include capitalizing on historical, cultural, and natural resources as tourist destinations (including the Bechtler house and goldmine site), establishing the identity of downtown as a central recreational opportunity, improving parking and streetscapes, promoting a more diverse housing stock, and supporting more restaurant and entertainment in the community.

Recommendations outlined in the plan specific to bicycle and pedestrian accommodations include the following:

Open Space and Greenways:

- Improve existing open space and create other types of open space to add to the variety and expand the open space system in downtown.
- Link various open spaces, existing and proposed, via a network of trails.
    - Create a Heritage Trail Network map.
    - Build Overmountain Victory Trail in accordance with the proposed trail map.
    - Establish the Tanyard Creek Greenway and Purple Martin Trail in accordance with the downtown plan.

Circulation:

- Improve downtown's vehicular circulation.
    - Improve the east-west connectivity by extending 7th Street to Cleghorn Street.
    - Create a safer crossing at the intersection of South Washington Street and Maple Street.
    - Create a parallel road along Cleghorn Creek.
    - Extend West 5th Street westwards to connect to North Mitchell Street.
    - Realign Monfredo Street with the proposed roads in the Rutherfordton Elementary School site to improve the intersection of South Washington Street and Maple Street and enhance connectivity.
- Establish and coordinate a non-vehicular transit support system.
    - Establish bicycle and pedestrian facilities to encourage convenient alternatives to vehicular means of transportation throughout the downtown area.
    - Extend the trail network beyond the downtown area to connect to surrounding neighborhoods.
    - Improve sidewalks in disrepair and encourage streetscape elements that enhance pedestrian experience.

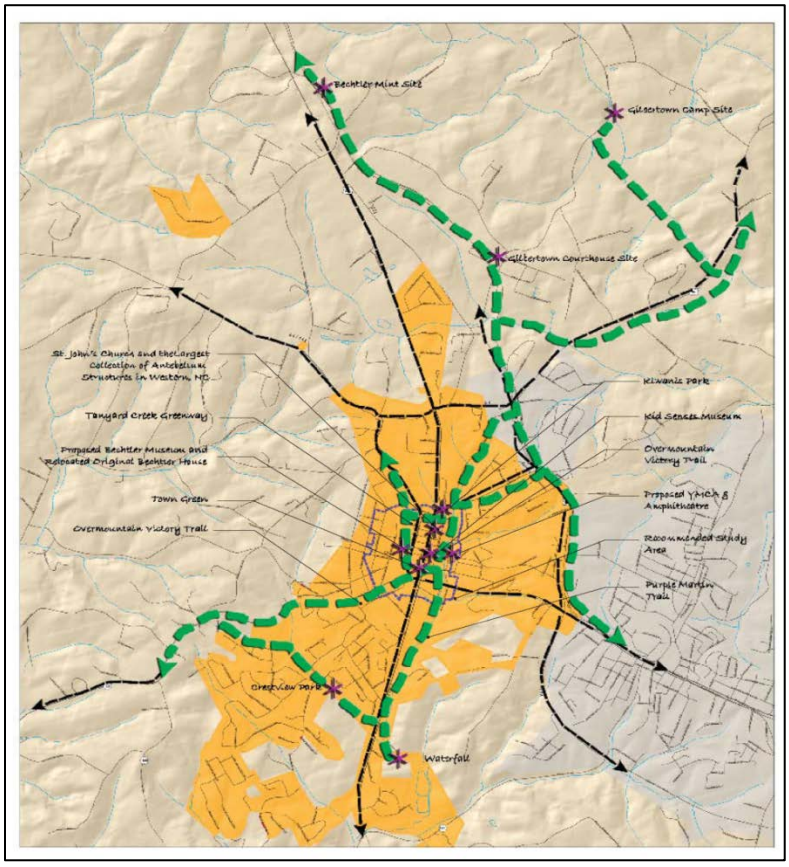
Streets and Streetscapes:

- Enhance Main Street.
    - Install crosswalks at intersections as well as mid-block locations that to facilitating safe pedestrian movement and add variety to the streetscape. Distinctive paving materials should be applied at the intersections to differentiate such areas from the rest of the street.
    - Improve the streetscape with better-defined sidewalk zones.
    - Plant street trees by converting some diagonal parking spaces into landscaped islands. This will not only soften the building edge but will also serve as a method to reduce speeding vehicles for the safety of pedestrians.

- Provide street furniture that will improve the street aesthetics and accommodate pedestrians (e.g., lighting, benches, trash receptacles, bike racks, newspaper racks, flower baskets, and street trees).

- Enhance other streets to include streetscape elements that, like Main Street, enhance pedestrian experience.
- Improve the streetscape by adding street trees and landscaping to Central Street and Taylor Street.

Figure 2-4: Proposed Heritage Trail Network (2006 Rutherfordton Master Plan)



Source: *Town of Rutherfordton Master Plan*, 2006

Rutherford County Comprehensive Transportation Plan

Rutherford County is working in cooperation with the Town of Bostic, the Town of Ellenboro, the Town of Forest City, the Town of Ruth, the Town of Rutherfordton, the Town of Spindale, Isothermal RPO, and NCDOT Transportation Planning Branch to develop the *Comprehensive Transportation Plan* (CTP). The CTP is a long-range planning effort that identifies major transportation improvement needs and develops recommendations for a 25-30 year timeframe. The plan will include at a minimum: population statistics, economic conditions, traffic patterns, existing and future land use, and highway, public transportation, rail, and bicycle conditions and projected needs.

Rutherfordton Bypass

State Transportation Improvement Project (STIP) number R-2233B is a proposed bypass constructed as a four-lane roadway with a 46-foot median. The purpose is to reduce congestion, improve safety, and improve travel time for traffic using the US 221 corridor near the Town of Rutherfordton. The project is approximately 8.5 miles long and begins just north of US 74 Bypass and terminates south of Thompson Road (SR 1367). Interchanges are proposed at existing US 221 (south of Rutherfordton), US 74 Business/US 221 Alternate (Charlotte Road), and US 64 (Mountain Street). Integrating bicycle and pedestrian facilities such as underpasses/overpasses and other forms of safe crossings as part of the design of R-2233B will be essential to a strategic and well connected bicycle and pedestrian network.

Thermal Belt Trail

The Isothermal RPO is currently partnering with the towns of Forest City, Spindale, and Rutherfordton to develop a master plan for the Thermal Belt Trail and preliminary engineering to pave the entire length of the rail corridor, from Forest City to Gilkey.

2.5 Community Features

Rutherfordton has several community features that provide important services and enrich the quality of life for its residents. These features serve as potential pedestrian and bicyclist origins and destinations. The Steering Committee reported current pedestrian and bicyclist activity at some of these places. By improving connectivity between these locations and Rutherfordton's neighborhoods, residents would be more likely to walk or ride a bike. These features are listed in Table 2-1 and mapped on Map 2-1. The map identifications (ID) in the table below correspond to the map. An infrastructure project's ability to provide connectivity to these origins and destinations was one variable used to prioritize projects and is discussed further in section 4.4.

The Thermal Belt Rail Trail (AECOM, 2016)

Table 2-1: Key Community Destinations

Map ID	Name	Type
AE1	Kid Sense Children's Museum	Arts and Entertainment
AE2	Rutherford County Visual Arts Center	Arts and Entertainment
E1	Rutherfordton Elementary School	Education
E2	Trinity School	Education
E3	Rutherfordton-Spindale Middle School	Education
C1	Rutherford Board of Commissions	Civic
C2	Rutherford County Superior Court	Civic
C3	U.S. Post Office	Civic
C4	Norris Public Library	Civic
C5	Rutherfordton Town Hall	Civic
R1	Rutherfordton Clubhouse	Recreational
R2	Rutherfordton Golf Club	Recreational
H1	Cemetery	Historic
H2	Carrier-McBrayer House	Historic
H3	Carrier-Ward House	Historic
H4	Cleghorn Mill	Historic
●	Place of Worship	Place of Worship

*Community facilities outside of Rutherfordton's town limits, but in close proximity. These are identified as potential bicycle and pedestrian destinations.

Map 2-1: Key Community Features

PUBLIC INPUT

DATA COLLECTION

2.6 Infrastructure

Roads

The road network in Rutherfordton forms a street grid typical of many North Carolina towns with its downtown as a central core. The town is located in the foothills of the Blue Ridge Mountains and has a variable topography and connection to extensive greenway and trail systems located in the mountains.

Main Street (US 221), a two-lane highway, runs through the center of the town intersecting with Green Street in the north and Charlotte Road in the south forming the boundaries of downtown. Maple Street moves southwest from Charlotte Road connecting downtown to Rutherford Regional Medical Center and Ridgecrest Road in the west. Charlotte Road and Green Street run east-west connecting to US 74 in the east. The major roads in Rutherfordton, such as US 221 and Charlotte Road, are maintained by the state. The town maintains many of the residential streets.

The road network in downtown Rutherfordton is based on a grid with Main Street and Washington Street making up the two primary downtown thoroughfares. There is currently one NCDOT STIP project in Rutherfordton: R-2233B, which will bypass US-221 east of Rutherfordton to US-221 north of Rutherfordton.

Charlotte Road
(AECOM, 2016)

Characteristics of the road network in Rutherfordton including ownership, surface type, length, speed limits, traffic, right-of-way, resurfacing schedule, and barriers and limitations for bicycle and pedestrian infrastructure are summarized in Table 2-2. Most of Rutherfordton's main roads are two lanes with approximately 10 to 12 foot travel lanes, with the exception of some downtown cross streets that are one-way, one-lane, with occasional pull off parking spots along the road. Most roads have sidewalks or curb and gutter sections; however, most of these are older, uneven due to deterioration issues, and not as wide as current standards. The pavement widths in Table 2-2 do not include gutter pans. Existing sidewalks are discussed in section 2.7 Existing Bicycle and Pedestrian Facilities. The speed limits vary between 20 mph in the downtown area and 45 mph on Charlotte Road. Residential streets vary between 20 and 35 mph (see Table 2-2).

Rights-of-way were estimated using aerial photography and Rutherford County parcel data. Main Street (US 221) centers the downtown area and has the widest right-of-way at approximately 75 feet. This includes on-street parking and sidewalks. In other areas of the town, the right-of-way varies from approximately 15 to 50 feet with road sections at 20 to 40 feet. This could potentially allow for 10 to 20 feet of available right-of-way for bicycle and pedestrian infrastructure. Main Street, Washington Street, and Court Street have larger rights-

of-way in the downtown area, which would more easily accommodate future infrastructure. These estimates would need to be verified during the feasibility and engineering phases of future projects.

Ridgecrest Street (AECOM, 2016)

There is one bridge within Rutherfordton's town limits: US 64 over US 221 (North Main Street). (Bridge ID #800117). The bridge was built in 1956. It is currently not structurally deficient, but it is functionally obsolete. There are sidewalks in poor condition on both sides of the bridge. There are no sidewalks present to the east or west of the bridge extents, making these sidewalks difficult to access. The railing along the sidewalk is approximately 24-inches tall, and does not meet the recommended 42-inch height requirement.

Table 2-2: Rutherfordton Bike/Ped Facilities Inventory by Street

Street	Ownership	Length (miles)	Speed Limit (mph)*	Traffic (2014 AADT)	Right-of-Way (feet)	Pavement Width (without gutter pan) (feet)	Curb/ Gutter	Existing Bicycle/Pedestrian Facilities	Constraints
Callahan St	Town	0.35	25	n/a	40	22	No	None	Above ground utilities on north side of the roadway
Cedar St	Town	0.14	n/a	n/a	40	23	No	None	Narrow travel lanes, vegetation
Central St	Town	0.15	n/a	n/a	23-36	20	Yes	Sidewalks on west side from West Court St to West 1st St	Above ground utilities on west side of the roadway, constrained right-of-way, narrow travel lanes, on-street parking
Charlotte Rd	State	0.93	20-45	12,000	60	48	Yes	Sidewalks on north side	
Cleghorn St	Town	0.69	25	n/a	25	23	Yes	None	Above ground utilities on both sides of roadway, narrow travel lanes, constrained right-of-way
Collett St	Town	0.66	n/a	n/a	40	28	No	None	Narrow travel lanes
Court St	Town	1	n/a	n/a	38-54	29-41	Yes, along sidewalk only	Sidewalks only from Mitchell Ave to Cleghorn St	Constrained right-of-way, narrow travel lanes, and vegetation from Ridgecrest St to Mitchell St
Crestview St	Town	0.44	25	n/a	50	32	Yes	None	Above ground utilities on north side of the roadway
Edwards St	State	1.08	35	n/a	40-60	25	No	None	Above ground utilities on north side of the roadway, vegetation
Elm St	Town	0.33	n/a	n/a	30	15	No	None	Above ground utilities on west side of the roadway, narrow travel lanes, vegetation
Fifth St	Town	0.20	20	n/a	20-25	15-21	Yes	None	Narrow travel lanes
First St	Town	.019	20	n/a	32-41	22-30	Yes, along sidewalk only	Sidewalks only from Washington St to Main St	On-street parking making narrow travel lanes
Fourth St	Town	0.24	20	n/a	15-23	13-18	Yes	None	Above ground utilities on north side of the roadway, narrow travel lanes, vegetation

Street	Ownership	Length (miles)	Speed Limit (mph)*	Traffic (2014 AADT)	Right-of-Way (feet)	Pavement Width (without gutter pan) (feet)	Curb/ Gutter	Existing Bicycle/Pedestrian Facilities	Constraints
Gabriel St	Town	0.14	n/a	n/a	20	12	No	None	Above ground utilities on south side of the roadway, ditch on north side, narrow travel lanes, vegetation
Green St	Town	0.60	35	n/a	40	25	Yes	Sidewalks on south side	Above ground utilities on south side of the roadway
Hardin St	Town	0.22	25	n/a	32	24	No	None	Narrow travel lanes, vegetation
Harris St	Town	0.22	20	n/a	29	19	No	None	Narrow travel lanes, vegetation
Hillside St	Town	0.48	n/a	n/a	20	20	No	None	Constrained right-of-way, narrow travel lanes, vegetation
Honeysuckle Dr	Town	0.56	35	n/a	51	22	No	None	Narrow travel lanes, vegetation
Hospital Dr	Town	0.08	n/a	n/a	28	20	Yes	None	Above ground utilities on east side of the roadway
Industrial Park Rd	State	0.83	35	1,100	60	24	No	None	Ditches on both sides of the roadway
Laurel Hill Dr	State	0.51	35-55	1,900	60	20	No	None	Ditches on both sides of the roadway
Lynch St	Town	0.24	25	n/a	36	22	No	None	Narrow travel lanes
Main St	State	3.19	20-35	6,100-7,600	50-75	32-52	Yes	Sidewalks	On-street parking
Maple St	State	0.39	25-35	5,500	50	40	Yes	Sidewalks	Above ground utilities on south side of the street
Meridian St	Town	0.68	n/a	n/a	37	21	No	Sidewalks only from Gabriel St to Third St	Above ground utilities on east side of the roadway, constrained right-of-way, narrow travel lanes, vegetation
Mitchell St	Town	0.44	25	n/a	40	30	Yes	None	Above ground utilities on west side of the roadway

Street	Ownership	Length (miles)	Speed Limit (mph)*	Traffic (2014 AADT)	Right-of-Way (feet)	Pavement Width (without gutter pan) (feet)	Curb/ Gutter	Existing Bicycle/Pedestrian Facilities	Constraints
Monfredo St	Town	0.39	25	n/a	36	20	No	None	Above ground utilities on north side of roadway, ditches on both sides, narrow travel lanes, vegetation
Mountain St	State	0.66	35	5,800-7,900	60	22	No	None	Above ground utilities and ditches on both sides of the street
Pine St	Town	0.25	25	n/a	40	27	Yes	Sidewalks on both sides	Above ground utilities on both sides of the roadway
Recreation St	Town	0.16	n/a	n/a	30	15	No	None	Narrow travel lanes, vegetation
Reece St	Town	0.41	n/a	n/a	50	18	No	None	Above ground utilities on south side of the roadway, narrow travel lanes, vegetation
Ridgecrest St	State	0.57	35	1,900-2,400	35	27	Yes, along sidewalk only	Sidewalks only from Court St to Maple St	Above ground utilities on both sides of the roadway, vegetation
Second St	Town	0.97	20	n/a	32	25	Yes, along sidewalk only	Sidewalks only from Washington St to Main St	Above ground utilities on both sides of the roadway, constrained right-of-way, narrow travel lanes, on-street parking
Seventh St	Town	0.20	20	n/a	30	21	Yes	Sidewalks on north side from Washington St to Main St	Above ground utilities on north side of the roadway, constrained right-of-way, narrow travel lanes
Sixth St	Town	0.20	20	n/a	26	20	Yes	None	Above ground utilities on north side of the roadway, constrained right-of-way, narrow travel lanes, vegetation
Southern St	Town	0.52	n/a	n/a	30	15	No	None	Above ground utilities on east side of the roadway, narrow travel lanes, vegetation
Tanner St	Town	0.45	25	n/a	41	25	No	None	Above ground utilities on east side of the roadway, narrow travel lanes
Taylor St	Town	0.15	n/a	n/a	36	20	Yes, along sidewalk only	Sidewalks on west side	Above ground utilities on east side of the roadway, constrained right-of-way, narrow travel lanes, on-street parking
Third St	Town	0.60	20	n/a	25-46	19-25	Yes, along sidewalk only	Sidewalks only from Meridian St to Main St	Narrow travel lanes, vegetation from Ridgecrest St to Meridian St, above ground utilities on north side of the roadway, constrained right-of-way, on-street parking

Street	Ownership	Length (miles)	Speed Limit (mph)*	Traffic (2014 AADT)	Right-of-Way (feet)	Pavement Width (without gutter pan) (feet)	Curb/ Gutter	Existing Bicycle/Pedestrian Facilities	Constraints
Toms St	Town	0.34	n/a	n/a	32	23	Yes	None	Above ground utilities on both sides of the roadway, narrow travel lanes from Seventh St to Third St
Trade St	Town	0.09	n/a	n/a	7-25	7-22	No	None	Above ground utilities on north side of the street, on-street parking
Tryon Rd	State	0.32	35	4,000	60	23	No	None	Above ground utilities on north side and ditches on both sides of the street
Twitty Ford Rd	Town	0.16	n/a	n/a	30	21	No	None	Above ground utilities on north side of the roadway
Washington St	State	1.48	20-35	5,400	45-50	30-35	Yes, along sidewalk only	Sidewalks on both sides	Above ground utilities on both sides of the roadway
Westview St	Town	0.15	n/a	n/a	28	20	No	None	Above ground utilities on north side of the roadway, narrow travel lanes, constrained right-of-way

* Unless otherwise posted, Section 28-120 of Rutherfordton Town Ordinance limits vehicular speeds to 35 miles per hour with the municipal corporate limits

Railroad

There are currently no operational railways in Rutherfordton. One former railroad right-of-way skirts the eastern border of the town limits. It was formerly a part of the rail system owned by the Rutherford Railroad Development Corporation and operated by Thermal Belt Railway. This line has been decommissioned and converted to the Thermal Belt Rail Trail which extends from Kentucky Street in Spindale to Oak Springs Road north of Rutherfordton.

Public Transportation

Rutherford County Transit provides transit services throughout Rutherford County. Rutherford County Transit operates a deviated fixed route transit service for the general public of Rutherford County, particularly Rutherfordton, Spindale, and Forest City, Monday through Friday, 8:00 AM to 5:40 PM. With this service, deviations can be made up to one-half mile from current stops. The fare was previously $1.00 per ride, but is now free. The county also offers a demand response service to Medicaid-qualified, elderly, and disabled individuals.

In addition to Rutherford County transit system, the Rutherford County School System provides school bus transportation to students.

Although public transportation services are limited, they depend on a bicycle and pedestrian network for transit riders to safely access transit stops. Furthermore, a bicycle and pedestrian network links transit stops to community destinations, residences, and businesses. A connected bicycle and pedestrian network would support future expansion in public transportation by providing safer access to transit stops on streets and sidewalks.

Utilities

Utilities are an important consideration for bicycle and pedestrian planning. Moving or replacing existing utilities to make room for new bicycle and pedestrian infrastructure can be costly and in some cases, cost-prohibitive. Table 2-3 lists where above-ground utilities become barriers to bicycle and pedestrian improvements. Often, sidewalks and multiuse paths are located on the side of the road where utilities are not present. The exact location of utilities would need to be surveyed during the engineering phase of each project. Coordination would need to occur with utility providers before construction. General information about utilities in Rutherfordton is noted in Table 2-3 below.

Table 2-3: Utilities

Utility	Provider	Location
Electricity	Duke Power	Above ground
Telephone	AT&T, Northland Communications, Nextiva	Above ground
TV/Internet	AT&T, Northland Communications, Pangea, Skyrunner	Above and below ground
Natural Gas	PSNC Energy	Below ground
Water	Broad River Water Authority	Below ground
Sewer	Broad River Water Authority	Below ground

2.7 Existing Bicycle and Pedestrian Facilities

Pedestrian Facilities

Sidewalks

Rutherfordton has existing sidewalks on several streets near the downtown area. The condition of these existing sidewalks varies. Ninety-four percent of Rutherfordton's sidewalks are in low distress, meaning they are unlikely to hinder the mobility of an average pedestrian.[5] However, seventy percent of all sidewalks experience some form of distress in the form of cracks, broken pavement, and insufficient widths.[6] Most of the sidewalks in better condition are located in the downtown area where they see the most use.

Existing sidewalk facilities are listed in Table 2-2 and mapped on Map 2-2. Overall, the sidewalk network in Rutherfordton is poor to moderate, with facilities present on many high-traffic streets like Main Street, Washington Street, and downtown streets. However, many neighborhood streets and streets in downtown Rutherfordton lack continuous, good condition sidewalk facilities. Many sidewalks need enhancements to improve safety and expand the connectivity between prime destinations.

Sidewalks along Main Street in downtown Rutherfordton between Third Street and Court Street are wider than in other parts of the town, and vary between 8 and 10 feet. However, pedestrian traffic in this area is heavier than in the rest of the town and the current sidewalk widths are insufficient when things like utility poles, street trees, and outdoor dining spaces are included. The 15-foot travel lanes and angled parking along this part of Main Street present an opportunity to expand the sidewalks by reducing the widths of the vehicular travel lanes. A reconfigured road would allow expanded sidewalks as well as room for additional street trees, merchandise display, outdoor dining, public seating, and other uses and improvements suitable to a downtown setting. An additional consideration for the reconfiguration would be to change the existing diagonal parking to back-in angled parking, which will improve safety and vision of both bikes, pedestrians, and other vehicles, allow easier parking maneuvers, allow easier loading of both cargo and children's car seats, and direct disembarking children safely behind open car doors to the sidewalk rather than the street. Additional information on back-in parking can be found at http://www.pedbikeinfo.org/data/faq_details.cfm?id=3974

[5] Sidewalk Condition Survey (Town of Rutherfordton), 2013
[6] Ibid.

Table 2-4: Existing Sidewalk Facilities

Street	From	To	Sidewalk Width (ft.)*	Condition	Street Lighting
Charlotte Rd	Main St	US 74	4	Good: cracked portions	Intermittent lighting on both sides of street
Court St	Mitchell St	Cleghorn St	4	Good: sunken portions	Intermittent lighting at intersections
Ridgecrest Ave	Court St	Maple St	4	Good: cracked and sunken portions; utility poles in sidewalk	Intermittent lighting on east side of street
First St	Washington St	Toms St	4	Good: utility poles in sidewalk and cracked	Lighting on south side of street
Green St	Main St	Sparks St	4	Good: cracked and sunken portions	Lighting on south side of street
Pine St	Ridgecrest St	Mitchell St	4	Poor: cracks and gaps, lifted and sunken portions	None
Maple St	Ridgecrest St	Washington St	4	Moderate: cracks, lifted and sunken portions and gaps	Intermittent lighting at intersections.
Main St	Carnegie Rd	Third St	4	Good: cracked and sunken portions	Street lighting on both sides of street
Main St	Third St	Court St	8-10	Good: utility poles and other obstacles in sidewalk	Street lighting on both sides of street
Main St	Court St	Lynch St	4	Good: cracked and sunken portions	Street lighting on both sides of street
Meridian St	Gabriel St	Third St	4	Good: cracks and vegetation	Street lighting on the north-east side of street.
Second St	Washington St	Taylor St	4	Good: utility poles in sidewalk	Lighting on north side of street
Mitchell St	Third St	Maple St	4	Good: cracked, lifted, and sunken portions and gaps	Intermittent lighting at intersections.
Taylor St	Third St	Court St	4	Good: cracked and missing portions	Lighting on east side of street
Third St	Meridian St	Taylor St	4	Moderate: cracked and sunken	Intermittent lighting at intersections.
Washington St	North of the Main Street intersection	Maple St	4	Good: cracked, sunken and crumbling portions	Street lighting on east side of the street

*Current NCDOT standards require a 5-foot sidewalk width, and 5.5 feet on bridges. Greater widths are recommended in areas with high pedestrian activity.

In addition to the street lighting noted in **Error! Reference source not found.**, overhead streetlights are located intermittently throughout the town. The Steering Committee and public meeting participants noted that lighting needed to be improved in the historic area of Washington Street.

Crossing Facilities

In addition to sidewalks, there are ten marked crosswalks along Main Street and Washington Street, summarized in Table 2-.

Table 2-5: Existing Crosswalks

Location	Type	Visibility
Main Street (Rutherford Church of Christ and St. Francis Episcopal Church	Mid-block crossing	Visible striped pavement markings
Main Street (Rutherford County Office Building parking lot)	Mid-block crossing	Visible striped pavement markings
Main Street and Second Street	Four-way crossing at intersection	visible striped pavement markings
Main Street and Court Street	Four-way crossing at intersection	Visible striped pavement markings
Main Street and Charlotte Street	Crossing across north side of Main and east side of Charlotte	Visible striped pavement markings
First Street (adjacent to Main Street)	Crossing First Street	Visible striped pavement markings
Washington Street and Third Street	Four-way crossing at intersection	Limited pavement markings
Washington Street and Second Street	Three-way crossing at intersection	Limited pavement markings
Washington Street and First Street	Three-way crossing at intersection	Limited pavement markings
Washington Street and Court Street	Four-way crossing at intersection	Limited Pavement Markings

The six crosswalks along Main Street benefit from bold, visible striped pavement markings on which pedestrians can cross the street. Although these pavement markings are visible to motorists, pedestrians would benefit from increased signage and pedestrian crossing signals to increase safety.

The four crosswalks along Washington Street one block west of and parallel to Main Street lie on a street with less traffic than Main Street. However, Washington Street crosswalks lack highly visible pavement markings

and the intersections do not have traffic signals or stop signs. Pedestrians crossing Washington Street must rely on breaks in vehicle traffic to cross, which presents a safety concern. These four intersections could be improved by new pavement markings and signage to alert drivers of the pedestrian crosswalks.

Bicycle Facilities and Multi-Use Trails

Rutherfordton does not have marked bike lanes, wide paved shoulders, or designated bike routes within its border. Rutherfordton collaborates with county and other local municipal and governmental entities, as well as other local stakeholder organizations, in maintaining an extensive system of recreational bike trails and bike routes throughout the area. The Thermal Belt Rail Trail is adjacent to Rutherfordton on its eastern border and connects to Spindale to the southeast, with plans to extend the Trail further south to Spindale and Forest City. The Thermal Belt Rail Trail is used by bicyclists, pedestrians, and, north of US 64, equestrians. The surface of the trail varies from unpaved to paved, but within Rutherfordton town limits the trail is a 6-feet wide and paved with asphalt.

The Purple Martin Greenway will ultimately connect Crestview Park to Kiwanis Park and the Thermal Belt Rail Trail. The first phase of the greenway was opened in 2015 and extends approximately 2,000 feet south from Skyline Drive. Phase two opened in June, 2017 and connects Skyline Drive to Industrial Park Road. Phase three is currently under construction and will connect Industrial Park Drive to Cleghorn Street, with future phases providing connections to Kiwanis Park and the Thermal Belt Trail. The trail is being constructed in part with donations from the RHI Legacy Foundation and town funds. The greenway is 10 feet wide and has an asphalt paved surface that is used by pedestrians and bicyclists.

Finally, the Gold Mile is an informal one mile walking loop around downtown Rutherfordton and generally follows North Washington Street, 6th or 7th Street, North Cleghorn Street, and Court Street.

2.8 Bicycle, Pedestrian, and Vehicular Traffic Counts and Crash Data

Bicycle and Pedestrian Activity

Although actual bicycle and pedestrian counts were not available for this plan; the Steering Committee and public meeting participants noted bicycle and pedestrian activity along the Thermal Belt Rail Trail, the Purple Martin Greenway, and the Gold Mile loop in addition to Crestview Park and Kiwanis Park. The trail system and Gold Mile loop have become popular attractions for both touring bicyclists and bicyclists and local employees during their lunch hours. The Steering Committee and public meeting participants also noted pedestrian activity and pedestrian safety concerns around Rutherfordton Regional Medical Center, the downtown retail and business area, and intersections to greenways.

NCDOT Annual Average Daily Traffic Counts

NCDOT prepares Annual Average Daily Traffic (AADT) counts for state roads, which represent the daily traffic average over the year at specific points. These counts, in conjunction with field visits and discussions with residents, help identify high traffic areas that may pose safety concerns for pedestrians and bicyclists.

Several roads within Rutherfordton have traffic counts available. The counts are listed in for the most recent year available, 2014. Railroad Avenue which runs along the railroad tracks east of the town had the highest traffic count. Traffic was also heavy in the downtown area on East Main Street and Washington Street. The AADT counts for Rutherfordton are listed in Table 2-6.

Table 2-6: Annual Average Daily Traffic (AADT) Counts

Street	Location	AADT (2014)
US-74 Alt./Railroad Ave.	Parallel to the railroad tracks along the eastern part of the town.	16,000
Charlotte Road	Entering in Rutherfordton, just east of Main Street.	14,000
Washington Street	Parallel and west of Main Street.	11,000
US-64/East Mountain Street	Just east of the Main Street US-221 interchange.	9,200
Tryon Road	West of South Ridgecrest Street	4,400

Crash Data

The NCDOT Division of Bicycle and Pedestrian Transportation in collaboration with local law enforcement departments developed a dataset for all reported bicycle and pedestrian crashes[7] within the state between the years of 1997 and 2014.

According to this dataset, between a five-year period from 2008 to 2014, 11 vehicular and pedestrian crashes and two bicycle crashes were reported in the Town of Rutherfordton. Out of the pedestrian crashes, one was a disabling injury, three were evident injury, four were possible injury, one resulted in a death, and two were no injury. The two bike crashes were reported as possible injuries. Most of these crashes were near the Charlotte Road and Railroad Avenue intersection.

General safety concerns cited by the Steering Committee include the following:

- Crosswalks are needed for bicycle and pedestrian access to trails and important downtown destinations
- Connected sidewalk networks are needed
- Sidewalks in disrepair
- Limited lighting
- Overall lack of bicycle facilities

[7] North Carolina Pedestrian and Bicycle Crash Data Tool

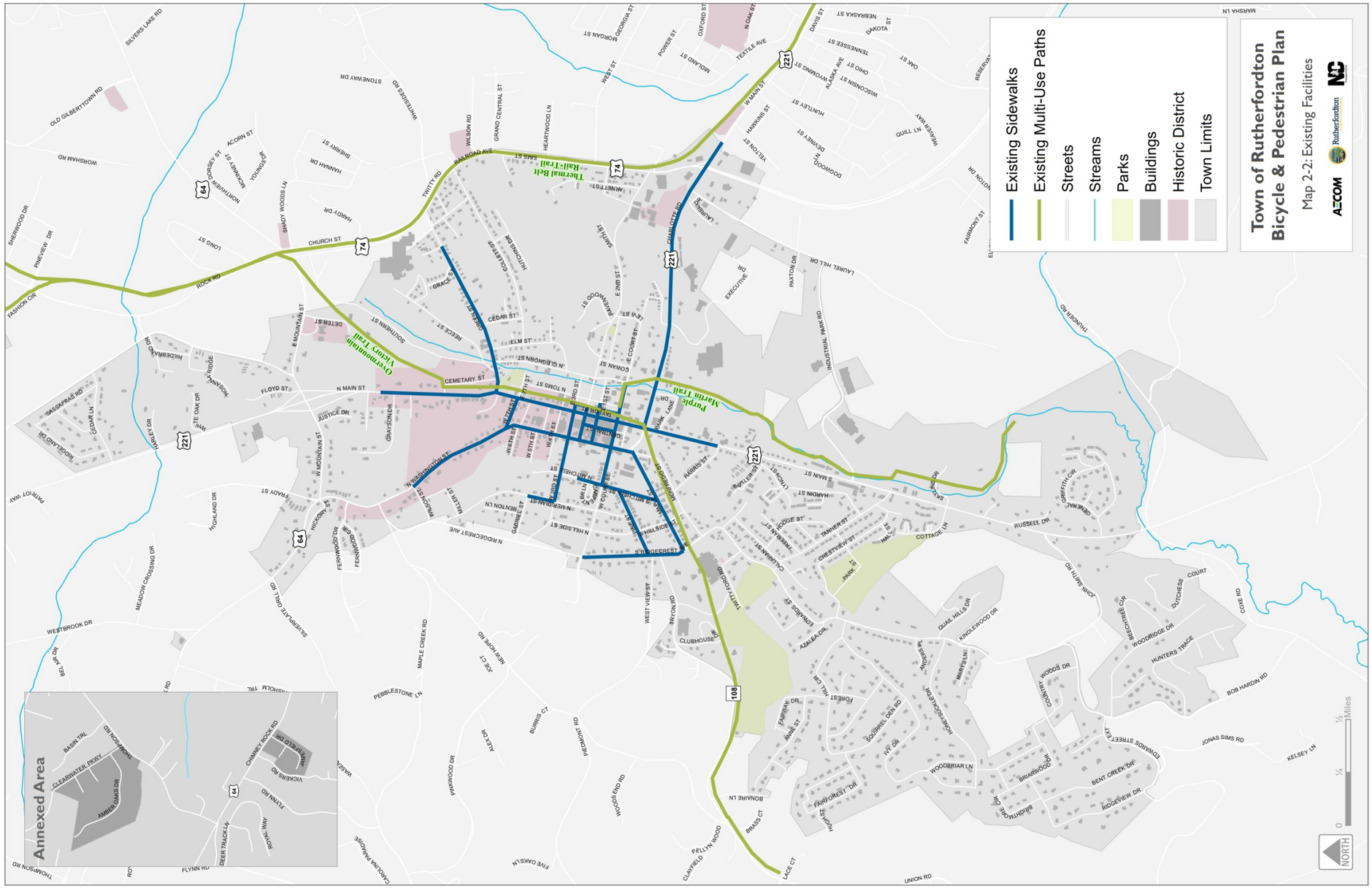
2.9 Existing Bicycle and Pedestrian Programs

There are several existing programs within the Town of Rutherfordton that promote and encourage walking and bicycling. Although the town itself does not have any existing programs, other groups such as the schools and outdoor enthusiasts have several programs.

Rutherfordton Elementary and R-S Middle School annually hold a walk to school day in conjunction with Region 2 of Active Routes to School. The walk to school day coincides with the *International Walk to School Week* which typically falls on the first week of October.

The Rutherford Outdoor Coalition (ROC) is a non-profit organization that works to encourage outdoor activity for residents of Rutherford County. In addition to promoting and improving the county's recreational sites, the ROC organizes events such as hikes on public and private lands and the Rutherford Race Series, a series of 5 and 10k races within the county.

Map 2-2: Existing Facilities



2.10 Opportunities and Constraints

In partnership with the Steering Committee, opportunities for improving bicycle and pedestrian mobility and safety were identified as well as potential constraints to overcome in achieving the community's vision for multimodal access and safety. Rutherfordton's location in the foothills of the Blue Ridge Mountains of Western North Carolina creates bicycle and pedestrian opportunities as well as challenges to the implementation of associated infrastructure. Connecting to existing bicycle and pedestrian infrastructure will allow users to explore the natural setting in and around the town, as well as add to the small town charm of the community while also providing economic benefits to local businesses.

Opportunities

1. An existing sidewalk network along many main thoroughfares that connects many of the community resources in the town, including trails and greenways.
2. Economic growth and investments that result from visitors using bicycle and pedestrian facilities including nature trails. The town and the surrounding area are popular amongst bicyclists drawn to the challenges the hilly terrain provides. Recreational riders in the town commonly access the several bicycling routes and trails by connecting from downtown Rutherfordton to the surrounding area.
3. Natural resources and topography that draw local and regional visitors.
4. Coordination with bicycle and pedestrian organizations/clubs like Safe Routes to School to help develop local activities and events, such as a bicycle rodeo or providing bicycle helmets to children.
5. The town has an opportunity for additional bicycle and pedestrian facilities to be constructed in conjunction with the upcoming Rutherfordton Bypass.

Constraints

1. Sidewalks along major corridors that are in need of repair, that are not Americans with Disability Act (ADA) accessible, and that do not form a connected network.
2. Unsafe intersections for accessing trails and important destinations.
3. Roadways with limited rights-of-way for sidewalks or bicycle lanes that are in need of retrofitting.
4. Lack of existing town policies that require sidewalk and bicycle infrastructure to be constructed as part of development.
5. Terrain and right-of-way challenges may increase engineering and construction costs of pedestrian infrastructure.
6. Difficulties in coordinating improvements for regional greenways and trails that involve multiple stakeholders.

3.0 Public Input

3.1 Steering Committee

The Steering Committee that guided this plan was formed as a dedicated group of local officials, staff, stakeholders, and citizens to incorporate a diverse range of community perspectives. The committee met three times throughout the planning process to help shape the Bicycle and Pedestrian Plan by identifying goals and objectives, identifying pedestrian constraints and opportunities, and prioritizing proposed projects.

First Steering Committee Meeting, April 2016 (AECOM, 2016)

At the first Steering Committee meeting on April 12, 2016, the group chose a vision statement for the plan and discussed issues the community is facing with regards to bicycle and pedestrian infrastructure. Members focused on developing a vision and set of goals for the plan. The committee broke into groups during a working session to define bicycle and pedestrian origins, destinations, activity, and areas of concern. These areas of concern were used to start thinking about potential projects, policies, or programs. The committee discussed focusing on connectivity, safety, and implementable projects.

Second Steering Committee Meeting, June 2016 (AECOM, 2016)

The second Steering Committee meeting was held on June 16, 2016. Sample projects, policies, and programs were presented to the committee in preparation for a working session. The working session captured committee input on bicycle and pedestrian infrastructure projects as well as relevant policies or programs. Specifically, focus was placed on linear facilities and spot improvements, connections and gaps in bicycle and pedestrian infrastructure, and amenities. The feedback gleaned during this meeting was used to develop preliminary recommendations.

The third Steering Committee meeting was held on November 16, 2016. During this meeting the Steering Committee was asked to help prioritize a list of recommended projects by scoring the projects based on various criteria including connectivity, demand, equity, and safety. The selected criteria were based on Steering Committee preference gleaned during the second meeting in June as well as consultant

recommendation. The Steering Committee was also asked to help identify which types of policy and programmatic recommendations would be made in the plan. The feedback from this meeting, as well as the second public meeting discussed below, was used to refine the recommendations made in the plan.

Third Steering Committee Meeting, November 2016 (AECOM, 2016)

Table 3-1: Steering Committee

Steering Committee Members		
Cindy Adair	Jimmy Dancy	Amanda Maishman
Doug Barrick	Karyl Fuller	Bill Parke
Christy Bare	Thad Hodge	Clark Poole
Dana Bradley	Lieutenant Clint Ingle	Mary Smith
Christy Bare	Michelle McClan	Kristina Solberg
Heather Britt	Willie Lowe	Keith Ward
Mike Cornelia	Ashley Lowery	Hallie Zeedik

3.2 Public Meetings

The first public meeting was held on June 16, 2016, immediately following the second Steering Committee Meeting. The Steering Committee served as facilitators and recorders during the working session to help guide a brief visioning exercise, mapping exercise that identified opportunities and constraints, and capture suggested bicycle and pedestrian projects, policies, and programs.

First Public Meeting, June 2016 (AECOM, 2016)

The second public meeting was held on November 16, 2016. During the second public meeting, the Steering Committee again served as facilitators and recorders during a working session that helped refine the proposed infrastructure projects, and identify programmatic and policy recommendations that would be included in the plan.

A copy of all meeting materials is provided in Appendix A: Public Involvement.

3.3 Community Survey Results

A survey was made available to Rutherfordton's residents from August to September 2016 to gather local information about current travel behaviors, priorities, and opportunities for bicycling and walking in Rutherfordton. Information from the survey has been included in this plan's recommendations. The following sections summarize the key themes from the forty-eight survey responses received. Complete survey responses can be found in Appendix A.

Themes

The most frequently reported purposes of bicycling and walking trips in Rutherfordton during a typical week involve local parks and trails, downtown area retail and offices, and exercise. Access to parks and trails emerges as a central theme in which residents either express their desire to use parks and trails and note the road or sidewalk facility barriers that limit access. Although physical activity is a priority amongst residents, almost 70 percent of survey respondents said bicycling or walking in Rutherfordton is very or somewhat difficult. Specifically, bicycling is difficult because of the limited availability of bicycling facilities and safety concerns due to vehicle traffic and speeds. Walking is difficult because of the poor condition of pedestrian facilities and lack of a complete sidewalk network linking pedestrians to desired destinations.

Priorities to Improve Bicycling and Walking

To address the current difficulties in bicycling and walking to parks, trails, and downtown, survey respondents' primary priority is infrastructure: particularly improving and adding bicycling and pedestrian facilities, providing more and safer connections to parks and trails, and maintaining these facilities over time. In addition, respondent's highlighted community and workplace incentive programs as a secondary priority to encourage people to continue or begin bicycling and walking. Educational programs targeting safe bicycling behaviors and safe ways for vehicles to share the road with bicycles are a third priority.

Rutherfordton residents had opportunities in the survey to provide recommendations with specific locations in need of attention, and the following four points summarize these responses:

1. **Connecting neighborhoods, parks, and trails**: Many respondents requested complete bicycling and pedestrian networks that do not require users to drive and park at a park or trail entrance.
2. **Bicycling and walking safely around downtown, the hospital, retail, and schools**: Several streets were identified as unsafe because of the condition of sidewalks, a lack of bike lanes, and

Second Public Meeting, November 2016 (AECOM, 2016)

limited vehicle speed regulation. In addition, neighborhoods with destinations like the hospital, parks, and schools lack a complete sidewalk network, which discourages residents from bicycling and walking. Examples include Washington Street, Edwards Street, Maple Street, and Main Street.

3. **Coordinating with neighboring jurisdictions to expand the regional network of bike routes**: The Thermal Belt Rail Trail runs through Rutherfordton and links several towns: Gilkey, Spindale, and Forest City. Respondents encouraged Rutherfordton officials to plan trails and bike routes in the region with these neighboring towns and the county, which could include connectivity to regional attractions such as Lake Lure.
4. **Promoting expansion of bicycle and pedestrian amenities on existing roadways through local ordinances**: Respondents suggested that Rutherfordton officials utilize local ordinances to maintain, protect, and expand bicycling and pedestrian facilities as improvements and developments are built.

RECOMMENDATIONS

PROPOSED PROJECTS

4.0 Recommendations

4.1 Overview

Active transportation—that is, bicycle and pedestrian travel—offers many benefits including improved health, reduced environmental impacts, and fewer financial commitments from decreased dependency on the automobile. This section describes the infrastructure improvements that are recommended to provide the Town of Rutherfordton with a safe, accessible, and connected bicycle and pedestrian network.

Recommended improvements in this plan include improving on-road bicycle facilities, sidewalk upgrades, and crossing improvements. Multiuse facilities (shared use paths, also known as greenways) are not specifically recommended due to the existing, robust, trail system; also, specific bicycle and pedestrian projects were prioritized ahead of shared-use projects during the development of projects. Potential design changes as a result of the upcoming bypass may result in combining recommendations into multiuse paths (see section **Error! Reference source not found.**).

All proposed projects are intended to provide safe connections between origins and destinations within the town while promoting exercise and mobility. The projects were developed through collaboration with the Steering Committee, field analysis, and public input. All bicycle and pedestrian facility recommendations along NCDOT-maintained roadways will require coordination with NCDOT Highway Division 13 as part of implementation.

4.2 Facility Types

Spot Improvements

Spot Improvements address bicycle and pedestrian problems at specific locations such as intersections, short lengths of a roadway, or single destinations. These types of improvements are generally low cost and provide enhancements through surface improvements, signing, access enhancements, or functional upgrades.

Spot Bicycle Facilities

Bicycle Parking: A rack or object provided specifically for the purpose of supporting and enabling a bicycle to be secured when not in use. A bicycle corral is a type of bicycle parking used in high-demand areas for the parking of multiple bicycles.

Bicycle Signal: A traffic control device that assigns right-of-way to bicyclists and controls bicycle movements in mixed traffic to reduce conflict with motor vehicles and/or pedestrians.

Bicycle Zone: An area in the public right-of-way reserved for bicycling facilities.

Signage: Sign categories include warning (e.g., turn signs), regulatory (e.g. stop signs), guide (e.g., bicycle route signs), school (e.g., school speed limit signs), and emergency signs (e.g., area closed signs).

Spot Pedestrian Facilities

Crosswalk: The portion of the roadway intended for pedestrians to use in crossing the street. It may be distinctly indicated for pedestrian crossing by lines or other markings on the surface. At intersections with sidewalk present, the crosswalk is the marked or unmarked part of the roadway where the lateral boundary lines of the sidewalk would extend across.

Crossing Island / Mid-Block Crossing: A raised island at intersection or mid-block crossing location that helps to protect crossing pedestrians from motor vehicles and provides a place of refuge.

Curb Extension: An extension of sidewalk, landscaped area, or curb line into the roadway that reduces the crossing distance and enhances visibility for pedestrians and may reduce traffic speed.

Curb Ramp: A combined ramp and landing to accomplish a change in level at a curb between the sidewalk and the street. This element provides a transitional access between elevations for pedestrians using wheelchairs, strollers or other devices with wheels, and must comply with ADA standards.

High Visibility Crosswalks: A crosswalk marked with diagonal or longitudinal lines parallel to traffic flow, such as the ladder, continental or bar pair marking pattern.

Lighting: Illumination provided to enhance the safety and comfort of pedestrians and bicyclists. High quality and well-placed lighting, including supplementing pedestrian-scale lighting at night-time crossing areas, increases safety and security for non-motorized users.

Pedestrian Hybrid Beacon: A pedestrian-activated device used to warn and control traffic at an unsignalized location to assist pedestrians in crossing at a marked Crosswalk.

Spot Multiuse Facilities

Paving Treatment: Paving treatments can send a visual cue to motorists about the function of a street. They can also create an aesthetic enhancement of a street and be used to delineate separate space for pedestrians or bicyclists. Some examples include colored concrete, brick, and cobblestone.

Trailhead: A trailhead is the primary access point to a shared use path. It may have parking and other amenities at the terminus.

Wayfinding: Comprehensive signage and/or markings to guide travelers to their destinations along preferred routes by providing information such as distances or times to reach key destinations or areas.

Linear Improvements

Linear Improvements are specific to linear project needs for bicycle and pedestrian problems such as enhancement or new construction of bike lanes, sidewalks, or improvements to streetscapes. These types of improvements are generally larger infrastructure projects with higher costs and longer implementation timeframes and together for a network of safe transportation choices for the community.

The following are suggested linear bicycle and pedestrian facilities that could be feasibile in the Town of Rutherfordton based on planning-level analysis and local stakeholder preference. This is not an exhaustive list and are terms defined by NCDOT.

Linear Bicycle Facilities

A successful bicycle network consists of bicycle facilities which allow for the safe and efficient movements of cyclists within and throughout a given area.

Buffer: A strip of land that separates the sidewalk, or other facilities, from the street to improve the active traveler's level of comfort. A buffer can be comprised of one or multiple zones including the green zone, bicycle zone, parking/transit stop zone or a combination thereof. Typical elements that contribute to creating a buffer include landscaping strips, parked cars and/or bicycle lanes.

Bicycle Route: A segment of road identified as a path of travel for bicyclists between destinations which may have directional and informational signage and markings. While these routes are identified for use by bicyclists, they are not necessarily exclusive to bicycle transportation. Routes may exist at the national, state, county and local level.

Markings: Provide information, guidance, regulation, or warnings to road users. As a proposed implementation method, marking means striping or painting facilities such as shared lane markings or bicycle lanes without any need for additional improvements or adjustments to the roadway.

Paved Shoulder: The portion of the roadway contiguous with the travel lanes that accommodates stopped vehicles, emergency vehicles, and reduces the frequency of pavement maintenance is referred to as a paved shoulder. Shoulders, where paved and of sufficient width, may be used by bicyclists. Bicycle lane pavement markings may be used to designate the shoulder as a bicycle lane. In rural areas, paved shoulders are also used by pedestrians where a sidewalk is not present.

Reallocation: A technique to modify the number or width of travel lanes to achieve systemic improvements such as adding a bicycle lane to an existing roadway with confined right-of-way. Variants of reallocation include 4-to-3-lane conversion, lane reduction, road diet, or reconfiguration.

Repave: Proposed implementation method to improve a facility for bicyclists by capitalizing on the routine paving or resurfacing maintenance schedule.

Restripe: Adjustment in the lateral placement of existing travel lanes to reallocate roadway space for bicyclists or create a greater buffer width between motor vehicle lanes and existing or proposed pedestrian facilities. This adjustment does not remove or add any travel lanes for motor vehicles.

Separated Bike Lane: A bicycle lane that is physically separated from motor vehicle lanes, exclusively for bicycle traffic, and is on or adjacent to the roadway. Also known as a cycle track or protected bike lane.

Shared Lane: A lane that is open to both bicycle and motor vehicle travel. Shared lanes can be marked with shared lane markings or designated as bicycle boulevards. A shared lane that is at least 14 feet wide allows space so that bicyclists and motorists may travel side-by-side within the same traffic lane.

Linear Pedestrian Facilities

Providing new infrastructure and making existing facilities safer and more inviting for pedestrians can help to increase the walkability of a community.

Resurface: A proposed implementation method to improve a facility for pedestrians to occur the next time the roadway segment is scheduled to be resurfaced. Resurfacing beyond routine maintenance (i.e., repaving) is considered an alteration and therefore requires upgrading curb ramps and crosswalks for ADA compliance.

Sidewalks: The portion of a street or highway right-of-way, beyond the curb or edge of roadway pavement, which is intended for use by pedestrians. As the primary element of the pedestrian environment, sidewalks are generally constructed of concrete, pavers, or other hard surface. In urban areas, sidewalks are typically located adjacent to the road with a curb to protect users from vehicular traffic. In suburban areas, sidewalks or wide paved shoulders along the roadway may be used for pedestrian use. In rural areas, wide shoulders may be the only pedestrian facility, and in many cases there are no specific improvements to accommodate pedestrian users.

Linear Multiuse Facilities

NCDOT adopted a "Complete Streets" policy (CS) in 2009, which directs NCDOT to consider and incorporate all modes of transportation when building new projects or making improvements to existing infrastructure. Complete Streets are designed to be safe and comfortable for all users, including pedestrians, bicyclists, transit riders, motorists, and individuals of all ages and capabilities.[8]

Part of designing with CS principles in mind includes the impact of street patterns on trip length, connectivity between resources, intersection use, and the overall experience of the user. Both cyclists and pedestrians can benefit from a street that has been designed with the CS policy including improvements for children and individuals with accessibility needs, health advantages, improved public transportation services, economic revitalization, safety enhancements, roadway equity, and a more livable community.

[8] NCDOT Complete Street Planning and Design Guidelines at http://completestreetsnc.org/

Equestrian Considerations: Trail corridors with paved and unpaved treads can accommodate multiple users, such as riders with horses, bicycles and pedestrians. Vegetation and distance help separate users and minimize conflicts.

Grade-Separated Crossing: A facility, such as an overpass, underpass, skywalk, or tunnel that allows pedestrians, bicyclists, and motor vehicles to cross each other at different levels to avoid conflicts and improve free flow of each mode. These are structures that cross under or above a roadway, barrier, or natural feature.

Shared Use Path: Also known as a "multiuse trail" or "greenway", a shared use path is a facility designed to meet ADA Standards, which may be used by bicyclists, pedestrians, and other non-motorized users. The shared use path is separated from the roadway by an open space or a physical barrier or within an independent-right-of-way. A rail trail, built within the right-of-way of a former railroad, is considered a type of shared use path.

Sidepaths: A specific type of shared use path facility that is physically separated from the road but located within the roadway right-of-way.

Unimproved Trail: An unpaved/unimproved off-road facility, open for bicyclist and/or pedestrian use, which is not required to meet ADA standards.

Widening: Increasing the width of the paved portion of the roadway to specifically improve the roadway segment for a bicycling or pedestrian facility.

4.3 Project corridors

Bicycle and pedestrian improvements proposed in this plan were developed based on the corridors, locations, and issues identified through the public engagement process. As described in Section 3, Steering Committee members and the public were asked to identify community features, origins and destinations, opportunities for pedestrian connections, and constraints to bicycle and pedestrian mobility. Based on that input and the data collection in Section 3, the team identified a total of twelve corridors for specific infrastructure improvement recommendations. The twelve corridors and corresponding projects are shown in Map 4-1, Map 4-2, and Map 4-3, and include the following:

- Charlotte Road — Corridor improvements
- Ridgecrest Street — Pedestrian improvements
- Green Street — Bicycle and pedestrian improvements
- Mountain Street — Bicycle and pedestrian improvements
- South Main Street — Corridor improvements
- Maple Street — Bicycle and pedestrian improvements
- Washington Street (Alt US 74) — Bicycle route designation
- Washington Street — Bicycle and pedestrian improvements
- East Court Street — Pedestrian improvements
- Edwards Street — Corridor improvements
- North Main Street — Pedestrian improvements
- Town Loop — Pedestrian connector

The corridors and projects were presented to the Steering Committee and the public who were asked to prioritize and provide input on the specific projects.

4.4 Prioritization

The results from the prioritization process are provided in Table 4-2. Prioritization results are meant to serve as a general guide. There may likely be opportunities to implement these projects in an order different from the order in which they were prioritized. For example, if NCDOT is repaving Maple Street, then it would be advantageous to explore shared lane markings or crossing improvements even though the project may have ranked lower than other projects. The prioritization in this plan should generally be followed as it directly reflects Steering Committee input and community feedback captured during public meetings and an online survey. This should not, however, prevent the town from taking advantage of bicycle or pedestrian improvements as opportunities present themselves. It is beneficial to implement bicycle and pedestrian projects on the same road segment simultaneously in order to realize cost savings and minimize disruptions due to construction.

The National Cooperative Highway Research Program (NCHRP) Report 803: Pedestrian and Bicycle Transportation Along Existing Roads - ActiveTrans Priority (APT) Tool Guidebook (2015) was used as a

methodology for prioritizing bicycle and pedestrian projects in the Town of Rutherfordton. These projects were ranked by corridor, rather than by each individual linear and spot project (see section 4.2 Facility Types) using the APT provided spreadsheet. Prioritization scores for each corridor improvement were based on a set of eight factors, as prescribed in the APT methodology. These factors were custom-selected for this plan based on input from each of the Steering Committee members in order to best reflect Rutherfordton's community values and priorities. Weight factors were then applied to indicate the relative importance of different factors.[9] A set of variables for each factor was then designated. Variables are characteristics of the roadways, neighborhoods, or other features related to the proposed project(s) that can be measured qualitatively or quantitatively. The traffic speed of a roadway, bicycle or pedestrian crashes, or results from a public input survey are all examples of measurable characteristics. After data was collected, assessed, and entered into the APT spreadsheet, variables were scaled (normalized along numeric scales). The resulting output is the calculation of priority score and rank for each individual project within the proposed corridor. Table 4-1, on the next page, summarizes the factors, weight of factors, and variables used in the prioritization of projects.

An example of this step-by-step process in use is as follows. The APT spreadsheet has a series of 10 tabs, each denoting a step in the prioritization process. As stated above, factors are selected, weighted, and variables designated. Each variable is then measured and data is assessed and entered into the spreadsheet. For the Charlotte Road Corridor Improvements project for example, under the factor "Constraints," the variables chosen include "Available Right-of-Way," "Utility Relocation," and "Order of Magnitude Cost." Data is assessed for each of these variables and included in the spreadsheet. This may be qualitative (such as yes/no responses) or quantitative data (such as numerical data). For this project, based on analysis, the following resulted: Available Right-of-Way: **Yes;** Utility Relocation: **Yes;** Order of Magnitude Cost: **Low.**

These variables are then scaled, where a numerical value is assigned to the "yes" and "low" results. This is done so the variables can be more equitably compared across projects and variables. This information is then processed through a calculation of priority scores where the weight of that factor places either more or less importance in the overall calculation. For example, "Stakeholder Input" for all projects has the highest weight factor of 10, resulting in this being the most important factor with the most weight, where the "Constraints" factor has a weight of 5. For the Charlotte Road project, the resulting score for its "Constraints" factor comes out to 2.3 (unweighted) or 11.7 (weighted). The weighted score for each factor for this project is summed (e.g., Stakeholder Input, Safety, Equity, etc.) for a total prioritization score of 50.2 for the Charlotte Road project. These scores are then entered into a ranking system to make the output more straight-forward. Because Charlotte Road had the highest prioritization score, it was ranked as a "1," being the highest priority project.

[9] The National Cooperative Highway Research Program (NCHRP) Report 803: Pedestrian and Bicycle Transportation Along Existing Roads - ActiveTrans Priority (APT) Tool Guidebook (2015)

Table 4-1: Prioritization Methodology

Factors	Weight of Factors	Variables
Stakeholder Input	10	• Number of requests (public outreach exercises) • Steering Committee and public comments • Public involvement ranking (public outreach exercise)
Constraints	5	• Available right-of-way • Utility relocation • Order of magnitude cost (based estimate)
Safety	8	• Public involvement (public outreach exercise) • Total bicycle/pedestrian crashes
Existing Conditions	5	• Posted speed limits • Presence of paved shoulders • Presence of sidewalks
Demand	5	• Proximity to community services • Public involvement (public outreach exercise)
Connectivity	8	• Connection to existing facility/facilities • Public involvement (public outreach exercise)
Equity	5	• Public involvement (public outreach exercise)

Based on The National Cooperative Highway Research Program (NCHRP) Report 803: Pedestrian and Bicycle -Transportation Along Existing Roads - ActiveTrans Priority (APT) Tool Guidebook (2015).

Prioritization Results

The results of the prioritization process for all proposed projects are in Table 4-2, below. The projects are organized by highest to lowest prioritization score and rank. This prioritization informs the organization of the recommendations in the following section 4.5.

Table 4-2: Prioritization Results

Project	Prioritization Score	Prioritization Rank
Charlotte Road Corridor Improvements	50.2	1
Ridgecrest Street Pedestrian Improvements	46.7	2
Green Street Corridor Improvements	46.0	3
Mountain Street Bicycle and Pedestrian Improvements	45.2	4 (tie)
South Main Street Corridor Improvements	45.2	4 (tie)
Maple Street Bicycle and Pedestrian Improvements	43.5	6
Washington Street (Alt US 74) Bicycle Route	42.7	7
Washington Street Bicycle and Pedestrian Improvements	42.0	8
East Court Street Pedestrian Improvements	41.7	9
Edwards Street Corridor Improvements	41.3	10
North Main Street Pedestrian Improvements	38.7	11
Town Loop Pedestrian Connector	37.7	12

4.5 Recommended Bicycle and Pedestrian Projects

Infrastructure projects were recommended to provide overall improvements to the existing system while offering a robust bicycle and pedestrian network that connects Rutherfordton facilities and destinations. Potential design changes as a result of the upcoming bypass may result in combining recommendations into multiuse paths (specifically, Mountain Street, see below), but multiuse facilities are not otherwise specifically recommended. This is due primarily to an existing system of trails and greenways and a greater focus from the Steering Committee and public on bicycle and pedestrian needs. Policies and programs are also proposed and outlined in section 4.7 and 4.8. These are intended to work in tandem with the recommended spot and linear improvements, which are often constructed concurrently.

Project recommendations are shown in Map 4-1, Map 4-2, and Map 4-3, at the end of this section. Table 4-3 below may be used as reference to these maps.

Table 4-3: Map Identification

Project	Project Type	Map ID
Charlotte Road	**Corridor improvements**	1
Ridgecrest Street	**Pedestrian improvements**	2
Green Street	**Bicycle and pedestrian improvements**	3
Mountain Street	**Bicycle and pedestrian improvements**	4
South Main Street	**Corridor improvements**	5
Maple Street	**Bicycle and pedestrian improvements**	6
Washington Street (Alt US 74)	**Bicycle route designation**	7
Washington Street	**Bicycle and pedestrian improvements**	8
East Court Street	**Pedestrian improvements**	9
Edwards Street	**Corridor improvements**	10
North Main Street	**Pedestrian improvements**	11
Town Loop	**Pedestrian connector**	12

Priority Projects 1 through 5

Projects receiving the highest priority rankings (1 through 5) are on the following pages as cutsheets 1-5.

PROJECT 1: Charlotte Road corridor improvements

Background

The Charlotte Road corridor was discussed numerous times in public meetings and was frequently identified as needing bicycle and pedestrian improvements. The total length of the corridor from Main Street in downtown Rutherfordton to the eastern edge of the town limits is 5,500 feet, or just over a mile. The corridor is heavily used by vehicles, and speeds can make walking and biking uncomfortable. Improvements would provide additional safe access from downtown to both the R-S Middle School and an additional connection to the Thermal Belt Rail Trail and Phase 2 and future phases of the Purple Martin Greenway.

Existing Conditions

Charlotte Road (Alt US 221) extends from the southern edge of Downtown Rutherfordton to Alt US 74. Charlotte Road is a four-lane road with a center turn lane. It has 4-foot sidewalks adjacent to the roadway on the north side of the road. Pedestrian crosswalks exist at this intersection on the north side of Charlotte Road and the east side of Main Street. However, there are no crosswalks where Charlotte Road intersects Alt US 74. In addition, there are no bicycling facilities or signage along the road. The speed limit on Charlotte Road is 35 MPH.

Issues and Challenges

The intersection of Charlotte Road and Alt US 74 presents significant challenges to bicyclists and pedestrians and crash data indicates that most crashes involving pedestrians in Rutherfordton occur at this intersection. First, with sidewalks only on the north side of Charlotte Road, there currently are no pavement markings or pedestrian signal heads for a pedestrian crossing. Second, the north side of the intersection has two right—turn-on-yield lanes: driving south on Alt US 74 turning onto Charlotte Road and driving west on Charlotte Road turning onto Alt US 74. Access to the Rail Trail from Charlotte Road sits behind three private businesses. Signage information is necessary to alert Rail Trail users of access points.

Opportunities

The town has an opportunity to have some of the recommendations made below be included in the final design of the Rutherfordton Bypass. This includes, potentially, bicycle lanes on both sides of Charlotte Road within the limits of construction of the bypass.

Project Map 4-1: Charlotte Road corridor improvements

Recommended Improvements

As part of the construction of the Rutherfordton Bypass, 5-foot sidewalks will be constructed on both sides of Charlotte Road within the footprint of the project, approximately from Old Charlotte Road to Laurel Hill Drive. The recommendation being put forth in this plan would extend the sidewalks to Main Street in the west, and the town limits on the east. In the short term, this would include improving conditions for pedestrians at the Charlotte Road/Main Street and Charlotte Road/Alt US 74 intersections through the installation of crosswalks and pedestrian signals and the construction of pedestrian refuge islands on US 74. Long term recommended improvements would be to install bicycle lanes on both sides of Charlotte Road. In addition, the Steering Committee and public expressed a desire to have a cross section that includes pedestrian refuges, particularly at Cleghorn Street where future phases of the Purple Martin Greenway will cross. This would require additional NCDOT coordination to determine the cross-section.

Figure 4-1: Charlotte Road recommended corridor improvements

Table 4-4: Charlotte Road corridor improvements

Mode	Type	Description	Location/Extent	Cost*
Short Term Recommendations				
Pedestrian	Spot	High-visibility crosswalk including pavement markings, pedestrian signals, and converting existing concrete median dividers to pedestrian refuges.	Charlotte Rd/US 74	$192,000 – $204,000
Pedestrian	Spot	High-visibility crosswalk including pavement markings and pedestrian signals	Charlotte Rd/Main Street	$58,000 - $66,000
Pedestrian	Spot	High-visibility crosswalk including pavement markings and pedestrian signals	Charlotte Rd/Cleghorn St	$19,000 - $21,000
Pedestrian	Spot	High-visibility crosswalk including pavement markings	Charlotte Rd/Old Charlotte Rd	$9,000 - $9,700
Pedestrian	Linear	Construct 5-foot sidewalk on the north/side of Charlotte Rd	Main St to eastern Town Limits	870,000 – 1,300,000
Long Term Recommendations				
Bicycle	Linear	Pavement markings to reallocate road space to include bike lanes.	From Main Street to eastern town limits	Requires further NCDOT analysis

*The range of costs is discussed in further detail in Section 4.6.

PROJECT 2: Ridgecrest Street pedestrian improvements

Background

Steering committee members and the public indicated an interest in increasing safe pedestrian access to the Rutherford Regional Medical Center from neighborhoods to the south and west, and providing additional connections between the hospital and Crestview Park.

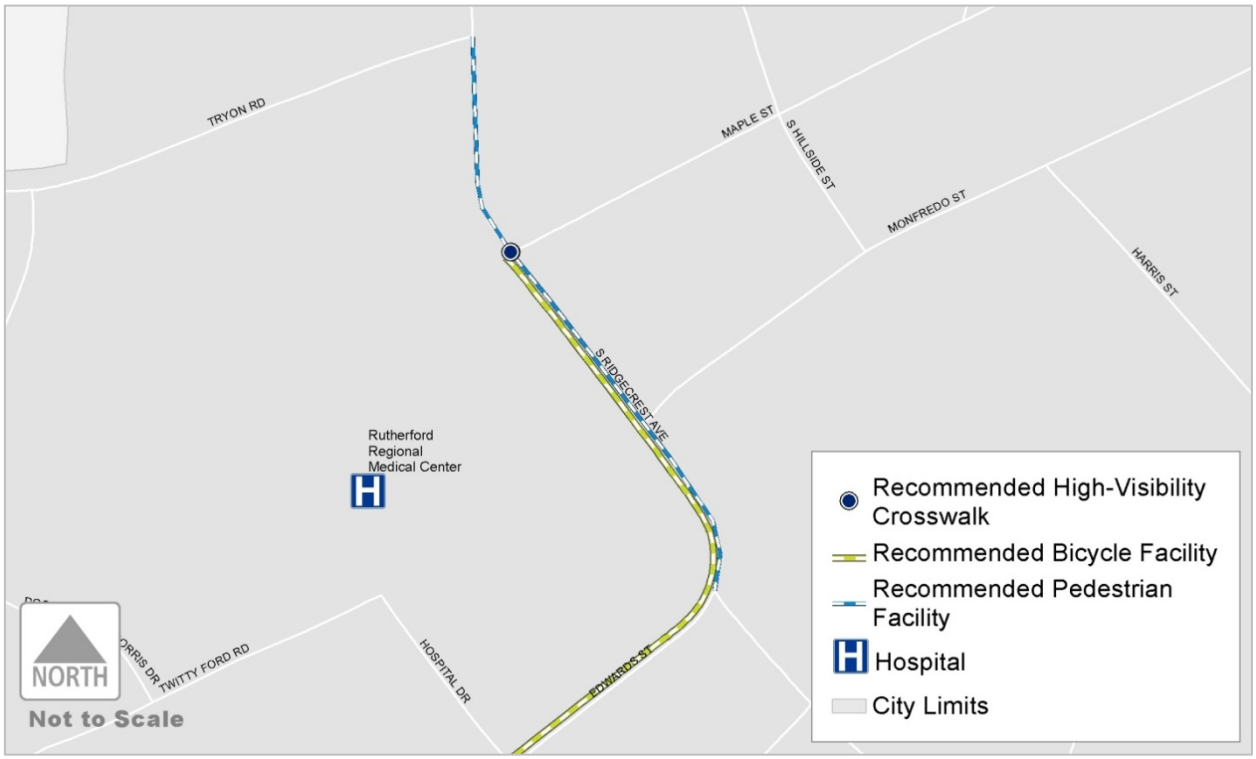
Existing Conditions

Ridgecrest Street is a residential street on the western border of the town that intersects with the entrance to Rutherford Regional Medical Center and Maple Street. Ridgecrest Street turns into Edwards Street south of the Medical Center. It has sidewalks in the residential portions of the street, but they end at Tryon Road before the Medical Center. The remainder of Ridgecrest Street as it turns into Edwards Street does not have sidewalks. The road has a curb and gutter on its west side and a large lawn on the Medical Center property.

Challenges

Pedestrian access to the Medical Center at Ridgecrest Street and Maple Street is limited due to a lack of sidewalks and pedestrian crosswalks. Currently, only controlled stop lights exist at this intersection, making it less safe and difficult for pedestrian to cross. The public workshops identified this intersection as a priority for a new pedestrian crosswalk because there are currently no facilities available.

Project Map 4-2: Ridgecrest Street pedestrian improvements



Note

In addition to the pedestrian improvements associated with this recommendation, pavement markings for bicycles are recommended along Ridgecrest Street and Edwards Street from Maple to Forest Hills Circle (and the entrance to Crestview Park) as a part of the Edwards Street corridor improvement (Project 10) recommendation.

Recommended Improvements

The recommended improvements for Ridgecrest Street are intended to improve the safety and visibility of pedestrians and provide additional safe connections to the hospital. Recommendations include a high visibility crosswalk and pedestrian signal head at all four legs of the intersection of Ridgecrest Street and Maple Street. A second recommendation would be to construct a 5-foot sidewalk on the west side of Ridgecrest Street from existing sidewalk at Tryon Road to Edwards Street (approximately 1,300 feet).

Figure 4-2: Ridgecrest Street recommended pedestrian improvements

Table 4-5: Ridgecrest Street pedestrian improvements

Mode	Type	Description	Location/Extent	Cost*
Pedestrian	Spot	High-visibility crosswalk including pavement markings and pedestrian signals at all four legs of the intersection of Ridgecrest Road and Maple Street	Ridgecrest Road/Maple Street	$49,000 - $55,000
Pedestrian	Linear	Construct 5-foot Sidewalk on west side of Ridgecrest Street	Tryon Road to Edwards Street	$200,000 - $300,000

*The range of costs is discussed in further detail in Section 4.6.

PROJECT 3: Green Street corridor improvements

Connections

Green Street connects Main Street and Kiwanis Park in the north of Downtown Rutherfordton to Alt US 74 and the Thermal Belt Rail Trail. When Green Street meets Alt US 74, it turns into Whiteside Road, and the Rail Trail crosses the road at this point.

Existing Conditions

There are currently 4-foot sidewalks on the south side of Green Street from Main Street to approximately Sparks Street, and no sidewalks from Sparks Street to Railroad Avenue and the Rail Trail. Additionally, there are no pedestrian accommodations for crossing Railroad Avenue.

Challenges

There are many challenges to create a safe crossing for the Rail Trail and for bicyclists and pedestrians approaching the Rail Trail from Green Street. First, Green Street's sidewalks on the southern side of the road end two blocks before the intersection with the Rail Trail, and there is no bicycling infrastructure. Second, the Rail Trail crossing sits within a complex intersection. A pedestrian accessing the Rail Trail from Green Street at this intersection contends with vehicles traveling along Railroad Street as well as vehicles entering the intersection from Church Street and Twitty and Whiteside Roads. Although this intersection is controlled by a four-way stop light, there are no crosswalks or pedestrian accommodations. The stop bar for the intersection of Whiteside Road and Alt US74 for westbound vehicles on Whiteside Road sits within the crosswalk for the Rail Trail, making it potentially dangerous when crossing Whiteside Road.

Project Map 4-3: Green Street corridor improvements

Recommended Improvements

Improvements to Green Street associated with the designs for the Rutherfordton Bypass include the replacement of the current 4-foot sidewalk along the south side of Green Street within the project limits with a 5-foot concrete sidewalk. Recommendations in this plan include extending the five foot concrete sidewalk to Main Street in the west, and the Rail Trail on the east. The intersection of Green Street and Railroad Avenue requires improvements to make it safer for pedestrians. These improvements include crosswalks and pedestrian signals crossing Railroad Avenue on the north leg of the intersection, and crosswalks and pedestrian signals across Green Street on west side of the intersection. Finally, relocating the stop bar on Whiteside Street to be placed to the east of the crossing of the Thermal Belt Rail Trail and installing crosswalks and pedestrian signals would prevent vehicles from impeding users of the trail, as well as provide increased safety for pedestrians.

Figure 4-3: Green Street recommended corridor improvements

Table 4-6: Green Street corridor improvements

Mode	Type	Description	Location/Extent	Cost*
Pedestrian	Spot	High-visibility crosswalk including pavement markings and pedestrian signals at the east, west and north legs of the intersection. Relocate the stop bar on Whitehead Street slightly to the east.	Green St/Railroad Ave/Whiteside Rd	$59,000 - $66,000
Pedestrian	Linear	Construct 5-foot Sidewalk on south side of Green Street	Main Street to Railroad Ave/	$200,000 - $300,000

*The range of costs is discussed in further detail in Section 4.6.

PROJECT 4: Mountain Street bicycle and pedestrian improvements

Background

Mountain Street (US 64) at the northern border of the town crosses over Main Street via a bridge and passes through Alt US 74 and the Thermal Belt Rail Trail. The Steering Committee and public workshops identified the portion of Mountain Street from Main Street to Alt US 74 as needing these facilities. This need appeals to the road's status as part of the Overmountain Victory National Historic Trail, a 330-mile network of roads and trails originally used during the American Revolutionary War. Bicycle and pedestrian facilities would also provide additional access to the Thermal Belt Rail Trail and Trinity School.

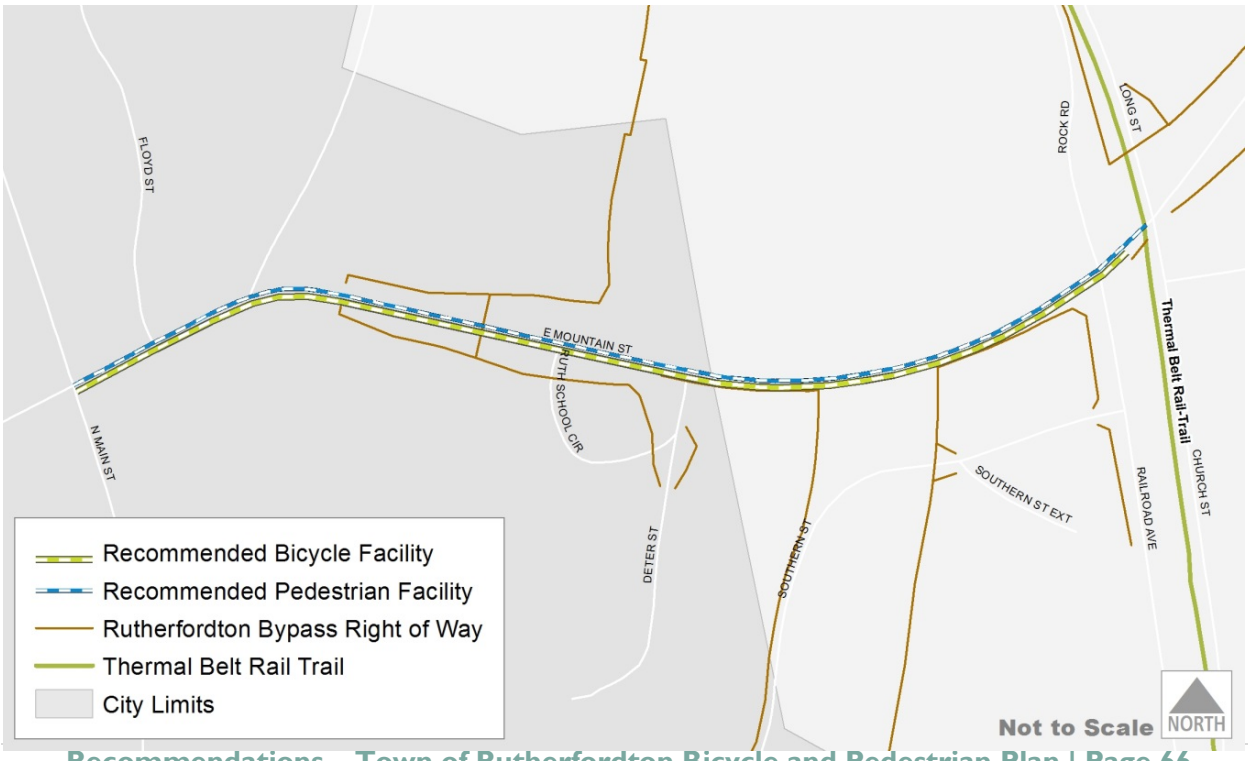
Existing Conditions

Currently, Mountain Street has no bicycling or sidewalk facilities. The road consists of two 11-foot lanes with posted speeds of 35 miles per hour. The western portion of the proposed project ends at the Mountain Street overpass over North Main Street but does not cross the overpass. The rail height on the overpass is insufficient for pedestrian and is a safety concern for any pedestrians crossing the overpass. In addition, there are no sidewalk accommodations on either side of the overpass.

Opportunities

The town has an opportunity to have some of the recommendations made below be included in the final design of the Rutherfordton Bypass. This includes, potentially, installing bicycle warning signs and pavement markings along Mountain Street

Project Map 4-4: Mountain Street bicycle and pedestrian improvements



Recommended Improvements

Preliminary plans for the Rutherfordton Bypass show Mountain Street as being widened to a 5-lane, median divided facility from approximately 750 feet east of old US 221 to Railroad Avenue. Mountain Street will be bridged over the Bypass, and preliminary plans include a 10-foot path along the south side of Mountain Street that would begin at the Trinity School (Deter Street), and connect to the Rail Trail on the east side. This path will function as part of the Overmountain Victory National Historic Trail. The recommendation being proposed in this plan would be to construct a 5-foot sidewalk on the south side of E. Mountain Street from Deter Street east to North Main Street to complete the pedestrian accommodations from Main Street to the Thermal Belt Rail Trail. The town should also work with NCDOT during the final design phase of the Rutherfordton Bypass to include pedestrian crossing accommodations at Railroad Avenue including crosswalks and pedestrian signals.

For bicyclists, the installation of shared lane pavement markings and bike warning signs from Main Street to the Thermal Belt Rail Trail are recommended to improve safety and driver awareness. Additionally wide paved shoulders should be installed from the western end of the Rutherfordton Bypass improvements on Mountain Street to Main Street to improve safety for bicyclists.

Figure 4-4: Mountain Street recommended bicycle and pedestrian improvements

Table 4-7: Mountain Street bicycle and pedestrian improvements

Mode	Type	Description	Location/Extent	Cost*
Bicycle	Spot	Bicycle Warning signage (MUTCD W11-1).	From Main Street to Thermal Belt Rail Trail (5,700 feet)	$2,700 - $3,100
Bicycle	Linear	Shared lane pavement markings (aka sharrows).	From Charlotte Street to Cottage Lane/Skyline Drive (3,700 feet)	$43,000 - $97,000
Bicycle	Linear	Install wide paved shoulders.	From Rutherfordton Bypass to Main Street (2,800 feet)	$187.000 - $270,000
Pedestrian	Linear	Construct 5-foot sidewalk on south side of Mountain Street	Deter Street to N. Main Street	$350,000 - $500,000

*The range of costs is discussed in further detail in Section 4.6

PROJECT 5: South Main Street corridor improvements

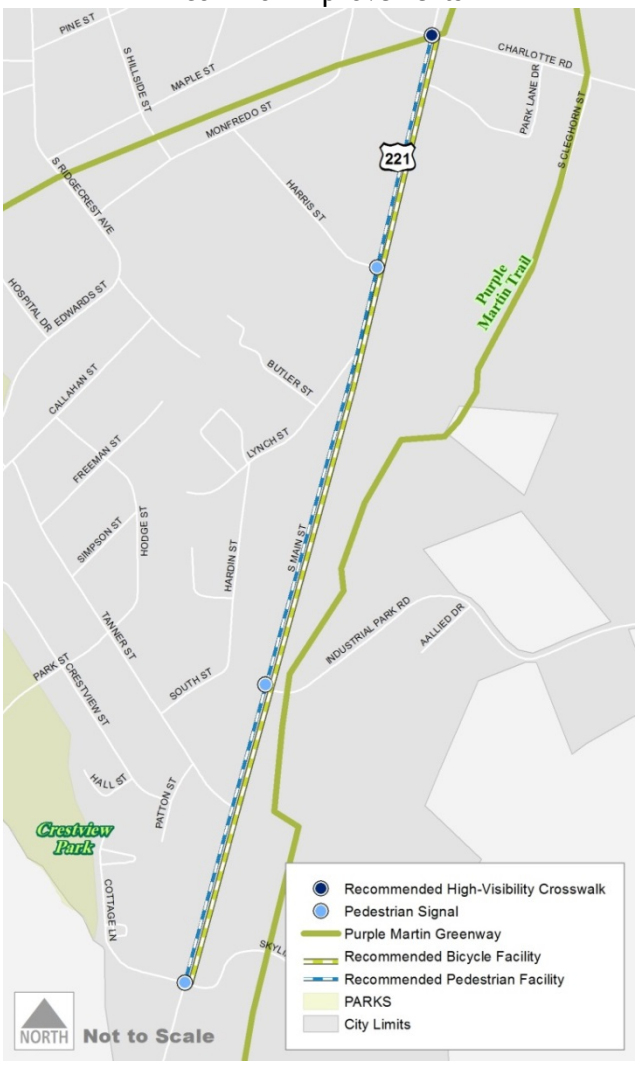
Connections

South Main Street extends from Downtown Rutherfordton to the southern border of the town. South Main Street is crossed by pedestrians and cyclists when traveling between two popular recreation facilities, Crestview Park and the Purple Martin Greenway. The entrance to Crestview Park is on the west side and the entrance to Purple Martin Greenway is on the east side of South Main Street. Pedestrians must cross South Main Street at Cottage Lane and Skyline Drive. South Main Street is also where the State Employee Credit Union is located, a destination identified by the town as needing bicycle and pedestrian connections.

Existing Conditions

There is a lack of bicycling facilities and sidewalk connectivity south of downtown as the town transitions to single-family residential units and small business plazas. Existing conditions along South Main Street include 15-foot lanes, with curb and gutter from Charlotte Street south to Lynch Street. South of Lynch Street, there is no curb and gutter, and numerous curb cuts for residences and businesses. There are sidewalks on both sides of the road in the northern portion of the corridor, but they have offset ending points (McMahans Funeral Home on the east side and Lynch Street on the west side) and pedestrians have no accommodations for crossing Main Street. To the south, the road has no shoulders, contributing to unsafe and uncomfortable walking conditions. There are currently no designated crossings or signals alerting vehicles of these bicyclists and pedestrians. In addition, this intersection is difficult for bicyclists and pedestrian to cross safely due to sight lines being obscured by the topography.

Project Map 4-5: South Main Street corridor improvements



Recommended Improvements

Several improvements are recommended to improve conditions for bicyclists and pedestrians in the South Main Street corridor. For bicyclists, the installation of shared lane pavement markings and bike warning signs from Charlotte Street to Cottage Street/Skyline Drive are recommended to improve

safety and driver awareness. In addition, wide paved shoulders should be installed from Lynch Street to Cottage Street/Skyline Drive to improve safety for bicyclists.

Recommended pedestrian improvements include constructing curb, gutter, and sidewalks from their current terminus at Lynch Street south to Cottage Lane/Skyline Drive. Given the costs associated with this recommendation, this is likely a long term recommendation. Also recommended are a series of pedestrian crossings of South Main Street. The first crossing would be on the south side of Harris Street and would include pavement markings and a rectangular rapid flashing beacon (RRFB). This crossing would allow pedestrians to cross South Main Street at the end of the existing sidewalks on Main Street, and to be able to use the sidewalks on the west side that extend further south. A second crossing is recommended at Industrial Park Road on the south side of the intersection and would also include pavement markings and a RRFB, and would provide a connection from Main Street to the Purple Martin Greenway to the east. Finally, a crossing of South Main Street at Cottage Lane/Skyline Drive with pavement markings and a RRFB would provide a safe connection between Crestview Park and the Purple Martin Greenway.

Figure 4-5: South Main Street recommended corridor improvements

Table 4-8: South Main Street corridor improvements

Mode	Type	Description	Location/Extent	Cost*
Bicycle	Spot	Bicycle Warning signage (MUTCD W11-1).	From Charlotte Street to Cottage Lane/Skyline Drive (5,700 feet)	$5,100 - $6,300
Bicycle	Linear	Shared lane pavement markings (aka sharrows).	From Charlotte Street to Cottage Lane/Skyline Drive (3,700 feet)	$58,000 - $66,000
Bicycle	Linear	Install wide paved shoulders.	From Lynch Street to Cottage Lane/Skyline Drive (5,700 feet)	$500,000 - $720,000
Pedestrian	Spot	High-visibility crosswalk on the south side of the intersection including pavement markings and a rectangular rapid flash beacons.	Across S. Main Street at Harris Street	$65,000 – $75,000
Pedestrian	Spot	High-visibility crosswalk on the south side of the intersection including pavement markings and an RRFB.	Across S. Main Street at Industrial Park Road	$65,000 – $75,000
Pedestrian	Spot	High-visibility crosswalk on the north side of the intersection including pavement markings and a RRFB.	Across S. Main Street at Cottage Lane/ Skyline Drive.	$65,000 – $75,000
Pedestrian	Linear	Construct curb, gutter and sidewalk along both sides of S. Main Street.	From Lynch Street to Cottage Lane/Skyline Drive (3,700 feet)	$1,200,000 - $1,800,000

*The range of costs is discussed in further detail in Section 4.6.

Priority Projects 6 through 10

Five corridors identified through Steering Committee meetings and public meetings as needing improvements scored 6 through 10 in the prioritization process. These projects are outlined below (See Table 4-9).

PROJECT 6: Maple Street bicycle and pedestrian improvements

Connections

Maple Street extends from Ridgecrest Street to the intersection of Charlotte Street and Washington Street and provides an important link from downtown Rutherfordton to Rutherford Regional Medical Center.

Existing Conditions

Maple Street experiences high levels of vehicle traffic (approximately 5,500 vehicles per day) because of the hospital, but 4-foot sidewalks are situated close to the curb with a one-foot vegetated buffer between the sidewalks and curb on the southern side. The sidewalk on the northern side is situated adjacent to the curb. Although sidewalks are present, bicycling and pedestrian access is limited by poor sidewalk conditions and a lack of designated bicycling lanes or shared lane signage. In addition, there are no pedestrian accommodations at this intersection, which is controlled by a traffic signal. Vehicles traveling west on Maple Street that turn right on to Ridgecrest Street can use a free flow right turn lane controlled by a yield sign making crossing Maple at this location even more challenging.

Safety Issues

Due to the lack of crossing facilities at this intersection and the presence of the free flow right turn lane, pedestrians crossing at this intersection are at risk. Vehicles using the free flow right turn lane are watching for vehicle traffic as they yield before looking for pedestrians.

Recommended Bicycle Elements	• Bicycle pavement markings and bicycle warning signage (MUTCD W11-1) along Maple Street from the intersection of Ridgecrest Street to the intersection of Charlotte Road and South Washington Street.
Recommended Pedestrian Elements	• Install crosswalks and pedestrian signals at all four legs of the intersection of Maple Street and Ridgecrest Street. • In the short-term, repair/replace existing sidewalk from the intersection of Ridgecrest Street to the intersection of Charlotte Road and South Washington Street. • Long-term: Replace existing sidewalks along Maple Street from the intersection of Ridgecrest Street to the intersection of Charlotte Road and South Washington Street with 5-foot sidewalks and grassy landscape strip on north side. • Long-term recommendation is to replace existing sidewalks with 5-foot sidewalks on both sides of Maple Street. • Removal of free flow right turn lane at Ridgecrest Street.

PROJECT 7: Washington Street (Alt US 74) bicycle route designation

Connections

Lake Lure is a popular regional tourist destination located approximately 18 miles west of downtown Rutherfordton. During the public workshops, the Steering Committee and residents noted an interest in providing better connectivity from downtown Rutherfordton to Lake Lure. Building off the recommendation to implement shared lane markings along Mountain Street from the Thermal Belt Rail Trail to downtown, it is also recommended to provide safe bicycle routes from downtown to Lake Lure.

Existing Conditions

Washington Street is a two-lane route with no curbs and gutters and a drainage ditch on its south side. The terrain to the north side of the road has slopes downward and contains heavy vegetation. Speeds along Washington Street/Alt US 74 are 45 miles per hour.

Safety Issues

This route, however, presents challenges. As noted above, Washington Street along this stretch is 45 mph, which is too fast for typical bicyclists. It is also two lanes, creating a possible danger for vehicles passing bicyclists. This 18-mile stretch would appeal mostly to experienced bicyclists seeking longer routes. The vegetation and downward sloping hills noted above on the north side along with the drainage ditch present challenges to widening the road for bike lanes.

Recommended Bicycle Elements	Bicycle route designation with route and warning signage along Washington Street from downtown Rutherfordton to Lake Lure.

PROJECT 8: Washington Street bicycle and pedestrian improvements

Connections

As a popular and central piece of downtown Rutherfordton's identity, Washington Street forms an important piece of Rutherfordton's Historic Walking Tour and Gold Mile highlighting the distinctive historic characteristics of the town. One block west of and parallel to Main Street, Washington Street extends from the town's northern border to the intersection of Maple Street and Charlotte Street at the southern edge of downtown. As a central component of downtown Rutherfordton's cultural and economic identity, recommendations aim to make this area more accessible to bicyclists and pedestrians.

Need

Washington Street emerged as a focal point in public workshops as needing bicycle and pedestrian improvements. The public workshop highlighted Washington Street as needing designated road space for bicyclists, sidewalk improvements, and traffic calming measures.

Existing Conditions

Existing roadway conditions along Washington Street include 15-foot lanes, curb, gutter, and sidewalks that are situated adjacent to the curb. Sidewalks are generally in good condition, but some portions are cracked, sunken, or crumbling. Posted speeds along Washington Street are 25 mph, but Steering Committee members and other public input indicate the actual speeds are higher, particularly north of downtown. Most intersections do not have ADA compliant ramps, and if there are ADA ramps, such as at the north east corner of First Street, they are diagonally oriented to the intersection and are no longer compliant.

Recommended Bicycle Elements	• Shared lane pavement markings for bicycles along Charlotte Road and Washington Street from South Main Street to Mountain Street. • Bicycle warning signage for bicycles along Charlotte Road and Washington Street from South Main Street to Mountain Street.
Recommended Pedestrian Elements	• Repair and resurface damaged sidewalks along Washington Street from the Main Street/Maple Street intersection to their current terminus just north of Wilson Street. • Add or improve ADA compliant ramps at all intersections along the corridor. • Install crosswalks including pavement markings and pedestrian signals along Washington Street at West Court Street, West First Street, West Second Street, and West Third Street.
Recommended Multiuse Elements	• Street lighting along Washington Street from Seventh Street to Maple Street. • Add stop signs on Washington Street at the intersections at West First Street, West Third Street, West Fifth Street, and West Seventh Street. These intersections already have stop signs for vehicles approaching Washington Street. • Conduct a speed/traffic study along the corridor from the Main Street/Maple Street intersection to Mountain Street to identify potential additional speed control measures.

PROJECT 9: East Court Street pedestrian improvements

Connections

A large parking lot that serves the KidSenses Children's Interactive Museum and the Rutherford County Visual Arts Center Gallery is located on East Court Street near the intersection of Court Street and Main Street. This parking lot is used not only for the museum and gallery, but also for visitors to downtown Rutherfordton who use the sidewalk to access Main Street from the parking lot. The sidewalk along Court Street provides access to downtown for the lower-income neighborhoods to the east of downtown.

Existing Conditions

Currently, there are no ADA-compliant curb ramps on the parking lot sidewalk curbs facing East Court Street and the sidewalk at the intersections of Toms Street and Taylor Street. Crosswalks are also needed

across both Toms Street and Taylor Street at Court Street. In addition, the sidewalk on the north side of East Court Street from Main Street to Cleghorn Street has broken pavement and is in need of repair.

Recommended Pedestrian Elements	• ADA compliant ramps and crosswalks on Court Street across Toms Street and Taylor Street. • Repair and resurface damaged sidewalks along East Court Street from Main Street to Cleghorn Street.

PROJECT 10: Edwards Street corridor improvements

Connections

Edwards Street extends from Ridgecrest Street to Camron Drive and, along with Ridgecrest Street, provides a connection between Rutherford Regional Medical Center and the entrance to Crestview Park. Each location is an important destination for the community and experiences significant vehicle traffic. Both the Steering Committee and public workshops highlighted this area as needing sidewalks to allow pedestrian connectivity between these destinations.

Existing Conditions

Existing conditions on Edwards Street include 8-10 foot lanes with no curb and gutter, no shoulders and no sidewalks, and posted speed limits of 35 mph. Right-of-way in the corridor is approximately 40 feet.

Challenges

Challenges to implementing sidewalks along Edwards Street include above-ground utility poles on both sides of the road, lack of curb and gutter, vegetation, including several large trees, the presence of drainage facilities, and right-of-way constraints. Because pedestrian improvements to this corridor are expected to be expensive, the Steering Committee – while acknowledging the importance of this corridor – scored this project lower and noted that connection to the park could be achieved via lightly traveled neighborhood streets that can function as "shared space" due to low vehicle volumes and low speeds. Also based on feedback from the Steering Committee and the public, the project was extended to the neighborhood at Forest Hills Circle, which would provide access from the neighborhood to Crestview Park.

Recommended Bicycle Elements	Shared lane pavement markings and bicycle warning signage (MUTCD W11-1) along Ridgecrest Street/Edwards Street between Tyron Road to Crestview Park.
Recommended Pedestrian Elements	• Short term: install pedestrian warning signs to alert vehicles of pedestrian usage from Ridgecrest to Crestview Park. • Long term: install new 5-foot sidewalk on west side of Edwards Street from Ridgecrest Street to Forest Hills Circle.

Priority Projects 11 and 12

Two final corridors ranked 11 and 12 among the priority projects.

PROJECT 11: North Main Street pedestrian improvements

Connections

North Main Street serves as the heart of downtown Rutherfordton and is used heavily by pedestrians. There are several historic buildings along North Main Street and the adjacent cross streets, including the historic Bechtler House on Sixth Street and many visitors to Rutherfordton use the sidewalks along the corridor to access the historic properties from downtown.

Existing Conditions

Although posted speed limits are posted at 20 mph and 25 mph, crossing improvements are needed along North Main Street for pedestrian safety. This is particularly relevant near municipal buildings downtown and for access to two churches from parking across Main Street. Sidewalks along North Main Street on both sides currently stop just north of Greyson Street.

Proposed Improvements

In the short term, pedestrian warning signs could be installed to alert drivers of pedestrians, with a long term solution being the installation of RRFBs. RRFBs are user-actuated amber LEDs that supplement warning signs at unsignalized intersections or mid-block crosswalks. They can be activated by pedestrians manually by a push button or passively by a pedestrian detection system. An RRFB was recently installed in Rutherfordton across Railroad Avenue at East Second Street.

As discussed in Section 2.7, a reconfiguration of Main Street in downtown Rutherfordton between Third Street and Court Street that would include the reduction of travel lane widths from 15 to 12 feet would provide an opportunity for widened sidewalks. The town could also convert the angled parking to back-in angled parking to improve bicycle and pedestrian safety in the corridor.

Recommended Pedestrian Elements	• Crosswalk across Main Street from East First Street to Main Street Park. • Crosswalk with RRFB across North Main Street at Sixth Street. • Install RRFB at existing mid-block crossing north of Fifth Street. • Construct sidewalk and ADA compliant curb ramps along one side of Sixth Street from North Main Street to Washington Street. • Construct sidewalk along North Main Street on both sides from current sidewalk terminus just north of Greyson Street to Mountain Street. • Road reconfiguration along Main Street between Third Street and Court Street. • Convert current angled parking to back-in angled parking. • Railing height should be improved when bridge is replaced by NCDOT

PROJECT 12: Town Loop pedestrian connector

Connections

Residents who attended the public workshops noted that residents and employees who work downtown use an informal network of streets around downtown Rutherfordton to walk for exercise during lunch. This network of streets is currently referred to as the Town Loop, or Lunch Loop. The Town Loop begins at Washington Street in the vicinity of Second Street and follows Washington Street north to Seventh Street and turns east. The loop then moves south through downtown either by Main Street or continuing to follow Seventh Street and wrapping north through Kiwanis Park and then heading south on Cleghorn Street. Both the Main Street and Cleghorn Street options turn west on Court Street to connect with Washington Street to complete the loop.

Existing Conditions

Not all of the streets in the Town Loop have pedestrian facilities. Washington Street (3-4-foot sidewalks), Seventh Street (3-foot sidewalks on the west side of North Main Street) Main Street (8-10 foot sidewalks) and Court Street (3 to 4-foot sidewalks) have sidewalk facilities. However Seventh Street on the east side of North Main Street and Cleghorn Street do not have pedestrian facilities.

Proposed Improvements

This project recommends a developing a formal pedestrian route called the Town Loop Pedestrian Connector identified in public workshops. An opportunity exists in the long term, to use future phases of the Purple Martin Greenway in lieu of North Main Street and Cleghorn Street as the north-south connection.

Recommended Pedestrian Elements	Wayfinding/branding signage from Washington Street to Seventh Street, south down Kiwanis Park/Cleghorn, west on Court Street.

The following maps (Map 4-1, Map 4-2, and Map 4-3) show projects 1 through 12. Table 4-3 corresponds to the Project ID numbers on the maps.

Table 4-9: Recommended Projects 6 through 12

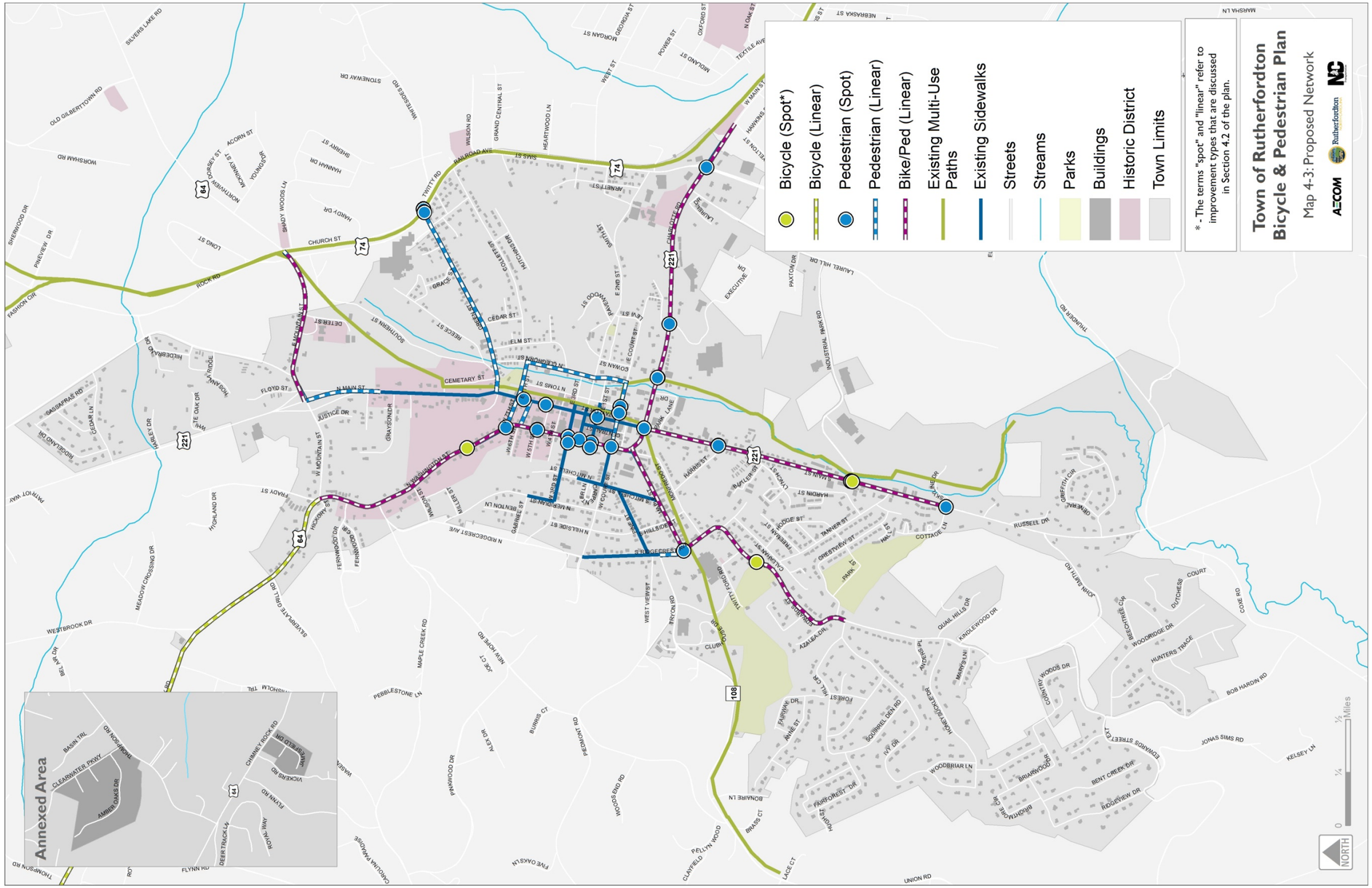
Recommended Improvement	Project Extents	Length (miles)	Facility Group	Cost Estimate	Potential Implementation Constraints
PROJECT 6: Maple Street Bicycle and Pedestrian Improvements (Map ID 6)					
Shared lane markings (sharrows)	Ridgecrest Street to Charlotte Road/S. Washington Street	0.40	Bicycle – Linear	$32,000 to $72,000	Fiscal constraints
Repair/replace sidewalk as necessary	Ridgecrest Street to Charlotte Road/S. Washington Street	0.40	Pedestrian – Linear	$30,000-$45,000	Fiscal constraints
Replace existing sidewalk with new, 5' sidewalk with ADA ramps	Ridgecrest Street to Charlotte Road/S. Washington Street	0.40	Pedestrian – Linear	$300,000 to $450,000	Fiscal constraints, right-of-way limitations, above ground utilities
Install Crosswalk and pedestrian signal across Ridgecrest Street from Maple to the Hospital	Intersection of Maple Street and Ridgecrest Street	n/a	Pedestrian – Spot	$58,000 to $66,000	Fiscal constraints
Remove free flow right turn lane	Intersection of Maple Street and Ridgecrest Street	n/a	Pedestrian – Spot	$1,300 to $1,600	NCDOT coordination
PROJECT 7: Washington Street/Alt US 74 Bicycle Route (Map ID 7)					
Coordinate with NCDOT to designate this route as a state bicycle route, including bicycle warning and route signage	Downtown Rutherfordton to Lake Lure	15.9	Bicycle – Spot	$76,000 to $93,000	Posted speeds and traffic volumes may prohibit this road from being designated as a bicycle route
PROJECT 8: Washington Street Bicycle and Pedestrian Improvements (Map ID 8)					
Shared lane markings (sharrows)	South Main Street to Mountain Street	1.3	Bicycle – Linear	$91,000 to $230,000	Fiscal Constraints
Share the road signage	South Main Street to Mountain Street	1.3	Bicycle – Spot	$6,100 to $7,500	No constraints
Repair/replace sidewalk as necessary	Main Street/Maple Street intersection to north of Wilson Street	0.9	Pedestrian – Linear	$66,000 - $98,000	Fiscal constraints
Install crosswalk with pavement markings and pedestrian signals at West Court Street	Intersection of Washington Street and West Court Street	n/a	Pedestrian – Spot	$57,000 – $66,000	Fiscal constraints
Install crosswalk with pavement markings and pedestrian signals at West First Street	Intersection of Washington Street and West First Street	n/a	Pedestrian – Spot	$47,000 - $54,000	Fiscal constraints

Recommended Improvement	Project Extents	Length (miles)	Facility Group	Cost Estimate	Potential Implementation Constraints
Install crosswalk with pavement markings and pedestrian signals at West Second Street	Intersection of Washington Street and West Second Street	n/a	Pedestrian – Spot	$47,000 - $54,000	Fiscal constraints
Install crosswalk with pavement markings and pedestrian signals at West Third Street	Intersection of Washington Street and West Third Street	n/a	Pedestrian – Spot	$57,000 – $66,000	Fiscal constraints
Install/improve street lighting	Maple Street to Seventh Street	0.5	Pedestrian – Spot	$360,000 to $440,000	Fiscal constraints
PROJECT 9: East Court Street Corridor Improvements *(Map ID 9)*					
Install ADA compliant ramps and crosswalks at Toms and Taylor Street	Court Street at Toms and Taylors Street	n/a	Pedestrian – Spot	$3,400 to $4,200	No constraints
Repair/replace sidewalk as necessary	Main Street to Cleghorn Street	0.15	Pedestrian – Linear	$12,000 to $17,000	Fiscal constraints
PROJECT 10: Edwards Street Corridor Improvements *(Map ID 10)*					
Shared lane markings (sharrows)	Ridgecrest Street to Forest Hills Circle	0.73	Bicycle – Linear	$55,000 to $130,000	Fiscal constraints
Share the road signage	Ridgecrest Street to Forest Hills Circle	0.73	Bicycle – Spot	$3,500 to $4,300	No constraints
Construct new sidewalk on one side of the road	Ridgecrest Street to Forest Hills Circle	0.73	Pedestrian – Linear	$640,000 to $940,000	Fiscal constraints, engineering challenges associated with topography, coordination with Rutherford Regional Medical Center
PROJECT 11: North Main Street Pedestrian Improvements *(Map ID 11)*					
Install crosswalk and pedestrian signal across South Main Street at First Street	Intersection of North Main Street and First Street	n/a	Pedestrian – Spot	$16,000 to $18,000	No constraints
Add a pedestrian activated signal at the existing mid-block crossing north of Fifth Street	Between Fifth and Seventh Street	n/a	Pedestrian – Spot	$15,000 - $18,000	No constraints
Install crosswalk and pedestrian signal across South Main Street at Sixth Street	Intersection of North Main Street and Sixth Street	n/a	Pedestrian – Spot	$16,000 - $18,000	No constraints
Construct sidewalk along Sixth Street	Between Washington Street and North Main Street. One side of the street	0.1	Pedestrian – Linear	$83,000 to $120,000	Fiscal constraints
Construct sidewalk along North Main Street to US 64 (Mountain Street)	Between the current sidewalk terminus north of Grayson Drive and US 64 (Mountain Street). Both sides of the street.	0.52	Pedestrian – Linear	$350,000 to $540,000	Fiscal constraints
PROJECT 12: Town Loop Pedestrian Connector *(Map ID 12)*					
Wayfinding/branding signage	From Washington Street to Seventh Street, south down Kiwanis Park/Cleghorn, west on Court Street	0.68	Pedestrian – Spot	$8,200 to $10,000	No constraints

Map 4-1: Proposed Bicycle Projects

Map 4-2: Proposed Pedestrian Projects

Map 4-3: Proposed Network



4.6 Cost Estimates for Recommended Bicycle and Pedestrian Facilities

How Estimates Were Derived

Costs for bicycle and pedestrian infrastructure projects were estimated primarily using NCDOT's Bicycle and Pedestrian Facility Construction Cost Estimator Tool. The Pedestrian and Bicycle Information Center (PBIC)'s report titled *Costs for Pedestrian and Bicyclist Infrastructure Improvements* was used in cases where the NCDOT tool did not include a specific project type recommended by this plan. PBIC receives funding from the U.S. Department of Transportation Federal Highway Administration and is part of the University of North Carolina Highway Safety Research Center.

Main Street (AECOM, 2016)

The NCDOT tool was released in fall 2016 in order to improve the accuracy of bicycle and pedestrian cost estimates. The tool establishes a common estimation methodology and derives average costs from more than 80 bicycle and pedestrian projects across the state. The PBIC report was published in October 2013 with over 1,700 cost figures from construction and engineering bids compiled nationwide in order to provide cost estimates for over 70 types of bicycle and pedestrian facilities. The report provides the average, median, high, and low cost estimates for each item. The median estimate was used for the purposes of this plan as the average estimate may be skewed by outliers.

The NCDOT tool was used to estimate costs for sidewalks, wide paved shoulders, bicycle lanes, shared lane markings, mid-block crossings, and intersection treatments. For other types of projects not included in the NCDOT tool, such as street lighting, signage, and RRFBs, PBIC estimates were used. Neither resource provided estimates for repairing sidewalks, so it was assumed that repairing was 10 percent of the cost of a new sidewalk.

The costs reported in this plan include preliminary engineering, high-level right-of-way costs, engineering and inspection, and construction. They do not include the costs of complementary site amenities such as trash receptacles, restroom facilities, benches, landscaping, water fountains, etc.

Range and Adjustment Factors

To account for uncertainty at this stage in the planning process, the costs for each project are reported as a range. The NCDOT tool includes percentile cost estimates so the 50th and 75th percentiles constitute the range. The PBIC report did not include percentile costs so a 10 percent range is reported for those projects. Costs from both the NCDOT tool and PBIC resource are shown in 2016 dollars, adjusted by an annual inflation factor of 3.5 percent.

The estimated costs are approximate and are subject to change based on the current price of materials and labor. They are dependent on the actual conditions which will be determined during the planning and

engineering phase. The estimates provided are intended to serve as a relative guide for a rough order of cost magnitude.

Estimated costs for bicycle and pedestrian infrastructure projects are included in cutsheets 1-5 for highly prioritized projects and in Table 4-9.

4.7 Recommended Policies and Programs

The Town of Rutherfordton's Unified Development Ordinance (UDO) was reviewed in order to understand how they influence the planning of pedestrian and bicycle enhancements. The UDO describes specific requirements for development. One of the most cost-effective strategies for implementing this plan is to establish land development regulations and street design policies that promote walkable and bikeable new development and capital projects.

The consultant team reviewed regulatory and policy language from other communities in North Carolina and the United States for policies that have been successful in implementing land use and transportation integration, transportation system connectivity, Complete Streets, and bicycle parking. The purpose of this review is to enable the Town of Rutherfordton to maximize bicycle and pedestrian improvements in conjunction with new development, redevelopment, and corridor improvement projects. If a change in existing policy is necessary to improve pedestrian and bicycle access, then a modified policy was recommended as part of this review.

Table 4-10: Code of Ordinance Review and Recommendations

Code of Ordinances Section	Current Policy	Recommended Changes and Comments
Chapter 26 – Article II – Sec 26-34 – Sidewalk display of merchandise prohibited; exceptions	(a) No person shall place for display or sale any goods, wares or merchandise of any kind upon any of the sidewalks of the town, except on Main Street in the Central business District . . . for the town and then only upon the following conditions: (1) The daily display of goods, wares or merchandise may only be placed directly in front of the businesses fronting on the street by the owners or occupants of such businesses and cannot extend in excess of three feet from the building front.	These three ordinances address a concern amongst survey respondents noting difficulties for pedestrians in navigating around multiple uses on sidewalks, including business displays, restaurant outdoor seating, and pedestrians. However, this blend of pedestrians and businesses brings economic vitality to downtown Rutherfordton, so businesses should still be encouraged to utilize sidewalk space.
Chapter 26 – Article V – Sec 26-141 – Central Business District (C-1)	(e) Merchandise and structures or devices holding or displaying the same may be allowed on the sidewalks in the central business district only upon the execution of an encroachment agreement as provided by section 26-137. In the event such an encroachment agreement is issued, the following restrictions shall apply: (1) Merchandise and the fixtures or devices on which they are displayed shall be located so that a minimum of three feet of passage for pedestrian traffic shall be provided at all times.	The first two ordinances address the sidewalk display of business merchandise and the sidewalk space allowed for displays and required for safe pedestrian passage. Displays cannot extend beyond three feet of the storefront, and pedestrians must be allowed at least three feet of sidewalk for passage. Therefore, sidewalks along North Main Street could range from three to six feet wide. The third ordinance allows for sidewalk cafes, which can also encroach on sidewalk space for pedestrian passage.

Code of Ordinances Section	Current Policy	Recommended Changes and Comments
Chapter 26 – Article VI – Sec 26-168 – General regulation	Notwithstanding any other provisions of this Code to the contrary, sidewalk cafes and sidewalk dining shall be permitted in the Central Business District (C-1) as indicated on the official zoning map of the town and shall be subject to such regulations as are set forth in this section.	It is recommended that the minimum sidewalk width for pedestrian passage be increased to five feet while maintaining the three-foot maximum limit for business displays and allowing for sidewalk café space. Consider setting a minimum sidewalk width on Main Street of 10-18 feet to accommodate businesses, restaurants, and pedestrians. This recommendation coincides with Project 11: North Main Street Pedestrian Improvements, which seeks to make Main Street more accessible and easier to navigate for all pedestrians. Consider using NCDOT's *Complete Streets Planning and Design Guidelines* (http://completestreetsnc.org) as a basis for street and intersection design guidelines. This document can be adopted by reference in development regulations. Chapter 4: Planning and Design Elements provides many models for planning a central street like Main Street.
Chapter 26 – Article V – Sec 26-140 – Bicycles, skateboards, and similar apparatus on sidewalks	(a) No person shall ride or operate a bicycle, skateboard, scooter, skates, or similar apparatus upon the sidewalks within the Central Business District as set forth in chapter 30, unified development, as the same is amended from time to time. (b) In addition, no person shall ride or operate a bicycle, skateboard, scooter, skates, or similar apparatus upon the following sidewalks: The full length of the sidewalk on the north side of Charlotte Road from U.S. Highway 221 to the U.S. Highway 74 Bypass.	These policies are important in maintaining safe bicycling and pedestrian networks and minimizing conflicts between bicyclists and pedestrians. The town should consider prohibiting bicycles on all sidewalks. When proposed projects are described in Section 4.5 of this plan, improvements to bicycling infrastructure are located in the roadway and not on the sidewalk. Consider using NCDOT's *Complete Streets Planning and Design Guidelines* (http://completestreetsnc.org) as a basis for street design guidelines. This document can be adopted by reference in development regulations. Chapter 4: Planning and Design Elements provides guidance on designing space for bicyclists while addressing separate space for pedestrians.

Code of Ordinances Section	Current Policy	Recommended Changes and Comments
Chapter 28 – Article VI – Sec 28-460 – Bicycles on roadways and bicycles paths	(a) Every person operating a bicycle upon a roadway shall ride as near to the right-hand side of the roadway as practicable, exercising due care when passing a standing vehicle or one proceeding in the same direction.	Many projects proposed in this plan incorporate shared-lane markings, which include bicyclists using more of the roadway than the far right-hand side of the roadway. Bicyclists often feel safer being more secure in the roadway. Consider modifying this ordinance to address shared-lane markings. Chapter 4 of NCDOT's *Complete Streets Planning and Design Guidelines* (http://completestreetsnc.org) can be used for guidance.
Chapter 30 – Article III – Sec 30-108 – Advisory committees	(a) From time to time, the town council may appoint one or more individuals to help the planning board carry out its planning responsibilities with respect to a particular subject area. By way of illustration, without limitation, the town council may appoint advisory committees to consider the thoroughfare plan, bikeway plans, housing plans, economic development plans, etc.	Consider appointing a new town council member with expertise and interest in bicycling and pedestrian infrastructure, policies, and programs to begin the implementation of projects in this plan. Individuals from the Rutherford Outdoor Coalition or Safe Routes to School could provide this expertise.
Chapter 30 – Article XIII – Sec 30-599 – Density on lots where portion dedicated to town	(a) Subject to the other provisions of this section, if: (1) Any portion of a tract lies within an area designated on any officially adopted town plan as part of a proposed public park, greenway or bikeway; and (2) Before the tract is developed, the owner of the tract, with the concurrence of the town, dedicates to the town that portion of the tract so designated; Then, when the remainder of the tract is developed for residential purposes, the permissible density at which the remainder may be developed shall be calculated in accordance with the provisions of this section. (b) If the proposed use of the remainder is a single-family detached residential subdivision, then the lots in such subdivision may be reduced in accordance with the provisions of sections 30-597 except that the developer need not set aside usable open space to the extent that an equivalent amount of land has previously been dedicated to the town in accordance with subsection (a) of this section.	Consider a density bonus policy in which developers are provided a density bonus to apportion land adjacent to roadways for bicycle and pedestrian facilities, such as sidewalks. This policy would be used to maintain bicycle and pedestrian connectivity between existing facilities and add to the network as new residences and subdivisions are developed in Rutherfordton. Chapter 4 of NCDOT's *Complete Streets Planning and Design Guidelines* (http://completestreetsnc.org) provides specific sidewalk design guidance and recommendations for a variety of street types including the following: • Main Street • Avenue • Boulevard • Parkway • Rural Road • Local/Subdivision Street

Code of Ordinances Section	Current Policy	Recommended Changes and Comments
	(c) If the proposed use of the remainder is a two-family or multifamily project, the permissible density at which the remainder may be developed shall be calculated by regarding the dedicated portion of the original lot as if it were still part of the lot proposed for development. (d) If the portion of the tract that remains after dedication as provided in subsection (a) of this section is divided in such a way that the resultant parcels are intended for future subdivision or development, then each of the resultant parcels shall be entitled to its prorated share of the density bonus provided for in subsections (b) and (c) of this section.	
Chapter 30 – Article XIV – Sec 30-617 – Usable open space	(a) Except as provided in subsection (c) of this section, every residential development shall be developed so that at least five percent of the total area of the development remains permanently as usable open space.	Consider requirements similar to those in the section on density bonuses. Specific recommendations for including greenways, shared use paths, sidewalks, and/or bicycle facilities should be listed. Chapter 4 of NCDOT's *Complete Streets Planning and Design Guidelines* (http://completestreetsnc.org) provides specific design guidance and recommendations for building greenways, shared use paths, sidewalks, and bicycle facilities for the following street types: • Main Street • Avenue • Boulevard • Parkway • Rural Road • Local/Subdivision Street
Chapter 30 – Article XIV – Sec 30-619 – Dedication of open space	(a) If any portion of any lot proposed for residential development lies within an area designated on an officially adopted recreation master plan, or similar plan, such as a neighborhood park or part of the greenway system or bikeway system, the area so designated, not exceeding five percent of the total lot area, shall be included as part of the area set aside to satisfy the requirement of section 30-617. This area shall be dedicated to public use.	
Chapter 30— Article XV – Sec 30-652 – Street width, sidewalk, and drainage requirements in	(b) It is presumed that all new streets may be constructed with six-foot-wide shoulders and drainage swales on either side in lieu of curb and gutter. . . . No sidewalks shall be required. (c) If, due to the topography of the land or other reasons, the permit-issuing authority deems that curb and gutter and sidewalks	Sidewalks should be required for all new streets, and be a minimum of five feet wide with accessible surfaces. In addition, the town's current three-foot width standard is smaller than Rutherford County's sidewalk standard. Section 905. Sidewalks in *Subdivision Regulations of Rutherford County, North Carolina* states,

Code of Ordinances Section	Current Policy	Recommended Changes and Comments
subdivisions	are required in the interest of the public health and safety, a finding to that effect shall be made and this section shall apply. Only standard 90 degree curb may be used, except that roll-type curb shall be permitted along minor and local streets within residential subdivisions. Street pavement width shall be measured from curb face to curb face where 90 degree curb is used, and from the center of the curb where roll-type curb is used. (*Sidewalk requirements on one side of local, subcollector, and collector streets*) (d) The sidewalk required by this section shall be at least three feet in width and constructed according to the specifications set forth in article XXII, division 4 of this chapter, except that the permit-issuing authority may permit the installation of walkways constructed with other suitable materials when it concludes that: (1) Such walkways would serve the residents of the development as adequately as concrete sidewalks; and (2) Such walkways would be more environmentally desirable or more in keeping with the overall design of the development. (e) Whenever the permit-issuing authority finds that a means of pedestrian access is necessary from the subdivision to schools, parks, playgrounds, or other roads or facilities and that such access is not conveniently provided by sidewalks adjacent to the streets, the developer may be required to reserve an unobstructed easement of at least ten feet in width to provide such access.	"Sidewalks, if constructed, shall be within the street right-of-way and shall be constructed to a minimum width of four feet and shall consist of a minimum thickness of four inches of reinforced concrete." Consider using NCDOT's *Complete Streets Planning and Design Guidelines* (http://completestreetsnc.org) as a basis for street design guidelines. This document can be adopted by reference in development regulations. Chapter 4: Planning and Design Elements provides guidance sidewalk design. Amending this ordinance to require five-foot sidewalks would benefit Project 3: Green Street corridor improvements, Project 4: Mountain Street bicycle and pedestrian improvements, and Project 10: Edwards Street Corridor Improvements. Each of these projects is designed to connect pedestrians by sidewalk to parks and greenways, which qualify under section (e) of the existing ordinance.
Chapter 30 – Article XV – Sec 30-654 – Street Intersections	(a) Streets shall intersect as nearly as possible at right angles, and no two streets may intersect at less than 60 degrees. Not more than two streets shall intersect at any one point, unless the public works director certifies to the permit-issuing authority that such an intersection can be constructed with no extraordinary danger to public safety. (b) Whenever possible, proposed intersections	The policies in this section of the UDO refer to street centerline intersections, with no discussion of non-motorized users. Consider using NCDOT's *Complete Streets Planning and Design Guidelines* (http://completestreetsnc.org) as a basis for requiring street design guidelines. This document

Code of Ordinances Section	Current Policy	Recommended Changes and Comments
	along one side of a street shall coincide with existing or proposed intersections on the opposite side of such street. In any event, where a centerline offset (job) occurs at an intersection, the distance between centerline of the intersecting streets shall be not less than 150 feet. (c) Except when no other alternative is practicable or legally possible, no two streets may intersect with any other street on the same side at a distance of less than 400 feet measured from centerline to centerline of the intersecting street. When the intersected street is an arterial, the distance between intersecting streets shall be at least 1,000 feet.	can be adopted by reference in development regulations.
Chapter 30 – Article XV – Sec 30-658 – Attention to handicapped in street and sidewalk construction	Whenever curb and gutter construction is used on public streets, wheelchair ramps for the handicapped shall be provided at intersections and other major points of pedestrian flow. Wheelchair ramps and depressed curbs shall be constructed in accordance with published standards of the state building code.	This policy is important to promote access to sidewalks for those with disabilities. Consider using NCDOT's *Complete Streets Planning and Design Guidelines* (http://completestreetsnc.org) as a basis for street and intersection design guidelines.
Chapter 30 – Article XIX – Sec 30-849 – Number of parking spaces required	(a) All developments in all zoning districts other than the C-1 district shall provide a sufficient number of parking spaces to accommodate the number of vehicles that ordinarily are likely to be attracted to the development in question. (b) The presumptions established by this section are that: (1) A development must comply with the parking standards set forth in subsection (e) of this section to satisfy the requirement stated in subsection (a) of this section; and (2) Any development that does meet these standards is in compliance. However, the table of parking requirements is only intended to establish a presumption and should be flexibly administered, as provided in section 30-850. (c) Uses in the table of parking requirements,	This ordinance should address bicycle parking. A common incentive for developers to build new bicycle parking is to decrease the amount of required vehicle parking for the installation of bicycle parking. The City of Wilson UDO Chapter 9, Parking and Driveways, Section 9.4 and 9.6 provides an example. Bicycles should receive equal consideration when calculating parking needs with specific calculations provided for determining the amount of bicycle parking provided by zoning district or land use type. Design and location standards for bicycle parking should be clearly stated. Different standards of bicycle parking are needed for short-term visitors and customers and for longer term users like employees, residents, and students.

Code of Ordinances Section	Current Policy	Recommended Changes and Comments
	subsection (e) of this section, are indicated by a numerical reference keyed to the table of permissible uses; when determination of the number of parking spaces required by this table results in a requirement of a fractional space, any fraction of one-half or less may be disregarded, while a fraction in excess of one-half shall be counted as one parking space. (d) The town council recognizes that the table of parking requirements set forth in subsection (e) of this section cannot and does not cover every possible situation that may arise. Therefore, in cases not specifically covered, the permit-issuing authority is authorized to determine the parking requirements using this table as a guide.	The Association of Pedestrian and Bicycle Professionals' *Bicycle Parking Guidelines* provides good standards for bicycle parking design.

4.8 Recommended Programs

In addition to recommended infrastructure and policy improvements, the planning team looked at programs that, if implemented, could encourage non-motorized transportation usage in the town and improve safety conditions for bicyclists and pedestrians. While specific programs identified based on Steering Committee and public feedback are recommended below, an overarching recommendation would be to develop a Bicycle and Pedestrian Advisory Committee (BPAC). This recommendation is being made outside of the public involvement process, but is being made to help implement some of the other program recommendations as well as some of the other recommendations being made in this plan.

The Steering Committee and public were asked to identify and prioritize the types of programs they would like to see recommended in the plan. Overall, updating town ordinances – including the UDO and the zoning ordinance – to include bicycle and pedestrian specific facilities and adopting complete street considerations scored the highest. Recommendations from this program are reflected in Section 4.7 of this plan.

The next four top scoring programs identified by the Steering Committee and the public were as follows:

- Safety campaigns to educate bicyclists, pedestrians and drivers.
- Enhance safe access to schools.
- Provide open street events.
- Enforce existing driving laws and speed limits.

Programs specific to these categories are discussed below. A full list of the ranked programs is included in Appendix A.

Bicycle and Pedestrian Advisory Committee

The development of a BPAC recommendation includes having the Rutherfordton Town Council appoint a council member, citizen liaison, or advocate, who will form a BPAC to continue bicycle and pedestrian planning efforts and program implementation in Rutherfordton. Based on a town the size of Rutherfordton, a committee is recommended (rather than an appointed individual).

The BPAC should include some existing Steering Committee members, Planning Board members, and residents concerned about bicycle and pedestrian issues and needs in the community. Membership of the BPAC should reflect the demographic makeup of the town in terms of age, race, and socioeconomic status. Representatives from community groups, schools, and businesses should be included. The BPAC would be charged with the principal objective of advocating for bicycle and pedestrian safety and mobility through education, encouragement, and enforcement campaigns and infrastructure projects.

The BPAC would research funding opportunities, assist with submission of grant applications, and play a role in selecting and monitoring the work of consultants and contractors designing and constructing bicycle and pedestrian infrastructure. It would also serve to form partnerships between schools, businesses, and neighboring municipalities. The BPAC or an appointee should meet regularly and provide updates to the

Rutherfordton Town Council. In addition to helping implement proposed projects the Town Council should promote education, safety, encouragement, enforcement and evaluation, events, and beautification programs. Specifically, the BPAC should work and coordinate with the following organizations.

- Rutherford Outdoor Coalition
- Rutherford Trails Committee
- Rutherfordton STEP Committee
- Regional Health System
- RHI Legacy Foundation
- Rutherford County Tourism Development Authority
- Safe Routes to School Region 2 Coordinator
- Safe Kids Rutherford County

Safety campaigns to educate bicyclists, pedestrians and drivers

The public comment form for this plan indicated "promote good road user behavior" as one of the top scoring programmatic goals for this plan. It was noted several times during the planning process that roads are unsafe for bicyclists and pedestrians not only because of the lack of facilities for those users, but because of vehicular driver behavior.

Watch for Me NC is a comprehensive campaign aimed at reducing the number of bicyclists and pedestrians hit and injured in crashes with vehicles. The campaign consists of educational messages on traffic laws and safety, and an enforcement effort by area police. With more than 2,400 pedestrians and 960 bicyclists hit by vehicles each year in North Carolina, NCDOT in collaboration with municipalities and universities has launched the Watch for Me NC campaign to reduce crashes through education and enforcement. Education materials in the form of a website, public service announcements, pamphlets, bus wraps, billboards, and bumper stickers have been developed and distributed to increase awareness of pedestrians and bicyclists and applicable laws. Many of the materials can be distributed at local festivals and other events, at local bike shops and other businesses, and in renters' information packets and property owners' guest information books. The campaign also provides increased training to law enforcement. Rutherfordton may coordinate with the City of Asheville, which has participated in the Watch for Me NC campaign.

Many of these resources are downloadable from Watch for Me NC at: www.watchformenc.org/.

Enhance safe access to schools

Safe Routes to School (SRTS) is a program that enables and encourages children to walk and bike to school. The program helps make walking and bicycling to school a safe and more appealing method of transportation

for children. SRTS facilitates the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools.

Currently, Rutherfordton Elementary School and R-S Middle School both participate in annual walk to school day held in October that is coordinated by the Region 2 Active Routes to School Coordinator. To improve both safety and access to schools, the town should work with its Region 2 and NCDOT to develop an SRTS plan for Rutherford County Schools. An SRTS plan would identify barriers to walking and bicycling to school and identify solutions using a combination of education, encouragement, engineering, and enforcement strategies.

Active Routes to School (ARTS) is the North Carolina SRTS project that is supported by a partnership between NCDOT and the Division of Public Health. The goal of the project is to increase the number of North Carolinians that meet the physical activity recommendations by increasing the number of elementary and middle school students who safely walk and bike to or at school.

More information on SRTS can be found at https://www.ncdot.gov/bikeped/safetyeducation/safeRoutesToSchools/.

In addition to the SRTS, the town could facilitate Rutherfordton Elementary School's participation in the NCDOT program Let's Go NC! - Pedestrian and Bicycle Safety Curriculum. Aimed to instruct children between grades k-5, the program focuses on walking and biking safety and skills. As a way to promote healthy and active lifestyles, a curriculum was developed that includes aspects of the SRTS program, and classroom, video, and exercise materials.

More information can be found at: www.connect.ncdot.gov/projects/BikePed/Pages/LetsGoNC.aspx.

Open Street Events

Once some of the recommended projects are constructed, it would create a perfect opportunity for regular special events. A festival could be set up at the Town Hall, at a park, or on a greenway spurring a new experience that may draw more interest in pedestrian facilities.

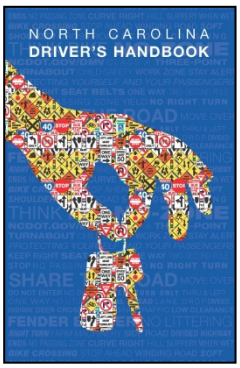
Open Street Bicycle Event (Flickr Creative Commons, Umberto Bayj, 2012)

An international trend is to turn major town roads into "Sunday Parkways." This concept takes long strips of roadways (linear or in a looping pattern) and converts one or both directions of traffic to pedestrian malls or for bicycle rides during a portion of every

Sunday and holiday. This encourages people to get out and walk or bicycle, increases the amount of public space, and motivates people to walk more often throughout the rest of the week. This concept is included in the statewide WalkBikeNC Plan. In planning any Open Street event, merchants and other business owners should be consulted to accommodate potential impacts on access and sales.

Enforcing existing driving laws and speed limits

Education is essential for teaching and reminding drivers of all ages the applicable laws and responsibilities of motorists as they pertain to safely sharing the road with bicyclists and pedestrians. This also includes educating police officers on bicycle and pedestrian laws.



Although children aged 5 to 15 years are not yet old enough to drive, it can be expected that the majority will become automobile users. Educating elementary and middle school students (the future driving population) about bicycle and pedestrian safety provides excellent opportunities to make a difference in a two-fold manner.

Pedestrian safety, as well as how to safely maneuver an automobile while in the presence of pedestrians and bicycles can be an instrumental part of any driver's education program in Rutherfordton. This training will allow new generations to be more aware of the simple fact that motorized vehicles do not have sole right to the transportation network, and it is everyone's responsibility to be careful when in the roadways.

More information can be found at: www.ncdot.gov/dmv.

The NC Bicycle and Pedestrian laws can be found at: www.ncdot.gov/bikeped/lawspolicies/.

IMPLEMENTATION

STRATEGY

5.0 Implementation Strategy

5.1 Overview

Achieving the vision, goals, and objectives of this plan will require the commitment of town officials and staff, BPAC or appointee(s), the Isothermal RPO, and NCDOT, and the support and leadership from the community and other partner organizations. Guided by the goals, objectives, and strategies, the town will continue working to improve bicycle and pedestrian safety and connectivity.

Second Steering Committee Meeting, June 2016 (AECOM, 2016)

The implementation strategy for this plan includes several components to assist with translating this document into implemented programs and constructed bicycle and pedestrian facilities:

- Key Action Steps: *Describing actions to help the town implement the recommendations of this plan and improve overall bicycling and pedestrian facilities*
- Project Development Strategies: *Utilizing key action steps to implement specific projects*
- Funding Process and Sources: *Identifying and mobilizing funding for projects*
- Performance Evaluation Measures: *Evaluating the effectiveness of projects*

5.2 Key Action Steps

The BPAC is entrusted with overseeing the implementation of the plan with assistance from town staff and participation by the stakeholders. The BPAC would be responsible for meeting regularly to receive updates and guide progress on the action steps. It would also author an annual progress report on bicycle and pedestrian conditions in Rutherfordton.

In addition, all bicycle and pedestrian facility recommendations along NCDOT-maintained roadways would require review and approval by NCDOT Highway Division 13 prior to implementation. The key actions are listed in Table 5-1.

Table 5-1: Key Actions

Action	Description	Stakeholder	Timeline
Adopt the Town of Rutherfordton Bicycle and Pedestrian Plan	Present the plan to the Rutherfordton Town Council for adoption.	Town Council and town staff	August 2017
Establish a Bicycle and Pedestrian Advisory Committee	Form an advisory committee or appoint an individual who will be responsible for overseeing the implementation of the plan.	Town Council and town staff	Fall 2017
Strengthen partnerships with Rutherford County and the Isothermal RPO	Hold an initial meeting with the stakeholders to provide an overview of the plan's recommendations and identify opportunities for collaboration.	Rutherford County and the Isothermal RPO	Fall 2017 / ongoing
Coordinate with NCDOT Division 13	Hold an initial meeting with NCDOT Division 13 to discuss how the plan's bicycle and pedestrian projects may be incorporated in upcoming transportation projects, including roadway resurfacing projects and the Rutherfordton Bypass (STIP R-2233B). Additional coordination is recommended via the BPAC to coordinate with the NCDOT Division 13 3-year road resurfacing schedule (including any short term changes) to accomplish the projects that require pavement markings.	NCDOT Division 13 and town staff	Ongoing
Coordinate with Isothermal RPO to include infrastructure projects in the regional planning process	Hold an initial meeting with Isothermal RPO to review the plan's infrastructure projects to include where appropriate in regional plans including any future updates to the *Rutherford County Comprehensive Transportation Plan.*	Town staff and Isothermal RPO	Fall 2017 / ongoing
Coordinate with local bicycle organizations and clubs such as the Rutherford Outdoor Coalition	Hold an initial meeting with representatives from the organizations to review the plan's goals and objectives and to discuss potential opportunities for collaboration with items such as the establishment of a Regional Bicycle Network, programs, and policies.	Town staff, BPAC/appointee, and representatives from the bicycle organizations	Fall 2017

Action	Description	Stakeholder	Timeline
Include requirements for bicycle/pedestrian facilities in town ordinances and policies	Draft amendments to town ordinances and policies following the recommendations of this plan for bicycle and pedestrian infrastructure in existing and new development.	Town Council and town staff	Fall 2017
Establish a sidewalk maintenance program	Develop a sidewalk maintenance program through the town's Public Works Department.	Town Council and town staff	Fall 2017
Apply for alternative funding sources for the plan's projects and programs	Refer to the funding sources identified in this plan in Appendix D; apply for funds in addition to the STIP process to implement programs and projects. Establish a fund to use for local match requirements.	BPAC/appointee and town staff	Ongoing
Coordinate with the Foothills Conservancy of North Carolina (FCNC)	Develop a partnership between the town and the FCNC that can identify strategies and funding sources for projects that enhance both the town and the FCNC.	BPAC, town staff and FCNC	Ongoing
Partner with NC Department of Commerce	Develop and partnership between the NC Department of Commerce, the Rutherford County Chamber of Commerce, and the Rutherford Outdoor Coalition that will serve to promote ecotourism in the town.	Town staff, NC Department of Commerce, Rutherford County Chamber of Commerce, ROC	Fall 2017/ ongoing
Carry out programs that educate residents on the health benefits of walking and biking	Partner with the Rutherford County Health Department, local schools, and other community organizations to implement encouragement and educational programs identified in Appendix B of this plan.	BPAC/appointee, and town staff	Fall 2017/ ongoing
Town budget planning	Identify potential funding sources for bicycle and pedestrian programs, projects and maintenance in the town's budget such as Powell Bill funds. Begin to accumulate funds that can be used for the local match required for most projects.	BPAC/appointee, Town Council and town staff	Fall 2017
Coordinate with Region 2 Active	Begin meeting with the Region 2 Active Routes to School Coordinator to establish	BPAC/appointee, town staff,	Winter 2018

Action	Description	Stakeholder	Timeline
Routes to School Coordinator	and develop policy for implementation and/or training or programs for Rutherfordton.	NCDOT, NC Division of Public Health	
Wayfinding Study	Identify locations for wayfinding signage and develop a system of unique and branded signs, possibly using a local artist.	BPAC/appointee, Town Council, town staff	Winter 2018
Watch for Me NC	Apply to participate in NCDOT's Watch for Me NC campaign to raise awareness and provide educational resources to promote bicycle and pedestrian safety to residents, drivers, and law enforcement.	BPAC/appointee, and town staff	Winter 2018/ Ongoing
Rutherfordton Bicycle and Pedestrian Annual Report/Memo	Prepare the first Rutherfordton Bicycle and Pedestrian Annual Report assessing progress made over the past year using the performance and evaluation measures included in this plan.	BPAC/appointee and town staff	Winter 2018

5.3 Project Development Strategy

The development process to prepare for a project's construction involves six key components described below. This strategy can be used to implement infrastructure projects proposed in this plan. When applicable, each component of the strategy will incorporate action steps described in Table 5-1 demonstrating how town officials can implement the project practically.

- Identification of funding source(s)
- Public involvement
- Feasibility Study (right-of-way availability and needs)
- Engineering and design
- Analysis of affected property owners
- Design-level cost estimates

The project development process will vary depending on whether the project is on-road or off-road on a new location. Wide paved shoulders and bike lane markings are on-road facilities because they are typically constructed within the road right-of-way. However, adding sidewalks where applicable may involve obtaining additional right-of-way and/or easements from adjacent property owners. Shared use paths are typically an example of off-road facilities because they would require new location rather than being built within an existing right-of-way, unless (for example) an existing utility easement is used.

Identification of Funding Sources

Funding for bicycle and pedestrian infrastructure projects needs to be identified early in project development. Many funding options are presented in Section 5.4 of this plan. Relevant action steps include the following:

- Coordinate with Isothermal RPO to include infrastructure projects in the regional planning process
- Apply for alternative funding sources for the plan's projects and programs
- Coordinate with the Foothills Conservancy of North Carolina
- Partner with North Carolina Department of Commerce
- Town budget planning

Public Involvement

This is a critical component for soliciting community input on the location, design, and function of the proposed facility. In addition, public involvement is critical in forming partnerships with local advocacy organizations and educating the community about the overall benefits of bicycling and walking. Public involvement should be included in all phases of project development. Practical action steps include the following:

- Establish a Bicycle and Pedestrian Advisory Committee
- Coordinate with local bicycle organizations and clubs such as the Rutherford Outdoor Coalition

- Carry out programs that educate residents on the health benefits of walking and biking
- Wayfinding study
- Watch for Me NC

Feasibility Study (Right-of-Way Availability and Needs)

Regardless of whether the proposed facility is on-road or off-road, the project will require a feasibility study. A feasibility study would likely be done for each proposed project, or a small group of inter-related projects. The study will examine the utility and right-of-way issues associated with a proposed facility and provide concept plans, profiles, and high level cost estimates. The study will determine utility constraints, and if right-of-way acquisition is necessary for the project. The study should be conducted in consultation with NCDOT where occurring within an NCDOT right-of-way. The Town of Rutherfordton may need to fund or provide a local contribution toward these studies.

Some of the bicycle and pedestrian projects proposed in this plan would be on-road facilities within NCDOT rights-of-way that require coordination with NCDOT. On NCDOT roads in town, bike lanes or sharrows have the potential to be accomplished cost-effectively through division's resurfacing projects. Projects 1, 4, 5, 7, 8 and 10 may be implementable through this approach as they are on NCDOT owned/maintained roads. As identified in the key action steps table, coordination with NCDOT Division 13 should be initiated following the adoption of this plan. There may be opportunities to include the on-road bicycle and pedestrian facilities proposed by this plan in road repaving and widening projects. An important role for the BPAC would be to monitor the NCDOT Division 13 resurfacing schedule. This could be accomplished through arranging quarterly check-ins with the Division Operations and Maintenance personnel to determine upcoming resurfacing plans. Although NCDOT communicates with local municipalities concerning upcoming resurfacing plans, coordination with NCDOT is recommended to ensure projects in this plan can be implemented through resurfacing.

Feasibility studies could require coordination at multiple levels from the town to NCDOT. The following actions would assist in coordinating and conducting feasibility studies:

- Adopt the Town of Rutherfordton Bicycle and Pedestrian plan
- Strengthen partnerships with Rutherford County and the Isothermal RPO
- Coordinate with NCDOT Division 13
- Coordinate with Isothermal RPO to include infrastructure projects in the regional planning process
- Town budget planning

Engineering and Design

In the engineering and design phase, concepts developed in the feasibility study will be developed and advanced using more in-depth engineering to develop a preliminary design. During this phase additional, more specific information on right-of-way and utility constraints will be developed. As with the feasibility study, the planning and design phase should be conducted in consultation with NCDOT where occurring within an NCDOT right-of-way. The Town of Rutherfordton may need to fund or provide a local

contribution toward these studies. Because engineering and design follow feasibility studies closely, many applicable action steps are the same:

- Coordinate with NCDOT Division 13
- Coordinate with Isothermal RPO to include infrastructure projects in the regional planning process
- Town budgeting and planning

Analysis of Affected Property Owners

It is best to develop projects within existing town or NCDOT right-of-way to minimize right-of-way acquisition and costs. Typically, bicycling and pedestrian infrastructure projects, including those in this plan, utilize existing roadways, sidewalks, and rights-of-way. However, if a project requires the acquisition of additional rights-of-way, the feasibility study, engineering, and design identify property owners who could be impacted by a project's alignment and construction. Once those property owners are identified, town officials should coordinate with NCDOT on the process to initiate contact with impacted property owners and acquire right-of-way.

Bicycling and pedestrian projects that could require the acquisition of rights-of-way typically include those that are not utilizing existing roadways or sidewalks. A shared use path, such as the Thermal Belt Rail Trail, is an example. Although there are no shared-use paths proposed in this plan, these types of improvements may be desired by the community in the future. This information is provided for future reference, as applicable.

Thermal Belt Rail Trail (AECOM, 2016)

Shared-use paths are considered off-road facilities that require different strategies for project development. Off-road facilities are constructed outside of the road right-of-way. Private land or an easement would need to be acquired to accommodate the shared-use path. Rutherfordton may partner with Rutherford County as well as conservation and land trust organizations, such as the Foothills Conservancy of North Carolina (FCNC), to secure needed easements or acquire land for the shared use projects.

For facilities that are planned adjacent to streams and waterbodies, it is important to consider buffer regulations and applicable watershed protection regulations. Rutherfordton is in the Broad River Basin. During the engineering phase, coordination should be undertaken with the Rutherford County Soil and Water Conservation District and the North Carolina Department of Environment and Natural Resources (NCDENR) in order to ensure that facilities are engineered to avoid buffer zones and/or ecologically sensitive areas. These facilities may be designed in conjunction with enhancing or constructing vegetated stream buffers to improve water quality. Such projects may be eligible for funding from the Clean Water Management Trust Fund.

Design-level Cost Estimates

A critical component of a project's engineering and design is developing the design-level cost estimates for proposed project alternatives. Detailed cost estimates allow the town council to evaluate alternatives, present options to the public, receive public input, and ultimately decide on the alternative that best fits the town's goals and budget. Design-level cost estimates are generated by the project engineers tasked with designing the project alternatives. Cost estimates include the following details:

- Roadway/path/sidewalk construction
- Utility construction or relocation
- Right-of-way acquisition
- Contingencies that could arise in the course of project construction

5.4 Funding Sources

Funding for bicycle and pedestrian projects will likely not come from a single source, and instead will need to be combined with several funding sources that can be used for a variety of activities, including: programs, planning, design, implementation, and maintenance. Although funding is available from outside sources, it is highly recommended that the town establish a source of local matching funds for potential grants. Even small amounts of local funding are essential for matching and leveraging outside sources. Local matching funds can be achieved through allocations to a reserve fund from the capital budget. In addition, many grants allow in-kind matching (e.g., local staff time).

This section discusses the state funding process and other potential funding sources. There are two main sources of funding, NCDOT STIP funding, and NCDOT Division 13.

State Funding Process for Transportation Improvements

In June 2013 the North Carolina General Assembly overhauled the process for funding state transportation projects with the Strategic Transportation Investments law (House Bill 817). This law establishes the Strategic Mobility Formula to allocate funds based on quantitative criteria and local input. The formula is intended: "to maximize North Carolina's existing transportation funding to enhance the state's infrastructure and support economic growth, job creation and high quality of life."

The formula funds projects according to the three following categories:

- Division Needs (30 percent)
- Regional Impact (30 percent)
- Statewide Mobility (40 percent)

The local NCDOT division and metropolitan or rural planning organization (M/RPO) provide MPO or RPO input in the Division Needs Category. Rutherfordton is within the Isothermal RPO.

Bicycle and pedestrian projects (separate from facilities included as part of a roadway project) may be funded through (NCDOT's Division 13) Division Needs category with certain restrictions.

Division and RPO Funding

The Highway Safety Improvement Program (HSIP) could potentially fund bicycle and pedestrian infrastructure projects in Rutherfordton. HSIP funds bicycle and pedestrian projects based on crash history and safety factors through a competitive process. It is administered by the NCDOT Transportation Mobility and Safety Unit. Surface Transportation Block Grants Direct Attributable (STBG-DA) funds are managed by Isothermal RPO and are eligible for use on bicycle and pedestrian projects. STBG-DA grants require 20 percent local matches.

Distribution of STBG-DA funds makes coordination with NCDOT Division 13 and Isothermal RPO critical as a way to provide local input for needed projects or upgrades, which could be included as a part of regional programs. The coordination will be an important part of implementing the infrastructure projects proposed in this plan, and is vital due to Rutherfordton's size, as state funds are limited and competitive.

Other Funding Sources

Rutherfordton should consider alternate funding sources to augment state funds for bicycle and pedestrian projects, which are limited and competitive. The programs listed below may be used to fund entire projects or be directed towards covering the cost of spot improvements like crosswalks or amenities such as benches and signage. Additional and more detailed information concerning what these funds can be used for, the required local match, and other characteristics is included in Appendix D: Funding Sources.

Federal Funding Sources

- Fixing America's Surface Transportation (FAST ACT)
- Congestion Mitigation and Air Quality Improvement (CMAQ)
- Highway Safety Improvement Program (HSIP)
- State and Community Highway Safety Grant Program (Section 402)
- Surface Transportation Program (STP)
- Transportation Alternatives Program (TA or TAP)
- Urbanized Area Formula Program (UZA)
- Safe Routes to School

State Funding Sources

- Clean Water Management Trust Fund
- Land and Water Conservation Fund
- Parks and Recreation Trust Fund (PARTF)
- Powell Bill
- Recreational Trails Program
- Strategic Mobility Formula

Local Funding Sources

- Capital Reserve Fund
- Community Crowdfunding
- Fees
- General Obligation Bonds
- Special Tax District

Nonprofit Funding Sources

- Blue Cross Blue Shield of North Carolina Foundation
- The Community Foundation of Western North Carolina
- Rutherford Outdoor Coalition
- Kate B. Reynolds Charitable Trust
- Robert Wood Johnson Foundation

Local "Crowdfunding"

In the last several years the internet has revolutionized fundraising. This new form of fundraising, called crowdfunding enables people all over the world to start a fundraising effort and provides an easy mechanism for others to make donations. Platforms such as Citizenvestor and Indiegogo are online communities that act as funding platforms for a diverse range of projects. Individuals or organizations post projects for a nominal fee and individuals make contributions via credit card. Costs include a 4 percent fee charged by the crowdfunding platform (e.g., Indiegogo) and a 3 to 5 percent fee charged by the credit card company.

This type of fundraising is likely to be a minor source, but might be useful for funding spot improvements, such as crosswalk markings or benches.

Citizinvestor: Projects are formed from "cities or official town partners" that focus on micro-projects (4 to 5 years). http://www.citizinvestor.com/.

Indiegogo: Similar to the successful crowdfunding platform, Kickstarter, Indiegogo is more locally oriented and trends toward civic-based projects. http://www.indiegogo.com/.

5.5 Performance and Evaluation Measures for Plan Implementation

In order to evaluate the progress and effectiveness of the Town of Rutherfordton Bicycle and Pedestrian plan, the following table (Table 5-2) lists evaluation criteria and examples of achieved progress that the BPAC and Town Council can use. These criteria and milestones are based on the goals and objectives of this plan. The table is intended to serve as a general guide – the BPAC should tailor these evaluation criteria to the community by adopting more specific, locally applicable quantitative metrics.

The evaluation of the plan should occur annually and be published in the form of a memo or report made available to the residents of Rutherfordton. The report should detail the progress made to date and the priorities for the coming year. This annual report will help to demonstrate the benefits of pedestrian infrastructure and programs as well as generate further support for the ongoing work of the BPAC or appointment of a single council member, citizen liaison, or advocate for bicycle and pedestrian activities.

Table 5-2: Performance and Evaluation Measures for Plan Implementation

Plan Goal	Plan Objective	Performance Evaluation	Examples of Progress Achieved
Goal and Objective 1: Improve Mobility through Bicycle and Pedestrian Networks			
Improve mobility through provision of options for active transportation	Create and provide safe bicycle and pedestrian networks, remove barriers, and enhance connections between residential neighborhoods and destinations.	Miles of bicycle and pedestrian facilities constructed; Number of spot improvements (e.g., crossing facilities) completed.	Miles of bicycle and pedestrian facilities constructed in a specific period of time (e.g., 3 miles within 5 years)
Goal and Objective 2: Provide Bicycle, Pedestrian and Driver Education			
Educate the community as to the benefits of pedestrian activity and applicable rules and regulations	Implement policies and programs to improve pedestrian and cyclist safety and educate the community	Number of safety education campaigns or events annually in the community	Participation in the Watch for Me NC program annually or bi-annually
		Number of bicycle and pedestrian-related crashes	Reduction in existing speed limits to increase safety and prevent potential incidents annually
Goal and Objective 3: Promote Environmental, Public Health, and Safety Benefits of Biking and Walking			
Achieve safe and attractive environment through programs and policies	Capture the environmental and public health benefits of biking and walking by providing active living environments with safe, connected, accessible facilities along with programs that encourage bicycling and walking	Number of partnerships established with schools, community groups, the county health department, environmental groups, and town government to plan and hold "X" number of events	Number of events held, counts, or number of miles biked or walked annually

Goal and Objective 4: Encourage Economic Benefits of Biking and Walking			
Educate the community as to the economic benefits that improved bicycle and pedestrian infrastructure can have on surrounding businesses and residences	Enhance and improve the secondary benefits resulting from bicycle and pedestrian infrastructure	Develop education and incentive programs that promote household savings from alternative transportation modes, tourism, development goals, and property value	Household spending on motor vehicle costs is less burdensome when alternatives are available
			Increase in tourism spending, development, or property value over a five-ten year period; businesses gain customers from additional trail users
Goal and Objective 5: Connect Cultural Sites and Natural Resources			
Develop facilities and programs that enhance the connection between local and regional cultural sites and natural resources through bicycle and pedestrian facilities such as trails	Create walking and bicycling information and wayfinding to tie Rutherfordton's historic downtown, its cultural and historic sites, and surrounding natural resources	Implemented infrastructure projects that connect cultural sites and natural resources annually	Miles/feet of bicycle and pedestrian facilities constructed that connect cultural sites and natural resources annually
		Interpretive signage and maps on bicycle and pedestrian facilities that describe the cultural and natural context of the area	Way finding signs and access points added to bicycle and pedestrian facilities
Goal and Objective 6: Foster Public Health and Environmental Benefits of Walking and Biking			
Encourage higher levels of physical exercise for improved public health and environmental awareness	Incentivize conditions, programs, and partnerships to achieve a more bikeable and walkable community	Construct new/upgraded bicycle and pedestrian facilities expanding recreational opportunities	Number of newly constructed or upgraded facilities annually
		Implement programs or establish partnerships to promote and develop encouragement of recreational bicycle and pedestrian activities	Number of programs or partnerships annually

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APPENDICES

Appendix A: Public Involvement

This appendix will be completed with the following documents:

- First Steering Committee Meeting Agenda
- First Steering Committee Meeting Sign-In Sheet
- First Steering Committee Meeting Minutes
- First Steering Committee Meeting Presentation and Map
- Second Steering Committee Meeting and Public Meeting Agenda
- Second Steering Committee Meeting and Public Meeting Sign-In Sheet
- Second Steering Committee Meeting and Public Meeting Minutes
- Second Steering Committee Meeting and Public Meeting Presentation and Handouts
- Third Steering Committee Meeting and Public Meeting Agenda
- Third Steering Committee Meeting and Public Meeting Sign-In Sheet
- Third Steering Committee Meeting and Public Meeting Presentation and Handouts

Appendix B: State and Federal Policies

Applicable state and federal policies pertaining to bicycle and pedestrian programs and facilities are summarized in Table B-1 below.

Table B-1: State and Federal Policies

Policy	Applicability to Bicycle and Pedestrian Planning
	Federal Policies
Americans with Disabilities Act (ADA) (1990)	Ratified in 1990, ADA prohibits discrimination on the basis of disability. Title III pertains to public accommodations including transportation. Federally funded bicycle and pedestrian projects must comply with the Americans with Disabilities Act.
American Association of State Highway & Transportation Officials (AASHTO)	AASHTO publishes design standards for transportation facilities including bicycle and pedestrian projects. These standards are often adopted by state departments of transportation, helping in the design of safe and efficient bicycle and pedestrian facilities.
Manual on Uniform Traffic Control Devices (MUTCD) (2009)	The 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) under 23 Code of Federal Regulations (CFR), Part 655, Subpart F.
Moving Ahead for Progress in the 21st Century (MAP-21) (2012)	MAP-21 funds surface transportation programs and creates a streamlined, performance-based, and multimodal program to address the many challenges facing the U.S. transportation system. MAP-21 reorganizes many of the dedicated bicycle and pedestrian funding programs into other functions. Applicable programs under MAP-21 for bicycle and pedestrian projects include: Transportation Alternatives Program (TAP), Congestion Mitigation and Air Quality Improvement (CMAQ), and Surface Transportation Program (STP).
Title VI of the Civil Rights Act of 1964 and Executive Order 12898 (1964, 1998)	Title VI of the Civil Rights Act of 1964 requires that each federal agency ensure that no person is excluded, denied, or discriminated based on race, color, national origin, age, sex, disability. Executive Order 12898 signed by President Bill Clinton in 1994 requires that each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

Policy	Applicability to Bicycle and Pedestrian Planning
United States Department of Transportation Mission Statement (2010)	The USDOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including (US) DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide — including health, safety, environmental, transportation, and quality of life — transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes.
	State Policies
NCDOT Bicycle Policy	The NCDOT Bicycle Policy states that bicycling is a "bona fide" highway purpose subject to the same rights and responsibility and eligible for the same considerations as other highway purposes. It also designates bicycle facility planning be included in the state thoroughfare and project planning process. http://www.ncdot.gov/bikeped/download/bikeped_laws_Bicycle_Policy.pdf
NCDOT Board of Transportation Resolution for Bicycling and Walking	The resolution states that the North Carolina Board of Transportation strongly reaffirms its commitment to improving conditions for bicycling and walking, and recognizes non-motorized modes of transportation as critical elements of the local, regional, and national transportation system. . It also acknowledges the benefits that bicycling and walking offer: cleaner air, reduced congestion, more livable communities, more efficient use of road space and resources and healthier people. http://www.ncdot.gov/bikeped/download/bikeped_laws_BOT_Mainstreaming_Resolution.pdf
NCDOT Bridge Policy	The NCDOT Bridge Policy states that sidewalks should be included on new bridges with curb and gutter approaches that are not controlled access facilities. Sidewalks may be on one or both sides of the bridge. The sidewalk should be a minimum of 5 to 6 feet wide. https://connect.ncdot.gov/projects/Roadway/RoadwayDesignAdministrativeDocuments/Bridge%20Policy.pdf
NCDOT Complete Streets	Adopted in July 2009, the Complete Streets policy is to accommodate all modes of transportation wherever safe and appropriate; increases connectivity between neighborhoods, streets, and transit systems; and improves safety for pedestrian, cyclists, and motorists. http://www.completestreetsnc.org/

Policy	Applicability to Bicycle and Pedestrian Planning
NCDOT Division of Bicycle and Pedestrian Transportation	The NCDOT Division of Bicycle and Pedestrian Transportation assists communities across the state improve bicycle and pedestrian safety and mobility. The Division provides technical assistance, funding for research and planning, and resources such as the Watch for Me NC campaign.
NCDOT Greenway Policy	In 1994, NCDOT adopted guidelines to consider greenways and greenway crossings during the highway planning process. This policy was incorporated so that critical corridors which have been adopted by localities for future greenways will not be severed by highway construction. http://www.ncdot.gov/_templates/download/external.html?pdf=http%3A//www.ncdot.gov/bikeped/download/bikeped_laws_Greenway_Admin_Action.pdf AND http://www.ncdot.gov/bikeped/download/GuidelinesForGreenwayAccommodations.pdf
NCDOT Mission Statement	NCDOT's mission is: "Connecting people and places safely and efficiently, with accountability and environmental sensitivity to enhance the economy, health and well-being of North Carolina." Bicycle and pedestrian facilities help to accomplish this mission by improving safety, encouraging physical activity, and providing environmentally friendly alternatives to motorized transportation.
NCDOT Pedestrian Policy Guidelines	The NCDOT Pedestrian Policy states that the Department of Transportation will replace existing sidewalks disturbed as a result of a highway improvement. The Department is authorized to construct new sidewalks adjacent to State highway improvement projects at the request of the municipality provided the municipality agrees to reimburse for the construction cost of the sidewalks. Maintenance of sidewalks will be the responsibility of the municipality. http://www.ncdot.gov/bikeped/download/bikeped_Ped_Policy.pdf
Strategic Mobility Formula	The Strategic Transportation Investments (STI) law signed June 2013 establishes the Strategic Mobility Formula for funding transportation projects in North Carolina. The formula divides bicycle and pedestrian projects into incidental and independent projects. Incidental projects are included in larger transportation projects while independent projects are standalone such as adding a sidewalk to an existing road. Independent projects are capped at 20 projects per M/RPO annually.

Sources: Advocacy Advance, American Association of State Highway and Transportation Officials, Federal Highway Administration, North Carolina Department of Transportation, United States Department of Transportation

Appendix C: Design Guidelines

General design guidelines for bicycle and pedestrian facilities are linked below and can provide general bicycle and pedestrian planning and design guidelines, as well as typical cross-sections and bicycle and pedestrian design considerations. NCDOT adheres to these guidelines and the state Complete Streets guidelines in its design of bicycle and pedestrian facilities. NCDOT has made these guidelines and resources available here: https://connect.ncdot.gov/projects/BikePed/pages/guidance.aspx. The following table is a summary of these resources along with links. At the conclusion of Appendix C, specific examples of wayfinding signage are provided.

NCDOT Design Guidelines and Resources		
Document		**Link**
American Association of State Highway and Transportation Officials (AASHTO)		
Guide for the Development of Bicycle Facilities	Bicycling and pedestrian facilities on state roads	https://bookstore.transportation.org/Item_details.aspx?id=1943
Guide for the Planning, Design, and Operations of Pedestrian Facilities		https://bookstore.transportation.org/item_details.aspx?id=119
Federal Highway Administration (FHWA)		
Accessibility Guidance		https://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/index.cfm
Design Guidance		
Facility Guidance		https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/index.cfm
Facility Operations		
Manual on Uniform Traffic Control Devices (MUTCD)		
Part 4E: Pedestrian Control Features	State roads	https://mutcd.fhwa.dot.gov/htm/2003r1r2/part4/part4e.htm
Part 7: Traffic Controls for School Areas		https://mutcd.fhwa.dot.gov/htm/2003r1r2/part7/part7-toc.htm
Part 9: Traffic Controls for Bicycle Facilities		https://mutcd.fhwa.dot.gov/htm/2003r1r2/part9/part9-toc.htm
2009 NC Supplement to MUTCD		https://connect.ncdot.gov/resources/safety/TrafficSafetyResources/2009%20NC%20Supplement%20t

		o%20MUTCD.pdf
National Association of City Transportation Officials (NACTO)		
Urban Bikeway Design Guide	Locally maintained streets and shared use paths	https://nacto.org/publication/urban-bikeway-design-guide/
Urban Street Design Guide		https://nacto.org/publication/urban-street-design-guide/
Safe Routes to School (SRTS) Non-Infrastructure		
National Center for Safe Routes to School		http://www.saferoutesinfo.org/
National Partnership for Safe Routes to School		http://www.saferoutespartnership.org/
US Access Board		
ABA Accessibility Standards	Locally maintained streets and shared use paths	https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-aba-standards/guide-to-the-aba-standards/single-file-version
ADA Accessibility Guidelines		https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/background/ada-aba-accessibility-guidelines-2004
ADA Accessibility Standards		https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards
Public Rights-of-Way, Streets & Sidewalks, and Shared Use Paths		https://www.access-board.gov/guidelines-and-standards/streets-sidewalks
North Carolina Department of Transportation (NCDOT)		
Statewide Pedestrian and Bicycle Plan	State Roads	https://www.ncdot.gov/bikeped/walkbikenc/#toolbox
Glossary of North Carolina Terminology for Active Transportation		https://connect.ncdot.gov/projects/BikePed/Documents/NC%20Terminology%20for%20Active%20Travel.pdf
NCDOT Complete Streets		http://www.completestreetsnc.org/
Evaluating Temporary Accommodations for Pedestrians		https://connect.ncdot.gov/projects/wztc/Documents/AccomPedinWZProc.pdf

NC Local Programs Handbook		https://connect.ncdot.gov/municipalities/Funding/Pages/LPM%20Handbook.aspx/
Traditional Neighborhood Development Guidelines		https://connect.ncdot.gov/projects/Roadway/RoadwayDesignAdministrativeDocuments/Traditional%20Neighborhood%20Development%20Manual.pdf

Appendix D: Funding Sources

Table D-1 below provides a list of funding sources, eligible projects, potential award amounts, and match requirements for bicycle and pedestrian infrastructure projects and programs in Rutherfordton.

Table D-1: Funding Sources

Source	Eligible Projects	Characteristics and Requirements
	Federal Funding Sources	
Congestion Mitigation and Air Quality Improvement Program (CMAQ)	• Projects to improve air quality and reduce traffic congestion • Projects must be in STIP • Technical assistance	• Typically requires 20% match • $2 billion authorized in FY 2013
Highway Safety Improvement Program (HSIP)	Bicycle or pedestrian projects on any public road, bike path, or trail	• Typically requires 10% match • $2 billion authorized in FY 2013
State and Community Highway Safety Grant Program (Section 402)	Education, enforcement, and research programs designed to reduce traffic crashes, deaths, injuries, and property damage	• Administered by the Governor's Representative for Highway Safety • $235 million authorized in FY 2013
Surface Transportation Program (STP)	• Projects on federal-aid highway • Safety brochure or book • Technical assistance	• Typically requires 20% match • $10 billion authorized in FY 2013
Transportation Alternatives Program (TAP)	• Bicycle and pedestrian facilities • Recreational trails • Safe Routes to School projects • Technical assistance • Programmed through the Strategic Transportation Investments – Strategic Mobility Formula process	• Typically requires 20% match • Can be received directly by local governments • $808 million authorized in FY 2013
Urbanized Area Formula Program (UZA)	• Public transportation projects • In urbanized areas of more than 200,000 at least 1% of funds must be used for bicycle and pedestrian facilities	• Typically requires 20% match • $2 billion authorized in FY 2013

Source	Eligible Projects	Characteristics and Requirements
	State Funding Sources	
Clean Water Management Trust Fund (CWMTF)	• Projects that enhance or restore degraded waters, acquire land with ecological, cultural, and historic significance • Greenway (shared use path) projects are eligible	• Requires matching funds • Annual grant cycle
Land and Water Conservation Fund (LWCF)	• Land acquisition and/or development projects for public outdoor recreation and/or to protect outstanding natural or scenic resources • Projects must be on a single site	• Requires 50% match • Administered by the Division of Parks and Recreation
Parks and Recreation Trust Fund (PARTF)	Acquisition and/or development of park and recreational projects	• Requires 50% match • Administered by the Division of Parks and Recreation
Powell Bill	"Maintaining, repairing, constructing, reconstructing or widening of any street or public thoroughfare within the municipal limits or for planning, construction, and maintenance of bikeways, greenways or sidewalks."	• Annual allocation from the State to qualifying municipalities • $135,878.20 awarded to Rutherfordton in FY 2016
Recreational Trails Program	• Trail construction • Trail facilities and amenities • Programs that promote safety and environmental protection as they relate to recreational trail projects	• Maximum grant award $200,000 • Requires 25% match • Federal funds managed by the Division of Parks and Recreation
Strategic Mobility Formula	• Limited funding for bicycle and pedestrian projects that are at least $100,000 and included in a locally adopted plan • Programmed through the Strategic Transportation Investments – Strategic Mobility Formula process	• State funds may not be used for a local match (except for Powell Bill funds) • MPOs/RPOs may submit up to 20 bicycle/pedestrian projects • Right-of-way is not an eligible expense

Source	Eligible Projects	Characteristics and Requirements
Safe Routes to School (SRTS)	• Infrastructure projects within 2 miles of a K-8 school • Project must be within the public right-of-way	• No match required • Currently funding with leftover SRTS funds, once expended TAP funds will be used and programmed through the Strategic Transportation Investments – Strategic Mobility Formula process
Local Funding Sources		
Capital Reserve Fund	May be used to fund bicycle and pedestrian infrastructure projects	• The Town Council would establish the fund through an ordinance • May be financed through town budget allocations, grants, and donations
Community Crowdfunding	Unrestricted source of funds, would apply to bicycle and pedestrian linear facilities and spot improvements	• Town residents make monetary contributions through online platforms such as Citizenvestor • Town would pay a nominal fee
Fees	• The fee ordinance would establish which projects are eligible • Shared use path projects may be eligible for funds generated by stormwater fees as these projects could mitigate the effects of runoff	• Would require adoption by the Town Council • Fee types may include stormwater fees assessed per area of impervious surface or streetscape fees assessed per length of street frontage
General Obligation Bonds	May be used to fund bicycle and pedestrian infrastructure projects	• Would require adoption by the Town Council • Would require approval by town residents
Special Tax District	May be levied by the municipality to raise funds to provide services or fund projects such as bicycle and pedestrian infrastructure projects	Would require adoption by the Town Council
Tax Increment Financing	Bicycle and pedestrian infrastructure improvements, land acquisition, utilities, and other improvements	Increased property values resulting from the constructed facility are used to pay the debt borrowed to build the facility

Sources: Advocacy Advance, MAP-21 Find It, Fund It!; NCDOT, Strategic Transportation Investments; NC Clean Water Management Trust Fund; NC Division of Parks and Recreation.