2024

CRAWFORD BRANCH GREENWAY

Feasibility Study

Franklin
1855 North Carolina

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00 Executive Summary

Image Source: Bob Scott

EXECUTIVE SUMMARY

In *Bike Walk Franklin: A Comprehensive Plan for Bicyclists and Pedestrians* (2017), the Town of Franklin identified the need for a greenway that connects the Little Tennessee River Greenway near Big Bear Park to Memorial Park on West Main Street. The vision in the plan calls for a greenway that roughly follows Crawford Branch south of Downtown Franklin. Effective greenways should link to key community areas such as parks, schools, residential neighborhoods, and commercial centers. This integration helps maximize the greenway's utility and encourages greater use by providing direct routes to important destinations. The Crawford Branch Greenway does exactly that by weaving through the heart of Franklin.

The Crawford Branch Greenway Feasibility Study investigates the existing conditions of the area, analyzes different route options to identify opportunities and constraints, provides cost estimates, and proposes strategies for the implementation of the greenway. The study also offers an action plan for implementing the recommended infrastructure.

Study Area

The study area spans from Memorial Park to the Little Tennessee River Greenway, forming an east to west corridor through the heart of downtown Franklin. While the proposed greenway roughly follows Crawford Branch creek, the feasibility study examines alternative routes along roadways and adjacent parcels to determine the best option for implementation.

Alternative Development

The feasibility study developed the greenway alternatives and implementation plan through the following steps:

Step 1. Review of study area conditions: Through a detailed evaluation of opportunities and constraints, the team identified potential greenway segments.

Step 2. Greenway segment analysis: The project team vetted the route segments identified in Step 1, analyzing potential landowner responses, and identifying constructibility challenges. This work resulted in a shortlist of the most viable connections to carry forward into Step 3.

Step 3. Alternatives development and evaluation: The team combined viable segments (from Step 2) into alternatives, established design standards, and estimated costs. Each alignment was evaluated based on criteria developed to identify the preferred alternative(s).

Step 4. Community engagement: The team obtained feedback from the study steering committee, held discussions with key stakeholders, and solicited broad community input through an online survey.

Step 5. Implementation + final study: The team identified and developed an implementation plan and funding options for the preferred alternative(s).

Throughout the study process, the project team evaluated four possible routes for the greenway. To determine a preferred route, the methodology incorporated community feedback, technical assessments, input from the study steering committee, and discussions with landowners in the study area. This approach ensures the chosen route aligns with community needs and desires while addressing practical considerations and potential challenges.

The route alternatives for the Crawford Branch Greenway are comprised of two sections. Alternatives A and B are options between Memorial Park to the Drake Enterprises property on Carolina Mountain Drive, presenting different ways to navigate this challenging area.

- **Alternative A**: From Memorial Park, this alternative runs east to Commerce Street, crossing West Palmer Street. It continues east to Maple Street, through property owned by the Town in front of the fire department. The route then goes through the Ingles property along Palmer Street Circle to Porter Street, where parking would need to be redesigned to accommodate the trail and improve parking and traffic patterns. After crossing Porter Street, the trail transitions to a new shared street through Heritage Hollow, sharing travel lanes with low-speed traffic. A new pedestrian bridge, replacing the former Heritage Hollow vehicle bridge, would cross Crawford Branch from the south side to the north side. The greenway connects to the Macon County Dog Park along an existing sewer easement, crosses Phillips Street, and runs through the Drake Enterprises campus along the alignment of the existing sidewalk, which would be widened to a minimum 10-foot-wide multiuse path.

- **Alternative B**: From Memorial Park, this alternative runs east to Porter Street as a multiuse side path along West Palmer Street, where many impacted driveways and parking lots would need redesigning to accommodate the trail and improve parking and traffic patterns. At Porter Street, it turns south, runs along the west side of Porter Street, crosses to the east side near Palmer Street Circle, and continues through Heritage Hollow as a new shared street with low-speed traffic. A new pedestrian bridge, replacing the former Heritage Hollow vehicle bridge, would cross Crawford Branch from the south side to the north side. The greenway then connects to the Macon County Dog Park along an existing sewer easement, crosses Phillips Street, and runs through the Drake Enterprises campus along the alignment of the existing sidewalk, which would be widened to a minimum 10-foot-wide multiuse path.

Alternatives C and D are two options for the greenway between Carolina Mounatin Drive and the Little Tennessee River Greenway at the County park.

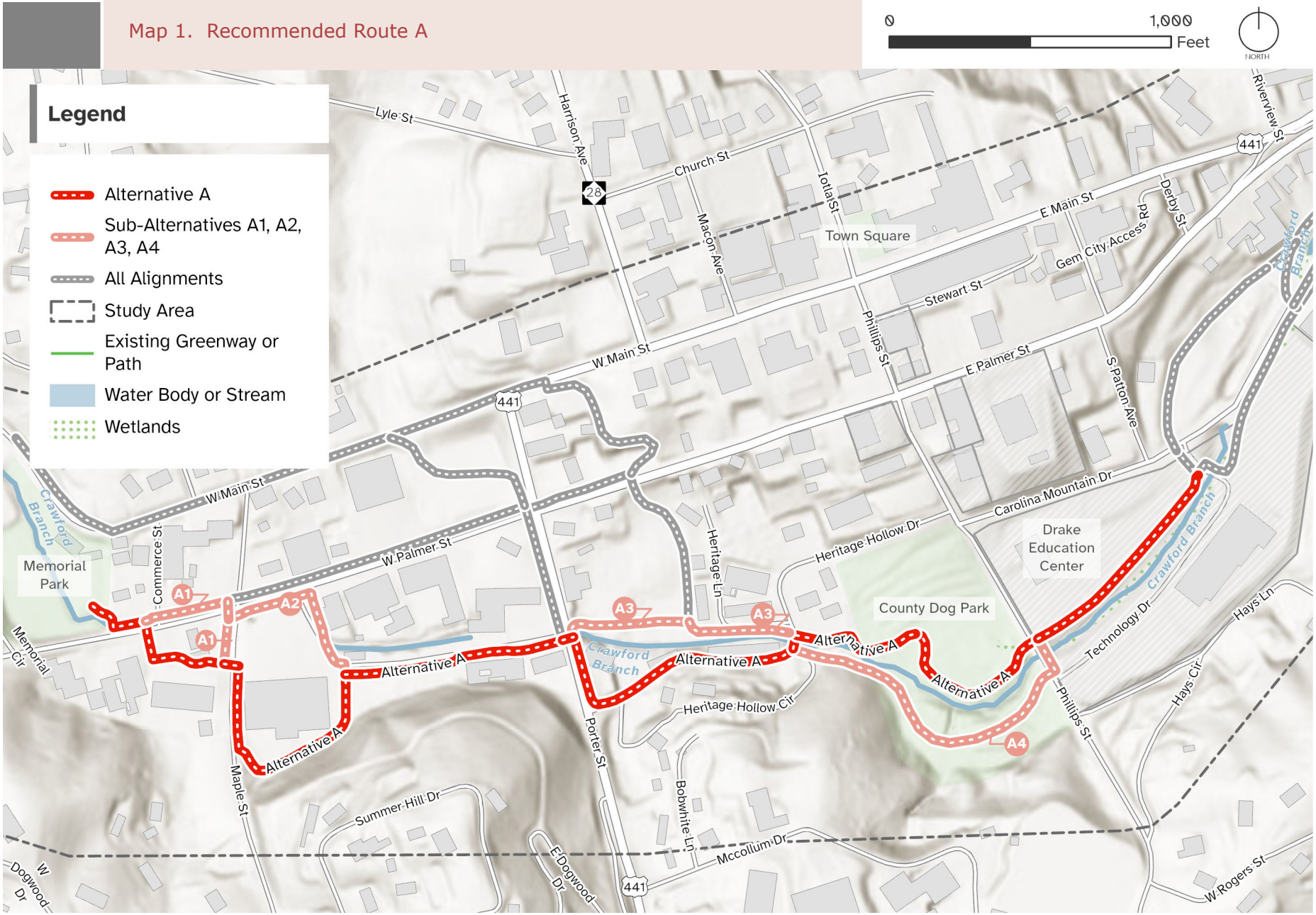
- **Alternative C**: From the Drake campus, this alternative crosses to the north side of Carolina Mountain Drive and runs along the base of a hill on undeveloped properties. It connects to the United Community Credit Union on a sewer easement along the north side of Crawford Branch, requiring the bank parking lot to be reconfigured for a trail connection. The route then runs along East Main Street, where the sidewalk would be widened to a 10-foot-wide multiuse sidepath up to East Rogers Street. After crossing US 441, it heads north up East Rogers Street and turns east to continue as a sidepath on the south side of Northeast Main Street to Depot Street. At Depot Street, the greenway crosses to the north side of Northeast Main Street and continues as a sidepath with a boardwalk before connecting to Big Bear Park and the Little Tennessee River Greenway.

- **Alternative D**: From the Drake campus, the greenway continues on the south side of Crawford Branch and Carolina Mountain Drive as a multiuse sidepath, requiring parking lot modifications. It runs south between several commercial properties, then turns east to connect to East Rogers Street and Depot Street. After crossing Depot Street, the greenway runs north for a short segment along Depot Street before turning west to run between commercial properties to reach the edge of the Little Tennessee River. It then follows the river and connects to the existing Little Tennessee River Greenway.

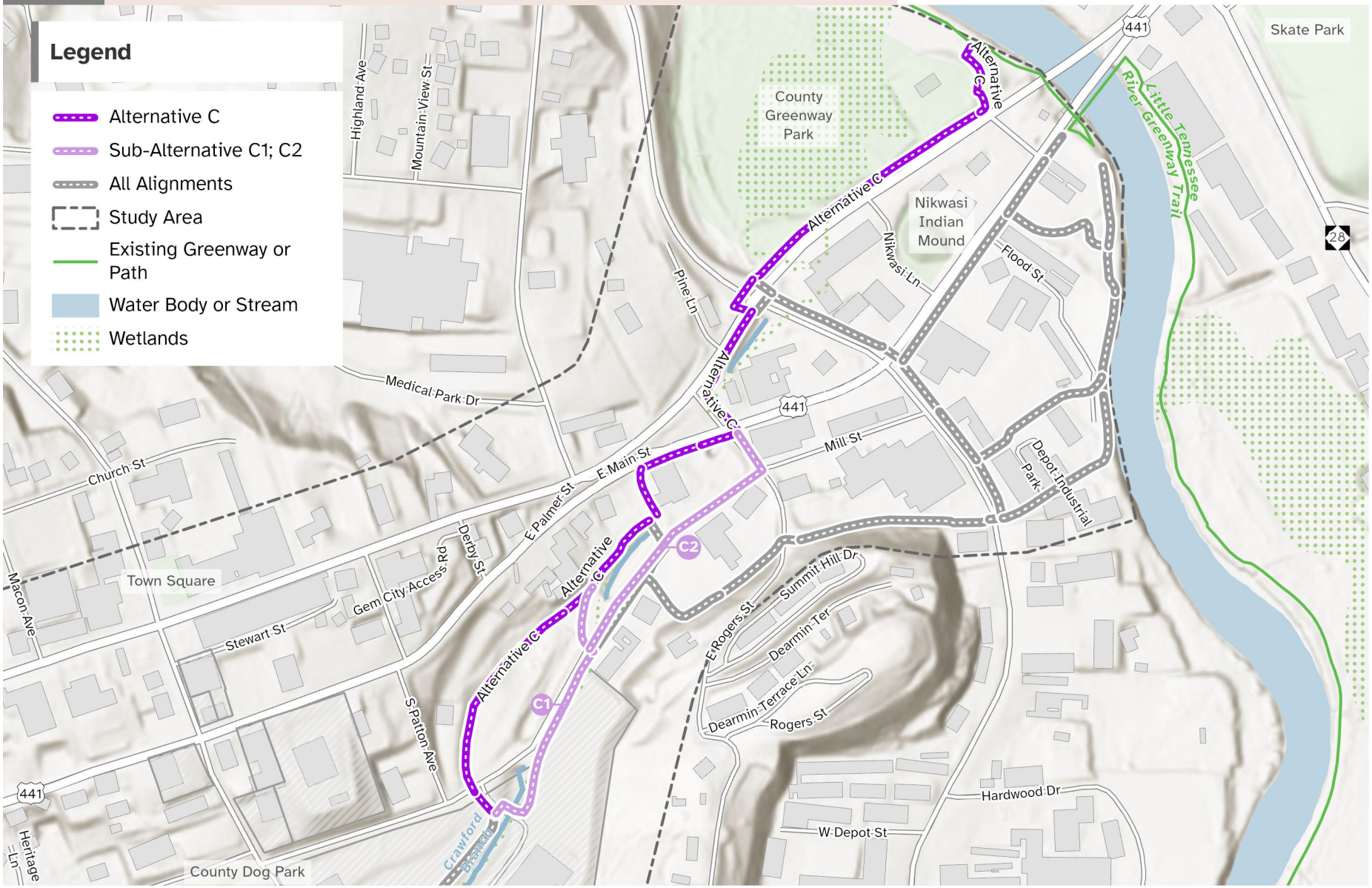
Recommended Route

After careful consideration, the committee selected Alternatives A and C as the preferred route. This combination would be the most direct option, aligning closely with Crawford Branch and affecting fewer private property owners. This option is detailed in Chapters 4 and 5, including sub-alternatives that may become more feasible as the project moves towards implementation.

Map 1. Recommended Route A



Map 2. Recommended Route C



IMPLEMENTATION HIGHLIGHTS

Developing a successful greenway project is a complex process that depends on partnerships involving various stakeholders within the community. Key participants in this collaborative effort encompass property owners along the greenway route, the Southwestern RPO, NCDOT, the Town of Franklin, nonprofit organizations, private sector partners, and local residents. Each of these entities plays a role in contributing their expertise, resources, and support to ensure the project's success and long-term sustainability.

Chapter 5 outlines further implementation considerations, including:

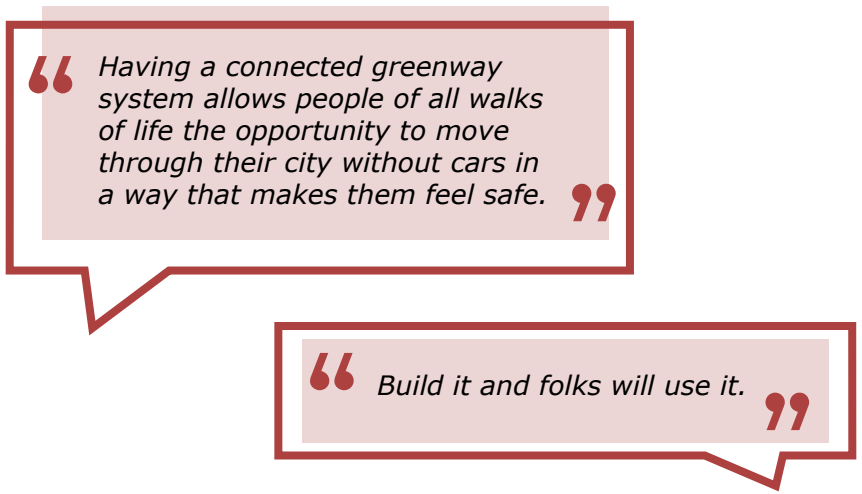
- An action plan delineating recommended implementation tasks, agency leads, key partners, time frames, and performance metrics.
- A summary of available funding sources encompassing NCDOT funding avenues, federal grant opportunities, potential public-private partnerships to leverage grants, and volunteer support for the greenway's completion.
- Considerations on developing a sustainable maintenance strategy, featuring sample maintenance tasks, task categorization, recommended frequency, and other considerations.

Several early action implementation recommendations were identified:

1. Continue landowner outreach to determine property owner willingness to provide trail easements. • In order to establish property owner willingness to grant easements, additional site investigations may be necessary to evaluate revised driveway access and site configurations. • If all private properties associated with Alternatives A (Western) and C (Eastern) are not available for a trail easement acquisition, then pursue sub alternatives (e.g. map segments A-2 or C-2) and Alternatives B (Western) and Alternative D (Eastern).
2. Continue coordination with NCDOT, specifically on Alternative C which will require lane re-configurations on Business 441 (Northeast Main Street).
3. Once property owner willingness is assessed and in writing for a complete connection, begin preliminary design including topographic survey and 30% design plans to verify the final design, environmental permitting assessment, construction costs and limits of required right-of-way.
4. Pursue funding for right-of-way, final design and construction based on findings of Tasks 1-3. This might include the following: • Early conversations with potential funding agencies that have upcoming grant opportunities that are a good match for this project. See Funding Resources Section and Appendix for more information. • Development of a steering committee to identify key funding and trail partners to track upcoming grants and provide coordination.

These early action plan items are focused on maximizing grant readiness and building implementation partnerships. This approach will ensure the most timely and successful implementation of this much needed Crawford Branch Greenway.

Figure 1. Survey Response Quotes



Project Partnerships

Project partners during implementation may include community stakeholders, property owners along the corridor, the Southwestern RPO, NCDOT, Macon County, nonprofit groups, private partners, and community members. Together, these partners can collaborate on tasks such as funding, designing, permitting, building, and maintaining the paved greenway.

The goal of this plan is to create a greenway connection that improves multimodal connections, links parks with a safe continuous route, enhances sustainability and resilience along a waterway, and supports a vibrant downtown. When completed, this project will expand the Town's multimodal transportation network, recreation opportunities, and connections to adjacent greenways and parks.

Figure 2. Survey Response Quotes

Figure 3. Key Implementation Partners

01 Introduction

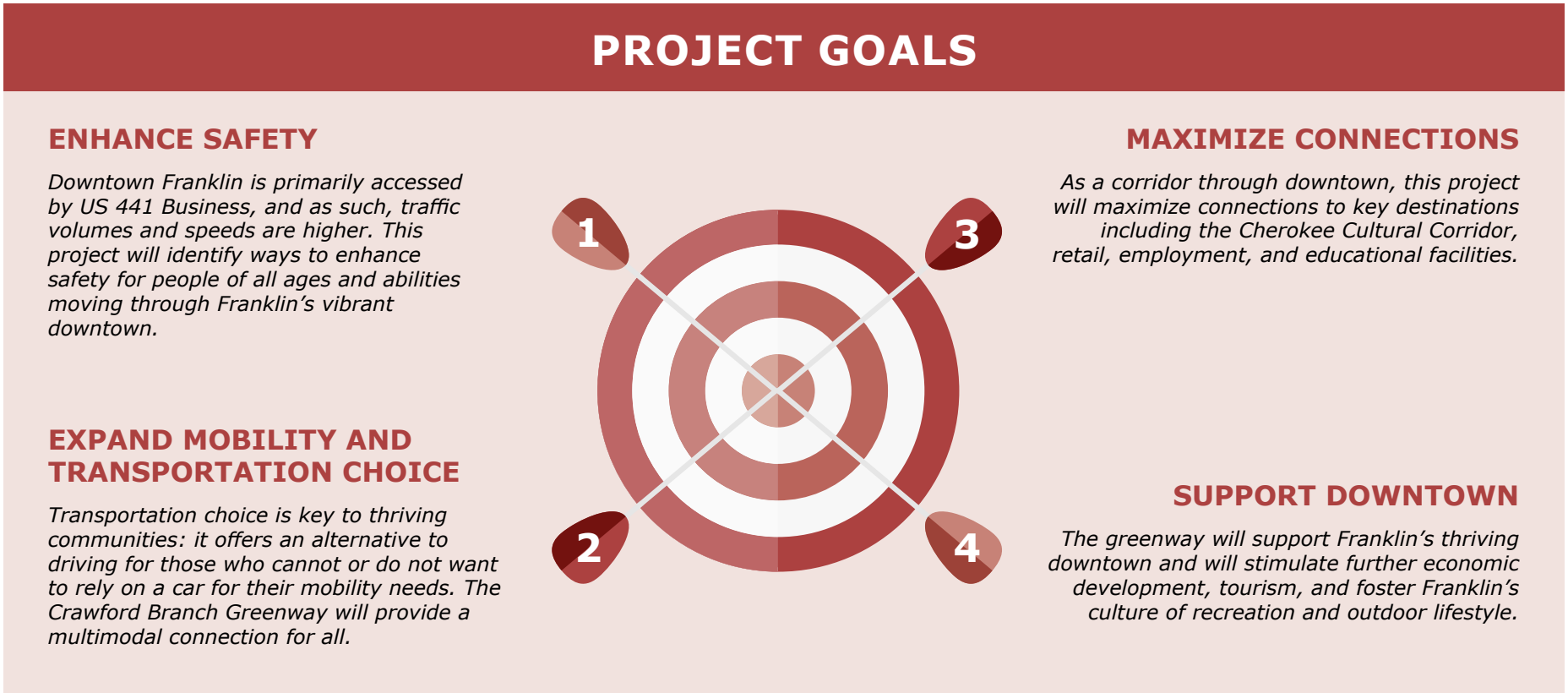
Image Source: Seth Solesbee

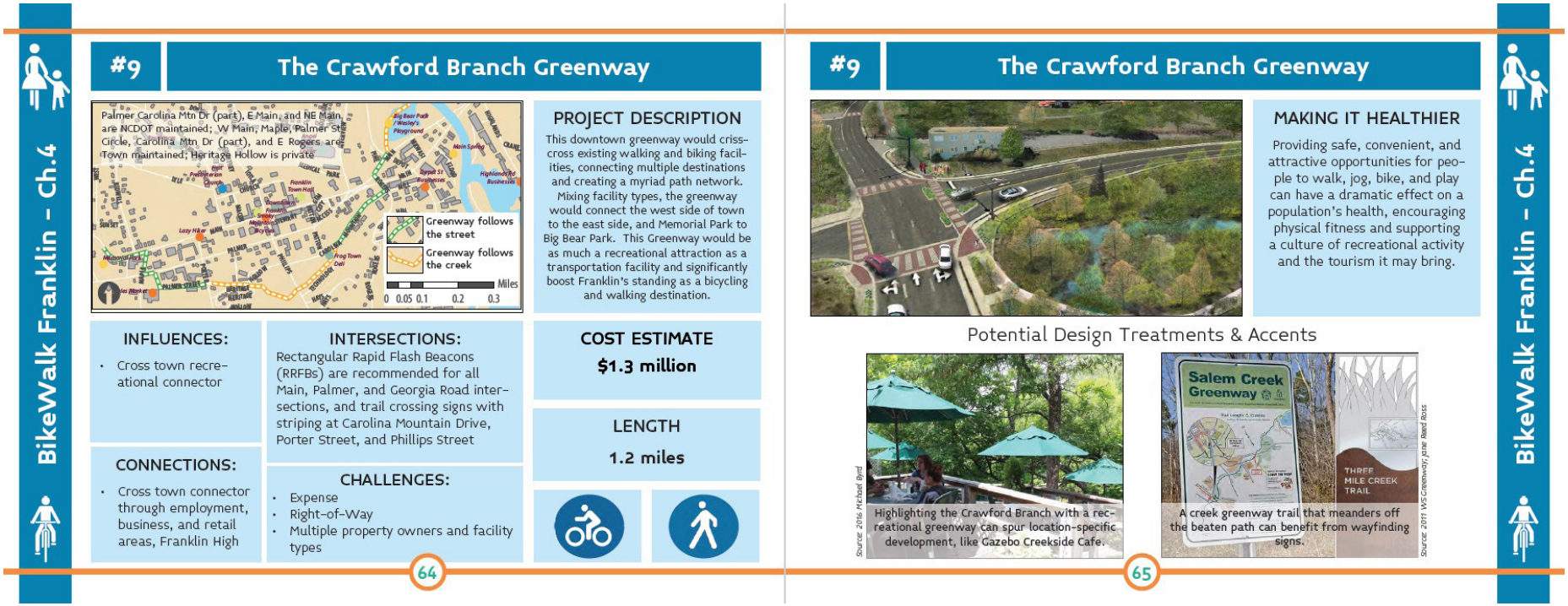
OVERVIEW & STUDY GOALS

In their 2017 Pedestrian and Bicycle Plan, *BikeWalk Franklin*, the Town of Franklin identified a vision for a cross-town greenway that would connect Memorial Park to the Little Tennessee Greenway. This greenway would be both a transportation facility and recreation amenity, connecting employment, business, retail areas, and schools. In 2023, the Town of Franklin received a Feasibility Study Grant from NCDOT's Integrated Mobility Division to investigate how the Crawford Branch Greenway vision may be realized. This study identifies a route for the greenway that is comfortable for people who walk and bike, has community support, and can be funded and constructed.

Figure 4 – Project Goals illustrates the four key project goals: enhance safety; expand mobility and transportation choice; maximize connections; and support downtown.

Figure 4. Project Goals





Source: Town of Franklin

Image 1. Project Cutsheet Detail from BikeWalk Franklin Pedestrian and Bicycle Plan

WHAT IS A FEASIBILITY STUDY?

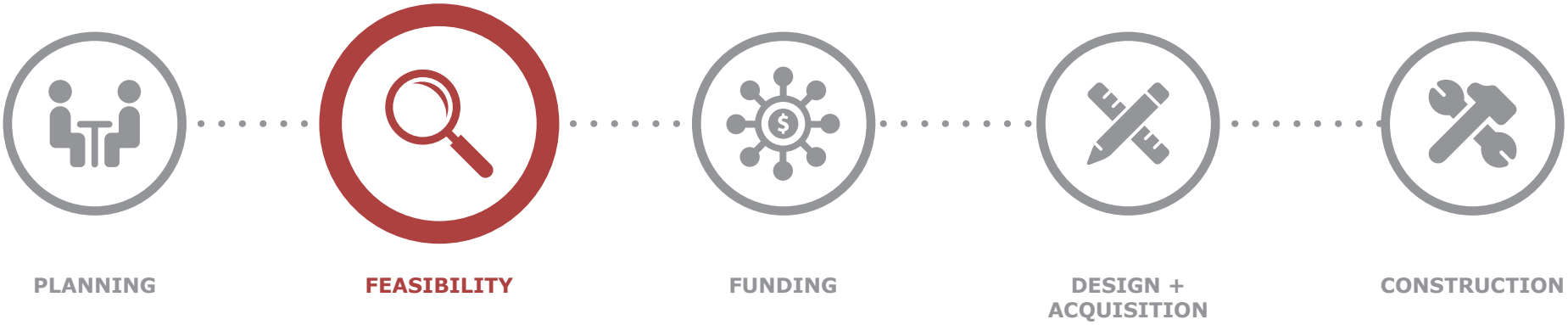
A feasibility study is a technical investigation of physical and environmental constraints that may impact the ability and/or cost to construct a multimodal facility like the Crawford Branch Greenway. It is a step in the process to build infrastructure that identifies key project risks that may need additional investigation before the scope and cost can be defined. Feasibility studies bridge the gap between high-level planning studies, such as *BikeWalk Franklin*, and design.

Once completed, this feasibility study will equip the Town and its partners to identify funding and work with willing property owners to determine the final design and a path towards construction.

Feasibility studies include items such as:

- Input from local stakeholders and community members
- Environmental features (e.g. wetlands, threatened and endangered species, waterways)

Figure 5. What is a Feasibility Study?



- Physical constraints (e.g. steep slopes, buildings, and private property impacts)
- Right-of-way availability (property ownership or the ability to acquire property for facilities)
- Utilities

PROJECT OUTCOMES

A feasibility study yields several specific outcomes, including:

Possible Route Alternatives: By analyzing site conditions, the study identifies opportunities and constraints to develop various route alternatives for Crawford Branch Greenway.

Identification of Key Stakeholders: Engagement with project stakeholders helps shape study recommendations and establishes ongoing relationships for the project's advancement into the design phase.

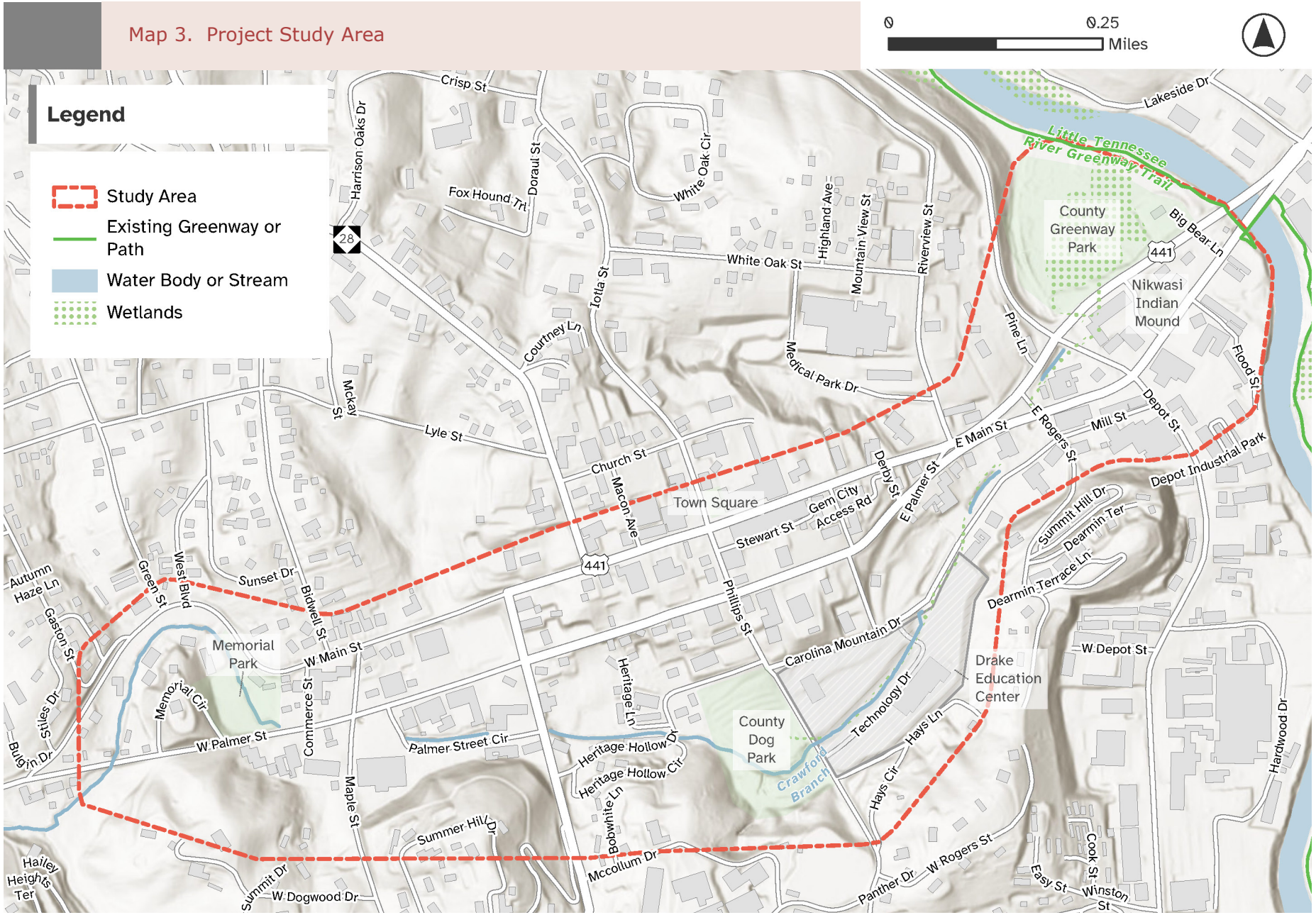
Estimated Project Costs: The study calculates anticipated costs associated with designing and constructing the recommended facility, facilitating the development of a project funding plan and future programming.

Plan of Action: Based on informed assessments, the study provides recommendations for preferred route alternatives and outlines a range of potential implementation scenarios and funding sources to guide the project's progression.

STUDY AREA

The study area is generally aligned with Crawford Branch Creek and bound on one end by the County Greenway Park / the Little Tennessee River Greenway (LTRG) and on the other end by the Town's Memorial Park. LTRG runs through nearly five miles of Franklin and is the pride of many residents and visitors. What began as a dream in the 1990s, the LTRG was led by a group of volunteers and is now a popular destination for many in the

Map 3. Project Study Area



region who are seeking an off-road greenway. On the west side of downtown sits Franklin's Memorial Park, which provides access to a larger outdoor pavilion, indoor building space, basketball courts, and a walking path along Crawford Branch. The County Greenway Park and Memorial Park bookend this project study area with downtown Franklin in between, as illustrated in Map 3 – Project Study Area.

PROCESS & SCHEDULE

The Crawford Branch Greenway Study began in June 2023 and concluded in September 2024. The Town of Franklin identified a project steering committee to guide the process with their local knowledge and insight to inform key decisions. Input from diverse sources, including community members, landowners, and various interested parties played a role in shaping this project. The primary phases of the study are illustrated in Figure 6 – Project Process and Schedule.

Figure 6. Project Process & Schedule

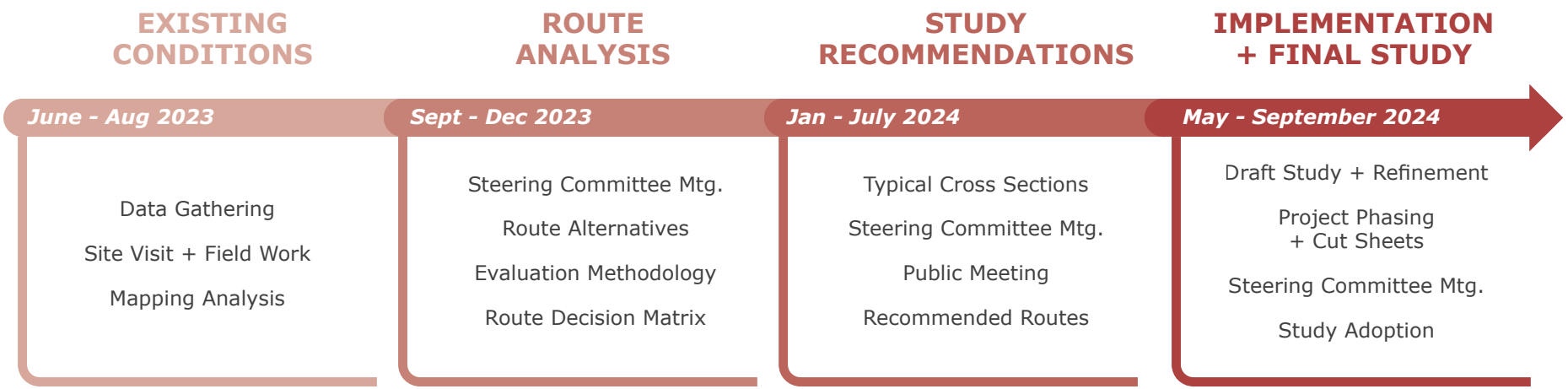
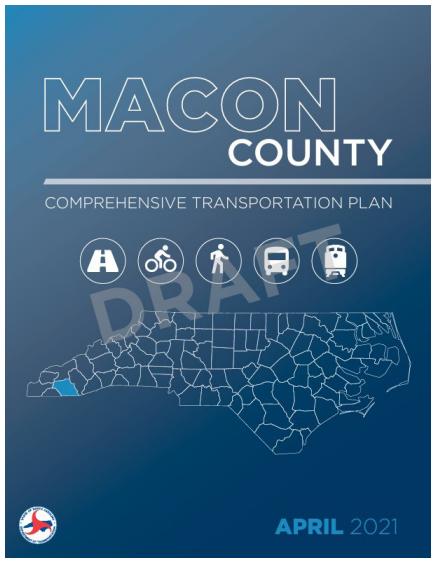
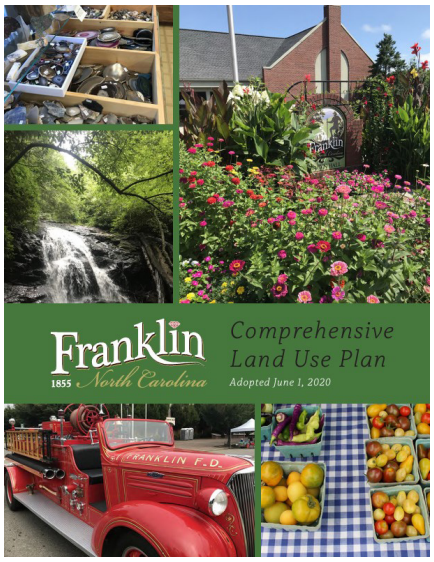


Image 2. Existing Plan Cover Pages



Source: NCDOT



Source: Town of Franklin

PREVIOUS PLANS & EXISTING POLICIES REVIEW

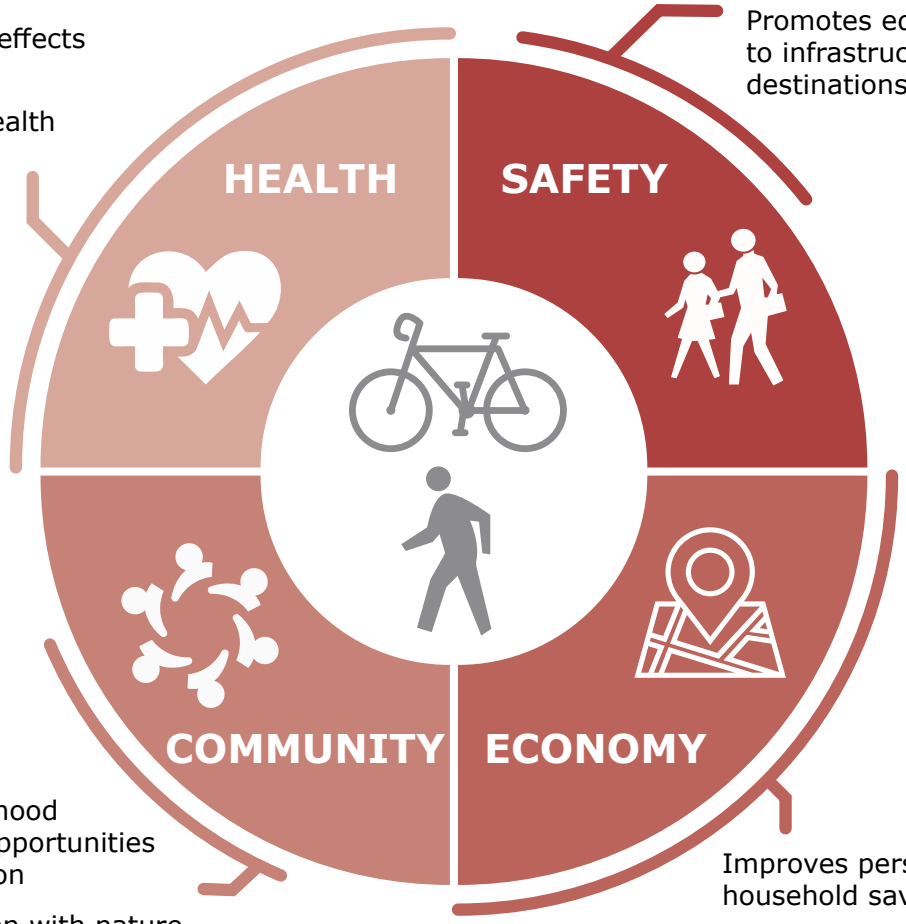
In crafting a planning study such as the Crawford Branch Feasibility Study, it is important to look back at planning studies that came before to gain insights and ensure future planning is building off past work. The following are local, county, or regional plan documents that relate to this greenway project:

- Macon County Comprehensive Transportation Plan (2021)
- Franklin Comprehensive Land Use Plan (2020)
- Macon County Comprehensive Plan (2019)
- Southern Blue Ridge Bike Plan (2018)
- BikeWalk Franklin (2017)
- Franklin Greenway Connections (2015)
- Franklin Parking Study (2014)
- Southwestern RPO Regional Trails Plan (2013)
- Macon County Heritage Development Plan (2008)
- Downtown Franklin Master Plan (2008)
- Macon County Recreation Master Plan (2005)

These documents make it clear that the town, county, and region prioritize multimodal transportation, recreation, and the outdoor economy. The Appendix provides a full review of these plans, a precedent on which the Crawford Branch Greenway study is built.

PROJECT BENEFITS

Connecting downtown Franklin with two parks by way of an multimodal facility will have great health, safety, and economic benefits to the Town, county, and region. The following describes the benefits of walking and biking infrastructure like greenways.



Facilitates physical activity

Improves psychological health and reduces stress

Reduces negative effects of air pollution

Improves social health and connections

Helps make sure streets are safe for all

Moves toward zero roadway fatalities

Promotes equitable access to infrastructure and destinations

Provides neighborhood connections and opportunities for social interaction

Reconnects children with nature

Helps protect the environment

Promotes regional thinking

Improves personal and household savings

Promotes tourism

Attracts and retains business

Improves property values

Figure 7. The Benefits of Bicycle & Pedestrian Infrastructure

The positive impact of
WALKING & BIKING

SAFETY

Estimated 67,336 pedestrians
were injured nationwide in 2022.[2]

More than 7,522 people
(an average of nearly 21 per day)
nationwide were struck and killed while walking in 2022.[2]

There has been a **57% increase in pedestrian deaths** since 2013.[2]

Pedestrian and bicycle deaths accounted for **20.6 percent of all traffic fatalities**.[4]

292 **people killed while walking and bicycling** in North Carolina in 2023.[3]

While walking may represent a smaller portion of total trips compared to other modes of transportation, people walking and bicycling bear a disproportionate burden when it comes to traffic fatalities.

Individuals who choose to walk and bicycling are often referred to as vulnerable users of our streets due to the increased risk of severe injury they face when struck by an automobile. They often lack dedicated infrastructure, forcing them to navigate in undesirable conditions, such as along a shoulder or a road shared with much faster vehicles. These conditions can make walking intimidating or even dangerous, leading to decreased levels of active transportation and a greater reliance on private vehicles for those who can drive, or increased isolation / unmet needs for who cannot.

By investing in dedicated infrastructure and promoting road safety education, communities can work towards reducing the risks people walking and bicycling face. Investments in sidewalk and greenway infrastructure often result in positive safety benefits for all roadway users because they create separate spaces for different modes of travel, minimizing speed differentials and conflicts.[1]

The positive impact of
WALKING & BIKING

HEALTH

5 Reasons to Walk

Walking for as little as 20 minutes a day has been found to show significant improvements in your overall health, including:

- **Improving cardiovascular health**
- **Strengthening muscles & bones**
- **Increasing focus, mood & memory**
- **Boosting immune system function**
- **Preventing & managing common health problems**

Regular physical activity is known to improve overall health and has numerous benefits regardless of age, sex, race, ethnicity, or current fitness level. However, according to the CDC's National Health Interview Survey, only twenty percent of individuals report meeting the recommended guidelines for aerobic and muscle-strengthening activities.[5]

According to data from the Macon County Community Health Assessment:

- 66.2% of people in the county are overweight or obese[6]
- 28.9% of people meet current physical activity recommendations[6]
- Regional data indicates that low income, people who are unable to work, and people who live in rural areas are more likely to be obese[6]

Studies have emphasized that adults can achieve substantial health benefits with just 20-25 minutes of physical activity per day, equivalent to walking about one mile.[7] Walking has been demonstrated to provide a wide range of long-range health benefits for the brain, pulmonary function, circulation, and overall physical well-being and has been associated with a reduction in chronic diseases, heart disease, and certain types of cancer. Walking has short-term benefits, too. Regular physical activity in children has also been shown to improve attention, memory, and reduce the risk of depression.[8]

> **"To improve walking and walkability, communities need to be designed to make walking safer and easier; programs and policies need to be available to support and encourage walking; and individuals and families need to support each other to become and stay active."**
>
> *- US Surgeon General*

The positive impact of
WALKING & BIKING

ECONOMY

Economic Impact

The economic impact of bicycle tourism in Macon, Graham, Clay, and Cherokee Counties is estimated to be:

- **$189.66 daily average per person spending[14]**
- **Average stay of 2.04 nights[13]**
- **Annual person visits of 18.653[13]**
- **129 total jobs supported[13]**
- **$2.8M income generated[13]**
- **Tax revenues of $1.05M[13]**

Multiple studies conducted in North Carolina have highlighted the substantial economic benefits of investing in bicycle and pedestrian facilities. For instance, a study conducted by the Institute for Transportation Research and Education (ITRE) revealed the economic impacts of four shared-use paths in North Carolina, one of which was in Brevard. These studies have document the economic advantages of greenways, including enhanced property values and increased spending on recreational activities such as equipment, dining, and accommodations.[9]

Other studies have demonstrated that well-designed non-motorized transportation enhancements can increase customer visits and local business activity.[10] Pedestrians are more likely to notice window displays, explore multiple stores, and spend more time, which ultimately has the potential to boost sales. By prioritizing and promoting walkable communities, we create an environment that fosters the success of independent businesses, stimulates economic growth, and strengthens the overall local economy.[11]

Robust active transportation networks also have the potential to boost tourism by attracting visitors who seek outdoor recreational opportunities and walkable downtowns. Investing in greenways and trails directly contributes to job creation, higher wages, and increased business output for outdoor recreation-related industries and nearby establishments.[12] The 2023 WNC Outdoor Recreation Participation Survey found that the total economic output from outdoor recreation visitor spending is $4.9B, equivalent to creating approximarely 48,000 full-time jobs.[13]

The positive impact of
WALKING & BIKING

COMMUNITY

Walking and bicycling **increases a person's number of social interactions** and positively affects overall social satisfaction, correlating to a reduction in loneliness.[16]

Residents of highly walkable, mixed use neighborhoods exhibited at least **80% greater levels of four indicators of social capital** (knowing neighbors, sociability, trust and political participation) than those in less walkable neighborhoods.[17]

> **"If you plan cities for cars and traffic, you get cars and traffic. I fyou plan for people and places, you get people and places."**
>
> *- Fred Kent, Project for Public Spaces*

Enhancing walking and biking in communities improves quality of life. It ensures that everyone, regardless of their circumstances or preferences, has access to essential services and opportunities. Prioritizing and supporting a variety of transportation options gives individuals the freedom to choose how they get around and contributes to a vibrant and inclusive community where everyone can thrive. Living in walkable neighborhoods has been associated with various positive social outcomes. Studies have shown that individuals living in walkable communities tend to have higher levels of trust in their neighbors, actively engage in community projects, and volunteer more compared to those in non-walkable areas.[15]

Shifting more trips from a motor vehicle to walking helps reduce traffic and parking congestion in our communities. With reduction in traffic, conditions for walking and biking also improves.

Greenways can play a crucial role in supporting the natural environment. They can contribute to improving air quality, which effectively eliminates harmful pollutants like ozone, sulfur dioxide, carbon monoxide, and airborne heavy metal particles. Greenways can enhance water quality by serving as natural buffer zones, shielding streams, rivers, and lakes from pollutants, preventing soil erosion, and filtering out pollution resulting from agricultural and road runoff. Additionally, greenways serve as a protective barrier against natural disasters like flooding, acting as a line of defense.

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02 Study Considerations + Alternatives Development

Image Source: Christina Tallent

INTRODUCTION

The focus of this chapter is on the natural environment, human environment, and planning considerations that define the study area. The natural environment includes water bodies (such as streams and floodplains) and land features (like topography), while the human environment encompasses human-made features such as urban areas. Planning considerations entail the specifics that characterize the community and its people (such as age and race). Understanding this framework is important because each consideration shapes the project approach and recommendations that are later described in this study.

PLANNING LEVEL CONSIDERATIONS

The planning level considerations that were studied in the development of the Crawford Branch Greenway project include:

- Community demographics
- Employment information
- Planned and programmed projects

The findings from each can be found in the following narratives, figures, and maps.

Community Demographics

To understand the current profile of the community, the U.S. Census Bureau 2020 Decennial Census and 2017-2021 American Community Survey was referenced. The data retrieved was for the Town of Franklin and in some cases, the analysis involved comparing data from the town to the county and state. These findings played a crucial role in shaping the project's community engagement strategy and prioritization. These demographics are detailed in the following sections.

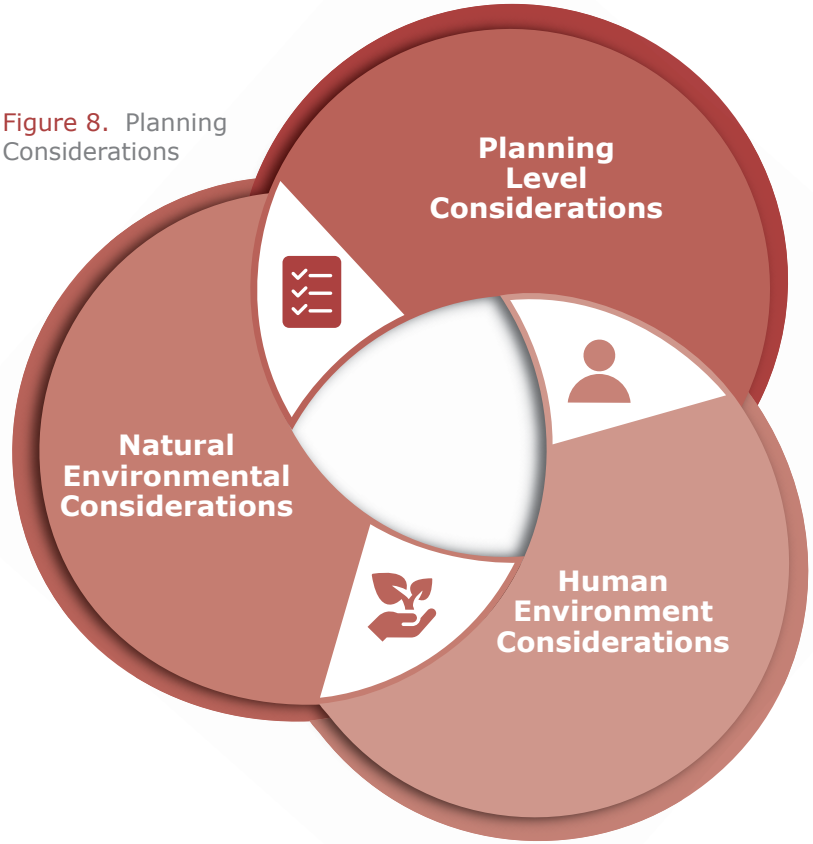


Figure 8. Planning Considerations

Population

Between 2010 and 2020, the population in the town increased by 9%; this change was consistent with growth in the state of North Carolina (9.5% growth). This indicates that the town is growing at a relatively steady rate.

Figure 9. Franklin Population Growth

Data Source: U.S. Census 2020 Decennial Census

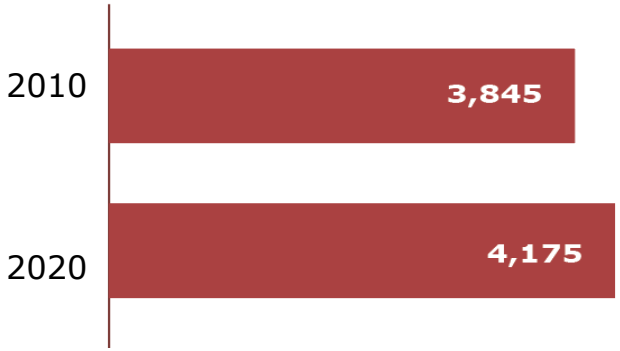
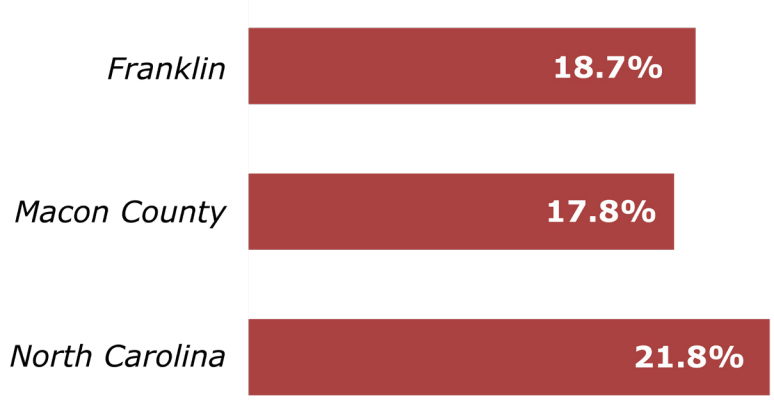


Figure 10. Population Under 18 Years Old

Data Source: U.S. Census 2018-2022 American Community Survey 5-Year Estimates

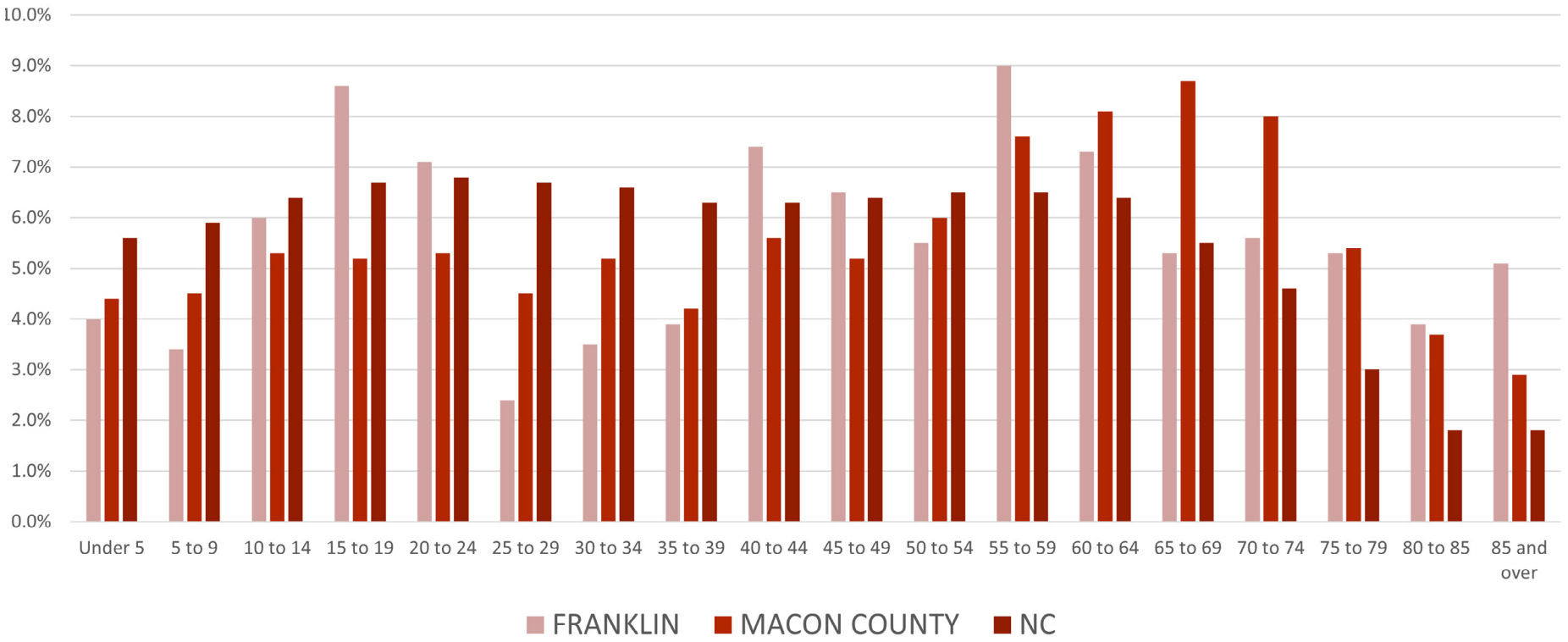


Age Groups

When investigating Franklin's population based on age, there are interesting trends that reveal where the Town is the same and where it is different than the county and the state. In general, Franklin's population is older than the county and the state. In general, for ages younger than 40, Franklin has fewer residents than the state; past age 40, Franklin's share of people is roughly greater than the state. Franklin's greater share of people aged 55 to 64 is particularly evident. Understanding these age disparities is essential for tailoring transportation and pedestrian infrastructure to meet the mobility needs of different age groups, especially older adults.

Figure 11. Total Population by Age

Data Source: U.S. Census 2018-2022 American Community Survey 5-Year Estimates



Diversity

The ethnic and racial diversity in Franklin is slightly more than the county, but less diverse than the state. The town has a population that is 18% non-white, compared to 9% of people who consider themselves non-white in the county and 35% people who are non-white in the state. Approximately 16% of people identified as Hispanic or Latino in Franklin.

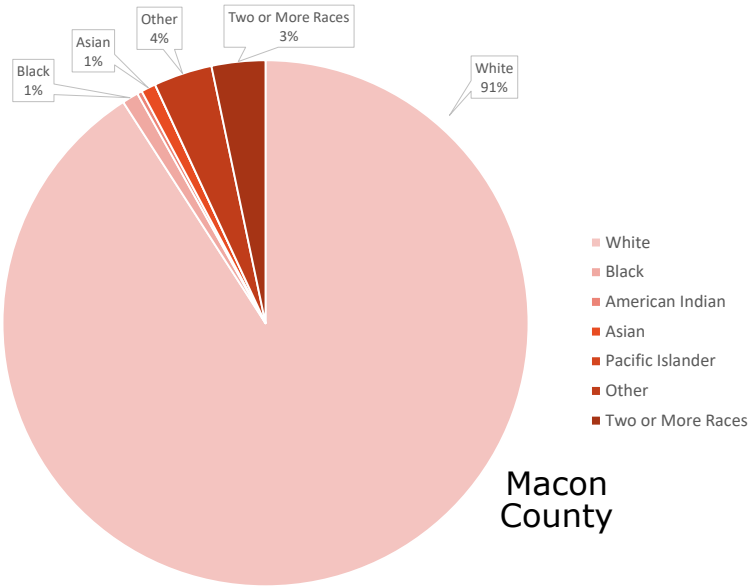
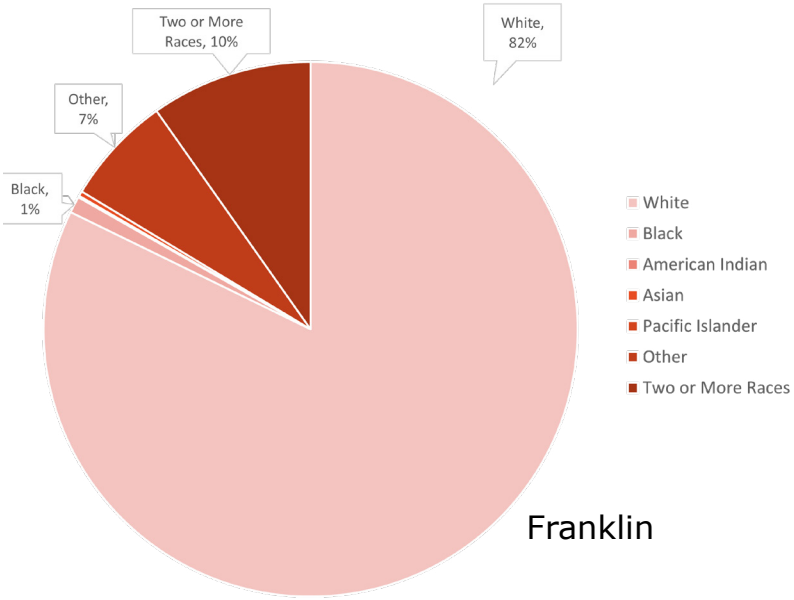
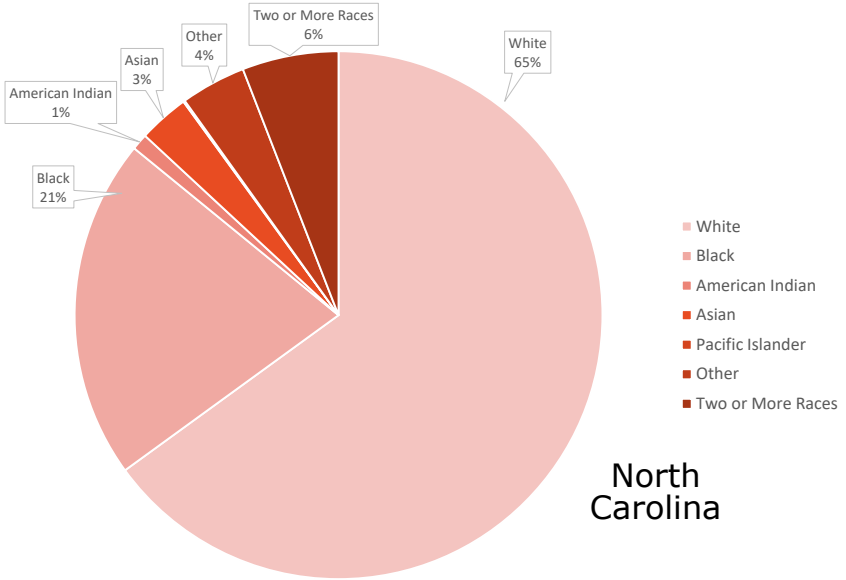


Figure 12. Racial Composition

Data Source: U.S. Census 2018-2022 American Community Survey 5-Year Estimates





Household Income and Poverty

With a median household income of $38,947, Franklin has less wealth than the county ($51,042) and the state ($66,186). The population of households with income below the poverty line is higher in Franklin than when compared to the other geographies: 22.9% of Franklin's households live below the poverty line compared to 15.4% in the county and 13.3% in the state. Connected, high-quality multimodal transportation networks such as the Crawford Branch Greenway can help households offset the burden of transportation and housing costs which can consume more than half of monthly incomes.

Figure 13. Median Household Income

Data Source: U.S. Census 2018-2022 American Community Survey 5-Year Estimates

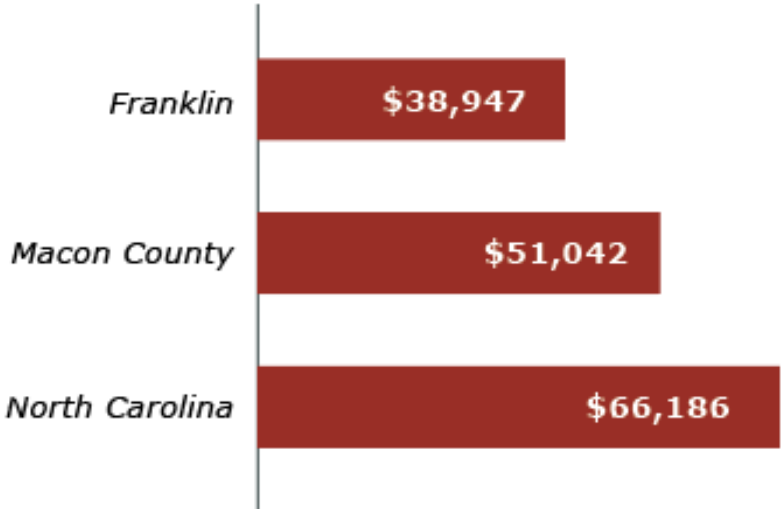
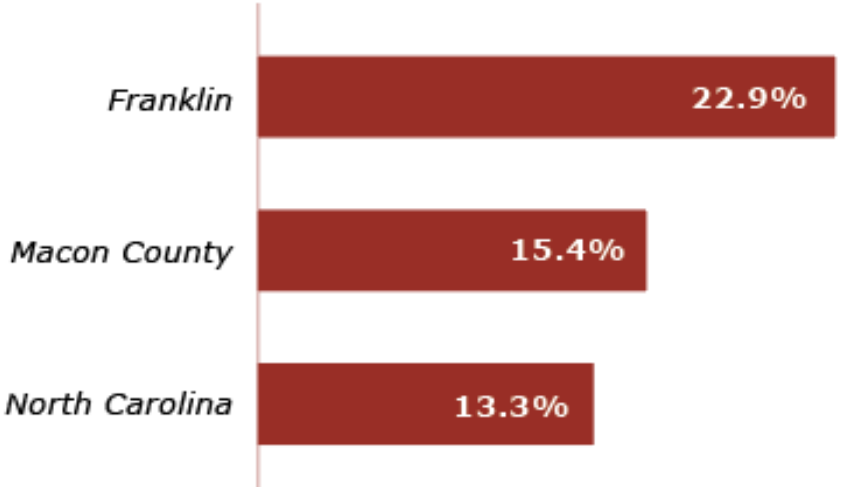


Figure 14. Population for Whom Poverty Status is Determined

Data Source: U.S. Census 2018-2022 American Community Survey 5-Year Estimates



Disability Status

Nearly one in four people (24.1%) in Franklin have a disability, which is higher than the county (16.9%) and the state (13.3%). The higher percentage of individuals with disabilities in the town suggests a greater demand for accessible transportation infrastructure. This includes sidewalks, curb ramps, crosswalks, and other pedestrian facilities designed to accommodate individuals with varying mobility needs. Well-designed greenways with smooth paths, gentle slopes, and safe crossings can significantly improve mobility for those using wheelchairs or other assistive devices. By connecting people to key destinations like parks, schools, and healthcare facilities, these greenways reduce dependence on cars and foster social interaction, enhancing independence and inclusion for individuals with disabilities.

Households with Children

Nearly eighteen percent (17.7%) of households in the town have children under the age of 18. Pedestrian and multiuse path improvements become important for enabling children to walk and bike to school and to experience the outdoors.

Figure 15. Disability Status

Data Source: U.S. Census 2018-2022 American Community Survey 5-Year Estimates

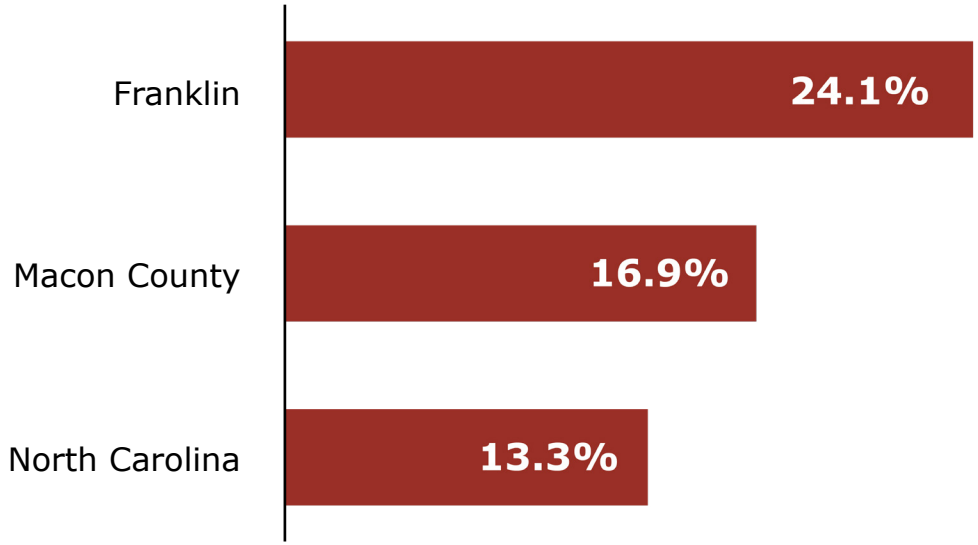
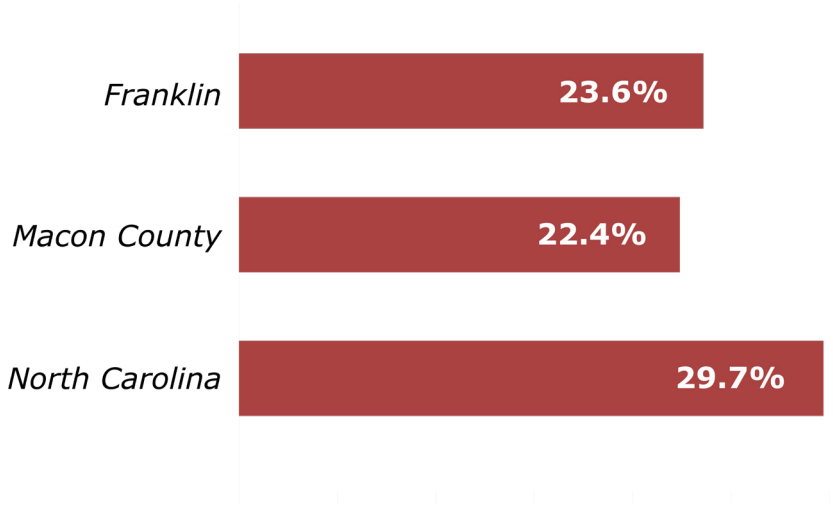


Figure 16. Households with Children Under 18 Years Old

Data Source: U.S. Census 2018-2022 American Community Survey 5-Year Estimates



Commuting & Access to Vehicles

In the town, approximately 90% of the population drove to work, with the majority – 82% – of those driving alone. 3.9% walked, and 3.9% worked from home. No residents reported riding a bike or using the bus to travel to work. 86.5% of Franklin workers (age 16 and older) have access to two or more motor vehicles to get to work. Only 1.2% do not have access to a vehicle. With only a small percentage of the population walking to work and no reported use of bicycles or public transit, greenway investments could encourage more non-motorized commuting options. With a small percentage of the population lacking vehicle access, greenways could provide a critical transportation option for those who are too young, too old, or unable to drive. The data underscores a strong dependence on cars, but greenways could offer an attractive alternative for short trips, recreational activities, and possibly even commutes, reducing reliance on vehicles. Overall, investing in greenways could help diversify transportation options in Franklin, making the town more accessible and supportive of active lifestyles across all age groups.

Figure 17. Access to Vehicles

Data Source: U.S. Census 2018-2022 American Community Survey 5-Year Estimates

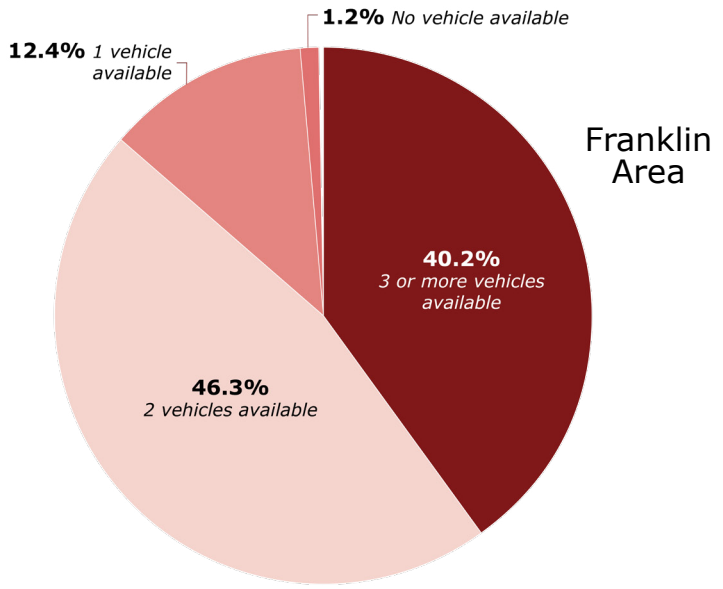
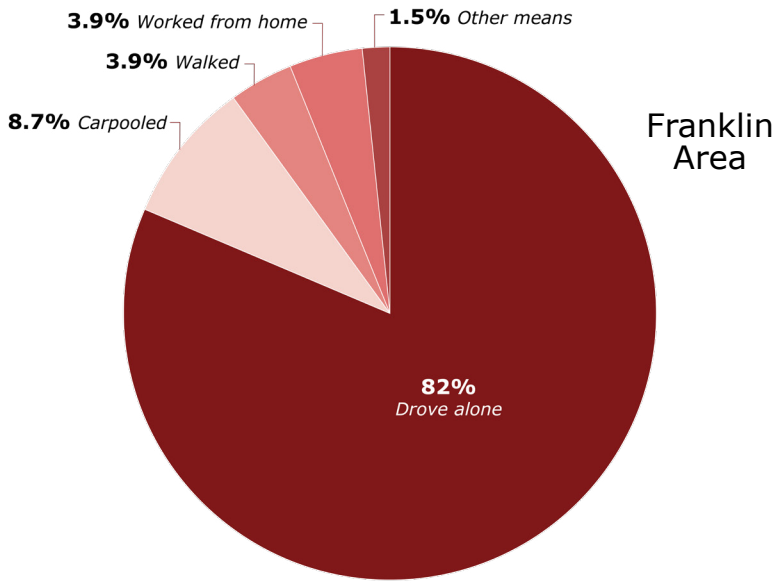


Figure 18. Commute to Work

Data Source: U.S. Census 2018-2022 American Community Survey 5-Year Estimates



Special Populations & User Groups

Addressing equity in transportation requires a deliberate focus on the needs of all user groups, particularly those who may have been overlooked in past planning efforts. In Franklin, where vehicle dependence is high and non-motorized commuting is minimal, considering special populations—such as older adults and young children, and those without access to a vehicle—is essential. These groups often face barriers that limit their mobility, whether due to age, physical ability, or economic circumstances.

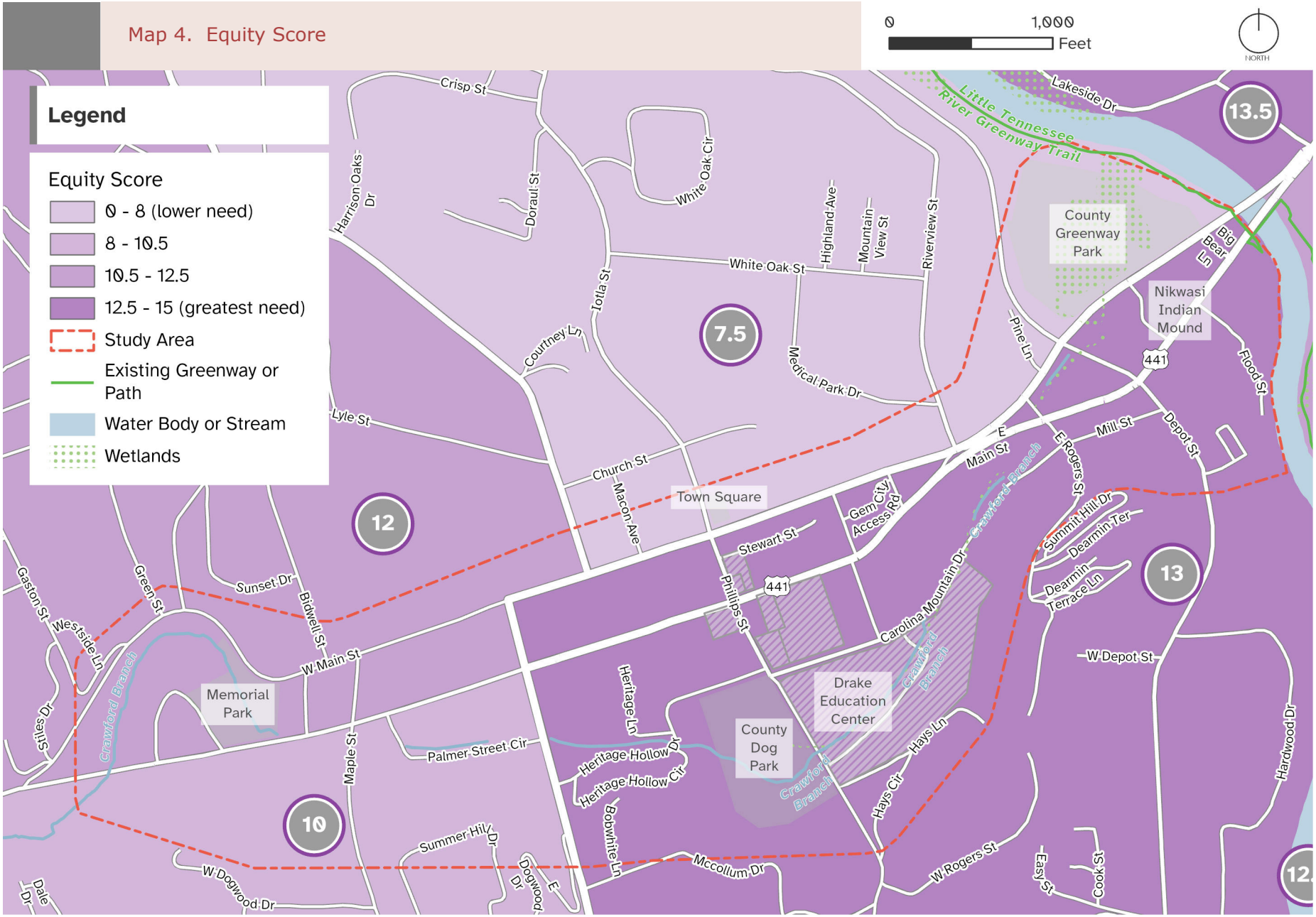
Viewing greenway investments through an equity lens means prioritizing areas that have historically lacked pedestrian and bicycle infrastructure. This approach ensures underserved populations are not only considered but prioritized in the planning process. By focusing on these areas, greenway projects can enhance accessibility, improve safety, and promote inclusivity. Evaluating routes with equity in mind also strengthens the case for connecting key resources like schools, parks, and neighborhoods with limited vehicle access, maximizing the impact and ensuring all residents benefit from safer, healthier transportation options.

To assess equity, the project team utilized NCDOT's statewide environmental justice map, called the Transportation Disadvantage Index (TDI). Map 4 - Equity Score shows the equity scoring for this project's study area, based on the statewide total score. The areas with a higher TDI score have a greater need for solutions that reduce disparities.

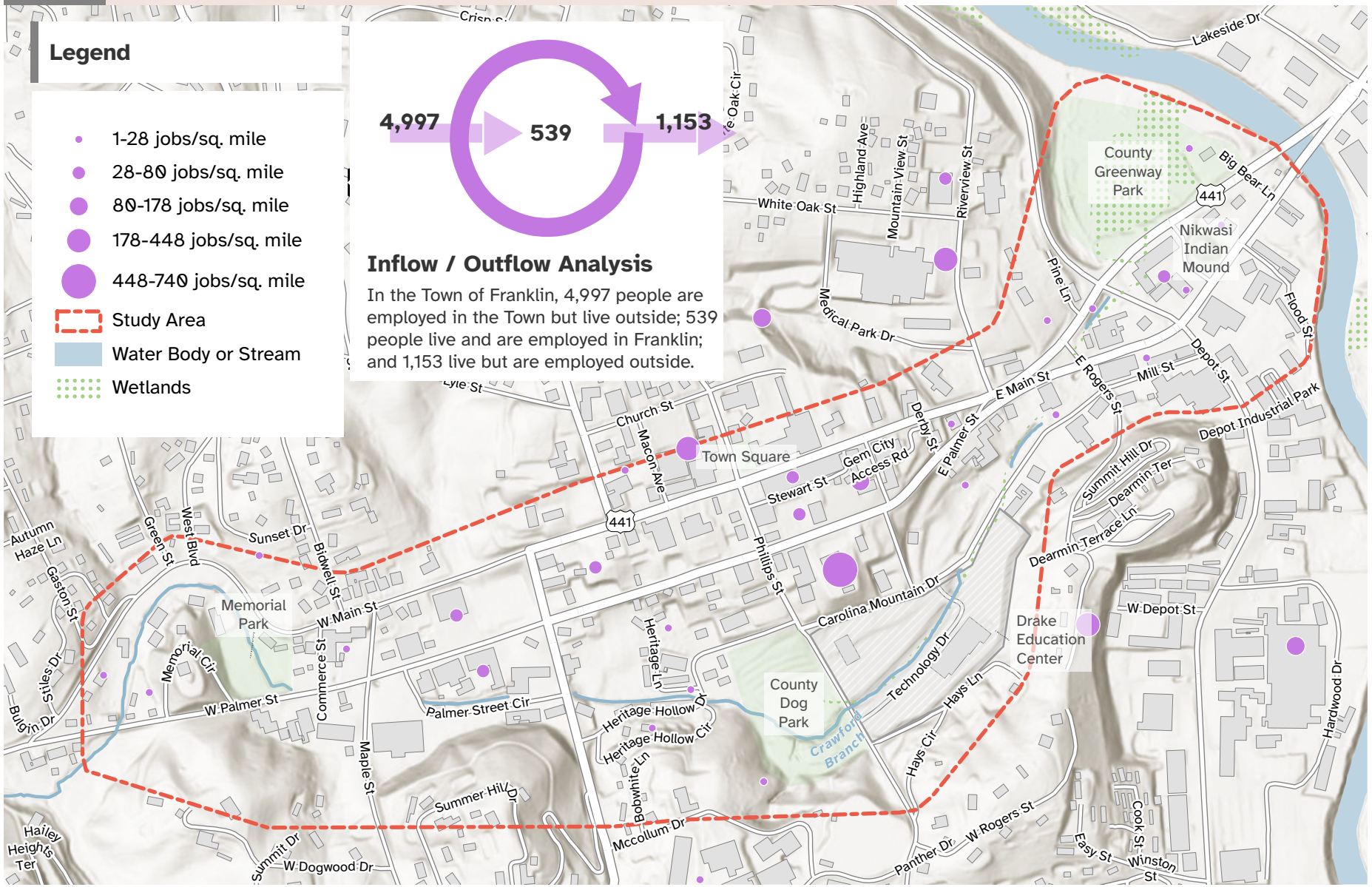
Employment Information

The U.S. Census Bureau's web-based mapping and reporting application, OnTheMap, was used to gather employment information in the study area (2021 data). This analysis can illustrate employment density as points and includes an inflow/outflow analysis, which shows how people commute for work. The employment density points highlight higher concentrations of jobs around major employment areas, Macon County services, and the hospital. The inflow/outflow analysis further reveals that more people commute into the study area for work than those who live in Franklin but commute elsewhere. Specifically, approximately 5,000 people are employed in the study area but live outside of it. The greenway's proximity to major employers emphasizes its potential to offer alternative modes of transportation for commuting purposes and work-related trips during the day. It could also offer opportunities for commuters to park on the periphery and walk or bike the rest of the way to work.

Map 4. Equity Score



Map 5. 202 Employment Density & Inflow/Outflow Analysis



Planned and Programmed Projects

The previous chapter and Appendix detail the numerous planning projects that preceded this study. A successful plan will leverage existing institutional knowledge while avoiding duplication of past efforts. Many of these earlier projects are depicted in Map 6 - Franklin Planned & Programmed Projects which collectively highlight the bicycle and pedestrian projects from the State Transportation Improvement Program (STIP) and the *BikeWalk Franklin*. NCDOT's State Highway Maintenance Improvement Program (HMIP) was cross-referenced as well, but there are no planned roadway resurfacing projects in the study area.

Within the study area, the STIP includes project EB-5756, which involves constructing missing sections of sidewalk along the west side of Depot Street from East Main Street to the roundabout at Wayah Street (SR 1667).

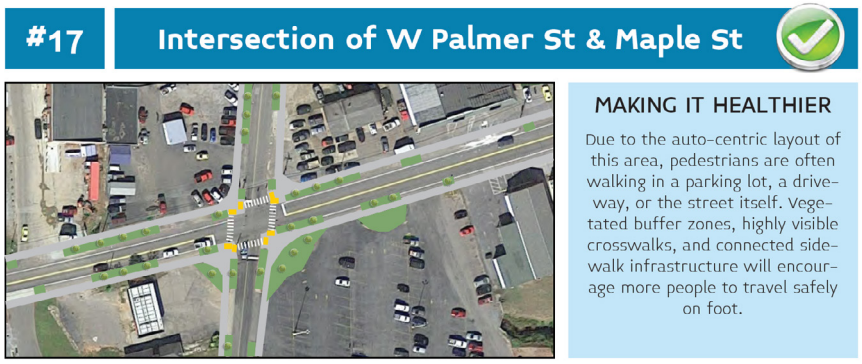
BikeWalk Franklin recommends adding sidewalks and crosswalks along Phillips Street to better connect the Crawford Branch Greenway to downtown. It also suggests sidewalk and crossing improvements on East Main Street, which would help link the Crawford Branch Greenway to the Little Tennessee River Greenway. The plan envisions West Palmer Street and Maple Street as more bike-friendly and walkable, with multiuse paths, sidewalks, and crosswalks throughout. The "Southwest Loop Trail" is a concept for a multiuse sidepath loop that would include a sidepath along Maple Street. Implementing these improvements would enhance access to the Crawford Branch Greenway and encourage more residents to walk and bike.

Image 3. NCDOT Sidewalks on Depot Street

Source: Google

NCDOT is working to fill in the gaps in the sidewalk network and improve walkability along key roadways. New sidewalks work in tandem with recent roundabout projects to help make walking in Franklin more comfortable and accessible.

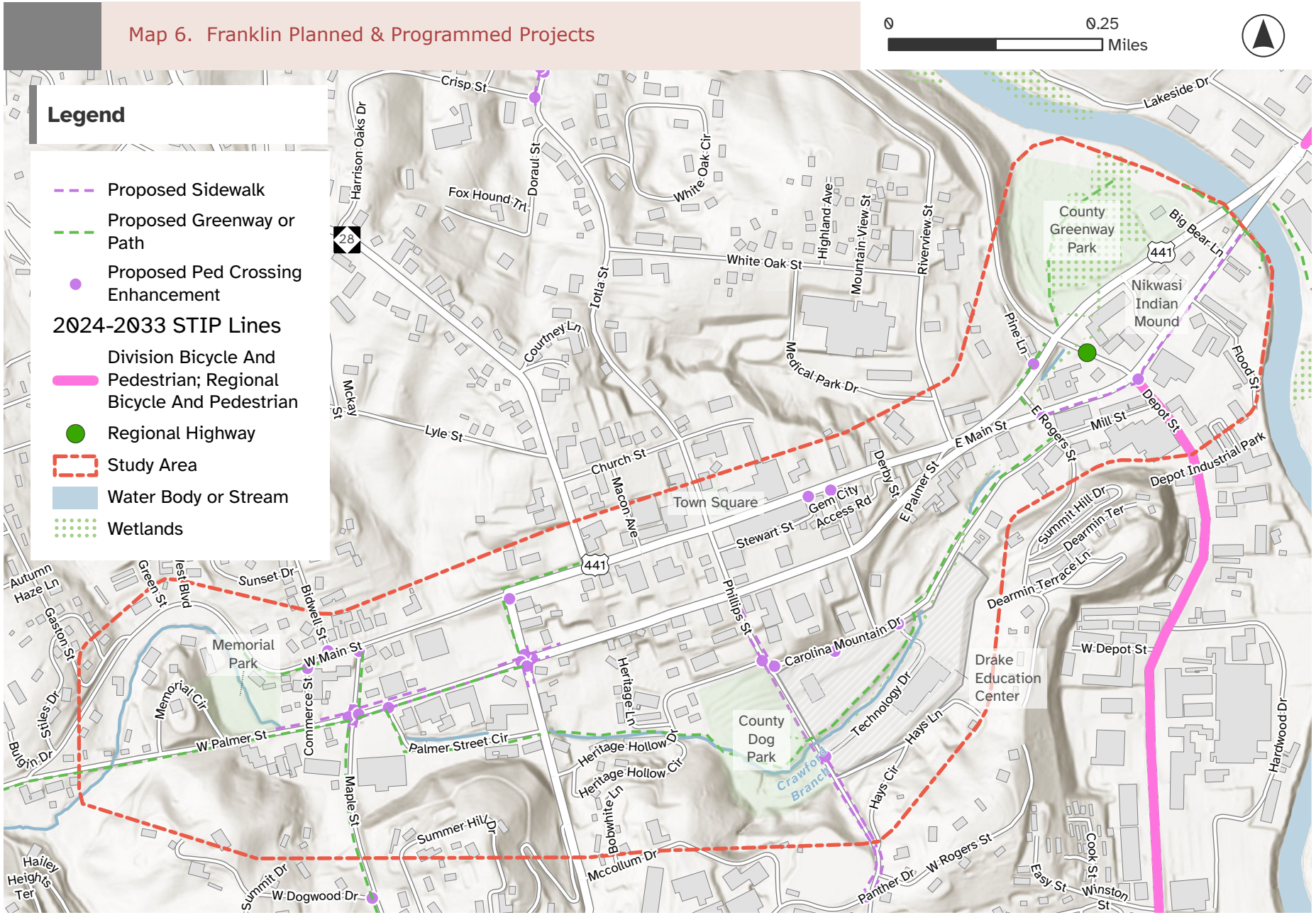
Image 4. BikeWalk Franklin Intersection Improvements



Source: Town of Franklin

Many of BikeWalk Franklin's recommendations are intersection safety, accessibility, and connectivity projects. These improvements could be designed with the Crawford Branch Greenway engineering and design process to make the project even more successful.

Map 6. Franklin Planned & Programmed Projects



NATURAL ENVIRONMENT CONSIDERATIONS

The natural environment is integral to how we design and connect greenways within our communities. In the study area, much of the landscape has already been shaped by human activity—hillsides have been graded, streams rerouted, and roads and buildings constructed. As we plan and design the Crawford Branch Greenway, it is important to account for these existing modifications while thoughtfully integrating and preserving the natural features that remain. This approach ensures that the greenway not only enhances connectivity but also respects and harmonizes with the environment. There are even opportunities to design the greenway with elements that bolster and support the local ecosystem in a number of ways.

Floodplain

Map 7 - Flood Zones highlights the flood risks associated with the Crawford Branch waterway and the Little Tennessee River within the study area. This map illustrates key flood zones as designated by the Federal Emergency Management Agency (FEMA):

- Regulatory Floodway: The floodway, adjacent to Crawford Branch, is the area where floodwaters can pass during heavy rains without raising the water surface elevation by more than one foot. This is typically the first land to flood during storms, and includes the area directly adjacent to the regular flow of water.
- 100-Year Floodplain: This area has a 1% chance of flooding in any given year. This designation is significant for planning and development within the study area.
- 500-Year Floodplain: This area has a 0.2% chance of flooding in any given year.

The Crawford Branch creek restoration project helps to mitigate flood impacts, improve water quality, and restore natural habitats along the creek. By stabilizing the streambanks and reestablishing native vegetation, the project will also reduce erosion, support local wildlife, and create a more resilient and aesthetically pleasing environment for the community.

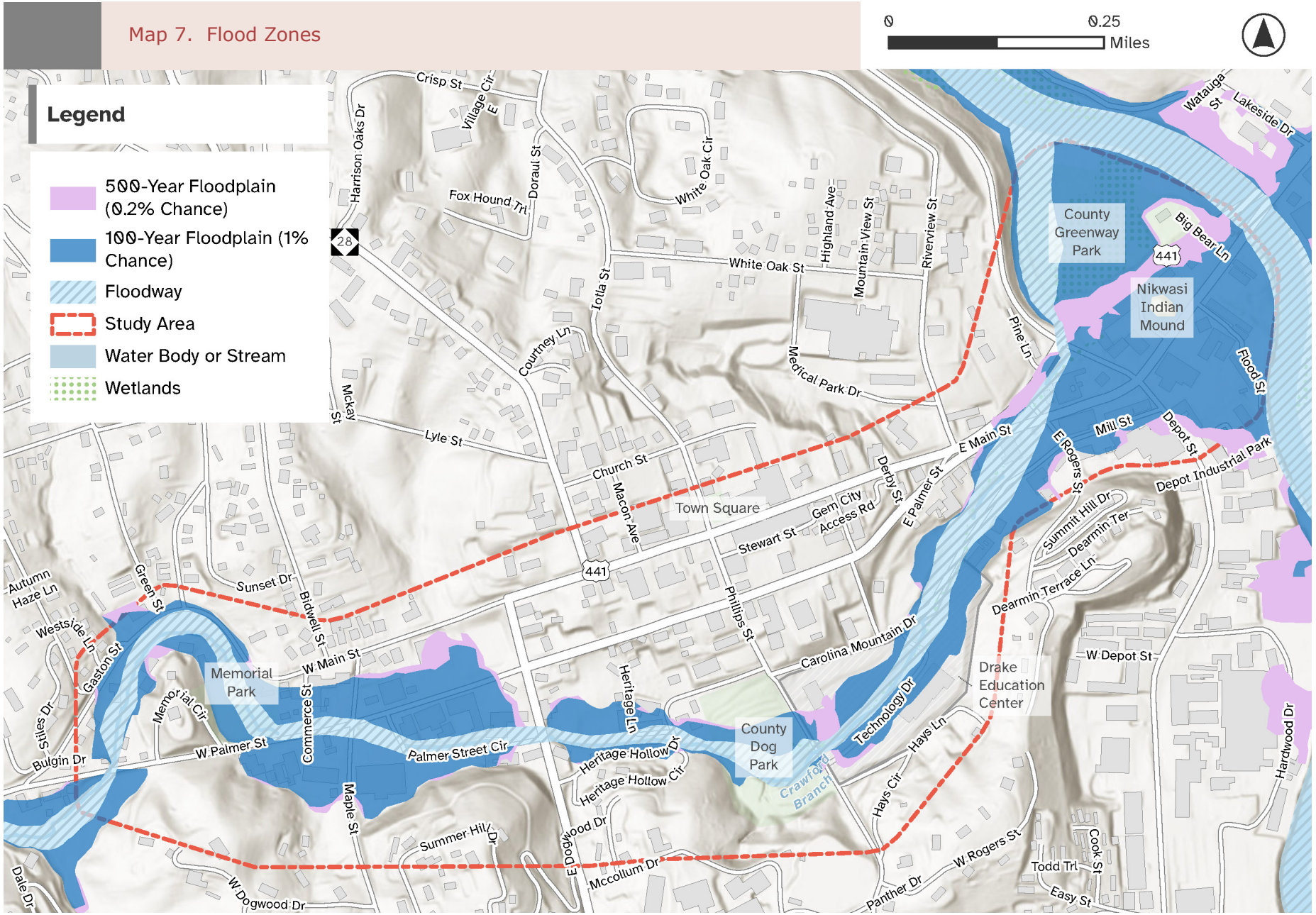
A significant portion of the study area falls within these flood zones, where Crawford Branch and the Little Tennessee River periodically overflow their banks. Most of the greenway route alignments considered for this study fall within the 100-year floodplain. When planning the Crawford Branch Greenway, it's essential to consider how any development, including recreational trails, might affect the floodplain's capacity to store and slow floodwaters.

Integrating stormwater best management practices into the greenway design will be critical, and regular maintenance will be necessary to ensure the long-term functionality of the infrastructure. Other sections of the greenway may require the construction of a boardwalk to elevate the trail above the flood-prone areas, ensuring it remains accessible during as many flood events as possible. This careful design approach will help balance recreational use with floodplain preservation, minimizing the impact on the natural flood management system while providing a safe and enjoyable greenway for the community.

Image 5. Crawford Branch Restoration Project

Source: Town of Franklin

Map 7. Flood Zones



Topography

NC OneMap data was used to obtain 4-foot contour elevation details, illustrated in Map 8 – Topography (4-Foot Contours). Crawford Branch meanders through the lowest areas, where widely spaced contour lines indicate flat, level land. In contrast, closely spaced lines reveal the elevated ridges and steep slopes that characterize much of Franklin's landscape. While much of the downtown business district is situated on higher ground, lower-lying areas are also developed. The topography provides key insights for greenway alignment, but designing a route within these constraints may require trade-offs and could increase costs in more challenging segments. The planning and engineering of the Crawford Branch Greenway will need to ensure a direct and accessible route that navigates these elevation changes effectively.

Endangered Species

A threatened and endangered species analysis is a critical component in the final design and engineering stages of a new greenway project. This analysis ensures that the project does not negatively impact habitats or species that are protected under federal and state laws. Based on analysis from recent Crawford Branch restoration work at Memorial Park, no aquatic threatened or endangered species were identified in the study area. However, the Smoky Dace (*clinostomus sp.*), a species of state concern, is present in Crawford Branch. This fish seems to thrive in the area, possibly due to the cooler water temperatures maintained by culverts and pipes, though its exact habitat preferences are not entirely clear. Additionally, existing populations of Virginia spiraea (*spriraea virginiana*), an endangered species of flowering shrub, are known to be present along the Little Tennessee River, likely within a mile of the confluence with Crawford Branch.

By identifying the presence of endangered species early in the process, planners and engineers can make informed decisions about the greenway's alignment, construction methods, and mitigation measures. This not only helps protect biodiversity but also ensures compliance with environmental regulations, reducing the risk of project delays or legal challenges. Incorporating endangered species considerations into the final design supports sustainable development and promotes the long-term health of the local ecosystem.

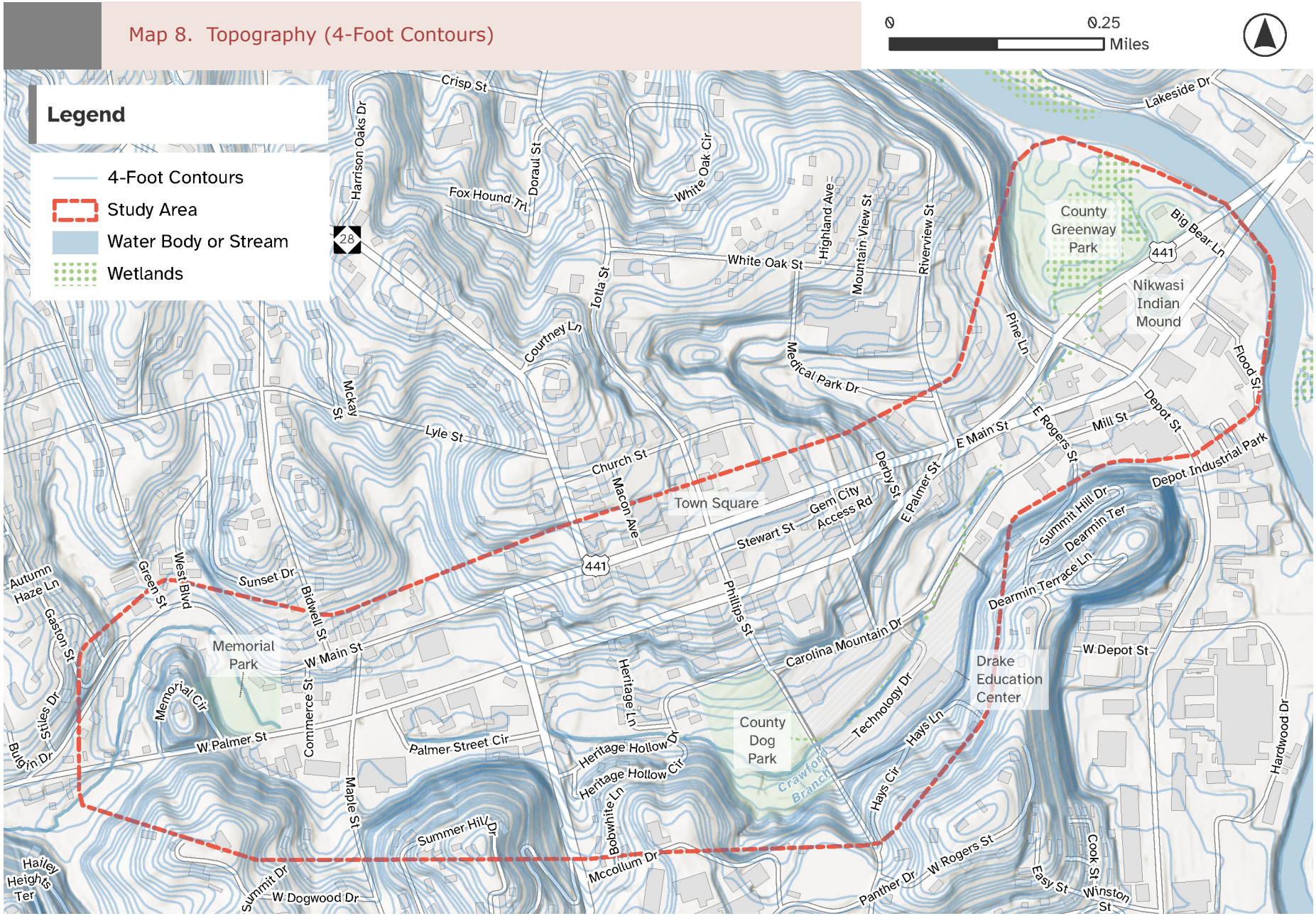
Image 6. Smoky Dace

Source: Jesse Bissette

Image 7. Virginia Spiraea

Source: Ohio Department of Natural Resources

Map 8. Topography (4-Foot Contours)



HUMAN ENVIRONMENT CONSIDERATIONS

The study area is located in downtown Franklin, where human activity is prominent. The following factors are important when considering the human environment:

- Key points of interest
- Land parcel ownership
- Historic sites
- Brownfield locations
- Existing multimodal infrastructure network
- Annual Average Daily Traffic (AADT) counts
- Posted speed limits
- Pedestrian crash history and corridor safety ratings

Points of Interest

The study area is located adjacent to downtown Franklin, where numerous points of interest are concentrated. Key destinations include government services, parks, and community facilities, as shown in Map 9 – Points of Interest. Memorial Park, a popular destination, features a large outdoor pavilion, indoor community space, basketball court, and a walking path along Crawford Branch. On the other end of the study area, the Little Tennessee River Greenway, a significant regional attraction, offers recreational opportunities for residents and visitors. The County Dog Park is centrally located and could serve as a trailhead.

The study area also includes various restaurants, businesses, grocery stores, medical offices, hotels, and other employment centers. Cultural and historical points of interest, such as the Nikwasi Indian Mound and the Scottish Tartans Museum, add to the area's rich heritage. Government buildings within the study area include the Macon County Courthouse, Franklin Town Hall, Franklin Police Department, and Franklin Fire & Rescue.

Additionally, the area is home to a wide range of community services that play a number of vital roles. Franklin High School and Macon County Senior Services, both located near the study area, are key destinations for younger and older residents.

A greenway running through this area would provide a safe and accessible route for residents to walk or bike to school, access essential services, go to work, or enjoy recreational activities. The greenway would enhance connectivity, offer an alternative transportation option, reduce reliance on cars, and promote a more active, healthy lifestyle.

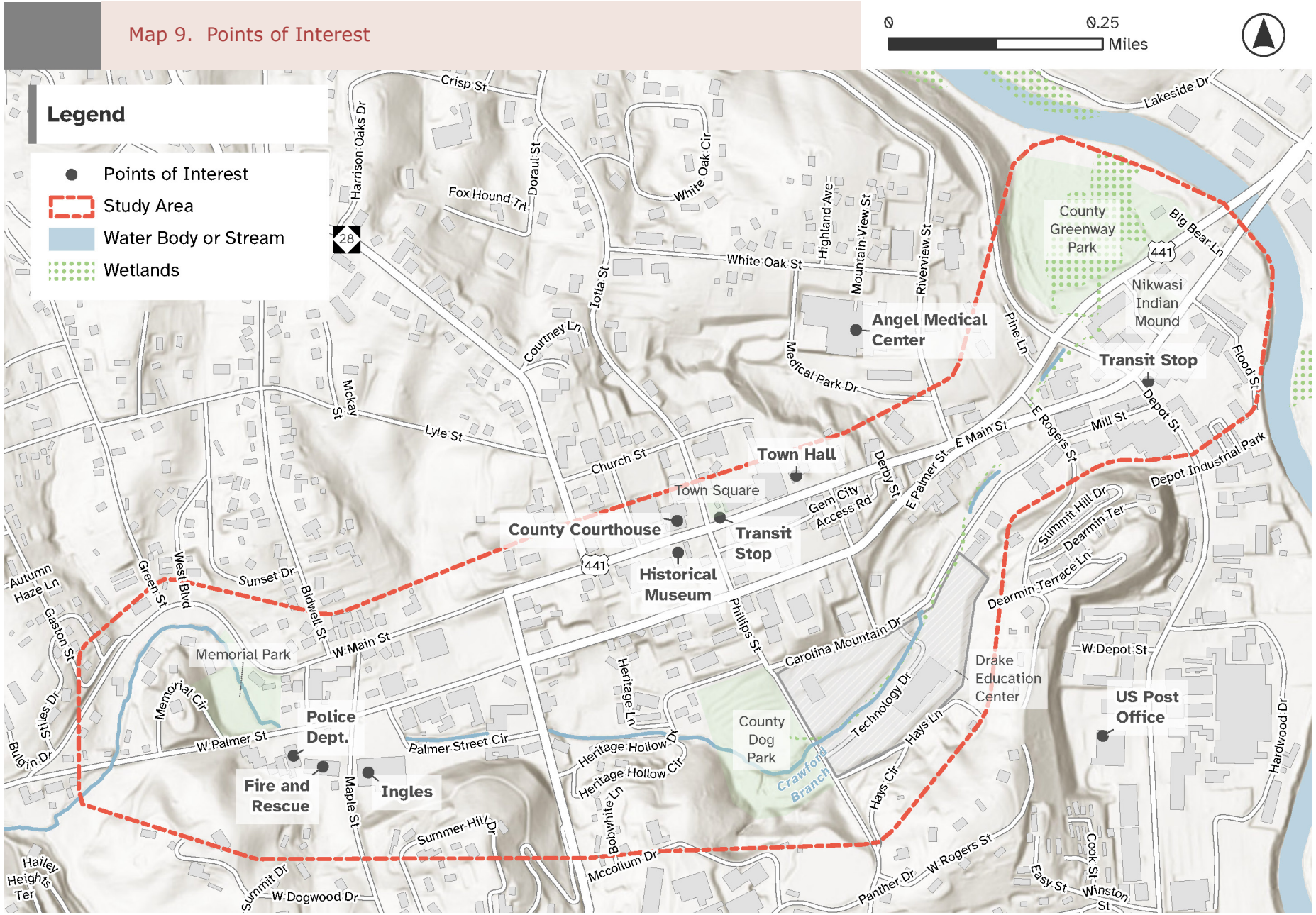
Image 8. *Franklin Fire & Rescue*

Source: Town of Franklin

Image 9. *Franklin Town Hall*

Source: The Franklin Press

Map 9. Points of Interest



Land Parcel Ownership

Macon County parcel data, which details land ownership, is invaluable in the process to determine the best route for the Crawford Branch Greenway, as it will need to navigate through various parcels to connect the municipal and county-owned parks at either end. Map 10 – Parcel Ownership shows several of the parcels owned by local government, as well as the Eastern Band of Cherokee Indians and Mainspring Conservation Trust. These parcels can become key trailhead locations and offer opportunities for supportive partnerships and more design creativity.

Larger private properties in the study area could provide more flexibility in route selection and open doors for collaboration with property owners who support the greenway project. Engaging with these stakeholders early on can lead to mutually beneficial agreements, such as easements or land donations, which can help streamline the greenway's development. Negotiating access across multiple properties can be complex, particularly if some owners are reluctant or if land use conflicts arise. Additionally, non-residential properties, such as commercial or industrial sites, may have specific operational concerns or security requirements that could complicate greenway alignment. Ensuring that the greenway route is both feasible and accessible will require careful planning, clear communication with property owners, and potentially creative design solutions to address these challenges. Ultimately, the success of the greenway will depend on balancing these opportunities and challenges while maintaining the project's overall vision of connecting key public spaces in Franklin.

Image 10. *Nikwasi Mound*

Source: Asheville Citizen Times

Historic Resources

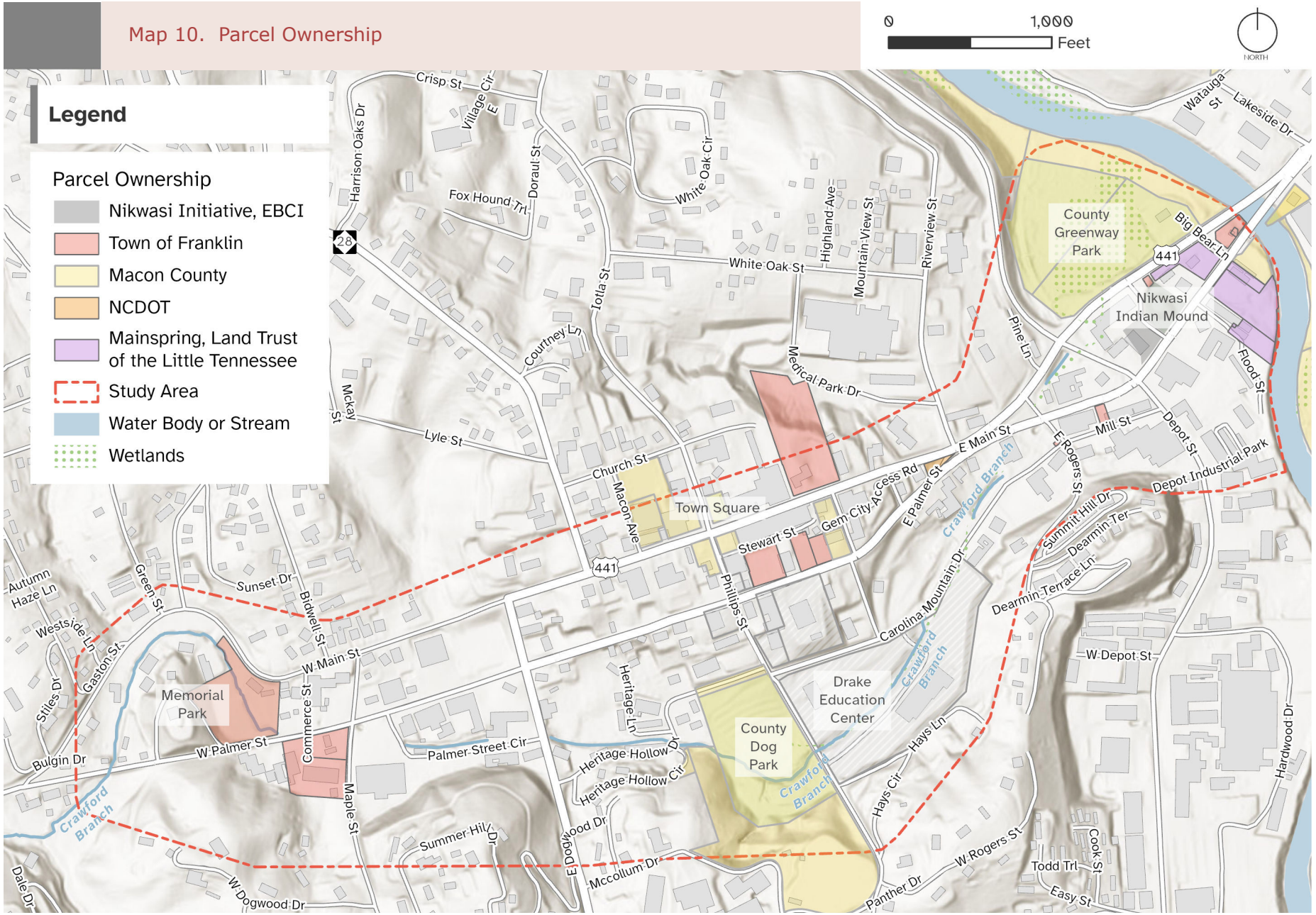
The North Carolina State Historic Preservation Office holds research reports, National Register nominations, and other materials related to the survey of historically significant sites, buildings, and districts across the state. By cataloging a wide array of structures and places, this branch creates a comprehensive inventory that reflects North Carolina's diverse history and development. Map 11 – Historic Resources highlights various historic properties and buildings within the study area, including landmarks like the Nikwasi Indian Mound and the Macon County Historical Society and Museum. Also included are the First Presbyterian Church, All Saints Episcopal Church, and Franklin Terrace Bed & Breakfast.

Historic site protections often impose regulations and guidelines that restrict the development of nearby land, which may include preserving its visual and environmental context to ensure minimal impact on the historic setting. Greenway projects, such as the Crawford Branch Greenway, must carefully balance providing recreational amenities with respecting the historical significance of the area. This involves thoughtful planning and design to integrate the greenway into the community while honoring its rich historical heritage.

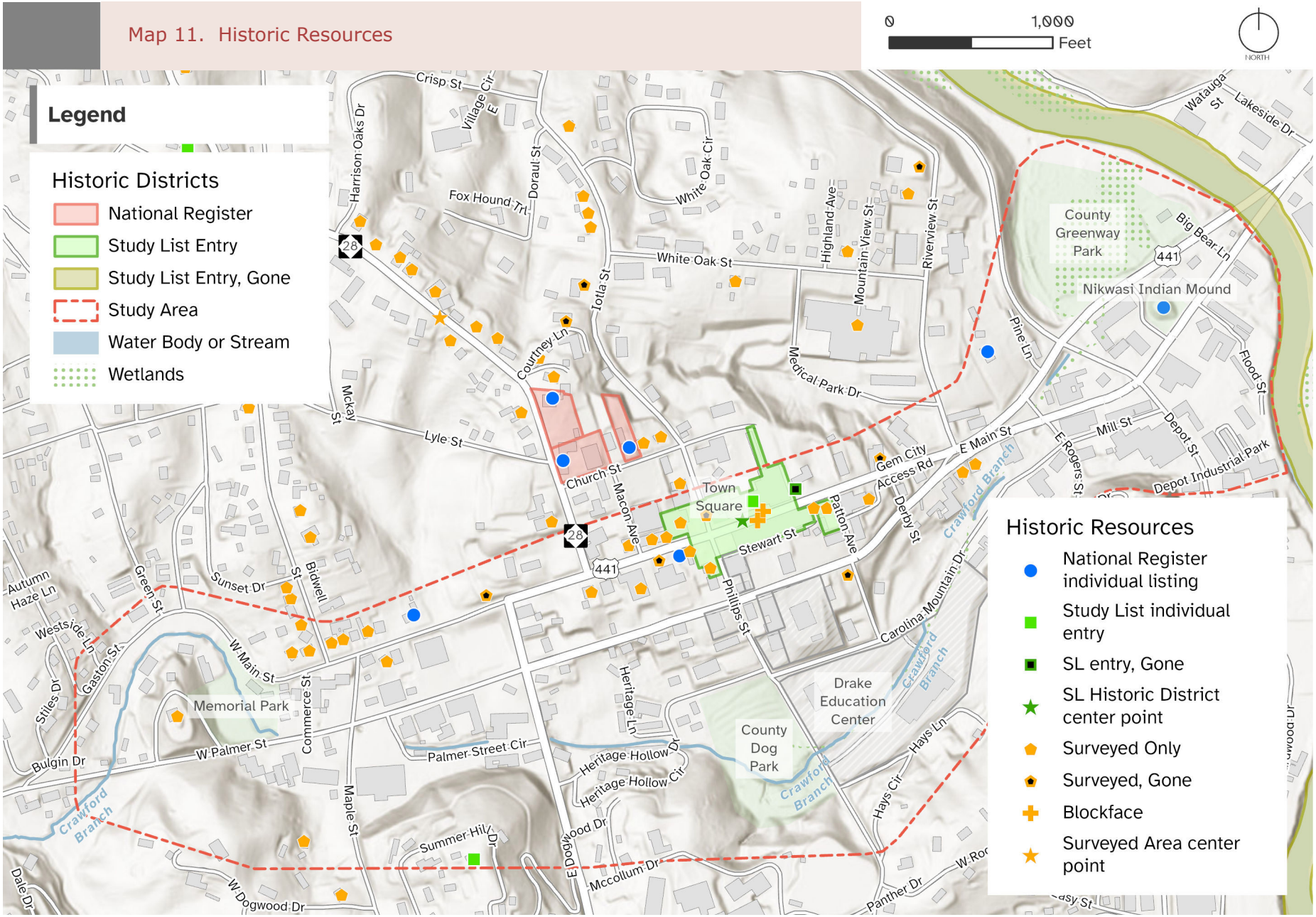
Image 11. *Macon County Historical Museum*

Source: Macon County Historical Society

Map 10. Parcel Ownership



Map 11. Historic Resources



Brownfields

Planning a greenway near a brownfield or existing industrial site requires careful consideration of potential challenges to ensure the project's success and safety. These sites may still harbor hazardous materials or pollutants from previous activities, posing environmental risks to both greenway users and the surrounding community. Map 12 - Brownfields illustrates several brownfield sites in the study area, which are currently either vacant or repurposed as a parking lot/greenspace. Redevelopment of brownfields into open spaces offers Franklin a unique opportunity to reclaim and rehabilitate degraded land. Incorporating brownfields into greenway or trailhead design can mitigate environmental hazards, promote sustainable development, and provide much-needed recreational spaces for residents.

Existing Multimodal Network

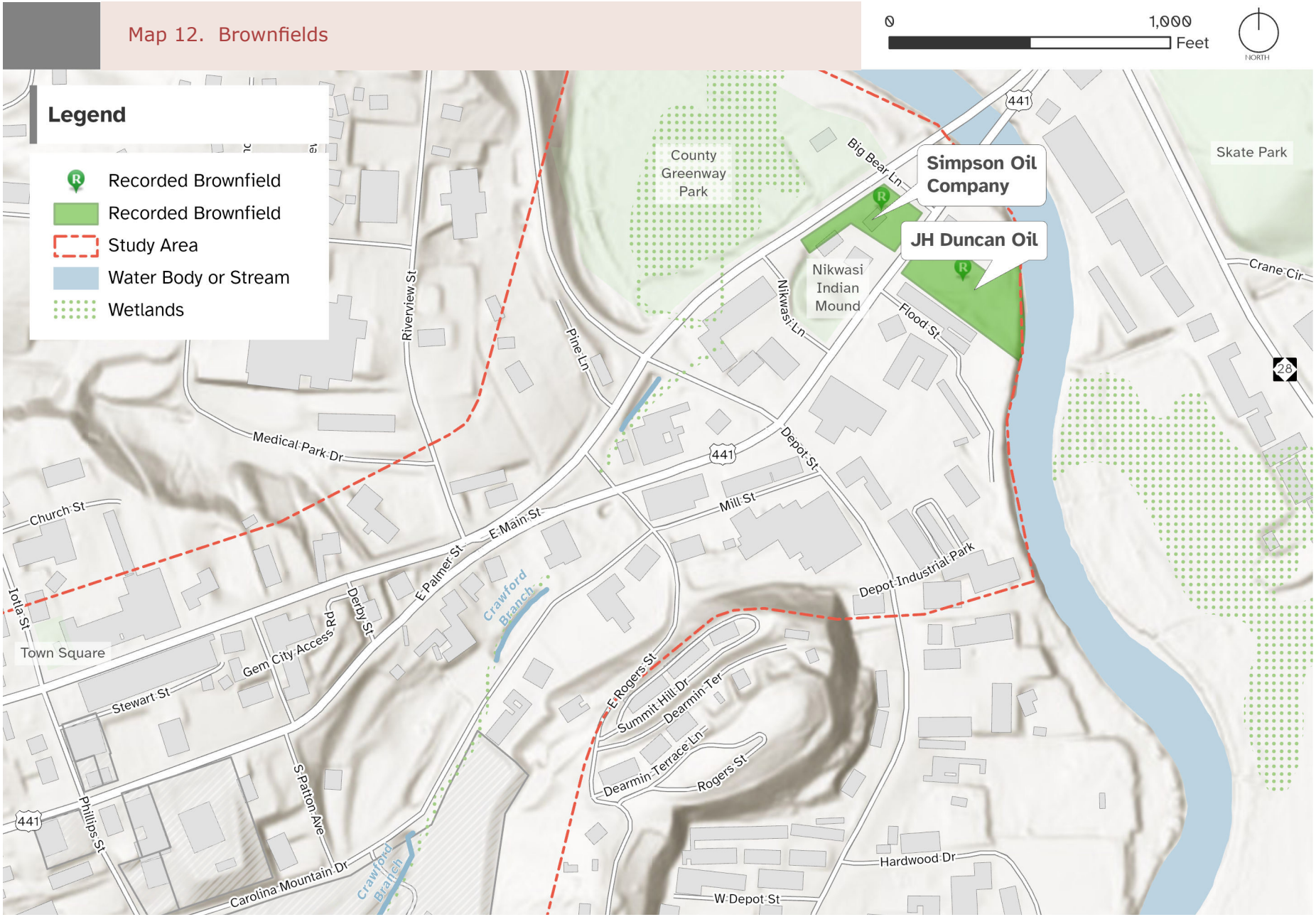
Though there are some gaps in the pedestrian network, the study area includes sidewalks, traffic signals, and crossings, as shown in Map 13 – Existing Sidewalks, Crosswalks, Greenways, & Traffic Signals. Sidewalks are present on both NCDOT- and Town-maintained streets, with gaps notably on West Palmer Street and Carolina Mountain Drive. Recent NCDOT improvements have added new sidewalks along the west side of Depot Street, enhancing connectivity. While there are no dedicated bike lanes in the study area, the Crawford Branch Greenway offers an opportunity to bridge these gaps by providing a safe, continuous route for pedestrians and cyclists. The greenway could be designed to integrate seamlessly with existing sidewalks and offer enhanced crossings at key roadways, improving safety and accessibility.

Traffic signals are primarily located on major thoroughfares like Main Street and Palmer Street, where traffic volumes are higher, while other intersections in the area are managed with stop signs. Maple Street, Porter Street, and Depot Street connect to roundabouts on Wayah Street just south of the study area, contributing to traffic flow management. Franklin's transportation network also includes demand-response services provided by Macon County Transit, along with the Mountain Gem Route, a deviated fixed-route loop that stops at the gazebo on Main Street and travels along Porter Street and Depot Street. With careful planning, the Crawford Branch Greenway could enhance transit accessibility by supporting riders of the Mountain Gem Route, offering them a convenient, multimodal connection to key destinations around town.

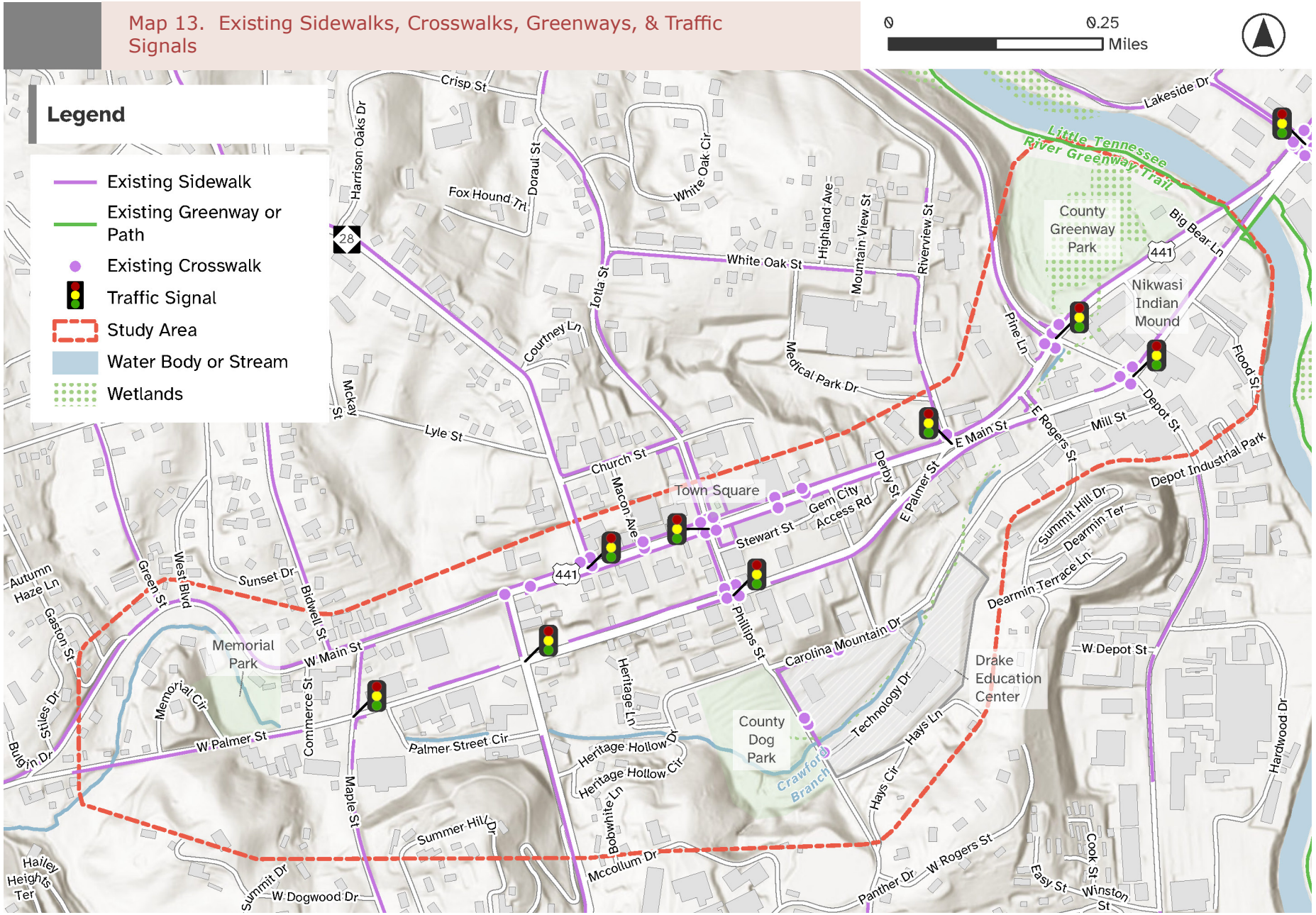
Image 12. Macon County Transit on Main Street

Source: Google

Map 12. Brownfields



Map 13. Existing Sidewalks, Crosswalks, Greenways, & Traffic Signals



Traffic Volumes

Leveraging data from NCDOT (2021), we can gain insight into traffic volumes on key corridors influencing the study area. Map 14 – Annual Average Daily Traffic illustrates traffic volumes on streets maintained by NCDOT. The study area is bisected by US-441 Business (Main Street and Palmer Street), with traffic volumes of approximately 6,000 vehicles per day (vpd) and exceeding 8,000 vpd in some sections. Depot Street and the area of East Main Street near the Nikwasi Mound are critical for moving traffic into and out of downtown Franklin.

Although a greenway like Crawford Branch would be separated from vehicular traffic, portions of it must cross roadways at grade, while some portions may end up being sidepath facilities running parallel to roadways. People will need to be able to reach the greenway by foot or bicycle and the trail will become part of Franklin's overall transportation network. Therefore, it is helpful to consider how traffic volumes might impact the greenway experience and inform its alignment to ensure safe and enjoyable access for all users.

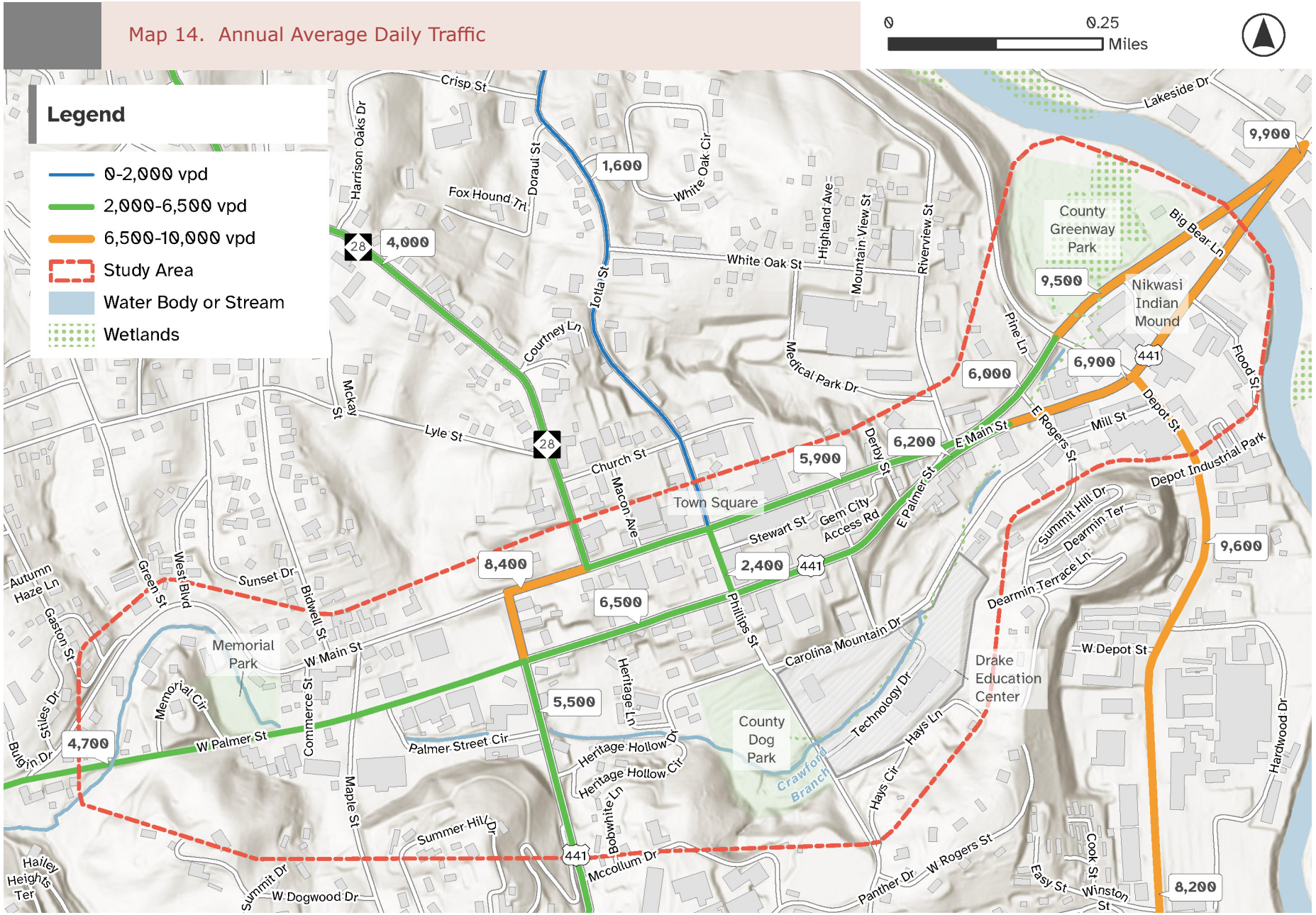
Posted Speed Limit

Map 15 – Posted Speed Limit shows the posted speed limits on various road segments throughout the study area, including both state-maintained and locally maintained roads. With the exception of the main arterials, all roads within the study area have posted speed limits of 25 mph or less. Many are 20mph in the downtown core. These lower speed limits are a factor in ensuring safety for pedestrians and cyclists, as speed is a key predictor of accident severity. The slower speeds contribute to a safer environment for those walking or biking, especially in areas where the Crawford Branch Greenway will intersect or run parallel to these roadways.

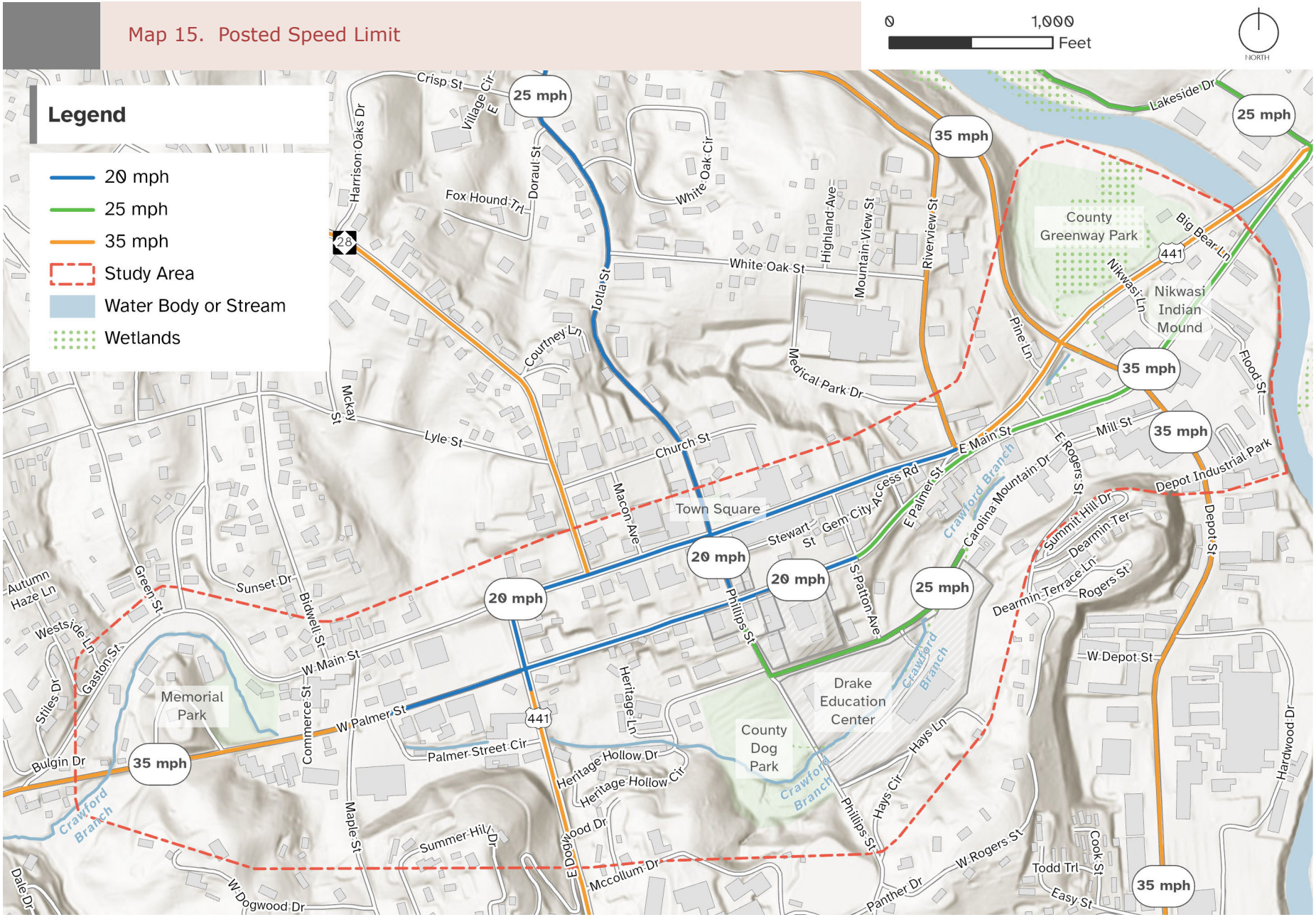
Image 13. Portions of the paved trail will intersect with the street network and, therefore, traffic volumes and speeds were analyzed.

Source: TPD

Map 14. Annual Average Daily Traffic



Map 15. Posted Speed Limit



Pedestrian Crash History and Corridor Section Safety Scores

Map 16 – Pedestrian Crash History and Corridor Safety Scores provides an overview of pedestrian- and bicycle-involved crashes within the Crawford Branch Greenway study area from 2017 to 2021, as well as the NCDOT Corridor Section Safety Scores. Notably, there were no bicycle-involved crashes and only one pedestrian-involved crash was reported during this period, which occurred in 2019.

The NCDOT Corridor Section Safety Scores offer a detailed assessment of crash and safety data, focusing on intersections and road segments within the study area. These scores are critical for prioritizing safety improvements and network planning. The scoring system evaluates three key factors: 1) the density of crashes in the study area relative to the average crash density on similar road types, 2) the severity of the crashes, and 3) the actual crash rate compared to the critical crash rate. Higher scores, indicating areas with greater safety concerns, were identified on streets like Iotla Street, Porter Street, and Palmer Street, highlighting these corridors as priorities for potential safety enhancements.

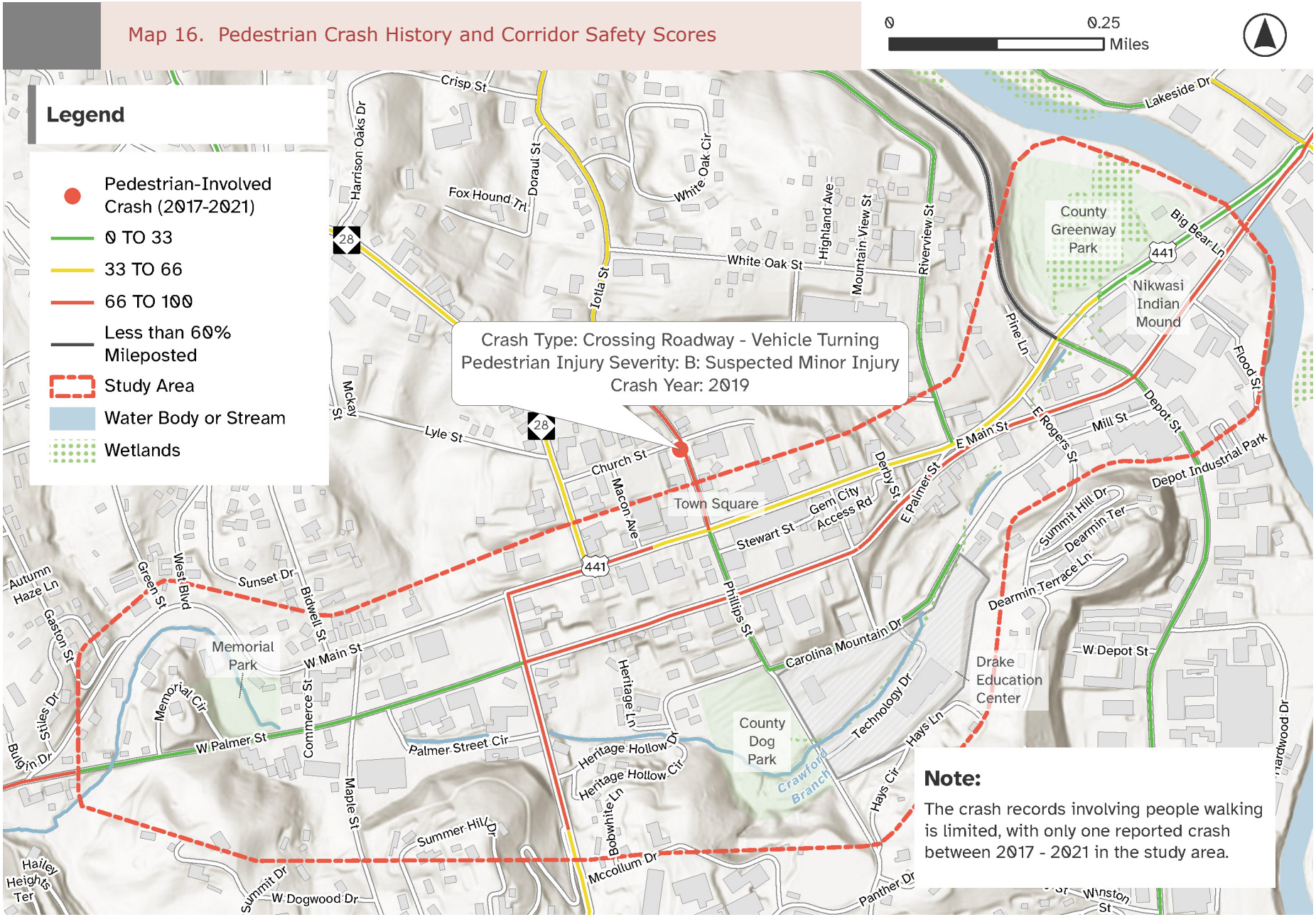
Image 14. The project team reviewed safety scores and walked the corridor.

Source: TPD

> *Make sure it's connected to the existing pedestrian network, so it can be safely accessed on foot.*
>
> *- Survey Respondent*

> *This would be an immediate success and well used connection path.*
>
> *- Survey Respondent*

Map 16. Pedestrian Crash History and Corridor Safety Scores



FIELD OBSERVATIONS

To gain a comprehensive understanding of the project, it is essential to conduct an on-site visit to document photographs, measurements, and observations of both the natural and built environments. On September 25, 2023, the project team conducted a site visit to thoroughly assess the opportunities and challenges associated with a potential greenway connection. During the visit, the team focused on several critical factors that significantly influenced the selection of the preferred alignment:

- Publicly owned parcels
- Right-of-way, private property impacts, and building setbacks
- Topography
- Floodplains and water bodies
- Existing structures (e.g., bridges)
- Sewer lines
- Roadway conditions (AADT, posted speed, traffic control, guardrails, sidewalks, crossings, parking)
- Existing greenways and sidewalk connections
- Land uses
- Driveways and site access
- Natural environment (invasive vegetation, erodible soils)
- Utilities
- Drainage
- New developments

These considerations are visually represented in the following maps and photographs, organized geographically across the study area.

Image 15. Several destinations in the corridor will attract visitors to use the trail once complete.

Source: TPD

> *"Easy links to downtown."*
>
> *- Survey Respondent*

> *"Connectivity to neighborhoods and commercial areas."*
>
> *- Survey Respondent*

Map 17. Field Visit Opportunities & Constraints Locations

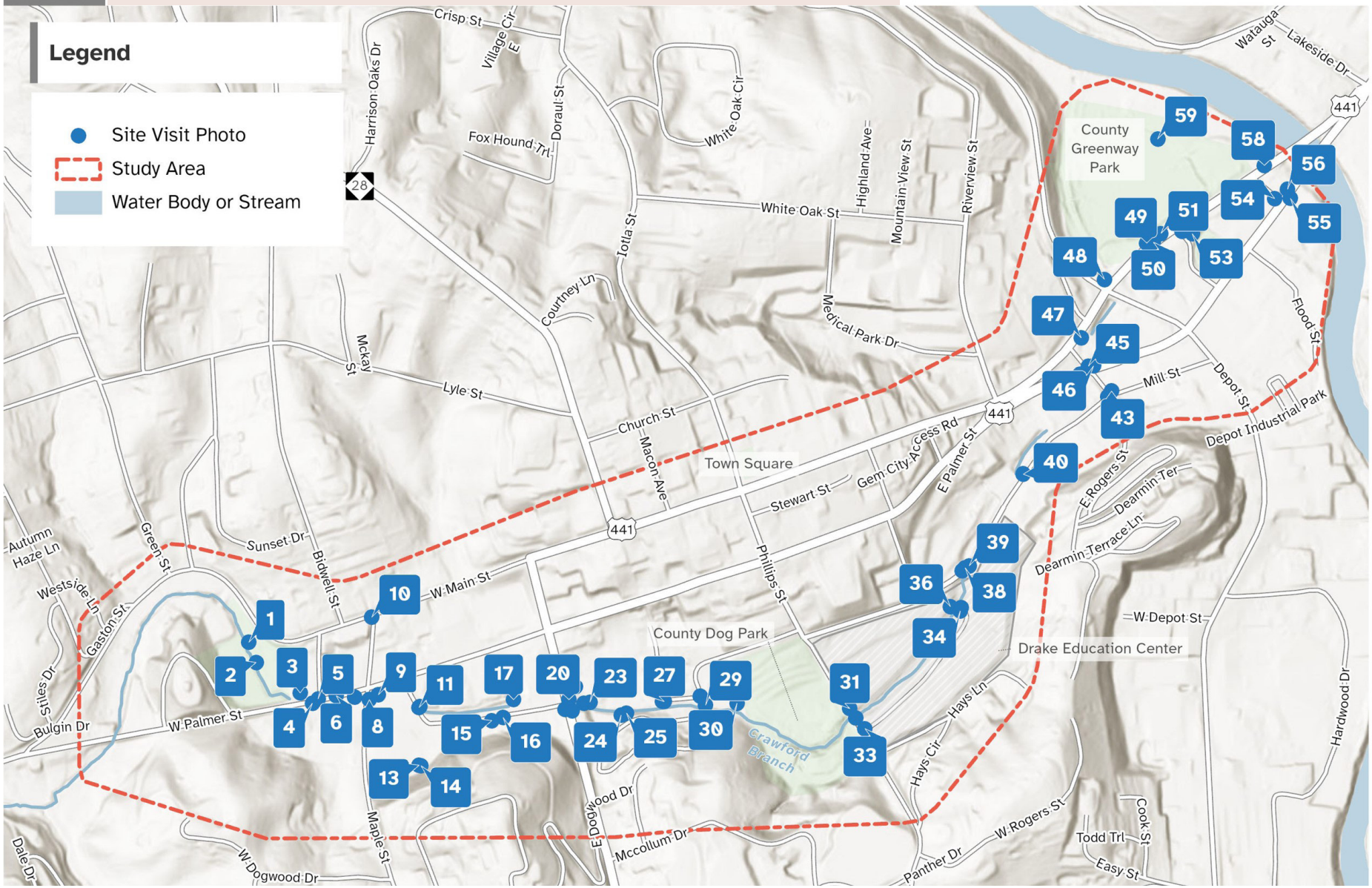
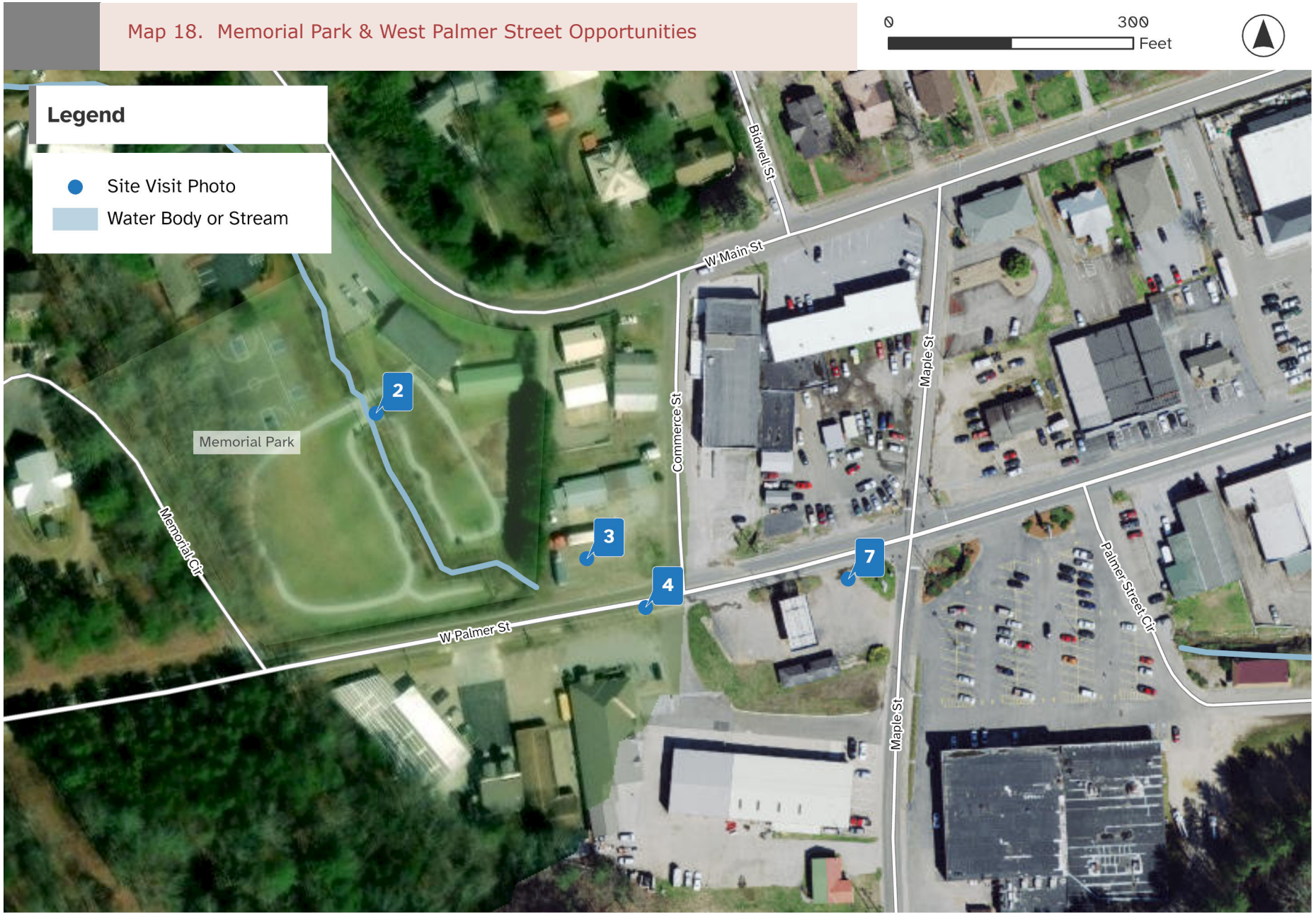


Image 16. The project team in the field

Map 18. Memorial Park & West Palmer Street Opportunities

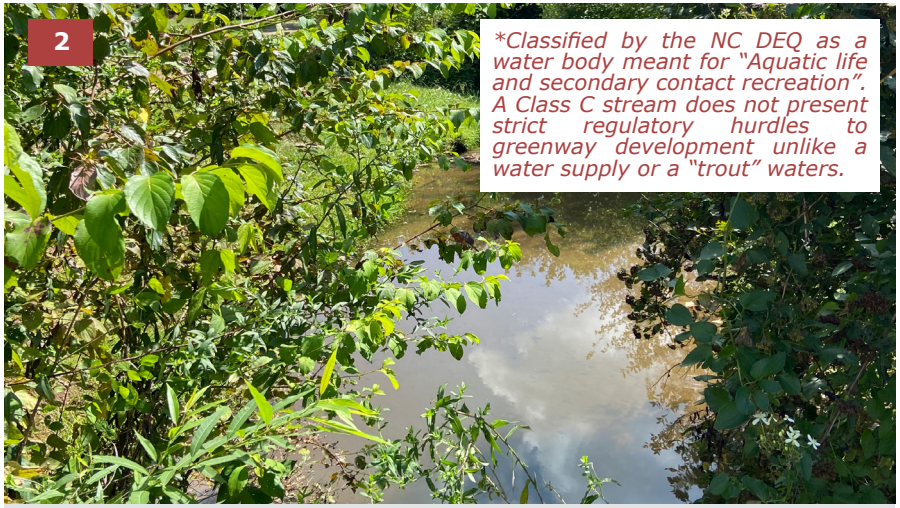


OPPORTUNITIES

A possible connection to Memorial Park from West Palmer Street would require an easement across commercial property. The topography is more suitable for a trail connection than alternate routes.

Roadway modifications will be necessary for a high visibility trail crossing on West Palmer Street from the Fire Department to Memorial Park.

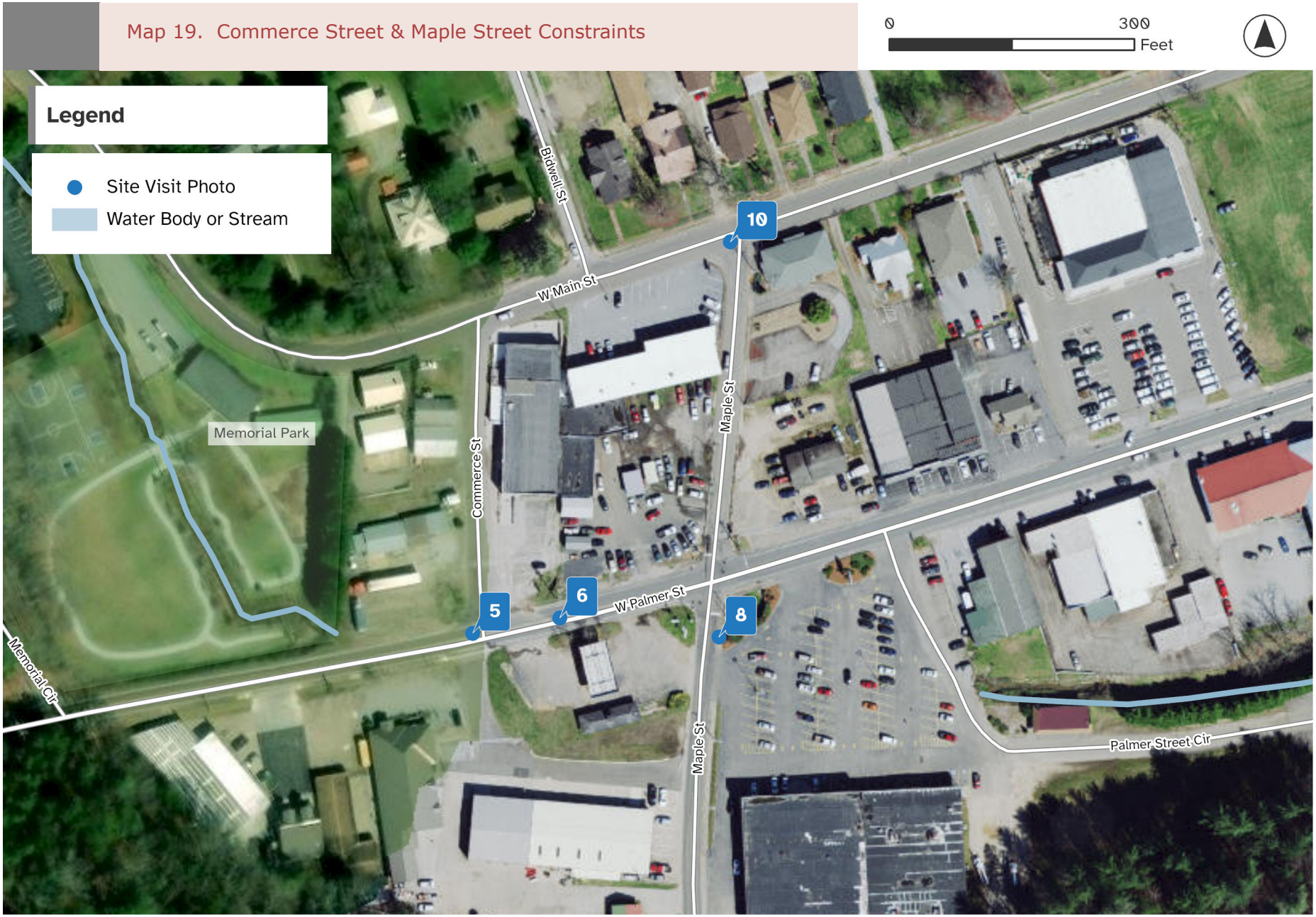
An open green area in front of the Town's fire and police stations presents an opportunity for a pocket park and trail.



**Classified by the NC DEQ as a water body meant for "Aquatic life and secondary contact recreation". A Class C stream does not present strict regulatory hurdles to greenway development unlike a water supply or a "trout" waters.*

Crawford Branch, a Class C stream, runs through Franklin Memorial Park.*

Map 19. Commerce Street & Maple Street Constraints



CONSTRAINTS

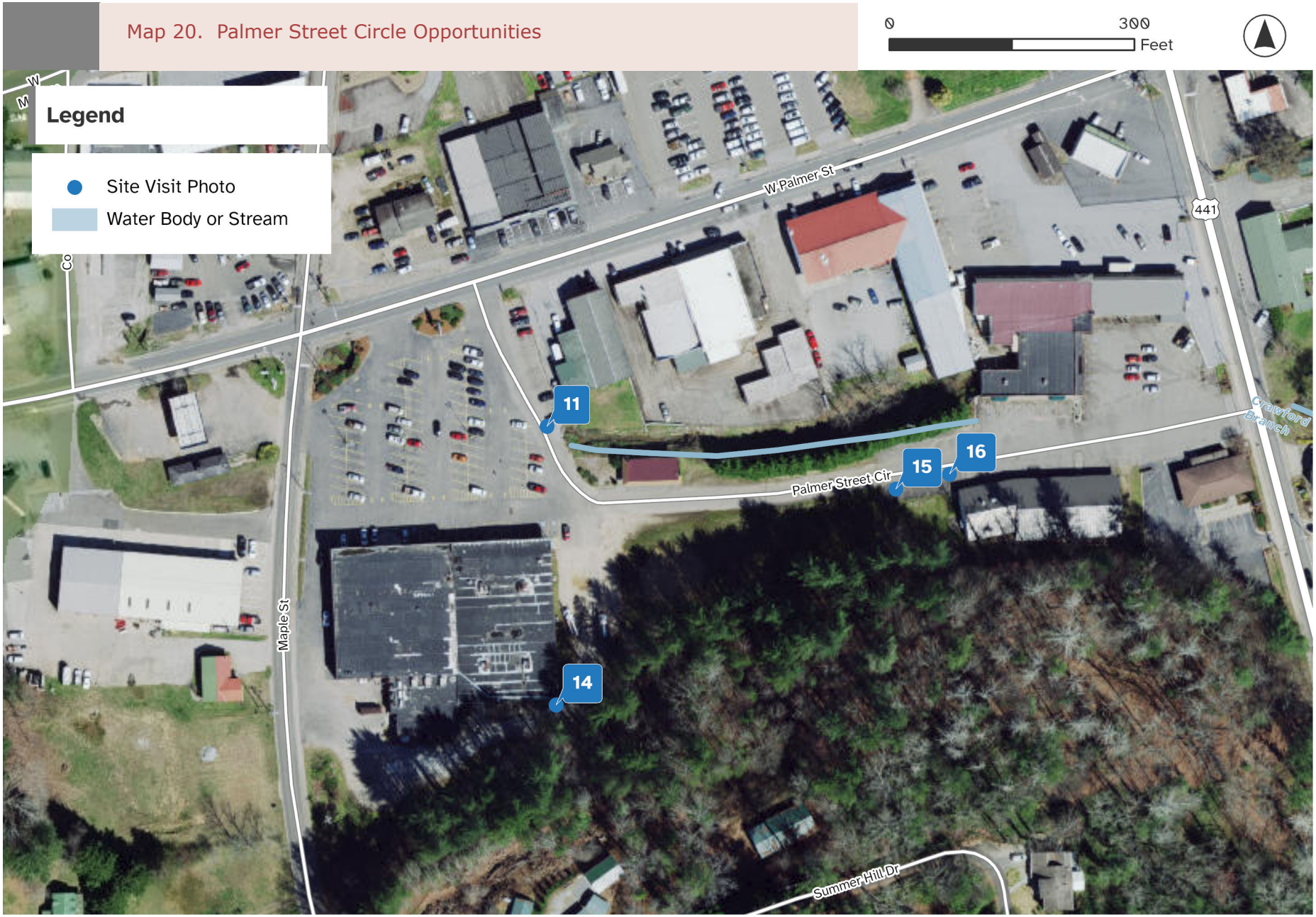
Commerce Street is steep and has commercial driveway conflicts. There is insufficient right-of-way for a greenway connection.

Crawford Branch and aging stormwater infrastructure are causing drainage issues along West Palmer Street and in the parking lots of commercial buildings.

Maple Street has steep terrain after it crosses West Palmer Street. The terrain is a significant constraint to a trail.

Any potential trail crossings across Maple Street near the Ingles will need to address the sight lines looking south that are impeded by vegetation and roadway geometry.

Map 20. Palmer Street Circle Opportunities



OPPORTUNITIES

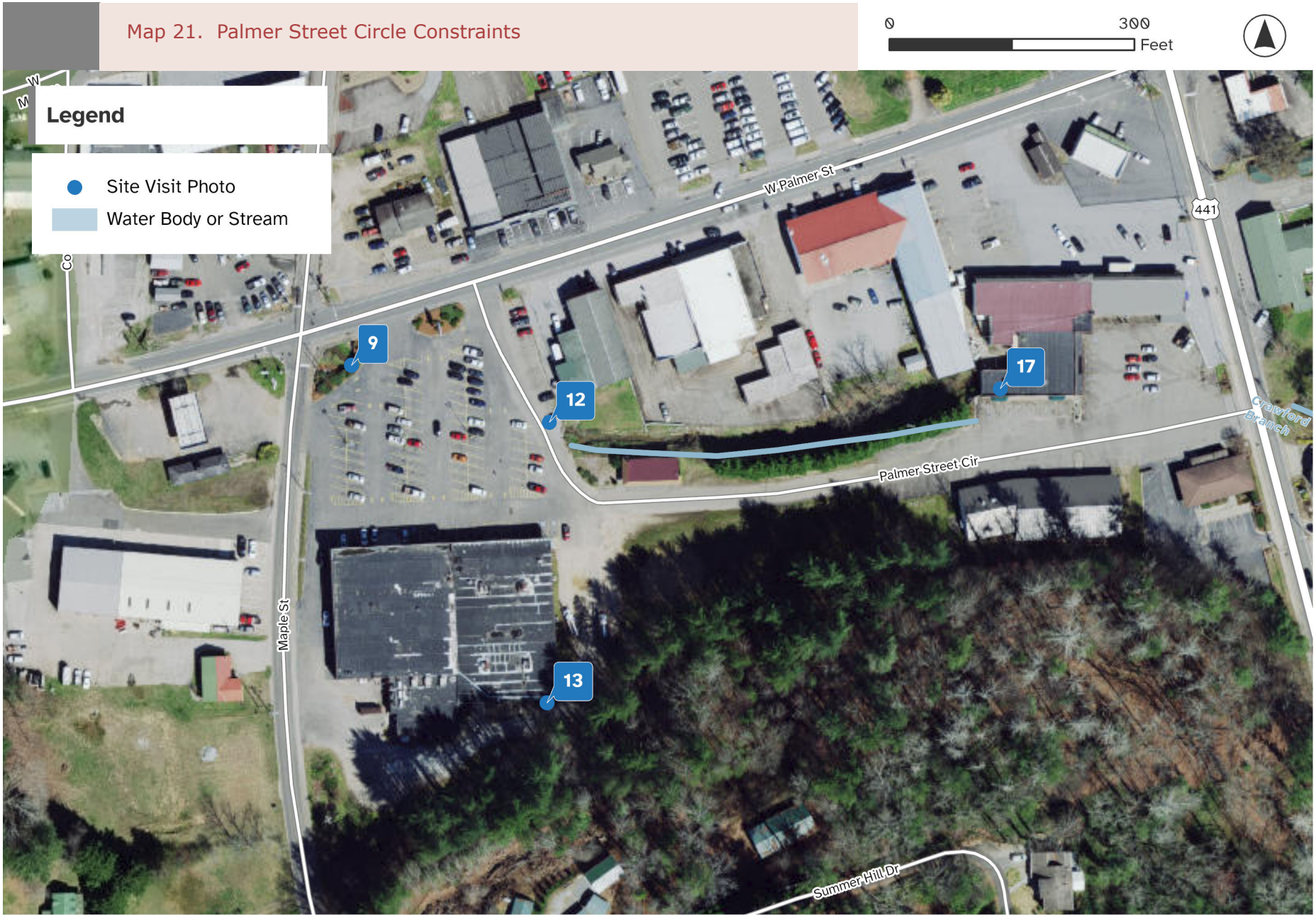
Palmer Street Circle goes through the Ingles parking lot where there is potential to reconfigure the layout of the street to provide a connection.

Space exists behind the Dollar General that may be sufficient for a trail connection; although trucks may need to access the back of building.

This access road connects between the commercial center connecting to Porter Street and the Ingles parking lot. There appears to be sufficient space for a trail connection.

The parking and travel lanes are wide enough here to accommodate a multiuse path with restriping of the parking lot.

Map 21. Palmer Street Circle Constraints



CONSTRAINTS

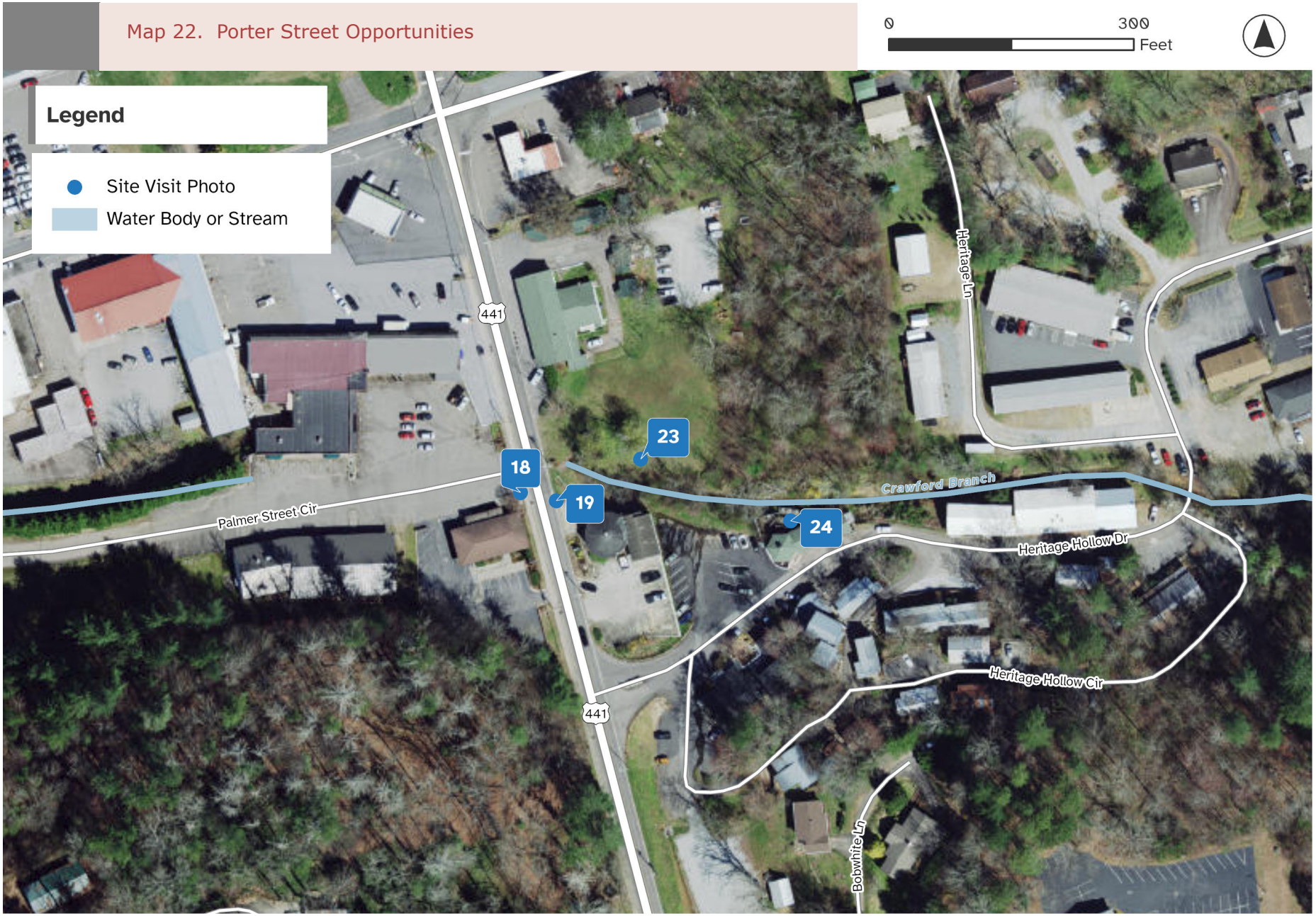
Lack of visibility and lighting behind the Ingles would need to be addressed for a trail connection.

Parking may be used for adjacent lots, requiring coordination with business owners for any changes.

The building on the left is a daycare. Special consideration must be taken if a multiuse trail were to be built in this parking lot.

Crawford Branch runs under West Palmer Street in box culverts.

Map 22. Porter Street Opportunities



OPPORTUNITIES

A high visibility crossing of Porter Street near Palmer Circle would be needed and would enhance the pedestrian connectivity of the existing infrastructure.

Wide grass shoulder could be retrofitted for a trail on the Crawford Branch culvert. Utility conflicts would need to be addressed during design.

Potential trail alignment on the north side of Crawford Branch along existing sewer line.

View of potential alignment on north side of Crawford Branch.

Map 23. Porter Street Constraints

CONSTRAINTS

A connection from Crawford Branch to West Palmer Street along Porter Street is constrained due to right-of-way, driveways and utilities.

Potential trail connection to Porter Street. This alignment would require an easement, regrading for ADA and retaining walls.

Crawford Branch culvert under Porter Street.

Buildings in this commercial area on the southside of Crawford Branch are immediately adjacent to the streambank, making an alignment here difficult.

Map 24. Heritage Hollow Drive Opportunities

OPPORTUNITIES

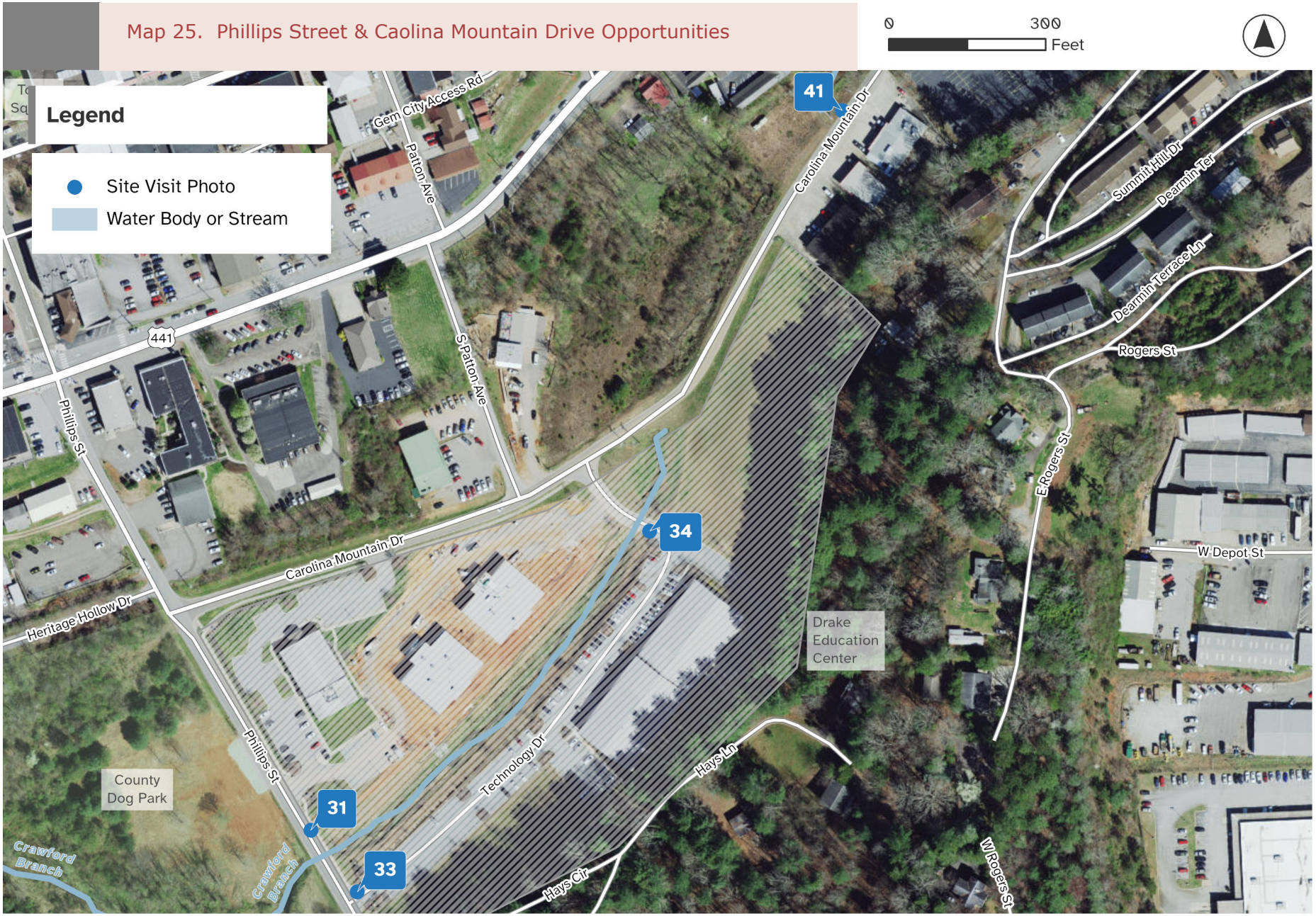
A relatively flat area exists adjacent to Heritage Lane on the north side of the creek.

The washed out bridge connecting into Hertiage Hollow could be replaced to reconnect Heritage Hollow Drive with a greenway.

Underutilized parking could be configured for a trail connection along the sewer line.

Existing worn path between Heritage Hollow Drive and the Phillips Street Dog Park. Existing sewer line.

Map 25. Phillips Street & Caolina Mountain Drive Opportunities



OPPORTUNITIES

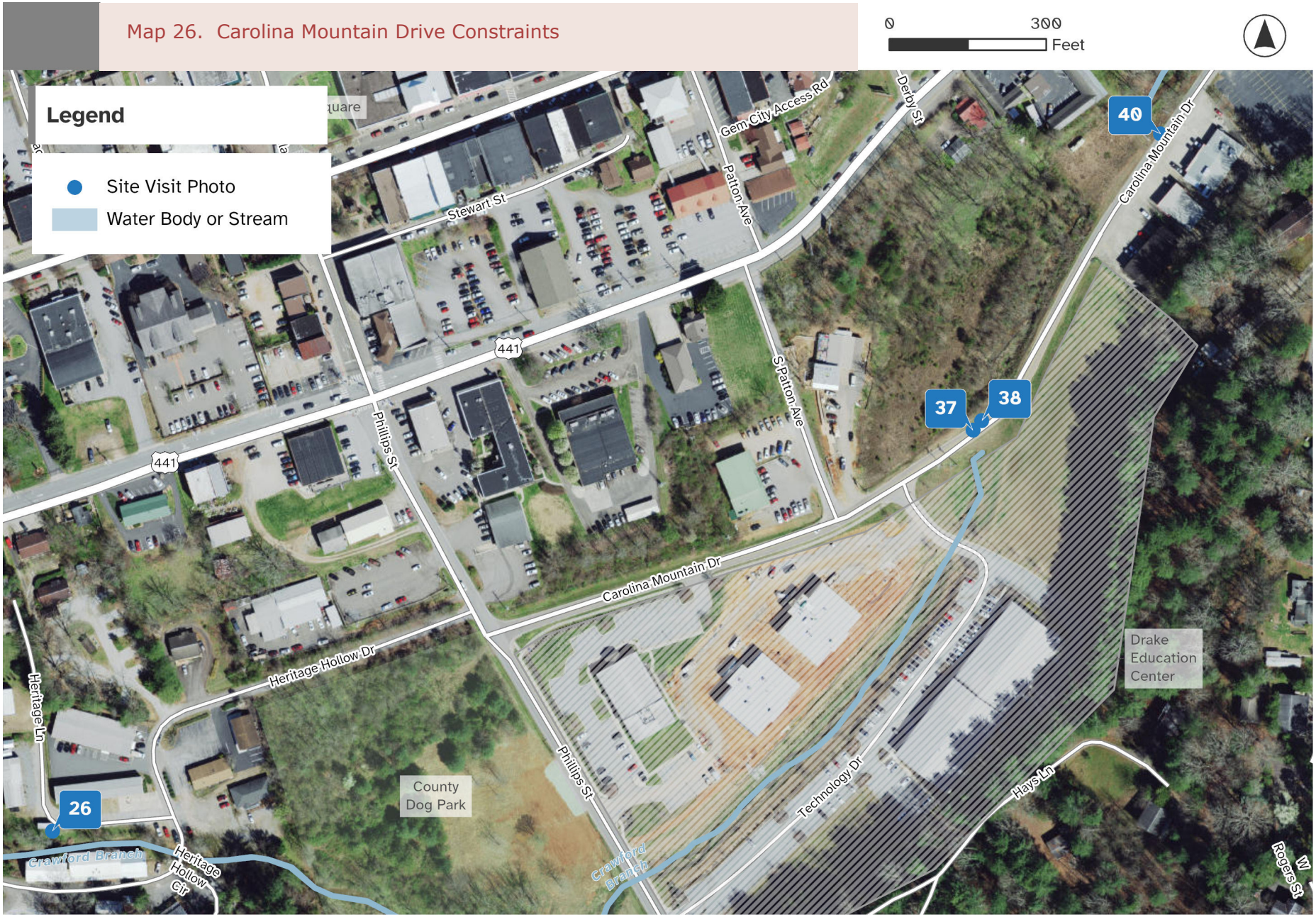
The sidewalk on Phillips Street could be an important connector to the dog park. A high visibility crossing would be needed on Phillips Street.

Existing pedestrian connections on private property could be widened for a greenway connection. A sidewalk along Crawford Branch exists behind buildings at Drake Education Center.

Open space exists near Crawford Branch at Technology Drive and Carolina Mountain Drive.

Previous enclosure of Crawford Branch could provide a crossing location for a trail.

Map 26. Carolina Mountain Drive Constraints



CONSTRAINTS

Crawford Branch is experiencing erosion and has incised banks in need of stabilization.*

Crawford Branch crosses under Carolina Mountain Drive. There is not much room on the south side of the road for a connection.

East Palmer Street sits at a higher elevation than the land on Carolina Mountain Drive, making a connection at this location challenging.

Crawford Branch and drainage facilities will be challenging features for integrating a trail on the north side of Carolina Mountain Drive.

Map 27. East Rogers Street & Northeast East Main Street Opportunities

OPPORTUNITIES

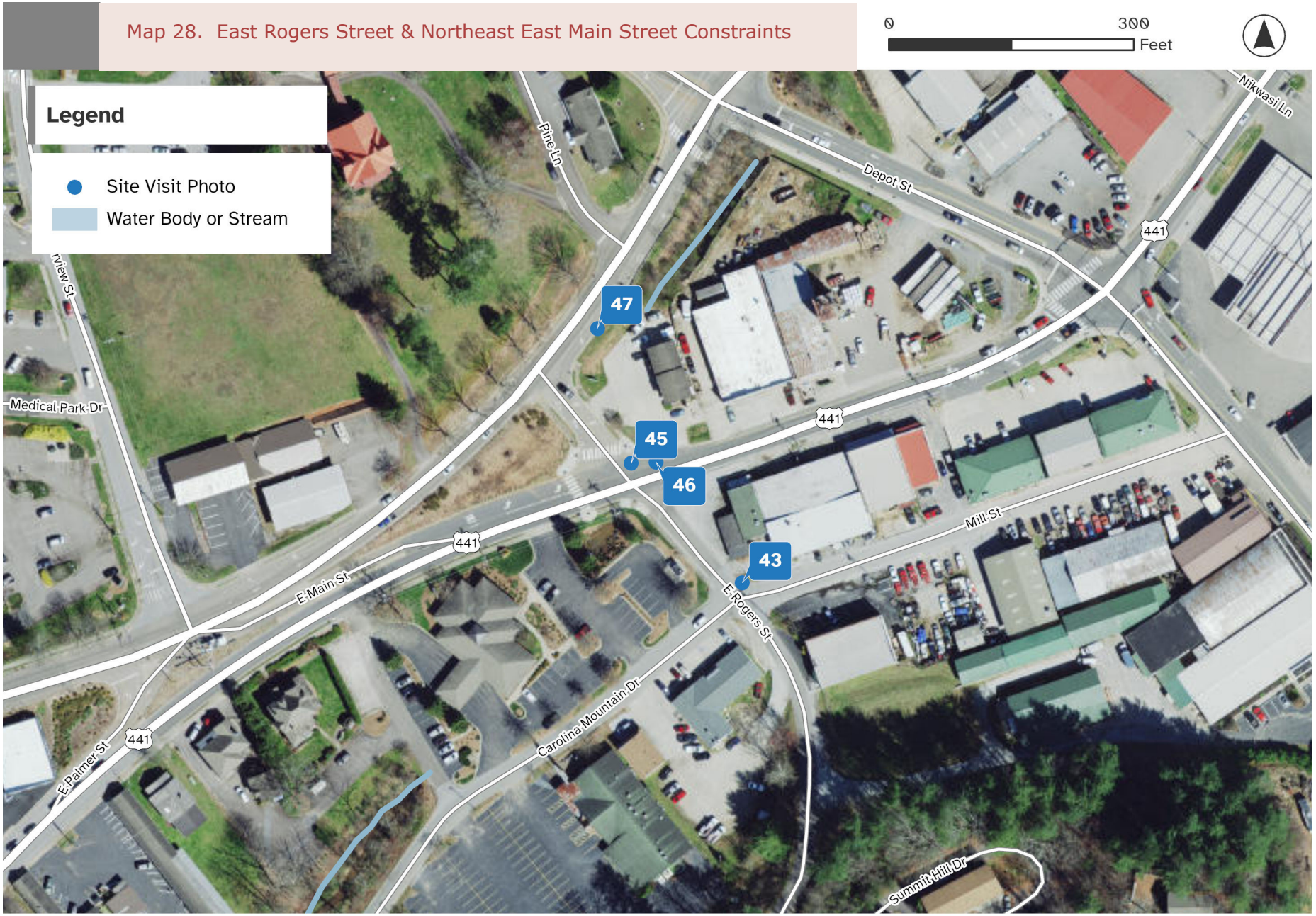
Carolina Mountain Drive could be reconfigured to provide for a trail connection along the low speed, low volume road.

East Rogers Street at East Main could be re-designed to make a crossing easier (e.g., decreasing turning radii).

The trail will need to negotiate crossing of Northeast and East Main Street. The signalized intersections are an opportunity for a controlled crossing.

Northeast Main Street has sidewalk that could be widened to create a trail connection.

Map 28. East Rogers Street & Northeast East Main Street Constraints



CONSTRAINTS

Mill Street has numerous businesses with pull in parking directly off the street creating a constraint to a multiuse trail.

East Rogers Street is constrained on the east side with a wall and bank facilities. The west side has back out parking spaces and open frontage.

East Main Street has merging traffic configuration that makes crossing, even at crosswalks, uncomfortable for a pedestrian.

Northeast Main Street is constrained by buildings on the north and Crawford Branch on the south.

Map 29. Nikwasi Area Constraints

OPPORTUNITIES

Northeast Main Street has a sidewalk on the north side and no sidewalk on the south side. A boardwalk adjacent to the sidewalk could serve as both a transportation corridor and a viewing platform for the wetland north of Northeast Main Street.

Views into the wetland are possible from the sidewalk with select tree trimming.

Nikwasi Lane, a low volume street, could provide an important access for the multiuse trail.

Future trail connections will make access to the Nikwasi Mound more accessible by foot and by bike.

Map 30. Big Bear Park & Northeast East Main Street Constraints

CONSTRAINTS

East Main Street currently has little pedestrian or bicycle infrastructure.

Currently to access the Little Tennessee River greenway, users must make a wide circle and go under the vehicle bridge on Big Bear Lane.

A connection across Northeast Main Street will be an important link between the town park and the trailhead for the Little Tennessee River Greenway.

Crawford Branch wetlands at Big Bear Park.

Map 31. Northeast/East Main Street & Little Tennessee River Greenway Opportunities

OPPORTUNITIES

This open land is planned for a future town park and sculpture. Pedestrian access will be important.

The trail will connect to the existing greenway and the pedestrian facilities on the East Main Street bridge.

ALTERNATIVES DEVELOPMENT

Design Parameters

Design parameters serve as a set of essential guidelines that steer the Crawford Branch Greenway project toward outcomes aligned with community goals. Informed by input from the project team and steering committee, the project aims to achieve the following objectives:

- **Pedestrian- and Bicycle-Centered Design:** The greenway will prioritize the needs of walkers and cyclists by incorporating wide pathways, clear separation from motor vehicle traffic, and appropriate signage and pavement markings to ensure safety and ease of navigation.
- **Traffic Separation:** Physical separation from vehicular traffic will be a key design element, employing barriers, buffers, or other infrastructure to create a safe and protected environment for greenway users, reducing the risk of accidents or conflicts with vehicles.
- **Universal Accessibility:** The greenway will be designed to support people of all ages and abilities, featuring gentle slopes, smooth surfaces, and amenities like seating, restrooms, and water fountains spaced at convenient intervals.
- **Flood Resilience:** Given the area's susceptibility to flooding, the greenway design will incorporate flood-resistant measures such as elevated pathways, effective drainage systems, and durable materials. These features will help maintain the greenway's usability and facilitate rapid recovery after flood events.
- **Compliance with Standards:** The greenway will adhere to national guidelines and best practices for design, construction, and accessibility, ensuring the development of a high-quality facility that meets or exceeds regulatory requirements.
- **Minimizing Property Impact:** The project will focus on minimizing the impact on private properties while maximizing the use of public land. This will require careful planning, collaboration with property owners, and innovative design solutions to mitigate any potential adverse effects.
- **Phased Implementation:** The greenway's development will be planned in phases, allowing flexibility in project delivery based on resource availability, funding, and shifting priorities, while maintaining continuity throughout the process.

To ensure the Crawford Branch Greenway is continuous and well-connected, it must cross several roadways. While grade-separated crossings are ideal, they are not always feasible. At-grade crossings will be necessary to maintain a seamless greenway experience, even at points where the greenway intersects with vehicular traffic. These crossings will be designed for high visibility, with potential additional treatments such as advanced warning signage, signals, and pavement markings based on specific site conditions. Chapter 4 and the Appendix provide detailed design resources for these crossing considerations.

Segment Alternatives

All possible routes were explored to provide a connection from Memorial Park to the Little Tennesse River Greenway. These routes are summarized in Table 1 – Preliminary Segment Alternatives with more detailed and a preferred alignment provided in Chapters 4 and 5.

Table 1. Preliminary Segment Investigations

ID	Alignment Description	Road Crossings	Length in Linear Feet	Factors that Effect Project Cost and Feasiblity	Challenges/Constraints Notes
A	Begins at Memorial Park, crosses West Palmer Street to the town-owned property, then proceeds through various commercial areas, crosses Crawford Branch with a new bridge at Heritage Hollow Drive and traverses county-owned land, continues across Drake Education Center to end at Carolina Mountain Drive.	4	~4,330 LF	Pedestrian bridge and high visibility crossings needed	Heritage Hollow Drive shared street is lower quality user experience; Porter Street is constrained where sidepath needed; some loss of parking is anticipated for commercial properties
A1	This route would remain along West Palmer Street before crossing the road at the intersection of West Palmer and Maple Street.	4	~4,330 LF	Repair of stormwater infrastructure	Buy-in needed from businesses whose parking would be affected; stormwater infrastructure in this area needs repair
A2	This alignment would follow in front of the Ingles parking lot to Palmer Steet Circle instead of routing behind Ingles shopping center.	4	~4,115 LF	Repair of stormwater infrastructure	Requires re-configuration of Ingles frontage and possible driveway consolidation; stormwater infrastructure in this area needs repair
A3	This route would follow the main Alternative A until Porter Street crossing where it would follow the north side of Crawford Branch instead of the south side. This short section would be an off-road greenway.	4	~4,119 LF	Possible retaining wall	Requires easement on private property that is not currently available
A4	This route would follow the same route at the main Alternative A, but would not cross to the north side of Crawford Branch, but stay on the south side along county-owned property before crossing Phillips Street to the Drake campus.	4	~4,487 LF	Invasive plant removal; short sidepath along Phillips Street	This parcel may be part of the future school expansion which will need consideration

Table 1. Preliminary Segment Investigations (Continued)

ID	Alignment Description	Road Crossings	Length in Linear Feet	Factors that Effect Project Cost and Feasiblity	Challenges/Constraints Notes
B	Begins at Memorial Park and continues along West Palmer Street as a sidepath. A high visibility mid-block crossing on East Palmer Street to an off-road greenway that parallels Heritage Lane. From there, it connects to the Macon County Dog Park and continues through the Drake Education Center.	4	~3,975 LF	High visibility mid-block crossing; Repair of stormwater infrastructure	Multiple commercial driveways would need to be re-configured, steep grade between Palmer Street and Crawford Branch
B1	This alternative follows Porter Street as a sidepath and uses Heritage Hollow Drive as a shared street. Includes a bridge over Crawford Branch.	4	~4,132 LF	Pedestrian bridge; high visibility mid-block crossing	Requires parking lot re-configuration; requires new pedestrian bridge; shared street is a lower quality user experience
B2	At Memorial Park, continues as a shared street on West Main Street then becomes an off-road greenway between West Main and East Palmer (at the Lazy Hiker Brewery). This route connects with the main Alternative B route at the crossing on East Palmer Street.	2	~4,539 LF	Possible retaining walls because of slopes	Steep slopes may require retaining walls and switchback design; West Main Street shared street is lower quality user experience
B3	Shared street on West Main Street to the undeveloped land at Porter Street between West Main and West Palmer Streets. It would connect to the main Alternative B route at the intersection of Porter Street and West Palmer Street.	3	~4,383 LF	Possible retaining walls because of slopes	Requires develop buy-in to create a quality trail between West Main Street and West Palmer Street
B4	This alternative diverts south of Crawford Branch at a new bridge at Heritage Hollow Drive. then follows county land on the opposite side of the creek from the dog park.	3	~4,179 LF	Pedestrian bridge; Invasive plant removal; short sidepath along Phillips Street	This parcel may be part of the future school expansion which will need consideration; would require a pedestrian bridge over Crawford Branch

Table 1. Preliminary Segment Investigations (Continued)

ID	Alignment Description	Road Crossings	Length in Linear Feet	Factors that Effect Project Cost and Feasiblity	Challenges/Constraints Notes
C	Begins at Drake Education Center and follows a sewer easement to a sidepath along East Main Street.; crosses on Rogers Street. to Northeast Main Street heads to County wetland park as a sidepath with a portion of boardwalk adjacent to the wetland.	4	~3,168 LF	Section of boardwalk	Requires a lane reduction on Northeast Main Street; requires roadway crossings at Depot Street, Northeast Main and East Main Street
C1	This route would begin at Drake Education Center and cross Crawford Branch and follow the south side of Carolina Mountain Drive as a sidepath before crossing the street to follow the north side of Crawford Branch to the United Community Credit Union.	4	~3,169 LF		Less direct route and requires re-configuration of parking along Carolina Mountain Drive just east of Drake Education Center
C2	Alternative C2 would follow Carolina Mountain Drive as a shared street between the Drake property and East Rogers Steet where it head north to cross US 441.	4	~3,108	Lower cost due to shared street	Shared street is a lower quality trail connection; Transitions from off-road to a shared street may be challenging
D	Begins at Drake Education and follows Carolina Mountain Drive as a sidepath requiring reconfiguring private parking. Then follows as an off-road greenway behind businesses to cross Depot Street and continues as greenway parallel to the river.	2	~3,308	Possible retaining walls; high visibility crossing; off-road greenway along river	Requires parking lot re-configuration along Carolina Mountain Drive
D1	This route would exit Drake Education Center campus and follow cross Carolina Mountain Drive to follow undeveloped land north of Crawford Branch. From the Credit Union parking lot, this alignment turns south to connect with the main alternative D route.	4	~3,818	Lower cost due to use of vehicle bridge	Less direct route; requires re-configuration of credit union parking

Table 1. Preliminary Segment Investigations (Continued)

ID	Alignment Description	Road Crossings	Length in Linear Feet	Factors that Effect Project Cost and Feasiblity	Challenges/Constraints Notes
D2	This route follows the main Alternative D route until Depot Street. Instead of a sidepath along Depot Street, this alternative would go through Depot Industrial Park to connect to the Little Tennessee River. From there a greenway trail along the river would connect to the existing trail.	2	~3,309	Longer off road section along river	Requires circulation modifications to the Industrial Park access
D3	This alternative follows the main Alternative D route until Depot Street. From there it would continue north along Depot Street to East Main Street. It would run east on the south side of East Main Street as a sidepath until connecting to the existing greenway through the land owned by Mainspring Conservation Trust.	2	~3,708	Possible retaining walls to get to river	Less direct route; requires re-configuration of parking lots and access driveways on Depot and Main Streets
D4	This route would follow a similar route as D3, but continue along East Main Street to the Women's History Park and connect with the existing greenway and bridge over the Little Tennessee River.	2	~3,688		Lower quality user-experience along busy roads and requires re-configuration of parking lots and driveways
D5	This alternative would follow a similar alignment as D3 but continue north on Depot Street to cross East Main Street and Northeast Main Street and continue as a sidepath with a boardwalk along the street to Big Bear Park.	4	~4,145	Section of boardwalk; improved crossings	Requires crossing East Main Street and Northeast Main Street; longer route with more road crossings

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03 Community Engagement

Image Source: Visit Smokies

OVERVIEW

Community participation provides insights into local observations, concerns, and aspirations, enriching project design and guiding decision-making. Engagement opportunities also enable the project team to convey project goals, set realistic expectations, and share outcomes. This section outlines the community engagement efforts for the Crawford Branch Greenway project and summarizes feedback from stakeholders—including residents, property owners in the study area, and local nonprofit organizations—that have contributed to shaping the Crawford Branch Greenway feasibility study.

COMMUNITY ENGAGEMENT PLAN

At the start of the feasibility study, the project team created a Community Engagement Plan to guide outreach efforts and ensure equitable public involvement as the project evolved. This adaptable document was designed to:

- Review past community engagement and planning efforts.
- Assess public interest in the planning process and identify opportunities for stakeholder participation.
- Highlight community priorities for multimodal connections.
- Develop strategies for segmenting and prioritizing project elements for future investment and implementation.

SUMMARY OF PROJECT MEETINGS

Kickoff Meeting

The project kickoff meeting was held virtually on August 8, 2023, to discuss key tasks, milestones, and goals. During the meeting, the team introduced a ConceptBoard map where participants could add comments highlighting points of interest and challenges within the study area. The team discussed initial routing options, key connections, and identified challenges and opportunities. These discussions were essential in shaping the development of greenway alignment alternatives.

KEY FINDINGS:

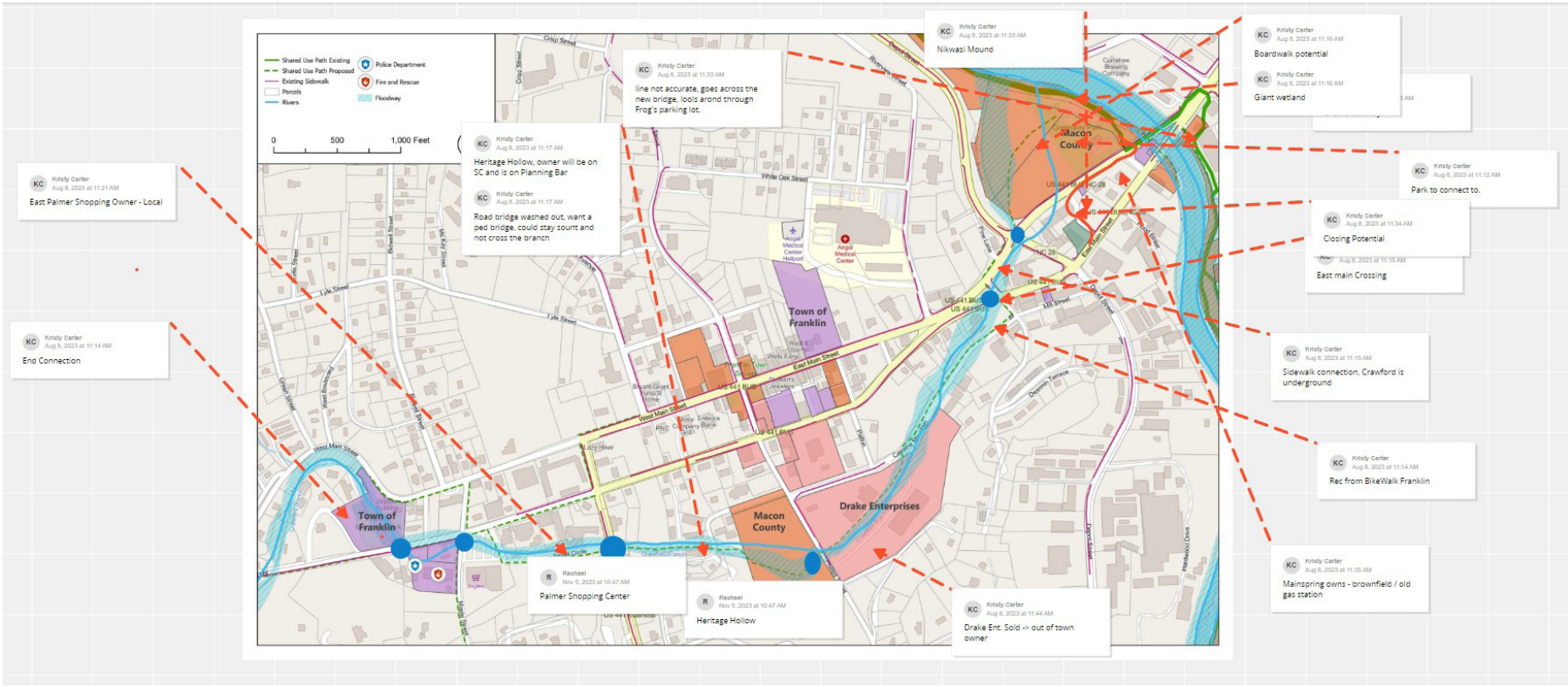
- There are five (5) potential NCDOT road crossings along the corridor and two (2) Town street crossings.
- The Eastern Band of Cherokee Indians (EBCI) plans to build a cultural center and expand green space near the Nikwasi Mound.
- A boardwalk through the wetland on the County-owned

Figure 19. Crawford Branch Greenway Engagement by the Numbers

parkland adjacent to NE Main Street and Depot Street has been discussed by Town Council members as an attractive feature for the greenway. However, due to permitting hurdles, cost, and challenge of getting equipment into the wetland, other alignments should also be explored for feasibility.

- Potential stakeholders were identified and include:
  - Drake Enterprises (which has switched ownership)
  - Heritage Hollow
  - East Palmer Shopping Center
  - Private landowners – small lots between the County property and Maple Street
  - Macon County – dog park property
  - Duke Energy
- The project team will request threatened and endangered species data for Crawford Branch.

Image 17. ConceptBoard Interactive Map Screenshot



STEERING COMMITTEE

The Steering Committee consisted of key staff from local agencies, including the Town of Franklin, the Southwestern RPO Commission, and NCDOT's Integrated Mobility Division. Over the course of three meetings, the committee provided guidance by reviewing data, evaluating community engagement efforts, assessing alternative route proposals, and discussing implementation plans for the greenway project.

MEMBERS

- Justin Setser, *Town of Franklin*
- Darcy Downs, *NCDOT Integrated Mobility Division*
- Rita St. Claire, *Friends of the Greenway*
- Stacy Guffey, *Franklin Town Council*
- Ben Laseter, *Mainspring Conservation Trust*
- Rose Bauguess, *Southwestern Commission Council of Governments*
- J. Mitchell Bishop, *NCDOT Division 14 (formerly)*
- Andy Russell, *NCDOT Division 14*
- Steve Williams, *NCDOT Division 14*

> *"Continue to recognize differing use (family meeting places, tables, shade) in addition to movement along greenway. Assure accessibility in features for wheelchair users."*
>
> *- Survey Respondent*

Steering Committee #1

This virtual meeting was held on November 27, 2023. The purpose of the meeting was for the project team to introduce the project to the Steering Committee with an overview, and to share demographic research, initial mapping, and field observations. The team mentioned that the Crawford Branch Greenway was documented in the 2017 *BikeWalk Franklin* plan and would connect not just the two parks but also employment centers, grocery stores, downtown, the police department, and Franklin Fire & Rescue. Constraints were discussed, including the flood prone nature of working alongside waterways and steep topography in the study area.

Steering Committee #2

This virtual meeting was held on February 16, 2024. The team provided a summary of stakeholder engagement activities, highlighting input received from various community members and organizations. Alignment maps were then reviewed to discuss potential routes for the greenway, followed by a discussion on the criteria used to evaluate these alignments, such as safety, connectivity, and feasibility. Finally, the committee outlined a public engagement plan to ensure continued community involvement and feedback throughout the study process.

Steering Committee #3

This virtual meeting was held on July 24, 2024. The meeting began with a summary of feedback from community members (from the online survey and one-on-one conversations) and from property owners from an in-person meeting, each of which provided valuable insights into local needs and concerns. The team then presented revised alignment maps that incorporated this feedback, highlighting potential changes to the proposed routes. A discussion followed on the alignment criteria used to evaluate these routes, ensuring they meet safety, accessibility, and connectivity goals. The meeting concluded with an overview of next steps, outlining actions needed to move the project forward.

Stakeholder Meeting #1

This meeting was held with a representative from National Communications on December 12, 2023, regarding potential impacts of routing the Crawford Branch Greenway through private property and alternatives along Porter Street and Palmer Street. The meeting focused on plans to develop a parking lot on the Porter Street property, which will accommodate commercial and construction vehicles. The representative expressed liability concerns and a greater worry about potential trespassing or misuse if the property were to become a public trail. The team agreed to include the route alternative in the report, though it may be infeasible due to current property use and ownership unless circumstances change in the future.

Stakeholder Meeting #2

A representative from Drake Enterprises met with the project team on December 19, 2023, to discuss the proposed multiuse trail. The representative expressed interest in the project and indicated that the property's investors, who are community-minded, would likely be supportive. The existing sidewalk was intended as a public connection, and there is an understanding that it would need to be widened for greenway use. The representative also noted that the site's elevation during development may mean current flood maps are inaccurate. While there are no current expansion plans, there is potential for selling the vacant parcel to the east. The representative expressed interest in reviewing any visuals that illustrate the character of the trail.

Stakeholder Meeting #3

A representative from Palmer Street Mall met with the project team on December 19, 2023, to discuss the recent sale of the parcel containing the commercial buildings to USDF LLC. The property has a Right-of-Way agreement involving Palmer Street Mall, USDF LLC, and Community First Bank, allowing one-way access from Porter Street to the Ingles parking lot; however, it currently functions as a two-way thoroughfare serving mall visitors and other nearby uses. Key concerns raised include potential trespassing, parking limitations, and maintenance of the right-of-way pavement, especially if reconfigured to accommodate a paved trail. Parking for the mall consists of 30 spaces near the mall and additional shared spaces, including agreements for nighttime use. USDF LLC may oppose losing any parking for the trail.

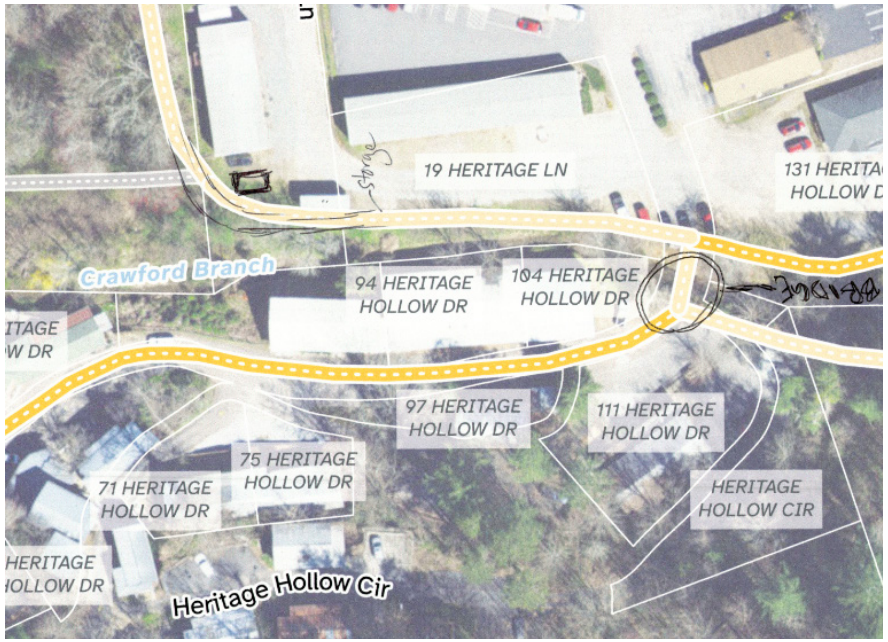
Image 18. Steering Committee Meeting

Source: TPD

Property Owner Meeting

An in-person meeting was held on March 21, 2024, at Franklin Town Hall, specifically for property owners near one of the potential greenway alignment segments. The meeting aimed to provide accurate information to those directly affected and to offer an opportunity for property owners to discuss the project with the consultant team and Town staff. During the meeting, maps displayed possible routing options, highlighting potential impacts on adjacent properties and opportunities for collaboration. This transparent approach allowed property owners to voice concerns, ask questions, and provide feedback on the proposed alignments. To ensure maximum participation, letters were mailed to the property owners a month earlier informing them about the project and inviting them to attend the meeting. Fifty-seven mailers were sent out and about a dozen people attended the meeting. Generally, attendees had some willingness for the greenway and helped provide suggested changes to the alternative alignments. No firm objections were raised by those in attendance.

Image 19. Map Notes from Property Owner Meeting



Source: TPD

Image 20. Property Owner Meeting

Source: TPD

ONLINE SURVEY

The project team conducted an online survey to gather public opinions on three potential route options for the greenway and general feedback on its use, concerns, and suggestions. The survey was open for just over 30 days in April and May 2024. This approach is valuable in informing the final route selection and recommendations for several reasons. First, direct community engagement helps ensure that the selected route aligns with public preferences. Second, understanding public perceptions of greenway usage provides insights into potential demand and usage patterns. Additionally, using an online survey allows for a broader and more diverse range of input, ensuring that the final design and development decisions reflect the perspectives of various stakeholders.

Survey Results

A total of 517 people visited the survey webpage to learn more about the greenway project, with 59 participants completing the survey and providing 85 comments. The survey results indicate that most people in Franklin currently use greenways primarily for recreational purposes. Eighty-five percent of respondents use greenways for walking, hiking, or running, and 65% for enjoying nature and relaxation. Meanwhile, 40% reported riding their bicycles on greenways, and around a third use them for dog-walking (38%) or birdwatching (35%). Only 4% said they use the greenway for commuting.

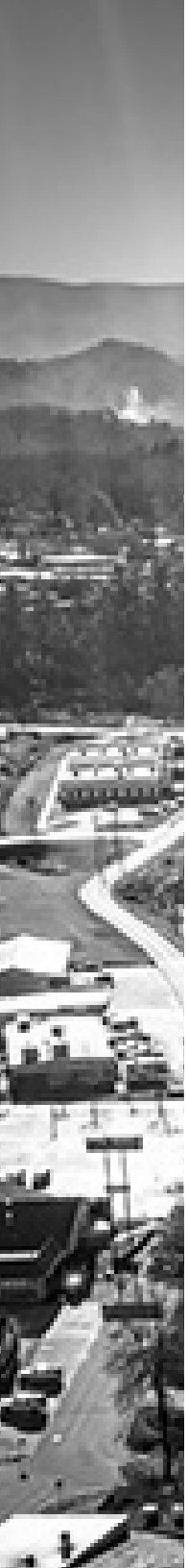
When asked about their potential use of the Crawford Branch Greenway once it is constructed, responses largely aligned with current greenway usage patterns in Franklin. However, there were notable increases in interest for commuting (20%, up from 4%) and bicycling (50%, up from 40%). This shift may be attributed to the fact that the existing greenway network is primarily along the Little Tennessee River and lacks direct connections to key destinations. In contrast, the Crawford Branch Greenway would run through the town center, providing a new route for biking and walking to work, school, shops, dining areas, grocery stores, and other local amenities. This central location would make the Crawford Branch Greenway a practical choice for daily commuting and errands, beyond its value for recreational activities.

Survey respondents largely envision the greenway as a recreational trail and suggested features like fitness stations, community gardens, and even a mobile snack vendor such as a golf cart. They emphasized the importance of keeping the trail clean and well-maintained, with amenities for emergency response and regular law enforcement patrols, potentially including a bicycle police unit. Many respondents emphasized the importance of linking the greenway to the existing pedestrian network and ensuring easy access to downtown, with clear signage to help users navigate. The need for the trail to be paved, wide, and accessible was a recurring theme throughout the feedback.

The increased interest in using the Crawford Branch Greenway for commuting and bicycling underscores its potential to serve as more than just a recreational space; it positions the greenway as a key component of Franklin's active transportation network. This dual function enhances its importance as both a transportation corridor and a recreational asset. Survey responses played a role in guiding the project team's decisions on preferred routes. Participants expressed a strong preference for connections to downtown businesses, minimal road crossings, and seamless access from the existing sidewalk network, highlighting the community's desire for a greenway that is both functional and convenient for everyday use.

Survey respondents are clear about the importance of having trailheads with parking and informative signs guiding users along the trail. People also indicate a desire for comfort on this greenway, with shade trees and benches seen as important amenities.

Figure 20. Survey Response Quotes



04 Evaluation & Recommendations

Image Source: Sanctuary Village

This chapter describes in detail the alternative routes, including the pros and cons and evaluation of each alternative. The alignment alternatives are divided between the western section of the proposed greenway and the eastern section. The western section begins at Memorial Park and ends at Carolina Mountain Drive past the Drake Education Center. Alternatives A and B and their sub-alternatives cover the western section. The eastern section begins at Carolina Mountain Drive and extends to the existing Little Tennessee River Greenway. Alternatives C and D and their sub-alternatives cover the eastern section.

WESTERN SECTION: ALTERNATIVE A

Route Description

Alternative A begins at Memorial Park where it exits the park near West Palmer Street and runs east to Commerce Street where it crosses West Palmer Street and enters onto property owned by the Town in front of the fire department. It crosses Maple Street with a high visibility mid-block crossing and continues through the Ingles property along Palmer Street Circle to Porter Street where parking and traffic circulation would need to be reconfigured to allow sufficient width for a trail. Crossing Porter Street (US 441) with a high visibility crossing, the trail would run south as a sidepath on Porter Street to Heritage Hollow Drive. The trail will continue as a shared street through Heritage Hollow (sharing travel lanes with low-speed traffic). A new pedestrian bridge (to replace the former Heritage Hollow vehicle bridge) would be constructed across Crawford Branch from the south side to the north side. On the north side of Crawford Branch, the greenway would connect with the Macon County Dog Park along an existing sewer easement. The route would cross Phillips Street with a high visibility crossing and traverse the Drake Enterprises campus along the alignment of the existing sidewalk, which would be widened to a minimum 10-foot-wide multiuse path along Crawford Branch.

Alternative A Pros

- Improves commercial parking lot circulation to allow for bicycle and pedestrian use while also creating potential landscaping and outdoor seating areas which, has the potential to improve businesses and increase business
- Makes use of existing dog county dog park property
- Potential to improve the health of the creek (by including stream bank restoration elements) while developing the trail
- High user experience especially through the county park and Drake campus

Alternative A Cons

- Frontage along Maple Street and behind the Ingles is constrained and will require additional engineering to ensure that Ingles delivery trucks can be adequately separated from trail use
- Delivery / loading areas and trash collection behind Ingles will require screening to create a better trail experience
- Parking lot reconfigurations and trail easements will require buy in from local businesses
- The section of the Porter Street sidepath is constrained and parking may be lost to provide a full width trail along this route
- The shared street alignment through Heritage Hollow is a lower quality trail experience than the north side of Crawford Branch
- A new pedestrian bridge to cross Crawford Branch will be needed

SUB-ALTERNATIVES

Exact alignments will need to be negotiated based on the willingness of private property owners to provide a trail easement through many commercial properties. The following sub-alternatives illustrate other ways to connect through commercial properties with the same goal in mind, to stay close to Crawford Branch.

Sub-Alternative A1

A1 would remain along West Palmer Street before crossing the road at Maple Street and cross Maple Street at a high visibility mid-block crossing into the Ingles parking lot.

Sub-Alternative A1 Pros

- This alternative overlaps with a section of West Palmer Street that has aging stormwater and culvert infrastructure where Crawford Branch runs under the roadway and parking lots - this may present an opportunity for creative grant and funding pursuits that will allow for the trail construction and culvert restoration
- This alternative crosses at an existing signalized intersection allowing better management of conflicts with vehicles
- Connects to existing commercial businesses on the north side of West Palmer Street

Sub-Alternative A1 Cons

- Parking lot reconfigurations and trail easements will require buy in from local businesses
- Unless a project can be funded to fix the aging stormwater and culvert infrastructure where Crawford Branch runs under the roadway, this alignment may be cost prohibitive

Sub-Alternative A2

From A1, this alignment would follow in front of the Ingles parking lot to Palmer Street Circle instead of routing behind the building.

Sub-Alternative A2 Pros

- This alternative may be more likely to gain support from Ingles than Alternative A that runs behind the site

Sub-Alternative A2 Cons

- Introduces a side path along West Palmer Street where vehicular turning movements conflict with path use
- Requires reconfiguration of Ingles frontage and possible driveway consolidation to reduce conflict points
- Unless a project can be funded to fix the aging stormwater and culvert infrastructure where Crawford Branch runs under the roadway, this alignment may be cost prohibitive
- Lower quality user experience adjacent to road and parking lots

Sub-Alternative A3

A3 route would follow the main Alternative A until Porter Street crossing where it would follow the north side of Crawford Branch instead of the south side. This short section would be an off-road greenway.

Sub-Alternative A3 Pros

- A higher user experience along the north side of Crawford Branch
- Options to include stream restoration work
- Reduced potential vehicle conflict points
- Reduced parking impacts to commercial development
- The grades/slopes for trail users are reduced and easier to navigate than Alternative A through Heritage Hollow

Sub-Alternative A3 Cons

- Requires easement on private property that is currently not available

Sub-Alternative A4

A4 would follow the same route at the main Alternative A, but would not cross to the north side of Crawford Branch at the end of Heritage Hollow Drive. Instead, it would stay on the south side of Crawford Branch on county-owned property before crossing Phillips Street to get to the Drake campus.

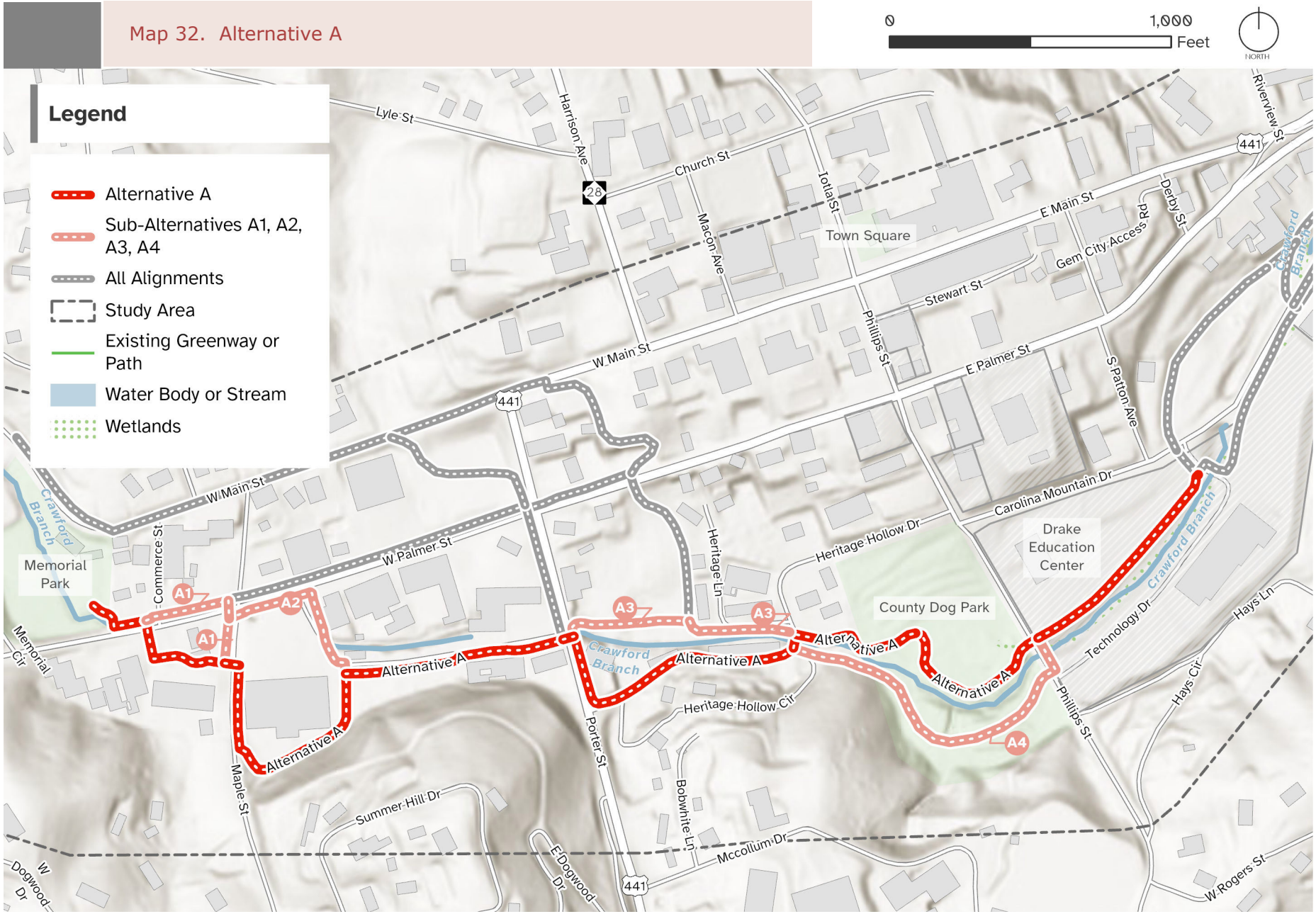
Sub-Alternative A4 Pros

- This alternative reduces impacts to commercial lots on the Heritage Hollow Drive section north of Crawford Branch
- Fewer conflicts with dog park uses

Sub-Alternative A4 Cons

- Requires removal of invasive plants on undeveloped tract
- This parcel may be part of a future school expansion which will need to be considered
- Does not connect to destinations north of Crawford Branch such as the dog park

Map 32. Alternative A



WESTERN SECTION: ALTERNATIVE B

Route Description

This alternative also begins in Memorial Park and exits the park near West Palmer Street and continues on the north side of Palmer as a sidepath. The route continues through the traffic signal at Porter Street to a high visibility mid-block crossing of West Palmer Street to head south as an off-road greenway that parallels Heritage Lane. From there, it connects to the Macon County Dog Park through an existing sewer easement, similar to Alternative A. After exiting the dog park, it crosses Phillips Street at a high visibility mid-block road crossing and then continues through the Drake Education Center campus along the alignment of the existing sidewalk that would be widened to a minimum 10-foot-wide multiuse path.

Alternative B Pros

- Improves commercial parking lots for bicycle and pedestrian use with the potential to increase visitors to local businesses
- Makes use of existing county park property
- Makes use of excess roadway width along West Palmer Street (west of Porter Street)
- Provides a more direct connection with more destinations served
- Potential to improve the health of the creek (by including stream bank restoration elements) while developing the trail
- High user experience especially through the county park and Drake campus
- Does not require a new pedestrian bridge

Alternative B Cons

- Multiple commercial driveways would need to be reconfigured to reduce vehicular conflicts with trail users.
- Multiple businesses would require parking reconfiguration as well and some possible parking loss.
- A steep grade exists between West Palmer Street and Crawford Branch and will require significant fill to build the trail up to East Palmer Street

Exact alignments will need to be negotiated based on the willingness of private property owners to provide a trail easement through many commercial properties. As such, various sub-alternatives were developed to provide options for investigation with property owners. The following sub-alternatives illustrate other routes with the same goal in mind.

Sub-Alternative B1

From alternative B at Porter Street, B1 turns south to cross West Palmer Street at Porter Street to continue as a sidepath along the west side of Porter Street. It then continues along the same path as Alternative A, crossing West Porter Street at a high visibility mid-block crossing and then continuing as a sidepath on the east side of Porter Street to Heritage Hollow Drive. The trail will continue as a shared street through Heritage Hollow (sharing travel lanes with low-speed traffic). A new pedestrian bridge (to replace the former Heritage

Hollow vehicle bridge) would be constructed across Crawford Branch from the south side to the north side. On the north side of Crawford Branch, the greenway would connect with Macon County Dog Park along an existing sewer easement. The route would cross Phillips Street with a high visibility crossing and traverse the Drake Enterprises campus along the alignment of the existing sidewalk that would be widened to a minimum 10-foot-wide multiuse path along Crawford Branch.

Sub-Alternative B1 Pros

- Provides a connection to the commercial businesses on Palmer Street and in Heritage Hollow Drive
- Improves commercial parking lot circulation to allow for bicycle and pedestrian use while also creating potential landscaping and outdoor seating areas. This has the potential to improve businesses and increase business

Sub-Alternative B1 Cons

- Requires a new pedestrian bridge over Crawford Branch
- Lower quality user experience adjacent to road and parking lots
- Parking lot reconfigurations and trail easements will require buy in from local businesses
- The section of the Porter Street sidepath is constrained and parking may be lost to provide a full width trail along this route
- The shared street alignment through Heritage Hollow is a lower quality trail experience than the north side of Crawford Branch
- A new pedestrian bridge to cross Crawford Branch will be needed

Sub-Alternative B2

Alternative B2 follows the same alignment as Alternative B except that instead of running as a sidepath on West Palmer Street, it runs along West Main Street, starting at the entrance to Memorial Park and continues east as a shared street with traffic calming and sidewalks. The route would then become an off-road greenway between West Main Street and East Palmer Street (at the Lazy Hiker Brewery). This route connects with the main Alternative B route at the East Palmer Street high visibility mid-block crossing.

Sub-Alternative B2 Pros

- Connects to residences and businesses along West Main Street
- Impacts fewer business than any other western section alternative
- Provides a connection to a popular restaurant/brewery

Sub-Alternative B2 Cons

- Steep slopes between West Main Street and East Palmer Street may require retaining walls and switchback trail design
- Shared street conditions provide a lower quality trail connectio

Sub-Alternative B3

Alternative B3 follows the same alignment as Alternative B1 from Memorial Park along West Main Street until it shifts south on undeveloped land at Porter Street between West Main and West Palmer Streets. It would connect to the main Alternative B route at West Palmer Street and Porter Street.

Sub-Alternative B3 Pros

- The undeveloped tract between West Main Street and West Palmer Street is more conducive to a trail connection than other parcels and could be developed as a trail friendly business

Sub-Alternative B3 Cons

- Requires developer buy-in to create a quality trail connection between West Main and West Palmer Streets

Sub-Alternative B4

Alternative B4 is the same as Alternative A4.

Sub-Alternative B4 Pros

- This alternative reduces impacts to commercial lots on the Heritage Hollow Drive section north of Crawford Branch
- Fewer conflicts with dog park uses

Sub-Alternative B4 Cons

- Requires removal of invasive plants on undeveloped tract
- This parcel may be part of a future school expansion which will need to be considered
- Would require a new pedestrian bridge to connect to Heritage Hollow Drive (south of Crawford Branch)

Map 33. Alternative B

EASTERN SECTION: ALTERNATIVE C

Route Description

Alternative C begins at the east end of the Drake Education Center campus and crosses Carolina Mountain Drive to follow undeveloped property north of Crawford Branch where follows a sewer easement to the United Community Credit Union. The credit union parking lot would need to be reconfigured for a trail connection. From that point, the alignment runs along East Main Street where the sidewalk would be widened to provide a 10-foot-wide multiuse sidepath to East Rogers Street. At East Rogers Street, Alternative C crosses US 441 at a high visibility crossing and heads north up East Rogers Street as sidepath, requiring driveway modifications. It then continues to the east to continue as a sidepath on the south side of Northeast Main Street. Crossing to the north side of Northeast Main Street at the signal with Depot Street, it then traverses to the south of the wetland (as partial boardwalk) before it connects to Big Bear Park and the Little Tennessee River Greenway.

Alternative C Pros

- It follows Crawford Branch to the extent feasible and provides views to the Big Bear Park wetland via boardwalk construction
- Provides bicycle and pedestrian connection to the Nikwasi Indian Mound site
- Provide connections to commercial destinations on East Main Street

Alternative C Cons

- Crossing US 441 is challenging due to site constraints and topography, this will require reconfiguration of the merging lane on EB US 441 to reduce conflict areas in the pedestrian crossing zone
- Would require a lane reduction and use of the left turn lane from Northeast Main Street onto East Rogers Steet to construct a greenway
- Requires reconfiguration of multiple commercial sites and driveways and reduce parking in some locations

Exact alignments will need to be negotiated based on the willingness of private property owners to provide a trail easement through many commercial properties. As such, two sub-alternatives were developed to provide options for investigation with property owners.

Sub-Alternative C1

This route would begin at Drake Education Center and cross Crawford Branch and follow the south side of Carolina Mountain Drive as a sidepath before crossing the street to follow the north side of Crawford Branch to the United Community Credit Union.

Sub-Alternative C1 Pros

- Stays on Drake campus along Carolina Mountain Drive

Sub-Alternative C1 Cons

- Requires a pedestrian bridge over Crawford Branch, or reconfiguration of parking at the apartment complex just east of the Drake property

Sub-Alternative C2

Alternative C2 would follow Carolina Mountain Drive as a shared street between the Drake property and East Rogers Street where it head north to cross US 441.

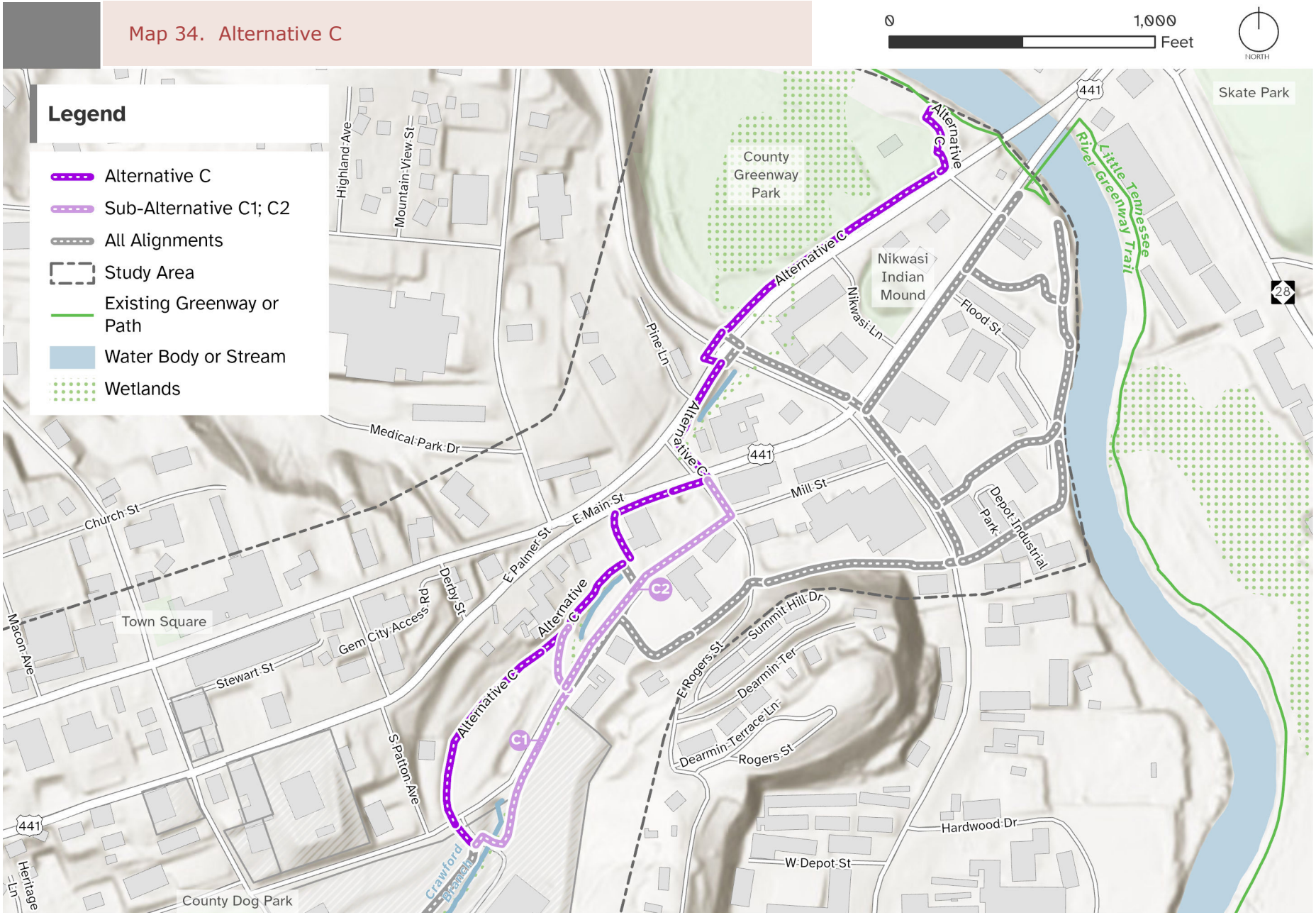
Sub-Alternative C2 Pros

- Requires fewer private property approvals
- Connects to commercial destinations

Sub-Alternative C2 Cons

- Shared street conditions provide a lower quality trail connection
- Challenging transitions from an off road trail on the Drake property to a shared street condition will require additional design and careful consideration

Map 34. Alternative C



EASTERN SECTION: ALTERNATIVE D

Route Description

Alternative D begins at the east end of the Drake Education Center campus and continues as a sidepath along the south side of Carolina Mountain Drive, requiring parking lot reconfigurations. It would then run south through the Japanese Steakhouse parking lot which will require outreach and easements to reconfigure parking to create space for a greenway. It would then turn east and run along the south edge of the parking lot where it would begin to ramp up behind multiple business in order to meet East Rogers Street at the same grade as the rear access to the Macon Furniture Mart. This route would require an easement through the Macon Furniture Mart to get to a high visibility mid-block crossing at Depot Street. From there it would continue north along the east side of Depot Street as a sidepath, requiring parking lot configurations. The route then heads east adjacent to Graff's Tavern and between light industrial uses to the Little Tennessee River where it heads north and connects to the Mainspring Conservation Trust property and connects with the existing paved trail that leads under Big Bear Lane bridge to Big Bear Park and the existing Little Tennessee River Greenway.

Alternative D Pros

- This route follows the Little Tennessee River to connect to the Mainspring Conservation site, introducing new river access and views
- More direct route to river and the existing greenway
- Fewer roadway crossings than all other alternatives
- Has the potential to improve commercial parking lot circulation to allow for bicycle and pedestrian use while also creating potential landscaping and outdoor seating areas. This has the potential to improve businesses and increase business

Alternative D Cons

- Requires mid-block road crossing of Depot Street in an area with sight line limitations, additional safety countermeasures will need to be implemented
- Parking lot reconfigurations along Carolina Mountain Drive and Depot Street and trail easements will require buy in from local businesses
- Lower quality user experience adjacent to road and parking lots

Exact alignments will need to be negotiated based on the willingness of private property owners to provide a trail easement through many commercial properties. As such, various sub-alternatives were developed to provide options for investigation with property owners. The following sub-alternatives illustrate other ways to connect through commercial properties with the same goal in mind.

Sub-Alternative D1

This route would exit Drake Education Center campus and follow Alternative C and cross Carolina Mountain Drive to follow undeveloped land north of Crawford Branch. From the United Community Credit Union parking lot, this alignment turns south to connect with the main alternative D route.

Sub-Alternative D1 Pros

- Avoids reconfiguration of parking lots and access for businesses and apartments on the south side of Carolina Mountain Drive

Sub-Alternative D1 Cons

- Less direct route requiring re-configuration of credit union parking
- Requires two additional roadway crossings, as compared to Alternative D

Sub-Alternative D2

This route follows the main Alternative D route until Depot Street. Instead of a sidepath along Depot, this alternative would go through Depot Industrial Park to connect to the Little Tennessee River. From there a greenway trail along the river would connect to the existing trail.

Sub-Alternative D2 Pros

- More direct route to the Little Tennessee River
- Does not require a sidepath along Depot Street

Sub-Alternative D2 Cons

- Would require circulation modifications to the Industrial Park access which is already constrained for current businesses

Sub-Alternative D3

This alternative follows the main Alternative D route until Depot Street. From there it would continue north along Depot Street to East Main Street. It would run east on the south side of East Main Street as a sidepath until connecting to the existing greenway through the land owned by Mainspring Conservation Trust.

Sub-Alternative D3 Pros

- Provides needed pedestrian connections for transportation use
- Connects with bus stop
- Connects to businesses along East Main Street

Sub-Alternative D3 Cons

- Lower quality user experience adjacent to busier road with driveway conflicts
- Requires re-configuration of parking lots / access drives

Sub-Alternative D4

This route would follow a similar route as D3, but continue along East Main Street to the Women's History Park and connect with the existing greenway and bridge over the Little Tennessee River.

Sub-Alternative D4 Pros

- Provides needed pedestrian connections for transportation use
- Connects with bus stop
- Connects to businesses along East Main Street
- Direct connection to the bridge side path over the river along Big Bear Lane

Sub-Alternative D4 Cons

- Lower quality user experience adjacent to busier road with driveway conflicts
- Requires re-configuration of parking lots / access drives

Sub-Alternative D5

This alternative would follow a similar alignment as D3 but continue north on Depot Street to cross East Main Street and Northeast Main Street and continue as a sidepath with a boardwalk along the street to Big Bear Park.

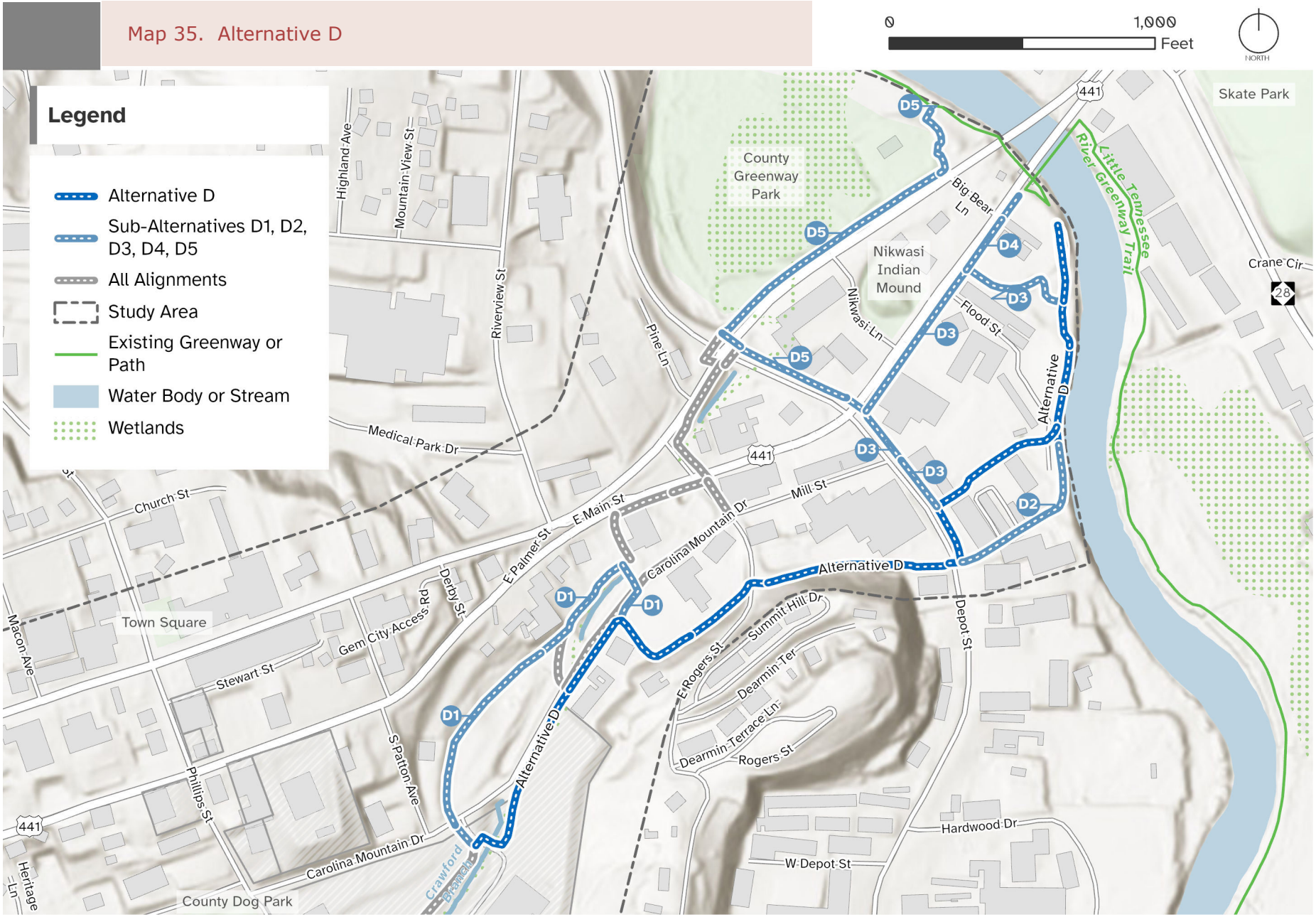
Sub-Alternative D5 Pros

- Trail users can get views of the wetland in Big Bear Park

Sub-Alternative D5 Cons

- Lower quality user experience adjacent to busier road with driveway conflicts
- Requires re-configuration of parking lots / access drives
- Requires crossing both East Main Street and Northeast Main Street

Map 35. Alternative D



EVALUATION CRITERIA

To identify the preferred alignments for the greenway connection, the project team first examined all potential segments that could form the route. A prioritization strategy was then developed to guide the selection process. This strategy relied on evaluation criteria that assigned a value to each potential alignment. The criteria used to evaluate the Crawford Branch Greenway alignments are detailed in Table 2 - Evaluation Criteria.

DECISION MATRIX & SCORING

The project team developed a systematic scoring methodology to assist in identifying preferred alignments that will contribute to the overall goals of the project and to meet stated evaluation criteria. Based on a comparison of alternatives, the four primary alternatives (and their respective sub alternatives) were assigned a ranking based on how it meets the criteria:

1 – Below Average

2 – Average

3 – Above Average

4 - Highest

The outcome of this scoring is illustrated in Table 2 - Evaluation Criteria Scoring. After the ranking was completed, the alignments were presented to the committee and stakeholders. After this feedback was gathered, the highest ranked alignments were studied for cost estimating purposes.

RECOMMENDATIONS

Table 2 - Evaluation Criteria Scoring indicates Alternative A in the western half and Alternative C in the eastern half of the study area as the most promising for implementing the Crawford Branch Greenway. These route alternatives earned a ranking of 40 and 37 respectively by achieving higher scores on the evaluation criteria. Both alignments balance a high-quality user experience with feasibility, while aligning with community goals.

Both routes will require further property owner outreach outlined in Chapter 5. During the planning process, an initial round of property owner outreach was conducted and provided a general understanding of willingness to accommodate a greenway trail. Some routes scored lower based on initial outreach. Alternatives A and C include land owned by the Town of Franklin, Macon County, NCDOT right-of-way and Drake Enterprises, all of which have expressed a willingness to accommodate a greenway trail. However, further outreach will be needed for these alternatives to determine if all of the commercial and private landowners will be willing to provide a trail easement.

Chapter 5 outlines a strategy to facilitate further property owner outreach and other implementation steps needed to realize the Crawford Branch Greenway.

Table 2. Evaluation Criteria

CRAWFORD BRANCH GREENWAY EVALUATION CRITERIA	
	DIRECTNESS OF CONNECTION Based on comparison of alternatives, how direct is this route for users to access Memorial Park, downtown, and the existing Little Tennessee River Greenway?
	ABILITY TO ACQUIRE ENVIRONMENTAL PERMITS Based on known natural and human environmental impacts (e.g. flood zones), how likely is it that this option can be permitted?
	QUALITY OF USER EXPERIENCE What level of user experience does this route alternative offer in terms of visual surroundings, separation from hazards, personal safety, and connection to nature and topography (including accessible grades)?
	AVAILABILITY OF RIGHT-OF-WAY/ANTICIPATED PROPERTY OWNER COOPERATION To what degree is right of way available or held by cooperative property owners?
	SECONDARY BENEFITS Beyond the primary project goal, how well does this project provide opportunity for secondary benefits such as access to under-served populations (equity), economic development, connections to community resources, sense of place, etc.?
	SEPARATION FROM MOTORIZED TRAFFIC CONFLICTS How well does this alternative separate users from motorized traffic conflicts to provide higher levels of comfort and to limit traffic impacts?
	ABILITY TO CONSTRUCT Based on an investigation of physical obstacles and constraints (e.g. roads, utilities, topography, buildings, waterways, etc.), how likely is it that this alternative can be built?
	ALIGNMENT WITH COMMUNITY GOALS Based on community leadership, public feedback, adopted planning efforts and stated local goals and objectives, what is the anticipated level of community support for this alternative?

Table 2. Evaluation Criteria (Continued)

CRAWFORD BRANCH GREENWAY EVALUATION CRITERIA	
	COST EFFECTIVENESS Based on a comparison of alternatives, what is the cost effectiveness of this alternative?
	POTENTIAL FOR FUNDING Compared to other alignments, how likely is this route to qualify for known grant and funding opportunities?
	POTENTIAL FOR TIMELY IMPLEMENTATION How likely will this project be able to be funded, designed, permitted, and constructed as compared to other alternatives?

Table 3. Evaluation Criteria Scoring

	CRITERIA	WESTERN ROUTES (A & B ALTERNATIVES) SCORE									
		ALT A	ALT A1	ALT A2	ALT A3	ALT A4	ALT B	ALT B1	ALT B2	ALT B3	ALT B4
PHASE 1	Directness of connection (Crawford Branch, parks, etc.)	4	4	3	4	3	3	2	2	2	3
	Ability to acquire environmental permits	3	2	2	3	3	2	3	4	4	3
	Quality of user experience	4	3	3	4	3	3	3	3	3	3
	Availability of right-of-way (anticipated property owner cooperation)	3	3	3	2	4	3	3	3	3	3
	Secondary benefits	4	3	3	4	4	4	3	4	3	3
	Separation from motorized vehicle conflicts	4	3	2	4	4	3	2	3	3	4
	Phase 1 SUBTOTAL	**22**	**18**	**16**	**21**	**21**	**18**	**16**	**19**	**18**	**19**
PHASE 2	Ability to construct	4	3	4	4	3	4	4	3	4	3
	Alignment with community goals	4	3	3	4	4	3	3	3	3	3
	Cost effectiveness	3	3	3	3	3	4	3	3	4	3
	Potential for funding	3	3	3	3	3	4	3	3	3	3
	Potential for timely implementation	4	3	3	3	3	3	4	3	3	3
	Phase 2 SUBTOTAL	**18**	**15**	**16**	**17**	**16**	**18**	**17**	**15**	**17**	**15**
TOTAL		**40**	**33**	**32**	**38**	**37**	**36**	**33**	**34**	**35**	**34**

What do these Scores Mean?

Based on a comparison of all alternatives, this alternative has been scored on how it ranks with respect to meeting this project evaluation criteria:

1 – BELOW AVERAGE

2 – AVERAGE

3 – ABOVE AVERAGE

4 – HIGHEST

Table 3. Evaluation Criteria Scoring (continued)

CRITERIA		WESTERN ROUTES (A & B ALTERNATIVES) SCORE								
		ALT C	ALT C1	ALT C2	ALT D	ALT D1	ALT D2	ALT D3	ALT D4	ALT D5
PHASE 1	Directness of connection (Crawford Branch, parks, etc.)	3	3	3	4	2	4	3	3	2
	Ability to acquire environmental permits	3	3	3	3	3	3	4	4	3
	Quality of user experience	4	3	2	4	4	3	2	2	3
	Availability of right-of-way (anticipated property owner cooperation)	3	3	3	3	3	2	3	3	3
	Secondary benefits	4	3	2	4	3	3	4	4	3
	Separation from motorized vehicle conflicts	4	3	2	3	4	3	2	2	2
	Phase 1 SUBTOTAL	**21**	**18**	**15**	**21**	**19**	**18**	**18**	**18**	**16**
PHASE 2	Ability to construct	3	3	3	2	3	3	3	3	3
	Alignment with community goals	4	3	2	4	3	3	3	3	3
	Cost effectiveness	3	2	3	3	3	3	4	4	3
	Potential for funding	3	3	3	3	3	3	3	3	3
	Potential for timely implementation	3	3	3	3	3	3	3	3	3
	Phase 2 SUBTOTAL	**16**	**14**	**14**	**15**	**15**	**15**	**16**	**16**	**15**
TOTAL		**37**	**32**	**29**	**36**	**34**	**33**	**34**	**34**	**31**

What do these Scores Mean?

Based on a comparison of all alternatives, this alternative has been scored on how it ranks with respect to meeting this project evaluation criteria:

1 – BELOW AVERAGE

2 – AVERAGE

3 – ABOVE AVERAGE

4 – HIGHEST

TRAIL DESIGN CONSIDERATIONS

This project will require a variety of trail types from a traditional greenway to a shared street. A traditional off-road greenway, such as the rendering shown for the Drake Education campus, separates users from streets and provides a high-quality user experience. However, locations where topography or other constraints limit the ability for an off-road greenway, other options are recommended such as a sidepath or a shared street. A sidepath, such as that shown along Carolina Mountain Drive, still provides separation from vehicles –usually by a 5' grass buffer—but travels parallel to a street. This design type is recommended for several sections of the preferred alignment. Finally, some locations are so constrained, such as at Heritage Hollow Drive, that a shared street is the most feasible treatment. A shared street provides pavement markings and requires low speed and traffic volume in order for non-motorized users and vehicles to share the street.

Width

For the Crawford Branch Greenway, a recommended width of 10 feet for the paved path, with 2 to 3-foot shoulders, would accommodate both recreational and transportation needs, balancing accessibility with the constraints of the surrounding environment. This width allows for comfortable passage for both pedestrians and cyclists, which is essential given the greenway's role as a cross-town connector. While wider paths provide a higher level of service and comfort, a 10-foot minimum width may be considered in sections where space is limited due to natural or built constraints. Additionally, a typical easement width of 20 to 30 feet is advisable to allow space for maintenance activities, landscaping, and amenities such as benches or signage along the greenway. In areas where the greenway runs adjacent to Crawford Branch, the easement should extend to the top of the bank to support conservation efforts and protect the riparian buffer, ensuring both a sustainable and scenic route for users.

Image 21. Off Road Greenway Rendering at Drake Education Campus

Source: TPD

Image 22. A shared street includes pavement markings and requires low speed for users to share a low-volume road

Source: City of Bend, OR

Image 23. Sidepath Exhibit along Carolina Mountain Drive illustrates a portion of Alternative D

Carolina Mountain Drive
Crawford Branch Greenway

1. 10’ Wide multiuse Sidepath on Carolina Mountain Drive.
2. Connects to Drake Enterprises Campus.
3. Converts pull in parking to angle parking (7 spaces). Additional parking behind buildings.
4. Converts pull in parking to parallel parking (6 spaces 9’ x 20’).
5. Greenway along edge of parking lot. Continues as off-road greenway.
6. Potential for expanding parking or shared parking arrangements.

Source: TPD

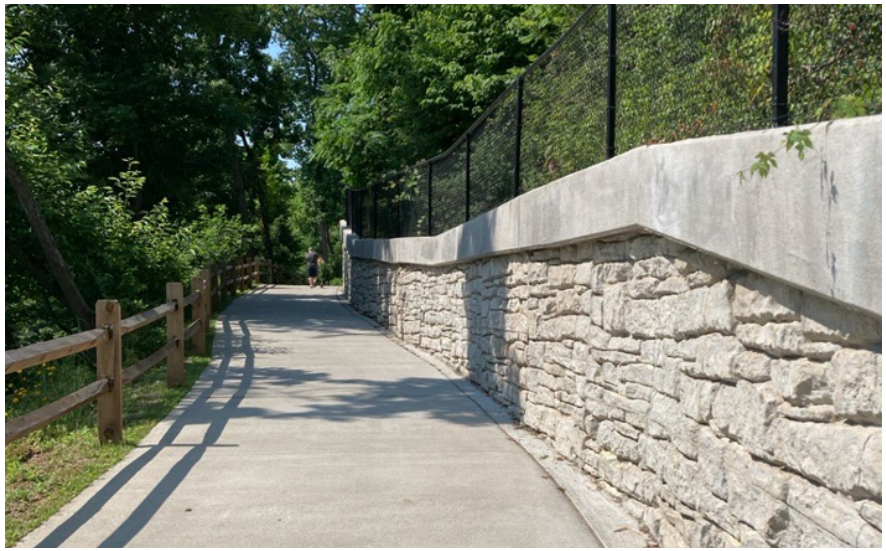
Retaining Walls

For greenways in areas with varied topography, such as Franklin, constructing a retaining wall is often necessary to maintain accessible grades in line with the Americans with Disabilities Act (ADA) requirements, which stipulate a maximum longitudinal slope of 5%. There are various retaining wall systems available, each suited to specific needs for soil retention and slope stability. When designing and constructing retaining walls for the Crawford Branch Greenway, it is important to carefully evaluate the different design options, construction methods, and the specific site conditions they will address. This careful planning will ensure both stability and accessibility along the greenway.

MATERIALS CONSIDERATIONS

The existing Little Tennessee River Greenway features both paved asphalt sections and natural surface sections, as well as boardwalks and bridges over the river. When selecting the surface material for a greenway or sidepath, several factors must be considered, such as user type (e.g., cyclists, pedestrians, or horseback riders), user demographics (e.g., age and ability levels), environmental conditions (e.g., topography), cost, maintenance needs, and available funding. Trail design should also incorporate green infrastructure solutions, such as permeable pavement and stormwater management systems, wherever feasible. Integrating infrastructure and vegetation that manage stormwater and runoff can help reduce flooding and erosion, improve the trail's aesthetics, and promote local biodiversity. To further support ecological resilience, planting native vegetation along the trail is recommended. Surface options for trails generally fall into two categories: paved surfaces and natural surfaces.

Image 24. Retaining Walls on a Greenway



Source: TPD

Image 25. Wooden Boardwalk on the Little Tennessee River Greenway

Source: Kyle Lechtenberg

Paved Surfaces

Paved surfaces are generally made of asphalt or concrete. Asphalt is commonly used because it is cost-effective and works well for many types of trails. Concrete, while more expensive initially, is more durable and is often chosen for urban areas or locations prone to heavy flooding, where its resistance to wear from high traffic and water damage is essential.

Image 26. Paved Surface Trail on the Little Tennessee River Greenway

Source: David Thornton

Source: Deborah Allen

Natural Surfaces

Natural surface options for greenways include compacted aggregates and compacted native soil. Compacted aggregates, such as granite fines, provide a durable and cost-effective alternative to paved surfaces. Proper compaction and effective drainage management are crucial to prevent erosion and maintain accessibility. Compacted native soil is another low-cost option but also requires careful compaction and drainage management to preserve trail integrity. Both types of surfaces need annual maintenance, including re-compaction and possible soil replenishment in areas prone to erosion.

Image 27. Natural Surface Trail on the Little Tennessee River Greenway

Source: David Thornton

Source: John Pierson

MAINTENANCE CONSIDERATIONS

Proper maintenance is essential to ensure long-term accessibility and safety for the Crawford Branch Greenway. Shared-use paths must be kept clear of debris and damage, with curb ramps maintained to be ADA accessible. Given that much of the study area lies in a floodway, incorporating stormwater mitigation features is important, along with promptly addressing any maintenance issues following heavy rains or flooding. Key considerations for maintaining the long-term viability of this pedestrian facility include:

- **Facility and Asset Inventory:** Developing a comprehensive inventory of all assets (such as signs, bridges, and pavement) will help differentiate between routine and substantial maintenance needs.
- **Baseline Maintenance Costs:** Estimating maintenance costs based on Town and County data from similar systems will provide a clearer understanding of budget requirements.
- **Use of Technology:** Implementing technology, such as Esri systems, can enhance monitoring and management of maintenance activities.
- **ADA Compliance:** Obtaining a final ADA inspection checklist from the contractor before project acceptance will ensure compliance from the outset.
- **Maintenance Plan and Funding:** Establishing a maintenance plan with dedicated funding resources for repairs to sidewalks, greenways, and curb ramps is critical. Additional guidance on developing a maintenance plan can be found in the FHWA 2013 publication, *A Guide for Maintaining Pedestrian Facilities for Enhanced Safety.*

By addressing these considerations, the Town of Franklin can ensure the Crawford Branch Greenway remains safe, accessible, and well-maintained for years to come.

Greenways in Floodplains

Flood events in Franklin highlight the vulnerability of areas like the Crawford Branch corridor. Greenways along waterways are popular pathways in both urban and suburban settings, but it's crucial to balance the cost of maintaining them, especially when they become inundated with sediment or debris during floods.

The choice of surface material is vital for a greenway's durability. While crushed rock is common, it erodes easily. Asphalt is more affordable but can be damaged by running water. Concrete is more resistant to submersion and erosion but can still suffer damage from severe stream bank erosion, which may leave significant debris. For flood-prone areas like Crawford Branch, concrete may be the best choice for withstanding flood conditions, especially when enhanced with transverse saw cuts to relieve pressure. However, concrete is costly to install and repair. Asphalt, while less expensive and providing a smoother surface, may require more frequent repairs and tends to retain heat in summer. Improving the durability of asphalt paths can involve building them with a deep base and a turn-down below the finished grade, along with using strategically placed stones to help reduce water volume if floodwaters cross the path.

Designing greenway facilities with flooding in mind can also help protect sensitive habitats, wetlands, and riparian zones. Erosion control measures like vegetative buffers, planting native trees and shrubs, and incorporating stormwater retention features can help prevent soil erosion and maintain water quality. For the Crawford Branch Greenway, using durable, water- and erosion-resistant materials such as concrete, steel, or composite materials for bridges and structures is essential to ensure long-term resilience.

Image 28. Rain Garden at Mainspring Conservation Trust

Source: Kelder Monar

Image 29. Flooding on the Little Tennessee River Greenway

Source: Mark Krancer

Source: Mark Krancer

Source: Franklin Press

The Little Tennessee River is prone to flooding after heavy rains, which can lead to temporary closures of the greenway along its banks. After such events, timely maintenance is essential to clear debris, remove silt buildup, and repair any damaged amenities. To ensure public safety, effective alert systems are crucial to inform users about potential flood dangers and the status of greenway accessibility and closures.

AMENITIES CONSIDERATIONS

The Crawford Branch Greenway offers a unique opportunity to enrich user experience through thoughtfully designed amenities that cater to diverse needs and preferences. By incorporating elements that enhance comfort, safety, and convenience, the greenway can become a more inviting and enjoyable space for all users—whether they are walking, biking, or simply spending time outdoors. These enhancements could range from features that support longer visits, such as resting areas or shaded spots, to those that provide practical benefits like improved navigation or safety measures. Amenities can also reflect the local culture and environment, offering educational or interpretive opportunities that connect users more deeply with the natural surroundings and community heritage. Strategically placed amenities not only make the greenway more accessible and user-friendly but also help in creating a sense of place, encouraging more frequent use and fostering a stronger connection between the community and its green spaces.

Trailhead/Parking

Access to a greenway is crucial for ensuring it serves the community effectively, whether for recreation, commuting, or connectivity. The Little Tennessee River Greenway offers several parking options and multiple access points, making it easy for users to park and start their journey. However, the Crawford Branch Greenway may have more limited parking opportunities. While there are designated parking areas at each terminus and available spaces near the dog park, much of the greenway will rely on sidewalk connections and crossings at low-volume roadways to provide access for pedestrians and cyclists.

Many of Franklin's greenway trailheads are multi-functional, serving as more than just access points to the trail. These locations often support additional community needs, such as parking for nearby businesses, access to parks and recreational facilities, or even as staging areas for local events. Partnering with local organizations, businesses, and community groups could enhance these trailheads' utility and accessibility.

Image 30. Permeable Parking Lot for the Hawksbill Greenway

Source: Luray Downtown Initiative

Image 31. Memorial Park educational signs can be expanded along the Crawford Branch Greenway

Source: TPD

Image 32. Entrance Kiosk on the Little Tennessee River Greenway

Source: David Thornton

Image 33. Directional Signs on the Little Tennessee River Greenway

Source: Pete Bostich

As a cross-town connector trail, the Crawford Branch Greenway will serve both as a thoroughfare for people moving through town and as a recreational destination. Enhancing sidewalk connections and ensuring safe crossings will be important to accommodate those accessing the greenway from nearby neighborhoods or by bike. Additionally, wayfinding and signage should highlight these access points and connections to the wider greenway network, helping users navigate to nearby parking areas or onto other trails. As the greenway evolves, exploring opportunities for additional parking and access improvements, particularly at key junctions or popular segments, could help increase its appeal and functionality for all users.

Wayfinding & Branding

For greenway users, knowing where they are and where they're headed is often more important than understanding municipal boundaries or facility ownership. The Crawford Branch Greenway will connect to the Little Tennessee River Greenway, creating a continuous pathway that requires clear and cohesive wayfinding to enhance user experience. Effective wayfinding and branding will help people easily identify which trail they are on, whether they are on a Town- or County-maintained facility, and provide essential information about rules, regulations, and nearby destinations.

The Little Tennessee River Greenway already has a distinct brand with corresponding signs and markers that help orient users. For the Crawford Branch Greenway, a key implementation step will be to develop a consistent branding strategy that complements the existing network while maintaining its own identity. Clear indicators—such as signs, markers, and maps—will be helpful for guiding users along the greenway, especially given the varying configurations the trail will pass through, from natural areas to more urban settings. These wayfinding elements will help users navigate seamlessly across different segments, ensuring a safe, intuitive, and enjoyable experience.

Other Greenway Amenities

- **Benches** offer convenient resting spots along the trail, especially for those who need frequent breaks, such as older adults or families with young children.
- **Trash receptacles** and **dog waste stations** help maintain cleanliness, promoting a pleasant environment for all users while encouraging responsible behavior.
- **Adequate lighting** is important for safety, particularly in areas with limited visibility or higher traffic, as it extends the trail's usability into the evening and ensures that users feel secure.
- **Centerline striping** helps manage traffic flow on the greenway, reducing conflicts between pedestrians and cyclists by clearly delineating pathways.
- **Public art** adds an aesthetic and cultural dimension to the greenway, creating a more engaging and memorable experience while reflecting the community's unique character.

Together, these amenities contribute to a well-rounded, accessible, and welcoming greenway that serves diverse user needs and promotes greater community engagement.

Image 34. Bench on the Little Tennessee River Greenway

Source: Christina Tallent

Image 35. Trash Receptacles

Source: John Myers Duluth News Tribune

Image 36. Greenway Lighting

Source: City of Maryville, TN

Image 37. Centerline Striping on Greenway

Source: TPD

Image 38. SCULPTor Greenway Art

Source: Charlotte Arts & Science Council

Source: Google

Crosswalks

Designated areas where pedestrians are legally allowed to cross the street. They are typically located at intersections or mid-block and may include features such as signage, pavement markings, and traffic control measures like stop signs, traffic signals, or flashing beacons to enhance safety and visibility.

Source: Seattle DOT

Curb Ramps

sloped surfaces designed to provide a smooth transition between the sidewalk and the street, making it easier for individuals using mobility devices to access or leave the sidewalk. When designed according to ADA standards, these ramps ensure accessibility for all users.

Source: VTrans

Pedestrian Signal Heads & Push Buttons

Installed at signalized intersections and allow pedestrians to activate the "walk/don't walk" signal. These devices typically display a signal indicating when it is safe to walk and may include a countdown timer for added safety.

Source: City of Lincoln, NE

Rectangular Rapid Flashing Beacons (RRFB)

Improve the visibility of pedestrians at midblock crossings. Paired with pedestrian warning signs, RRFBs consist of two rectangular yellow indicators with LED lights that flash in a rapid alternating pattern to alert drivers to pedestrians.

GREENWAY CROSSINGS

As outlined in this feasibility study, pedestrians and cyclists are disproportionately affected by traffic crashes, especially at intersections and crossings where their paths intersect with motor vehicles. The design goals of the Crawford Branch Greenway emphasize creating a facility that is not only safe and accessible but also enjoyable, comfortable, and convenient. To build an inclusive community that supports multiple transportation modes, infrastructure must prioritize safety along corridors and at critical points like street crossings, trails, and access points such as driveways. For all crossings, the following are applicable:

For the Crawford Branch Greenway, many crossings will likely occur at signalized intersections. At these intersections, the greenway should seamlessly connect to existing pedestrian infrastructure, incorporating accessible curb ramps, pedestrian signal heads, and clearly marked crosswalks. For mid-block crossings, the greenway should intersect the road at a 90-degree angle wherever feasible. Key considerations for all crossings include:

Vehicular Scale Signage

Install greenway signage at a vehicular scale near crossings to alert drivers of the greenway. All signs must comply with the Manual on Uniform Traffic Control Devices (MUTCD) standards. If the greenway runs parallel to a road before or after a crossing, signage should be placed in advance to inform motorists about the shared path.

**Please note that the images referenced are sourced from various locations across the United States, and specific design details may differ from those used by NCDOT.*

High Visibility Design
Crossings should prioritize visibility through the use of bold lane markings and appropriate signage, following MUTCD guidelines, to ensure they are noticeable to both drivers and pedestrians.

Surface Material
Where the greenway meets sidewalks, a concrete surface should be used to provide durability and maintain a consistent walking surface.

Pedestrian-Activated Signals
For mid-block crossings on major roads, pedestrian-activated signals should be installed to enhance safety and manage traffic flow.

ADA Compliance
All crossings must adhere to ADA standards and/or Public Right-of-Way Accessibility Guidelines (PROWAG), incorporating features like detectable warnings and other ADA-compliant elements as per the latest standards and local regulations.

Stormwater Management
Integrate stormwater management features and pervious surfaces where feasible to enhance the greenway corridor as a sustainable and resilient public asset.

Right-of-Way Considerations
Assess existing right-of-way (ROW) widths and locations before starting detailed design work. Aim to keep improvements within the current ROW whenever possible, prioritizing adjustments to roadway widths and other elements over acquiring new ROW.

Image 39. Greenway Crossing in Durham, NC

Source: FHWA

At both the state and national levels, comprehensive guidance and standards have been established to address greenway crossing needs. These resources reflect best practices and are essential for planning and designing safe pedestrian crossings for the Crawford Branch Greenway.

North Carolina Pedestrian Crossing Guidelines (2018) provides guidance on when to consider marking crosswalks at uncontrolled approaches, installing pedestrian signal heads at existing signalized intersections, and supplemental treatments at a crossing location. More information can be found **HERE**.

FHWA's Proven Safety Countermeasures Initiative compiles over 15 years of research and offers tools to enhance pedestrian crossing safety. Key countermeasures include crosswalk visibility improvements, leading pedestrian intervals, medians, pedestrian refuge islands, and Rectangular Rapid Flashing Beacons (RRFBs). More information can be found **HERE.**

FHWA's Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations assists agencies in addressing pedestrian safety issues at uncontrolled crossings. It outlines a process for evaluating crossing conditions and determining appropriate safety measures based on data collection, site analysis, and crash history. More information can be found **HERE.**

Improving Visibility at Trail Crossings from FHWA provides a systematic approach for planning and enhancing at-grade trail crossings, focusing on engineering solutions like improved signage and traffic controls. More information can be found **HERE.**

AASHTO Guidelines set the standards for designing pedestrian facilities, including crosswalks, signal timing, and pedestrian signalization, ensuring consistency and safety. More information can be found **HERE.**

The Manual on Uniform Traffic Control Devices (MUTCD), 11th Edition by FHWA provides national standards for traffic control devices at pedestrian crossings, including guidance on signage, pavement markings, and signals. More information can be found **HERE.**

The NACTO Urban Street Design Guide offers innovative strategies for urban pedestrian crossings that prioritize safety and accessibility. More information can be found **HERE.**

The Pedestrian and Bicycle Information Center (PBIC) provides additional resources and tools for enhancing pedestrian and bicycle safety, including detailed guidelines for safe and accessible crossings. More information can be found **HERE.**

By integrating these best practices and guidelines, the Crawford Branch Greenway can be designed to ensure safe and effective crossings, enhancing the overall greenway experience for a wide range of users. This approach not only improves safety but also promotes accessibility, making the greenway more inclusive for pedestrians, cyclists, and individuals with mobility challenges. Thoughtful design at key crossings will help connect neighborhoods, parks, and local destinations, fostering a stronger sense of community and encouraging more active transportation options. Ultimately, these enhancements will contribute to a more enjoyable and functional greenway for all residents.

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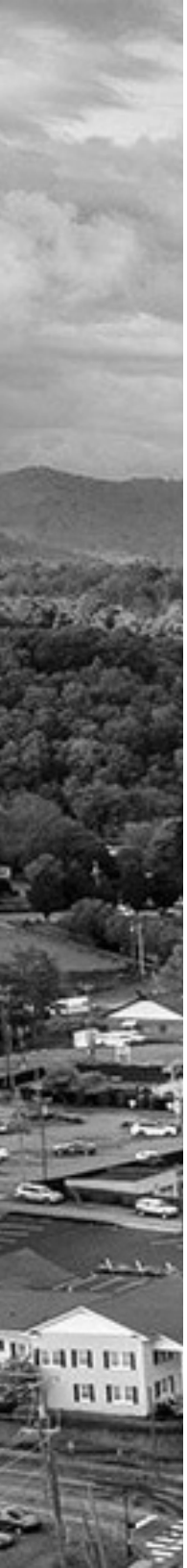


05 Implementation

Image Source: Ryan Karcher Photography

OVERVIEW & SUMMARY OF STRATEGIES

The findings in this report provide an implementation plan for multimodal investments that will connect key public lands within the Town of Franklin, enhancing access to public spaces, commercial areas, and natural resources. This chapter includes project cutsheets, offering concise project snapshots to help the town and its partners advance these efforts. Each cutsheet provides stand-alone details such as route alternatives, phasing options, cross-sections, maps, visual representations, and planning-level cost estimates. Additionally, the chapter highlights the importance of local and regional partnerships, which are outlined to support project advancement. Finally, it presents an action plan that assigns tasks, identifies lead agencies and primary partners, sets an implementation timeline, and establishes metrics to gauge success.

Early Action Implementation Recommendations

Alternative A in the western section and Alternative C in the eastern section of the study corridor are the highest-ranking route options. Implementing these alternatives will require acquiring easements from several private property owners, with some properties needing significant adjustments to parking lot circulation and access. Consequently, the feasibility of these alternatives cannot be confirmed until the easements are secured. Due to the number of affected properties and uncertainty about property owners' willingness to grant easements, it is recommended that all alternatives and sub-alternatives remain under consideration in case the preferred options cannot be pursued.

Additionally, the following early action steps are recommended:

1. Continue landowner outreach to determine property owner willingness to provide trail easements.
    - In order to establish property owner willingness to grant easements, additional site investigations may be necessary to evaluate revised driveway access and site configurations.
    - If all private properties associated with Alternatives A (Western) and C (Eastern) are not available for a trail easement acquisition, then pursue sub alternatives (e.g. map segments A-2 or C-2) and Alternatives B (Western) and Alternative D (Eastern). See **Landowner Outreach Priorities** below.
2. Continue coordination with NCDOT, specifically on Alternative C which will require lane re-configurations on Business 441 (Northeast Main Street).
3. Once property owner willingness is assessed and in writing for a complete connection, begin preliminary design including topographic survey and 30% design plans to verify the final design, environmental permitting assessment, construction costs and limits of required right-of-way.
4. Pursue funding for right-of-way, final design and construction based on findings of Tasks 1-3. This might include the following:
    - Early conversations with potential funding agencies that have upcoming grant opportunities that are a good match for this project. See Funding Resources Section and Appendix for more information.
    - Development of a steering committee to identify key funding and trail partners to track upcoming grants and provide coordination.

These early action plan items are focused on maximizing grant readiness and building implementation partnerships. This approach will ensure the most timely and successful implementation of this much needed Crawford Branch Greenway.

Landowner Outreach Priorities

As outlined in Chapter 3, property owners were engaged early in the process to gauge their willingness to collaborate with the Town on providing a trail easement or how a sidepath might impact their access and parking. Outreach efforts included focused discussions with five private property owners, including Drake Enterprises, to assess their interest in partnering with

the Town. Additionally, letters were sent to all owners of key properties, explaining the project and inviting them to an open meeting to share their ideas or concerns. More details can be found in the Appendix about these outreach efforts.

The initial outreach to property owners helped in shaping the preferred alternative. However, due to the number of impacted properties, ongoing outreach remains necessary to ensure continued collaboration and support. To facilitate this process, a map of key properties is shown here with priority levels as follows:

PRIORITY LEVEL 1: Engaging with these property owners is critical to assessing the feasibility of acquiring a trail easement along the preferred route. If the Town receives feedback indicating that a specific property owner is unwilling to grant an easement or if the cost is prohibitive, the Town can then shift its outreach to Priority Level 2 property owners to explore the possibility of securing an alternative route.

PRIORITY LEVEL 2: Outreach to these property owners will help determine the feasibility of sub-alternatives (e.g., A-1, A-2) or Alternatives B or D, along with their respective sub-alternatives. This process will help in identifying viable alternatives if the preferred route is not achievable.

Given the complexity of this project, this outreach to property owners will be essential to determine which alternative route will be available for right-of-way acquisition. A spreadsheet of all property owners in the study area can be found in the Appendix.

Preferred Alternative Cut Sheets

To assist in the next phase of project development, a project summary, or cutsheet, was developed for the preferred alternatives: Western Alternative A and Eastern Alternative C. These cutsheets presented on the following pages, includes implementation details such as:

- A project map and description of improvements
- Right-of-way availability and property acquisition needs
- Permitting requirements
- Cost estimates for survey, design, and construction

Explanation of Cost Estimate Items

The following cutsheets provide project cost estimates; however, these estimates are not based on actual surveys or designs. Therefore, these planning-level costs should be revisited as the Town refines project details and conducts preliminary design investigations.

Baseline Construction

This value represents an estimated probable cost for a contractor to complete the proposed improvements within the current calendar year, based on recent bid prices for similar projects. Detailed estimates for specific project components are included in the Appendix.

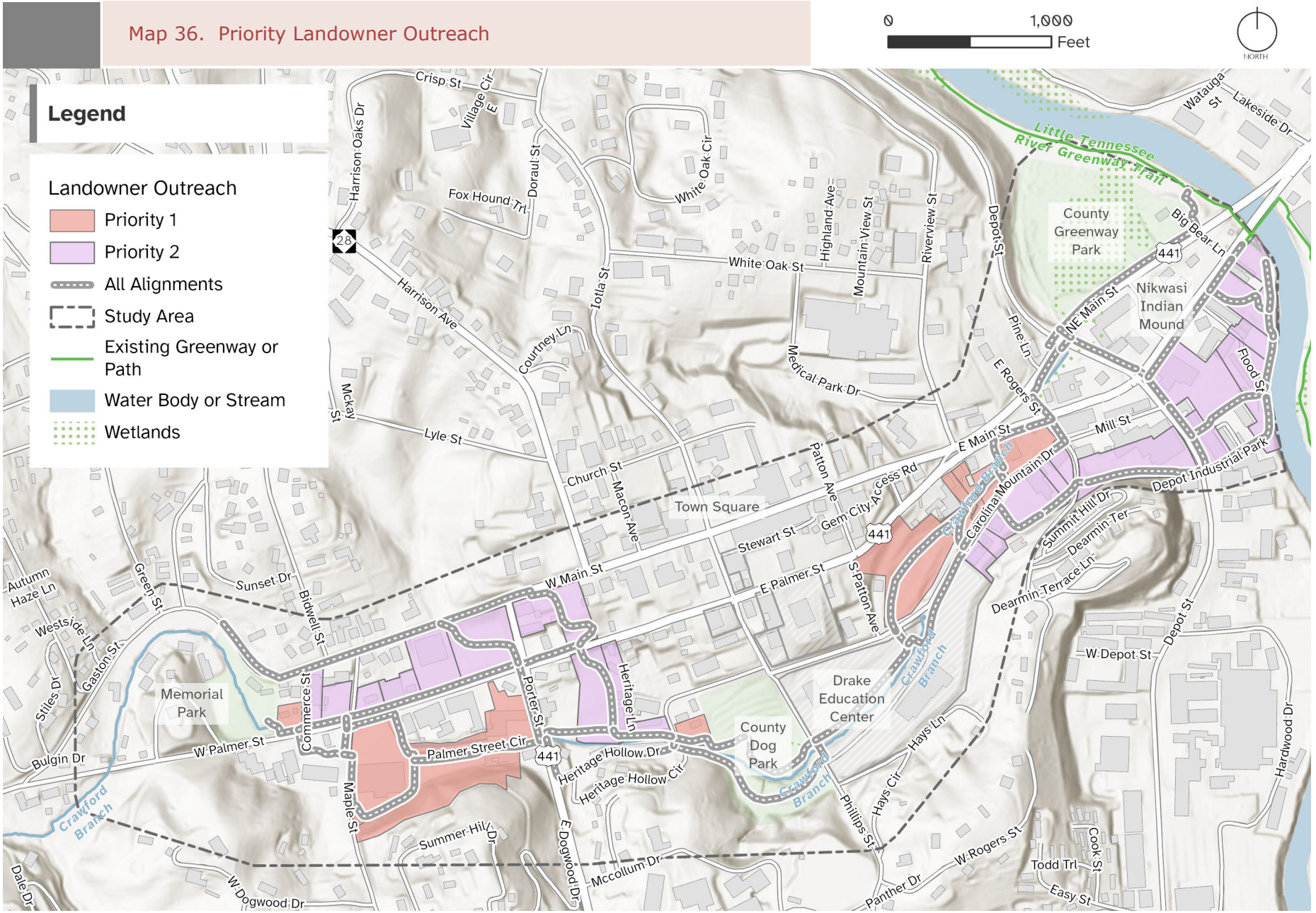
Survey / Design Services

This estimate reflects the expected cost for consulting firms to conduct surveys, design the project for permitting and approvals, and prepare construction documents for bidding. Different funding sources can influence the required approvals, design standards, and permitting needs. Additionally, environmental factors identified during preliminary design may increase costs. As such, this estimate should be revisited once funding is secured. We recommend staging the design process, with project costs and permitting needs reevaluated after the preliminary design phase.

Right-Of-Way (ROW) Acquisition

Many projects affect properties outside the public right-of-way (ROW). Before construction can commence, several tasks must be completed, including purchasing property and obtaining permanent or temporary easements. These tasks involve costs associated with acquisitions, easements, legal work, and right-of-way surveys and exhibits. If federal transportation funds are utilized, ROW negotiations must adhere to the Federal Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act). To accurately estimate ROW costs, current market research and appraisals are necessary, which may require hiring

Map 36. Priority Landowner Outreach



a specialized right-of-way firm. ROW costs should be calculated after further investigation as individual segments of the preferred route progress into design and implementation.

Escalated Construction

The construction estimate reflects current year costs. However, due to the time needed for funding, right-of-way acquisition, design, and permitting stages, it is essential to adjust these costs for inflation that may occur before construction begins.

Construction Engineering + Inspection Services

The required levels of construction engineering and inspection (CEI) services may vary based on the funding source during the construction phase. Typically, CEI services account for a percentage of the estimated construction cost, depending on the project size and its specific elements. For this study, it is assumed that 12% will be allocated for preliminary engineering and an additional 10% for final engineering.

Total Budget Estimates

In the planning of projects like this, unforeseen issues often emerge during the later stages of design and construction. To account for these unknown costs, a project contingency is included. The percentage allocated for contingency can vary based on the design stage and the potential for unexpected expenses. At the planning level, a higher contingency is typically employed to prevent underfunding. For this project, a 20% contingency has been assumed, as no actual design work has been completed. The final budget for the project is determined by summing the aforementioned costs and rounding to the nearest dollar, reflecting the planning phase of the project.

ALTERNATIVE A

PROJECT SNAPSHOT

Location: Begins at Memorial Park and ends at Carolina Mountain Drive on Drake Education Center property.

Facility type: Sidepath, greenway and shared street.

Total length: Approximately 0.8 Miles

Structures: New pedestrian bridge needed over Crawford Branch at Heritage Hollow.

At Grade Road Crossings: Four mid-block crossings needed. Appropriate treatment, such as Rectangular Rapid Flashing Beacons (RRFBs) needed for crossing at an unsignalized location.

Trail Connections: Trails at Memorial Park.

Destinations Serviced: Memorial Park, Macon County Dog Park, commercial businesses at Palmer Street Mall and Heritage Hallow Drive, employment center at Drake Education.

POTENTIAL REAL ESTATE ACQUISITION NEEDS

NCDOT encroachment agreements, erosion and sediment control permit, floodplain development permit, and potentially permits from NCDEQ and US Army Corps of Engineers.

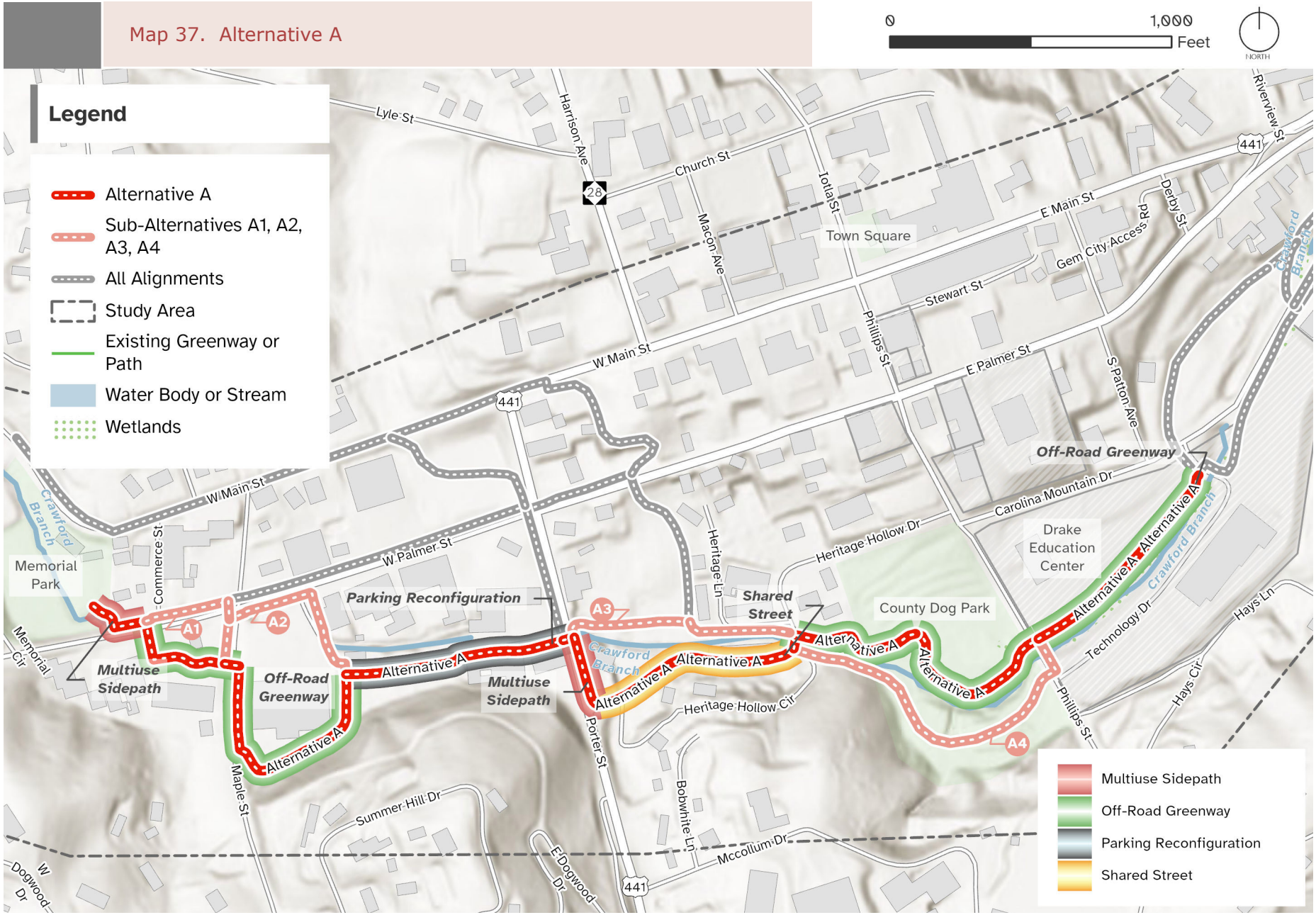
PRIMARY TYPICAL SECTIONS

2024 Baseline Construction Cost Estimate	$1,100,000
Additional Contingency (30%)	$510,000
Escalation	$90,000
Survey & Design Fee	$400,000
Construction Inspection/Management	$120,000
Total Estimated Budget	**$2,220,000**

**See Appendix for breakdown, assumptions and exclusions*

PRIMARY TYPICAL SECTIONS

Map 37. Alternative A



ALTERNATIVE C

PROJECT SNAPSHOT

Location: Alternative C picks up where Alternative A left off and crosses Carolina Mountain Drive to follows the sewer easement on undeveloped property to E. Main Street and crosses US 441 at East Rogers Street and continues as a sidepath on NE Main Street to Big Bear Park and the Little Tennessee River Greenway.

Facility type: Off-road greenway and sidepath.

Total length: Approximately 0.6 Miles

Structures: No bridges needed, but sections of boardwalk adjacent to the wetland will be needed.

At Grade Road Crossings: Four crossings at intersections needed.

Trail Connections: Little Tennessee River Greenway

Destinations Serviced: Employment Center at Drake Education, Nikwasi Indian Mound, Macon County wetland and greenway park.

POTENTIAL PERMITTING NEEDS

NCDOT encroachment agreements, erosion and sediment control permit, floodplain development permit, and potentially permits from NCDEQ and US Army Corps of Engineers.

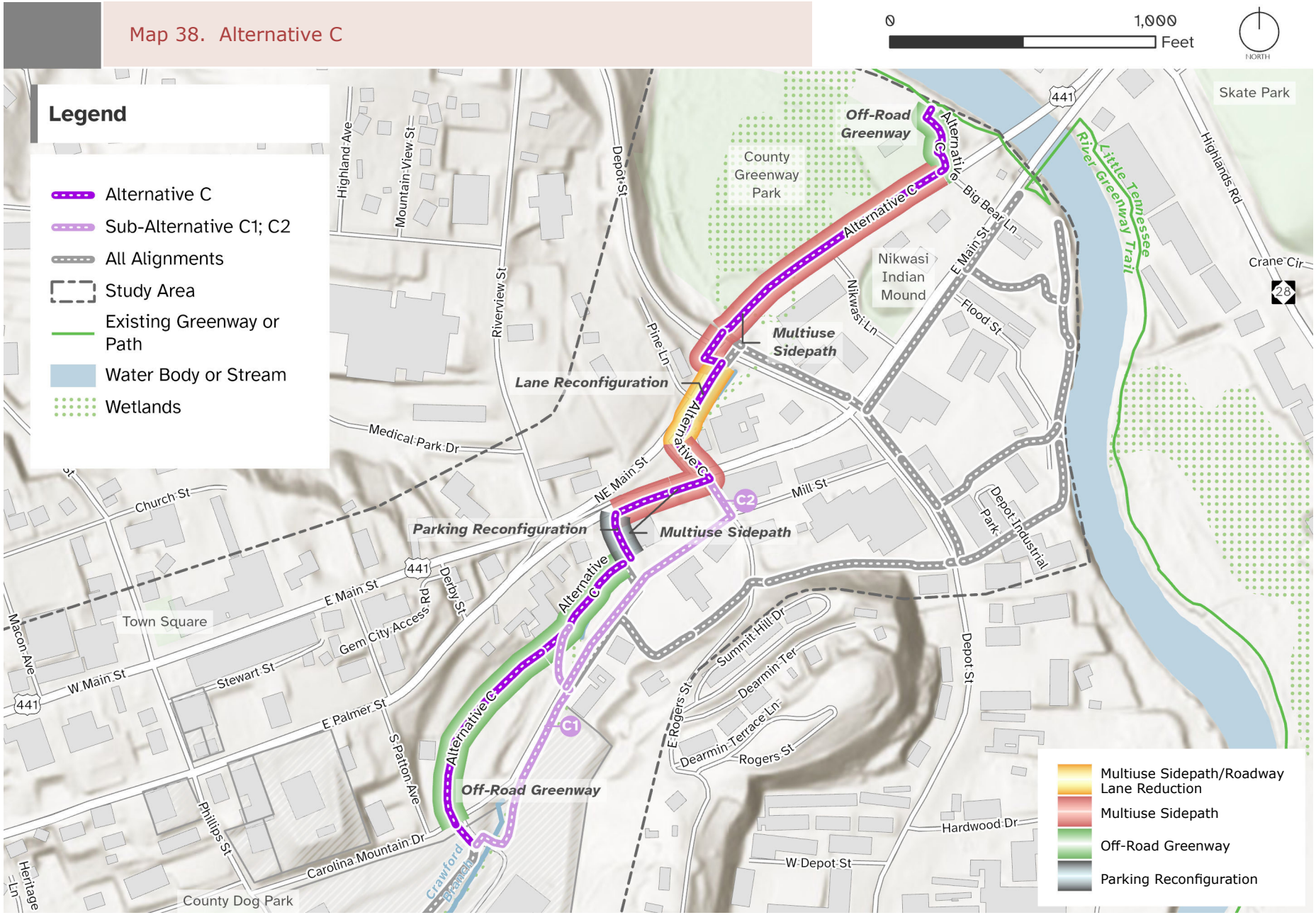
PRIMARY TYPICAL SECTIONS

2024 Baseline Construction Cost Estimate	$1,140,000
Additional Contingency (30%)	$530,000
Escalation	$90,000
Survey & Design Fee	$410,000
Construction Inspection/Management	$120,000
Total Estimated Budget	**$2,290,000**

**See Appendix for breakdown, assumptions and exclusions*

PRIMARY TYPICAL SECTIONS

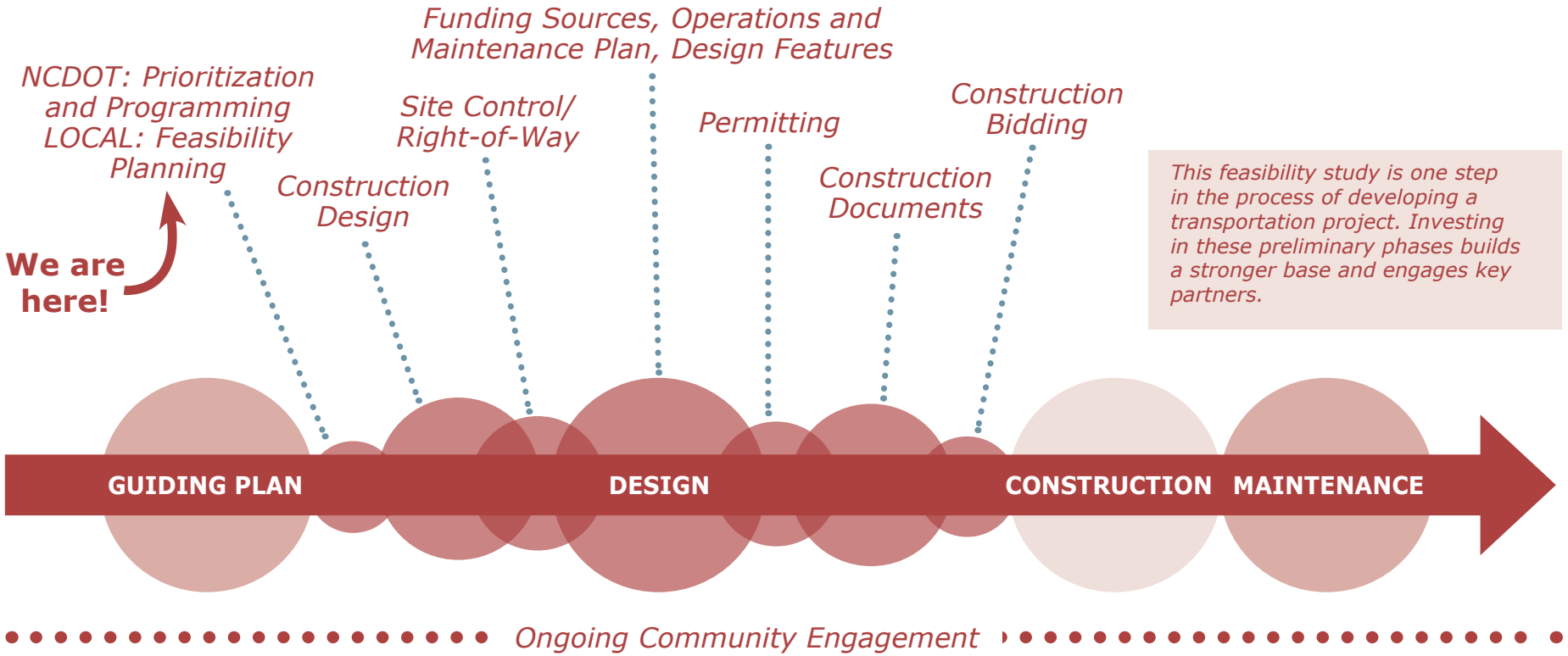
Map 38. Alternative C



Lifecycle of a Project

One of the most frequently asked questions in the development of pedestrian and bicycle networks is, "When will the project be finished so I can take a walk or bike?" While this question appears simple, the answer is quite complex. Figure 21 illustrates the typical lifecycle of an active transportation project. The timeline for implementing a project varies based on several factors, including the project's complexity, the level of managerial oversight (whether by local authorities or NCDOT), the type of funding involved, the amount of land required, and the project's overall scale. This greenway project is currently in the 'Feasibility Planning' stage, after which it will progress through design, construction, and finally, maintenance and programming. The cutsheets are designed to present these projects effectively for funding opportunities, thereby facilitating their advancement through the various lifecycle stages.

Figure 21. Lifecycle of a Transportation Project



Key Partners for Implementation

This Plan will not be driven solely by the Town of Franklin; its success will hinge on collaboration with county, regional, and state agencies, as well as local partners, the private sector, and non-profit organizations. Their respective roles are outlined below.

FRANKLIN TOWN COUNCIL: The Town of Franklin will play a central role in adopting and implementing this study, affirming its commitment to walking and bicycling, and coordinating efforts with the Southwestern RPO and NCDOT.

TOWN OF FRANKLIN STAFF: Staff will be responsible for advancing project development, community engagement, policy development, funding sources, and maintenance, including:

- Coordinating with the RPO and NCDOT on funding and project implementation.
- Identifying development regulations and opportunities to expand the walking and bicycling network.
- Collaborating with the private sector to enhance the pedestrian and bicycling network.
- Partnering with local jurisdictions and NCDOT to create a vibrant, well-connected pedestrian and bicycling system supported by adjacent land uses.
- Overseeing policy needs and maintenance responsibilities.

MACON COUNTY: Macon County will play an important role in supporting the implementation of the pedestrian and bicycling connection project, facilitating potential alignments on county land. Key responsibilities include:

- Collaborating with various stakeholders to identify and secure funding sources for project advancement.
- Actively exploring avenues for expanding the project scope and creating additional connections within the network to enhance accessibility and connectivity.

What is an RPO?

Rural Planning Organizations (RPOs) play a vital role in local transportation planning within rural areas, serving as collaborative forums where local and state governments come together to make informed decisions about transportation initiatives. This partnership helps meet the planning mandates established by federal legislation, which governs transportation funding allocations in rural regions. By facilitating dialogue and cooperation among various stakeholders, RPOs ensure that transportation projects address the unique needs and priorities of rural communities.

The Southwestern Commission Council of Governments

As part of the Southwestern Commission Council of Governments, the Rural Planning Organization (RPO) offers transportation planning and mapping assistance to Cherokee, Clay, Graham, Jackson, Macon, and Swain counties, as well as their municipalities. It acts as a vital platform for local representatives and residents to engage with NCDOT personnel regularly, facilitating the exchange of localized feedback on transportation initiatives. The Southwestern Commission has been instrumental in this project's Steering Committee and played a key role in supporting the grant application that launched this study.

SOUTHWESTERN RPO: The Southwestern Commission RPO can support project development by:

- Actively seeking and facilitating access to various funding sources for the project.
- Collaborating closely with NCDOT to ensure alignment with state transportation initiatives and regulations.

NCDOT INTEGRATED MOBILITY DIVISION: NCDOT Integrated Mobility Division will be able to provide support by:

- Providing expertise on bicycle and pedestrian policies, including Complete Streets initiatives.
- Facilitating communication and collaboration with local NCDOT division offices to align project efforts.
- Assisting in identifying and accessing available funding and grant opportunities for project implementation.
- Maintaining and updating the Pedestrian and Bicycle Infrastructure Network (PBIN) mapping database to reflect current and planned infrastructure.

NCDOT DIVISION 14: NCDOT Division 14 will contribute by collaborating with local partners to identify and pursue funding opportunities for transportation projects within the division's jurisdiction.

COMMUNITY MEMBERS (RESIDENTS, VISITORS, PROPERTY OWNERS): People in the community will play an important role by:

- Engaging with elected officials and stakeholders to promote the importance of funding for pedestrian and bicycle projects.
- Actively using the new walking and biking facilities to enhance community mobility and accessibility.
- Raising awareness and building enthusiasm for walking and bicycling initiatives within the community.

PRIVATE SECTOR (DEVELOPERS, OTHER FUNDERS SUCH AS NON-PROFIT): The private sector can contribute by:

- Providing financial support for projects aimed at enhancing pedestrian and bicycle infrastructure.
- Assisting in the construction of new sidewalks, shared-use paths, and other facilities that expand the pedestrian and bicycle network.
- Through land development initiatives, fostering environments that promote walking and biking as viable transportation options.

ACTION PLAN

For this Feasibility Study to be effective, it requires a clear action plan that outlines the next steps for achieving its vision. The following action plan details the timeframe for implementation, identifies the lead agency and key partners, and establishes performance measures for evaluating success. This structured approach will enable the Town to remain strategic while also being adaptable to new opportunities as they arise.

Table 4. Action Plan

Task #	Description	Lead	Partner	Timeframe	How Will Success be Measured
1	Adopt this plan, which allows the study to become the official planning document for the Crawford Branch Greenway and shows intention to support implementation over time.	Town Council	Town Staff, Macon County, NCDOT IMD and Div 14, RPO	Winter 2024	Adopted Plan
2	Ensure that the preferred alignments from this study are incorporated into regional plans, such as the CTP and future County Comprehensive Plans.	NCDOT, RPO	Town Staff, Town Council, NCDOT IMD and Div 14	Spring 2025	Amendments to Plan documents
3	Consider the creation of an annual work plan to guide the development of this study. The work plan may include key milestones, timelines, and roles.	Town Staff	Town Council NCDOT Div 14	Ongoing	Annual work plan document
4	Coordinate with NCDOT and the RPO on submitting the project to the NCDOT SPOT process.	RPO, Town Staff	NCDOT Div 14	Spring 2025	SPOT submittal
5	Coordinate with key project partners to evaluate and advance phasing options based on the scenarios presented in Chapter 5.	Town Staff	NCDOT Div 14, RPO	Ongoing, Winter 2025	Coordination notes/meeting minutes
6	Seek future funding opportunities for facility construction.	Town Staff, RPO	NCDOT Div 14 and IMD	Summer 2025	Funding sources identified.
7	Develop a maintenance plan for the project.	Town Staff	NCDOT Div 14	Summer 2026	Maintenance plan document

FUNDING RESOURCES

The following outlines potential funding sources to facilitate the design and development of the sidewalk and trail components of this project. For a comprehensive list of additional funding sources, please refer to the Appendix.

Active Transportation Infrastructure Investment Program (ATIIP)

The Active Transportation Infrastructure Investment Program (ATIIP), established under the Bipartisan Infrastructure Law, is a competitive grant program focused on constructing safe, connected active transportation facilities within networks and spines. ATIIP projects aim to enhance the safety, efficiency, and resilience of active transportation networks, improve links between active and public transportation, support environmental protection, and boost quality of life in disadvantaged communities by expanding connected mobility options.

The ATIIP provides two grant types: Planning and Design grants and Construction grants. Planning and Design grants, requiring a minimum cost of $100,000, fund the development of active transportation networks and spines, which connect communities or link key destinations within them. Construction grants, with a minimum project cost of $15 million, fund the building of safe, connected active transportation facilities in these networks and spines. Both grants aim to enhance access to destinations like schools, workplaces, and recreation areas, and prioritize integrating active transportation facilities with transit services where available, to improve public transportation access. More **HERE**.

RAISE Grant

The Rebuilding American Infrastructure with Sustainability and Equity (RAISE) grant is a federal funding program that supports surface transportation projects with a focus on sustainability, safety, economic competitiveness, and quality of life. RAISE grants fund planning, design, and construction, prioritizing projects that improve access and mobility in underserved communities, reduce environmental impacts, and create safe, multimodal infrastructure. For greenway development, RAISE grants could provide crucial funding to design and build safe, connected pathways that enhance local mobility, promote active transportation, and integrate with other transit options, especially in areas that may lack existing infrastructure. More **HERE**.

Recreation Trails Program (RTP)

In North Carolina, the Division of Parks and Recreation, part of the North Carolina Department of Natural and Cultural Resources, administers the Recreation Trails Program under the approval of the Federal Highway Administration. The goal of the program is to help states provide and maintain recreational trails for both motorized and nonmotorized recreational trail use. A 25% local match is required for funding, and funding is provided on a reimbursement basis. The minimum grant amount for on-the-ground trail projects is $10,000 with a maximum of $100,000. This would be a good source for both the trail development portion and streambank stabilization. More **HERE** and **HERE**.

Streamflow Rehabilitation Assistance Program (StRAP)

The Streamflow Rehabilitation Assistance Program (StRAP) provides funds to organizations working on projects that help reduce flooding, restore streams, and protect the integrity of drainage infrastructure across North Carolina's waterways. More **HERE**.

Water Resources Development Grant Program

The purpose of this program is to provide cost-share grants and technical assistance to local governments throughout the state. Applications for grants are accepted for seven eligible project types, which include: water management, stream restoration, Natural Resources Conservation Service Environmental Quality Incentives Program (EQIP) stream restoration projects and feasibility/engineering studies. More **HERE**.

NC Parks & Recreation Trust Fund (PARTF)

Since 1994, the North Carolina Parks and Recreation Trust Fund (PARTF) has been granting matching funds to local governments for the enhancement of parks, public beach access, and upgrades within state parks. This statewide initiative aids local governments in achieving their objectives related to parks and public access, ultimately enhancing the overall quality of life in their respective communities. PARTF offers matching grants on a dollar-for-dollar basis to local governments for the acquisition and/or development of park and recreational projects aimed at serving the broader public. Each application from a local government can seek a maximum of $500,000 in funding. More **HERE**.

NCDOT STIP (State Transportation Improvement Program)

The current STIP identifies transportation projects that will receive funding from 2024-2033. The current round of Strategic Transportation Prioritization, referred to as "P7.0", is underway to update the 2026-2035 STIP. This project could be submitted to P7.0; however, the Town of Franklin would need to supply the 20% match. More **HERE**.

NCDOT Spot Safety Program

The NCDOT Spot Safety Program is intended to fund smaller improvement projects that address safety, potential safety, and operational issues. The program is funded with state funds; however, any bike/ped projects are funded with Federal Transportation Alternatives Program funds. Other monetary sources (such as Small Construction or Contingency funds) can assist in funding Spot Safety projects, however, the maximum allowable contribution of Spot Safety funds per project is $400,000. A Safety Oversight Committee (SOC) reviews and recommends Spot Safety projects to the Board of Transportation (BOT) for approval and funding. Criteria used by the SOC to select projects for recommendation to the BOT include but are not limited to: the frequency of correctable crashes, severity of crashes, delay, congestion, number of signal warrants met, effect on pedestrians and schools, division and region priorities, and public interest. Staff from the NCDOT Division 14 office can be consulted for the status of this Program. More **HERE**.

Macon County Community Foundation

This private source funds projects to meet local needs that include education, human services, basic needs, arts, historical preservation, health, recreation, youth development, environment, and animal welfare. The Macon County Community Foundation is an affiliate of the North Carolina Community Foundation. Grants typically range from $500 - $2,500. More **HERE**.

The Community Foundation of Western North Carolina

The Community Foundation makes grants and works with fundholders to support promising projects across Western North Carolina. They provide grants to 501(c)3 organizations that may be willing partners to support bicycle, pedestrian, and greenway projects. More **HERE**.

2024

APPENDIX

CRAWFORD BRANCH GREENWAY

Feasibility Study

Franklin
1855 North Carolina

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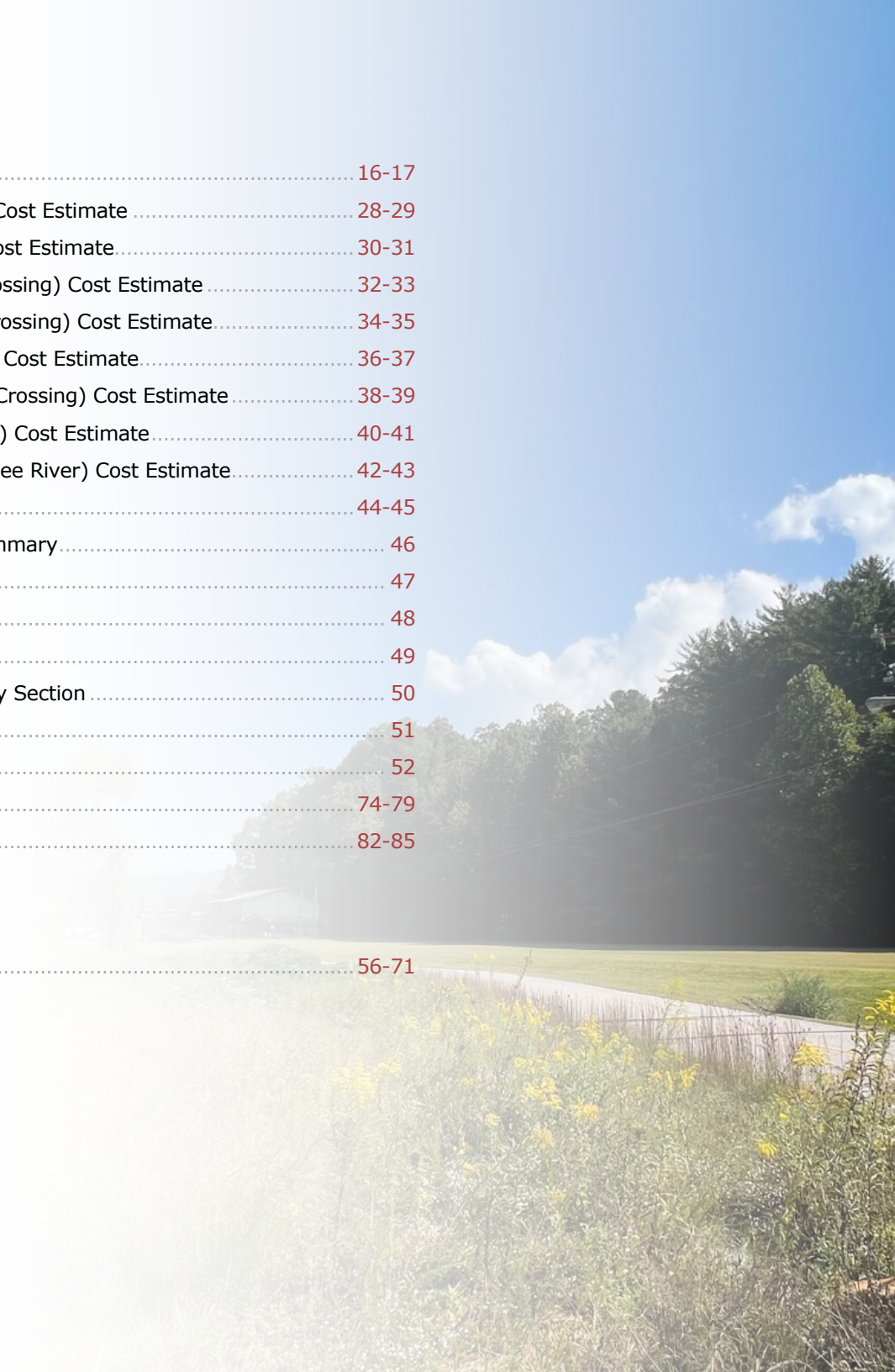

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APPENDIX A

Funding Sources

Image Source: Bob Scott

OVERVIEW

This resource outlines major funding sources available for walking and bicycling infrastructure in North Carolina, covering both state and federal levels. It serves as a guide to support projects through various stages, including planning, design, construction, and maintenance. Each funding source has specific eligibility criteria regarding applicants, project types, and costs, which are not detailed here. Please note that funding requirements, eligibility criteria, amounts, and program details may change, so the information provided is accurate as of the publication date of this feasibility study.

STATE SOURCES

North Carolina provides several funding opportunities for bicycle and pedestrian projects. These funds can be used either as matching sources or to fully finance standalone projects. A significant portion of these state-level funds originates from federal government allocations.

NCDOT Statewide Project Funds

NCDOT has division-led funding opportunities that are sourced from statewide funds. Division 14 can provide more information about these opportunities, which may include:

Small Construction Funds

Established to fund small projects in and around cities and towns which could not be funded in the STIP Provisions currently allow for use on a variety of transportation projects for municipalities, counties, schools throughout the state.

- Funds allocated equally to each Division.
- $250,000 maximum amount per project per Fiscal Year, unless otherwise approved by the Secretary of Transportation.
- Right-of-way should be provided at no cost to NCDOT.
- Utility relocations should be accomplished at no cost to NCDOT.
- Requests received from municipalities, counties, businesses, schools, and industrial entities, and NCDOT staff.
- Request should be submitted to the Division Engineer providing technical information such as location, improvements being requested, timing, etc. for thorough review.

Statewide Contingency Funds

Created for statewide rural or small urban highway improvements and related transportation enhancements to public roads/public facilities, industrial access roads, and spot safety projects.

- The President Pro Tempore of the Senate, the Speaker of the House, and the Secretary of Transportation sponsor project requests from this fund.
- $12 million fund administered by the Secretary of Transportation.
- Requests received from municipalities, counties, businesses, schools, citizens, legislative members, and NCDOT staff.
- Request should include a clear description and justification of the project.

Economic Development Funds

Created to expedite transportation projects that promote commercial growth as well as either job creation or job retention.

- Established to expedite transportation projects that promote commercial growth as well as either job creation or job retention.
- $2,500 per job (new & retained) allowed unless waived by the Secretary of Transportation.
- $400,000 maximum amount per project, unless otherwise approved by the Secretary of Transportation.

High Impact/Low-Cost Funds

Established to provide funds to complete low-cost projects with high impacts to the transportation system including intersection improvements, minor widening projects and operational improvements.

- Funds allocated equally to each Division.
- Each Division is responsible for selecting their own scoring criteria for determining projects funded in this program.
- $1.5M maximum per project unless otherwise approved by the Secretary of Transportation.
- Projects are expected to be under contract within 12 months of funding approval from the Board of Transportation.

NCDOT Strategic Transportation Investment (STI)

Funds: Infrastructure projects.

The NCDOT Strategic Transportation Investments (STI) law, enacted in 2013, provides a framework for prioritizing transportation projects throughout North Carolina, including the Town of Franklin. This law uses a data-driven scoring system, combined with local input, to assess project benefits, future conditions, multi-modal characteristics, and alignment with local priorities. Known as the Strategic Transportation Prioritization (SPOT) process, this system generates the Draft State Transportation Improvement Program (STIP).

The SPOT process evaluates roadway, public transportation, bicycle, pedestrian, rail, and aviation projects, organizing them into three funding categories: Statewide Mobility, Regional Impact, and Division Needs. Metropolitan Planning Organizations (MPOs), Rural Planning Organizations (RPOs), and NCDOT Divisions assign local priority points to further refine project scores.

The current STIP funds projects from 2024 to 2033, while the ongoing "P7.0" round will update the STIP for 2026-2035.

For Franklin, federal funding requires a 20% local match, and state law prohibits using state funds for standalone bicycle and pedestrian projects. As such, the Town must find alternative sources to cover this 20% match for bike and pedestrian projects.

https://www.ncdot.gov/initiatives-policies/Transportation/stip/Pages/strategic-trans

NCDOT Spot Safety Program

Funds: Among other activities, improvements for pedestrian including signals, crosswalks, and curb ramps.

The Spot Safety Program, managed by NCDOT, provides funding for smaller projects aimed at improving safety and operational challenges. Although the program primarily uses state funds, bicycle and pedestrian projects are often supported through Federal Transportation Alternatives Program funds. Other funding sources, like Small Construction or Contingency funds, may also contribute, but the maximum allocation per project is limited to $400,000.

A Safety Oversight Committee (SOC) evaluates and recommends projects for final approval and funding by the Board of Transportation (BOT). The SOC considers factors such as the frequency and severity of preventable crashes, congestion, signal needs, pedestrian and school impacts, regional priorities, and public interest. For updates or inquiries, NCDOT Division 14 office staff can be contacted.

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

NCDOT Highway Hazard Elimination Program

Funds: Larger projects that address safety and potential safety issues.

The Hazard Elimination Program focuses on developing larger projects that address existing and potential safety concerns. Funded with 90% federal and 10% state funds, these projects typically range in cost from $400,000 to $1 million. Like the Spot Safety Program, the Safety Oversight Committee (SOC)

evaluates and recommends Hazard Elimination projects for approval by the state Board of Transportation (BOT). Funding is prioritized based on a benefit-to-cost (B/C) ratio, where the safety benefits are calculated based on the projected reduction in crashes. Once approved, these projects are added to the State Transportation Improvement Program (STIP).

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

NC Land and Water Fund (NCLWF)

Funds: Among other activities, planning grants for greenways.

The North Carolina Land and Water Fund (NCLWF) is a non-regulatory organization focused on preserving and enhancing the state's land and water resources. It offers annual grants to non-profit organizations and government agencies for purposes like land acquisition, stream restoration, and innovative stormwater management. Bike and pedestrian projects can qualify for NCLWF planning grants if they support efforts to:

- Improve or restore degraded waters
- Protect clean water sources
- Establish riparian buffers and greenways for environmental, educational, or recreational use
- Provide buffers around military installations
- Preserve ecologically significant land or historic properties Improve stormwater treatment systems.

https://nclwf.nc.gov/

NC Parks and Recreation Trust Fund (PARTF)

Funds: Construction and renovation of facilities in parks and to purchase land for new and existing parks.

The Parks and Recreation Trust Fund (PARTF), managed by North Carolina State Parks, provides dollar-for-dollar matching grants to local governments for developing public parks and recreational projects. This fund is the primary resource for constructing and renovating facilities in state parks and acquiring land for both new and existing parks. Eligible applicants include North Carolina counties, incorporated municipalities, and public authorities authorized to acquire land or develop recreational facilities under N.C. General Statute 159-7. The maximum grant request is $500,000, with recipients selected by the Parks and Recreation Authority, a nine-member board appointed by the Governor and General Assembly.

https://www.ncparks.gov/more-about-us/parks-recreation-trust-fund/parks-and-recreation-trust-fund https://rrs.cnr.ncsu.edu/partf/

FEDERAL SOURCES

In November 2021, Congress passed the $1.2 trillion Infrastructure Investment and Jobs Act (IIJA), setting federal transportation policy and funding through 2026, replacing the previous FAST Act. The following section outlines funding opportunities for pedestrian and bicycle projects, focusing on programs that have updated eligibility criteria and increased funding under the IIJA. Additionally, newly introduced programs under the IIJA are clearly identified in the subsequent sections. The DOT Discretionary Grants Dashboard can also be used to navigate USDOT sourced grants: https://www.transportation.gov/grants/dashboard

Land and Water Conservation Fund (LWCF)

Funds: Construction and renovation of facilities in parks and to purchase land for new and existing parks.

Administered by North Carolina State Parks, the Parks and Recreation Trust Fund (PARTF) provides dollar-for-dollar matching grants to local governments for public parks and recreational projects. As the primary funding source for constructing and renovating state park facilities and acquiring land for parks, PARTF supports both new and existing projects. Eligible applicants include North Carolina counties, incorporated municipalities, and public authorities authorized to develop recreational facilities. The maximum grant request is $500,000, with the Parks and Recreation Authority, a nine-member board

appointed by the Governor and General Assembly, making the final funding decisions.

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

https://www.lwcfcoalition.com/

Transportation Alternatives Program (TAP)

Funds: Pedestrian and bicycle facilities, streetscaping projects.

The Transportation Alternatives Program (TAP) provides federal reimbursement for community-based projects, particularly those focused on walking and bicycling infrastructure. With a 60% funding boost under the Infrastructure Investment and Jobs Act (IIJA), TAP is now the largest federal source for such initiatives, accounting for roughly half of all federal funding for bicycle and pedestrian projects. Under the IIJA, TAP funding will increase in alignment with overall surface transportation spending, rather than being capped at a fixed amount, ensuring ongoing growth in available resources.

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

Active Transportation Infrastructure Investment Program (ATIIP)

Funds: Active transportation networks (within communities) and spine (between communities) projects.

The Active Transportation Infrastructure Investment Program (ATIIP) is a discretionary funding initiative aimed at supporting the development of active transportation networks and key connectivity routes. This program focuses on enhancing infrastructure for walking, cycling, and other forms of active transportation, promoting safer and more accessible options for communities.

https://www.fhwa.dot.gov/environment/bicycle_pedestrian/atiip/

Healthy Streets Program

Funds: Streetscape improvements to reduce the urban heat island effect.

Authorized by the Infrastructure Investment and Jobs Act, this discretionary grant program provides funding to eligible entities for implementing cool pavements, porous pavements, and expanding tree cover. Its primary goals are to mitigate urban heat islands, improve air quality, and decrease impervious surfaces, stormwater runoff, and flood risks. Furthermore, the program aims to reduce heat impacts on infrastructure and road users, fostering a more sustainable urban environment.

Safe Streets and Roads for All

Funds: Funds Safety Action Plans and implementation projects.

The Safe Streets and Roads for All (SS4A) discretionary program is set to distribute $5-6 billion in grants over the next five years to bolster regional, local, and Tribal initiatives focused on preventing roadway deaths and serious injuries. This program aligns with Secretary of Transportation Pete Buttigieg's National Roadway Safety Strategy, aiming for the ambitious goal of zero fatalities on our nation's roadways. Funding can be utilized for:

- Developing or updating a Comprehensive Safety Action Plan
- Conducting planning, design, and development activities related to the Action Plan.
- Implementing projects identified in the Action Plan.

Eligible applicants include:

- Metropolitan planning organizations.
- Counties, cities, towns, and other special districts that are subdivisions of a State, along with transit agencies.
- Federally recognized Tribal governments.
- Multijurisdictional groups composed of these entities.

https://www.transportation.gov/grants/SS4A

Promoting Resilient Operations for Transformative, Efficient, and Cost-saving Transportation (PROTECT)

Funds: Extreme weather resilience and emergency response infrastructure.

To enhance evacuation and recovery mobility for all road users, it's essential to integrate biking, walking, and rolling infrastructure into resiliency plans and evacuation routes. The PROTECT discretionary program provides two types of funding opportunities: planning grants and Competitive Resilience Improvement Grants.

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

Rebuilding American Infrastructure with Sustainability and Equity (RAISE)

Funds: Projects to build or repair transportation systems.

This grant opportunity funds road, rail, transit, and port projects that align with national objectives. Previously known as BUILD or TIGER Discretionary Grants, Congress has allocated nearly $9.9 billion to support 700 projects that have significant local or regional impact.

https://www.transportation.gov/rural/grant-toolkit/rebuilding-american-infrastructure-sustainability-and-equity-raise

Recreation Trails Program (RTP)

Funds: Recreational trails and trailhead facilities that are open to the public.

In North Carolina, the Division of Parks and Recreation, under the Department of Natural and Cultural Resources, manages the Recreation Trails Program (RTP) with approval from the Federal Highway Administration. This program is designed to assist in the development and maintenance of recreational trails for both motorized and non-motorized use. A 25% local match is required, and funding is distributed on a reimbursement basis. The minimum grant for on-the-ground trail projects is $10,000, while the maximum funding available is $100,000. RTP funding is allocated through the Transportation Alternatives Program (TAP).

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

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

Highway Safety Improvement Program (HSIP)

Funds: Safety projects for bike and pedestrian infrastructure, educational programs, and evaluation programs.

The Highway Safety Improvement Program (HSIP) is a vital federal initiative focused on drastically reducing traffic fatalities and serious injuries across all public roads, including non-state-owned and tribal roads. The Infrastructure Investment and Jobs Act (IIJA) has brought significant updates to the HSIP, including a 24% increase in funding. The enhanced program is structured around four key pillars: Vulnerable Road User (VRU) Safety Assessment, Safe Systems Approach, VRU Special Rule, and Federal Highway Administration (FHWA) Research.

https://highways.dot.gov/safety/hsip

Safe Routes to School (SRTS)

Funds: Active transportation and complete streets projects, plus education or enforcement activities that allow students to walk, bike, and roll to school safely.

The Bipartisan Infrastructure Law (BIL) officially integrates the Safe Routes to School (SRTS) initiative into existing legislation, boosting funding by 60% and expanding programming to include high schools. Recent updates under the Infrastructure Investment and Jobs Act (IIJA) classify SRTS infrastructure as an eligible expense under the Highway Safety Improvement Program (HSIP), which permits the hiring of local coordinators. However, it is important to note that SRTS still functions under the Transportation Alternatives Program and is not considered a separate initiative.

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

Thriving Communities Program

Funds: Technical assistance, planning, or capacity building services to help disadvantaged communities.

The Thriving Communities Program (TCP) focuses on supporting disadvantaged communities adversely affected by environmental, climate, and health policies. By providing essential technical resources and strengthening organizational capacity, the program aims to enable these communities to compete effectively for federal funding and execute high-quality infrastructure projects that promote community well-being. Over two years, TCP will deliver comprehensive support, followed by three years of facilitated peer learning for selected communities. This initiative will assist them in planning and establishing a strong pipeline of projects related to transportation, housing, and community revitalization.

https://www.transportation.gov/rural/grant-toolkit/thriving-communities-program

LOCAL, PRIVATE, and NON-PROFIT FUNDING SOURCES

Conserving Carolina

Funds: Programs to connect people and nature.

Conserving Carolina focuses on fostering connections between people and nature, particularly through the development of trails and recreational opportunities. The organization has opened over 23,000 acres for public enjoyment, featuring significant areas such as Chimney Rock State Park, DuPont State Recreational Forest, and Headwaters State Forest. In addition to these large parks, local initiatives include the Ecusta Trail and Saluda Grade Trail in nearby Henderson and Transylvania Counties, along with a network of hiking trails throughout Buncombe County.

https://conservingcarolina.org/

Robert Wood Johnson Foundation (RWJF) Grants and Grant Programs

Funds: Among other activities, planning and demonstration projects, community engagement, and public education.

The RWJF grant programs have three main objectives: to explore transformative ideas, to disseminate impactful model interventions, and to conduct research and evaluations. They fund a variety of projects, including:

- Planning and demonstration initiatives
- Research and evaluations
- Policy and statistical analysis
- Learning networks and communities
- Public education and strategic communications
- Community engagement and coalition-building
- Training/fellowship programs and technical assistance

The foundation typically issues a competitive call for proposals that outlines specific challenges, desired outcomes, and eligibility criteria. Additionally, they provide funding through open calls for ideas, various challenges and prize competitions, and direct project solicitations.

https://www.rwjf.org/en/grants.html

The Community Foundation of WNC

Funds: Various activities in the 18 counties of Western NC.

The Community Foundation provides grants and collaborates with fundholders to support innovative projects throughout Western North Carolina. They specifically offer grants to 501(c)(3) organizations that can partner on bicycle, pedestrian, and greenway initiatives.

https://cfwnc.org/

Blue Cross Blue Shield of North Carolina Foundation Grants

Funds: Programs related to health.

The BCBSNC Foundation is committed to enhancing the health and well-being of North Carolinians by supporting organizations dedicated to this mission. Their grant initiatives are designed to create lasting impact through investments in organizations, collaborations, and communities. Instead of adhering to a traditional grant cycle, the foundation periodically announces funding opportunities, offering a range of grants from small, one-time awards to larger, multi-year partnerships. Key focus areas include transforming the healthcare system (including oral health), expanding access to nutritious food, supporting healthy development in children, improving living environments, and empowering communities to take charge of their health.

http://www.bcbsncfoundation.org/

Duke Energy Foundation

Funds: Programs and projects supporting conservation and access.

The Duke Energy Foundation is dedicated to making strategic investments that foster thriving communities, enhance the environment, and support educational and economic success. Their funding priorities include projects that promote conservation efforts and improve access to natural resources, ensuring that nature and wildlife can thrive while also contributing to the development of a skilled workforce and overall economic prosperity.

https://www.duke-energy.com/community/duke-energy-foundation

America Walks Community Change Grants

Funds: Programs and projects supporting physical activity and active communities.

This grant program supports advocates, organizations, and agencies implementing innovative and inclusive community-level projects. It offers $1,500 community stipends for initiatives that promote healthy, active, and engaged environments. Funded projects should aim to:

- Increase physical activity and active transportation.
- Engage new participants and organizations in walkability efforts.
- Foster a culture of inclusive health.
- Build and sustain healthy, active, and connected communities.

https://americawalks.org/community-change-grants/

National Safety Council Community Traffic Safety Grants

Funds: Projects supporting programs, research, and infrastructure to achieve vision zero goals.

The Road to Zero Community Traffic Safety Grant Program is designed to fund innovative and effective strategies for implementing evidence-based safety measures. It emphasizes the Safe System approach and supports research initiatives aimed at reducing traffic fatalities, addressing disparities in mobility and safety, and enhancing overall traffic safety across communities.

https://www.nsc.org/road-safety/get-involved/road-to-zero/grants

Dogwood Health Trust Immediate Opportunities and Needs Grant

Funds: One-time immediate pressing needs or opportunities for non-profit organizations and tribal governments.

Grants between $500 and $25,000 are available to meet one-time urgent needs or capitalize on new opportunities. These

Immediate Opportunities and Needs grants do not fund ongoing programs or general operating expenses. Organizations may submit one application per funding cycle, and if awarded, they cannot apply again in the subsequent round.

https://dogwoodhealthtrust.org

AARP Community Challenge

Funds: "Quick-action" projects that can help communities become more livable for people of all ages.

The AARP Community Challenge provides small grants for "quick-action" projects designed to enhance community livability for individuals of all ages. Funding is available for initiatives that improve housing, transportation, public spaces, technology (including smart city innovations), civic engagement, and more. Grants can be utilized for projects that achieve:

- Permanent physical improvements within the community.
- Temporary demonstrations that inspire long-term change.

https://www.aarp.org/communitychallenge

APPENDIX B

Design Resources

Image Source: Seth Solesbee

Design Guideline Resources

To develop safe and consistent pedestrian and bicycle facilities, planners, engineers, and project designers rely on clear, up-to-date standards. In the past, multimodal design lacked comprehensive guidance for many situations. However, over the past 15 years, new resources and innovative case studies from both local and international projects have transformed the field. These advancements now support more inclusive designs, ensuring accessibility for users of all ages and adaptable solutions for both urban and rural environments. Key elements like connectivity, comfort, and convenience are central to creating effective pedestrian and bicycle networks.

For Franklin, state and national design guidelines have been gathered to help shape a multimodal transportation system that encourages alternative transportation choices. As multimodal design continues to evolve, it's crucial to keep up with new developments and tailor designs to the specific needs of the area, using sound engineering judgment and thorough documentation at every stage.

Table 1. Design Resources

North Carolina Department of Transportation	
Roadway Design Manual	2021
Complete Streets Policy A.09.0106	2019 (2022 methodology update)
Evaluating Temporary Accommodations for Pedestrians	2018
Pedestrian Crossing Guidelines	2018
Greenway Accommodations Guidelines	2015
WalkBike NC: The Statewide Pedestrian and Bicycle Plan	2013
Manual on Uniform Traffic Control Devices (MUTCD)	
MUTCD 11th Edition Guidance and Supplemental Information (including NC Supplement)	2024
American Association of State Highway and Transportation Officials (AASHTO)	
Guide for the Development of Bicycle Facilities	2012
Guide for the Planning, Design and Operation of Pedestrian Facilities	2004

Table 1. Design Resources (Cont'd)

Federal Highway Administration (FHWA)	
Strategies for Accelerating Multimodal Project Delivery	2019
Bikeway Selection Guide	2019
Guide for Improving Pedestrian Safety at Uncontrolled Crossing Intersections	2018
Small Town and Rural Multimodal Networks Design Guide	2016
Achieving Multimodal Networks: Applying Design Flexibility and Reducing Conflicts	2016
Guidebook for Developing Pedestrian and Bicycle Performance Measures	2016
Separated Bike Lane and Planning Design Guide	2015
US Access Board	
Proposed Public Rights-of-Way Accessibility Guidelines (PROWAG)	2011
Guide to the Standards	2010
USDOT/Department of Justice	
USDOT ADA Standards for Transportation Facilities	2006
DOT/DOJ Joint Technical Assistance Memos	Varies
ADA Standards for Accessible Design	2010
National Association of City Transportation Officials (NACTO)	
Transit Street Design Guide	2016
Urban Street Design Guide	2013
Urban Bikeway Design Guide	2013

APPENDIX C

Plan Document Review

Image Source: Christina Tallent

OVERVIEW & TAKEAWAYS

Franklin, in collaboration with Macon County and regional partners, has established a solid foundation in multimodal planning, evidenced by various planning documents addressing these issues within the town. The following documents form the basis for developing the Crawford Branch Greenway. Key themes include linking essential destinations such as parks, neighborhoods, schools, and commercial areas while also expanding the existing greenway network.

NCDOT Roadway Design Manual (2023)

The Roadway Design Manual offers essential design information and criteria for NCDOT roadways, with the most recent updates implemented in November 2023. These updates feature important improvements in multimodal design guidance, beneficial for the Town of Franklin. Key sections addressing multimodal design elements include Section 4.14 (Pedestrian Facilities) and Section 4.15 (Bicycle Facilities).

More here: https://connect.ncdot.gov/projects/Roadway/Pages/RDM.aspx

NCDOT 2026-2035 Transportation Improvement Plan (currently underway)

The Transportation Improvement Program (TIP) is a ten-year work plan that outlines all regionally significant transportation projects within the Southwestern RPO planning area. It covers projects across various modes of transportation, including roads, public transit, rail, aviation, as well as bicycle and pedestrian infrastructure. The RPO draft Prioritization 7.0 list includes a few projects in and near the Town of Franklin, including the following multimodal projects:

- **H172338: US 441 Business Modernization.** Modernize East Palmer Street/East Main Street and construct sidewalks from Porter Street to Big Bear Lane.
- **H090749-B/R-5734B: Georgia Road (US 23/441) Access Management.** This project involves access management along Georgia Road from Wide Horizon Drive (SR 1652) to Prentiss Bridge Road (SR 1649).
- **H192807: Highlands Road (NC 28) Access Management.** This would construct access management facilities and sidewalks on Highlands Road from East Main Street (US 441 Business) to Thomas Road (SR 1514).

More here: https://regiona.org/rpo-funding/

North Carolina Great Trails State Plan (2022)

The Great Trails State Plan builds on existing plans and introduces new recommendations to create a statewide network of shared-use paths and trails, connecting every county in North Carolina. The focus is on linking population centers with North Carolina State Parks. The key result of this planning effort is a comprehensive statewide trail map, supported by an action-oriented network plan and a 5-year implementation strategy.

The Crawford Branch Greenway would provide access to the Little Tennessee River Greenway, which is part of the plan's vision for a greenway facility farther along the river to Almond, where it would connect to the broader cross-state trail network.

More here: https://www.ncdot.gov/divisions/integrated-mobility/multimodal-planning/great-trails-state/Pages/default.aspx

Macon County Comprehensive Transportation Plan (2021)

The Macon County Comprehensive Transportation Plan (CTP) serves as a strategic framework that outlines the anticipated transportation needs of the county over the next 25 years. This plan is essential for guiding the development of infrastructure that meets the evolving demands of the community, particularly as Franklin continues to grow and develop its multimodal transportation options.

The recommendations outlined in the CTP have been carefully crafted to address the specific needs identified through extensive research and community engagement. These recommendations will play a crucial role in prioritizing projects for funding and

construction in the years to come, ensuring that Franklin can effectively enhance its transportation network. By integrating various modes of transport, including walking and biking facilities, the CTP aims to create a more connected and accessible environment for residents and visitors alike.

Recommendations include bike lanes and sidewalks on Siler Road (SR 1660) from Georgia Road to Wells Grove Road, sidewalks along Phillips Street to Wayah Street, and three multi-use path recommendations for Franklin: The Crawford Branch Greenway, the Southwest Loop Trail, and an extension of the Little Tennessee River Greenway to the County Recreation Park. These are also in *BikeWalk Franklin*, the Town's Comprehensive Bicycle & Pedestrian Plan.

More here: https://regiona.org/rpo-plansprojects/macon-county-ctp/

Franklin Comprehensive Land Use Plan (2020)

The Town of Franklin Comprehensive Land Use Plan is a collaborative community vision for the Town's future, recognizing the necessity of a strategic framework to ensure continued success and address significant challenges. This plan builds on previous initiatives, including the Town of Franklin Principles of Growth, the Downtown Franklin Master Plan, and *BikeWalk Franklin*. The Land Use Plan is structured around key goals and strategies that focus on various aspects such as land use and aesthetics, downtown revitalization, economic development, preservation of natural and cultural resources, and enhancement of transportation and infrastructure.

The plan envisions a greenway connection along Crawford Branch, which is highlighted as the most important bicycling connection for the community. Goal 5 of the Land Use Plan is to provide a variety of transportation choices, stating that "Franklin's transportation network should provide connectivity between businesses, neighborhoods and to the region. Improving sidewalks, extending the greenway, increasing access to transit and enhancing roadways can help beautify parts of town and make walking and biking safer and more enjoyable."

More here: https://www.franklinnc.com/pdf/planning/Franklin%20Town%20Plan_FINAL_ADOPTED_20200601_reduced.pdf

Macon County Comprehensive Plan (2019)

The Comprehensive Plan serves as a vital tool for establishing goals and guiding future decisions for Macon County. It provides continuity across time, offering a framework for the Macon County Commissioners to address various issues while protecting public investments and valuable resources. Though non-regulatory, the plan includes goals and objectives that act as recommendations and a shared vision for the county's future. It is a dynamic document aimed at balancing growth and preservation of the county's natural beauty and traditions. Additionally, the plan serves as a bridge between elected officials and citizens, clarifying intentions for land use regulations, budgeting, and capital improvements to foster positive growth in Macon County.

The Comprehensive Plan emphasizes the development of a multi-modal transportation system. As the population grows, the need for safe, accessible, and environmentally friendly transportation becomes increasingly important. Key bicycle, pedestrian, and greenway recommendations:

- Ensure pedestrian and bicycle safety within transportation designs.
- Promote multi-modal transportation planning to reduce trip lengths and emissions.
- Review subdivision ordinances to encourage pedestrian-friendly infrastructure.
- Create a Greenway Master Plan and explore Rails to Trails initiatives to enhance alternative transportation options and attract tourism.
- Support the Rural Planning Organization (RPO) to prioritize regional transportation projects and updates to the CTP and STIP prioritization process.

These recommendations aim to foster a transportation network that enhances connectivity, supports sustainable development, and integrates pedestrian and bicycle facilities throughout Macon County.

More here: https://regiona.org/wp-content/uploads/2019-Macon-County-Comprehensive-Plan.pdf

NCDOT Complete Streets Policy (2019)

In alignment with North Carolina's transportation goals, the NCDOT adopted its Complete Streets policy in 2009 and updated it in 2019, emphasizing the integration of multimodal facilities in the design and enhancement of transportation projects. The latest updates in 2022 provided refined methodologies and additional guidance for evaluating Complete Streets projects.

The updated policy establishes a Project Evaluation Methodology that provides clearer guidance on selecting appropriate facilities while balancing the competing needs within public rights-of-way. For Franklin, this means that local transportation projects, including potential greenways and multimodal paths, can be more effectively prioritized and funded. Furthermore, the policy encourages projects to be included in the local Comprehensive Transportation Plan (CTP) and advance through the Strategic Prioritization process. This approach is particularly beneficial for Franklin, as it helps reduce or eliminate common cost-sharing barriers, making it easier to secure funding for essential multimodal infrastructure.

More here: https://connect.ncdot.gov/projects/BikePed/Pages/Complete-Streets.aspx

Southern Blue Ridge Bicycle Plan (2018)

The Southern Blue Ridge is the study area for this NCDOT-funded regional bicycle plan, led by the Southwestern Commission. The study area includes four counties: Cherokee, Clay, Graham, and Macon. Developing a bicycle plan for the mountain counties of western North Carolina requires balancing diverse needs to promote health, economic development, and community cohesion. This plan is tailored for riders of all ages and abilities, including the "strong and fearless" as well as those "interested but concerned" about safety. It highlights the recreational tourism value of bicycling in the region and sets realistic goals for implementation.

This plan recommends an extension of the Little Tennessee River Greeenway to the Macon County Recreation Park, bike lanes on Georgia Road, and a number of safety improvements along key bicycle routes. As stipulated in the plan, "new greenways will connect schools to recreational opportunities, help users appreciate the scenic beauty of the area - its agricultural land and winding rivers, connect towns to each other, and encourage commercial, business, and real estate investments and returns.

More here: https://regiona.org/wp-content/uploads/Southern-Blue-Ridge-Bike-Plan-5.25.18.pdf

BikeWalk Franklin: Town of Franklin Comprehensive Bicycle & Pedestrian Plan (2017)

BikeWalk Franklin is the Town of Franklin's comprehensive bicycle and pedestrian plan aimed at enhancing active transportation options within the community. The plan focuses on creating safe, accessible, and well-connected routes for walking and biking, linking key destinations like public spaces, commercial areas, and natural resources. By improving infrastructure and fostering partnerships, the plan seeks to promote healthier lifestyles, reduce traffic congestion, and increase connectivity throughout the town.

The Crawford Branch Greenway is identified as Project #9 in this plan, with detailed information provided in a project cutsheet. Its alignment in *BikeWalk Franklin* closely mirrors the recommended alignment from this feasibility study, extending along Maple Street, Palmer Street, around the dog park and Drake property, Carolina Mountain Drive, Rogers Street, and East Main Street. Several crossings are proposed to feature Rectangular Rapid Flashing Beacons (RRFBs). Spanning 1.2 miles, the estimated cost is $1.3 million, according to *BikeWalk Franklin*.

More here: https://www.franklinnc.com/pdf/projects/BikeWalk-Franklin-Final-20170126.pdf

Franklin Greenway Connections (2015)

This plan serves as a strategic tool for guiding future infrastructure investments in the Little Tennessee River Greenway, aiming for efficient use of resources by various partners and jurisdictions involved. It highlights the Greenway's potential to boost economic development in Franklin while promoting a high quality of life and responsible management of surrounding natural resources. The Land Trust for the Little Tennessee (LTLT), with support from the Town of Franklin, seeks to enhance pedestrian connectivity to the existing Greenway. The report highlights the Crawford Branch Greenway as a key connection for the town.

More here: https://regiona.org/wp-content/uploads/2015-Franklin-Pedestrian-Connections-to-Little-TN-River-Greenway.pdf

Franklin Parking Study (2014)

This study focuses largely on street parking along Main Street, with a recommendation to improve pedestrian safety while keeping or increasing the amount of on-street parking available on Main Street. It also recommends providing a Complete Streets design to include all roadway users.

More here: https://www.franklinnc.com/pdf/planning/franklin-parking-report.pdf

Southwestern RPO Regional Trails Plan (2013)

The Southwestern Commission developed the Regional Trails Plan in 2013, marking the first effort to catalog and plan for a comprehensive trail system in the seven-county region of Western North Carolina. Funded by the North Carolina Division of Parks and Recreation's State Trails Program, the Plan involved data collection, public workshops for input on new trails, and documentation of trail-related considerations. The counties included are Cherokee, Clay, Graham, Haywood, Jackson, Macon, and Swain. The Plan aims to gather citizen and community leader input on where to pursue new trails or enhance existing ones, covering hiking, mountain biking, greenways, paddle trails, and equestrian trails. Trails recognized in this Plan will be integrated into the State Trails Plan, enhancing the region's eligibility for state funding through grant programs. Macon County priorities include:

- Construct a connection from the Little Tennessee River to Siler Road, potentially as a greenway or a combination of sidewalk and bicycle route.
- Create a multi-use trail or walking loop branching from the Little Tennessee River greenway to connect other areas of Franklin, possibly including a link to Wallace Branch.

More here: https://regiona.org/wp-content/uploads/20130924_SWC_Trails_Plan-FINAL-LowRes.pdf

Macon County Heritage Development Plan (2008)

Macon County's heritage planning process emerged from community input, including a well-attended kick-off event and consultations with local organizations. The planning team, composed of leaders from the Chamber, Historical Society, Friends of the Little Tennessee River Greenway, and other stakeholders, identified numerous conservation, education, and preservation projects. This plan reflects a thoughtful review of the impact and feasibility of these initiatives, prioritizing the protection of Macon County's unique heritage and characteristics.

Action items include the development of a crosswalk from the Greenway to Nikwasi Mound and the expansion of the Greenway itself. Plans also involve the restoration of the Frog Quarters, which includes retail shops and the restoration of a water mill. An annual Greenway Festival is proposed to celebrate the area, and the construction of an outdoor amphitheater at the Nikwasi Center along the Greenway is also planned. These initiatives aim to enhance connectivity, promote local culture, and foster community engagement.

More here: https://www.blueridgeheritage.com/wp-content/uploads/images/PDFs/Local%20Heritage%20Plans/MaconCountyHeritagPlanOct2008.pdf

Downtown Franklin Master Plan (2008)

This plan provides a vision for streetscape designs throughout Franklin's downtown core, with ideas for new sidewalks, gateways, roundabouts, trees, lighting, and signs along roadways like Palmer Street, Depot Street, and Main Street. This vision includes many new roadway cross-sections, renderings, and visual reference images for streetscape elements.

More here: https://regiona.org/wp-content/uploads/downtown-franklin-master-plan.pdf

Macon County Recreation Master Plan (2005)

The Macon County Recreation Master Plan assesses the current recreational facilities, activities, and programs offered by the Macon County Parks & Recreation Department and provides a roadmap for better serving the community's recreational needs. This plan includes a comprehensive inventory and evaluation of existing park facilities and programs, alongside an assessment of community satisfaction. The recommendations offer clear guidance for expanding facilities, programs, and staff to meet the future recreational needs of Macon County residents.

For the Franklin area, this plan recommends studying the connectivity from existing parks and land holdings to existing greenway facilities like the Little Tennessee River Greenway. This feasibility study does just that. It also recommends beginning the land acquisition and budgeting process for the next phase of the Little Tennessee River Greenway based on Greenway Master Plan.

More here: https://regiona.org/wp-content/uploads/Macon-County-Rec-Master-Plan.pdf

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APPENDIX D

Detailed Cost Estimates

Image Source: Harrison Keely

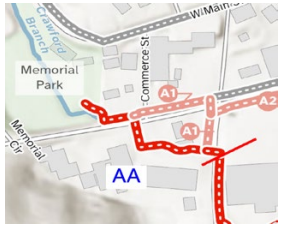
Table 2. Section AA (Memorial Park to Maple Street Crossing) Cost Estimate

SECTION:	**AA**
SECTION DESCRIPTION:	**Memorial Park to Maple Street Crossing**
CATEGORY:	Greenway/Multi-use Sidepath
CROSSING ESTIMATE: (ROUNDED)	$ 428,000.00

COMMENTS:

10' Asphalt greenway. 2 mid-block RRFB crossings.
150' path from Memorial Park to Commerce St. 1 RRFB Crossing at W Palmer St. 1 marked driveway crossing at Fire/Police department. 250' path in front of fire department. 1 RRFB Crossing at Maple St.
Future amenities could be located in front of Fire/Police department - not included in estimate.

Begins at Memorial Park where it exits the park near W. Palmer St. and runs east to Commerce Street where it crosses W. Palmer Street and enters onto property owned by the Town in front of the fire department. It crosses Maple Street with a high visibility mid-block crossing.



NOTES:

Construction cost estimates based on local similar project data and escalated to 2026 construction.
Utility estimates are based on visual inspection and may not be all inclusive.
Right-of-way costs are not included.

Table 2. Section AA (Memorial Park to Maple Street Crossing) Cost Estimate (Cont'd)

COST ESTIMATE					
LINE ITEM	**UNIT**	**UNIT RATE**	**QTY**	**TOTAL COST**	**DESCRIPTION**
Removal of Existing Infrastructure	LS	$ 8,000.00	1	$ 8,000.00	Memorial Park Connection
Clearing & Grubbing	AC	$ 15,000.00	0.22	$ 3,300.00	Footprint & Working Buffer
Utility Relocation	LS	$ -	-	$ -	N/A
Grading	SY	$ 35.00	890	$ 31,150.00	
Subgrade - 6" ABC	SY	$ 25.00	445	$ 11,125.00	
Asphalt - 4.5"	SY	$ 60.00	-	$ -	
Concrete Sidewalk - 4"	SY	$ 110.00	445	$ 48,950.00	
Curb & Gutter	LF	$ 50.00	-	$ -	
Curb Ramps	EA	$ 3,250.00	5	$ 16,250.00	
Detectable Warning Surface	SF	$ 55.00	100	$ 5,500.00	
Drainage	LS	-	-	$ -	
Walls	SF	$ 250.00	-	$ -	
Pavement Markings	LS	$ 3,640.00	1	$ 3,640.00	260 LF of 24" Crosswalk
Signage	EA	$ 230.00	5	$ 1,150.00	
Traffic Control	LS	$ 7,962.60	1	$ 7,962.60	Minor Traffic Control - Flagging & Signage
Signalization/RRFB	EA	$ 35,000.00	2	$ 70,000.00	2 RRFB Crossings - Double Sided
-				$ -	
-				$ -	
-				$ -	
SUM OF CONSTRUCTION ITEMS				$ 207,027.60	
Design	LS	$ 53,741.05	1	$ 53,741.05	24% Estimate
Environmental	LS	$ 6,717.63	1	$ 6,717.63	3% Estimate
Survey	LS	$ 22,392.11	1	$ 22,392.11	10% Estimate
Construction & Project Management	LS	$ 22,392.11	1	$ 22,392.11	10% Estimate
SUM OF PERCENTAGE BASED ITEMS				$ 105,242.89	
Escalation	LS	$ 16,893.45	1	$ 16,893.45	4% for 2 Years
Contingency	LS	$ 98,749.18	1	$ 98,749.18	30% Coverage
SUM OF PERCENTAGE BASED INCREASES				$ 115,642.64	
TOTAL ESTIMATE				**$ 427,913.13**	**Greenway/Multi-use Sidepath Estimate**

Table 3. Section AB (Maple Street to Porter Street Crossing) Cost Estimate

SECTION:	**AB**		
SECTION DESCRIPTION:	**Maple Street to Porter Street Crossing**		
CATEGORY:	Greenway/Multi-use Sidepath	**CROSSING ESTIMATE: (ROUNDED)**	$ 383,100.00

COMMENTS:

10' Asphalt greenway. 1 mid-block RRFB crossing.
240' parking reconfiguration. 730' currently unpaved section behind plaza and lot. 365' parking reconfiguration to Porter Street. 1 RRFB at Porter Street.
Future amenities could be located in front of grass section between plazas - not included in estimate.

Start at Ingles property along Maple Street. Run behind plaza and through existing lot to Porter Street. Parking and traffic would be reconfigured to allow for multi-use path. Cross Porter Street (US 441) with a high visibility crossing.

NOTES:

Construction cost estimates based on local similar project data and escalated to 2026 construction.
Utility estimates are based on visual inspection and may not be all inclusive.
Right-of-way costs are not included.

Table 3. Section AB (Maple Street to Porter Street Crossing) Cost Estimate (Cont'd)

COST ESTIMATE					
LINE ITEM	**UNIT**	**UNIT RATE**	**QTY**	**TOTAL COST**	**DESCRIPTION**
Removal of Existing Infrastructure	LS	$ 1,000.00	1	$ 1,000.00	Minimal
Clearing & Grubbing	AC	$ 15,000.00	-	$ -	Footprint & Working Buffer
Utility Relocation	LS	$ -	-	$ -	N/A
Grading	SY	$ 35.00	1625	$ 56,875.00	
Subgrade - 6" ABC	SY	$ 25.00	815	$ 20,375.00	
Asphalt - 4.5"	SY	$ 60.00	815	$ 48,900.00	
Concrete Sidewalk - 4"	SY	$ 110.00	-	$ -	
Curb & Gutter	LF	$ 50.00	-	$ -	
Curb Ramps	EA	$ 3,250.00	2	$ 6,500.00	
Detectable Warning Surface	SF	$ 55.00	40	$ 2,200.00	
Drainage	LS	-	-	$ -	
Walls	SF	$ 250.00	-	$ -	
Pavement Markings	LS	$ 6,890.00	1	$ 6,890.00	60 LF of 24" & 1210 LF of 4"
Signage	EA	$ 230.00	2	$ 460.00	
Traffic Control	LS	$ 7,128.00	1	$ 7,128.00	Minor Traffic Control - Flagging & Signage
Signalization/RRFB	EA	$ 35,000.00	1	$ 35,000.00	1 RRFB Crossings - Double Sided
-				$ -	
-				$ -	
-				$ -	
SUM OF CONSTRUCTION ITEMS				$ 185,328.00	
Design	LS	$ 48,108.18	1	$ 48,108.18	24% Estimate
Environmental	LS	$ 6,013.52	1	$ 6,013.52	3% Estimate
Survey	LS	$ 20,045.08	1	$ 20,045.08	10% Estimate
Construction & Project Management	LS	$ 20,045.08	1	$ 20,045.08	10% Estimate
SUM OF PERCENTAGE BASED ITEMS				$ 94,211.86	
Escalation	LS	$ 15,122.76	1	$ 15,122.76	4% for 2 Years
Contingency	LS	$ 88,398.79	1	$ 88,398.79	30% Coverage
SUM OF PERCENTAGE BASED INCREASES				$ 103,521.55	
TOTAL ESTIMATE				**$ 383,061.41**	**Greenway/Multi-use Sidepath Estimate**

Table 4. Section AC (Porter Street to Heritage Hollow Drive Crossing) Cost Estimate

SECTION:	**AC**		
SECTION DESCRIPTION:	**Porter Street to Heritage Hallow Drive Crossing**		
CATEGORY:	Greenway/Multi-use Sidepath	**CROSSING ESTIMATE: (ROUNDED)**	$ 706,200.00

COMMENTS:

10' Concrete sidepath.

175' concrete sidepath. 635' of shared travel lanes/marking seperated path. 1 new pedestrain bridge to cross Crawford Branch.

Start east of Porter Street and run south as a sidepath to Heritage Hollow Drive. Continue as a shared street through Heritage Hollow - sharing travel lanes with low-speed, low-volume traffic. A new pedestrian bridge to replace the former vehicle bridge will cross Crawford Branch.

NOTES:

Construction cost estimates based on local similar project data and escalated to 2026 construction.

Utility estimates are based on visual inspection and may not be all inclusive.

Right-of-way costs are not included.

Table 4. Section AC (Porter Street to Heritage Hollow Drive Crossing) Cost Estimate (Cont'd)

COST ESTIMATE					
LINE ITEM	**UNIT**	**UNIT RATE**	**QTY**	**TOTAL COST**	**DESCRIPTION**
Removal of Existing Infrastructure	LS	$ 10,000.00	1	$ 10,000.00	Bridge Access
Clearing & Grubbing	AC	$ 15,000.00	0.08	$ 1,200.00	Footprint & Working Buffer
Utility Relocation	LS	$ -	-	$ -	N/A
Grading	SY	$ 35.00	390	$ 13,650.00	
Subgrade - 6" ABC	SY	$ 25.00	195	$ 4,875.00	
Asphalt - 4.5"	SY	$ 60.00	-	$ -	
Concrete Sidewalk - 4"	SY	$ 110.00	195	$ 21,450.00	
Curb & Gutter	LF	$ 50.00	145	$ 7,250.00	
Curb Ramps	EA	$ 3,250.00	3	$ 9,750.00	
Detectable Warning Surface	SF	$ 55.00	40	$ 2,200.00	
Drainage	LS	-	-	$ -	
Walls	SF	$ 250.00	-	$ -	
Pavement Markings	LS	$ 7,190.00	1	$ 7,190.00	60 LF of 24" & 1270 LF of 4"
Signage	EA	$ 230.00	4	$ 920.00	
Traffic Control	LS	$ 13,139.40	1	$ 13,139.40	Minor Traffic Control - Flagging & Signage
Signalization/RRFB	EA	-	-	$ -	
Pedestrian Bridge	LS	$ 250,000.00	1	$ 250,000.00	Prefabricated Truss
-				$ -	
-				$ -	
SUM OF CONSTRUCTION ITEMS				$ 341,624.40	
Design	LS	$ 88,680.23	1	$ 88,680.23	24% Estimate
Environmental	LS	$ 11,085.03	1	$ 11,085.03	3% Estimate
Survey	LS	$ 36,950.10	1	$ 36,950.10	10% Estimate
Construction & Project Management	LS	$ 36,950.10	1	$ 36,950.10	10% Estimate
SUM OF PERCENTAGE BASED ITEMS				$ 173,665.45	
Escalation	LS	$ 27,876.55	1	$ 27,876.55	4% for 2 Years
Contingency	LS	$ 162,949.92	1	$ 162,949.92	30% Coverage
SUM OF PERCENTAGE BASED INCREASES				$ 190,826.47	
TOTAL ESTIMATE				**$ 706,116.32**	**Greenway/Multi-use Sidepath Estimate**

Table 5. Section AD (Heritage Hollow Drive to Phillips Street Crossing) Cost Estimate

SECTION:	**AD**
SECTION DESCRIPTION:	**Heritage Hollow Drive to Phillips Street Crossing**
CATEGORY:	Greenway/Multi-use Sidepath
CROSSING ESTIMATE: (ROUNDED)	$ 476,300.00

COMMENTS:

10' Asphalt greenway.

350' asphalt greenway to existing park. 550' asphalt conversion of existing walkway. 1 RRFB at Phillips Street.

Start north of Crawford Branch and connect with Macon County Dog Park along an existing sewer easement. Cross Phillips Street with a high visibility crossing.

NOTES:

Construction cost estimates based on local similar project data and escalated to 2026 construction.

Utility estimates are based on visual inspection and may not be all inclusive.

Right-of-way costs are not included.

Table 5. Section AD (Heritage Hollow Drive to Phillips Street Crossing) Cost Estimate (Cont'd)

COST ESTIMATE					
LINE ITEM	**UNIT**	**UNIT RATE**	**QTY**	**TOTAL COST**	**DESCRIPTION**
Removal of Existing Infrastructure	LS	$ 10,000.00	1	$ 10,000.00	
Clearing & Grubbing	AC	$ 15,000.00	0.5	$ 7,500.00	Footprint & Working Buffer
Utility Relocation	LS	$ -	-	$ -	N/A
Grading	SY	$ 35.00	2000	$ 70,000.00	
Subgrade - 6" ABC	SY	$ 25.00	1000	$ 25,000.00	
Asphalt - 4.5"	SY	$ 60.00	1000	$ 60,000.00	
Concrete Sidewalk - 4"	SY	$ 110.00	-	$ -	
Curb & Gutter	LF	$ 50.00	-	$ -	
Curb Ramps	EA	$ 3,250.00	2	$ 6,500.00	
Detectable Warning Surface	SF	$ 55.00	40	$ 2,200.00	
Drainage	LS	$ 3,600.00	1	$ 3,600.00	Install 20 LF of 24" RCP at Phillips Street
Walls	SF	$ 250.00	-	$ -	
Pavement Markings	LS	$ 840.00	1	$ 840.00	60 LF of 24"
Signage	EA	$ 230.00	4	$ 920.00	
Traffic Control	LS	$ 8,862.40	1	$ 8,862.40	Minor Traffic Control - Flagging & Signage
Signalization/RRFB	EA	$ 35,000.00	1	$ 35,000.00	RRFB at Phillips Street
-				$ -	
-				$ -	
-				$ -	
SUM OF CONSTRUCTION ITEMS				$ 230,422.40	
Design	LS	$ 59,813.97	1	$ 59,813.97	24% Estimate
Environmental	LS	$ 7,476.75	1	$ 7,476.75	3% Estimate
Survey	LS	$ 24,922.49	1	$ 24,922.49	10% Estimate
Construction & Project Management	LS	$ 24,922.49	1	$ 24,922.49	10% Estimate
SUM OF PERCENTAGE BASED ITEMS				$ 117,135.69	
Escalation	LS	$ 18,802.47	1	$ 18,802.47	4% for 2 Years
Contingency	LS	$ 109,908.17	1	$ 109,908.17	30% Coverage
SUM OF PERCENTAGE BASED INCREASES				$ 128,710.63	
TOTAL ESTIMATE				**$ 476,268.72**	**Greenway/Multi-use Sidepath Estimate**

Table 6. Section AE (Phillips Street to Drake Education Center) Cost Estimate

SECTION:	**AE**		
SECTION DESCRIPTION:	**Phillips Street to Drake Education Center**		
CATEGORY:	Greenway/Multi-use Sidepath	**CROSSING ESTIMATE: (ROUNDED)**	$ 202,000.00

COMMENTS:

10' Concrete greenway.
670' sidewalk widening/expansion.

Start east of Phillips Street and traverse the Drake Enterprises campus along the alignment of the existing sidewalk. Widen the existing sidewalk to a minium 10-foot path.

NOTES:

Construction cost estimates based on local similar project data and escalated to 2026 construction.
Utility estimates are based on visual inspection and may not be all inclusive.
Right-of-way costs are not included.

Table 6. Section AE (Phillips Street to Drake Education Center) Cost Estimate (Cont'd)

COST ESTIMATE					
LINE ITEM	**UNIT**	**UNIT RATE**	**QTY**	**TOTAL COST**	**DESCRIPTION**
Removal of Existing Infrastructure	LS	-	-	$ -	
Clearing & Grubbing	AC	$ 15,000.00	-	$ -	Footprint & Working Buffer
Utility Relocation	LS	$ -	-	$ -	N/A
Grading	SY	$ 35.00	745	$ 26,075.00	
Subgrade - 6" ABC	SY	$ 25.00	375	$ 9,375.00	
Asphalt - 4.5"	SY	$ 60.00	-	$ -	
Concrete Sidewalk - 4"	SY	$ 110.00	375	$ 41,250.00	
Curb & Gutter	LF	$ 50.00	20	$ 1,000.00	
Curb Ramps	EA	$ 3,250.00	2	$ 6,500.00	
Detectable Warning Surface	SF	$ 55.00	40	$ 2,200.00	
Drainage	LS	-	-	$ -	
Walls	SF	$ 250.00	-	$ -	
Pavement Markings	LS	$ 840.00	1	$ 840.00	60 LF of 24"
Signage	EA	$ 230.00	2	$ 460.00	
Traffic Control	LS	$ 3,908.00	0	$ -	No Traffic Control
Signalization/RRFB	EA	-	-	$ -	
Fencing	LF	$ 50.00	200	$ 10,000.00	Protect from steep slopes near water
-				$ -	
-				$ -	
SUM OF CONSTRUCTION ITEMS				$ 97,700.00	
Design	LS	$ 25,361.36	1	$ 25,361.36	24% Estimate
Environmental	LS	$ 3,170.17	1	$ 3,170.17	3% Estimate
Survey	LS	$ 10,567.23	1	$ 10,567.23	10% Estimate
Construction & Project Management	LS	$ 10,567.23	1	$ 10,567.23	10% Estimate
SUM OF PERCENTAGE BASED ITEMS				$ 49,665.99	
Escalation	LS	$ 7,972.32	1	$ 7,972.32	4% for 2 Years
Contingency	LS	$ 46,601.49	1	$ 46,601.49	30% Coverage
SUM OF PERCENTAGE BASED INCREASES				$ 54,573.81	
TOTAL ESTIMATE				**$ 201,939.80**	**Greenway/Multi-use Sidepath Estimate**

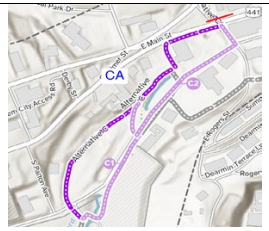
Table 7. Section CA (Drake Education Center to E Main Street Crossing) Cost Estimate

SECTION:	**CA**
SECTION DESCRIPTION:	**Drake Education Center to E Main Street Crossing**
CATEGORY:	Greenway/Multi-use Sidepath
CROSSING ESTIMATE: (ROUNDED)	$ 739,000.00

COMMENTS:

10' Asphalt greenway. 10' Concrete sidepath. 2 mid-block high-visibility crossings.
1,050' asphalt greenway from Drake driveway crosswalk to United Community Bank parking lot. 1 mid-block crossing at Carolina Mountain Drive. 200' parking lot restructure. 290' concrete sidepath to Rogers Connector St. 1 mid-block crossing at Rogers Connector St.

Begins at east end of Drake Education Center campus and crosses Carolina Mountain Drive to follow undeveloped property north of Crawford Branch. Follows a sewer easement to the United Community Credit Union. Reconfigure parking lot for trail connection. Run along E. Main Street via widened concrete sidepath to East Rogers Street.



NOTES:

Construction cost estimates based on local similar project data and escalated to 2026 construction.
Utility estimates are based on visual inspection and may not be all inclusive.
Right-of-way costs are not included.

Table 7. Section CA (Drake Education Center to E Main Street Crossing) Cost Estimate (Cont'd)

COST ESTIMATE					
LINE ITEM	**UNIT**	**UNIT RATE**	**QTY**	**TOTAL COST**	**DESCRIPTION**
Removal of Existing Infrastructure	LS	$ 10,000.00	1	$ 10,000.00	Sewer Easement
Clearing & Grubbing	AC	$ 15,000.00	0.74	$ 11,100.00	Footprint & Working Buffer
Utility Relocation	LS	$ 50,000.00	1	$ 50,000.00	1 pole
Grading	SY	$ 35.00	2980	$ 104,300.00	
Subgrade - 6" ABC	SY	$ 25.00	1490	$ 37,250.00	
Asphalt - 4.5"	SY	$ 60.00	1170	$ 70,200.00	
Concrete Sidewalk - 4"	SY	$ 110.00	325	$ 35,750.00	
Curb & Gutter	LF	$ 50.00	-	$ -	
Curb Ramps	EA	$ 3,250.00	4	$ 13,000.00	
Detectable Warning Surface	SF	$ 55.00	80	$ 4,400.00	
Drainage	LS	-	-	$ -	
Walls	SF	$ 250.00	-	$ -	
Pavement Markings	LS	$ 5,020.00	1	$ 5,020.00	260 LF of 24" Crosswalk
Signage	EA	$ 230.00	12	$ 2,760.00	
Traffic Control	LS	$ 13,751.20	1	$ 13,751.20	Minor Traffic Control - Flagging & Signage
Signalization/RRFB	EA	$ 35,000.00	-	$ -	
-				$ -	
-				$ -	
-				$ -	
SUM OF CONSTRUCTION ITEMS				$ 357,531.20	
Design	LS	$ 92,809.38	1	$ 92,809.38	24% Estimate
Environmental	LS	$ 11,601.17	1	$ 11,601.17	3% Estimate
Survey	LS	$ 38,670.57	1	$ 38,670.57	10% Estimate
Construction & Project Management	LS	$ 38,670.57	1	$ 38,670.57	10% Estimate
SUM OF PERCENTAGE BASED ITEMS				$ 181,751.70	
Escalation	LS	$ 29,174.55	1	$ 29,174.55	4% for 2 Years
Contingency	LS	$ 170,537.23	1	$ 170,537.23	30% Coverage
SUM OF PERCENTAGE BASED INCREASES				$ 199,711.78	
TOTAL ESTIMATE				**$ 738,994.68**	**Greenway/Multi-use Sidepath Estimate**

Table 8. Section CB (E Main Street to E Rogers Street Crossing) Cost Estimate

SECTION:	**CB**		
SECTION DESCRIPTION:	**E Main Street to East Rogers Street Crossing**		
CATEGORY:	Greenway/Multi-use Sidepath	**CROSSING ESTIMATE: (ROUNDED)**	$ 381,600.00

COMMENTS:

10' Concrete sidepath. 1 RRFB crossing. 1 signalized crossing.
1 RRFB crossing. 355' concrete sidepath/roadway modification. 1 signalized crossing.

Begin east of East Rogers Street and cross US 441 at a RRFB crossing. Continue up East Rogers street as a sidepath requiring driveway modifications. It then continues to the east on the south side of NE Main Street. Path crosses to the north side of NE Main Street at the signal with Depot Street.

NOTES:

Construction cost estimates based on local similar project data and escalated to 2026 construction.
Utility estimates are based on visual inspection and may not be all inclusive.
Right-of-way costs are not included.

Table 8. Section CB (E Main Street to E Rogers Street Crossing) Cost Estimate (Cont'd)

COST ESTIMATE					
LINE ITEM	**UNIT**	**UNIT RATE**	**QTY**	**TOTAL COST**	**DESCRIPTION**
Removal of Existing Infrastructure	LS	$ 3,000.00	1	$ 3,000.00	Existing C&G
Clearing & Grubbing	AC	$ 15,000.00	0.2	$ 3,000.00	Footprint & Working Buffer
Utility Relocation	LS	-	-	$ -	N/A
Grading	SY	$ 35.00	790	$ 27,650.00	Milling/C&G
Subgrade - 6" ABC	SY	$ 25.00	395	$ 9,875.00	
Asphalt - 4.5"	SY	$ 60.00	-	$ -	
Concrete Sidewalk - 4"	SY	$ 110.00	395	$ 43,450.00	
Curb & Gutter	LF	$ 50.00	355	$ 17,750.00	
Curb Ramps	EA	$ 3,250.00	4	$ 13,000.00	
Detectable Warning Surface	SF	$ 55.00	80	$ 4,400.00	
Drainage	LS	-	-	$ -	
Walls	SF	$ 250.00	-	$ -	
Pavement Markings	LS	$ 1,120.00	1	$ 1,120.00	80 LF of 24" Crosswalk
Signage	EA	$ 230.00	4	$ 920.00	
Traffic Control	LS	$ 10,449.90	1	$ 10,449.90	Involved Traffic Control - Closure & Signing
Signalization/RRFB	EA	$ 50,000.00	1	$ 50,000.00	Ped Adjustments at Signal/RRFB
-				$ -	
-				$ -	
-				$ -	
SUM OF CONSTRUCTION ITEMS				$ 184,614.90	
Design	LS	$ 47,923.07	1	$ 47,923.07	24% Estimate
Environmental	LS	$ 5,990.38	1	$ 5,990.38	3% Estimate
Survey	LS	$ 19,967.95	1	$ 19,967.95	10% Estimate
Construction & Project Management	LS	$ 19,967.95	1	$ 19,967.95	10% Estimate
SUM OF PERCENTAGE BASED ITEMS				$ 93,849.35	
Escalation	LS	$ 15,064.58	1	$ 15,064.58	4% for 2 Years
Contingency	LS	$ 88,058.65	1	$ 88,058.65	30% Coverage
SUM OF PERCENTAGE BASED INCREASES				$ 103,123.22	
TOTAL ESTIMATE				**$ 381,587.48**	**Greenway/Multi-use Sidepath Estimate**

Table 9. Section CC (E Rogers Street Crossing to Little Tennessee River) Cost Estimate

SECTION:	**CC**		
SECTION DESCRIPTION:	**East Rogers Street Crossing to Little Tennessee River Greenway**		
CATEGORY:	Greenway/Multi-use Sidepath	**CROSSING ESTIMATE: (ROUNDED)**	$ 1,148,200.00

COMMENTS:

10' Concrete sidepath. 1 signalized crossing. 10' boardwalk over wetlands.
1 signalized crossing. 300' concrete sidepath. 300' boardwalk near wetlands. 560' concrete sidepath.

Begin north of NE Main Street and cross Depot Street. Traverse northeast along NE Main Street south of the wetland. Utilize a partial boardwalk over wetland areas. Connect to Big Bear Park and the Little Tennessee River Greenway.

NOTES:

Construction cost estimates based on local similar project data and escalated to 2026 construction.
Utility estimates are based on visual inspection and may not be all inclusive.
Right-of-way costs are not included.

Table 9. Section CC (E Rogers Street Crossing to Little Tennessee River) Cost Estimate (Cont'd)

COST ESTIMATE					
LINE ITEM	**UNIT**	**UNIT RATE**	**QTY**	**TOTAL COST**	**DESCRIPTION**
Removal of Existing Infrastructure	LS	$ 10,000.00	1	$ 10,000.00	Wetland work
Clearing & Grubbing	AC	$ 15,000.00	0.58	$ 8,700.00	Footprint & Working Buffer
Utility Relocation	LS	$ 15,000.00	1	$ 15,000.00	5 Light Poles
Grading	SY	$ 35.00	2355	$ 82,425.00	
Subgrade - 6" ABC	SY	$ 25.00	1180	$ 29,500.00	
Asphalt - 4.5"	SY	$ 60.00	-	$ -	
Concrete Sidewalk - 4"	SY	$ 110.00	1180	$ 129,800.00	
Curb & Gutter	LF	$ 50.00	-	$ -	
Curb Ramps	EA	$ 3,250.00	5	$ 16,250.00	
Detectable Warning Surface	SF	$ 55.00	100	$ 5,500.00	
Drainage	LS	-	-	$ -	
Walls	SF	$ 250.00	-	$ -	
Pavement Markings	LS	$ 1,400.00	1	$ 1,400.00	100 LF of 24" Crosswalk
Signage	EA	$ 230.00	2	$ 460.00	
Traffic Control	LS	$ 31,442.10	1	$ 31,442.10	Involved Traffic Control - Closure & Signing
Signalization/RRFB	EA	$ 15,000.00	1	$ 15,000.00	Ped Adjustments at Signal
Boardwalk	LF	$ 700.00	300	$ 210,000.00	CIP Concrete Footings w PermaTrak
-				$ -	
-				$ -	
SUM OF CONSTRUCTION ITEMS				$ 555,477.10	
Design	LS	$ 144,192.97	1	$ 144,192.97	24% Estimate
Environmental	LS	$ 18,024.12	1	$ 18,024.12	3% Estimate
Survey	LS	$ 60,080.40	1	$ 60,080.40	10% Estimate
Construction & Project Management	LS	$ 60,080.40	1	$ 60,080.40	10% Estimate
SUM OF PERCENTAGE BASED ITEMS				$ 282,377.89	
Escalation	LS	$ 45,326.93	1	$ 45,326.93	4% for 2 Years
Contingency	LS	$ 264,954.58	1	$ 264,954.58	30% Coverage
SUM OF PERCENTAGE BASED INCREASES				$ 310,281.51	
TOTAL ESTIMATE				**$ 1,148,136.50**	**Greenway/Multi-use Sidepath Estimate**

Table 10. Cost Estimate Unit Prices & Descriptions

Item	Unit	Unit Price		Description
High Vis Crosswalk Pavement Markings	LF	$	15.00	Description - 5' Width
High Vis Bike Cross Pavement Markings	SF	$	6.00	Green Thermoplastic
Yield Line Triangle Markings in Roadway	LF	$	30.00	Full Dashes
Bike Lane Pavement Markings	EA	$	450.00	Symbol & Arrow
Trail Pavement Markings	LF	$	1.25	
TRAIL XING Pavement Markings	EA	$	400.00	Both Words
STOP AHEAD Trail Pavement Markings	EA	$	350.00	Both Words
YIELD AHEAD Trail Pavement Markings	EA	$	350.00	Both Words
24" Stop Bar Pavement Markings	LF	$	10.00	
Sign Post & Installation	EA	$	100.00	
Stop Sign Signage (30"x30")	EA	$	156.25	R1-1
Yield Sign Signage (36"X36"X36")	EA	$	97.50	R1-2
Stop Here for Pedestrians (36"X36")	EA	$	225.00	R1-5 or R1-5(a-c)
Yield Here for Pedestrians (36"x36")	EA	$	120.00	
Bike/Ped Combined Signage (36"x36")	EA	$	120.00	
Stop Sign Ahead Signage (30"x30")	EA	$	156.25	W3-1
Yield Sign Ahead Signage (30"x30")	EA	$	156.25	W3-2
Signal Signage (30"x30")	EA	$	156.25	W3-3
No Motor Vehicle Signage (24"x24")	EA	$	100.00	R5-3
Turning Vehicles Yield Signage (30"x30")	EA	$	156.25	R10-15
Generic Sign (9"x12")	EA	$	18.75	R10-2
Generic Sign (9"x15")	EA	$	23.50	
Ped/Bike Warning Signage (36"x36")	EA	$	120.00	W11-15
Trail X-ing Signage (24"x18")	EA	$	75.00	W11-15P
Trail Arrow Signage (24"x12")	EA	$	50.00	W16-7P
Distance Warning Signage (24"x12")	EA	$	50.00	W16-2aP
Road Name Signage (24"x8")	EA	$	33.25	W16-8P
Turn Arrow Signage (24"x18")	EA	$	75.00	W16-6P
Ahead Signage (24"x12")	EA	$	50.00	W16-9P
ADA access + truncated domes	EA	$	2,500.00	
Generic 30 x 12 Sign	EA	$	62.50	"Look" Signage
Pedestrian Refuge Island	LS	$	20,000.00	
RRFB (2 double sided flashers)	LS	$	25,500.00	See below right (NO PASSIVE DETECTION INCL.)
RRFB (3 double sided flashers)	LS	$	38,000.00	See below right (NO PASSIVE DETECTION INCL.)
Bike Push Button	LS	$	3,500.00	Pair of push buttons

Table 10. Cost Estimate Unit Prices & Descriptions (Cont'd)

Item	Unit	Unit Price	Description
Thermal Passive Detection	LS	$ 16,000.00	
RRFB + Thermal Passive Detection	LS	$ 54,000.00	
Full Signal Modification Kanuga	LS	$ 175,000.00	
Full Signal Modification US-64	LS	$ 150,000.00	
Concrete Curb	LF	$ 50.00	
Signal ADA access + truncated domes	EA	$ 5,000.00	
Generic Sign (24"x12")	EA	$ 50.00	
Generic Sign (24"x30")	EA	$ 125.00	
Generic Sign (36"x12")	EA	$ 75.00	
RRFB Installation	EA	$ 4,250.00	includes power supply, conduit, installation of foundations, setting poles, directional bore under driveways (30ft)
RRFB (2 double sided flashers)&FLIR	LS	$ 19,000.00	Includes passive detection for bikes - no installation
On Site Equipment Support and Setup	LS	$ 5,300.00	
ADA access design	EA	$ 2,700.00	
Pedestrian Poles and mounting	EA	$ 1,550.00	4.5" OD aluminum poles, bases, anchor bolts and mounting brackets
Retainage Wall (low height)	SF	$ 50.00	

Table 11. Recommended Route Alternatives Cost Estimate Summary

COST ESTIMATE SUMMARY BY SECTION			
Section	**Project Name**		**Estimate**
A	Baseline Construction	$	1,100,000.00
A	Survey & Design	$	400,000.00
A	Construction & Project Management	$	120,000.00
A	Escalation	$	90,000.00
A	Contingency	$	510,000.00
A	***Alternative A - Memorial Park to Drake Education Center***	***$***	***2,220,000.00***
C	Baseline Construction	$	1,140,000.00
C	Survey & Design	$	410,000.00
C	Construction & Project Management	$	120,000.00
C	Escalation	$	90,000.00
C	Contingency	$	530,000.00
C	***Alternative C - Drake Education to LTR Greenway***	***$***	***2,290,000.00***
	TOTAL ESTIMATE	***$***	***4,510,000.00***

Table 12. Cost Estimate Summary by Section

COST ESTIMATE SUMMARY BY SECTION			
Section	**Project Name**		**Estimate**
AA	Memorial Park to Maple Street Crossing	$	428,000.00
AB	Maple Street to Porter Street Crossing	$	383,100.00
AC	Porter Street to Heritage Hallow Drive Crossing	$	706,200.00
AD	Heritage Hallow Drive to Phillips Street Crossing	$	476,300.00
AE	Phillips Street to Drake Education Center	$	202,000.00
A	***Alternative A - Memorial Park to Drake Education Center***	***$***	***2,195,600.00***
CA	Drake Education Center to E Main Street Crossing	$	739,000.00
CB	E Main Street to East Rogers Street Crossing	$	381,600.00
CC	East Rogers Street Crossing to Little Tennessee River Greenway	$	1,148,200.00
C	***Alternative C - Drake Education to LTR Greenway***	***$***	***2,268,800.00***
	TOTAL ESTIMATE	***$***	***4,464,400.00***

Table 13. Baseline Construction Cost Estimate by Section

BASELINE CONSTRUCTION BY SECTION			
Section	**Project Name**		**Estimate**
AA	Memorial Park to Maple Street Crossing	$	213,800.00
AB	Maple Street to Porter Street Crossing	$	191,400.00
AC	Porter Street to Heritage Hallow Drive Crossing	$	352,800.00
AD	Heritage Hallow Drive to Phillips Street Crossing	$	237,900.00
AE	Phillips Street to Drake Education Center	$	100,900.00
A	***Alternative A - Memorial Park to Drake Education Center***	***$***	***1,096,800.00***
CA	Drake Education Center to E Main Street Crossing	$	369,200.00
CB	E Main Street to East Rogers Street Crossing	$	190,700.00
CC	East Rogers Street Crossing to Little Tennessee River Greenway	$	573,600.00
C	***Alternative C - Drake Education to LTR Greenway***	***$***	***1,133,500.00***
	TOTAL ESTIMATE	***$***	***2,230,300.00***

Table 14. Survey & Design Fee Cost Estimate by Section

SURVEY & DESIGN FEE BY SECTION			
Section	**Project Name**		**Estimate**
AA	Memorial Park to Maple Street Crossing	$	76,200.00
AB	Maple Street to Porter Street Crossing	$	68,200.00
AC	Porter Street to Heritage Hallow Drive Crossing	$	125,700.00
AD	Heritage Hallow Drive to Phillips Street Crossing	$	84,800.00
AE	Phillips Street to Drake Education Center	$	36,000.00
A	***Alternative A - Memorial Park to Drake Education Center***	***$***	***390,900.00***
CA	Drake Education Center to E Main Street Crossing	$	131,500.00
CB	E Main Street to East Rogers Street Crossing	$	67,900.00
CC	East Rogers Street Crossing to Little Tennessee River Greenway	$	204,300.00
C	***Alternative C - Drake Education to LTR Greenway***	***$***	***403,700.00***
	TOTAL ESTIMATE	***$***	***794,600.00***

Table 15. Construction & Project Management Cost Estimate by Section

CONSTRUCTION & PROJECT MANAGEMENT BY SECTION			
Section	**Project Name**		**Estimate**
AA	Memorial Park to Maple Street Crossing	$	22,400.00
AB	Maple Street to Porter Street Crossing	$	20,100.00
AC	Porter Street to Heritage Hallow Drive Crossing	$	37,000.00
AD	Heritage Hallow Drive to Phillips Street Crossing	$	25,000.00
AE	Phillips Street to Drake Education Center	$	10,600.00
A	***Alternative A - Memorial Park to Drake Education Center***	***$***	***115,100.00***
CA	Drake Education Center to E Main Street Crossing	$	38,700.00
CB	E Main Street to East Rogers Street Crossing	$	20,000.00
CC	East Rogers Street Crossing to Little Tennessee River Greenway	$	60,100.00
C	***Alternative C - Drake Education to LTR Greenway***	***$***	***118,800.00***
	TOTAL ESTIMATE	***$***	***233,900.00***

Table 16. Escalation Cost Estimate by Section

ESCALATION BY SECTION			
Section	**Project Name**		**Estimate**
AA	Memorial Park to Maple Street Crossing	$	16,900.00
AB	Maple Street to Porter Street Crossing	$	15,200.00
AC	Porter Street to Heritage Hallow Drive Crossing	$	27,900.00
AD	Heritage Hallow Drive to Phillips Street Crossing	$	18,900.00
AE	Phillips Street to Drake Education Center	$	8,000.00
A	***Alternative A - Memorial Park to Drake Education Center***	***$***	***86,900.00***
CA	Drake Education Center to E Main Street Crossing	$	29,200.00
CB	E Main Street to East Rogers Street Crossing	$	15,100.00
CC	East Rogers Street Crossing to Little Tennessee River Greenway	$	45,400.00
C	***Alternative C - Drake Education to LTR Greenway***	***$***	***89,700.00***
	TOTAL ESTIMATE	***$***	***176,600.00***

Table 17. Contingency Cost Estimate by Section

CONTINGENCY (20%) BY SECTION			
Section	**Project Name**		**Estimate**
AA	Memorial Park to Maple Street Crossing	$	98,800.00
AB	Maple Street to Porter Street Crossing	$	88,400.00
AC	Porter Street to Heritage Hallow Drive Crossing	$	163,000.00
AD	Heritage Hallow Drive to Phillips Street Crossing	$	110,000.00
AE	Phillips Street to Drake Education Center	$	46,700.00
A	***Alternative A - Memorial Park to Drake Education Center***	***$***	***506,900.00***
CA	Drake Education Center to E Main Street Crossing	$	170,600.00
CB	E Main Street to East Rogers Street Crossing	$	88,100.00
CC	East Rogers Street Crossing to Little Tennessee River Greenway	$	265,000.00
C	***Alternative C - Drake Education to LTR Greenway***	***$***	***523,700.00***
	TOTAL ESTIMATE	***$***	***1,030,600.00***

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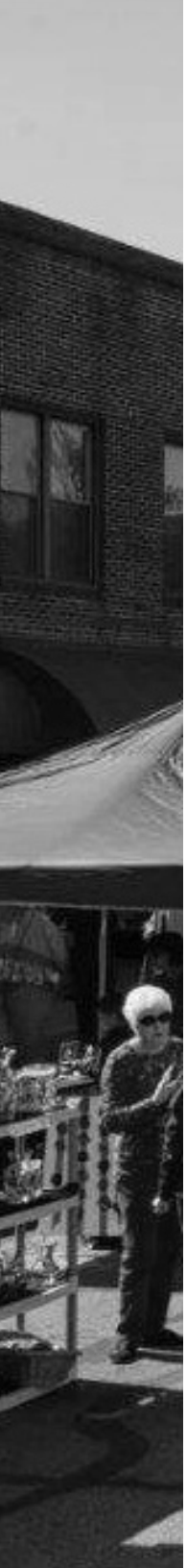


APPENDIX E

Online Survey Results

Image Source: Visit Smokies

Image 1. Online Survey Response Summary

Crawford Branch Greenway Feasibility Study

Project Engagement

VIEWS	PARTICIPANTS	RESPONSES	COMMENTS
522	59	893	85

Do you currently walk or bike through this area?

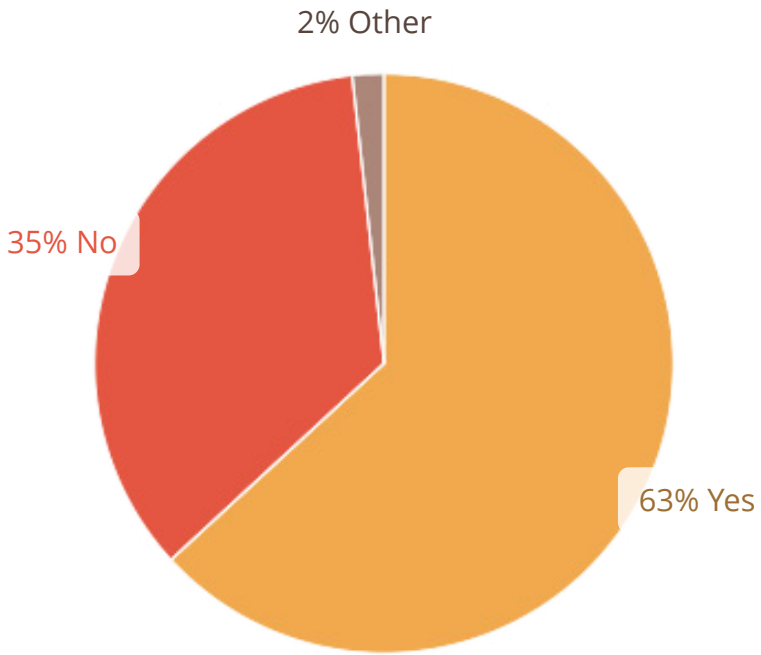
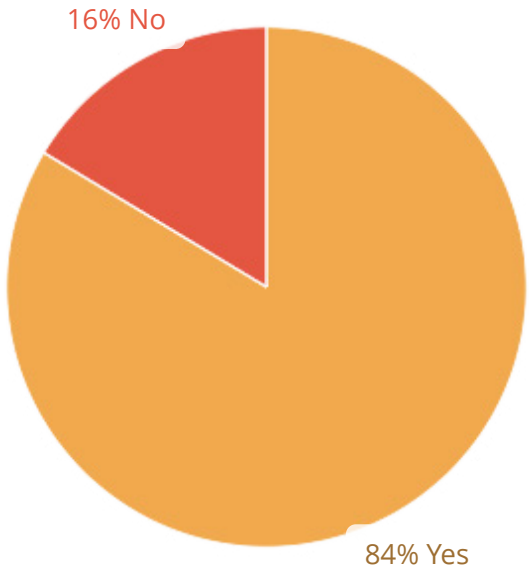


Image 1. Online Survey Response Summary (Cont'd)

Would you use the proposed Crawford Branch Greenway if it were fully complete, extending from the Little Tennessee River Greenway to Memorial Park?



55 respondents

Image 1. Online Survey Response Summary (Cont'd)

How do you **currently** use greenways in Franklin?

85%	Walking, hiking, or running	47 ✓
65%	Enjoying nature or relaxing	36 ✓
40%	Bicycling	22 ✓
38%	Taking the pets out	21 ✓
35%	Bird watching	19 ✓
27%	Taking the kids out	15 ✓
9%	Skating or rollerblading	5 ✓
5%	None of the above	3 ✓
4%	Commuting to work/errands/seeing family or friends	2 ✓
4%	Other	2 ✓

Image 1. Online Survey Response Summary (Cont'd)

How **would you** use the Crawford Branch Greenway that is proposed in this study?

83%	Walking, hiking, or running	45 ✓
54%	Enjoying nature or relaxing	29 ✓
50%	Bicycling	27 ✓
44%	Taking the pets out	24 ✓
30%	Bird watching	16 ✓
28%	Taking the kids out	15 ✓
20%	Commuting to work/errands/seeing family or friends	11 ✓
13%	Skating or rollerblading	7 ✓
13%	None of the above	7 ✓
2%	Other	1 ✓

Image 1. Online Survey Response Summary (Cont'd)

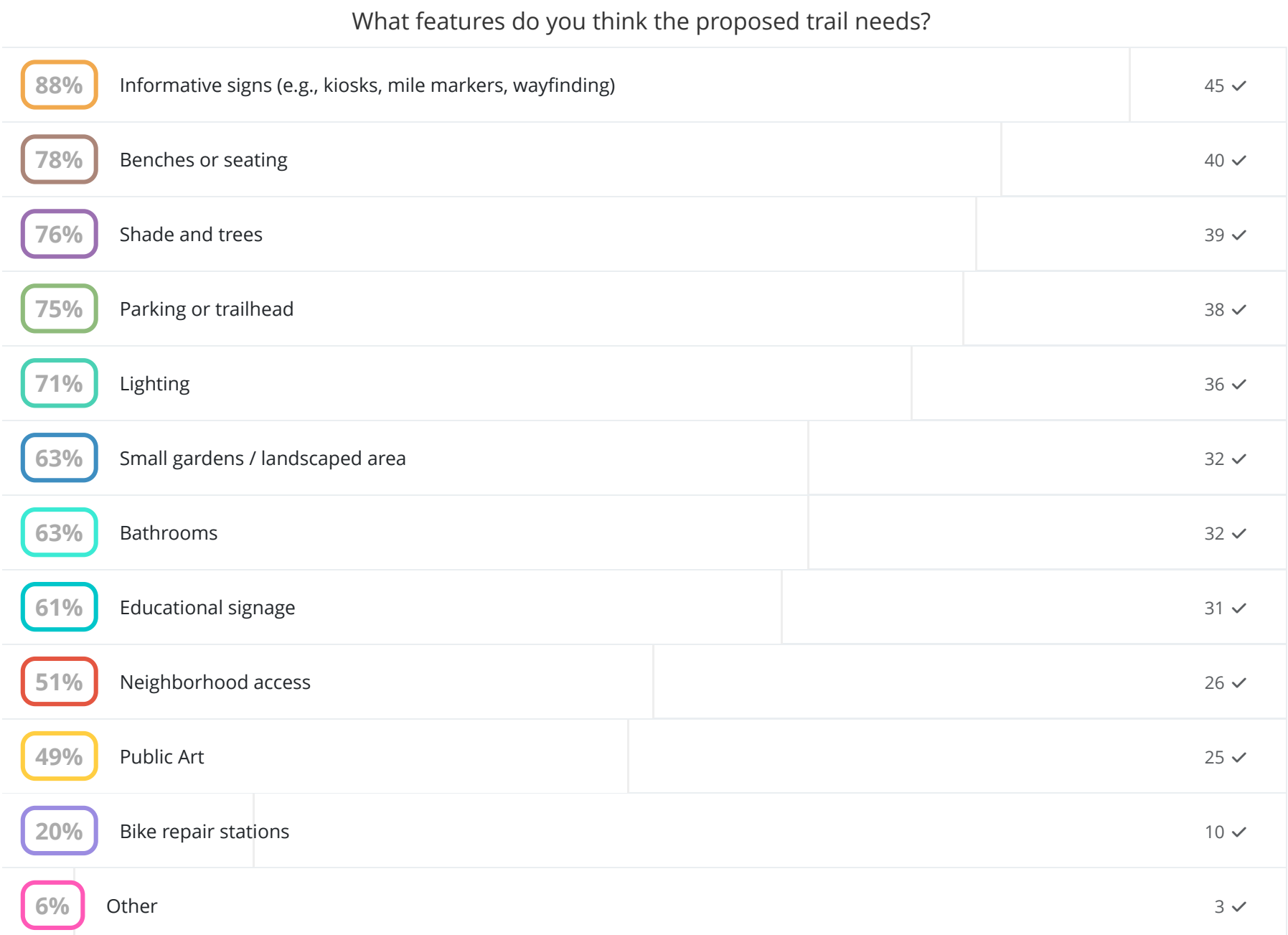


Image 1. Online Survey Response Summary (Cont'd)

What do you think would help make the proposed Crawford Branch Greenway exciting and successful?

This would be amazing to have in the community!!

5 months ago

1 Agree

All of the above !!!

5 months ago

1 Agree

If it actually got beyond the discussion stage.

5 months ago

1 Agree

Keep it clean and well maintained.

5 months ago

1 Agree

I would really like it to have fitness sections along the greenway.

5 months ago

1 Agree

I think that it would be smart to have emergency response buttons incase someone is having a heart attack or is attacked by a predator.

5 months ago

1 Agree

Make sure it's connected to the existing pedestrian network, so it can be safely accessed on foot.

5 months ago

1 Agree

commerce, recreation, fitness and connectivity all in one! This would be an asset for all to enjoy.

5 months ago

1 Agree

Assure that not so steep as to discourage use. Easy links to downtown. Good signage to promote business access. Also need dog poop stations- great addition to rest of greenway. It has made a difference!

Image 1. Online Survey Response Summary (Cont'd)

What do you think would help make the proposed Crawford Branch Greenway exciting and successful?

Easy access and getting the word out

5 months ago

1 Agree

Having this as a way to enjoy pedestrian access to Franklin is incredible. In one visit to WNC we saw in a park in cashiers where kids were able to do a paver, some with handprints, some with drawings or other art. Using that as a fundraiser would be exciting and add more character than the typical engraved pavers a lot of places do

5 months ago

1 Agree

Paved throughout

5 months ago

1 Agree

Everyone need to support this project

5 months ago

1 Agree

its existence as a pathway connecting memorial park to the existing greenway is exciting and successful in and of itself.

5 months ago

1 Agree

Walkathons, dog parades, nearby restaurants, ice cream shops, secure parking, fund raising,

5 months ago

1 Agree

Wide enough for biking with road crossings minimized.

4 months ago

Being well maintained and policed by bicycle

4 months ago

Image 1. Online Survey Response Summary (Cont'd)

What do you think would help make the proposed Crawford Branch Greenway exciting and successful?

Being well maintained and policed by bicycle

4 months ago

Business support and maybe some coordinated activities to get the whole town out walking

4 months ago

Clean, maintained and safe

5 months ago

Perhaps a seasonal caddy cart for busy times, selling snacks!! A frogs 🐸Golf Cart!! Selling your stuff!! All up and down it!! 🤩

5 months ago

Making this section smoother, so rollerblades can be used. Keeping it wide so strollers and bikers can pass easily.

5 months ago

Incorporate the new women's statue. Keep it safe by having law enforcement patrols. Make it as family friendly as possible

5 months ago

Avoiding road crossings whenever possible.

5 months ago

Completing the plan and having access available is very exciting and something we need for the community. I love this plan.

5 months ago

It'll just be another homeless hang out that's to dangerous to take the kids to. It'll be littered with needles and trash soon.

5 months ago

Image 1. Online Survey Response Summary (Cont'd)

What do you think would help bring new users and a more diverse and inclusive trail user group to the proposed Crawford Branch Greenway?

Electric bike rental stations! People would come down and use the trail more often if electric bikes were an option for commuting to and from places. Also a great way to get funds for the city!

5 months ago

1 Agree

it will be self-fulfilling. will not need recruitment for popularity. This is a homerun as an idea and will be a tremendous asset to franklin

5 months ago

1 Agree

A welcoming clean safe atmosphere

4 months ago

Maybe have a kickoff event with local artists and musicians performing along the way.

4 months ago

A public campground for Appalachian Trail and Bartram Trail thru hikers, for example, at the county-owned parcel north of the new dog park.

5 months ago

Acceptance and love.. 💖

5 months ago

Seating with shade for elderly, access to bathroom, small community garden pods along the path for general interaction as you walk.

5 months ago

Image 1. Online Survey Response Summary (Cont'd)

What do you think would help bring new users and a more diverse and inclusive trail user group to the proposed Crawford Branch Greenway?

We have Lake Emory that could use some TLC. It would be a perfect addition where families could paddle boat, watch the eagles and lake birds, picnic, Dredge it like it used to be and incorporate that area into a family friendly destination!

5 months ago

Make it paved with smooth pavement (instead of the sealed gravel like at parker meadows).

5 months ago

More connections and access/entey points and signage. Would love to see a multi mile greenway connecting all areas of town.

5 months ago

Hold events from time to time.

5 months ago

Electric bike rental stations

5 months ago

Downtown areas that it passes through need to be cleaned up. There are so many eyesores that would make it unpleasant to walk or bike through. Many businesses there do not keep their premises tidy, with used cars and parts piled up, unsightly buildings deteriorating, etc.

5 months ago

Connectivity to neighborhoods and commercial areas.

5 months ago

This would be an immediate success and well used connection path.

5 months ago

Image 1. Online Survey Response Summary (Cont'd)

What do you think would help bring new users and a more diverse and inclusive trail user group to the proposed Crawford Branch Greenway?

Continue to recognize differing use (family meeting places, tables, shade) in addition to movement along greenway. Assure accessibility in features for wheelchair users.

5 months ago

Build it and they will come

5 months ago

The above mentioned things.

5 months ago

Signage and word of mouth

5 months ago

this is a great idea

5 months ago

Safe, good traffic control, safe road crossings, festivals

5 months ago

Image 1. Online Survey Response Summary (Cont'd)

Do you have any final comments, ideas, concerns or thoughts regarding the proposed Crawford Branch Greenway?

I'm in favor of adding a footbridge across the creek in Heritage Hollow.

5 months ago

3 Agree

A water area with easy access (cheap rentals) for fishing or paddling the water

5 months ago

1 Agree

Let this happen soon! Real life time, not government red tape time.

5 months ago

1 Agree

Look forward to using it!

5 months ago

1 Agree

Stops to include restrooms, coffee, soft drinks, hiking equipment and don't forget the beaver pond.

4 months ago

This would be a great community asset and make Franklin much more attractive

5 months ago

Please make as much of it as possible follow the rivers for fishing but also allow for it to go through the town for commerce.

5 months ago

Please add a pedestrian bridge across the creek in Heritage Hollow

5 months ago

Image 1. Online Survey Response Summary (Cont'd)

Do you have any final comments, ideas, concerns or thoughts regarding the proposed Crawford Branch Greenway?

Make West Franklin great again! This is a great concept that will positively impact loads of people and lots of businesses. please don't sleep on it. Let's make it happen!

5 months ago

Please connect and open up the heritage hollow area and make it nice again.

5 months ago

Really hope this comes to fruition. Looking forward to our move to Franklin and getting involved

5 months ago

Please do it!

5 months ago

Looks like a great plan

5 months ago

Please make this a reality.

5 months ago

It's Good to get bicycles off of roads. Town needs to promote and market it.

5 months ago

Image 1. Online Survey Response Summary (Cont'd)

What is your race/ethnicity?

85%	White	29 ✓
12%	I prefer not to answer	4 ✓
3%	American Indian or Alaska Native	1 ✓
0%	Black or African-American	0 ✓
0%	Hispanic, Latino, or Spanish	0 ✓
0%	Asian	0 ✓
0%	Native Hawaiian or Other Pacific Islander	0 ✓
0%	Other	0 ✓

Image 1. *Online Survey Response Summary (Cont'd)*

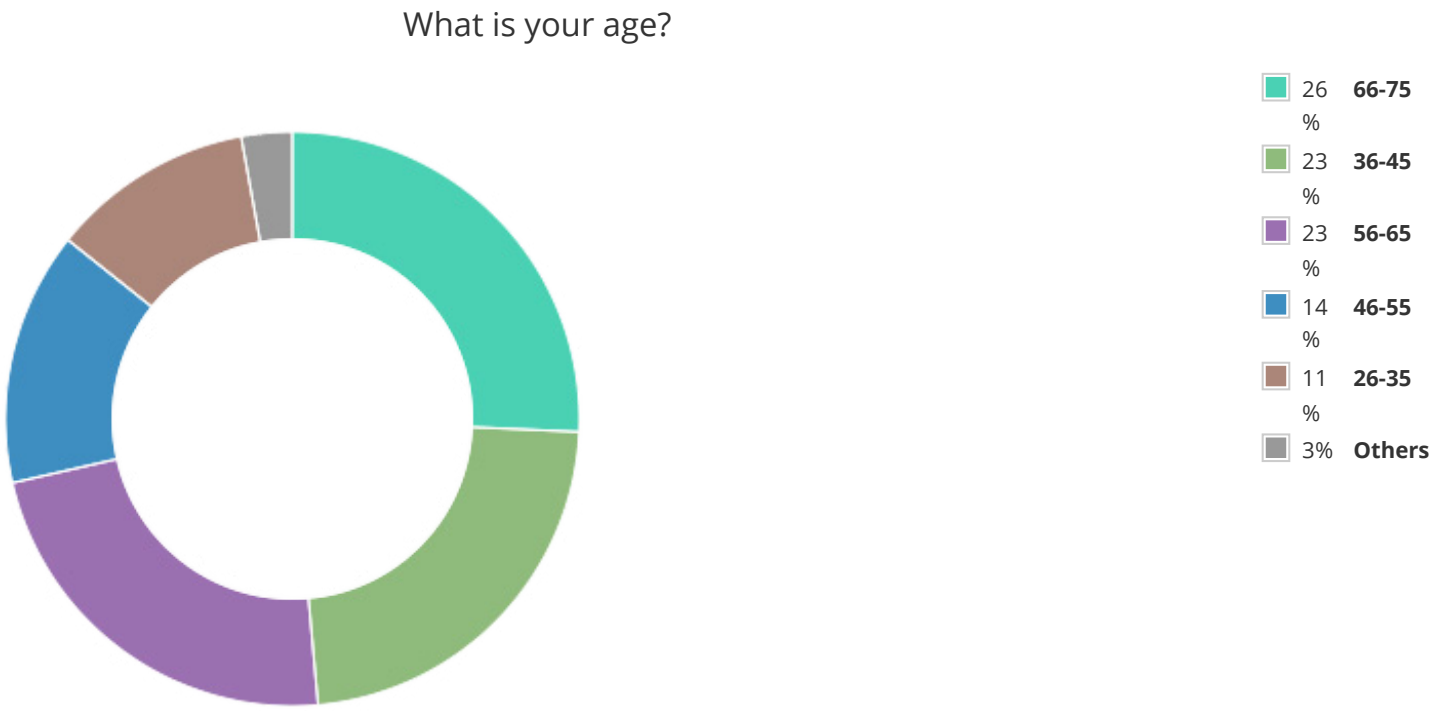


Image 1. Online Survey Response Summary (Cont'd)

What is your race/ethnicity?

85%	White	29 ✓
12%	I prefer not to answer	4 ✓
3%	American Indian or Alaska Native	1 ✓
0%	Black or African-American	0 ✓
0%	Hispanic, Latino, or Spanish	0 ✓
0%	Asian	0 ✓
0%	Native Hawaiian or Other Pacific Islander	0 ✓
0%	Other	0 ✓

APPENDIX F

Project Screening Report

Image Source: Visit Smokies

Table 18. NCDOT Project Development Screening Report

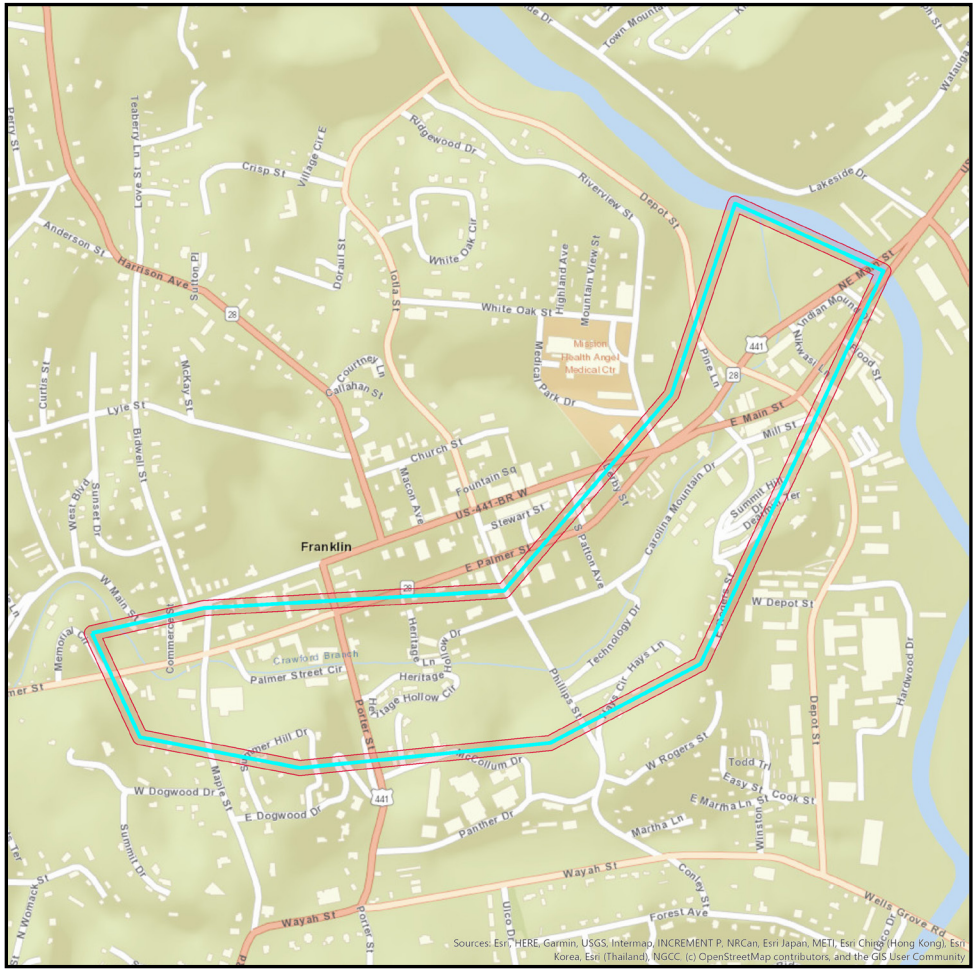
Project Development Screening Report

This report is for high-level screening purposes only. Staff and consultants must continue to adhere to NCDOT standard operating procedures including, but not limited to, ETRACS requests and field validations.

Report Date: 08/08/2023

Crawford Branch Study Area

N/A



County: Macon

Division: 14

Study Area Size: 33.1 Acres

Buffer Size: 50 Feet

User Customized Screening

Table 18. NCDOT Project Development Screening Report (Cont'd)

EPA Level III Ecoregion:	Blue Ridge
EPA Level IV Ecoregion:	Broad Basins
HUC8:	06010202
Riparian Buffer:	Error
CAMA:	No
Airport within 4 miles:	Yes

Human Environment

Cultural Resources	Feature Count	Total Coverage	Nearest Feature
NC Historic Preservation NR Points	1	N/A	162.8 ft
Tribal Urban Communities	1	33.0 ac	N/A
NCDOT ATLAS NC Cemeteries	0	0	790.4 ft
Geo Environmental	**Feature Count**	**Total Coverage**	**Nearest Feature**
NC DEQ Underground Storage Tank Incidents	2	N/A	71.3 ft
NC Brownfields Locations	0	0	96.4 ft
NC DEQ Active Permitted Landfills	0	0	0
NC DEQ Dry Cleaning Solvent Cleanup Act Sites	0	0	0
NC DEQ Hazardous Waste Sites	0	0	86.2 ft
NC DEQ Pre Regulatory Landfill Sites	0	0	0

Table 18. NCDOT Project Development Screening Report (Cont'd)

Human Environment			
Public Property	**Feature Count**	**Total Coverage**	**Nearest Feature**
NC Paddle Trails Lines	0	0	0
North Carolina State Owned Lands	0	0	3511.3 ft
USGS Tennessee Valley Authority Land	0	0 ac	0
Utilities	**Feature Count**	**Total Coverage**	**Nearest Feature**
Duke Transmission Easements	5	2.5 ac	43.9 ft
NC DEQ Dams	0	0	0
TVA Dams	0	0	0

Natural Environment			
Conservation Area	**Feature Count**	**Total Coverage**	**Nearest Feature**
Conservation Easements (National Conservation Easement Database)	2	1.1 ac	52.3 ft
NC Conservation Tax Credit Program Properties	1	1.6 ac	41.6 ft
NC Critical Areas	0	0	0
US Fish and Wildlife Service Areas (Land and Water Conservation Fund)	0	0	0
US Forest Service Areas (Land and Water Conservation Fund)	0	0	0
USGS Wildlife Reserve	0	0 ac	0

Table 18. NCDOT Project Development Screening Report (Cont'd)

Fish and Aquatics	Feature Count	Total Coverage	Nearest Feature
USACE Western NC Water Buffers	2	26.4 ac	N/A
USACE Western NC Waters	2	994.5 ft	2362.6 ft
USACE Trout Watersheds	1	33.0 ac	1227.0 ft
NC DEQ Primary Fish Nursery Areas	0	0 ac	0
NC WRC Public Mountain Trout Waters	0	0 ft	0
NOAA Essential Fish Habitat	0	0 ac	0
Threatened and Endangered	**Feature Count**	**Total Coverage**	**Nearest Feature**
NC Natural Heritage Element Occurrences	5	33.0 ac	112.0 ft
Bat Bridges Habitat Probability	2	N/A	2276.9 ft
NCDOT ATLAS NC Northern Long-Eared Bat Hibernation And Or Maternity Sites by HUC 12	1	33.0 ac	2526.5 ft
USFWS ECOS Critical Habitat (polygon)	1	2.2 ac	N/A
Water Quality	**Feature Count**	**Total Coverage**	**Nearest Feature**
US EPA Superfund Sites	0	0	0
Wetlands	**Feature Count**	**Total Coverage**	**Nearest Feature**
USFWS National Wetland Inventory	5	2.1 ac	39.3 ft
NC DEQ Unique Wetlands	0	0	0
NCDOT ATLAS NC NRTR Preliminary Jurisdictional Wetlands	0	0	0

Table 18. NCDOT Project Development Screening Report (Cont'd)

Report Metadata

Created by: TeresaKBuckwalter **Date/Time Executed:** 08/08/2023 10:22 AM

Application version: 1.19.2.0

Report Disclaimer:

While the N.C. Department of Transportation strives to provide complete and accurate information, the data provided in this screening report are reported "as is." This report does not replace field data collection and data verification conducted by licensed professionals. No warranty is expressed or implied regarding the accuracy of available data for general or scientific purposes. NCDOT shall under no circumstances be responsible for any errors or omissions which may occur in these records, nor liable for any actions taken as a result of reliance upon any information contained within this web site from whatever source, or any consequences from such reliance.

How to read this report:

User-defined Project Study Area = The final polygon that the user created in the Screening Tool. This study area includes any buffers the user added within the application.

Layer Name = Layer selected for Screening. You may click the hyperlink to access additional layer details.

Field Name = Calculated result for a specific field within a layer that was selected for Screening (using Set Field).

Feature Count = Number of unique features (points, lines, and/or polygons) from a particular GIS layer that are within or intersecting the user-defined project study area.

Table 18. NCDOT Project Development Screening Report (Cont'd)

Values displayed the Output Report: (N/A vs 0)
N/A: When this value is displayed it indicates that the calculation requested cannot be completed do to a limitation of the geometry. For example, you cannot calculate the area of a point.

0: When this value is displayed it means that the calculation was able to be performed with no limitations due to the input geometry, however the result was 0. For example, your study area did not overlap a hydrography feature, therefore the resulting overlap length is 0.

Total Coverage = Total number of linear feet (lines) or area (polygons) from a particular GIS layer that are contained within the user-defined project study area. N/A under Total Coverage refers to point layers as point layers cannot have coverage.

Nearest Feature = Distance from the boundary of the user-defined project study area to next closest feature (point, line, or polygon) for a particular GIS layer within the vicinity (1 mile) of the project study area boundary. Zero (0) under Nearest means there are no features in the project vicinity (1 mile buffer).

Availability of Web Services:

The layers referenced in this report utilize web services. If any web services were unavailable at the time of the report execution, related errors are noted in the following table:

APPENDIX G

Engaged Property Owners

Image Source: Harrison Keely

Table 19. Engaged Property Owner List

Owner Name	Address	City/ Town	State	ZIP	Letter Sent?	Attended Focus Meeting?	Attended Drop-In Property Owner Meeting?	Extended Outreach Priority 1	Extended Outreach Priority 2
TODD J. PARRISH TRUSTEE	P O BOX 1026	FRANKLIN	NC	28734	Y				
35 EAST PALMER STREET, LLC	117 APPLE TRL	FRANKLIN	NC	28734	Y				
ABDUL WALIANY	935 RENAISSANCE WAY	ROSWELL	GA	30076	Y			Y	
B & A INVESTMENTS OF NC, LLC	200 CROAKIN FROG LN	OTTO	NC	28763-7042	Y				
BLUE RIDGE OFFICE SOLUTIONS, LLC	235 E PALMER ST	FRANKLIN	NC	28734	Y				
BOATRIGHT PROPERTIES, INC.	536 CHAPEL COVE ROAD	FRANKLIN	NC	28734	Y				
BRASSTOWN BEEF, LLC	1960 BRASSTOWN RD	BRASSTOWN	NC	28902	Y				Y
BRYSON INVESTMENTS, LLC	340 EAST MAIN ST	FRANKLIN	NC	28734	Y				Y
CABIN CASTLE, LLC	PO BOX 778	CORTEZ	FL	34215	Y				
CAROLINA SMOKIES ASSOC. OF REALTORS, INC.	131 HERITAGE HOLLOW DR	FRANKLIN	NC	28734	Y				

Table 19. Engaged Property Owner List (Cont'd)

Owner Name	Address	City/ Town	State	ZIP	Letter Sent?	Attended Focus Meeting?	Attended Drop-In Property Owner Meeting?	Extended Outreach Priority 1	Extended Outreach Priority 2
CAROLYN B. WEST TRUSTEE	254 BELLEVIEW PARK RD	FRANKLIN	NC	28734-7549	Y				
CHARLES MICHAEL MCCALL	215 SUTTON LANE	FRANKLIN	NC	28734	Y			Y	
COMMUNITY FIRST BANK	PO BOX 459	SENECA	SC	29679-0459	Y				
CONLEY MOTOR COMPANY (C/O JAMES D. CONLEY, JR.)	275 STONECREEK DRIVE	FRANKLIN	NC	28734	Y		Y		Y
D H INVESTMENTS OF MACON COUNTY INC	3488 BRYSON CITY RD	FRANKLIN	NC	28734	Y				
DANIEL ROGERS	304 SW 8TH PL	BOYNTON BCH	FL	33426	Y				
DEAN ANSON STIWINTER	30 OAK DRIVE	FRANKLIN	NC	28734	Y			Y	
DENALI HOLDINGS, LLC	1167 CORBIN RD	FRANKLIN	NC	28734-7152	Y			Y	
ERNEST A. KLATT TRUSTEE	130 E MAIN ST	FRANKLIN	NC	28734	Y			Y	
FENG SHI	138 CAROLINA CREST DR	FRANKLIN	NC	28734	Y				Y
FRANKLIN OTTO INVESTMENTS, LLC	P.O. BOX 209	OTTO	NC	28763-0209	Y				

Table 19. Engaged Property Owner List (Cont'd)

Owner Name	Address	City/ Town	State	ZIP	Letter Sent?	Attended Focus Meeting?	Attended Drop-In Property Owner Meeting?	Extended Outreach Priority 1	Extended Outreach Priority 2
GREGORY'S AUTOMOTIVE CO	95 PAUL SWAFFORD RD	FRANKLIN	NC	28734	Y				
HARRIS PROPERTY MANAGEMENT, LLC	196A WILKIE ST	FRANKLIN	NC	28734-2866	Y		Y	Y	
JESSE L. GREEN	39 MOUNTAIN WHISPERS DR	FRANKLIN	NC	28734-0692	Y				
JOSEPH R. SANDERS TRUSTEE	PO BOX 423	FRANKLIN	NC	28744	Y				
KARBAR PROPERTIES, LLC	242 IOTLA ST	FRANKLIN	NC	28734	Y				
KAREN H. NORTON	290 OAK HILL DR	FRANKLIN	NC	28734-8069	Y			Y	
KARL E. GILLESPIE	552 CORBIN ROAD	FRANKLIN	NC	28734	Y	Y			
KENNETH L. DAVIS	P O BOX 733	FRANKLIN	NC	28734	Y				
KIRKLAND JONES, LLC	430 E MAIN ST	FRANKLIN	NC	28734-2697	Y				
KURT KNECHTEL	44 HERITAGE HOLLOW DR	FRANKLIN	NC	28734	Y				
LAMPLIGHTER INVESTMENTS OF WNC, LLC	340 E MAIN ST	FRANKLIN	NC	28734-2672	Y				
MACON COUNTY	5 W MAIN ST	FRANKLIN	NC	28734-3005	Y				

Table 19. Engaged Property Owner List (Cont'd)

Owner Name	Address	City/ Town	State	ZIP	Letter Sent?	Attended Focus Meeting?	Attended Drop-In Property Owner Meeting?	Extended Outreach Priority 1	Extended Outreach Priority 2
MACON COUNTY BOARD OF EDUCATION	PO BOX 1029	FRANKLIN	NC	28744	Y				
MAINSPRING CONSERVATION TRUST	PO BOX 1148	FRANKLIN	NC	28744	Y				
MAR KAT NC, LLC	PO BOX 778	CORTEZ	FL	34215	Y				
MARY ANN LYNCH	144 PORTER ST; SUITE 103	FRANKLIN	NC	28734-3015	Y				
MISTY MOUNTAIN LEGACY, LLC	111 SKYLINE VIEW RD	FRANKLIN	NC	28734-4769	Y			Y	
NLA PROPERTIES, LLC	354 E MAIN ST	FRANKLIN	NC	28734-2672	Y				
NORTHBROOK CAROLINA HYDRO II, LLC	14550 N FRANK LLOYD WRIGHT BLVD	SCOTTSDALE	AZ	85260	Y				
OH BOY, LLC	468 4TH AVE S	ST PETERSBURG	FL	33701-4620	Y				
ORVILLE D. COWARD, JR	43 WEST MAIN STREET	FRANKLIN	NC	28734	Y				
PALMER STREET MALL, LLC	PO BOX 695	FRANKLIN	NC	28744-0695	Y	Y			
PATRICIA M. GRAHAM TRUSTEE	P.O. BOX 319	FRANKLIN	NC	28744	Y				Y

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