



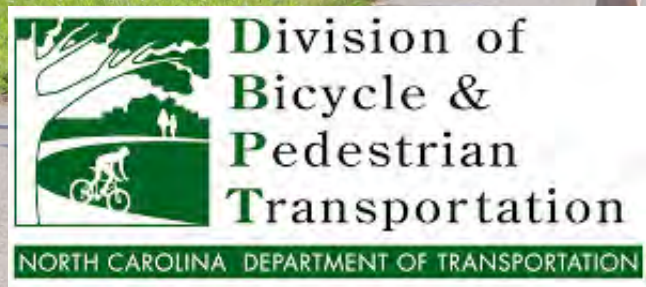
BikeWalk Franklin



**APPROVED**

# BikeWalk Franklin

A Comprehensive Plan for Bicyclists  
and Pedestrians – Adopted March 7, 2017







# BikeWalk Franklin



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**Acknowledgements:** *Thank you to the following individuals (and the organizations they represent) who have so helpfully contributed to BikeWalk Franklin:*

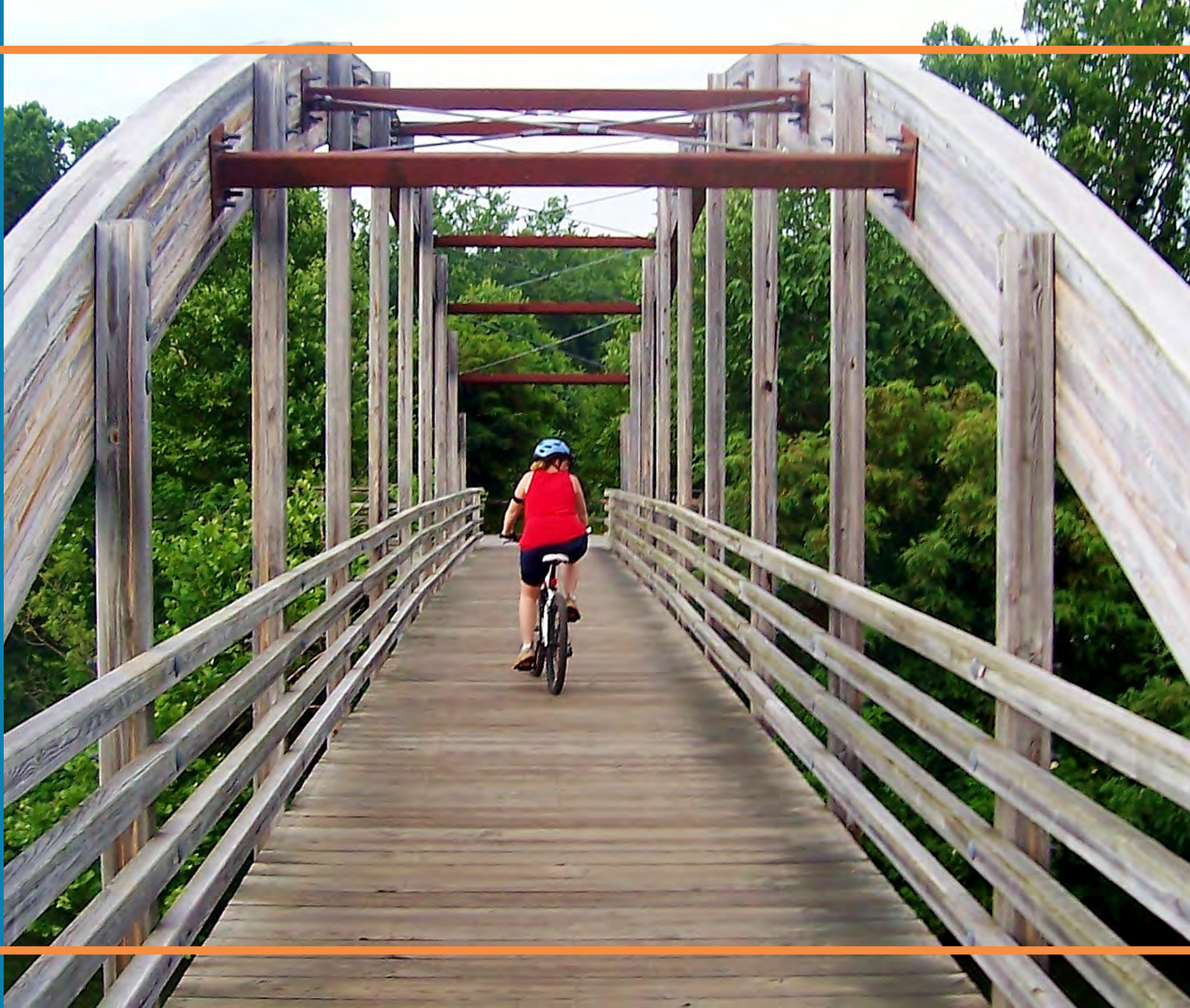
- **Bob Scott**, Mayor of Franklin & Steering Committee member
- **Billy Mashburn**, Alderman
- **Joe Collins**, Alderman
- **Patti Abel**, Alderman & Steering Committee member
- **Brandon McMahan**, Alderman
- **Barbara McRae**, Alderman
- **Adam Kimsey**, Alderman
- **Summer Woodard**, Town Manager
- **Justin Setser**, Town Planner & BikeWalk Franklin Project Manager
- **David Adams**, Police Chief & Steering Committee member
- **Jay Gibson**, Public Works Director & Steering Committee member
- **Rose Bauguess**, Southwestern Commission Senior Planner & Steering Committee member
- **Jackie Moore**, Region 1 Active Routes to School Project Coordinator & Steering Committee member
- **Marty Wadewitz**, COO at Angel Medical Center & Steering Committee member
- **David Rusch**, Steering Committee member
- **Pam Forshee**, Smoky Mountain Bicycles owner & Steering Committee member
- **Shawn Darveaux**, Drake Software Developer & Steering Committee member
- **Rita St. Clair**, Friends of the Greenway Secretary & Steering Committee member
- **John Vine-Hodge**, NCDOT Division of Bicycle & Pedestrian Transportation







# BikeWalk Franklin - Ch.1





# Chapter 1: Introduction, Context and History

## Executive Summary

The following report presents the Town of Franklin, North Carolina's first comprehensive bicycle and pedestrian master plan. The intent of this plan is to develop a network of bicycle and pedestrian facilities and provide a blueprint for transforming Franklin into a more bicycle and pedestrian friendly community, improving connectivity with a comprehensive toolbox of facility types that are appropriate for specific corridors and intersections.

This plan establishes priorities for facility improvements, highlights high-priority projects and those that provide unique opportunities, addresses bicycle and pedestrian safety, and provides policy recommendations to help sustain improvements in bicycle and pedestrian conditions.

This plan is a product of the North Carolina Department of Transportation's Division of Bicycle and Pedestrian Transportation, in partnership with the Town of Franklin, its elected officials, and the consultant team, with significant input and direction from the project steering committee, comprised of stakeholders and representatives from various jurisdictions and the public.

BikeWalk Franklin builds upon existing plans, data and analysis, policy direction from various partners, significant public input, surveys, and dedicated involvement by bicycle and pedestrian advocates who continue to work with the local government and NCDOT to make sound transportation decisions that are inclusive of all modes of transportation.

It is expected that over time, this plan will be amended and updated to reflect changing needs and conditions and to replace completed projects with new ideas. Planning for bicycle and pedestrian facilities is similar to all planning initiatives in that it is an incremental and iterative process. It should be

understood that BikeWalk Franklin constitutes a living document that will need to be amended periodically.

## Introduction, Context, and History

Dozens of ancient trails and trading paths converged on a fertile area of the Little Tennessee River flood plain near a natural ford that is now modern day Franklin. For thousands of years, generations of families called this place home. Archaeologists estimate that the first formal town was built circa 640 AD around a man made earthen mound that the Cherokee called Nokwisi-yi (Nikwasi), or Star Place. A spiritual and political center, the council house atop Nikwasi witnessed trade agreements and treaties between the Cherokee and tribes all over North America as well as the French, British, and Americans.



*An early image of transportation near the Nikwasi Mound.*

In 1820 Jesse Franklin, a Revolutionary War veteran, state legislator, U.S. Senator and later Governor of North Carolina, sited a county seat on a hill near the Cherokee village of Nikwasi on the Little Tennessee River. Almost fifty years earlier the American naturalist and traveler William Bartram, during his botanical exploration through the Southeast, documented the names and locations of many Cherokee towns, including Nikwasi. The ancient Nikwasi mound still stands on Main Street (a reminder of Frank-







lin's 11,000-year tradition of walking) and the official Bartram Trail today passes near the county seat that bears Jesse Franklin's name. Due to the isolation and poverty of the area, many resident's only mode of transportation was walking. Old timers tell stories of walking from far-fetched communities to town on Saturdays to trade.

The Town of Franklin's growth has been influenced over the past two centuries by the lumber industry, kaolin mining for making fine porcelain; agriculture, gemstones and recreation. Once served by the Tallulah Falls Railroad from northern Georgia, part of that rail bed now makes up a portion of the Little Tennessee River Greenway. Through the efforts of several local citizens and the Nantahala Power & Light electric company (now part of Duke Energy), the Town has been blessed for nearly twenty years now with a five-mile-long greenway along Cartoogechaye Creek and the Little Tennessee River. Franklin has a vibrant and attractive downtown with roots to the time when walking was the primary method of transportation, and several residential areas are well connected by sidewalks with downtown.

In recent times Franklin has developed as a retail center for southwestern North Carolina, supporting retirement living and second homes in the scenic Blue Ridge Mountains. A major highway bypasses downtown, and newer retail development has migrated out of downtown to locations thought to be more accessible by automobile. Several public services were also placed outside of downtown to facilitate access by motor vehicle, such as the public library, community college and health department. These places can become more accessible through planning and engineering to improve bicycling and walking environments.

As a designated Appalachian Trail Community and town on the Bartram Trail, Franklin supports



long distant recreational walking. Main Street is home to both a healthy bicycle shop that supports local riding and to a major trail outfitter. State bike route #2 traverses North Carolina from east to west and passes through downtown Franklin, which is located in one of the most idyllic settings in the Southeast and is one of the most desirable areas for hiking and bicycling in the United States.



*Macon County residents have a history of walking. "The North Carolina Department of Transportation built pedestrian suspension bridges to give rural residents a quick way on foot across a major river. This one, which crosses the Little Tennessee River in the Etna Community, had to be rebuilt after it was destroyed by flood." - NC Study List*



## A Comprehensive Plan for Walking and Bicycling

BikeWalk Franklin is an effort funded by the Town of Franklin and the North Carolina Department of Transportation to assist the community in making a stronger connection between the features of the community that make it more walkable and bike-friendly, while supporting the health of its current and future residents and visitors.

Walking and bicycling were once the predominant modes of travel within small towns across the United States. Driving was for the privileged and was exclusively expensive. It would have been inconceivable for someone to use a hand-cranked automobile to make a one-mile trip to the store or the park.

The bicycling movement of the late 1800s spawned the era of paved roads in the United States and North Carolina's claim to fame – being first in flight – is grounded in the Wright Brothers' bicycle business.

Like so many towns across the Blue Ridge Mountains, State of North Carolina, and America as chronicled in *Suburban Nation* (Duany, Plater-Zyberk & Speck, 2000), Franklin changed in the years since World War II, unintentionally becoming physically and socially disconnected due to highway expansion, increased traffic volumes, auto-centric investment priorities by public and private entities, and changes in retail markets. These influences caused traditional neighborhood businesses to move to high vehicular volume corridors. Those trends are beginning to reverse in communities all over the country, which are promoting what it means to be a healthy small town. The investment in the downtown area as well as more than a decade of progressive greenways planning and implementation leave Franklin ready to become a small town success story for walking and bicycling.

In order to improve conditions for people who walk and bike in Franklin and elsewhere, street and land use challenges can be solved by collectively addressing them

through input from community members, business owners, planners, engineers, architects, law enforcement and many others.

Town leaders want to see more people enjoying all of the quality of life benefits that walking and bicycling have to offer. Important to both residents and visitors, people-powered transportation improves physical health through exercise and provides a stronger sense of community by letting people be immersed in their surroundings as they travel.

Leaders seek a comprehensive plan to guide improvements in the walking and bicycling environment of Franklin. They have already identified the disconnected nature of the existing pedestrian network through sidewalk mapping, and have pointed out that although several signed bicycle routes pass through Franklin, there are no bicycle facilities such as bicycle lanes or even marked shared lanes anywhere in Town. Public input shows that many residents perceive walking and bicycling as hazardous, though many more say they would walk and bike more if it were safe and there were facilities provided for these uses.

The quality of these connections directly affects the physical, economic and social health of the community. BikeWalk Franklin uses public, stakeholder and official input to identify those destinations and corridors that people want to use for bicycling and walking, and makes recommendations for facility construction, incentive programs and safety improvements creating safe active transportation connections between those places.







## The Vision for Walking and Bicycling in Franklin

The vision guiding the BikeWalk Franklin Plan is:

*“The Town of Franklin’s transportation system connects people to places through a well-connected system of greenway, bicycle, and pedestrian networks; choosing active transportation is as convenient (or more) as driving a car.”*

A steering committee member said they remembered growing up in Franklin and that they walked everywhere downtown. Specifically, there were reasons to go downtown, destinations that served their daily needs. Another member said she often walks around town now, as she works downtown, and that some destinations are fun to walk to. She specifically mentioned enjoying walking to and using the Little Tennessee River Greenway.



*Kids want to ride bikes, but there is no designated place to do so. Bicycling can provide a major source of independence for youth under age 16, but they need to be raised with the experience to ride with safety and confidence.*

Franklin is an Appalachian Trail Community, attracting many through hikers into Town for services, and they must get around on foot. It was also declared that kids in town want to ride bikes, but other than the Greenway, there’s not a safe place to do so now.

*Suburban Nation* laments that children, after early childhood, become prisoners in a thoroughly safe and incubated environment when they are dependent on adults to drive them around, unable to exercise independence and practice becoming adults. Safe and comfortable walking and biking networks allow children to learn responsibility by providing for their own transportation needs.



*Children with transportation options learn independence at a young age.*

The elderly are another group of people who are marginalized by poor walking and bicycling environments. As noted in *Suburban Nation*:

*“Most elderly are neither infirm nor senile; they are healthy and able citizens who can no longer operate two tons of heavy machinery. Senior citizens can remain self-sufficient when their environment does not force them to drive.”*

According to the 2009 American Community Survey (ACS), 3.4 percent of commuters nationwide are bicyclists (0.55%) or pedestrians (2.86%). According to the 2009 National Household Travel Survey (NHTS), 1 percent of all trips were by bicycle and 10.5 percent of all trips were by foot. However, there are challenges in counting walking



## Exhibit 1-1: How Far Will People Walk?



Research has proven that people are willing to walk longer distances to reach a destination if they are given safe and convenient facilities.



People in Franklin want to walk to downtown, parks, restaurants, and events on safe and convenient facilities.

and biking trips and distance. The Federal Department of Transportation notes that there is not a national mechanism in place for regular and consistent collection of non-motorized travel data. For this reason, locally collected data on walking and biking trips likely provides a more accurate picture of pedestrian and bicycle activity.

It is important to look nationally, regionally, and locally to try to identify bicycling and walking trends. Pedestrian and bicycle counts also help indicate where the largest share of bicyclist traffic is located, and where adequate infrastructure might be lacking. This information helps decision makers prioritize infrastructure design improvements and investments to make walking and biking safer.

### Major Influences

The influences on walkability and bikability listed below reflect how a community can respond, in part, by creating a more walkable and bikable area as emerging demographic, health, and economic trends suggest physical activity and having places to recreate is at the heart of making small towns economically competitive in contemporary society and the modern economy.

**Changing Demographics:** Communities like Franklin find young adults continuing to move out of the area. Moreover, older adults tend to be moving in. All of this leads to declining birth rates and a rapidly aging population.







**Health Issues:** Obesity rates tend to be higher than the national average among every age group in areas with demographic indicators similar to Franklin. This results from an automobile-reliant population, lack of walking and biking networks for active transportation, as well as from neighborhoods lacking easy access to healthy foods and recreational spaces.

**Housing:** Based upon trends, young professionals, trades people, minorities, and some seniors prefer smaller, multi-family housing versus conventional single-family homes, but little of this type of housing exists in Franklin.

**Rental Share:** The share of renter-occupied housing for Franklin (45.0%) is higher than the North Carolina share (33.3%). By comparison, Sylva’s share of renter-occupied housing is 51.1% and Murphy’s is 49.4%.

**Transportation Costs:** Franklin remains an auto-dependent community, given the relatively low cost of fuel and the abundant uncongested local highway network. Except when destinations are within close proximity to a person’s residence, transportation options combined with travel

distance to jobs and other resources cause transportation costs to rise because individuals must purchase fuel for automobile travel, spend more time traveling and pay for vehicle maintenance and repairs. While commuting to a job may be a trip that residents must make by car due to the realities of a small town market, we can replace automobile-based trips for recreation and shopping by promoting walkability. Fortunately, Franklin has a high percentage of employees working within a ten minute drive of work, raising the potential to increase walking and bicycling mode share (see Exhibits 2-4 and 2-5).

### Creating a Pedestrian Network for All

In her article, *“Sidewalks-A Smart Investment,”* Dr. Kathleen Beine of Kingsport, Tennessee notes:

“There are many approaches and solutions to the [health] crisis ... A significant part of the solution is to make it easy to be physically active--where you don’t have to load up a car and drive someplace, or join a gym. Just make it easy by walking out your front door and lead your family on a neighborhood adventure outing,

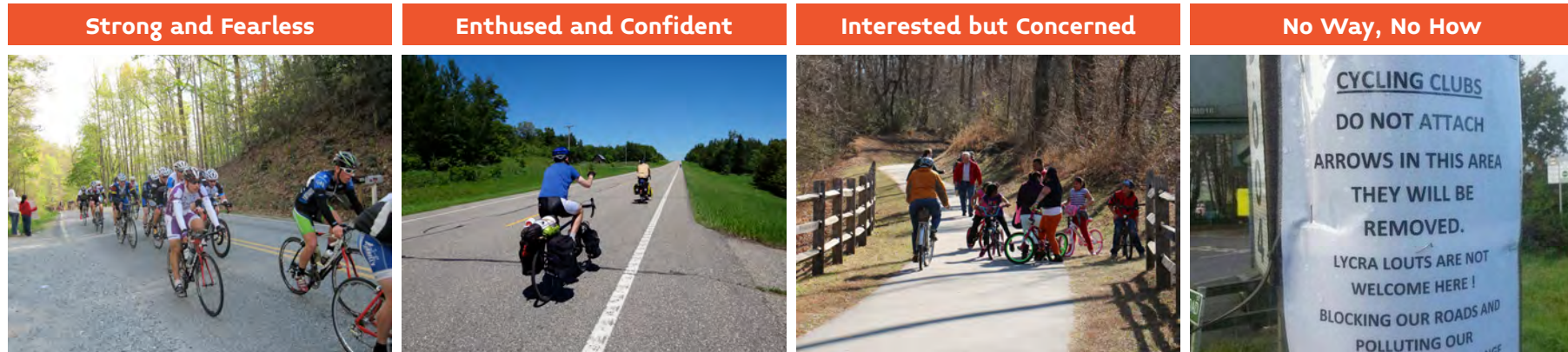
Exhibit 1-2: Types of Pedestrians

Footloose and Fancy Free	Confident and Able	Necessity Walker	Mobility Challenged





## Exhibit 1-3: Types of Bicyclists



**Most Comfortable in  
Most Conditions**

possibly to a small community park to play and visit with other neighbors.”

Dr. Beine’s research indicated that sidewalks are smart investments. Benefits of properly-designed sidewalks and connectivity include improved:

- Pedestrian safety;
- Safety for motorists (not worrying about hitting a pedestrian, decreased risk of swerving head-on into another motorist when trying to avoid an unexpected pedestrian in the road);
- Sociability and neighborliness;
- Air quality from decreased usage of vehicles;
- Family budgets because of being able to safely walk on short trips rather than driving;
- Health, such as aerobic capacity, cardiovascular fitness, muscle strength and balance; decreased obesity, diabetes, heart disease, high blood pressure, asthma,

cancers of various types; and

- Mental and emotional health, such as decreased depression, anxiety, and social isolation –improved work performance, on the job and at school (that’s where kids work). It also leads to decreased medical costs for individuals and companies. The cost of a mile of sidewalk is cheap compared to emergency room visits, operations, hospital stays, rehab, and sometimes, permanent disability.

### The 8-to-80 Vision

If every transportation decision we make is founded by a principal of inclusivity and concern for well-being, we inevitably design our cities and towns to enable the greatest amount of mobility for the widest variety of pedestrians.

While many pedestrians are confident and able under most conditions, some have no choice but to attempt to traverse unsafe environments out of necessity and some are challenged by inadequate infrastructure.





People will walk if the option to do so is safe, comfortable, and practical. Walkability is more than just building sidewalks so that people can walk, it is also about creating spaces in which people want to walk.

If everything we do in our public spaces and transportation framework is designed with the broadest spectrum of ability and mobility in mind, we will ensure that everyone is given the opportunity to choose to walk – if we plan for both an 8-year-old and an 80-year-old, it will already be suitable for everyone else.

### Creating a Cycling Network for All

A cornerstone of the approach employed to develop BikeWalk Franklin is producing a plan for walkers and bicyclists by walkers and bicyclists. This is not a plan for an inanimate object, as a bicycle is incapable of moving without human power. The bicyclist, like the pedestrian, is a living, breathing human being that experi-

Exhibit 1-4: People for Bikes' "Build it for Isabella" Campaign

**BUILD IT FOR ISABELLA**

**ISABELLA: 12 YEARS OLD AND READY TO RIDE**

**Meet Isabella. Like most girls her age, she is exploring her independence.** She just started 7th grade and loves doing cartwheels in the grass with her friends and sharing her life through Instagram. She is ready to travel her world by bike, but is the network ready for her? Isabella wants to bike to school, the library and the ice cream shop, but her mom worries about her getting across or along busy streets. Isabella likes to ride, but she's still small and her skills aren't fully developed. She's sometimes a little wobbly and it's hard for her to see over parked cars near intersections.

**What does Isabella need to ride safely around her world?**

- Are we planning low-stress, connected networks that work for Isabella?
- What if every project was designed with Isabella in mind?

If we build it for Isabella, wouldn't it work beautifully for the rest of us too?

*If our bicycle system meets the needs of young, entry-level riders, it provides good service for cyclists of higher ability as well. The original People for Bikes campaign has expanded to "Build it for Isabella and her grandfather".*

ences the world through the use of sight, touch, feel and smell – all senses that are ignited by using a bicycle to get around.

Not all bicyclists are the same. They desire different routes, ride different types of bikes and take to their bike for a variety of reasons. BikeWalk Franklin addresses these different types of bicyclists through the lens of an emerging approach that categorizes bicyclists by their attitudes toward riding:

**Strong and Fearless Bicyclists:** Those that are confident riding in almost all situations, including high volume and high speed traffic situations. Accommodating them safely on streets and highways is important, and their choice to ride a bicycle is not dependent on having dedicated facilities such as bike lanes or greenways.

**Enthusied and Confident Bicyclists:** Comfortable in many on-road situations but prefer to ride in dedicated facilities like bike lanes. Accommodating them along high speed and high volume roadways requires special considerations to buffer them from traffic. They may choose greenways over on-road routes if greenways offer a convenient alternative.

**Interested but Concerned Bicyclists:** May be interested in riding a bicycle but are reluctant to ride where they do not feel safe. They may already ride a bike on mountain bike trails or exclusively on greenways and can be encouraged to ride in other situations when given dedicated, safe facilities such as buffered or protected bike lanes.

**No Way, No How:** This group is not interested in bicycling due to lack of interest, inability to ride, or concerns about topography and safety. Communities should seek ways to introduce them to bicycling so they can become interested in riding.

In developing a Comprehensive Plan, as required by NCDOT, all of these rider types should be considered. However, the emphasis in developing project, program and policy recommendations lies in addressing the needs of the Enthusied and Confident and Interested but Concerned bicyclists. The theory goes that addressing their needs benefits the Strong and Fearless riders and helps en-



courage the No Way, No How crowd to give bicycling a try.

Bicyclist attitudes toward riding can also fluctuate among these groups. A person who is strong and fearless when riding a road bike on long weekend rides may become interested but concerned when riding with a child. The enthused and confident rider may have a no way, no how attitude when it comes to performing certain tasks on a bike that necessitate travel along routes that are intimidating, such as high speed highways.

Therefore, BikeWalk Franklin recommends various on-street and off-street network investments and programs aimed to serve existing riders well and increase ridership by creating the safest and most convenient system possible.

## Franklin's Future

The DOT notes that bicycling and walking – often used as travel modes for short local trips – can provide access to the broader transportation network, including public transportation. The transportation network encompasses not just a person's immediate neighborhood or community, but also the entire region or metropolitan area. Connected bicycle and walking networks and designated pedestrian zones and amenities can provide safe, reliable, and equitable access to robust transit networks, providing viable and reliable travel options for all.

The goal of BikeWalk Franklin is to identify how the community can establish and enhance facilities within its boundaries to serve as physical activity and recreation hubs, create places where residents can access healthy food, and reconnect neighborhoods via multi-modal transportation infrastructure and additional programs.

While stating a desire or adopting a vision is a good starting place, a vision alone cannot create a connected and coordinated pedestrian network or realize new and im-

proved bicycle infrastructure. A community needs good policies and implementation plans to transform its vision to on-the-ground bike paths, safe road crossings, and greenways.

The following chapters contain a variety of project, program and policy recommendations generated through the planning process. They emerged through various inputs such as the public open houses, surveys, the steering committee's perspective, and the consultant team's expertise in walking and pedaling around the community.





# Chapter 2

## Building the Plan





## Chapter 2: Building the Plan

### Community Outreach

The challenges faced by those who wish to bike and walk must be solved by collectively addressing them through input from community members, business owners, planners, engineers, architects, law enforcement, and many others.

Those who walk or bicycle in Franklin, manage its businesses, and administer the Town's affairs understand the community best. Any good plan is built from these and other key individuals and organizations. The cornerstone of BikeWalk Franklin is the community input. The efforts to build the plan consisted of a multi-pronged approach to spread awareness of the planning process and to ensure that a variety of perspectives were incorporated. Residents, stakeholders, and Town Staff were engaged during the process through the following channels:

Steering Committee meetings

Public Meetings, Community Workshop

Stakeholder Interviews

Community Walkabout

Community Bike Ride

Interactive WikiMap & Website

Survey Development & Outreach

### Steering Committee Meetings

The process for the Plan was overseen by a Steering Committee comprised of representatives from the Town, the County's Health Department, the business community, as well as pedestrian and bicycle advocates.

The Steering Committee convened on four occasions to provide input on pedestrian and bicycle issues and opportunities, to serve as a sounding board for elements of the planning process, and to review plan deliverables.

The first Steering Committee meeting was held on Wednesday, October 14, 2015 at Franklin's Town Hall. The consultant team introduced the committee to the joint plan and gathered feedback about issues and opportunities facing the Town. The second Steering Committee meeting was held concurrently with the Public Workshop.

### Community Workshops

A joint community workshop and Steering Committee meeting was held Tuesday, February 23, 2016 at Tartan Hall. The workshop was advertised through notices on the radio, posts on Franklin's website and their Facebook page, Smoky Mountain Bicycles, Outdoor 76, community organizations, and email updates. Fifty-six residents attended the meeting.

The workshop began with an interactive presentation by



*Naturally, several workshop participants rode their bicycles to the second public input meeting!*

the consultant team that included an overview of the plan purpose and timeline, a review of basic bicycle and pedestrian planning concepts, and preliminary findings from field research in the Town. Attendees were also asked about





how comfortable they felt in different situations while riding a bicycle. This prompted a large group discussion about the four overarching types of bicyclists, and how different conditions can lead to alternate levels of comfort and safety. Participants then divided into groups for a mapping exercise. Each group identified places that they would like to walk or bicycle, and then identified the route and highlighted gaps in the network. Specific facility improvements were also recommended by participants that would help connect people with their destinations.

On Tuesday, July 12, a second public input meeting was held at Tartan Hall. This was not a presentation, but an open house - a chance for interested stakeholders to view elements of the planning process and demonstrate preferences to help prioritize specific projects. Thirty-seven people attended the event and were encouraged to imagine the potential of a Complete Streets intersection at Main Street and Depot Street, gave input about their preferences for possible bicycling and pedestrian infrastructure elements in Franklin (bicycle parking, wayfinding signs, crosswalk visibility, paving treatments), and widely agreed that adopting the plan was a vital next step to becoming a bike tourism destination in WNC. Their feedback from the open house was incorporated into the plan development process.

### Stakeholder Interviews

The Little Tennessee River Greenway was brought up in most interviews, specifically completion of it and connectivity to it. In addition, connectivity between destinations was a recurring theme in the interviews. Facility improvements as they relate to economic development came up in every conversation.

“Having good, accessible bicycle and pedestrian connectivity in a town sets the tone about that town’s values and how much it cares about its people,” said Lenny Jordan, co-founder and COO at the Lazy Hiker Brewery.



*People of all ages came out for the Community Walk.*



“We see that more and more people want to live and work in or close to town because of the ease of movement...Planning for walking and bicycling is a jobs issue,” said Tommy Jenkins, Macon County Economic Development Director.

(Additional interview responses and suggested action items can be found in the Appendix, Exhibit 10-4).

### Community Walkabout

On Saturday, March 12, about 35 residents gathered at the Town Square to take a community walk. The participants included children, dogs, and adults of all ages. Two groups were created, and the consultant team led the residents on a walk that included five stops over a span of about three miles. The residents were surprised at how unsafe it felt to walk outside of much of the downtown area. Other observations included:

Need speed limit signs and wider sidewalks around Wesley’s Playground/Big Bear

Morris Trace under the bridge is difficult to navigate

Hard to find the greenway across the Little Tennessee River

Generally, traffic outside of downtown moves very fast

### Community Bike Ride

On Saturday, April 2, about 30 residents attended the community bike ride. Participants congregated in the parking lot behind Smoky Mountain Bicycles. Riders aged seven to 77 brought their bicycles to ride on a clear, blustery day. The “strong and fearless” contingent was well represented, but more casual riders also attended, including three children under twelve on their own and two more in tag-a-long bike trailers. Franklin police provided traffic control at three intersections during the ride. Rider observations included the following:



Scenes from the Community Bike Ride.





Too bad it was necessary to have to need police for a bike ride.

Riders other than the Strong and Fearless said they were generally not comfortable sharing the road with motor vehicles.

Some riders expressed a degree of comfort on some of the quieter streets, but pointed out that to bike anywhere in Franklin, riding on or across the busy streets was necessary.

Residents are proud of their Little Tennessee River Greenway and would like more access points to get to it.

### Survey Development and Outreach

A public input survey was deployed to collect input from local residents on their biking and walking habits, popular destinations, barriers to biking and walking, and needed improvements. A total of 363 responses were received from a variety of outreach opportunities, including a link on the Town’s website, a Facebook page, and sending the link and flyer to Town Staff and residents. The consultant team also attended community events.

### Survey Outreach Events

Tour de Franklin: In September, 2015, the team set up a booth at the Tour de Franklin. Participants were asked to fill out the survey and JMTE discussed the bicycle and pedestrian plan. The team received about 25 responses.

PumpkinFest 2015: In October, 2015 the consultant team worked with the Town of Franklin to attend PumpkinFest. The team shared a tent with the Town’s informational booth at the festival to raise awareness about the bicycle and pedestrian plan and to encourage participation in the public input survey. In total, about 50 individuals completed the survey during the festival.

## Walking Section Overview

While most respondents are currently walking 3 or more days per week for recreation or exercise purposes (62%) and a large percentage for walking the dog (46%), only 15% walk 3 or more days per week for transportation purposes. Additionally, results indicate that improvements could increase safety and convenience for pedestrians, making them more likely to walk for both recreation and transportation purposes.

### Where do they want to go?

The majority of respondents currently walk to downtown destinations (61%) and parks or recreation centers (57%). If it were safer and more convenient, the majority of respondents would walk more often to the following destinations:

- Downtown (81%)
- Parks or recreation centers (72%)
- Restaurant or cafes (65%)
- Social events or entertainment (54%)

### What causes concerns?

Sixty-four percent (64%) of respondents cite the lack of sidewalks as a major factor that discourages them from walking in Franklin. A high percentage of respondents note heavy or high speed traffic (52%) and dangerous motorist behavior (50%) as major factors.

### How can the concerns be addressed?

More sidewalks to places I want to walk was most frequently identified (74%) as a major improvement that would encourage respondents to walk more often. The majority of respondents would also walk more often if there were more greenways and trails (64%) and better maintenance of existing sidewalks (57%). Additionally, the



need for additional sidewalks and improving existing sidewalks was a recurring theme in open-ended comments.

When asked which roadway corridors in Franklin are most in need of sidewalks or sidewalk improvements for pedestrians, respondents most frequently named the following streets:

Depot Street

Georgia Road

Highlands Road

Main Street

Old Murphy Road

Respondents most frequently identified the following intersections or street crossings as most in need of improvements for pedestrians:

Depot Street / Main Street

Highland Road / Main Street

Porter Street / West Main Street

Respondents indicated they would like to see the following areas in Franklin connected by greenways or trails:

The Rec Park / various schools

The Rec Park / the library

The Rec Park / the greenway

The downtown area

Respondents most frequently identified the following locations as presenting hazards or barriers that make walking unsafe or inconvenient:

Georgia Street

Multiple bridges

Multiple sidewalks

Highlands Road

## Bicycling Section Overview

Survey results indicate significant opportunity to increase bicycling in Franklin by improving the safety and making key destinations more accessible by bicycle. A large majority of respondents (84%) are currently bicycling for recreation and fitness, but only 19% are bicycling to nearby destinations. If it were safer and more convenient to do so, nearly 3 times as many respondents would bicycle to nearby destinations and would be significantly more likely to bicycle to work and social activities or events.

### Where do they want to go?

81% of respondents would like to access downtown Franklin by bicycle.

75% of respondents would like to access the Little Tennessee River Greenway by bicycle.

Rural bike routes (57%) and the Library (42%) are the third and fourth most popular bicycling destinations.

### What causes concerns?

When asked about the factors that most discourage them from bicycling more often, respondents frequently identified the following:

The lack of bicycle lanes or paved shoulders (79%)

High speed traffic (59%)

Unaware or inconsiderate motorists (53%)

A lack of separated paths or greenways (53%)

NOTE: BikeWalk Franklin does not make a general recommendation for lower speed limits or traffic calming, despite the survey responses indicating high speed traffic as a cause for concern. Many of the roads in and around Franklin are designed and intended for high speed traffic, so the recommendation to alleviate concern for bicyclists is routing cyclists on a low-speed connected network and





adding separate bike facilities on the high speed roads. For pedestrians, more emphasis was given to well-designed walking facilities that have an adequate buffer from traffic or separate facilities altogether, like greenways and multi-use trail recommendations. (see "How can the concerns be addressed?" below)

When asked an open-ended question to specify the locations in Franklin where hazards or other barriers make bicycling feel unsafe, respondents were most concerned about the following locations:

- Palmer Street
- Old Depot Street
- Old Murphy Road
- Main Street
- Multiple bridges

### How can the concerns be addressed?

Respondents were asked which facility improvements would encourage them or members of their household to bicycle more often. The following improvements received the most support:

- More separated or off-road paths, such as greenway trails and side-paths (83%)
- More on-street facilities for bicycles, such as bike lanes and paved shoulders (79%)

When asked to identify the roads and intersections most in need of improvement, respondents identified the following road and intersections most frequently:

- The intersection of Depot and Main (74%)
- The intersection of E. Main and Highlands (73%)
- Highlands Road (48%)
- E. Main Street (41%)
- Depot St (39%)

- Georgia Road (39%)
- W. Main Street (38%)

When asked which of the proposed greenway trails will do the most to promote bicycling in Franklin, 77% of respondents identified the proposed segments of Little Tennessee River Greenway and 69% identified the Franklin Greenway Loop. Other changes identified by respondents to encourage more bicycling included:

- Access to a map of safe/appropriate bicycling routes to popular destinations.
- Bicycling events and activities for all ages and abilities.
- Education for non-cyclist drivers and increased awareness of cyclist safety.

### Interactive Map

The online interactive mapping tool called WikiMaps was also used as an additional approach to gain information from



surveys and outreach events. The tool allows residents



to provide place-specific input on pedestrian issues and opportunities, hazards, routes, and intersection improvements.

## Demographics

In addition to surveys, it is important to examine a community's demographics (in terms of age of its citizens and means of travel to work) because this information can provide clues about travel behavior and preferences. It can also help identify potential health-related concerns as they relate to the socioeconomic conditions in which someone is raised and/or lives.

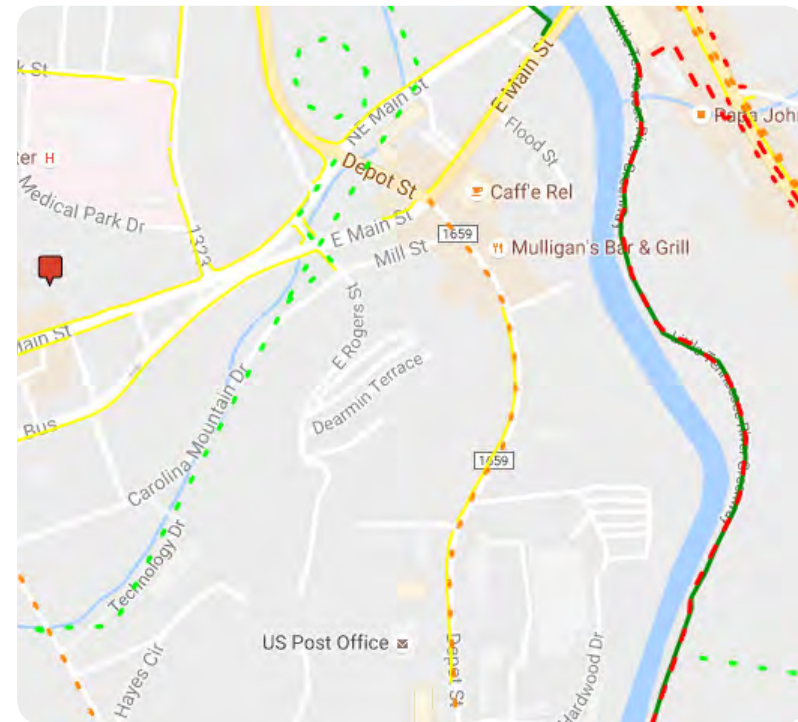
Characteristics such as age, income, vehicle ownership, and commute time can suggest a population's potential for walking and biking as modes of transportation. This section provides a summary of the demographic analysis for Franklin. It also explains the implications of the analysis for the recommendations made in this plan. The Census data summarized in this section includes those considered most relevant.

Using 2014 American Community Survey age characteristics data for Franklin (Exhibit 2-1), we can identify the type of population needs for walking based on age groups of Older Adults, Working Population and Youth.

The **Older Adults** population cohort (greater than age 60) comprises roughly 34.6% of the town's overall population compared to only 18.4% of the state's population in this

age group. Older adults are seeking walkable communities because they want to lead an independent lifestyle as they approach retirement and ultimately retire. Older adults are concerned about their safety while walking in terms of self-defense and the risk of falling. The isolation that can come from being in a large, rural estate during retirement has been shown to have negative physical and mental health effects. Given the large percentages of Older

**Exhibit 2-1: Screenshot of a portion of the WikiMap**



**Exhibit 2-2: Screenshot of Instructions for the WikiMap**

Instructions	Existing Layers	Add a Route	Add a Point
Click & comment on <b>Existing Layers</b>	<ul style="list-style-type: none"> <li>Destinations</li> <li>Existing Sidewalk</li> <li>Existing Greenway</li> </ul>	<ul style="list-style-type: none"> <li>Route I Walk or Bike Now</li> <li>New Bike Facility Needed</li> <li>New Sidewalk Needed</li> <li>Sidewalk Improvement Needed</li> <li>New Greenway Needed</li> </ul>	<ul style="list-style-type: none"> <li>My Destinations</li> <li>Walking or Bicycling Hazard</li> <li>Intersection Improvement</li> <li>Ped/Bike Crash or Near Miss</li> <li>Ask Question</li> </ul>
<p><b>Add a Route</b> to identify paths that you would like to walk or bike</p> <p><b>Add a Point</b> to identify popular destinations, intersection improvements, or barriers to walking</p> <p>Click &amp; comment on <b>Routes and Points added by others</b></p> <p><i>(About &amp; help &gt; View Options &gt; Turn On/Off Other People)</i></p>			

*Citizens could add a variety of existing and potential routes, as well as hazards and necessary improvements to the online map.*





Adults, Franklin should consider orienting its investment programs to provide safe connections along the greenway and between common destinations and residences for older adults.

The **Working Population** (20 to 60 years of age) of Franklin is slightly greater than 43% and is noticeably lower than North Carolina’s proportion at 54.8%. The life of a working adult is complicated. They are seeking greater work/life balance while also considering the needs of the family, both elders and offspring. They seek recreational opportunities as time allows, which makes greenway and similar investments a popular choice.

The **Youth** percentage for Franklin is 22.2%, compared to 26.8% of North Carolina’s population that is age 19 years and younger. Youth seek to explore the world around them and express their free will in these years. With increasing demands on the family and most households having both parental units in the workforce, youth are being asked to

be more independent. Walkable communities allow for this to occur in a safe environment. Connections such as improved linkages between schools and the Greenway and sidewalks in residential neighborhoods give youth the place to be active.

For other Census-related data, the American Community Survey (ACS) is used to estimate mode of transportation to work and travel time to work. The Survey only measures commute modes of transportation and has no metric to indicate number of walking trips per day for recreation or other purposes.

Unfortunately, the ACS data for small towns and rural areas is largely unreliable within the margins typically seen for pedestrian mode share. For example, the survey, which samples a portion of the population every 5 years, indicates no one commutes on a bicycle. This is a statistic that is known to be untrue; in fact, a member of the BikeWalk Franklin Steering Committee is a regular bicycle commuter.

Exhibit 2-3: Population Pyramid of Franklin

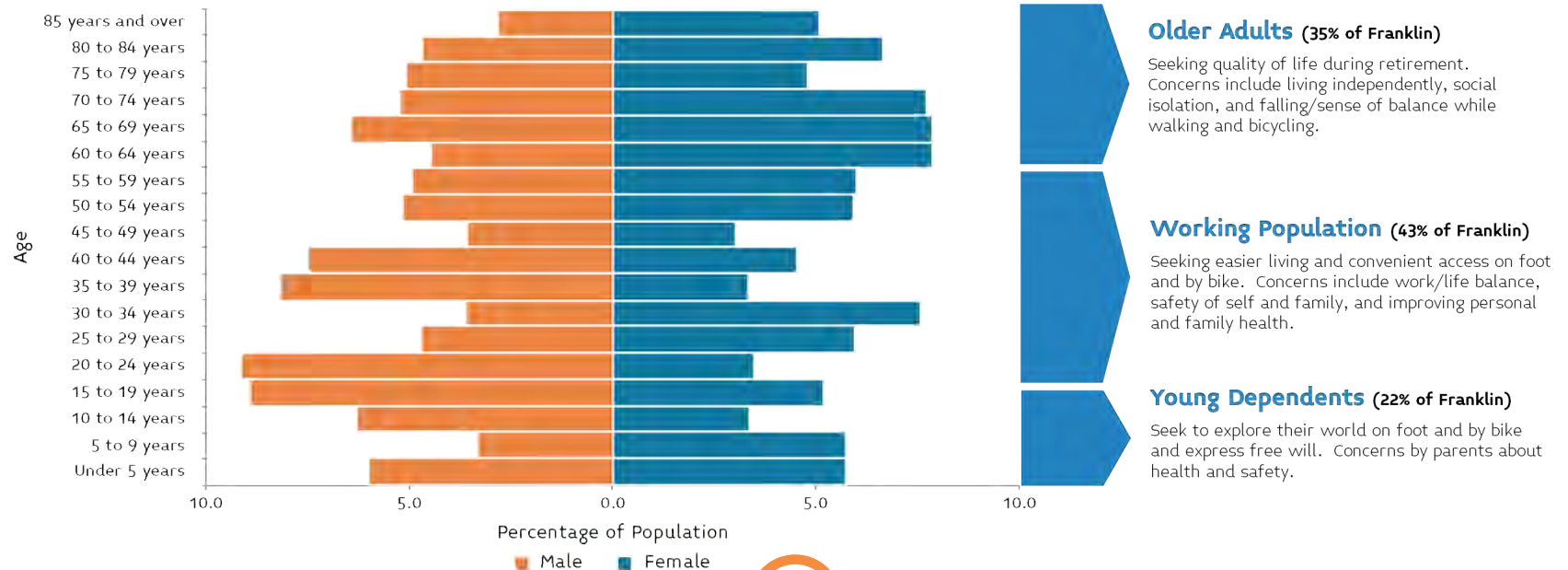




Exhibit 2-2 shows some journey-to-work data for workers age 16 years and older in Franklin. The mode to work share indicates 1.1% of workers 16 years and older walk as a means of commuting (the margin of error is +/- 0.5%). The table also includes data for North Carolina.

**Exhibit 2-4: Means of Transportation to Work (ACS)**

Means of Transportation to Work	Franklin (%)	North Carolina (%)
Drove Alone	75.8	81.1
Carpooled	16.2	10.4
Worked at Home	6.3	4.4
Public Transportation	0.0	1.1
Walked	1.1	1.8
Bicycle	0.0	0.2
Other	0.6	1.0

The American Community Survey indicates more than 40% of Franklin residents have a commute time of less than 10 minutes (Exhibit 2-5). This is a significant number in terms of potential for walking and bicycling potential. This is more than three times the rate of North Carolina's population, with only 13% reporting a travel time to work of less than 10 minutes. The average travel time to work for Franklin residents is 16.1 minutes. Macon County's average travel time to work for residents is 20.3 minutes and North Carolina's is 23.7 minutes.

**Exhibit 2-5: Travel Time to Work (ACS)**

Travel Time to Work	Franklin (%)	North Carolina (%)
<b>Total Workers</b>	<b>1,806</b>	<b>4,088,554</b>
Less than 5 minutes	9.0%	3.0%
5 to 9 minutes	31.3%	10.0%
10 to 14 minutes	23.9%	15.4%
15 to 19 minutes	10.3%	17.5%
20 to 24 minutes	1.6%	16.0%

Travel Time to Work	Franklin (%)	North Carolina (%)
25 to 29 minutes	3.7%	6.8%
30 to 34 minutes	11.4%	13.1%
35 to 39 minutes	0.7%	2.9%
40 to 44 minutes	0.5%	3.2%
45 to 59 minutes	5.4%	6.5%
60 to 89 minutes	0.4%	3.7%
90 or more minutes	1.9%	1.9%

In terms of vehicle ownership, 3.1% of Franklin households (or 60 households) report having no vehicle available. This rate is slightly greater than North Carolina's rate of 2.5% of households and Macon County's rate of 2.8% of households. Another 31.5% of Franklin households (or 607 households) report having only 1 vehicle available. This rate is notably higher than the NC rate of 17.7% and Macon County's rate of 18% of households.

### Informational Website

A dedicated website was developed to inform the public about the plan, to provide a forum for updates and events and to house draft materials. Links to the survey, existing plans, and WikiMaps interactive mapping tool were included.







# Chapter 3

## Existing Plans, Policies & Programs





# Chapter 3: Existing Plans, Policies & Programs

## Existing Plans, Policy, and Programs

Recently, several regional planning efforts have identified the importance of the area’s small town character to economic development. A crucial part of the character and a component of the attractiveness of the region’s towns is the ability to bike and walk. The shift from planning for and encouraging auto-mobile-oriented development can be clearly seen in the time line of Franklin’s plans and policies. Its past plans are filled with goals, objectives, and action items intended to promote community connectivity and accessibility as well as convenient transportation choices for residents and visitors.

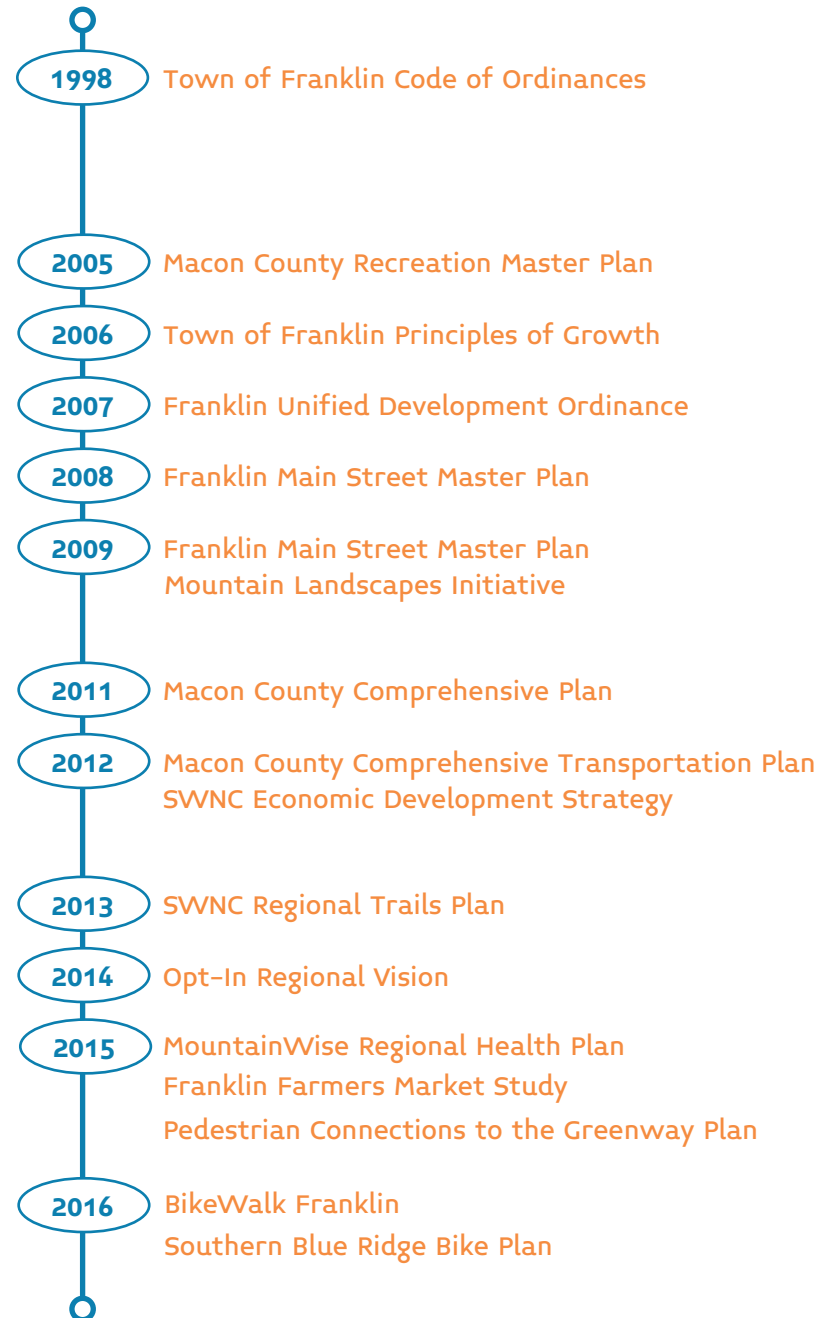
The 2006 Principles of Growth defines Franklin as a town committed to development that will offer families and residents the opportunity to choose to bike and walk to their destinations.

### Local Plans

**Town of Franklin Code of Ordinances.** First adopted in 1998 and updated regularly since, the Code of Ordinances (the Code) was developed to bring all of the town’s existing ordinances under one comprehensive set of rules. Section 72 of the Code regulates the use of bicycles inside the town’s jurisdiction. Section 95 addresses the use and maintenance of sidewalks. Section 96 enumerates the rules along the Little Tennessee River Greenway.

**The Macon County Recreation Master Plan.** This plan was developed in 2005 to guide near and long-term recreation goals for the county. Pertinent to the Town of Franklin, the plan calls for linking area parks together through a multi-use greenway system. Recommendations include the development of greenway master plan and the acquisition of properties to create greenway corridors.

Exhibit 3-1: Time Line of Plans and Policies





## Principle #4 – Create Walkable Neighborhoods

“The Town of Franklin should strive to make our town a walkable community. Walkable communities are pedestrian-friendly, desirable places to live, work, learn, worship and play. They stimulate economic viability and distinctive character, as well as improve residents’ health and safety and regional air quality. The benefits of walkable communities include lower transportation costs, greater social interaction, improved personal and environmental health, expanded consumer choices and an overall healthier way of living.”

– Town of Franklin *Principles of Growth* (2006)

**Principles of Growth.** In 2006, to reflect a shift in vision from vehicle-oriented suburban-style development to traditional development patterns, the town developed the Principles of Growth. The ten principles are meant to guide future development and to act as a framework for future development rules in the town. Among the principles, number four calls for policies that make Franklin a walkable community such as requiring sidewalks in new developments, creating gateway corridor plans, mixing land uses, increasing pedestrian connectivity, and adopting a pedestrian master plan. Further, Principle Eight calls for greater transportation choices including bicycles facilities.

**Franklin Unified Development Ordinance (UDO).** In 2007, the UDO replaced the decades-old, suburban-style zoning code. It translated the Principles of Growth into regulatory language that aims at preserving the quality of life in the town. The UDO has specific regulations designed to create pedestrian-scale development that enhances the streetscape. Certain districts such as the Urban Village, among others, must provide access to bicyclists and pedestrians. Near the downtown core, district rules call for no setback

and for rear parking thereby allowing for direct bike and pedestrian access to buildings. The required pedestrian facilities and accommodations correlate directly with the type of zone, its proximity to the downtown core and its density.

**Franklin Main Street Program Master Plan.** The 2008 streetscape plan covered Main Street, East and West Palmer Street, Depot Street, and the Highlands Road. Some of the recommendations, such as hanging plants and planter boxes, were implemented by the former Franklin Main Street Program.

**Macon County Comprehensive Plan (Comp Plan).** Adopted in 2011, the county’s Comp Plan calls for the creation of a greenway master plan, the establishment of funding sources for sidewalk development, and further development of multi-modal transportation options.

**Macon County Comprehensive Transportation Plan (CTP).** The 2012 CTP calls for multiple specific improvements to bicycle and pedestrian facilities in the town’s jurisdiction (see Exhibits 3-2 and 3-3).



**Franklin Farmer’s Market Study.** Developed in 2014 and updated in 2015, the study looks at the development of a permanent downtown Farmer’s Market. It also explores the idea of a greenway extension along Crawford Branch.

**Pedestrian Connections to the Greenway.** This 2015 study proposes pedestrian connections from town neighborhoods and destinations to the Little Tennessee River Greenway.

**Exhibit 3-2: Macon County CTP Pedestrian Recommendations**

New Pedestrian Facilities	
MACO0003-P:	Lakeside Drive (SR 1324) from US 441 BUS to Lake Emory Road (SR 1324) and Lake Emory Road from Lakeside Drive to US 441 BUS.
MACO0016-H:	Siler Road (SR 1660) from US 23-441 to Macon Early College
MACO0005-P:	Siler Road (SR 1660) from Macon Early College to Dowdle Mountain Road (SR 1659)
MACO0006-P:	Watauga Street and Dan Street from Lakeside Drive (SR 1324) to US 421 BUS.
MACO0007-P:	Wells Grove Road (SR 1667) from Dowdle Mountain Road (SR 1659) to Clarks Chapel Road (SR 1653)
MACO0008-P:	A western loop including West Palmer Street (SR 1442), Old Murphy Road (SR 1442), Sloan Road (SR 1153), Carolina Drive (SR 1463), Roller Mill Road (SR 1154), and Orchard View Drive.

**Pedestrian Improvements:**

MACO0001-H:	US 23-441 from US 441 BUS to Belden Circle (SR 1152). This facility is shown on the CTP maps as Needs Improvement, but new sidewalk facilities are recommended on both sides of the road.
MACO0011-P:	US 441 BUS from NC 28 — Highlands Road to Dan Street
MACO0003-H:	US 441 BUS from Womack Street (SR 1156) to US 23-441

**Downtown Franklin Parking Study.** J.M. Teague Engineering & Planning (JMTE) analyzed and made recommendations concerning the town’s on-street parking along Main Street. This area included most of Historic Downtown Franklin, which contains a dense collection of shops, restaurants, parks, and offices. The area captured a large amount of pedestrian activity. While the study largely focuses on parking along Main Street, other factors were also examined in order to best suit the context and help the residents and businesses that make this Downtown area a place to do business, relax, or shop. The report recommended curb extensions and high visibility cross-walks to improve pedestrian safety.

The Parking Study includes recommendations to improve the walking and biking environment in the several blocks of Main Street in the Central Business District. Leaders and planners have put more emphasis on those needs in recent years.

**Exhibit 3-3: Macon County CTP Bicycle Recommendations**

New Bicycle Facilities	
MACO0001-B	Siler Road (SR 1660) from Macon Early College to Dowdle Mountain Road (SR 1659).
Bicycle Improvements:	
MACO0005-B	US 441 BUS from Lakeside Drive (SR 1324) to Wayah Road (SR1667) Both Directions
MACO0006-B	NC 28 from US 441 BUS — Main Street to Swain County
MACO0004-H	NC 28 from US 441 BUS — Main Street to US 23-441
MACO0006-H	Depot Street (SR 1729) from US 441 BUS to Wayah Street (SR 1667)
MACO0028-B	Harrison Ave from US 441 BUS to Windy Gap Road (SR 1321)
MACO0016-H	Siler Road (SR 1660) from US 23-441 to Macon Early College





### Regional Plans

**Mountain Landscapes Initiative.** The 2009 Region A guide to development and planning calls for encouraging development around downtown cores and offers specific recommendations for bicycle, pedestrian, and pathway construction in the region.

**Southwestern NC Economic Development Strategy.** As highlighted in this 2012 regional strategy, the region’s small town quality of life, including walkability and bicycling, plays a big role in attracting and retaining businesses in the area.

**Southwestern Commission Regional Trails Plan.** The 2013 plan gives recommendations for trail improvements in areas around Franklin (see list).

- Pursue Complete Streets upgrades in the Clarks Chapel area to fill gaps in the Bartram trail and connect to Franklin along the Little Tennessee River.

- Connect Little Tennessee River Greenway to Southwestern Community College and Macon County Library.
- Siler Road: Construct connection from Little Tennessee River to area along Siler Road. Project may be greenway or combination of sidewalk and bicycle route.
- Construct greenway or hiking trail loop around Franklin: Branch from Little Tennessee River Greenway to link other areas of Franklin with a multi-use trail or walking loop. May include trail link to Wallace Branch.

**Opt-In Regional Vision.** A large regional undertaking, the 2014 regional vision calls for the development of compact downtowns with a variety of transportation choices including biking and walking. The Southwestern Regional Commission, in partnership with the Appalachian Regional Commission is offering small grants for follow-up projects that implement components of the vision.

**Southern Blue Ridge Bike Plan.** The Southwestern Rural Planning Organization and NCDOT are anticipated to com-

Exhibit 3-4: Relevant NCDOT STIP Projects

Route	Description	Right-of-Way	Utilities	Construction
US 23-441 Georgia Road (STIP Project R-5734)	From US 64 to Wide Horizon Drive / Belden Circle, Access Management Implementation (\$6.29 million)	2019 \$530,000	2019 \$60,000	2021 \$5.7 million
US 441 Business Georgia Road / Wayah Street (STIP Project U-5604)	From US 23/64/441 to Porter Street — Intersection Improvements at Womack, Maple, Porter and Depot Streets (\$7.3 million)	2020 \$1.6 million		2022 \$5.7 million
US 441 Business East Main Street (STIP Project B-5125)	Replace Bridge Over the Little Tennessee River. Plans include a ten-foot wide path behind a concrete wall.			2016 \$2.25 million
SR 1729 Depot Street EB-5756	Build sidewalk in gaps on west side of street and build new sidewalk on the east side of the street			2023 \$235,000



plete a regional bike plan for Cherokee, Clay, Graham, and Macon Counties in 2017.

## Statewide Plans

**2016–2025 NCDOT State Transportation Improvement Program (STIP).** The North Carolina Department of Transportation’s STIP is NCDOT’s data-driven, multi-year schedule for its transportation projects. A community’s project(s) may be included in the STIP after the community scores projects against NCDOT goals. Projects in the STIP include highway, bridge, public transit, bike, pedestrian, railroad, and other improvements.

The NCDOT projects for Franklin (listed in Exhibit 3-4) are important for walkers and bicyclists and are taken into consideration in conjunction with BikeWalk Franklin’s recommended projects.

The first two projects listed in Exhibit 3-4 are important for the Town as the NCDOT is bound by the Complete Streets policy to include bicycle and pedestrian needs, but current policies will require that some or all funding for these elements come from the Town. The NCDOT is required to replace sidewalk that it removes during construction, but is not required to install new sidewalk unless the Town participates. Project B-5125 will provide a long needed connection for the Little Tennessee River Greenway. EB-5756 is far enough in the future that its construction date is not considered a commitment yet; projects must reach the five year work plan to be considered scheduled for a deliverable date.

**BikeWalk NC.** This membership-based, statewide advocacy organization promotes non-motorized transportation choices for residents of and visitors to North Carolina.



Existing and potential support groups include shop owners, cycling clubs, transportation professionals, local advocacy organizations, elected officials, allied non-profits, business groups, government, environmental and health-oriented organizations, and various individual advocates across the state interested in promoting people-powered transportation.

**NCDOT’s Complete Streets Planning and Design Guidelines.** The adoption of the state’s Complete Streets policy in 2009 began the process for NCDOT to develop a set of guidelines for implementation of the policy. While NCDOT has adopted the Complete Streets policy, they also encourage individual towns to adopt their own policy via resolution. As new projects come on-line, developments are considered and improved, and parks and other public facilities are constructed, Franklin should ensure their design and street connections comply with Complete Streets goals.

In its Policy Statement, DOT says “Transportation, quality of life, and economic development are all undeniably connected through well-planned, well-designed, and context sensitive transportation solutions.”

Further, in its role as stewards over the transportation infrastructure, it states NCDOT is committed to:

- Providing an efficient multi-modal transportation network in North Carolina such that the access, mobility, and safety needs of motorists, transit users, bicyclists, and pedestrians of all ages and abilities are safely accommodated;
- Caring for the built and natural environments by promoting sustainable development practices that minimize impacts on natural resources, historic, businesses, residents, scenic and other community values, while also recognizing that transportation improvements have significant potential to contribute to local, regional, and statewide quality of life and economic development objectives;





- Working in partnership with local government agencies, interest groups, and the public to plan, fund, design, construct, and manage complete street networks that sustain mobility while accommodating walking, biking, and transit opportunities safely.

This policy requires that NCDOT’s planners and designers consider and incorporate multi-modal alternatives in the design and improvement of all appropriate transportation projects.

The adoption of Complete Streets policies at the local government level should go beyond design standards like those in the NCDOT Complete Streets guidance and should consider how subdivision, zoning, storm water management and other ordinances consider the needs of all modes of travel.



*“Complete streets are designed to be safe and comfortable for all users, including pedestrians, bicyclists, transit riders, motorists, and individuals of all ages and capabilities.” – North Carolina Department of Transportation Complete Streets Guidelines*

Streets should not be deemed “complete” unless the design of the land uses adjacent to those streets is also complete in its consideration of bicycle and pedestrian modes, as it does little to promote use of non-motorized modes to have a bicycle lane or a sidewalk if those users cannot

### Sidewalks

Sidewalks are the primary mode of pedestrian travel and are a crucial element in any pedestrian network. Sidewalks should be part of a continuous network, connected with crosswalks and separated from traffic with a buffer (see next treatment). To maintain a high quality of service, sidewalks should be kept level, smooth, and free of debris, and they should be kept continuous across driveways and other entrances. They should also be kept free of conflicts, such as utility poles or fire hydrants, with sidewalk dimensions that allow for appropriate unobstructed walking space. The minimum unobstructed walking space for a sidewalk on a street is five feet, with six feet or wider applications for higher-volume, higher-speed streets, and/or more intensive land uses (as described in Chapter 4). The sidewalk shown below exceeds this minimal width, reflecting the context. Such treatment should be encouraged where possible, particularly in urban areas.



*NCDOT’s Complete Streets policy states that “Complete Streets is North Carolina’s approach to interdependent, multi-modal transportation networks that safely accommodate access and travel for all users.”*

### Buffer

Providing a buffer between pedestrians and traffic is important for providing good quality of service. A buffer is a strip of land that separates vehicular traffic from the sidewalk or other pedestrian facility. Buffers typically are planting strips or, in more intensive areas of development, hardscaped amenity zones. For most street types, these types of buffers are also planted with trees to provide shade and for additional (vertical) buffering. A buffer greatly enhances the pedestrian experience by providing additional separation from traffic. Other elements of complete streets can also contribute to a buffer, such as bicycle lanes and on-street parking. The buffer pictured below includes both a planting strip with street trees and a cycle track. To maintain a high quality of service, these buffers should be kept clear of debris and be of sufficient width to separate the sidewalk from fast-moving vehicles.





safely reach the front door of a store or business, and park their bicycle, once they leave the street environment. The Town should also pursue policies and design guidance for non-DOT streets and greenways that help connect complete streets to a variety of land use types.

With the passage of the Strategic Transportation Investments law in 2013, NCDOT is prohibited from using state funds for standalone pedestrian and bicycle projects.

NCDOT's Complete Streets Planning & Design Guidelines include several illustrations on how to build a community for people who walk. The Guidelines also contain conceptual cross-sections that serve as the starting point for project discussions. These guidelines and associated documents can be accessed via the following site:

[www.completestreetsnc.org](http://www.completestreetsnc.org)

### Exhibit 3-5: NCDOT's Complete Streets Elements





## Other NCDOT Policies for Reference:

### NCDOT Bridge Policy

<https://connect.ncdot.gov/projects/Roadway/RoadwayDesignAdministrativeDocuments/Bridge%20Policy.pdf>

### NCDOT Pedestrian Policy Guidelines

[http://www.ncdot.gov/bikeped/download/bikeped\\_Ped\\_Policy.pdf](http://www.ncdot.gov/bikeped/download/bikeped_Ped_Policy.pdf)

### NCDOT Greenway Policy

[http://www.ncdot.gov/\\_templates/download/external.html?pdf=http%3A//www.ncdot.gov/bikeped/download/bikeped\\_laws\\_Greenway\\_Admin\\_Action.pdf](http://www.ncdot.gov/_templates/download/external.html?pdf=http%3A//www.ncdot.gov/bikeped/download/bikeped_laws_Greenway_Admin_Action.pdf)

### NCDOT Board of Transportation Resolution for Bicycling and Walking

[http://www.ncdot.gov/bikeped/download/bikeped\\_laws\\_BOT\\_Mainstreaming\\_Resolution.pdf](http://www.ncdot.gov/bikeped/download/bikeped_laws_BOT_Mainstreaming_Resolution.pdf)

### NCDOT Bicycle Policy

[https://www.ncdot.gov/bikeped/download/bikeped\\_laws\\_Bicycle\\_Policy.pdf](https://www.ncdot.gov/bikeped/download/bikeped_laws_Bicycle_Policy.pdf)

## Promoting Bicycle and Pedestrian Infrastructure through Franklin's Unified Development Ordinance and other Land Development Policies

Through its *Principals for Growth* and progressive zoning districts defined in its Unified Development Ordinance, the Town of Franklin has a solid foundation to promote bicycling and pedestrian infrastructure through the land development process. But like all communities, more can be done to ensure that the needs of pedestrians and bicyclists and the infrastructure that serves them are incorporated in land development policies. Policies most fitting for the Town of Franklin are highlighted below:

- Complete and adopt an updated Comprehensive or Land Use Plan to further define Franklin's future vision for land development.
- Develop street standards and specifications as a stand-alone policy document or incorporated with the Town's subdivision ordinance to provide road development guidelines, giving developers the tools to design sidewalks and roads that are bicyclist and pedestrian friendly. Give special consideration to road and parking lot connectivity to reduce the high number of curb cuts in Franklin's commercial areas. As an alternative, develop illustrations to better communicate the concepts in UDO Section 152.098 — Streets and Sidewalks.
- Revise the UDO Section 152.098(1)(5) to increase the minimum sidewalk width from 4 feet to at least 5 feet. Wider sidewalks should be required in the Downtown area and other developing commercial areas.
- Revise the UDO's Open Space Standards to require an easement for greenway development during the land subdivision and land development process when a greenway or multi-use path through the property is depicted in an adopted plan. This standard should apply to residential



and non-residential projects. For examples, refer to standards developed by Harrisbrug, NC or Cramerton, NC.



**Carolina Thread Trail:**

Proposed Carolina Thread Trail Connection:

- +/- 3.04 Acres within 25' Public Greenway Trail Easement

\*Public Land Dedications consists of 3.04 acres within the proposed 25' Public Greenway Trail Easement. 10' wide asphalt trail to be constructed. The remaining Public Land Dedication requirement difference (1.25 Acres) will be provided on remaining land west of Morehead Road, adjacent to existing Catawba Land Property.

## Autumn Glen

Harrisburg, NC

Carolina Thread Trail Connection

Harrisburg, NC, incorporated standards into their land development code that require developers to incorporate greenway construction into site plans if the property has been identified as ideally situated for greenway connection. This helps new construction align with the town's Comprehensive Bicycle, Pedestrian, & Greenway Master Plan and ensure accommodations for future proposed connections along the Carolina Thread Trail in accordance with the Master Plan for Cabarrus County Communities. This helps the Carolina Thread Trail meet its goals while including secondary routes and connectors to the town's bicycle and pedestrian infrastructure.

- Franklin can also add standards to the UDO's parking standards to require all new multi-family residential and non-residential developments to install bicycle parking. The Town should also consider a matching funds program to place bike racks at existing businesses. The Town should also install its own bike racks throughout town.



Association of Pedestrian and Bicycle Professionals – Essentials of Bike Parking Guide:

[http://c.ymcdn.com/sites/www.apbp.org/resource/resmgr/Bicycle\\_Parking/EssentialsofBikeParking\\_FINA.pdf](http://c.ymcdn.com/sites/www.apbp.org/resource/resmgr/Bicycle_Parking/EssentialsofBikeParking_FINA.pdf)







# Chapter 4

## Building Systems for People Who Walk and Bike





## Chapter 4: Building Systems for People Who Walk and Bike

### What attracts Pedestrians and Bicyclists?

Pedestrians and bicyclists are, for better or worse, lumped together in many planning and design considerations. When considering how likely a destination is to attract people who walk or bike, it is important that there are differences in the two modes, just as there are differences between cars and trucks—both use the same transportation network but the type and length of trips they take varies greatly because their function is different.

The most effective investments for people who walk and bike are those that link residential areas and employment centers to other attractions, such as schools, parks, cultural and historic sites, downtowns and greenways.









The difference in whether or not someone chooses to walk versus ride a bike or even decide to make a trip via an active mode depends on their level of comfort in walking there or their level of comfort combined with level of skill in riding a bike there.

The downtown area of Franklin and the 1/2-mile buffer around the US 441 Business corridor leading to and from downtown Franklin contain the majority of the destinations and, as noted previously, most are linked to existing residential neighborhoods with sidewalks, greenways and potential on-street bike routes. The areas of Franklin that are most walkable and bikeable today are the same locations that were walkable and bikeable when those were the only modes of choices other than a horse and buggy.

The table (Exhibit 4-1) identifies destinations identified through the survey, steering committee and consultant team. A designation of “Present” means it has linkages where people can walk or bike to them today; “Future”

means that investments are needed. A designation of “walk, bike or both” indicates the most likely user group at some destinations may be a more bikeable distance from town and neighborhoods rather than within walking distance. For additional information about destinations, see Exhibit 4-5 on page 39.

**Exhibit 4-1: Destinations and Connections**

Destination	Present or Future	Walk, Bike, or Both?
Downtown Franklin, its businesses and nearby residential areas	P	
Little Tennessee River Greenway and Pavilion	P	
Franklin High School	P (walk) F (bike)	
East Franklin Elementary School	P (walk) F (bike)	
Businesses along US 441 South	F	
Macon County Recreation Park complex	F	
Macon Middle School & Intermediate School complex	F	
Library and Southwestern Community College complex	P (some bike) F (walk, more bike)	





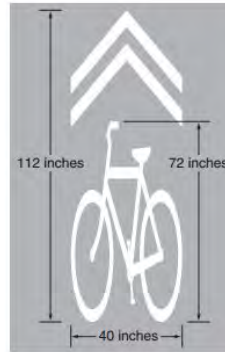
## Existing Bicycling & Pedestrian Facilities & Activity Centers in Franklin

### Existing Bicycle Infrastructure

As previously mentioned, there are no existing exclusive bicycle facilities in Franklin, but there are active riding groups who travel the signed state bicycling routes and, less often, on other public roads around town. Many of the two-lane town and rural state roads are acceptable to existing riders as evidenced by their use of these roads. In addition to State Bike Route #2, there are county routes # 30 on Lakeside Drive, Harrison Avenue and Windy Gap Road, #31 on Wayah & Wells Grove Roads, Clarks Chapel Road, Roller Mill Road, Patton Road, Palmer and Porter Streets, and #32 on Wide Horizon Road. There are infrequent “Share the Road” signs as well as numbered bike route signs, but no shared lane markings or “Bikes May Use Full Lane” signs (which are allowed by the MUTCD, though as of 2016 not consistent with state law).

Bicycling is also a popular activity on the Little Tennessee River Greenway (LTRG), which is mostly paved but unpaved in some sections. The LTRG intersects Bike Route #2 at Tasee park located at the corner of Wells Grove Road and Ulco Drive. It connects to the campus of Macon County Early College, Southwestern Community College, and the Macon County Library via an unsigned dirt road. There are connections to Main Street and Northeast Main Street (US 441 Business northbound and southbound, respectively) as well as to the East Franklin Shopping Center and Highlands Road (NC 28) both through the shopping center and along Salali Lane at Cullasaja Park. Finally, the northern end of the greenway is connected to Riverside Street (NC 28) by a boardwalk.

Franklin does have an active walking club and a dedicated group of recreational cyclists. However, walking and biking



to accomplish daily chores is not often seen. Both groups seek out off-road facilities and roads farther from the downtown core on the rural bike routes in the county.

Most connecting roads within Franklin are state-owned and have no room on existing pavement for both motor vehicles and cyclists. Some connections are possible on city-owned streets but have to cross the busier state routes.

NCDOT Complete Streets policies require that the Town financially support non-motor vehicle elements, although the Town’s traffic (of all modes) is not just generated by residents of Franklin. “Stand-alone” projects are prioritized in the STIP under the mode, bicycle or pedestrian, of transportation, and require the local government to pay a percentage (based on population and ranging from 20% to 50%) of all (planning, design, right-of-way, construction, and utility estimated costs), and to be responsible for 100% of any project overrun costs.

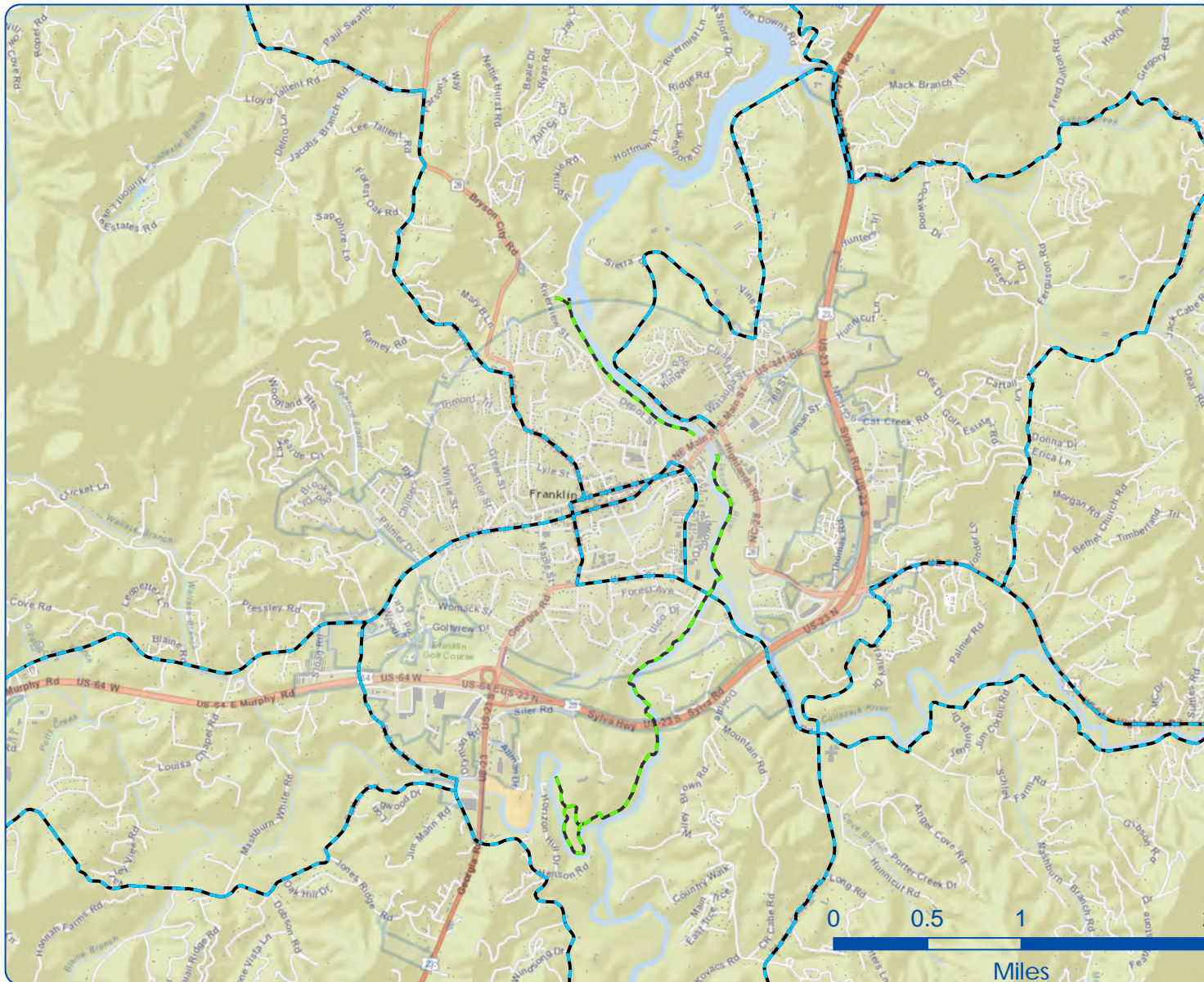
Projects that are “Incidental” to highway STIP projects can have all of the bicycle facilities included so long as they are the “standard” treatment, such as a 14’ — wide outside lane for a shared lane, or a five-foot wide bicycle lane. If a local government wanted more than the standard treatment (a separated bicycle lane, for example), the local government would be responsible for 100% of the “betterment” cost, i.e., the difference in construction cost between the two treatments.

NCDOT has historically had some money budgeted for new sidewalk construction, but it can only be used for the actual sidewalk. Related work such as curb and gutter, drainage improvements, and pedestrian signals have to have a separate source of funds. All newly constructed sidewalk must be accepted for maintenance by a party other than the NCDOT, which is usually the municipality but could also be the county or a university.

A map of existing bicycle infrastructure is shown on the following page (Exhibit 4-2).



## Exhibit 4-2: Current Franklin Bicycle Network



### Legend

- Greenway
- Bike Routes
- Bldg Footprints
- Town Limits

Signed existing bike routes in Franklin and the Little Tennessee River Greenway





### Existing Walking Infrastructure

Generally, the older the part of town, the more sidewalks link destinations together. Improvements may be desired in ramp design, crossing signals, or width, but the downtown provides a pleasant walking experience.

One doesn't have to walk far from downtown before the walking environment deteriorates, however. Traffic speeds increase where no parking or pedestrian activity requires more caution, and most sidewalks are flush with the curb, without buffers, creating discomfort and safety concerns for pedestrians. In some places sidewalks have been removed and not replaced for various reasons, and utility poles block the use of some sidewalks. Whether through driveway construction, utility work, or deterioration, many gaps in sidewalks exist.

Over the years of Franklin's post-World War II growth, much of the infrastructure was modified to benefit the automobile at the expense of the pedestrian. An example of this is seen at the intersection of Palmer and Phillips Streets where parking areas align with the edge of the pavement in all four quadrants, threatening the pedestrian paths.

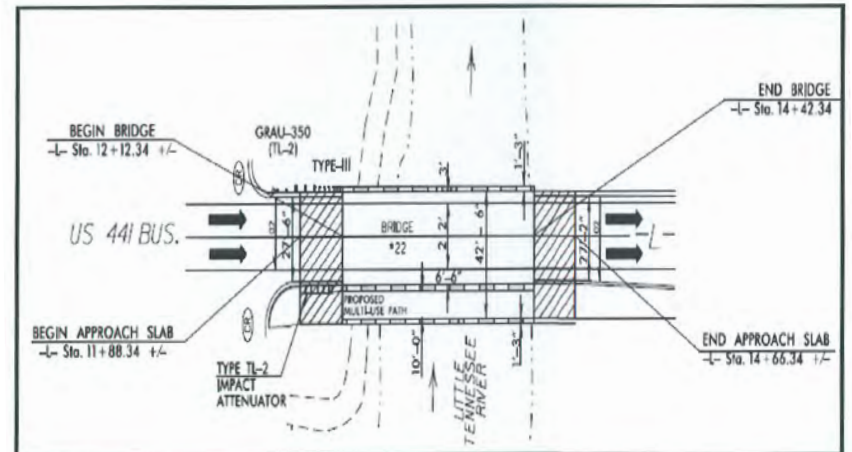
Other sidewalks reflect the construction standards at the time. While the sidewalk along Northeast Main Street has a one foot buffer, it is only four feet wide. More recent sidewalk construction reflects the current standard of five feet or six feet if flush with the back of curb. NCDOT, builders of most of the sidewalk in Franklin, still sometimes fail to build ramps and landings to every ADA standard, sometimes due to lack of knowledge/training, other times due to physical or financial constraints. One recent retrofit project from the past few years installed pedestrian signals and crosswalks at the busy Highlands Road intersection with East Main Street. Though the crosswalks are long, the ramps now are ADA compliant (accessible curb ramps with detectable warnings, smooth transitions, and running slopes of under 12.5%) and the WALK signals

allow time for a safe crossing and are at a height of 42”.

Long awaited and greatly anticipated by citizens and leaders of Franklin, the NCDOT's new bridge for East Main Street crossing the Little Tennessee River should be under construction later in 2016, and it will provide a separated multi-use trail crossing for the Little Tennessee River Greenway. Other future projects by the NCDOT promise to be guided by the Complete Streets Policy, making sure that the needs of all types of travelers, including walkers and bicyclists, are accommodated.

Many of the streets that lack sidewalk were once rural roads, and many have become principal routes through town. For most of the country's auto-centric years, constructing sidewalk was not considered necessary.

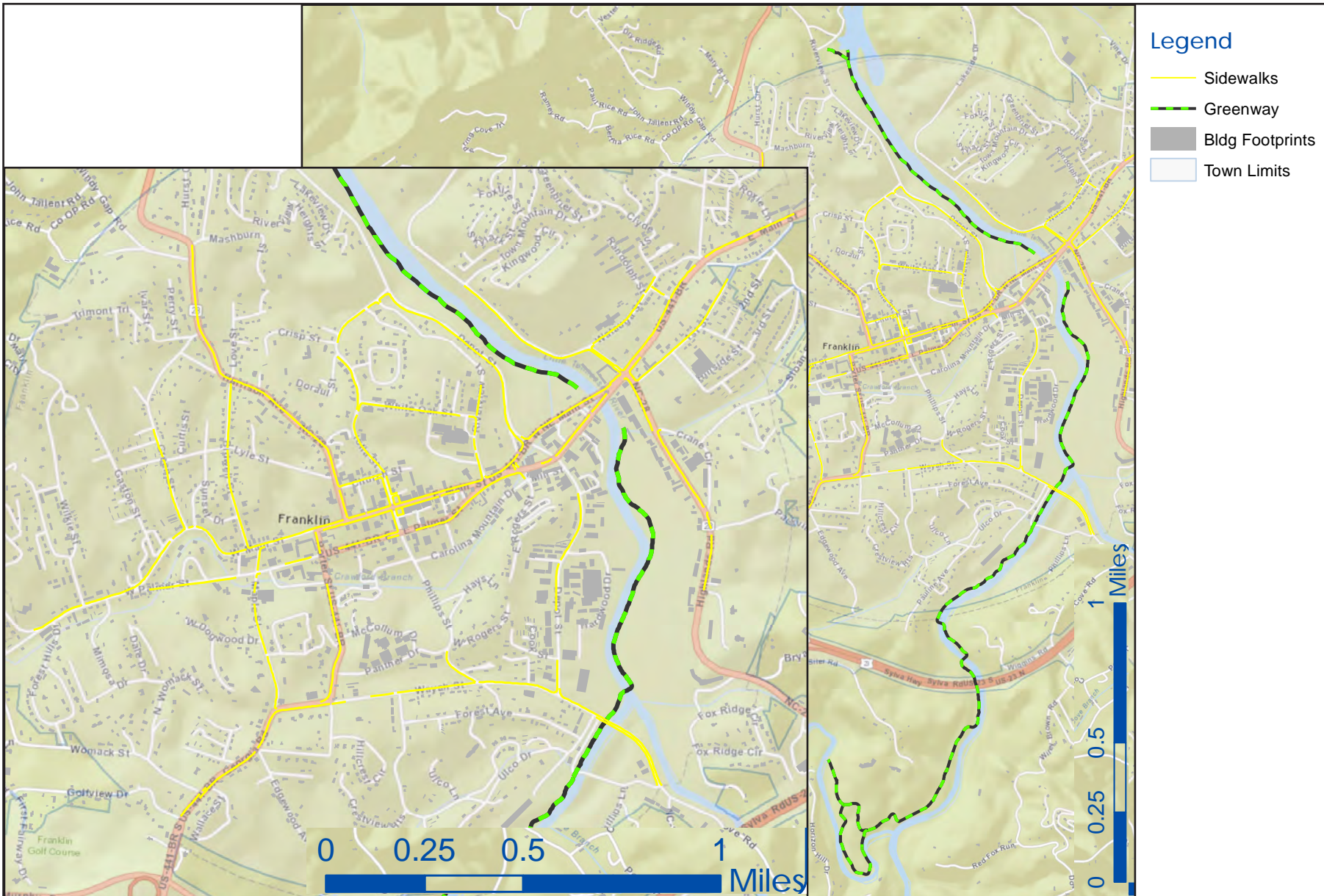
A map of existing walking infrastructure is shown on the following page (Exhibit 4-3).



The new bridge over the Little Tennessee River is estimated to cost \$2,502,000 and will replace the current bridge, built in 1931.



### Exhibit 4-3: Current Franklin Pedestrian Network



Existing sidewalks are more common closer to downtown.





## Prioritization Ranking Projects

A topic discussed with the Steering Committee on May 18, 2016, is the criteria and point system desired for use in ranking potential walking and bicycling projects.

The projects identified through the early stages of the plan were mapped for consideration by the Steering Committee and review by the public at the second Open House meeting. The Steering Committee identified the criteria by which they wanted to evaluate the projects in order to develop a priority list.

The criteria shown in Exhibit 10-1 illustrate how projects were scored. The maximum number of points available for each criteria (ranging from 5 points to 20 points) was determined as applicable and projects were scored on a matrix of criteria. Inputs were averaged to then identify the relative weight (reflective in the maximum number of points available) of each criterion.

Projects were scored based on this weighting. The consultant team used the outcomes of this ranking process to identify the top projects that constitute priorities for Franklin. Recommended projects scored between 42 and 83 points;



they are listed by prioritization ranking to help guide administrators with implementation of this plan. However, the Appendix lists several other project ideas that may also be important for the town to consider as viable options – their failure to earn a place as a recommended project should not mean they never come to fruition.

The Steering Committee emphasized pedestrian facilities over bicycling facilities early in the planning process as a more inclusive facility type for all residents. The plan seeks to increase the ridership of “interested but concerned” riders, and more respondents desired off-road greenways and multi-use trails (projects recommended for both bicycling *and* walking) than desired bike lanes and paved shoulders. It is true that most state roads in Franklin are not conducive to adding bike lanes and shoulders due to having curb & gutter, and lane width and/or lane number reductions may not be allowed by the NCDOT.

## System Plan

Developing a list of projects to improve bicycle conditions and walkability in Franklin is not as simple as identifying where sidewalks and bike lanes exist and where they are missing.

Identifying projects that promote multimodal transportation is an exercise in identifying destinations or land uses that are most likely to generate pedestrian and cyclist trips if linked through a comprehensive network of quality facilities. Overall, Franklin does have a network for walking and biking where the main roads between major destinations have a sidewalk on at least one side. The downtown area has a sidewalk network and there are very few places where people who walk are exposed to poor walking conditions along high speed, high volume traffic routes.

The project recommendations are intended to create a better network inclusive of those routes, promote safer crossing treatments for major routes, and add an additional set of greenways to the mix.



**Exhibit 4-4: Project Ranking Metrics and Point Scale**

Points	Potential Evaluation Criteria
15	<p><b>Proximity to Schools/Churches (within quarter-mile; half-mile; 1-mile)</b></p> <ul style="list-style-type: none"> <li>15 points: Within 1/4-mile and along primary route</li> <li>12 points: Within 1/4-mile and along secondary route</li> <li>9 points: Within 1/2-mile</li> <li>6 points: Within 3/4-mile</li> <li>3 point: Within 1-mile</li> </ul>
20	<p><b>Proximity to Parks/Natural Area (within quarter-mile; half-mile; 1-mile)</b></p> <ul style="list-style-type: none"> <li>20 points: Within 1/4-mile and along primary route</li> <li>16 points: Within 1/4-mile and along secondary route</li> <li>12 points: Within 1/2-mile</li> <li>8 points: Within 3/4-mile</li> <li>4 point: Within 1-mile</li> </ul>
10	<p><b>Access to Food (within quarter-mile; half-mile; 1-mile)</b></p> <ul style="list-style-type: none"> <li>10 points: Within 1/4-mile of Grocery Store and along primary route</li> <li>7 points: Within 1/4-mile of Community Garden or Farmer's Market</li> <li>5 points: Within 1/2-mile of Community Garden, FM, or Grocery Store</li> <li>3 points: Within 3/4-mile of Community Garden, FM, or Grocery Store</li> <li>1 point: Within 1-mile of Community Garden, FM, or Grocery Store</li> </ul>
20	<p><b>Proximity to Downtown &amp;/or Jobs (within quarter-mile; half-mile; 1-mile)</b></p> <ul style="list-style-type: none"> <li>20 points: Within 1/4-mile and along primary route</li> <li>16 points: Within 1/4-mile and along secondary route</li> <li>12 points: Within 1/2-mile</li> <li>8 points: Within 3/4-mile</li> <li>4 point: Within 1-mile</li> </ul>

Points	Potential Evaluation Criteria
10	<p><b>Access for Populations in Need (Census data)</b></p> <ul style="list-style-type: none"> <li>10 points: Project is in block group showing need among more than 3 categories</li> <li>7 points: Project is in a block group showing need among 3 categories</li> <li>4 points: Project is within a block group showing need among 2 categories</li> <li>1 points: Project is within block group showing need in 1 category</li> </ul>
10	<p><b>Safety</b></p> <ul style="list-style-type: none"> <li>3 points for every level of safety hierarchy control improvement project achieves over existing facility (See Safety Chapter) AND</li> <li>1 point for every bicycle or pedestrian crash that occurred in the most recent seven year crash history that would likely not have occurred if the project had been in place</li> </ul>
15	<p><b>Fills a gap in the system</b></p> <ul style="list-style-type: none"> <li>15 points: Project fills gap in existing system along a primary route</li> <li>12 points: Project fills more than half of a gap in existing primary system</li> <li>9 points: Project fills gap in system along secondary routes or less than half a gap in the primary system</li> <li>6 points: Project fills more than half of a gap in existing secondary system</li> <li>3 point: Project fills less than half a gap in the secondary system</li> </ul>





The process of identifying projects for BikeWalk Franklin consisted of:

- Reviewing project recommendations from past planning efforts, most notably the Town of Franklin’s Principles of Growth document, the Main Street Master Plan and the Macon County Comprehensive Transportation Plan, and the Southern Blue Ridge Regional Bicycle Plan;
- Gathering feedback at the Steering Committee meetings and public involvement efforts (citizen input);
- Conducting field evaluation of walking and biking conditions along streets and evaluating likely greenway routes where property access was available (*see Appendix Exhibit 10-2: Facility Characteristics Table*).
- Identifying popular destinations and walking/biking routes.

From this input, the project recommendations contained in this chapter are developed at what is referred to as “planning level,” meaning that they were examined for their relative value and evaluated based on field observations. Detailed right-of-way or design processes were not conducted as part of this Plan. Rather, those steps will follow as the Town, NCDOT, and others work toward implementation.

The cost estimates are based on planning level evaluation and prevailing costs per mile of similar facilities at the time of Plan development; they are reflective of the entire project, but do not include estimated engineering and design work fees. Costs will change, as they always do. It is best for Franklin to work through NCDOT Division 14 at the time a project grant is being pursued so these estimates can be updated. Most projects will require funding and grant pursuits from the town.

The consultant team produced a spreadsheet for developing project cost estimates that includes a wide variety of design elements. NCDOT bid averages were consulted on both local division and statewide summaries, and unit costs were chosen that reflect a blend of quantity of work and worksite location. Unit costs for estimating purposes generally assume that enough

of that type of work will be under contract that favorable, if not the lowest, unit cost can be expected. Special equipment and mobilization is required for most types of construction, and if mobilization cost are large relative to the amount of work contracted, high unit cost will be the result. Also, construction bid averages only capture the cost of the contractor delivering and installing the item; they do not capture the cost of project design, administration, or planning. These cost estimates do not capture the cost of utility relocation and right-of-way procurement, so those costs need to be estimated separately. Often there are too many unknowns in the planning phase to place a specific cost estimate for utilities and right-of-way, and either a placeholder value or a cost additive percentage is used.

The spreadsheet includes estimated costs for the following design elements: Curb ramps, crosswalk markings (standard and high visibility), signs, rectangular rapid flash beacons (RRFB), three categories of sidewalk – paved shoulder / bike lane, greenway (off-road), multi-use path (parallel to road) to capture minimal, moderate, or substantial earthwork involvement, “Sharrow” pavement markings, upgrading existing traffic signals with pedestrian signals, curb extensions/refuge islands, marking removal, lane reduction restriping, striping parallel parking, detectable domes, and stand-alone multi-use bridges.

The project cost estimates were developed by inspecting the proposed project area and counting the known design elements to be included and measuring the length of the project component distances and multiplying by the expected cross-section type. Typically these summations are rounded to the next highest number with only one or two significant digits so that detailed specificity is not implied.

Contingency additives to estimates are common even as a project approaches the construction phase, for budgeting purposes. This additive is usually 15%. Projects also need detailed construction plans once they are no longer “planned” but programmed, or budgeted for construction. These detailed plans are referred to as PS&E packages (Plans, Specifications, & Estimate) and can cost in the range of 15 to 20 percent of the



estimated construction cost. A smaller scale project may not necessarily be easier to design, so the PS&E additive is recommended to be 20% of any estimated construction cost up to the first \$100,000, and then 15% of the amount over \$100,000.

## Project Development

Project Development. To become reality, projects may go through up to four phases depending on level of complexity.

1. Feasibility studies may occur on projects like greenways or streetscape plans to gather more information. This could include a field review by Town staff or with the help of consultants;
2. Most projects begin with design, which is the surveying, measuring and scoping of the project to produce a set of drawings to define the exact parameters of the projects and the manner in which it can be constructed;
3. Acquisition of land may then occur if the project design process indicates additional land is needed; in some cases there may be existing right-of-way to accommodate the project; and
4. Construction proceeds once a project is designed and land has been acquired and funding is available.

A majority of the projects identified in this Plan are at a point they can move into either a design phase or a joint feasibility study / design phase. Depending on the implementing agency, design may be done by in-house staff or can be contracted through a design consultant.

All pedestrian and bicycle facility recommendations along NCDOT-maintained routes require review by NCDOT Highway Division 14 prior to implementation. Most of the projects depicted in this plan will require easements or rights-of-way that do not currently exist. Any private property shown in these depictions would not be acquired without the process of negotiation and compensation as required by law.

## Project Recommendations

The following pages contain project profiles for the top 22 short- and long-term projects identified through the project ranking.

A shortcoming of any project ranking method is that it cannot assign factors to deal with all project influences. Implementation realities related to budgeting, grant availability and unknown factors can only be determined through project development or design.

While the town should begin pursuing these top priorities, they should not overlook opportunities that arise to fund projects further down the list of possible projects (*found in the appendix, Exhibit 10-2: Project Ranking*), which includes bicycle and pedestrian alternatives that did not score as well in the planning process.

Additional intersection improvements may occur as part of sidewalk projects in an effort to combine necessary elements and create the most beneficial infrastructure system.

It is also important to understand that opportunities for implementation may vary greatly for different kinds of projects - greenway, sidewalk, or bike lane. Short term projects are geared toward more affordable and feasible additions, like pavement markings (crosswalk stripes, "sharrows"), signage, and route designation, while long term projects reflect more substantial infrastructure upgrades. The use of sewer easements may also be a major determinant in the feasibility of constructing some of the greenways identified in this plan. If this opportunity does not arise, it does not mean that the project should not be the town's top priority; it simply means that other priorities may be more effectively addressed in the short-term.

Some projects have been designated as "Quick Wins," due to a combination of their overall feasibility, visibility, high priority, affordability, and/or broad appeal. Look for the icon on their individual project sheets.



Exhibit 4-6 (page 41) is a map of all recommended projects.





Exhibit 4-5: Project Ranking, Type, & Points

Rank	Project	Type of Improvement	Total Points
1	The Southwest Loop Trail	Multiuse Path	83
2	Intersection of Palmer Street & Porter Street	Intersection	77
3	Highlands Road Sidewalk Extension (West)	Sidewalk	77
4	Highlands Road Sidewalk (Crane Cir-First Ave)	Sidewalk	77
5	Georgia Road Sidewalk (Maple St-Belden Cir)	Sidewalk	76
6	East Main Street Sidewalk (Rogers Rd-River)	Sidewalk	73
7	The East Franklin Sidewalk Loop	Sidewalk	73
8	Georgia Road Bike Lanes	Bike Lane	67
9	The Crawford Branch Greenway	Multiuse Trail & Greenway	66
10	The Downtown to SW Loop Connector	Multiuse Trail	65
11	Bike Route Signing & Marking	Safety Treatment	63
12	Wayah Street Sidewalk (Maple St-Porter St)	Sidewalk	61
13	West Palmer Street Sidewalk (Maple St-Porter St)	Sidewalk	61
14	Old Airport Trail Greenway Extension	Greenway	58
15	Morris Trace Greenway Extension	Greenway	58
16	Phillips Street Sidewalk (E Palmer St-Panther Dr)	Sidewalk	57
17	Intersection of West Palmer St & Maple St	Intersection	57
18	Intersection of Iotla/Riverview St & Depot Street	Intersection	49
19	The Little Tennessee River Greenway Extension to Macon County Recreation Park	Greenway	48
20	The Cullasaja River Greenway	Greenway	48
21	Iotla Street Sidewalk (Market St-Doraul St)	Sidewalk	47
22	Wells Grove Road Bridge over the Little Tennessee River Greenway	Safety Treatment	42



# BikeWalk Franklin - All Projects

## Legend

### Destinations

- Church
- Other
- Public Services
- Recreation
- Retail
- School

### Existing Infrastructure

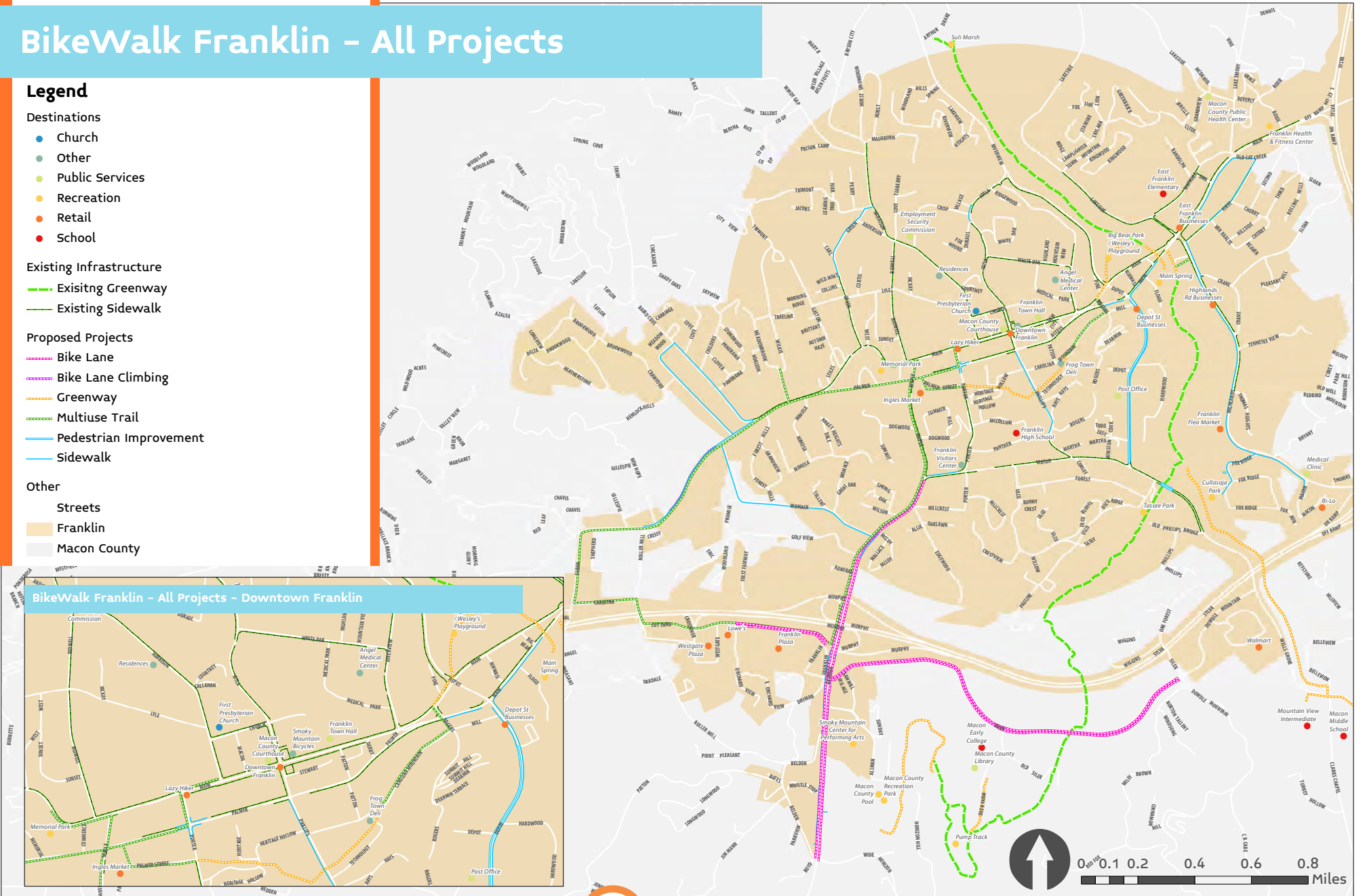
- Existing Greenway
- Existing Sidewalk

### Proposed Projects

- - - - - Bike Lane
- - - - - Bike Lane Climbing
- - - - - Greenway
- - - - - Multiuse Trail
- Pedestrian Improvement
- Sidewalk

### Other

- Streets
- Franklin
- Macon County



# BikeWalk Franklin – Pedestrian Projects

## Legend

### Destinations

- Church
- Other
- Public Services
- Recreation
- Retail
- School

### Existing Infrastructure

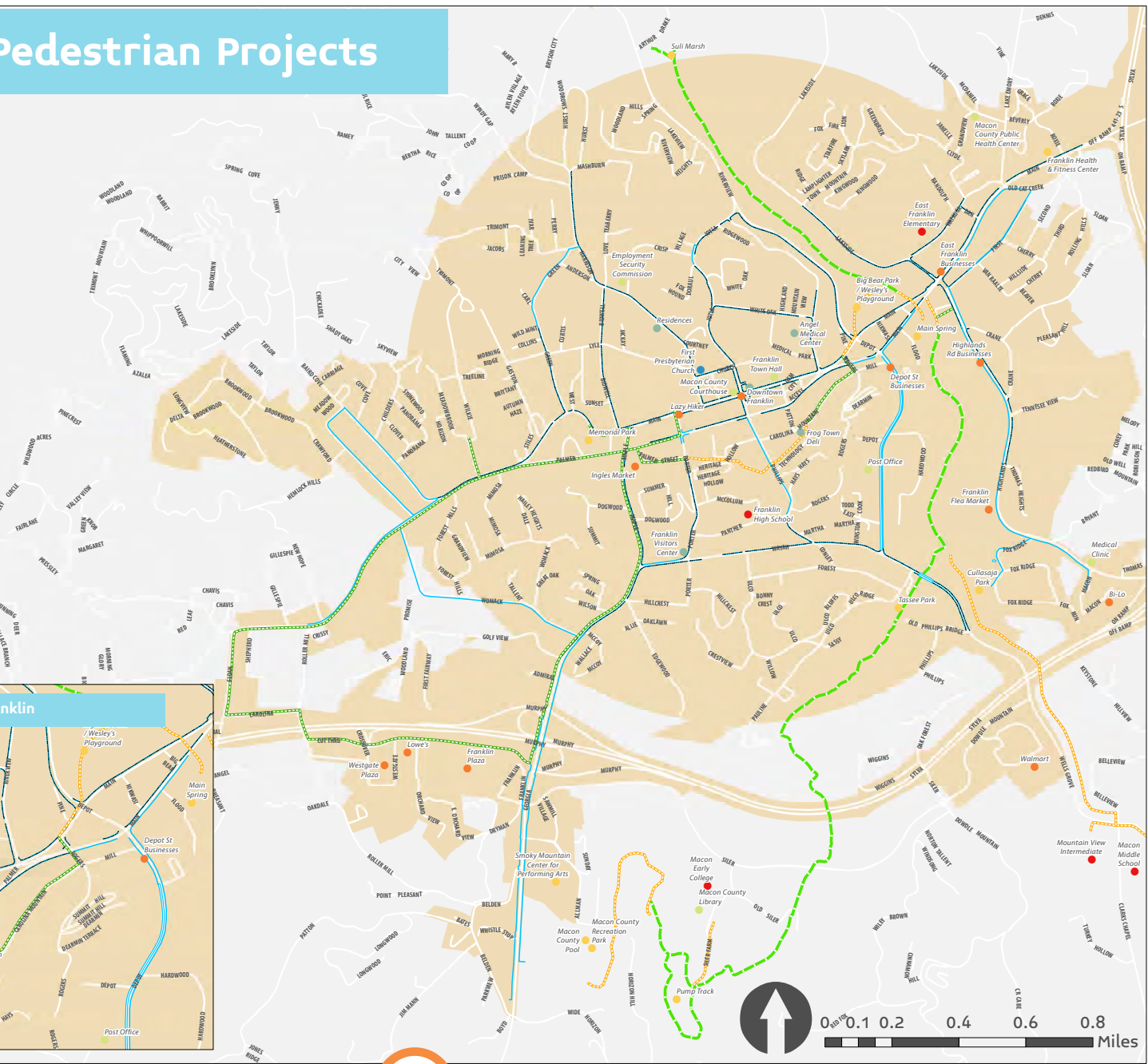
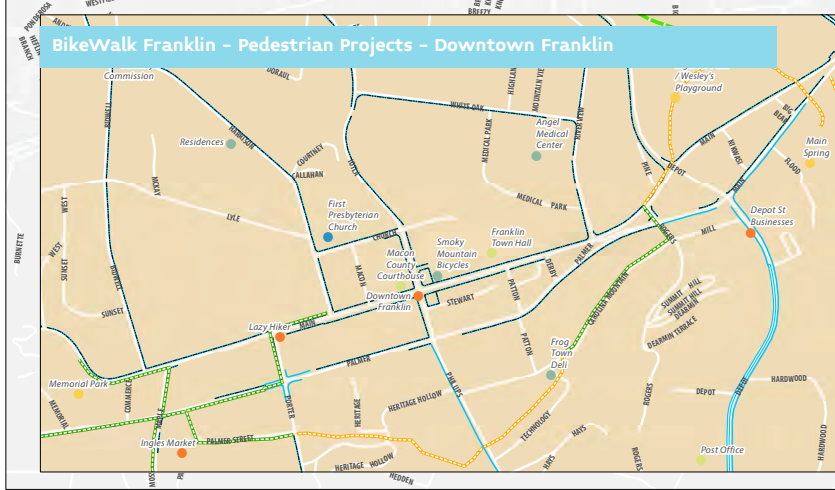
- Existing Greenway
- Existing Sidewalk

### Proposed Projects

- Greenway
- - - Multiuse Trail
- Pedestrian Improvement
- Sidewalk

### Other

- Streets
- Franklin
- Macon County





# BikeWalk Franklin – Bicycling Projects

## Legend

### Destinations

- Church
- Other
- Public Services
- Recreation
- Retail
- School

### Existing Infrastructure

- Existing Greenway

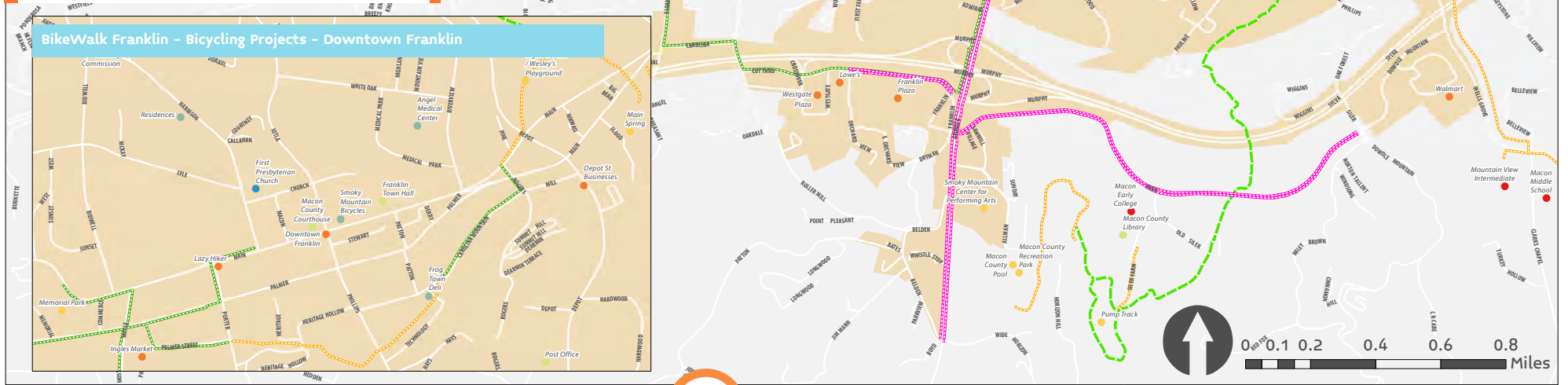
### Proposed Projects

- - - Bike Lane
- - - Bike Lane Climbing
- - - Greenway
- - - Multiuse Trail

### Other

#### Streets

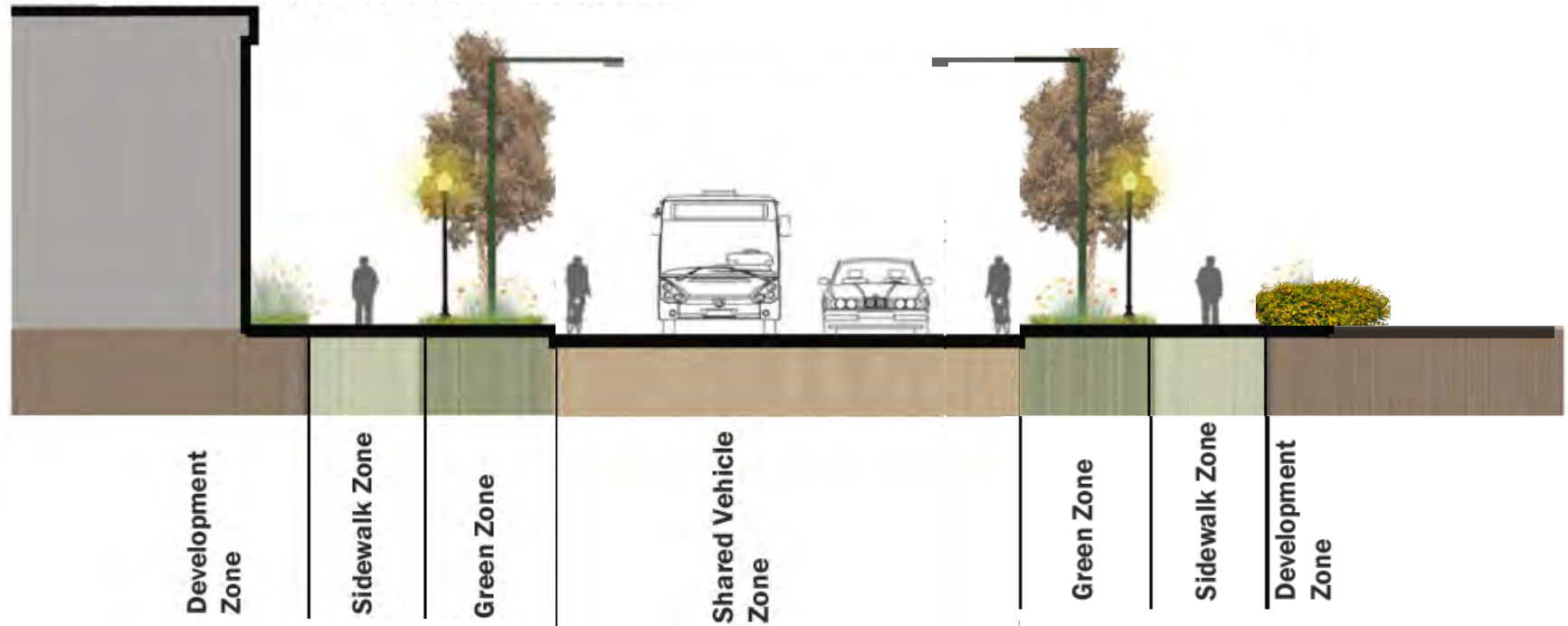
- Franklin
- Macon County





# Urban/Suburban Avenue

## ILLUSTRATIVE STREET CROSS-SECTION



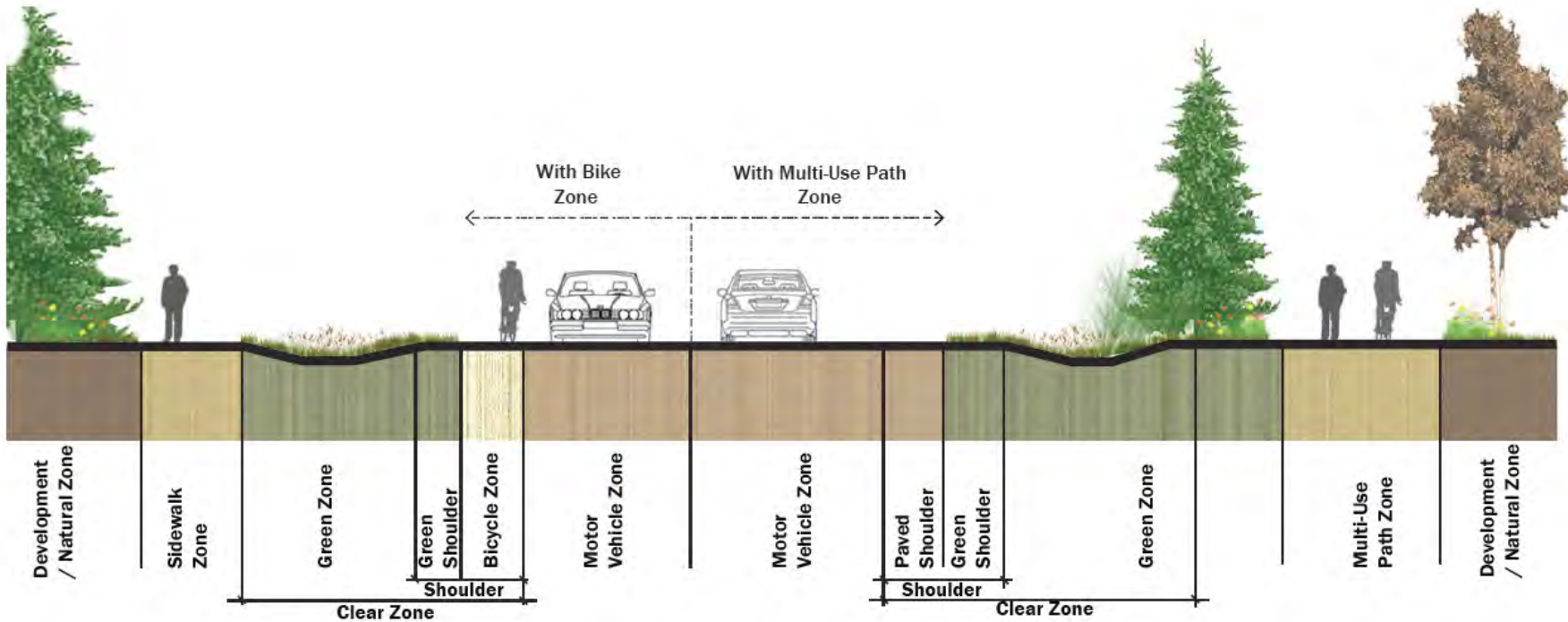
Recommended Projects 3, 4, 5, 6, and 7 all adhere roughly to this layout. Their intent is to make sure pedestrians have 6'-12' sidewalks on both sides of the street, with a 6'-8' green zone buffer when feasible. These projects alone do not feature delineated bike lanes, but continue to have shared vehicle streets.

Note that most development along Georgia Road and Highlands Road is set back from the sidewalk, so there will most likely be parking lots adjacent the sidewalk (though often separated by a vegetative buffer).



# Rural Road

## ILLUSTRATIVE STREET CROSS-SECTION



Recommended Projects 8, 9, and 10 all adhere loosely to this cross-section, either with an on-street bicycle lane or a separated multi-use path, depending on the location.

The Downtown to SW Loop Connector Trail should maintain a minimum 10' sidewalk when feasible.

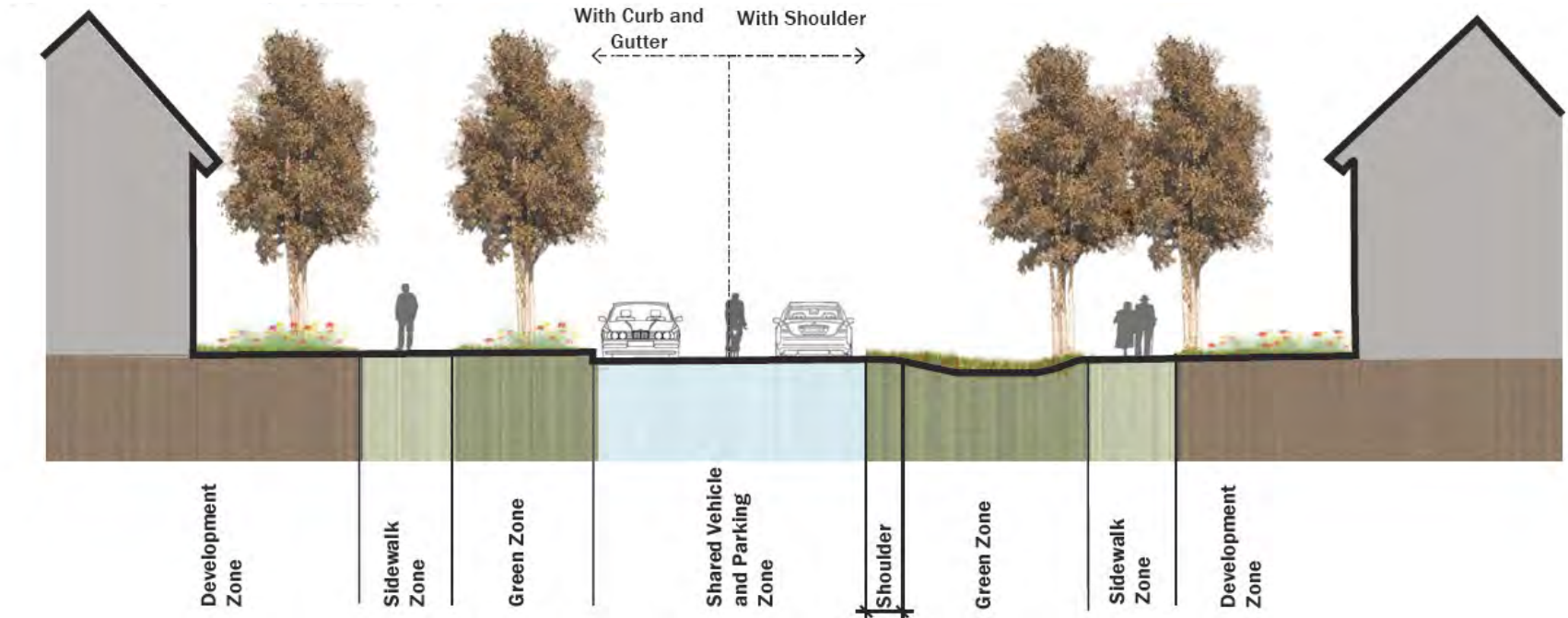
It is important that bike lanes be a minimum of 4 feet diameter (and preferably physically buffered from the motor vehicle zone with a painted area or barriers).





# Local/Subdivision Street: Residential

## ILLUSTRATIVE STREET CROSS-SECTION



Recommended Projects 12, 16, and 21 are all in residential areas and will look similar to this cross-section, either with a curb and gutter or soft shoulder (most likely grass for local streets). These projects are on Wayah Street, Phillips Street, and Iotla Street, with recommendations for sidewalk repair and construction. Bike lanes are typically not necessary due to low speed and volumes, but are allowed.

Note that medians are typically not provided on local streets (though sometimes for aesthetics)

On-street parking may be an option, depending on land use characteristics, street width, and parking demand.



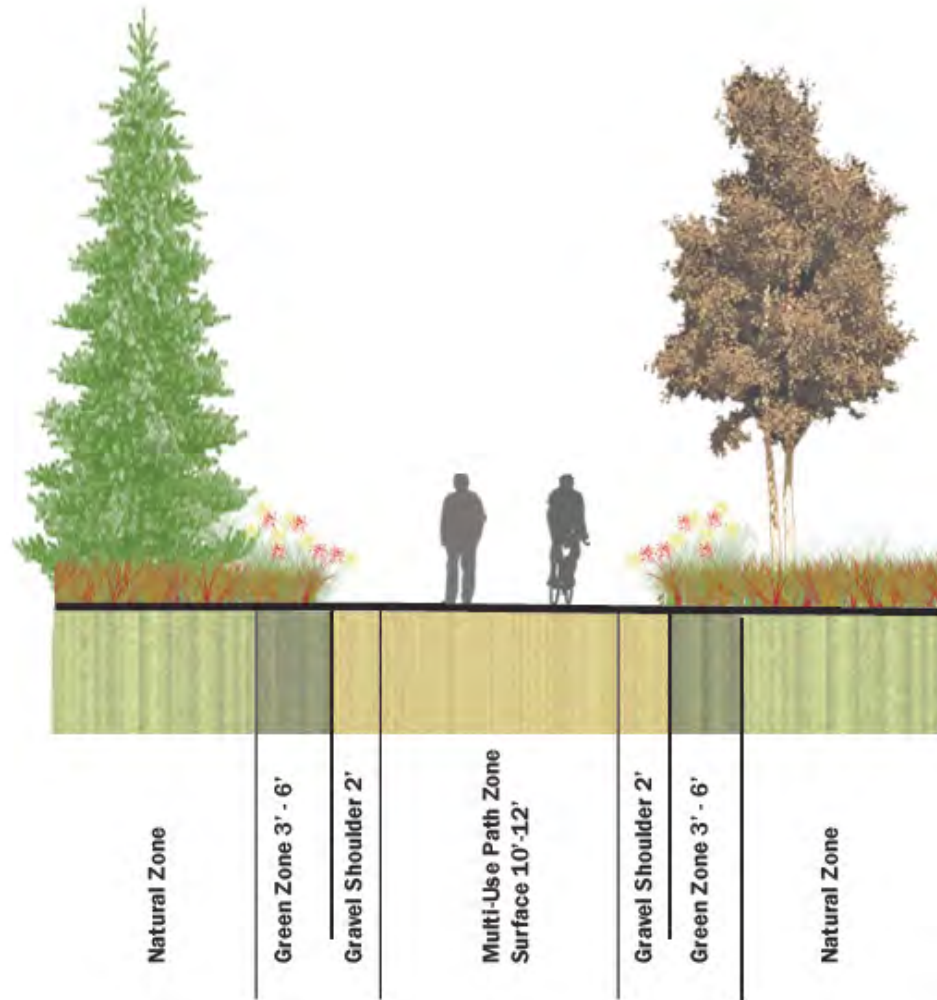
# Multi-Use Path

## ILLUSTRATIVE PATH CROSS-SECTION

Recommended Projects 14, 15, 18, 19, and 20 are all greenway / multi-use path projects, so should adhere to this cross-section.

The Green Zone is a planting strip used to create lateral offset from the edge of the path to trees and other objects (so branches don't typically get in the way).

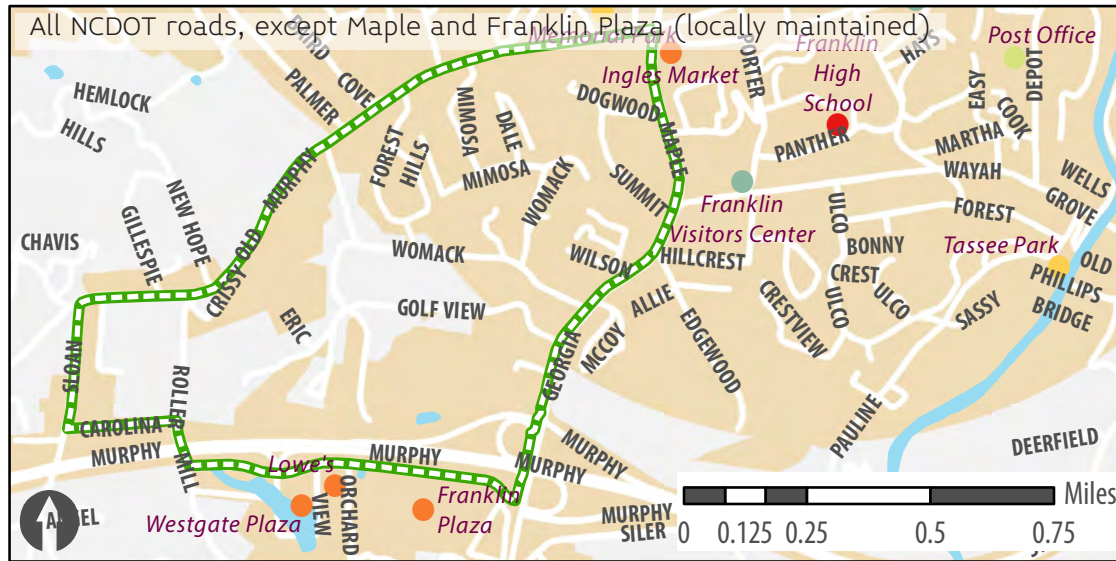
The Natural Zone serves to separate trail users from motorists on the nearest street and can provide attractive shade trees.





#1

# The Southwest Loop Trail



## PROJECT DESCRIPTION

A multi-use path for both bicyclists and pedestrians on a facility separated from motor vehicles. Markings and in some cases signs are used to identify intersections and driveways that cross the trail, and the trail will be located on the same side of the road as any existing sidewalks or where feasible. WALK / DON'T WALK signals would be added to signalized intersections through which the trail passes. This loop would serve many commercial, institutional, retail and residential destinations, connect them to town, and serve a recreational function.

### INFLUENCES:

- Suburban commercial/retail
- Residential
- Grocery & Downtown

### INTERSECTIONS:

- Crossing of on- and off- ramps at US 64 Interchange w/ Georgia Road, US 23-441
- Crossing Roller Mill Road at Carolina Drive
- Numerous driveway and street crossings

**COST ESTIMATE**  
**\$4 million**

### CONNECTIONS:

The completion of this loop would connect nearly every destination in southwest Franklin and link downtown to suburban retail

**CHALLENGES:** This large project will likely require construction in phases due to cost, and right-of-way acquisitions.

**OPPORTUNITY:** Coordination with NCDOT STIP #U-5604, which includes intersection improvements along trail route.

**LENGTH**  
**3.7 miles**





# The Southwest Loop Trail



## MAKING IT HEALTHIER

This trail would provide a safe travel network for bicyclists and pedestrians to access what is now limited (sidewalks currently only connect a small portion of the loop and are not continuous) and establish a loop ideal in length for a fitness trail. Existing sidewalks should be widened to match the new trail width - where this is not feasible, on-street bicycle facilities should be considered.

## Potential Design Treatments & Accents



There is potential for tourism and economic development - Franklin could start an annual Southwest Loop 5k race.



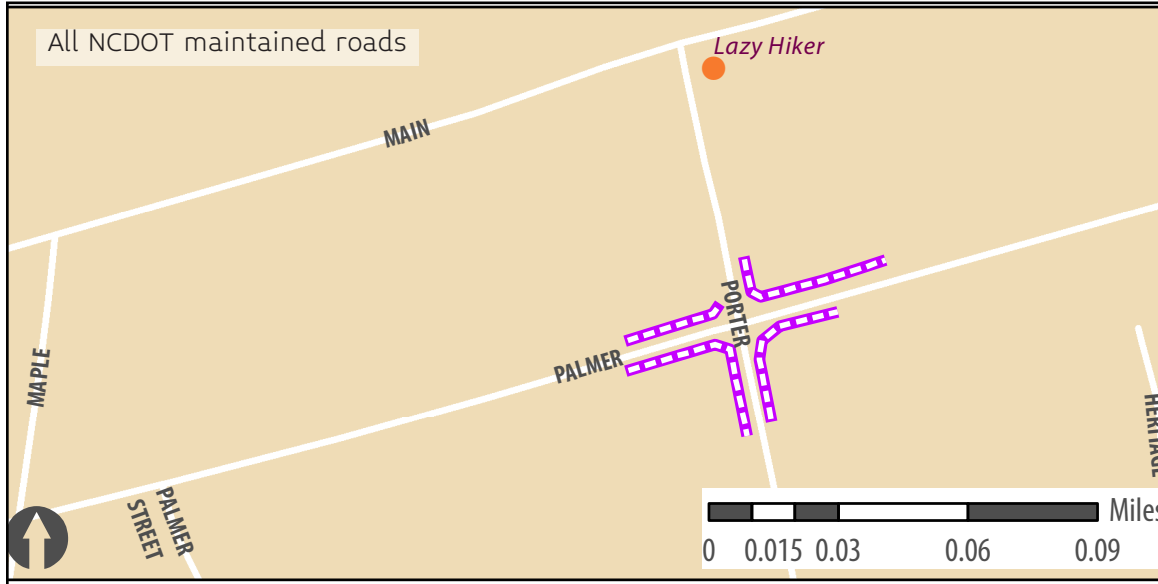
Signs can promote the health aspects of the Southwest Loop Trail, with potential for partners and sponsorships.

Source: 2011 Press-Register



#2

# Intersection of Palmer St & Porter St



## PROJECT DESCRIPTION

This intersection at the corner of Project #1 closest to downtown needs sidewalk continued in all directions to fill in gaps and make connections. Pedestrian signals would be added to the existing traffic signal, along with crosswalks and accessible ramps.

### INFLUENCES:

- Downtown
- Brewery
- Grocery Store
- Other Retail

### INTERSECTIONS:

One-way segments of US 441 Business reconnect into two-way route at this intersection.

### COST ESTIMATE

**\$125,000**

### CONNECTIONS:

- Downtown
- Brewery
- Grocery Store and other
- Retail

### CHALLENGES:

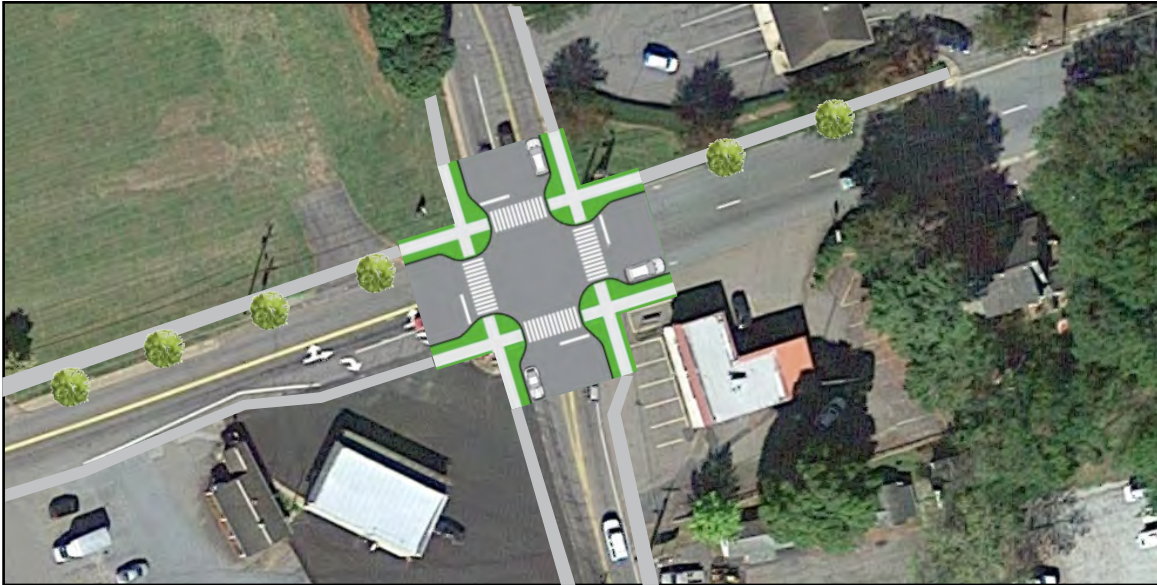
- Busy traffic intersection
- Need additional Right-of-Way for construction

### LENGTH

**800 linear feet**







### MAKING IT HEALTHIER

Currently, pedestrians do not have a sidewalk to stand on, crosswalks, or signalized assistance. This intersection is hazardous to anyone attempting to cross either road, so this project would enable all users and connect to existing pedestrian infrastructure.

### Potential Design Treatments & Accents



Painted pedestrian bulb-outs (with installed barriers) can be a cost-effective way to increase safety and visibility at an intersection.

Source: 2016 City of Austin, TX



Decorative accents can help improve driver awareness while also providing shade for pedestrians.

Source: 2016 Colfax Mayfair BID



# #3

# Highlands Road Sidewalk Extension (West Side)



## PROJECT DESCRIPTION

Extending sidewalk along Highlands Road an additional one mile (on the west side – sidewalk already exists on the east side from Crane Circle to Thomas Heights Road). This will bring pedestrian access to many business along this route and a major grocery store at the end. Two neighborhoods could take advantage of walkability to town.

### INFLUENCES:

- Suburban commercial / retail shopping
- Residential
- Grocery

### INTERSECTIONS:

One minor street crossing but numerous busy commercial driveways will need markings and possibly signs.

### COST ESTIMATE

**\$550,000**

### CONNECTIONS:

- Major Grocery Store
- Businesses along Highlands Road
- Pine Hill Park and Fox Ridge subdivisions

### CHALLENGES:

Little room for a desirable buffer between sidewalk and traffic

### LENGTH

**1 mile**







### MAKING IT HEALTHIER

The many businesses along this corridor would benefit from increased foot traffic, while pedestrians who are already walking to the restaurants, barbershops, plumbers, and clothes stores would benefit from the added comfort and safety provided by a complete length of sidewalk.

### Potential Design Treatments & Accents



Source: 2016 City of Richmond, VA

Well-placed trees can shade the footpath to provide a comfortable walking environment.



Source: 2016 Richard Drudl

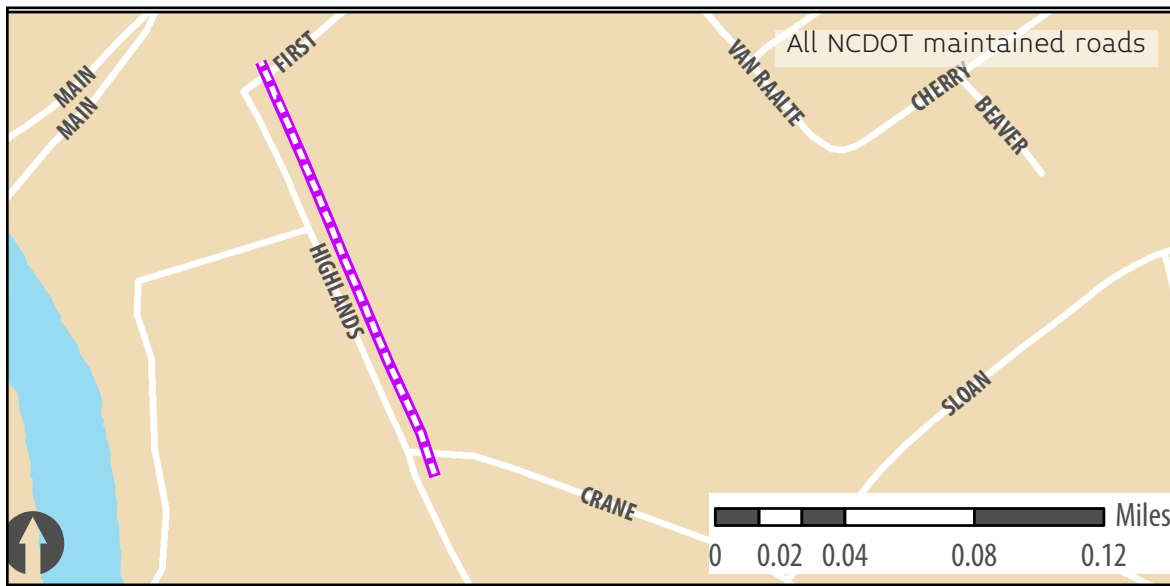
Mid-block crosswalks can be very helpful for pedestrians because they allow for a staggered crossing, one lane at a time.





#4

# Highlands Road Sidewalk (Crane Cir to 1st Ave)



## PROJECT DESCRIPTION

Building a new sidewalk along the east side of Highlands Road here connects an isolated 2300-foot long section of existing sidewalk to the Town network, providing access to many businesses and a few residences.

### INFLUENCES:

- Suburban commercial / retail shopping

### INTERSECTIONS:

Mark and sign crossings at each end of project; no interior crossings exist

### COST ESTIMATE

**\$90,000**

### CONNECTIONS:

- Businesses along Highlands Road
- Connects an isolated segment to the system

### CHALLENGES:

- Grading
- Right-of-Way

### LENGTH

**750 linear feet**





### MAKING IT HEALTHIER

The Federal Highway Administration acknowledges that roadways without sidewalks are more than twice as likely to have pedestrian crashes as sites with sidewalks on both sides of the street.

### Potential Design Treatments & Accents



This project would likely require a retaining wall (due to the slope of the terrain) and/or extensive preliminary grading work.



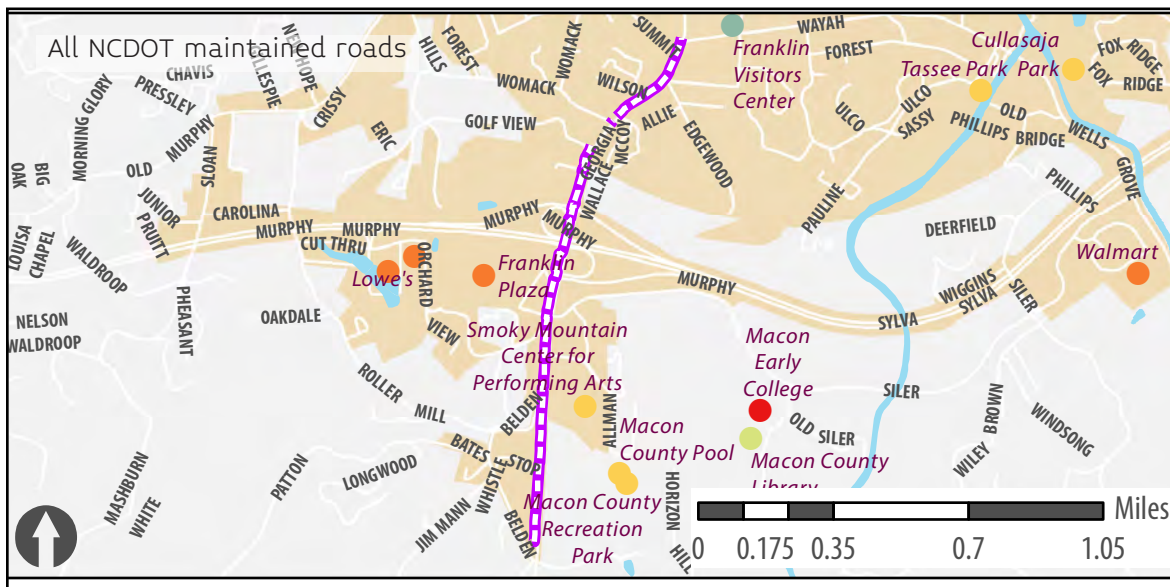
Benches could be added as a comfort amenity for pedestrians, built into the retaining wall.





#5

# Georgia Road Sidewalk (Maple St to Belden Cir)



## PROJECT DESCRIPTION

Extending sidewalk along both sides of Georgia Road from Golfview Drive to Belden Circle would connect the US 23-441 southern corridor with downtown, adding safe pedestrian paths along this wide road. There are currently sidewalks on the east side of Georgia Road from Maple to Womack and on the west side from Womack to Golfview - these sections only need new construction on one side (and might already feature infrastructure if the Southwest Loop Trail is completed). This busy commercial area already attracts pedestrians who are too young to drive.

### INFLUENCES:

- Suburban commercial / retail shopping

### INTERSECTIONS:

- Crossing of on- and off- ramps at US 64 Interchange w/ US 23-441.
- Pedestrian signal upgrades needed
- Numerous driveway crossings

**COST ESTIMATE**  
**\$540,000**

### CONNECTIONS:

- Businesses along Georgia Road

**CHALLENGES:** This large project will likely require construction in phases due to cost, and right-of-way acquisitions.

**OPPORTUNITY:** NCDOT STIP # R-5734 might incorporate pedestrian features with improved vehicular access management strategies.

### LENGTH

**5,700 linear feet**





## MAKING IT HEALTHIER

Connecting the Macon County Fairgrounds and Recreation Park, the Smoky Mountain Center for The Performing Arts, the Franklin Chamber of Commerce, Franklin High School, and all the businesses in between allows Georgia Road to become an inclusive thoroughfare and entryway to the town of Franklin.

### Potential Design Treatments & Accents



Adding a gateway sign element to the south side of this project corridor would welcome visitors and residents from Georgia.



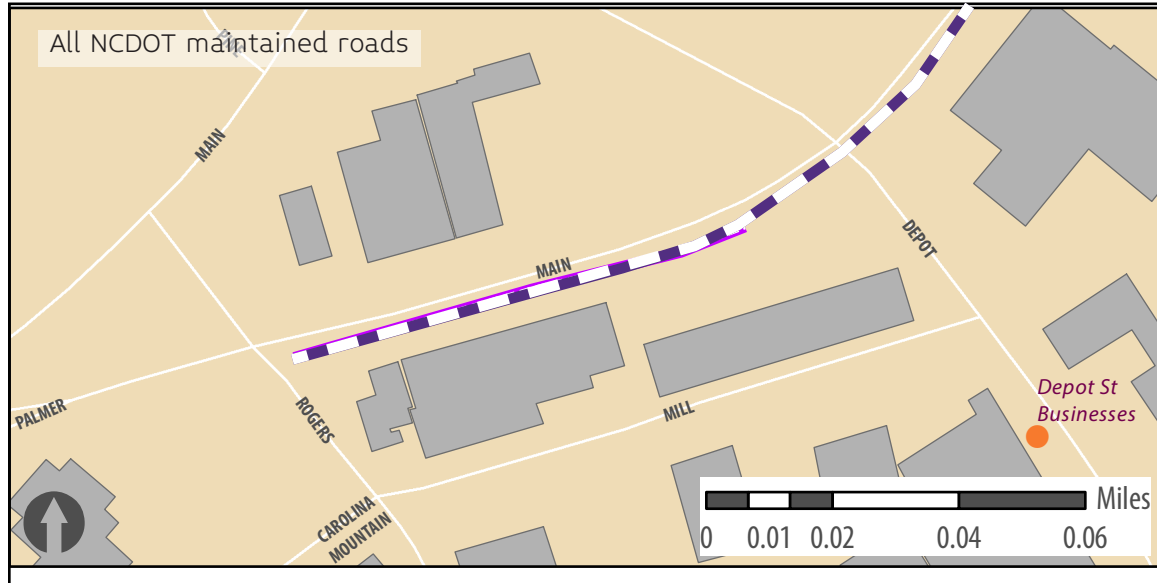
Planting native flowers along the road's median can add tremendous visual appeal and create a link to the local ecosystem.





#6

# East Main St Sidewalk (Rogers Rd - River)



## PROJECT DESCRIPTION

Filling in the gaps in sidewalks along East Main Street would connect Downtown to the Little Tennessee River Greenway by the most direct route, while connecting more businesses to the network. These additions should also help alleviate safety concerns at the E Main St and Depot St intersection.

### INFLUENCES:

- Downtown
- Commercial

### INTERSECTIONS:

Open frontage parking lots would be made safer with defined driveways and designated sidewalks.

### COST ESTIMATE

**\$160,000**

### CONNECTIONS:

- Downtown
- Greenway
- Business area

### CHALLENGES:

- Right-of-Way issues
- Driveways
- Existing parking

### LENGTH

**1,250 linear feet**





### MAKING IT HEALTHIER

By connecting the downtown core to the eastern area of town, pedestrians are able to wander a little farther and explore/linger in places otherwise not welcoming to people on foot. This may spur residents to walk longer distances and encourage denser cultural or commercial development in the area.

### Potential Design Treatments & Accents



Sidewalks with street trees have many benefits, including the use of metal grates to highlight the town and region's heritage.



Using different materials (such as brick) to separate sidewalks from road pavement can help pedestrians feel more comfortable.

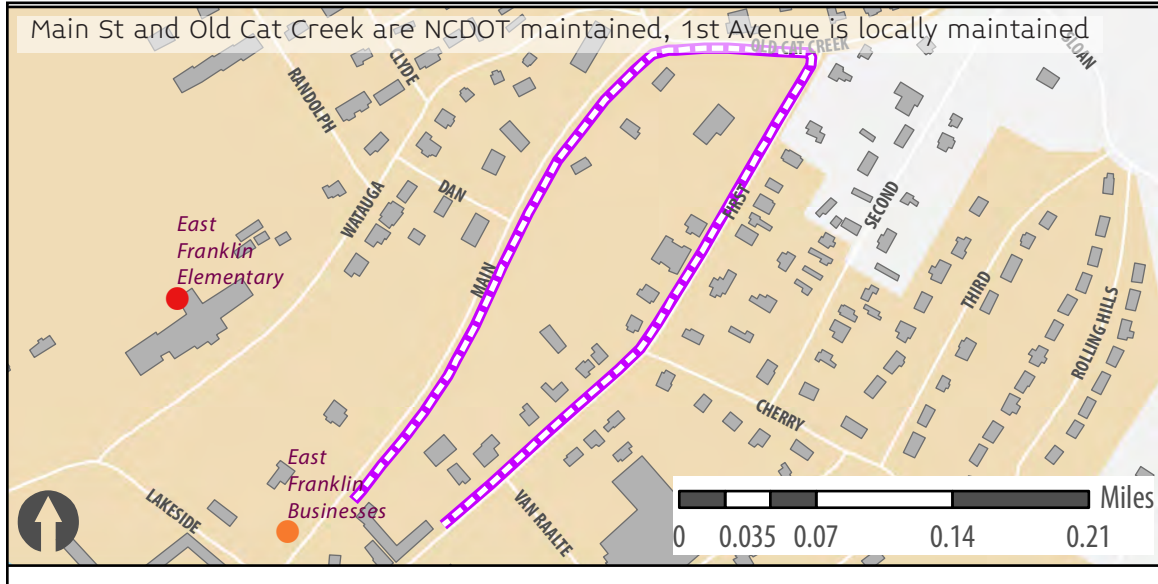
Source: 2016 Creative Plantation





#7

# The East Franklin Sidewalk Loop



## PROJECT DESCRIPTION

Building this sidewalk loop connects a town neighborhood with shopping and the town network.

### INFLUENCES:

- Residential
- Arterial traffic
- Shopping areas

### INTERSECTIONS:

This “around the block” loop crosses no major intersections and would make driveway crossings safer

### COST ESTIMATE

**\$180,000**

### CONNECTIONS:

- Residential area to East Franklin plaza shopping and dining

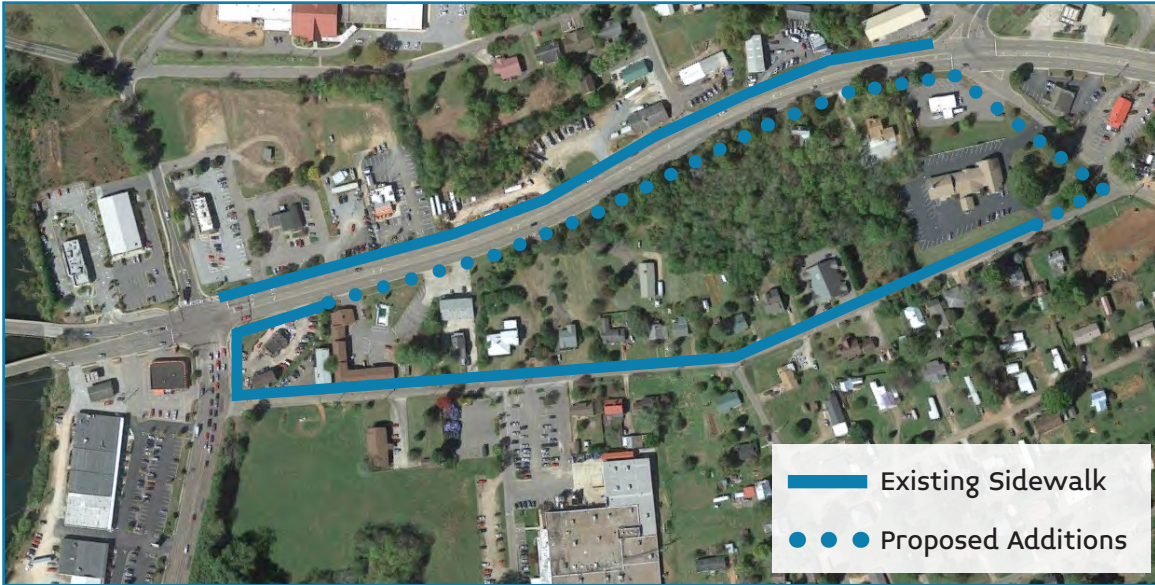
### CHALLENGES:

- Right-of-Way needs
- Some topographical challenges

### LENGTH

**2,100 linear feet**



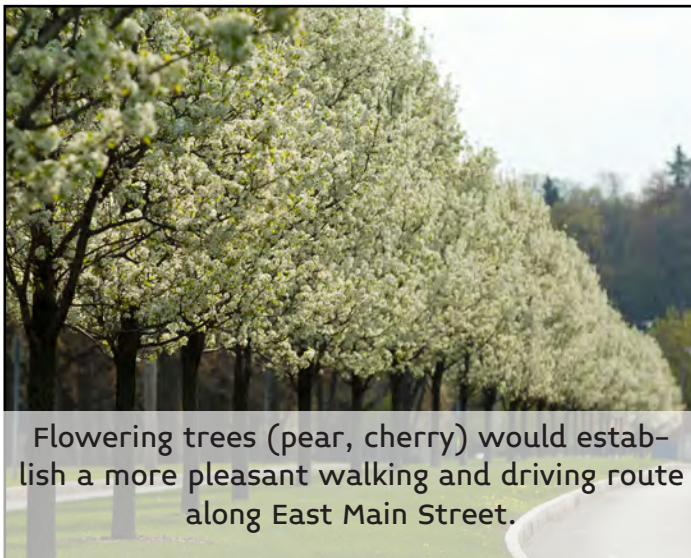


## MAKING IT HEALTHIER

This area includes churches, a veterinary clinic, a laundromat, a produce market, an inn, a credit union, a manufacturing corporation, and several restaurants.

The surrounding residential neighborhood and East Franklin Elementary School would benefit from having a dependably walkable community.

## Potential Design Treatments & Accents



Source: 2016 Adam Fenster



Source: Marrickville Greens





#8

# Georgia Road Bicycle Lanes



## PROJECT DESCRIPTION

This project will be a primary route connection to Georgia Road businesses for cyclists. From Maple Street to Golfview Drive, the road should be widened to accommodate a bike lane. Further south to Belden Circle, the 5 traffic lanes can be re-stripped (10–11 ft) to accommodate a 5-foot bike lane. These lanes should be marked and signs installed, with buffering in place when feasible. If the Southwest Loop Trail is constructed, bike lanes north of Golfview Drive are not necessary.

### INFLUENCES:

Primary route connection to Georgia Road busi-

### INTERSECTIONS:

3 minor intersections/approximate-ly one dozen driveways, one frontage parking lot

### COST ESTIMATE

**\$310,000**

### CONNECTIONS:

- Downtown via Maple Street to US 23-441

### CHALLENGES:

- May need right-of-way or ease-ments
- This project will need to coincide with NCDOT STIP # R-5734, Access Management Strategies

### LENGTH (Maple - Golfview)

**1900 centerline feet;  
3800 shoulder feet**

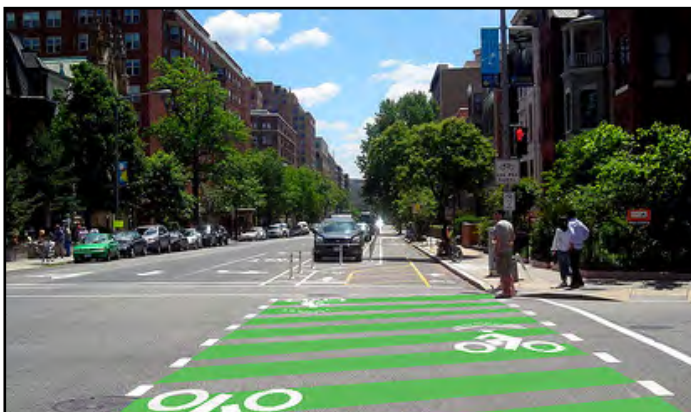




## MAKING IT HEALTHIER

Georgia Road from Maple Street has only one lane in each direction for motor vehicles, with no space dedicated to bicycles. Further south, the road widens but there still is no dedicated bike lane. With high traffic volumes and fast speeds, sharing a lane with motor traffic is uncomfortable for bicyclists.

## Potential Design Treatments & Accents



Source: 2011 Dan Malouff

Green paint can greatly accentuate a bike lane and clearly delineate the separation from the motor vehicle lane.



Source: BikeSide LA

A bike box allows cyclists to position themselves for a left turn at an intersection and remain visible to cars turning right.

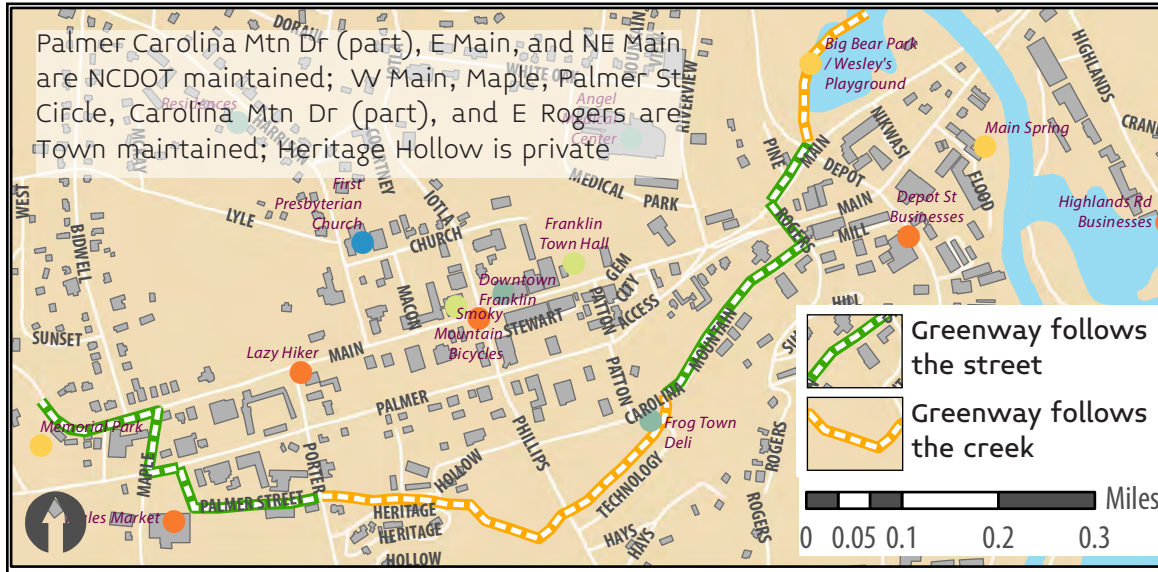




#9

# The Crawford Branch Greenway

Palmer Carolina Mtn Dr (part), E Main, and NE Main are NCDOT maintained; W Main, Maple, Palmer Street Circle, Carolina Mtn Dr (part), and E Rogers are Town maintained; Heritage Hollow is private



## PROJECT DESCRIPTION

This downtown greenway would criss-cross existing walking and biking facilities, connecting multiple destinations and creating a myriad path network.

Mixing facility types, the greenway would connect the west side of town to the east side, and Memorial Park to Big Bear Park. This Greenway would be as much a recreational attraction as a transportation facility and significantly boost Franklin's standing as a bicycling and walking destination.

### INFLUENCES:

- Cross town recreational connector

### INTERSECTIONS:

Rectangular Rapid Flash Beacons (RRFBs) are recommended for all Main, Palmer, and Georgia Road intersections, and trail crossing signs with striping at Carolina Mountain Drive, Porter Street, and Phillips Street

### COST ESTIMATE

**\$1.3 million**

### CONNECTIONS:

- Cross town connector through employment, business, and retail areas, Franklin High

### CHALLENGES:

- Expense
- Right-of-Way
- Multiple property owners and facility types

### LENGTH

**1.2 miles**





## MAKING IT HEALTHIER

Providing safe, convenient, and attractive opportunities for people to walk, jog, bike, and play can have a dramatic effect on a population's health, encouraging physical fitness and supporting a culture of recreational activity and the tourism it may bring.

## Potential Design Treatments & Accents



Source: 2016 Michael Byrd

Highlighting the Crawford Branch with a recreational greenway can spur location-specific development, like Gazebo Creekside Cafe.



A creek greenway trail that meanders off the beaten path can benefit from wayfinding signs.

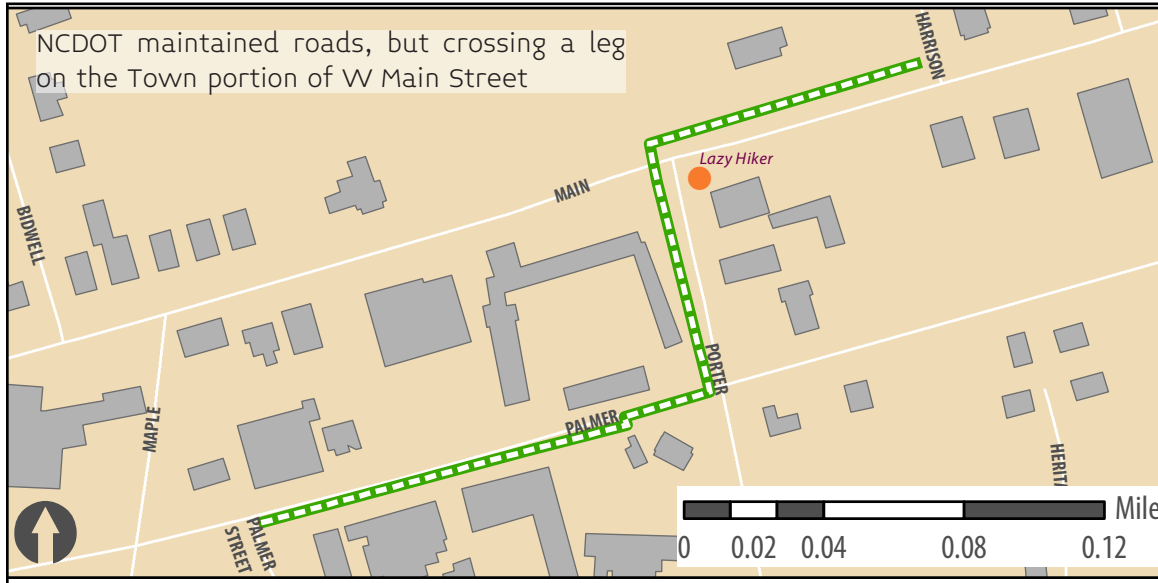
Source: 2011 WS Greenway; Jane Reed Ross





#10

# The Downtown to SW Loop Connector Trail



## PROJECT DESCRIPTION

Widen the sidewalk along Main Street and West Palmer Street, building a new section along Porter. This relatively short sidepath would make access from downtown to the west side of town much more convenient. It would serve as the origin of the downtown bicycle network by providing a route from bikeable downtown to the west side and the SW Loop Trail.

### INFLUENCES:

- Downtown
- Commercial

### INTERSECTIONS:

Crosses at existing signal and one un-signalized intersection for which high visibility markings are recommended.

### COST ESTIMATE

**\$330,000**

### CONNECTIONS:

- Downtown to southwest Franklin business, residential, retail, service, grocery

### CHALLENGES:

- Right-of-Way needed
- High expense for a short project
- Current parking alignment along West Palmer Street

### LENGTH

**1,550 linear feet**





### MAKING IT HEALTHIER

Connectivity is vital to successful bicycle and pedestrian infrastructure. Sidewalks, bike lanes, and trails are only truly useful if they are linked. This short connector trail serves the purpose of bridging much-needed gaps in an otherwise strong network.

### Potential Design Treatments & Accents



Source: State College Pennsylvania

Proper drainage is always useful along streets, sidewalks, and trails. Rain gardens can siphon large amounts of stormwater.



Source: Stephen & Lucy Dawson

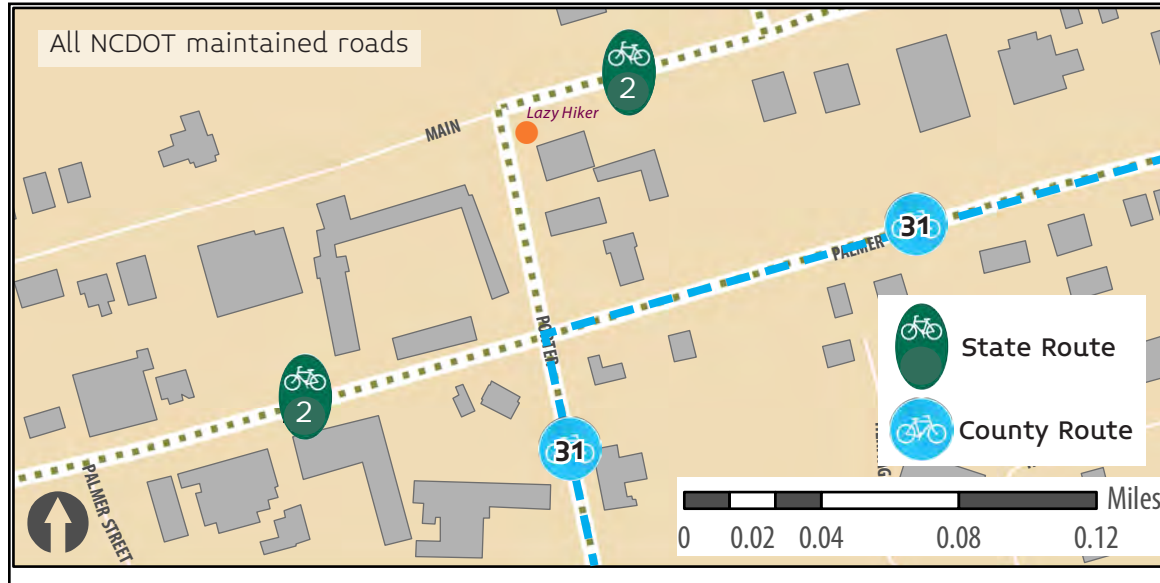
Connector signs can indicate direction and distances to other recreation amenities, trail loops, and town resources.





#11

# Bike Route Signing & Marking



## PROJECT DESCRIPTION

Existing Bike Routes — Review all of Franklin’s existing bike routes to determine if their alignment is still preferred, and to identify missing bike route signs and have them replaced. Install “Share the Road” and “Bicycles Yield to Peds” signs and Sharrow Pavement Markings where needed and appropriate.

### INFLUENCES:

- Safety Awareness

### INTERSECTIONS:

Existing routes cross major intersections.

### COST ESTIMATE

**\$270,000**

### CONNECTIONS:

- Existing bike routes criss-cross throughout the town limits of Franklin

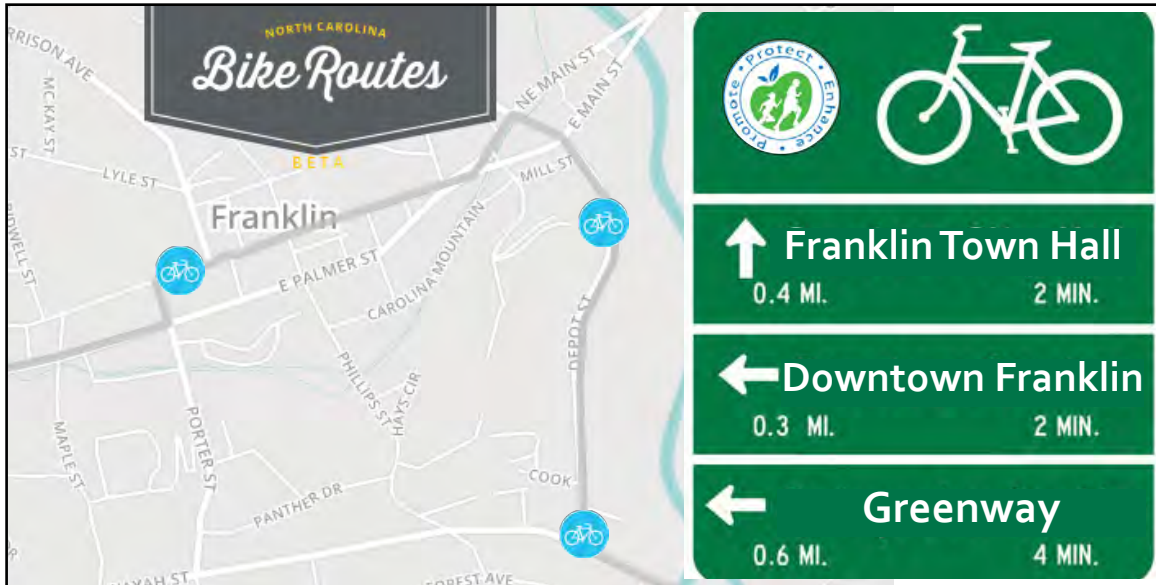
### CHALLENGES:

- Expense and frequency of “sharrows”
- Driver awareness

### LENGTH

**9.4 miles**





## MAKING IT HEALTHIER

Franklin is already served by several designated bicycle routes, but their presence is barely noticeable. Replacing and upgrading signing and installing Sharrow pavement markings would greatly increase the visibility of the Town's bicycle network, with the desire of making bicyclists more visible to motorists while helping cyclists find their routes.

## Potential Design Treatments & Accents



Bike route signs can be customized to highlight different towns within the county.



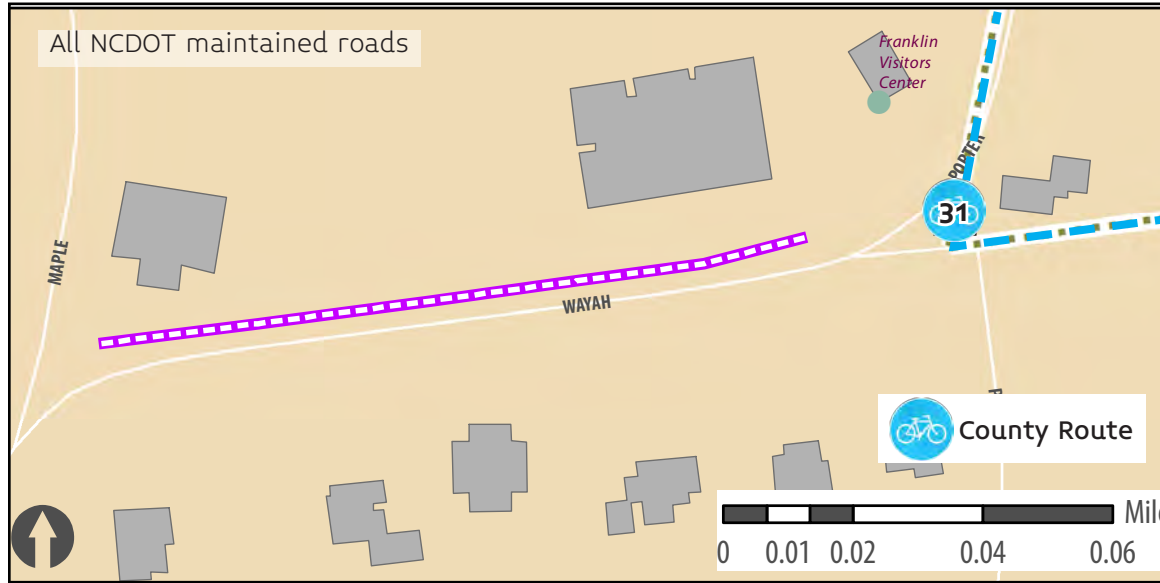
There are creative designs to incorporate bike routes in a distinctly Franklin way.





#12

# Wayah St Sidewalk (Maple St - Porter St)



## PROJECT DESCRIPTION

This short section of proposed sidewalk would complete a missing link in the vicinity of the high school, hopefully encouraging students and staff, as well as other area employees, to consider walking to school and other places of employment.

### INFLUENCES:

- High School
- Residential

### INTERSECTIONS:

Three driveway crossings.

### COST ESTIMATE

**\$55,000**

### CONNECTIONS:

- Connects two existing segments of sidewalk, high school, church, and houses

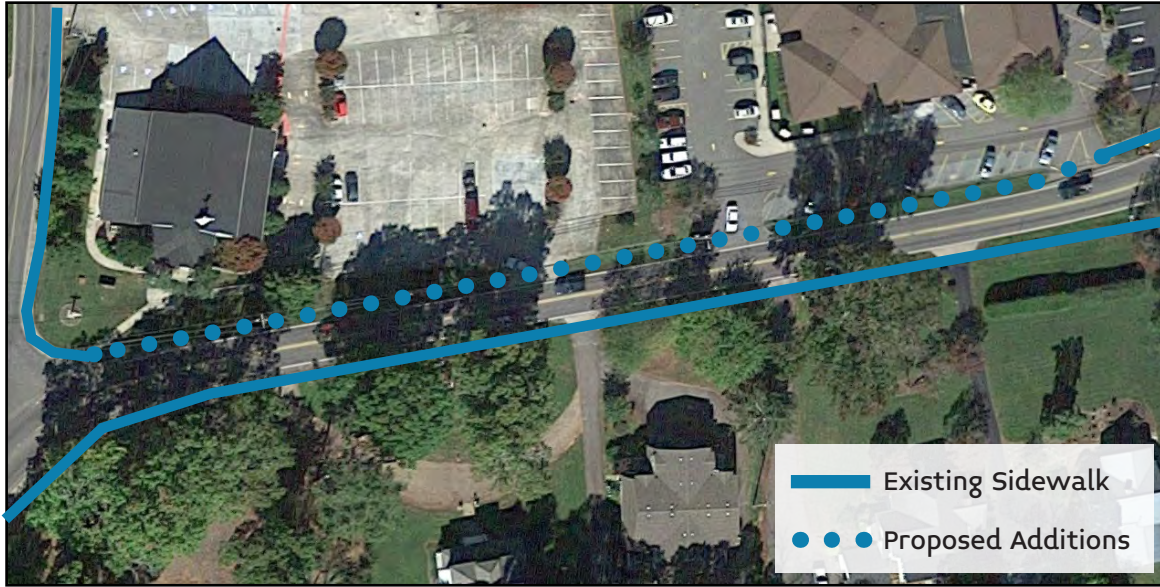
### CHALLENGES:

- Connection at Lutheran church
- Crossing private driveways

### LENGTH

**580 linear feet**





## MAKING IT HEALTHIER

Churchgoers, Franklin High School attendees/employees, and Chamber of Commerce visitors are all served by this sidewalk project. Encouraging walking to service and to school can help many people in the community establish a healthy daily/weekly routine.

## Potential Design Treatments & Accents

Source: The Partnership for Water Sustainability in BC



The buffer between sidewalks and streets can be utilized as a rain garden / bioswale to help control storm water runoff and pollution.



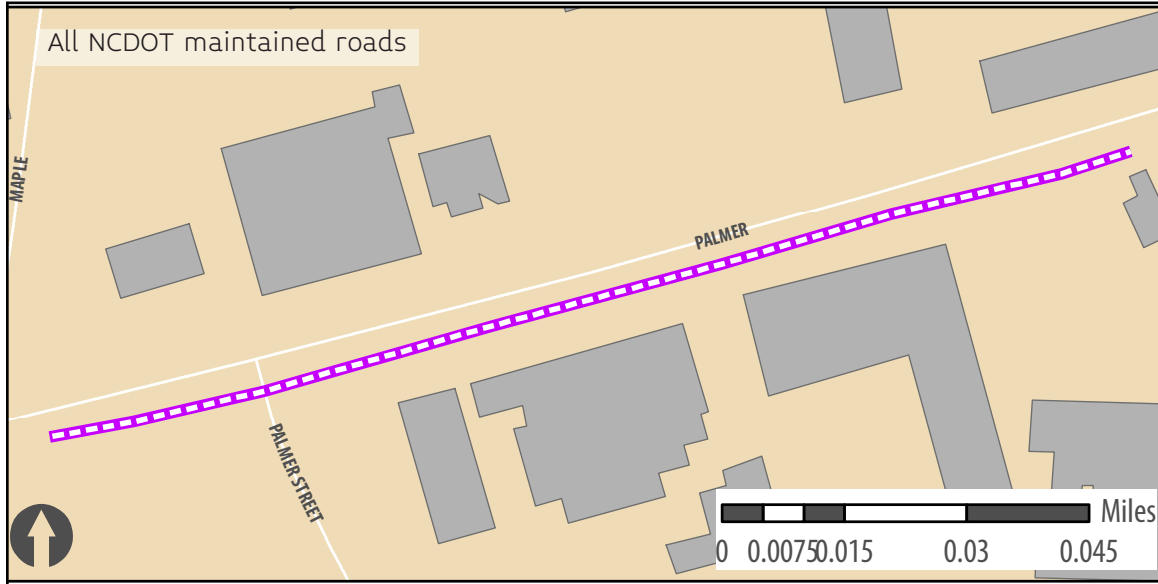
A bright, highly visible pedestrian crossing can make a big difference in establishing a safe, connected sidewalk network.





#13

# West Palmer Street Sidewalk (Maple - Porter)



## PROJECT DESCRIPTION

Sidewalk along West Palmer Street should connect Maple Street, with its residences and good sidewalk, to downtown. Passing in front of an Ingles grocery store, the sidewalk would provide additional access to food for area residents. This sidewalk section can serve alongside the Downtown to SW Loop Connector Trail (on the other side of the street) but does not accommodate bicycle traffic so is less inclusive than the Connector Trail.

### INFLUENCES:

- Connects existing sections of sidewalk

### INTERSECTIONS:

Open frontage parking lots would be made safer with defined driveways and designated sidewalks.

### COST ESTIMATE

**\$90,000**

### CONNECTIONS:

- Grocery store, business district, and residences

### CHALLENGES:

- Right-of-Way
- Accommodating business parking needs

### LENGTH

**725 linear feet**



# #13

# West Palmer Street Sidewalk (Maple - Porter)



## MAKING IT HEALTHIER

This corridor can be an extension of downtown Franklin, a walkable and attractive neighborhood, if planning considerations are made for comfortable sidewalks, shade trees, safe crossings, and connectivity to Main Street.

## Potential Design Treatments & Accents



Encouraging new development to arrange parking in the rear (accessible through an alley) helps sustain walkability along the street.

Source: New Designs for Growth



On-street parking (for bikes and cars) can help create a slower, destination street, but must accommodate sidewalks as well.

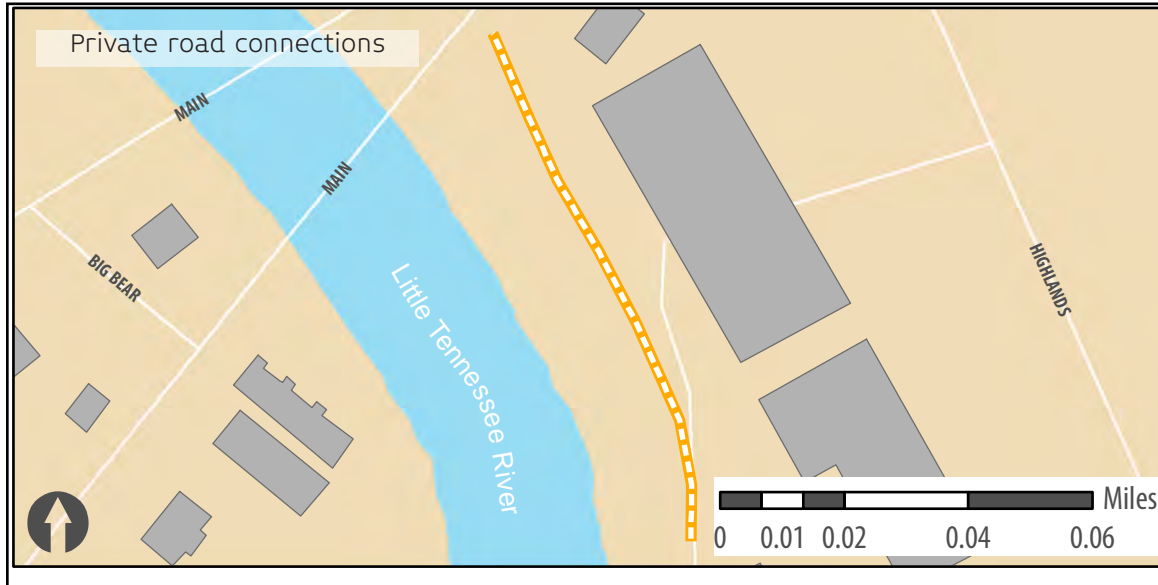
Source: City of Lawrence, KS





#14

# Old Airport Trail Greenway Extension



## PROJECT DESCRIPTION

Behind the East Franklin Shopping Center, this missing link in the existing greenway should be completed so that when the East Main Street bridge is completed with its new trail, the greenway would be a continuous route.

### INFLUENCES:

- Missing link in greenway

### INTERSECTIONS:

No intersections; need buffer from alley traffic.

### COST ESTIMATE

**\$50,000**

### CONNECTIONS:

- Fills critical gap in existing greenway

### CHALLENGES:

- Right-of-Way
- Accommodating business parking needs

### LENGTH

**475 linear feet**





## MAKING IT HEALTHIER

The best greenways are those that span a great length, allowing long-distance bicycle tourism and regional travel. Most communities implement their greenway plans in phases, connecting various segments. This 475-foot portion is vital to the overall success of the Little Tennessee River Greenway.

## Potential Design Treatments & Accents



A gateway feature could be added in the East Franklin Shopping Center alleyway to serve as an entrance to the greenway.



A bicycle repair station is a helpful amenity to add to multiuse trails and greenways, providing cyclists with tools to fix their bikes.

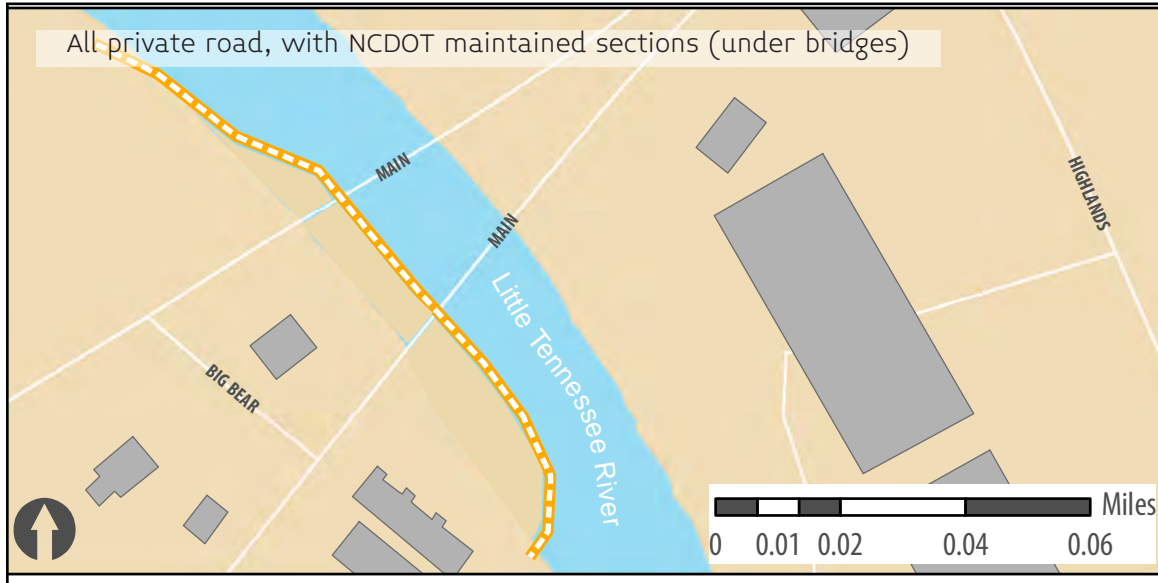
Source: Preston, MN, Chamber of Commerce





#15

# Morris Trace Greenway Extension



## PROJECT DESCRIPTION

Passing under the Northeast Main Street bridge from Big Bear Park, this dirt trail link in the existing greenway should be paved and brought to the FROG headquarters so that when the East Main Street bridge is completed with its new trail, the greenway would be a continuous route.

### INFLUENCES:

- Missing link in greenway.

### INTERSECTIONS:

No conflicts.

### COST ESTIMATE

**\$85,000**

### CONNECTIONS:

- Fills critical gap in existing greenway.

### CHALLENGES:

Flood plain

### LENGTH

**625 linear feet**

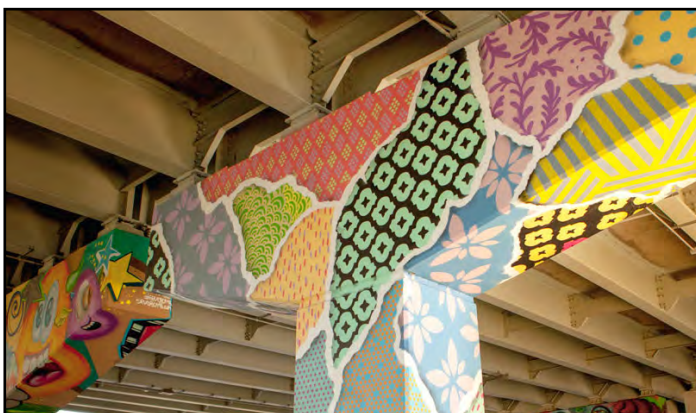




## MAKING IT HEALTHIER

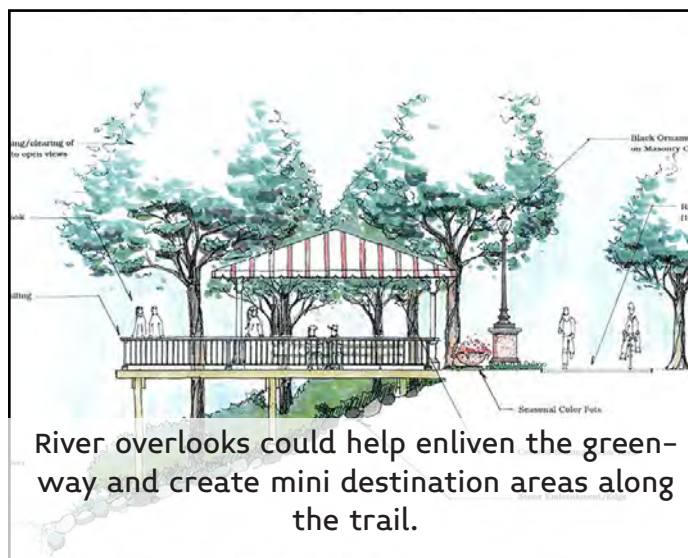
This key segment of the Little Tennessee River Greenway is integral to the success of the whole and should model ideal design and accessibility standards – namely, a paved surface for walkers and bicyclists of all types to use.

## Potential Design Treatments & Accents



Source: Kristen McCrea

The East Main Street bridge could feature mural work to enhance the appeal of the greenway as it passes underneath.



Source: City of Hastings, MI

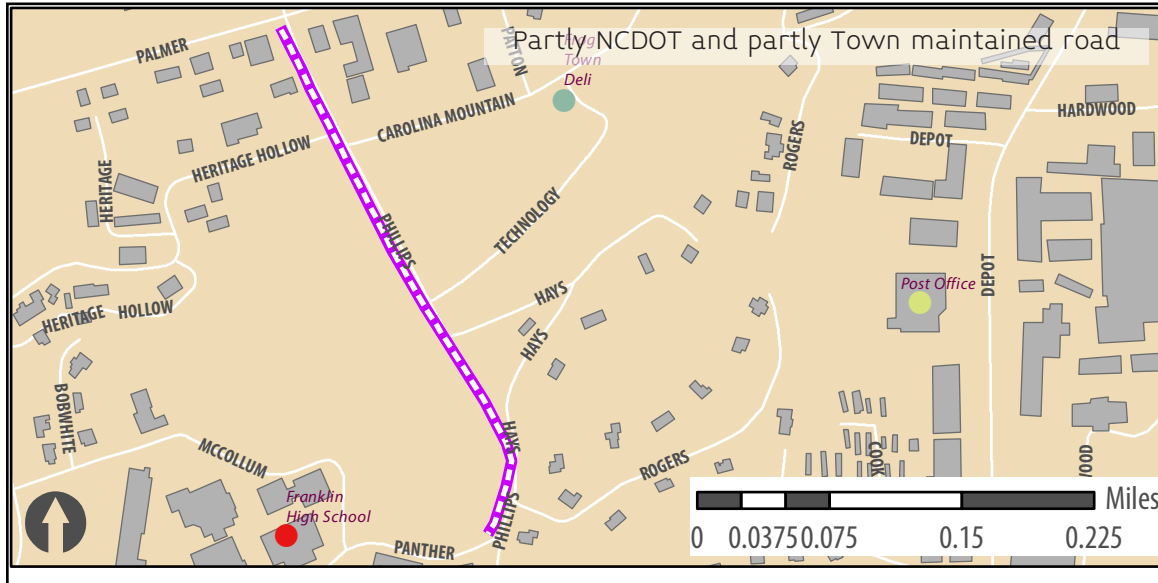
River overlooks could help enliven the greenway and create mini destination areas along the trail.





#16

# Phillips Street Sidewalk (E Palmer - Panther)



## PROJECT DESCRIPTION

Sidewalk was removed from Phillips Street when the road was last resurfaced, and it connected downtown directly to the high school. Replacing this sidewalk would also provide additional connections to the proposed Crawford Branch Greenway.

### INFLUENCES:

- Franklin High School
- Downtown

### INTERSECTIONS:

No major intersections, but three minor driveway crossings.

### COST ESTIMATE

**\$75,000**

### CONNECTIONS:

- Franklin High School
- Downtown

### CHALLENGES:

Understanding why the existing sidewalk here was removed

### LENGTH

**1,700 linear feet**

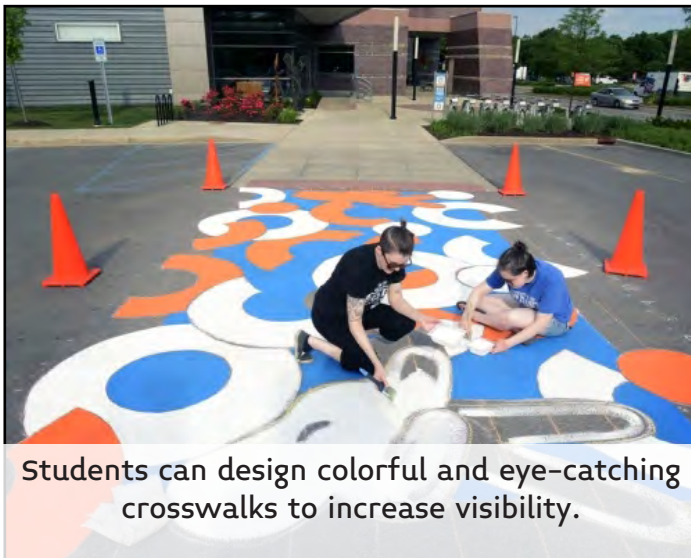




### MAKING IT HEALTHIER

Schoolchildren should be encouraged to walk and bike to school, but only if the infrastructure exists for them to do so safely. We cannot expect children to walk in the gutter or sprint across a street without signalized crosswalks. Partial pedestrian networks help encourage more people to walk, but not safely.

### Potential Design Treatments & Accents



Students can design colorful and eye-catching crosswalks to increase visibility.

Source: 2016 Journal-Gazette



Schools benefit from unique crosswalks aimed at child safety and incident reduction.

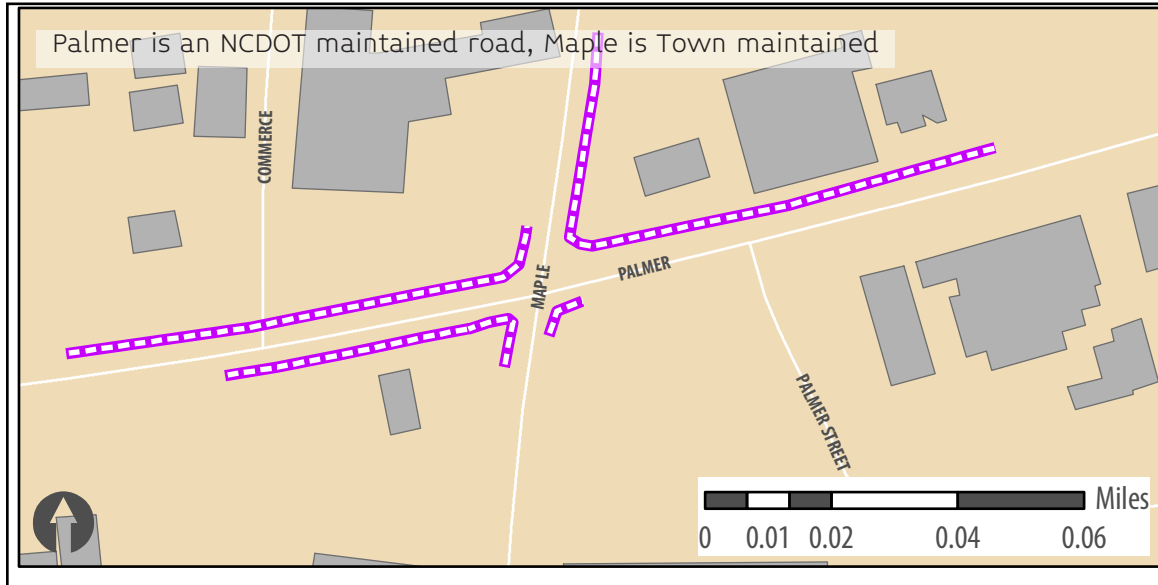
Source: 2016 Ennis Flint





#17

# Intersection of W Palmer St & Maple St



## PROJECT DESCRIPTION

This intersection along Project #1 needs sidewalk continued in all directions to fill in gaps and make connections. Pedestrian signals would be added to the existing traffic signal, along with crosswalks and accessible ramps. This would help facilitate the broader system of sidewalks and multi-use sidepaths.

### INFLUENCES:

- Fill gaps, completes connection

### INTERSECTIONS:

The purpose of this project is to make this intersection safer and more accessible for pedestrians.

### COST ESTIMATE

**\$225,000**

### CONNECTIONS:

- Grocery store, business district, residences

### CHALLENGES:

Crawford Branch passes under Palmer Street here. A needed culvert extension will add to the expense of this project.

### LENGTH

**2,000 linear feet**

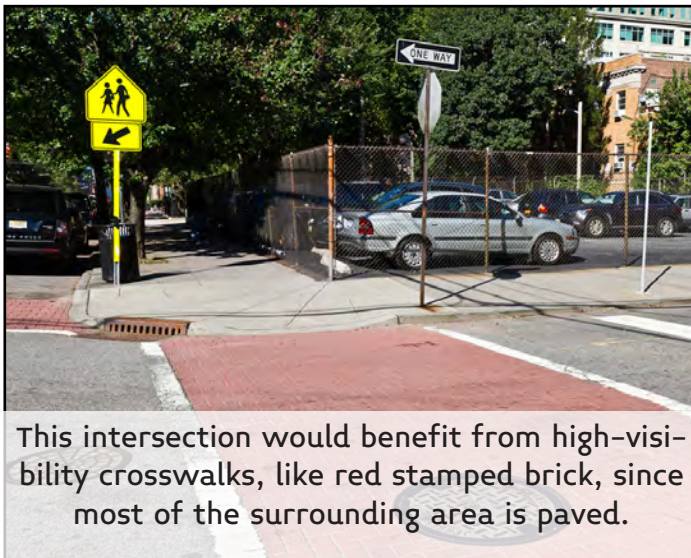




### MAKING IT HEALTHIER

Due to the auto-centric layout of this area, pedestrians are often walking in a parking lot, a driveway, or the street itself. Vegetated buffer zones, highly visible crosswalks, and connected sidewalk infrastructure will encourage more people to travel safely on foot.

### Potential Design Treatments & Accents



Source: 2011 Will Sherman

This intersection would benefit from high-visibility crosswalks, like red stamped brick, since most of the surrounding area is paved.



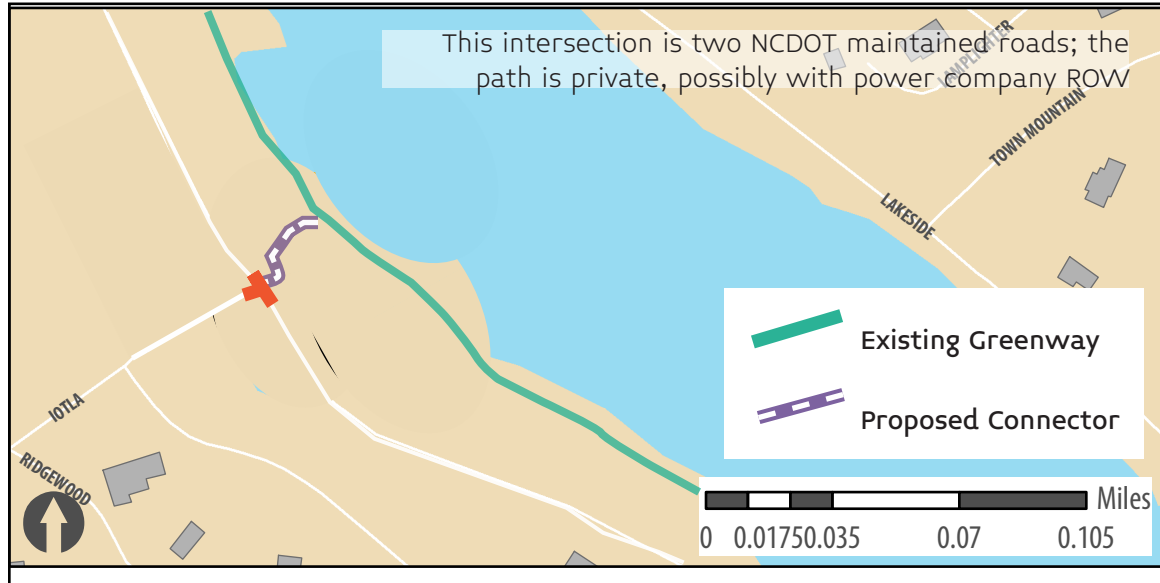
Countdown pedestrian signals ensure that people crossing the street know how much time they have to reach the other side.





#18

# Intersection of Iotla & Depot Street (NC 28)



## PROJECT DESCRIPTION

Iotla Street provides another direct connection from downtown to the Little Tennessee River Greenway. Providing a new crossing of Depot Street Extension (NC 28) and a path connecting to the greenway would give many north Franklin residents more direct access to the Greenway.

### INFLUENCES:

- Safety, New greenway connection

### INTERSECTIONS:

The purpose of this project is to create a safe intersection for new access to the greenway.

### COST ESTIMATE

**\$70,000**

### CONNECTIONS:

- Provides direct access to the greenway for north Franklin residents

### CHALLENGES:

- May need permits for trail across natural land
- Slight topography challenges

### LENGTH

**400 linear feet**





## MAKING IT HEALTHIER

Making sure it is easy to connect to the greenway will enable the most people to use the facility; small connectors that fill gaps between the trail system and the town's sidewalk network make healthy recreational opportunities more accessible.

## Potential Design Treatments & Accents



A roundabout option would help ensure safe pedestrian and bicyclist access through the intersection to and from the greenway.



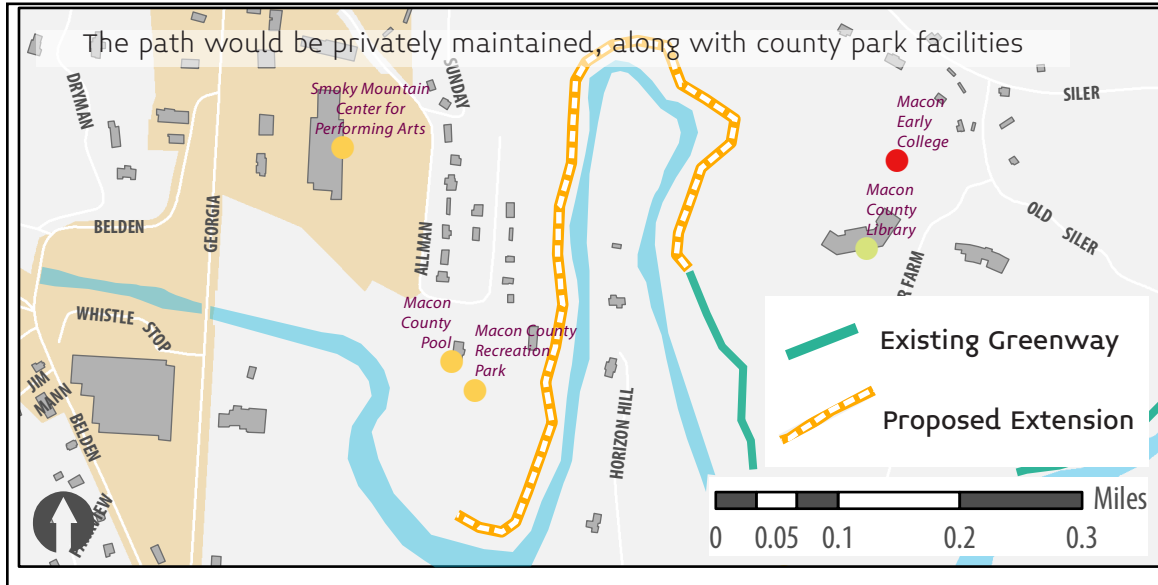
Designing a gateway entrance to the greenway here would be useful to visitors coming from the north.





#19

# Little Tenn. River Greenway Extension



## PROJECT DESCRIPTION

The Little Tennessee River Greenway can be continued around the loop of Cartoogechaye Creek or by crossing the creek twice for a much shorter trail. The trail should be continued well into the park, even as far as the main building, which would mean upgrading the existing creek bridge that connects the main building to baseball fields, the pool, a playground, and a larger pavilion.

### INFLUENCES:

- The largest and most used recreation facility in Macon County.

### INTERSECTIONS:

None.

### COST ESTIMATE

**\$550,000**

### CONNECTIONS:

- Completes a critical connection to the County Recreation Park

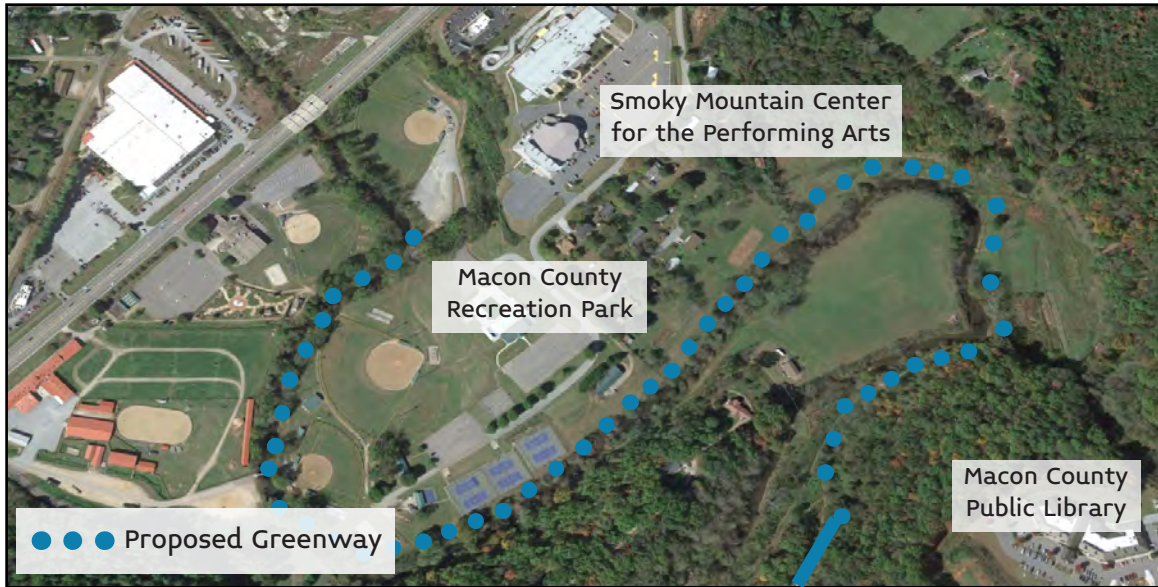
### CHALLENGES:

Historically, the property owners have not been interested in granting Right-of-Way for this project

### LENGTH

**3,900 linear feet**





## MAKING IT HEALTHIER

This long-desired project would turn the Little Tennessee River Greenway from a dead-end trail into a connector to the largest and most used recreation facility in Macon County. A facility dedicated to physical health would become accessible by means of physically active transportation.

## Potential Design Treatments & Accents

Source: 2016 Angie Cook/Jackson County Floridan



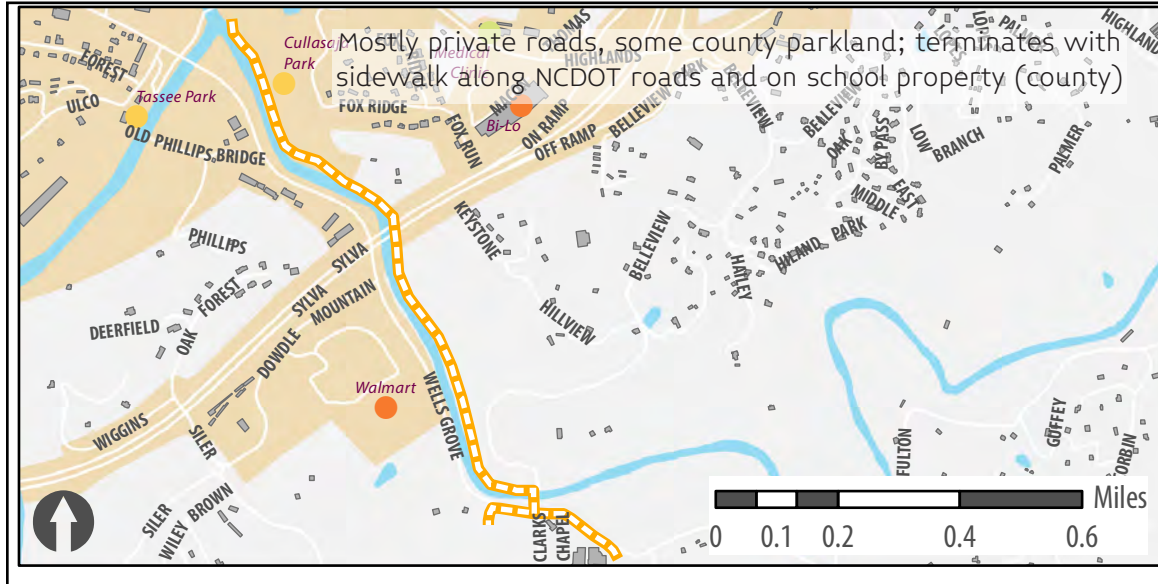
Source: City of Milwaukee WI





#20

# The Cullasaja River Greenway



Mostly private roads, some county parkland; terminates with sidewalk along NCDOT roads and on school property (county)

## PROJECT DESCRIPTION

A new greenway intersecting the existing Little Tennessee River Greenway near Tassee Bridge and Salali Lane Parking Lot can use Cullasaja Park and follow this river opposite Wells Grove Road out to Clarks Chapel and two large schools serving Macon County: Macon Middle School and Mountain View Intermediate School.

### INFLUENCES:

- Enables walking and biking to school.

### INTERSECTIONS:

Project recommended crossings of Wells Grove and Clarks Chapel would have high visibility markings.

### COST ESTIMATE

**\$1.5 million**

### CONNECTIONS:

- Provides a new active route to major public schools.

### CHALLENGES:

- Property owner permission / Right-of-Way
- NEPA permits

### LENGTH

**1.1 miles**





## MAKING IT HEALTHIER

Broadening the network of greenways in the community can produce a dramatic spike in usage, from residents now able to find necessary connectivity and tourists interested in new scenic bicycle routes in the region.

## Potential Design Treatments & Accents

Source: 2014 Thomas Hawk



Pedestrian lighting should be considered in more urban environments.



Try to provide a green buffer of 3' to 6' on both sides of the path, but especially between the greenway and the street.

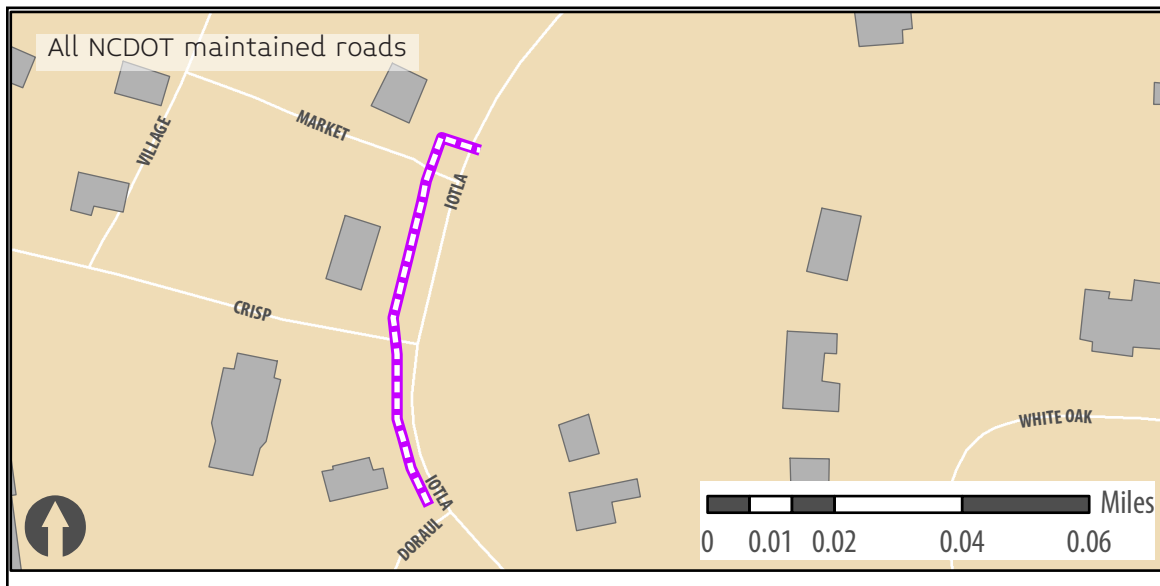
Source: 2016 Places for People





#21

# Iotla St Sidewalk (Market St - Doraul St)



## PROJECT DESCRIPTION

Building a short section of new sidewalk here could relieve safety concerns about the visibility of crossing the street to continue walking along the sidewalk.

### INFLUENCES:

- Spot improvement needed for sight distance

### INTERSECTIONS:

This project creates a safer crossing by moving it out of a blind curve.

### COST ESTIMATE

**\$50,000**

### CONNECTIONS:

- Improves the safety of a north Franklin crossing

### CHALLENGES:

- Some Right-of-Way conflicts
- Minor topographical challenges

### LENGTH

**350 linear feet**





## MAKING IT HEALTHIER

The Sanctuary Village, a planned residential development, is located off Market Street and Iotla, between downtown Franklin and the greenway. Ensuring pedestrian accessibility along this corridor will enable residents to safely walk to those destinations.

## Potential Design Treatments & Accents

Source: 2011 The Sanctuary Communities



City sidewalk improvements can connect directly to nearby residential development, incorporating design characteristics.



Hilly terrain should include proper drainage, allowing the natural flow of water from properties to the city's stormwater facilities.





#22

# Wells Grove Rd Bridge over Little TN River



## PROJECT DESCRIPTION

Sidewalk on both sides and ends of this bridge terminate at the bridge, causing pedestrians to walk at the same level and beside traffic. Placing a delineating feature or raised curb system would provide a buffer between traffic and pedestrians.

### INFLUENCES:

- Spot improvement

### INTERSECTIONS:

None, but this bridge passes over the Little Tennessee River Greenway, so a ramp or stairs could be included for easy linkage.

### COST ESTIMATE

**\$8,000**

### CONNECTIONS:

- Improves the safety of an existing pedestrian route.

### CHALLENGES:

- Treatment type might create an ongoing maintenance need.

### LENGTH

**225-foot bridge**





## MAKING IT HEALTHIER

The nearby Little Tennessee River Greenway system features several pedestrian/bicycle bridges, but this crossing is dangerous to traverse without safety improvements. It would enable safer commuting and encourage walkers and bikers to find their way to and from the greenway.

## Potential Design Treatments & Accents



Distinguishing surface materials can be more visually appealing and cost effective.



Decorative planters along the span of the pedestrian section of the bridge could create a destination out of a thoroughfare.





#9

# Crawford Branch Greenway





#1

# The Southwest Loop Trail



BikeWalk Franklin - Ch.4



Supplemental Design Rendering







# Chapter 5

## Designing for People Who Walk & Bike





# Chapter Five: Designing for People Who Walk & Bike

## Applying Complete Streets

Just because a street has sidewalks and bike lanes does not always mean it is “complete” from the perspective of safely accommodating all users of all ages and abilities. Careful consideration must be given to the needs of bicyclists and pedestrians and how they interact with traffic along different routes. Destinations along or near a proposed sidewalk or bicycle route will determine what types of users to expect.

NCDOT’s Complete Streets policies, related guidelines and practices mean that the state is likely to improve streets with bicycling and pedestrian facilities when they are part of other major roadway upgrades or changes in configuration. Given current constraints, it is not likely that NCDOT will add capacity to every street in Franklin.

The addition of bike lanes or bikeable shoulders, for instance, is most likely to occur through resurfacing of the streets by NCDOT (in partnership with Franklin to add pavement width where possible) or through the town independently pursuing federal or local funds to add the lanes to state-managed and other routes. JMTE did not



find any locations where restriping alone could be used to gain a bicycle facility. Most streets where these facilities are desirable either have curb & gutter without enough room for a separate lane and/or any widening would require right-of-way from adjoining property owners. The NCDOT’s resurfacing projects have never been set up to procure right-of-way or to remove curb and gutter.

While Complete Streets are being implemented by NCDOT, it is still imperative that Franklin and its residents remain diligent about how bicyclists and pedestrians are accommodated on projects. Franklin should work closely with its local NCDOT Division office to articulate these needs during the project development process so proper input can be given to the designers, who are oftentimes housed in Raleigh and are not as familiar with local context. There are several positive examples across the state where this type of constant interaction has yielded better design for bicyclists along state highways.

## Emerging Trends

BikeWalk Franklin is a document that emphasizes priorities over a ten-year time frame. It is likely that design guidance that is current as of 2016 may be outdated when some recommendations of this plan are implemented.

Prevailing design guidelines will always be a step or two behind the prevailing needs of bicyclists and pedestrians, which means it is difficult for designers to justify treatments that are not part of adopted design guidelines due to liability concerns. This section summarizes some emerging trends in bicycle facility design and organizations that are addressing the emerging trends.

**WalkBikeNC Implementation.** There are several recommendations contained in North Carolina’s statewide pedestrian and bicycle plan that could influence how NCDOT and other communities across the state implement future designs for bicycling facilities. Governor McCrory’s Vision25 document on the state’s future for transportation recommends implementation of the statewide plan.



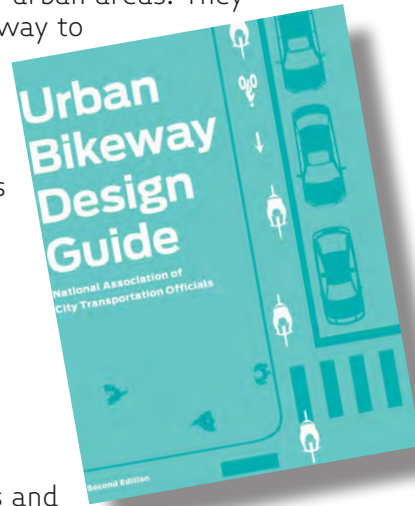




Franklin should keep track of the progress of this, in concert with the Southwestern Commission COG, as well as subsequent updates to the state's Complete Streets Planning and Design Guidelines to ensure the most modern application of treatments for pedestrians and bicyclists are accommodated.

**NACTO Urban Bikeway Design Guide.** The National Association of City Transportation Officials (NACTO) has recognized that prevailing guidance from AASHTO is not well-suited for bicycle mobility in urban areas. They developed this design guide as a way to account for those unique needs. The NACTO guide is available online and includes several innovative treatments, many of which are acceptable applications within what MUTCD allows.

Cycle tracks and colored bicycle lanes are prevalent in the Design Guide, as are various treatments for bicycle boulevards and how to accommodate bicyclists at intersections. WalkBikeNC recommends NCDOT endorse this design guide so that communities and NCDOT are comfortable with applying some of its concepts. Many communities across the country, including Charlotte, have already endorsed it.



## Designing for People Who Walk

Pedestrian facility use is a function of a variety of factors, including the connectivity of the facilities, their safety, their convenience, and their comfort. For this reason, pedestrian facility design should be thoughtful and sensitive to the needs of its users. By following the guidelines provided in this section for sidewalk, crossing, and trail design, as well as other items associated with pedestrian facilities, Franklin should be able to create a built environment that will promote walking and increase the number of pedestrians in the area.

This section is intended to be a general reference for sidewalk and pedestrian facilities as well as a guide for various "Best Practices" that apply to special pedestrian situations. This section is not exhaustive but rather it refers to various national and state guidelines to respond to specific situations that may arise.

Currently, the town has few standards for pedestrian facilities — sidewalks, crosswalks, and other pedestrian-related amenities are constructed on an ad-hoc, as needed basis. This section of the Plan is important because it provides a consistent set of guidelines to help ensure that safety and accessibility goals are realized and clear expectations are set for drivers and pedestrians.

Design standards are constantly changing and evolving, so it is recommended that the Town confer with NCDOT and various national resources guides whenever embarking on new facilities.

## Design Guidance

There are a variety of sources for design guidance for pedestrian facilities, including the following:

- NCDOT Roadway Standard Drawings (2012);
- NCDOT Complete Streets Planning and Design Guidelines (2012)
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities (2004);
- Manual on Uniform Traffic Control Devices (MUTCD);
- US Access Board Guidelines for Pedestrians Facilities in Public Right-of-Way (2011); and
- Numerous Federal Highway Administration publications.

It is best to refer to these design publications when special conditions arise in the design of projects. Every effort should be made to address the requirements, particularly those concerning ADA, to maximum extent possible even if it means additional right-of-way or construction is needed.

For NCDOT information, see <https://connect.ncdot.gov/projects/BikePed/Pages/Guidance.aspx>

## Sidewalks

The typical sidewalk is least five feet in width, made of concrete, and placed along roadways at least three feet behind the curb line (a 5' buffer is preferable). In general, the width of sidewalks should accommodate two persons walking past one another, a width generally perceived to be five feet, at a minimum. Other circumstances that may require additional sidewalk width are to accommodate:

- High pedestrian volumes, such as in a central business district;
- The overhang of parked vehicles from off-street or angled on-street parking areas; and
- Additional buffer from traffic when a planting strip cannot be installed.

The downside of a typical 5-foot sidewalk is that it barely allows for enough width for two people to walk side by side or comfortably pass when considering clearance.

Sidewalks should fit the design characteristics of the area in which they are constructed and designers should recognize when more width is required.

Additional design considerations for on-street sidewalk facilities are:

- Eliminating both high and low contact points with tree branches, mast-arm signs, overhanging edges of amenities or furniture, and
- Providing clear space between walls on one side of the walkway and amenities, parking overhang, or plantings on the curb side of the walkway.

In general, concrete is the preferred surface because it is more durable than asphalt. A more flexible material, such as rubberized paving, can also be considered in situations in which there is the potential for tree roots to crack and lift the concrete. Using these types of materials can reduce the risk of a tripping hazard, and also lower maintenance costs.

More permeable materials, such as porous pavers, can be considered for all pedestrian-ways, and in particular for greenways near streams, in order to reduce run-off from storm events.

## Cross-Slopes

Cross-slopes, or a slope along the travelway surface which is perpendicular to the direction of travel, can often make it very difficult for wheelchair travel. In addition, it can also make for treacherous walking conditions for individuals with problems with their balance and coordination.

Cross-sloping most frequently occurs in conditions in which a driveway meets a sidewalk, but can also occur in other situations. In order to minimize the risk of a dangerous and difficult travel condition for some, cross-slope is regulated by ADA such that cross-slopes should not exceed 2 percent, and preferably not exceed 1.5 percent where possible.

## Curb Ramps

Curb ramps are a significant and required feature of accessible pedestrian transportation systems, and must be designed carefully to fulfill their function and the requirements of the Americans with Disabilities Act. Curb ramps should not have a running slope greater than 1:12, meaning that for every foot of travel, the slope should not rise more than one inch. To provide a tactile warning to the visually impaired, raised truncated domes with a color contrast to the background material (typically concrete) should be used. The ADA Accessibility Guidelines for Buildings and Facilities has an easy-to-use format for locating specific design criteria related to curb ramps, rise/run restrictions on ramps, and figures illustrating basic concepts.

Curb ramps are also required to have a 4-foot by 4-foot flat landing (no greater than 2 percent cross slope in either direction) area at the top of the ramp to allow people who walk to orient themselves. In some cases, the 4x4



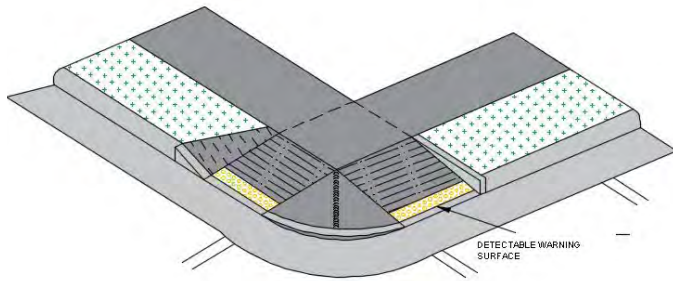




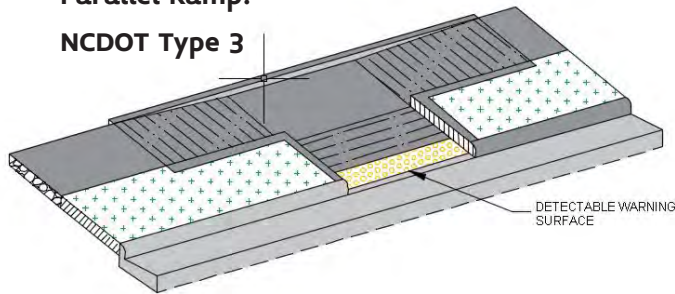
### Exhibit 5-1: Best Practices for Curb Ramps

Curb ramps are the most difficult element of ADA-compliant pedestrian facility design to address. Getting the slopes and flat landings properly constructed is critical to the function of a person in a wheelchair or someone on crutches as they prepare to enter or leave the street.

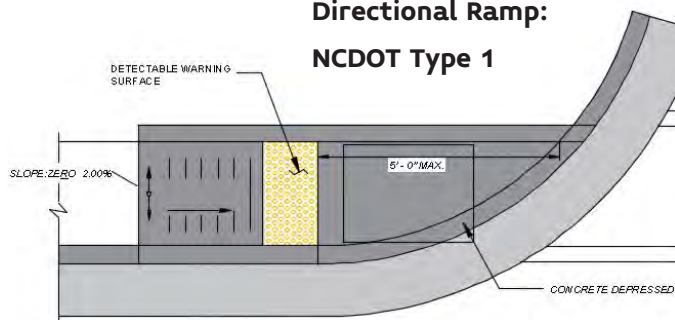
**Shared Landing:  
NCDOT Type 4**



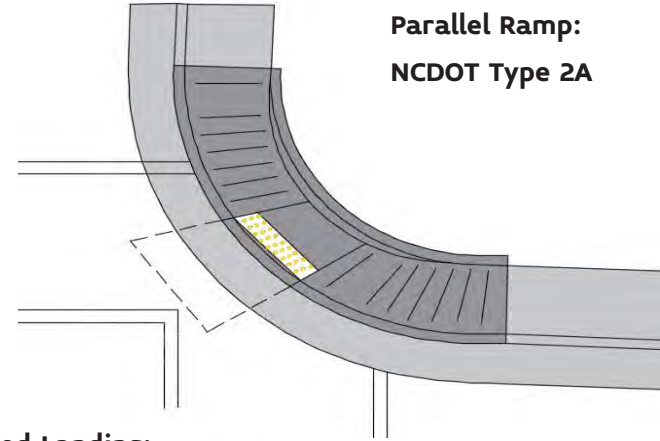
**Parallel Ramp:  
NCDOT Type 3**



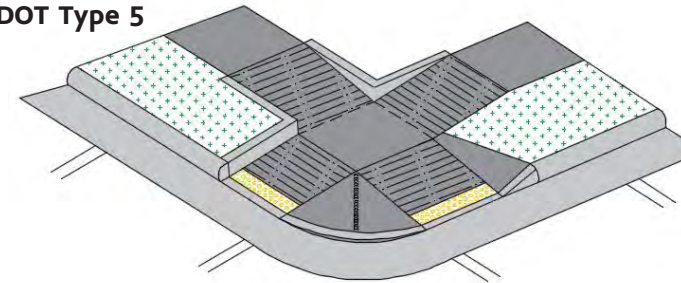
**Directional Ramp:  
NCDOT Type 1**



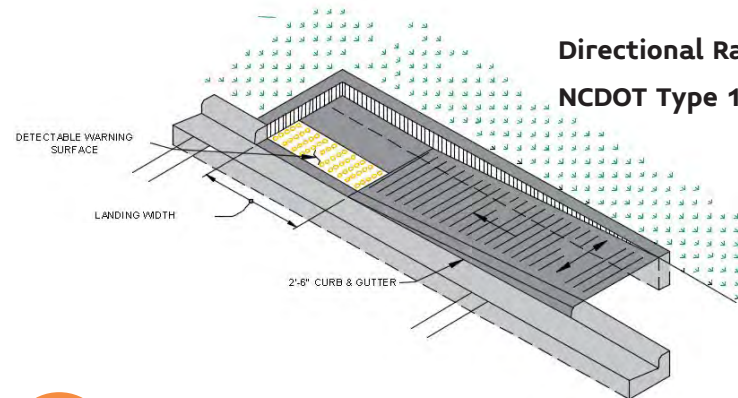
**Parallel Ramp:  
NCDOT Type 2A**



**Shared Landing:  
NCDOT Type 5**



**Directional Ramp:  
NCDOT Type 1A**



landing may be accommodated at the bottom throat of the ramp.

This is a design requirement that is noted in NCDOT's design standards for wheelchair ramps, 2012 Roadway Standards Drawings 848.05 and 848.06

NCDOT's website for Roadway Standard Drawings also includes four different alternative curb ramp designs intended to help communities meet ADA requirements in a variety of constrained situations.

Curb ramps should be placed entirely within the area of a marked crosswalk, so that a pedestrian can enter the ramp space at an angle perpendicular to the direction of travel. Generally, the standard is to have separate curb ramps on each corner; if a shared (sometimes called corner or diagonal) curb ramp is constructed, then the width and radius should accommodate the user so that entry onto the ramp is parallel to the direction of travel.

### Crossings

Pedestrian-friendly crossings are a critical feature in a well-connected pedestrian system because they provide the linkages between one segment of sidewalk to another as a pedestrian may cross a street, connect to another existing piece of sidewalk, or pass to a new development. A well placed crossing can dramatically reduce pedestrian travel time and improve pedestrian safety, greatly increasing the convenience of walking as a mode of travel. Crossings can be either signalized or unsignalized, and located at intersections or, in special circumstances, at mid-block locations.

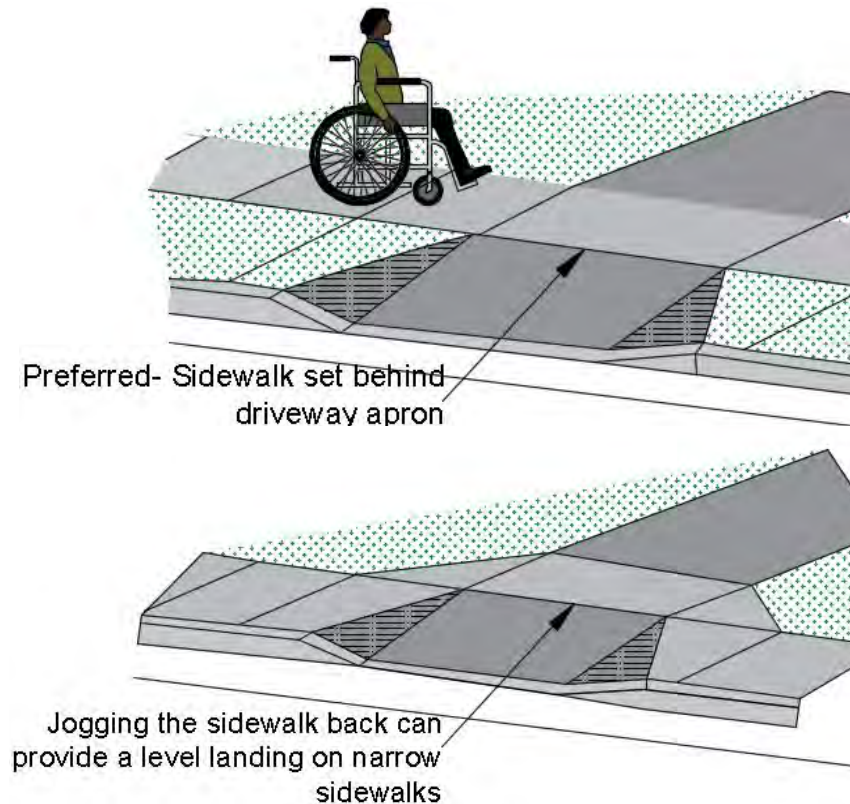
The most basic crossing is an unsignalized intersection with standard, continental or zebra crosswalk markings. Other potential treatments for unsignalized crossings include raised crosswalks and/or signage. In-street or overhead "yield to pedestrian" signs are a treatment for unsignalized intersections, encouraging motorists to stop for pedestrians as they cross the street.

These signs offer a visual cue and instill some friction in the roadway, as they are typically placed in the middle of a

bi-directional, two-lane road. Additional treatments can be added for crosswalk visibility at unsignalized and signalized locations, including decorative brick, textured crosswalks or experimental paint colors.

All signalized intersections should be outfitted with countdown pedestrian signals and crosswalks, per NCDOT and MUTCD standards. MUTCD standards dictate that timing must allow for a pedestrian to safely cross the street at a speed of 3.5 feet per second.

**Exhibit 5-2: Flat Landings at Curb Ramps**



*Across North Carolina, curb ramps are the most commonly misapplied elements in street design, with many failing to meet ADA requirements because they do not feature an appropriate flat landing. The landing allows a space for a person in a wheelchair or other mobility device to orient themselves to cross the street or turn to go in their desired direction on the sidewalk.*







In some cases, the built environment or user context may require more crossing time or more specialized treatments to alert motorists to the presence of pedestrians.

MUTCD notes that 3.0 feet per second can be used to allow sufficient time for slower pedestrians, such as older adults, those in wheelchairs or who are visually disabled.

Marked crosswalks (at signalized and unsignalized locations) should not be less than six feet in width, with 10 feet or greater for downtown areas and locations of high pedestrian traffic. Advance stop bars should be placed 4 to 10 feet from the pedestrian crosswalk (with 6 to 15 feet recommended in uncontrolled locations or multi-lane roads). Pedestrian push buttons should accompany pedestrian signals that are not phased into the regular traffic signal cycle; push buttons must follow ADA guidelines.

Pedestrian-activated signals should be used for roadways with long traffic signal cycles where pedestrians are to be given preference when present, and/or for signals where the pedestrian cue is not phased into the traffic cycle unless a button is activated. Pedestrian-activated signalization can also be used to provide lead pedestrian intervals in high-conflict areas, in order to give pedestrians a few seconds of full use of the intersection or crosswalk prior to allowing right or left turning movements for motorists.

These options reinforce pedestrian safety at high-conflict intersection locations with significant crash history. Push buttons should not be used in central business districts or



high traffic locations as the only means of providing a walk signal. Though NCDOT does not have established guidelines for the placement of pedestrian signals, they generally use MUTCD and AASHTO warrants for the installation of traffic signals. It is advisable to follow this same guidance or confer with NCDOT Division 13 before making changes.

## Signage

In addition to sidewalks and crossings, pedestrian facilities also include signage along major pedestrian routes. Regulatory and warning signs serve primarily to reinforce traffic laws and rules of the road, and notify motorists and others of the presence of pedestrians. Often, the intended effect is to instruct motorists to drive more cautiously and reduce their speeds, thereby improving the safety for pedestrians in the given area.

Regulatory and warning signs can be used in a variety of places, including at crosswalks, at intersections, in-street, and near schools. National standards for sign placement and use can be found in the MUTCD. The MUTCD provides guidance for warning signs which can be used at both crosswalks, or along the roadway.

## Accommodation During Construction

For residents to be comfortable using walking as a primary mode of transportation in their town and neighborhood, they need to be confident that the facilities they count on will be available consistently. Therefore it is of high importance to adhere to guidelines laid out in Chapter 6D of MUTCD regarding Temporary Traffic Control to ensure pedestrian access when construction or special events obstruct the usual pedestrian route. The Towns are responsible for ensuring both municipal construction crews and contractors comply with these guidelines when pedestrian paths are impacted by construction.

## Parking Lots

Pedestrian circulation through parking lots is an essential element of walkability and can make the difference between a resident walking to a store or getting into a car for a short trip. Zoning should include requirements for pedestrian-friendly circulation to and from the front doors of places of business, and development review should include an assessment of pedestrian access and safety through vehicular areas in private developments, including

attention to the standards described in this chapter for curb ramps, crosswalks, and driveways.

### New Construction and Redevelopment

The town's zoning ordinance should be as specific as possible regarding pedestrian facility requirements for new construction and redevelopment. Developers should be told up front about expectations for pedestrian facilities that not only meet minimum requirements but enhance the pedestrian experience. Requirements may vary by zoning district, size of development, and functional classification and design features of the road the development abuts.

### Traffic Calming

Traffic calming is the term used to describe a toolbox of improvements that can be used to "calm", or slow, traffic along a street, usually in a neighborhood or similar area with low traffic speeds and relatively lower traffic volumes.

Traffic calming efforts can help to create a safer, more comfortable pedestrian environment by reducing vehicle speeding. Traffic calming comes in a variety of forms. Some of the most common techniques are described in the following paragraphs.

**Curb Extensions (Bulb-Outs) and Curb Radii:** The primary purpose of bulb-outs is to shorten the distance that pedestrians must travel to cross a street. In addition, they may encourage motorists to drive slower by narrowing the travel lane and reducing vehicular speeds during turning movements at intersections.

Motorists travel more at lower speeds around corners with smaller curb radii even without the use of curb extensions. Landscaping and other aesthetic treatments such as special paving textures should be carefully designed to avoid hazards to drivers and visually-impaired citizens while minimizing maintenance costs. The type of vehicles (especially trucks) using the route should be considered in the design of curb extensions.

**Medians and Refuge Islands:** One approach where wide, high volume and/or high speed roadways create an obstacle to pedestrian mobility is to provide refuge islands to shorten the length of the crossing and give pedestrians who are not able to cross the entire street in one signal cycle the opportunity to split their crossing.

These islands, along with medians, also enclose the visual space for motorists and therefore encourage compliance with speed limits and other traffic laws. Sensitivity to large vehicles (buses, trucks and fire equipment) dictates some elements of the median design, curb style, and placement. Median-controlled roadways reduce the number of turning conflicts and are generally considered safer for all road users than a two-way, left turn lane roadway.



*Many conflicts can arise on downtown sidewalks as merchants want to market their stores and have sidewalk sales while towns want to plant trees, place benches, and other amenities. The illustration above notes the clear route that should be maintained at all times. The pedestrian access route is an ADA requirement take ensure consistent and clear space.*







## Pedestrian Access Routes

A retail establishment may display merchandise on the sidewalk and outdoor seating is permitted immediately in front of a restaurant. This type of street activity should be encouraged as both the display of merchandise and outdoor dining contribute to a business district's vibrancy and visual attractiveness. In other words, these activities engage the pedestrian.

Four feet of sidewalk should be maintained unobstructed by permanent or temporary obstacles and protruding objects such as benches, bike racks, fire hydrants, planers, utilities, etc. The minimum acceptable ADA sidewalk width is five feet (four feet if a five-foot wide pathway is placed at least every 200 feet).

## Alternative Pedestrian Facilities

Given budget limitations, the Town of Franklin and NCDOT may find opportunities to explore other options for accommodating people who walk in a manner that addresses required technical elements of design but is cost-effective from a budgetary perspective. The common design manuals provide for the perfect solution and the traditional curb, gutter and sidewalk approach to building pedestrian facilities has been around since the 1800s. But this is not always possible given an area's context. Improvements can sometimes be constructed at 1/10th the cost of traditional curb, gutter and sidewalk designs, which is why it is important to consider these options before embarking on more costly improvements. People are already walking along many streets and that requires them to walk in the roadway at times. These alternative facilities simply allow for that use to continue while giving those who walk some space that is clearly delineated from the vehicular realm.

For instance, painted pedestrian lanes or simple markings are suitable for low speed, low volume residential streets where motorists and pedestrians are already sharing the road space. Alternatives such as shoulders converted into

labeled multi-use trails could be an interim measure before full-scale pedestrian improvements or a linkage between greenways alongside a street. Gravel sidewalks and pathways without curbs can provide a minimum amount of safety for pedestrian travel without requiring extensive design work or implementation costs.

## Designing for People Who Bike

In addition to the state's Complete Streets policy, NCDOT operates under an adopted Bicycle Policy that stems from the state's 1974 Bicycle and Bikeways Act. Some important elements of the bicycle policy for Franklin to remember when projects are pursued are:

- Bicycle compatibility shall be a goal for state highways in order to provide reasonably safe bicycle use, except on fully-controlled access highways, where bicycle use is prohibited.
- All bicycle facilities shall conform with the (state) adopted Design Guidelines for Bicycle Facilities on state-funded projects, and also with guidelines published by the American Association of State Highway and Transportation Officials (AASHTO) on federal aid projects.
- Paved shoulders shall be encouraged as appropriate along highways for the safety of all highways users, and should be designed to accommodate bicycle traffic.

As prescribed in NCDOT's Bicycle Policy, most of the prevailing guidance on the design of bicycling facilities stems from AASHTO. In 2012 the organization published its Guidelines for the Development of Bicycle Facilities, which serves as the foundation for the design guidance contained in this chapter. Franklin should purchase this document to have on-hand for future discussions as it is not universally known about or applied in North Carolina.

The other prevailing design guidance for transportation engineers is the Manual on Uniform Traffic Control Devices (MUTCD), which sets the standards for traffic control practices across the United States. The application of

MUTCD is why speed limit signs look the same in most states and the striping and signage along highways and streets is consistent. The most recent MUTCD was adopted in 2009 and includes the most comprehensive set of considerations for signage and pavement markings for bicyclists. Engineers, in most cases, are hesitant to deviate from its guidance due to fears of litigation.

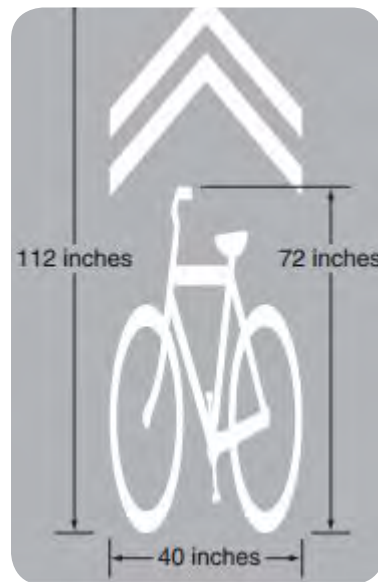
In some instances, NCDOT's own design guidelines have identified features that are more bicycle friendly, such as how to determine appropriate bikeable shoulder width based on the speed of adjacent motor vehicle traffic.

The important thing to note is that as the bicycling culture is changing in America, the design standards are also evolving rapidly and new guidance is being published yearly from various organizations.

### Neighborhood "Greenways"

A neighborhood greenway is a signed bicycle route on a slow speed, low traffic residential street. These routes always have bicycle route signing and may also include pavement marking "sharrows" and/or "Share the Road" or "Bikes May Use Full Lane" signs (which may not currently be compatible with state allowances) to alert motorists to the presence of bicyclists. They are intended to prioritize bicycling movements.

Neighborhood bicycle routes and bicycle wayfinding are popular on streets where there is not the need for dedicated bicycling facilities. In a similar fashion as Franklin has signed and marked its greenway, the Town may pursue designating a neighborhood bicycle route or historic bicycle tour of Franklin through a system of pavement markings and/or signage.



Bicyclists can be given additional priority on these streets through other measures such as traffic calming via chicanes, chokers and dead end streets that allow bicyclists to go through.

### Shared Lane Marking ("Sharrows")

The use of shared lane markings has become more popular on streets where adding a bicycle lane or shoulder is not feasible or planned. A shared lane marking is defined by AASHTO as a "pavement marking symbol that indicates an appropriate bicycle positioning in a shared lane, which is a lane of traveled way that is open to both bicycle and motor vehicle travel."

Shared lane markings send other messages to bicyclists and motorists: 1) That a bicycle has a right to use the lane and the lane should be shared; 2) Positions a bicyclist in a travel lane with on-street parking in a location where they can avoid opening car doors; and 3) Positions a bicyclist in a travel lane without on-street parking in a location where they are not squeezed out or riding along the right edge of pavement.



Special care should be taken when marking a shared lane. MUTCD recommends a 10-foot or 11-foot distance from the center of the marking to the curb face when on-street parking is present. However, local conditions may vary and necessitate placing the marking further out into the travel lane or in the middle of the travel lane.

### Bicycle Lanes

A bicycle lane is defined by AASHTO as a "portion of roadway that has been designated for preferential or







exclusive use by bicyclists by pavement markings and signs. It is intended for one-way travel, usually in the same direction as the adjacent traffic lane.”

The bicycle lane is the most common application for dedicated bicycling facilities and typically ranges in width from four-feet to six-feet adjacent to a motor vehicle lane. This width does not include the width of the gutter pan as it is not usable space for a bicyclist.

Four-foot wide lanes are most appropriate on low-speed streets such as collectors where there is not as much discrepancy in the speed of the bicyclist versus the speed of the motorist. On higher speed facilities, the width should be greater (5-feet on 35 mph to 45 mph streets; 6-feet on streets with speed limits greater than 45 mph).

### Bikeable Shoulders

Bikeable shoulders are similar to bike lanes except there is no curb and gutter and the shoulder may or may not be marked as a bike lane. The 1994 The NC Bicycle Facilities Planning and Design Guide defines it as a “portion of roadway contiguous with the traveled way that accommodates stopped vehicles, emergency use and lateral support for the roadway surface. Shoulders that are 4-foot (less than 35 mph speed limit) or 5-foot (35 mph to 45 mph speed limit) are considered bikeable because they are a width similar to a bike lane.”



### Separated Bike Lanes

There is a special type of bike lane called a cycle track. Cycle tracks can be one-way or two-way, and may be either buffered or separated. Buffered bike lanes are divided from the adjacent motor vehicle travel lane only by a painted or marked island, whereas separated bike lanes have a vertical element such as a curb, a raised median or a row of delineation posts between the bicycle lane and the motor vehicle lane. Motor vehicle parking may even be used to separate the travel lane from the cycle track. When a barrier is used between a motor vehicle travel lane and the bike lane, the separated bicycle lane is also known as a protected bike lane.

The application of cycle tracks is increasingly popular on urban streets. Cycle tracks are similar to multi-use trails but are located within the street and intended only for bicyclists; a sidewalk is still needed for pedestrians.

### Shared Use Pathways / Sidepaths

These facilities are also commonly called multi-use paths or greenways. Design principles for shared use pathways and sidepaths take both pedestrian and bicyclists’ needs into account. Bicyclists need more space for two-way operation, especially when pedestrians also use the facility; this is why these paths are wider than standard sidewalks. A pathway that accommodates both types of users should be 10-foot wide at minimum; (8-feet is allowed in short, constrained sections) but 12-foot or 14-foot wide pathways are preferred in high volume areas or near parks and schools.

A common response to building greenways is that some residents and officials feel that giving a bicyclist a separated trail will get them off the road. This may be true for less confident riders but a trail should not be seen as a substitute for on-road facilities as some bicyclists will prefer to be on the road in most situations.

Some special considerations on shared pathways include:

- A firm and stable surface that can accommodate a wide variety of bicycle types. Narrow tires on road bikes can make travel unsafe on gravel or sand paths.

- Sidepaths should be placed in areas where there are few driveway cuts or low potential for future driveway cuts. Motorists do not expect two-way bicycle traffic on a pathway crossing a driveway.
- Curb ramps and crosswalks at intersections of greenways and other pathways should be a width that conforms to the width of the pathway. Oftentimes, especially in North Carolina since NCDOT does not have a greenway curb ramp design standard drawings, communities place a five-foot wide ramp at an intersection with a multi-use trail. This is not compliant with Americans with Disabilities Act requirements or AASHTO's design guidelines.

### Other Treatments

**Bicycle Boulevards:** Bicycle boulevards are street segments, or a series of contiguous street segments, that are modified to accommodate through bicycle traffic and minimize through motor vehicle traffic. Bicycle boulevards are best suited for street sections that link major destinations like a park or school to a greenway or other major bicycling facility where a dedicated greenway connection is infeasible or a bicycle lane is not practical due to the low-speed, low-volume nature of the street. Bicycle boulevards typically consist of special signage and pavement markings denoting them as a space where bicyclist movement is prioritized. "Stop" signs and traffic signals along such a route should be oriented to favor bicycle traffic, a process that itself requires special analysis and procedure.

**Green Lanes:** Painting a bicycle lane or sections of a bicycle lane with green paint is becoming a more popular treatment to help visually offset the bicyclist's space of the roadway as a way to improve safety and visibility. The most common treatment of green bicycle lanes is applying the paint where a motorist is merging across a bicycle lane, either at an intersection to reach



a right-turn only lane or at a freeway interchange. Green lanes require special permission from the Federal Highway Administration as they are not yet universally accepted in prevailing design standards

### Other Bicyclist Accommodations

Parking lots and driveway entrances/exits are surprisingly hazardous for bicyclists. Motorists are not conditioned to notice bicyclists in these environments. Sometimes novice bicyclists will "cut through" parking areas to avoid perceived hazards on the road, and engage in bad practices such as cutting across parking aisles. Driveway entrances sometimes have channelized islands that allow motorists to make high-speed turns into a parking lot that can pose hazards for both bicyclists and pedestrians.

**Bicycle parking:** Bicycle parking racks can almost literally come in any shape or style you can imagine, thanks to some vendors catering to special markets for event centers, universities with specific mascots, municipal icons, and artists.

However, many of these designs neglect functionality. Even the popular "wave" rack style generally only supports a bicycle at one point, as does the comb rack, often seen at public schools. Regardless of the specific style, a thick (10") concrete base should be constructed for each bicycle parking station.

Generally, the basic rack styles are still a variant of the "post-and-loop" design. These styles are easily recognizable as usable bicycle racks instead of works of art and help prevent two bicycles rubbing up against each other.







Note also that bicycle parking areas should have minimum 6' horizontal clearances on all sides to ensure that each rack can be used properly, and at least a 7-foot vertical clearance. A shorter horizontal clearance with a minimum of 4 feet, may be used behind the rack. Note that bicycles are to park parallel to the rack, not through them for post-and-loop designs.

**Crossing Railroad Tracks:** Most railroad tracks and on-road bicycle paths will cross at a near-90 degree angle. Bicycles crossing tracks at a less than 45 degree angle should consider the treatment that calls for a realignment of the bicycle path to create a more perpendicular approach angle.

Some communities have begun using shared-lane markings, or sharrows, to indicate to bicyclists the most suitable way to cross a railroad track that is within an urban street where improvements such as those shown at right are not feasible.

**Drainage Grates & Utility Covers:** Drainage grates can pose a serious hazard for bicyclists, particularly on older streets where the design and placement of drainage grates did not consider the potential use of bicyclists. Grates with openings that are parallel to the curb cause the wheels on bicycles, particularly those with narrow tires, to fall into the grates and result in a crash.

On new construction projects, grates should be placed only within the gutter pan of the street with grate openings that are perpendicular to the curb and direction of travel. On older streets, the jurisdiction in control of that street should be requested to retrofit the grates with new grates with openings that are perpendicular to the curb. Another



retrofit treatment is the welding of straps across the grate perpendicular to the direction of travel, which narrows the opening of the grate to prevent the bicycle wheel from falling into the opening.

Grates and utility covers/manholes create different problems for bicyclists as roadways sink or are re-surfaced. Grates and utility covers should be flush with the roadway and should be replaced or reconfigured when NCDOT or a municipality resurfaces a street so they remain flush with the pavement.

Utility covers can pose problems on greenways as many of them are constructed along sewer easements. As with roadways, the utility covers should be flush with the trail surface and, where possible, outside of the travelway.

**Rumble Strips:** The addition of rumble strips along highways causes great concern among bicyclists due to the placement of rumble strips on high speed roadways. The placement is usually the only suitable location for bicyclists to travel due to the speed differential.



To account for the needs of bicyclists, rumble strips should be placed as close to the edge line or fog line of the highway to maximize the space available for the bicyclist along the highway. Design standards for most four-lane highways leave typically 5-feet or greater on the shoulder for bicyclists to operate outside the area of the rumble strips.

## The Potential of Greenways

Greenways are becoming a popular transportation and recreation feature in communities across North Carolina. Franklin's greenway system includes the Little Tennessee

River Greenway, which is a public/private collaboration between Macon County, the Town of Franklin, North Carolina Parks & Recreation Trust Fund, NC Clean Water Trust Fund, Friends of the Greenway, many citizens and organizations in Macon County.

The Little Tennessee River Greenway is one of more than a thousand such trails snaking their way across America turning old canals, abandoned rail beds and forgotten riverbanks into green recreational corridors. The greenway represents a voluntary local strategy to preserve scenic, natural, historic, cultural and recreational resources and promotes increased public access to the Little Tennessee River through the creation of riverside parks and trails.

BikeWalk Franklin proposes several additions to the Little Tennessee River Greenway, including extensions along the Cullasaja River and Cartoogechaye Creek. The sidewalk and bike path system would ultimately connect to these greenway corridors, providing a comprehensive bike and pedestrian network throughout the town. This will allow any Franklin resident the ability to travel throughout to key destinations. Visitors will be attracted to the area and the system will be a key recruiting and retention tool to businesses and residents.

### Greenway Design

How we design greenways and trails impacts the experience and, ultimately, the safety of the diverse set of citizens who use greenways and trails for a variety of recreational, health and transportation purposes. Greenways should not be planned or built unless consideration is given to how they are designed, funded, operated, and maintained.

Some guiding principles for greenways include:

- Think long-term and have a vision for a connected, paved system for transportation and recreation
- Use on-road and sidewalk connections until a complete system is built

- Do not use eminent domain
- Be creative with the routing, don't get stuck on one route if barriers exist
- Always be building and have an active project each year until finished
- Consider using natural surface trails as an interim until more money is raised or for areas in sensitive areas such as along a lake or a creek
- Incorporate Best Management Practices for storm water management and sedimentation.
- Maintain the system by building maintenance funding into the town budget and cultivating volunteers and adopt-a-greenway efforts

In addition to serving as a transportation function, greenways should include aesthetic and recreational amenities. Consider integrating cultural and historic themes in creative ways to reinforce a sense of place along the greenway. The greenway system should contain cohesive elements to unify the design.

### Greenway Surfaces

One major design decision is the selection of the surface material. There are two general categories: hard and soft surfaces. While hard surfaces such as asphalt and concrete are more accessible and accommodating for wheeled vehicles and require less maintenance, the initial cost for installation can be high. Soft surfaces such as crushed stone, mulch, or natural earth are less expensive but are not as accessible, can require more maintenance, and can be impacted by adverse weather and drainage conditions. The cost of surfacing a trail with asphalt or concrete may be prohibitive in the beginning stages of trail building. However, you may be able to upgrade from a softer surface like dirt or crushed stone to a harder surface like asphalt or concrete once you have secured funding. When selecting a surface, the main factors to consider include cost to purchase and install materials, accessibility, cost of maintaining the surface, life expectancy and ease of use.







## Maintenance

A greenway system is only as good as the condition of its surfaces and adjacent amenities. Our climate requires special consideration for design and maintenance practices to ensure four seasons of use per year as greenways are not only recreational facilities, but provide key transportation connections.

The primary objectives of maintaining and operating a greenway system should be to:

- **Preserve Existing Investment:** Greenways are one of many visible public investments that should be viewed as an asset to the community. The outlay of resources for the initial construction of trails, pathways, amenities, access points, parking lots, signage and lighting also requires consideration of how investments are preserved.
- **Protect Habitat & Environment:** Greenways and trails are desired in areas that promote or enhance natural environments, even in their most urban settings. The degradation of a greenway or walking trail can adversely impact the quality of the surrounding habitat and environment that it was meant to protect.
- **Keep it Safe:** Maintenance involves the trail infrastructure and the environment around it, both of which can greatly impact the safety and the perception of safety for users. Rapid growth of foliage can overtake trails, block safety-related signs and create an “enclosed” feeling where users may not feel safe. The environment also impacts the trail surface as root heaves create tripping hazards for users while encroachment of trailside grasses and shrubs can degrade the edge of pavement or shorten the effective width of the trail and create user conflicts. Storm water runoff can compromise the integrity of the trail base and natural surface trails can be washed away during major storms, both creating unexpected conditions for users.

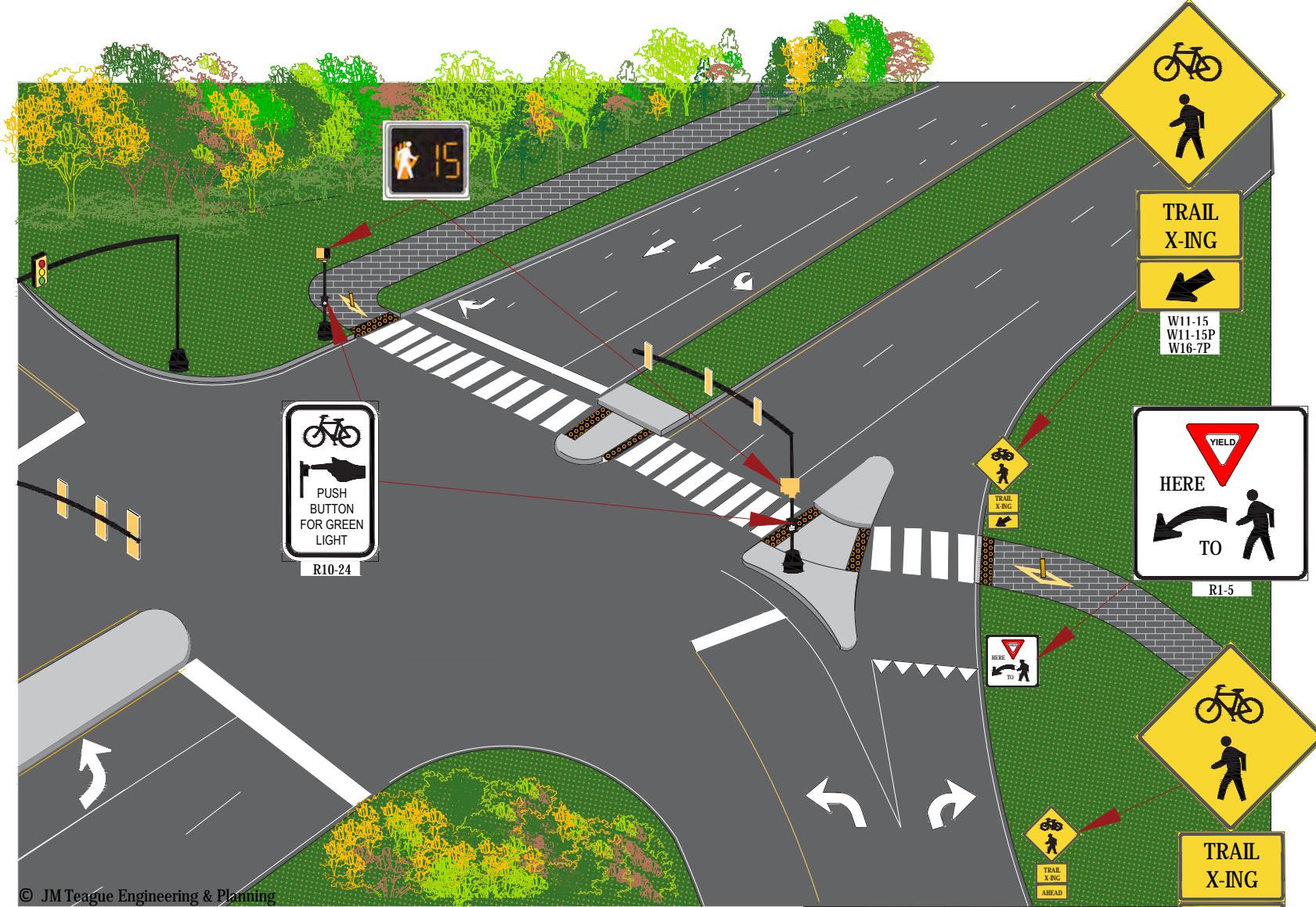
Some maintenance needs include mowing, trimming foliage on and around greenways, sweeping sediment from the trail, removing fallen limbs, and fixing cracks before they become safety hazards. Delaying action on any or all of them seriously compromises the integrity of the trail and sets forth a cycle of degradation that can quickly result in the need to completely repave or rebuild a trail. Some of these maintenance needs can be planned for while others require methods of reporting maintenance needs, response policies and clearly defined roles for maintenance participants.

## Crossings for Multi-Use Trails

Where multi-use trails meet the street is one of the most critical, yet overlooked, design elements. These locations are where a diverse set of users must cross a street or intersection and they travel at varying speeds.

Places where pathways cross at a mid-block location require design treatments that are very different than a common crosswalk/sidewalk/ramp combination. Crossings and curb ramps must be as wide as the trail. Exhibit 5-3 shows best practice treatments for these conditions. It is important to work with designers and DOT on these crossings, as multi-use trail design standards are not included in current NCDOT standard drawings.

Exhibit 5-3: Greenway Crossing at an Intersection



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# Chapter 6

## Safety & Enforcement



PISCAN HEIGHTS



**TRAIL  
XING**





## Chapter Six: Safety & Enforcement

### Bicycle & Pedestrian Laws in North Carolina

In all fifty states, bicycles are considered vehicles with all the applicable rights and responsibilities [§20-4.01 (49)]. Thus, every law that refers to “vehicle” can apply to a bicycle. The term “driver” or “operator” in the NC statutes also applies to bicyclists.

#### Bicycling Laws

**House Bill 232 — Bicycle Safety Laws Study:** Approved in June 2015, House Bill 232 required NCDOT to study North Carolina bicycle and traffic laws and make recommendations on how the laws could better ensure the safety of bicyclists and motorists. H 232 also required NCDOT to form and meet with a working group representing various industries and interests. NCDOT released its final report containing recommendations to the Joint Legislative Transportation Oversight Committee on January 8, 2016. Among recommendations about overtaking/passing protocol, group ride registration, and dark condition visibility, the working group determined that there is a need to enhance state-wide education and outreach efforts to help ensure motorists and bicyclists are properly informed on how to safely and properly interact with each other when sharing roadways.

**Bicycle Helmets and Seats:** Bicyclists and bicycle passengers under the age of 16 must wear approved protective safety helmets that are securely fastened to their head using straps, while riding on public roads, bicycle paths, and other public rights-of-way [§20-171.7(b)].

Passengers that weigh less than 40 pounds or are less than 40 inches in height must be seated in a separate restraining seat and must be able to maintain an erect seated position. Other passengers under the age of 16 must be

seated on saddle seats (as on a tandem bicycle) [§20-171.7(b)].

The parent or legal guardian of a child under the age of 16 cannot knowingly permit a child to break these helmet and seat laws. The penalty for violation of this law is a civil fine of up to ten



dollars. However, the court may waive the fine if the person responsible provides proof that an appropriate helmet or seat has been purchased and is being used as required [§20-171.9(e)].

**Bicycle Lights:** For riding after dark, every bicycle must be equipped with proper lighting equipment: Front – a lighted lamp that is visible from a distance of at least 300 feet. Rear – a red reflex mirror or lamp that is visible from a distance of at least 200 feet [§20-129(e)]. Lights are required during the period from sunset to sunrise and when there is insufficient light to see clearly a person on the highway 400 feet ahead [§20-129(a)].

**Riding on the Right:** When riding on a roadway, a bicyclist must ride in the same direction as other traffic. Also, the bicyclist must travel in the right-hand lane and should ride as close as practicable to the right-hand edge of the highway [§20-146(a)]. Exceptions to this law are provided when the bicyclist is making these maneuvers:

- Passing another vehicle moving in the same direction [§20-146(a)(1)];
- Avoiding a dangerous obstruction [§20-146(a)(2)];
- Riding on a one-way street [§20-146(a)(4)];
- Preparing for a left turn [§20-146(e)].

Bicyclists are not required to ride on adjacent bicycle paths.







**Impairment:** A bicycle is *not* considered a vehicle for purposes of impaired driving [§20-138.1(e)]. However, bicyclists should not mix drinking and bicycling. According to a U.S. DOT study, alcohol involvement was reported in more than one-third of bicycle fatalities in the year 2000.

**Reckless Operation:** Bicyclists can be guilty of reckless driving if they operate their bicycles on a highway or public vehicular area – which is defined in §20-4.01(32) – with wanton disregard for the rights and safety of others. Reckless driving also includes riding without due caution and at a speed that can endanger people and their property [§20-140(b)].

**Stopping on the Highway or Bridge:** As with other vehicle operators, bicyclists should not park or leave any bicycles on the paved or main-traveled portion of a highway or bridge outside municipal corporate limits. If a bicycle is left for more than 48 hours, it will be assumed that a law enforcement officer has been designated to remove the vehicle to safe storage, and the officer is considered the legal possessor under the law [§20-161)].

**Parking in Restricted Areas:** The law does not allow attended or unattended vehicles to park in these restricted areas:

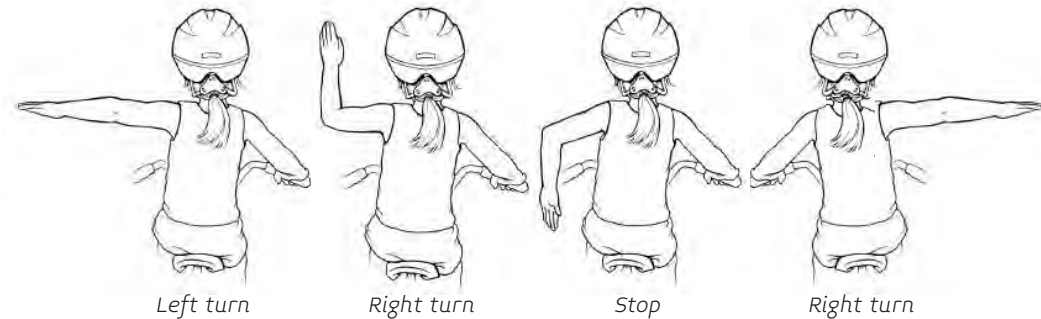
- On a street or highway in front of a private driveway;
- Within 15 feet in either direction of a fire hydrant or entrance to a fire station;
- Within 25 feet from the intersection of a curbed street or within 15 feet of the intersection of property lines on a street without curbs. Local authorities may pass an ordinance decreasing this distance;
- Any public vehicular area that has been designated as a fire lane, including shopping centers and mall parking lots; however, temporary loading and unloading is allowed as long as the vehicle is attended.

Law enforcement officials may remove any vehicles found in violation and may not be considered criminally liable

unless there is wanton misconduct or intentional wrongdoing [§20-162].

**Signs and Signals:** Bicyclists must obey all traffic signs and signals – they are not exempt because they are operating a non-motorized vehicle [§20-158].

Bicyclists must signal their intention to turn by using electrical, mechanical, or manual (arm and hand) signals for left and right turns, and stopping. The signals must begin at least 100 feet before the turn or stop, and continue throughout the turn. Bicyclists must also give a clearly audible signal to any pedestrians that may be affected by the turning or stopping movement. Manual signals must be given using the left arm as follows:



- Left turn – left hand and arm horizontal, forefinger pointing [§20-154(b)];
- Right turn – left hand and arm pointed upward at a ninety-degree angle OR right hand and arm horizontal, forefinger pointing [§20-154(b)];
- Stop – hand and arm pointed downward at a ninety-degree angle [§20-154(b)].

**Yielding Right-of-Way to Pedestrians:** Bicyclists must yield the right-of-way and avoid colliding with pedestrians who are walking on a roadway, sidewalk, walkway, or in a crosswalk. Bicyclists should exercise caution when exiting a driveway or alley to watch for and yield to pedestrians. Pedestrians have the right-of-way while in a marked or unmarked crosswalk at an intersection that does not

have a traffic signal. Also, bicyclists should not pass a vehicle that is stopped at a crosswalk to permit a pedestrian to cross the highway [§20-173 and §20-174].

**Yielding to Vehicles:** When not using a marked or unmarked crosswalk at an intersection, pedestrians must yield the right-of-way when crossing the roadway. They must also yield the right-of-way when crossing the roadway and not using a pedestrian alternative, such as a pedestrian tunnel or bridge, that is provided for them [§20-174(a) and (b)].

**Yielding to Pedestrians Outside of Crosswalks and Intersections:** Motorists and bicyclists must yield the right-of-way to pedestrians in several cases that do not involve crosswalks and intersections:

Where there is a traffic signal emitting a steady red light, or flashing red light or flashing yellow light [§20-158(c)]; Where there is a stop sign [§20-158(d)(1)]; When a pedestrian is traveling on a sidewalk or driveway and is approaching a driveway, alley, building entrance, or private road [§20-173(c)].

Regardless of right-of-way, motorists and bicyclists must exercise caution to avoid colliding with pedestrians on the roadway, and must sound a horn to warn pedestrians, when necessary. Vehicle operators must also exercise caution when observing any child or apparently incapacitated person in the roadway [§20-174(e)].

For additional reference see [www.bikelaw.com/wp-content/uploads/2014/11/BIKELAW\\_RG\\_NC\\_Web.pdf](http://www.bikelaw.com/wp-content/uploads/2014/11/BIKELAW_RG_NC_Web.pdf)

## Pedestrian Laws

**Signals:** Pedestrians must obey special pedestrian-control signals as follows:

- WALK – Pedestrians facing the signal can walk across the roadway in the direction of the signal, and motorists must yield the right-of-way;

- DON'T WALK – Pedestrians cannot start to cross the roadway, but if they are partially across the highway they can complete their crossing or proceed to a safety island [§20172(b)].

On certain streets and highways, traffic islands or other spaces are set aside specifically as pedestrian refuges when pedestrians cannot completely cross the roadway on a single WALK signal [§20-4.01 (39)]. When these special pedestrian-control signals are not provided, pedestrians must obey the regular traffic control signals, such as traffic lights [§20-172(c)].

**Walking Along the Road:** When a sidewalk is available, pedestrians must use the sidewalk instead of walking on the roadway, which is defined as the part of the highway that is paved, graveled, or otherwise improved for vehicle travel [§20-174 (d) and §20-4.01 (38)]. When sidewalks are not provided, pedestrians walking along or on the highway should, when practicable, walk on the extreme left of the roadway or shoulder facing traffic and must yield the right-of-way to traffic [§20-174(d)].

**Railroad Signals:** Pedestrians cannot pass through, around, over, or under any railroad crossing gate or barrier that is closed or in operation [§20-142.1].

**Physical Impairment:** Only persons that are wholly or partially blind can use a white cane (or white-tipped with red) on a street or other public space [§20-175.1].

**Electric Personal Mobility Devices:** A person operating an electric personal mobility device has all the rights and duties of a pedestrian. These devices may be operated on public highways with a posted speed of 25 miles per hour or less, on sidewalks, and on bicycle paths. Operators of these devices must yield the right-of-way to pedestrians and other human-powered devices (like bicycles). Municipalities may regulate the time, place, and manner of operating these devices but cannot prohibit their use [§20-175.6].







**Right-of-Way at Crosswalks:** Pedestrians have the right-of-way at marked and unmarked crosswalks in residential and business areas except where there is a traffic or pedestrian signal [§20-155(c) and [§20-173(a)]. Also, whenever any vehicle is stopped at an intersection crosswalk to permit a pedestrian to cross, other motorists or bicyclists approaching from the rear are not permitted to overtake and pass the stopped vehicle [§20-173(b)].

## Crash Data

Bicyclist and pedestrian injuries and fatalities have steadily increased since 2009. The 5-year trend for bicyclist fatalities rose to 726 fatalities in 2012—the highest in 5 years. Pedestrian fatalities followed the same trend; rising to 4,743 fatalities in 2012—also the highest number in 5 years. Additionally, 76,000 pedestrians and 49,000 bicyclists were injured in 2012. As a percentage of the total motor vehicle-related deaths in 2012, pedestrian fatalities represented 14.1 percent and bicyclist fatalities represented 2.2 percent, for a total of 16.3 percent of the total.

Livable communities that support bicycling and walking are a high priority of the U.S. Department of Transportation. A livable community is one that provides safe and convenient transportation choices to all citizens, whether it's by walking, bicycling, transit, or driving. Each year, unfortunately, pedestrian and bicyclist fatalities comprise about 16 percent of all traffic fatalities with approximately 5,000 pedestrian deaths and 800 bicyclist deaths. Another 65,000 pedestrians and 48,000 bicyclists are injured in roadway crashes annually.

## Demographic Characteristics of Crash Victims

The DOT reveals that pedestrian injuries and fatalities disproportionately occur among older adults. Individuals who are 65 and older accounted for 20 percent (935) of all pedestrian fatalities and an estimated 9 percent of all pedestrian injured in 2012. Since almost 35% of Franklin's population is over 60 years old, and with a generally



*Areas in Franklin without sidewalks can be dangerous for all age groups, but especially children and older residents.*

aging U.S. population, safety considerations should be a top priority for town officials. Simply having ADA-compliant public facilities and well-maintained sidewalks can have a tremendously positive effect on the senior population's ability to safely navigate their town.

It's also vitally important to consider a younger demographic when designing and planning our towns. The 8-to-80 rule is fundamental for general safety. DOT statistics raise a red flag – of children between the ages of 5 and 15 killed in traffic crashes, over one-fifth (22%) were pedestrians.

Young pedestrians are at particular risk of injury from running into the road from between parked cars or other obstacles – their view of traffic is blocked and they cannot see oncoming cars. Additionally, very young children are still learning how to use their peripheral vision and how to use the information they see to identify oncoming cars in the first place.

While young children usually wait for a longer period of time before crossing than older children, there may be a delay between the time a young child decides it is safe to cross the street and when he or she actually starts to

cross (Barton & Schwebel, 2007). Due to that delay, it may no longer be safe to cross because motor vehicles may be closer than when the child first decided to cross.

Young children are also at risk for traffic-related injuries because without training or prompting they may not fully understand why traffic situations are dangerous (Hill, Lewis, & Dunbar, 2000).

Distraction and impulsiveness also are contributors to unsafe behaviors because they can affect a child's decision-making process and may lead to unsafe crossing choices or other unsafe bicycling and pedestrian behavior (Barton & Schwebel, 2007). For example, a child who chases a ball into the street does not automatically realize that they have gone from playing in the yard to running in the street.



*Children are often struck by vehicles simply because they were traversing an area not adequately designed for pedestrians, having to walk in a gutter or overgrown embankment in the grass and dirt, or on the road itself. This can be fatally dangerous, especially for our children and our older community.*

While children are becoming more physically independent, they still are influenced by role model actions and depend on parents and caregivers for guidance and assistance in their everyday lives. Parental supervision and setting the

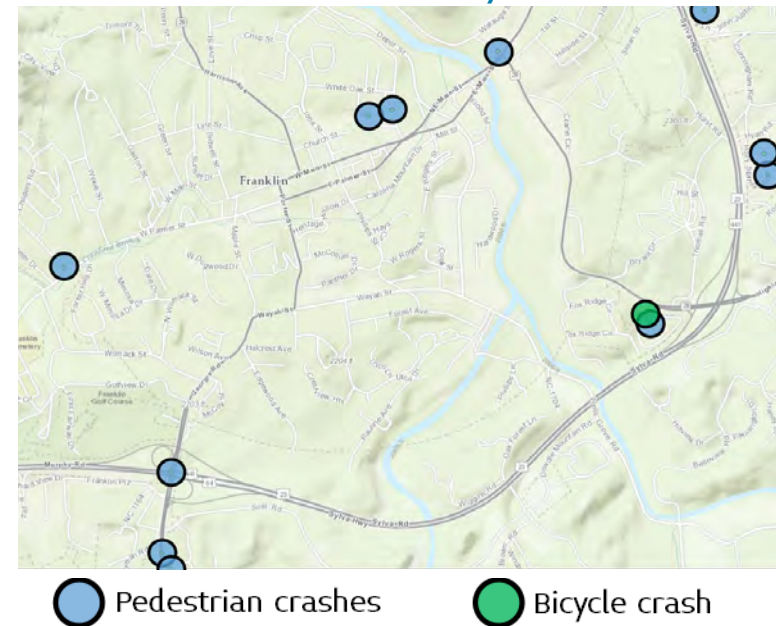
right example are essential for preparing children to make safe decisions.

Minorities are also overrepresented in pedestrian fatalities. Deaths of African Americans and Hispanics as pedestrians are disproportionately high: although African Americans represent only 12.7 percent of the total U.S. population, they compose 17.3 percent of total pedestrian fatalities, while Hispanics are 15.1 percent of the population but 18.6 percent of pedestrian fatalities.

### Areas of Concern

Pedestrian and bicyclist crash data was compiled for Franklin utilizing NCDOT's Pedestrian and Bicycle Crash Data tool and online GIS map. The database contains data from 1997 through 2012 on all pedestrian and bicyclist crashes. Data can be sorted in many different ways and at different geographic scales.

### Exhibit 6-1: NCDOT Franklin Bike/Ped Crash Data



*North Carolina Department of Transportation Bicyclist & Pedestrian Crash Map (2007-2013).*







Over the 16-year period of time there were 23 total pedestrian crashes with a motorist in Franklin. There is only one bicyclist crash on record and the map indicates it occurred in the Macon Plaza access road or parking lot area. Of those 23 pedestrian crashes:

- There was 1 fatal pedestrian crash
- 2 resulted in a disabling injury
- 9 of the victims were youth
- 6 occurred on roadways with a posted speed limit of 30 mph or greater
- 15 occurred between the hours of Noon and 6 pm (19 total during daylight hours)
- 5 were in public vehicular areas, which could be a driveway crossing at a street or in a parking lot

No distinct patterns emerge in this data due primarily to the small dataset. In looking at the crash map, which contains location-specific information for crashes from 2007 through 2013 (13 crashes during this time period), the US 441 South / Georgia Road area between the US 64 Bypass and Wide Horizon Drive had four crashes. A majority of crashes occurring on higher speed roadways is common as motorists traveling at higher speed may not see the pedestrian in their field of vision.

### Enabling Safe Behavior

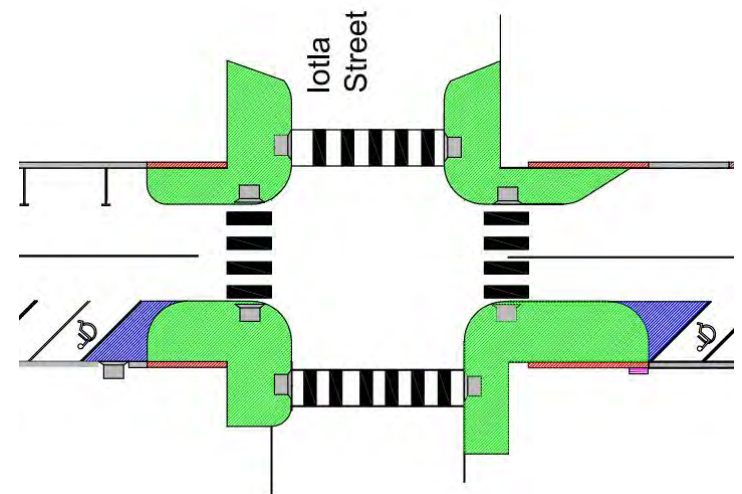
#### Downtown Franklin Parking Study

In 2014, J.M. Teague Engineering & Planning (JMTE) analyzed and made recommendations concerning the town's on-street parking along Main Street. This area included most of Historic Downtown Franklin, which contains a dense collection of shops, restaurants, parks, and offices. The area captured a large amount of pedestrian activity. While the study largely focuses on parking along Main Street, other factors were also examined in order to best suit the context and help the residents and businesses that

make this Downtown area a place to do business, relax, or shop.

Bicyclist and pedestrian behaviors can affect their likelihood of being victims of a crash with a motor vehicle, as well as their likelihood of surviving that crash. Crossing streets outside of intersections increases the risk of a crash. In fact, 70 percent of pedestrian fatalities occur at non-intersection locations. However, behavior is motivated heavily by circumstance. Having adequate crossing assistance (pavement striping, signs, bulb-outs, median refuges, and other pedestrian safety elements) takes the guesswork out of the decision-making and makes sure the responsibility is on both the motorist and the pedestrian to be watchful and take fewer risks.

It is important for cyclists to follow the rules of the road, especially simple actions like riding with the flow of traffic, using turn signals, and yielding to pedestrians – many bike crashes are easily preventable.



*The Downtown Franklin Parking Study specifically recommended curb extensions and high-visibility crosswalks to improve pedestrian safety.*

## Exhibit 6-2: FHWA's Bicycle Protection Hierarchy

Least Protection



### Signed Routes (No Pavement Markings)

A roadway designated as a preferred route for bicycles.



### Shared Lane Markings

A shared roadway with pavement markings providing wayfinding guidance to bicyclists and alerting drivers that bicyclists are likely to be operating in mixed traffic.



### On-Street Bike Lanes

An on-road bicycle facility designated by striping, signing, and pavement markings.



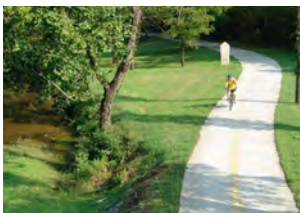
### On-Street Buffered Bike Lanes

Bike lanes with a painted buffer increase lateral separation between bicyclists and motor vehicles.



### Separated Bike Lanes

A separated bike lane is an exclusive facility for bicyclists that is located within or directly adjacent to the roadway and that is physically separated from motor vehicle traffic with a vertical element.



### Off Street Trails / Sidepaths

Bicycle facilities physically separated from traffic, but intended for shared use by a variety of groups, including pedestrians bicyclists, and joggers.

Most Protection

For bicyclists, wearing a properly fitted helmet is the single most effective piece of personal protective equipment to lower the cyclist's risk of injury or fatality in the event of a crash.

However, if the bicycling infrastructure and network is extensive and inclusive enough, the environment for cycling can be very safe (see Exhibit 6-2). Certain facilities, like off-street paths or protected/buffered bike lanes, have shown to encourage more cyclists to take to the road, and with larger assemblages of cyclists comes safety in numbers.

### Visible Reminders

The burden of preventing crashes and injury does not rest solely on pedestrians and bicyclists, but must be shared by the motorists as well. Crossing the street safely and wearing reflective clothes while biking are certainly helpful in mitigating dangerous occurrences, but drivers also need to be reminded of the perils of driving.



*Median refuges for pedestrians make crossing multi-lane roads easier, less confusing, and much safer.*







Bright yellow signs clearly and visibly indicate caution. Bicycling and pedestrian advocates and municipalities can work with NCDOT and others to provide an effective safety component—signage in the public and private realm.



Traffic signs along key corridors promote good behavior by motorists and bicyclists. There are several types of signs that can be installed along roads and streets to highlight the presence of bicyclists or the designation of a bicycle route.

Most signs for this type of enforcement are contained in the Manual on Uniform Traffic Control Devices (MUTCD), which is a document developed at the federal level to ensure consistent implementation of traffic control devices, such as signs, across the United States. NCDOT relies on this publication, updated in 2009, as a guide for their implementation methods. Signs included in MUTCD for bicycle-related enforcement are shown in Figure 34.

Signage does not have to be constrained to identified in MUTCD, as many communities have recognized that these signs are intended to be universal and utilitarian. Therefore, some communities supplement these signs with other specialized signs. Guidelines should be followed, but rethinking some may be appropriate.

The “share the road sign” is highly maligned. It is a friendly reminder – but for whom? Sometimes the confusion stems from a lack of knowledge and sometimes it’s because the sign’s message does not suit the need of the particular road user. For example, some motorists don’t like to share the road with bicyclists because they are in a rush to get somewhere or they feel bicyclists slow down and get in the way of the flow of traffic; they might feel the sign is directed to the bicyclist, and sharing the road means the



bicyclist should move over, get off the road, or use the sidewalk. Some bicyclists feel the sign is directed only to the motorist.

In 2014, the Delaware Department of Transportation announced that the state would stop using the MUTCD-approved “Share The Road” plaque (W16-1P). In addition, the department would also start removing all “Share The Road” signs currently installed in Delaware. The determination was that the sign’s primary audience was ambiguous and causes more conflict and consternation than problem-solving or influencing behavior, while adding distracting clutter to the visual landscape.

Regardless, having visible warning signs is an important component of any safe roadway network and proper signage will remind people to use caution and be mindful of others.

### Greenway Safety Considerations

People who are unfamiliar with greenways often fear that they will attract crime and lower adjacent property values. Numerous studies in the past couple of decades have refuted this, in fact, greenways are generally safer than the surrounding communities.

Careful attention to the site planning and design of particular areas such as parking lots, trailheads, and restrooms is critical in reducing safety problems. There is a balance between retaining or creating a natural setting that is safe while also preserving the naturalness of an area. Design strategies include allowing clear visual access, having appropriate lighting in key areas, providing multiple access and egress points, and organizing activities to increase the number of users and “eyes on the path”.

Encouraging ownership of the greenway by involving the public in the planning process and educating them on the benefits of greenways, as well as presenting data illus-

trating the lack of crime and other problems is essential in gaining public support. Other safety-related initiatives can include:

- Programming activities for users of all ages and interests encourages increased greenway use and is especially effective when planned for times that may not get much use. The more people there are on a trail, the safer it will be.
- Consistent maintenance will help keep the greenway safer by eliminating potential hiding places through the use of regular landscape clearing and pruning.
- Encouraging children to walk and bicycle is part of the Safe Routes to Schools (SRTS) program, a school-based effort that involves young students, teachers, law enforcement officers and parents in the development of school safety and encouragement initiatives.

Offering instruction on how to safely use the greenway is important for people to learn proper riding techniques, greenway etiquette, safety awareness, and how to avoid collisions.

## Enforcement

Law enforcement officers see first hand the consequences of motor vehicle crashes and they know the behaviors that cause these consequences. From conducting education and enforcement campaigns to identifying unsafe conditions, law enforcement officers can play multiple roles any community effort to improve bicycle and pedestrian safety.

Demands are usually quite high for a typical police department, however, so the level of support varies from community to community. It is important to understand what the local police resources are.

There are at least three general types of law enforcement officers:

- **Traffic Enforcement Specialists:** These officers specialize in traffic enforcement and are well-acquainted with issues and trends. They respond quickly to traffic safety hot spots within a community.
- **Community Action Officers/Precinct Officers:** These officers are generally assigned to a specific portion of the town and work on problem areas. While they do not specialize in traffic enforcement, they can be called in for enforcement activities (during special events) and help coordinate with vehicular officers.
- **School Resource Officers:** Some police officers are assigned to schools and concentrate on special problems such as drugs, gangs, and other on-campus problems. They can also be used to help solve special traffic problems on or near the campus and can coordinate with Safe Routes to Schools programs.

Police are able to provide an enforcement presence that discourages dangerous behaviors on a town's streetscape. This may mean issuing warnings to drivers breaking traffic laws and maintaining a presence during peak traffic times – rush hour and special events. Drivers who have made a minor error will often respond to a warning from an officer by being more careful. Drivers who continue to violate traffic laws, however, need to be ticketed. Simply enforcing speed limits can have a huge impact on pedestrian safety (see *Exhibit 6-3*).

Creating partnerships with local law enforcement agencies should start with building upon existing relationships in Franklin. The existing support from the Police Department illustrates the agency's commitment to having a safe community for walking and bicycling. The department can be a valuable component of further programming, providing support for organized rides and participating in walk/bike to school events.







This type of involvement with enforcement agencies should continue to be supported through events and identification of new partnerships to help with enforcement. One such partnership should be the inclusion of an officer to teach the specific module of bicycle rodeos or other education-based efforts, such as the League of American Bicyclists Traffic Skills 101 course.

Other methods to engage law enforcement include:

- Conduct training on the laws that affect bicycling and help law enforcement officials understand them from the perspective of the bicyclist.
- Encourage your local law enforcement trainers to take the class on bicycle laws so they can in turn train the rest of the department officers.
- Work with your local departments explaining the importance in having all officers trained in this area.
- Encourage the use of bike patrol officers for the greenways and parks in the community and then future bike lanes.
- Request a police liaison for advisory/advocacy groups.

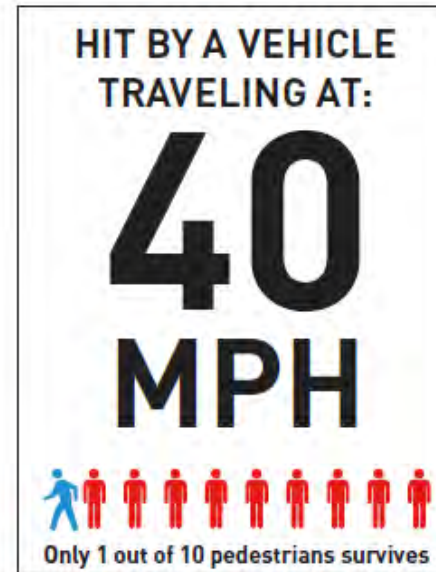
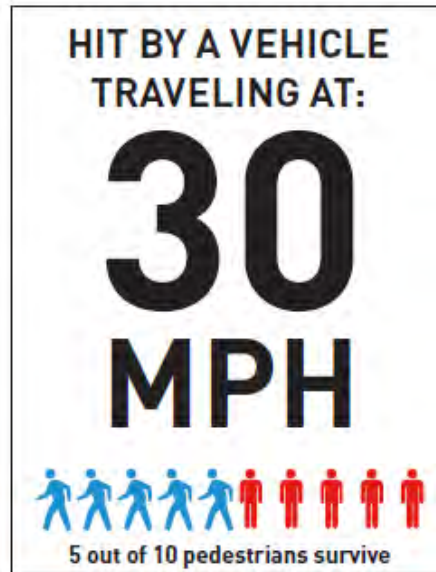
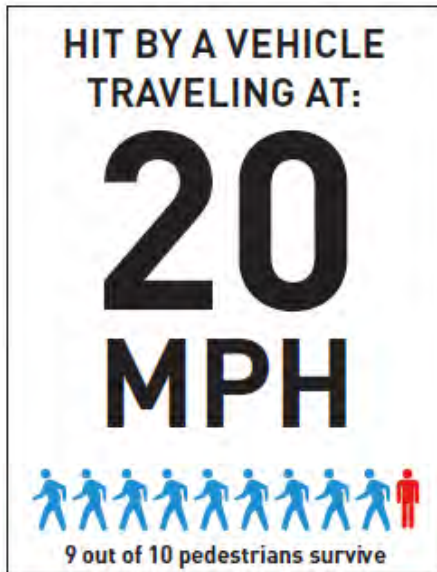
Outreach can range from simply passing out printed materials created by other campaigns, to a targeted media blitz combined with in-person outreach at community events or high traffic intersections and coordinated with enforcement actions. It is often said that the most effective education for drivers is “enforcement, enforcement, and education about the enforcement.”

Residents themselves can also take a greater role in their own neighborhoods in advocating for slower speed limits and posting yard signs reminding motorists that children and pets live nearby.

### Safe Passing

BikeWalkNC, the statewide advocacy organization for active transportation, has published a summary of safe passing of bicyclists. They note that narrow two-lane state roads are important travel routes for commuting and recreational bicyclists.

Exhibit 6-3: Pedestrian Fatality Rates by Vehicle Speed



*Enforcing speed limits in residential neighborhoods and school zones can greatly decrease pedestrian injuries.*

When there is little or no shoulder and the travel lane is narrow, competent drivers recognize that there isn't room to pass within the bicyclist's lane, and so they wait until the oncoming lane is clear of traffic for an adequate distance before moving into the next lane to pass. In 2016, North Carolina state law was amended. § 20-150 (e)(4) now states that "The driver of the faster moving vehicle either provides a *minimum of four feet* between the faster moving vehicle and the slower moving vehicle or completely enters the left lane of the highway."

In many places where this occurs, a solid yellow centerline is striped to discourage passing of other motor vehicles. Traffic engineers place this striping where there is not adequate distance to safely pass a motor vehicle that is traveling near the maximum posted speed limit. But in the real world, drivers recognize that the distance required to pass a slow moving bicyclist is a small fraction of this distance, and invariably ignore the striping in favor of weighing the safety and convenience of passing under the existing conditions. Drivers routinely cross solid centerlines to pass bicyclists safely, and police routinely ignore this as long as the passing driver does not create a danger for oncoming traffic.

Police in NC are in a difficult situation and frequently turn to the laws that govern driving around disabled vehicles and fallen trees to justify not ticketing prudent drivers. In North Carolina, this is § 20-146 (a)(2):

"When an obstruction exists making it necessary to drive to the left of the center of the highway; provided, any person so doing shall yield the right-of-way to all vehicles traveling in the proper direction upon the unobstructed portion of the highway within such distance as to constitute an immediate hazard."

### Awareness of Contributory Negligence Laws

North Carolina is one of only a few states with a contributory

negligence law that can greatly impact the bicyclist's ability to receive compensation in the event of a crash where the motorist is seen as at fault. Other states may require contribution, such as if the accident is 20% the fault as a cyclist, then they get 80% of the judgment, otherwise known as comparative fault.

This approach to legal remedy has far-reaching consequences for bicyclists in North Carolina. A bicyclist struck by a drunken driver would have a much lower chance of receiving compensation for his or her injuries under the state's pure Contributory Negligence law, which bars the cyclist's recovery of damages if his or her fault is even 10%.

Although juries do tend to award zero negligence in cases where the plaintiff's role was slight in order to avoid this decision and provide some compensation, lawyers will frequently turn down tort liability cases where they believe that a protracted legal battle will provide no compensation to them or their clients.

One of the issues that this law potentially raises is the perception that riding in the street is disproportionately dangerous; bicyclists are simply "asking for it" when they ride as they should — with traffic and obeying all the laws.

Until a time when North Carolina's laws are changed, it is vital for bicyclists to work with and educate law enforcement officials on the perspective of the bicyclist and what it means to be a bicyclist in and around Franklin.

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*"As long as you don't affect the movement of oncoming traffic — that's where common sense comes in—you're allowed to go left of center to avoid hazards and obstructions in the roadways," Gilbreath said. "Take for example if a farmer drops a bale of hay in the roadway, and you need to go around it. Even though you're left of center, you have not violated the law. [...] An officer would have a hard time convincing a judge that you're supposed to ride behind a bicyclist for 10-15 miles..."*

- N.C. Highway Patrol 1st Sgt. Brian Gilbreath, quoted in the 8/19/2014 *Asheville Citizen-Times*

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# Chapter 7 Education & Encouragement





# Chapter Seven: Education & Encouragement

## Context

Pedestrian and bicyclist safety improvements depend on an integrated approach that involves engineering, enforcement, and education. The FHWA's Office of Safety develops projects, programs and materials for use in reducing pedestrian and bicyclist fatalities.

Education should start at a young age – teaching kids how to ride their bikes safely, cross the street properly, and acknowledge that just because you are cautious, it does not necessarily mean that everyone else is being careful as well.

Walking, first as a child holding the hand of a caring adult through to an elder being guided across the street, is a form of transportation used throughout life. Being able to walk safely is an essential life skill that needs to be developed and practiced, starting with those first hand-held walks. Just as teenagers must first know the rules, then practice judgment and skills with an adult present, young children need help learning and practicing where and how to walk safely. To help children become safe walkers, adults must look at the world of traffic from a child's point of view and have an understanding of how children's abilities to learn and reason develop over time. A parent or instructor walking or bicycling with a child enables them to learn in a real world setting and allows the adult to assess how well the child understands and applies new skills.

## Education

Planning successful education activities requires differentiating how children and adults learn best. Children benefit from a combination of educational methods such as group activities, hands-on skill building, and discussion. Many of the pedestrian and bicyclist safety skills that children need

cannot be taught solely by verbal instruction; they also require practical experience (Tolmie, Foot, & McLaren, 1996; Kearsley, 2005). Hands-on activities such as simulated street crossings and bicycle handling drills provide children with the opportunity to watch and directly apply safety skills.

Adults learn best when they feel the topic is relevant to them (Lieb, 1991). Safe Routes to School education aims to provide parents with information about how to address barriers to walking and bicycling and how to create and promote safe walking and bicycling behaviors and environments for their children. For example, if vehicles frequently speed near the school, parents may be educated on both how the speed of a vehicle hitting a pedestrian relates to the seriousness of injuries and potential solutions for improving safety.

Education programs are primarily aimed at promoting safe driving, bicycling and walking habits. Educational examples include pedestrian and bicycle safety workshops, personal safety training and brochures advising parents on correct pick-up/drop-off procedures at schools. Educational programs are most effective if they are ongoing, rather than a one-time event.

## Watch for Me NC

The "Watch for Me NC" program is a comprehensive platform, run by the North Carolina



Department of Transportation (NCDOT) in partnership with local communities, that aims to reduce pedestrian and bicycle injuries and deaths through a comprehensive, targeted approach involving two key elements:

- Safety and educational messages directed toward drivers, pedestrians and bicyclists;
- Enforcement efforts by area police to crack down on some of the violations of traffic safety laws.







*Watch For Me NC bumper stickers, which are also offered in Spanish to help communities reach a broader audience and be sensitive to local populations.*

The Watch for Me NC program is a source of outreach materials and potential funding for such campaigns, and nationally, the National Highway Traffic Safety Administration (NHTSA) funds many similar programs. All materials created with NHTSA funding are available in the public domain for use and adaptation by other agencies, although Watch for Me NC materials will contain specific information on North Carolina laws. Efforts include public outreach messaging and education about how to be a safer driver, bicyclist, and pedestrian, and ultimately, reduce the number of people hit or killed by vehicles on North Carolina streets.

Local programs are typically led by municipal, county, or regional government staff with the involvement of many others, including pedestrian and bicycle advocates, city planners, law enforcement agencies, engineers, public health professionals, elected officials, school administrators and others.

The city of Carrboro, NC, recognized that the Watch For Me NC program has helped their community over the past few years. A key measure of success has been the institutionalization of enforcement. Since 2009, the town has conducted two enforcements per month and has also conducted at least one brochure handout per month. This consistent presence of enforcement holds drivers, bicyclists, and pedestrians all accountable for their behavior on a regular basis, and it sets an expectation for safe road use.

In the last year, Carrboro has also seen improvements in the municipal ordinances related to bicycling. Amendments to the Town Code endorsed by local bicycling advocates were passed, related to both riding abreast and rider spacing on roadways. City officials cite two main lessons learned from instituting the program:

- **Acknowledge good behavior:** In addition to conducting enforcement actions, Carrboro used the Watch For Me program to identify safe cycling behavior. In spring 2015, cyclists riding safely were provided “good cyclist vouchers” for ice cream at a local coffee shop.
- **Rotate enforcement locations:** The Carrboro Police Department conducts enforcement activities at several different sites throughout the town. The diversity of sites both helps to raise awareness about safe driving and non-motorized behavior, but also helps to avoid criticism so places aren’t “over-targeted.”

For more information, visit <http://watchformenc.org/>

### Let’s Go NC

This education program (“A Pedestrian and Bicycle Safety Skills Program for Healthy, Active Children”) teaches elementary age children how to walk and bike safely, giving them the essential skills that they need to enjoy a healthy and active lifestyle. Let’s Go NC! is an all-in-one package of lesson plans, materials, activities and instructional videos that encourages children to learn about and practice fundamental skills that build safe habits.

This program was developed for the North Carolina Department of Transportation's Division of Bicycle and Pedestrian Transportation and Safe Routes to School Program by NC State University's Institute for Transportation Research and Education.

For more information, visit <https://connect.ncdot.gov/projects/BikePed/Pages/LetsGoNC.aspx>

### Safe Routes to School

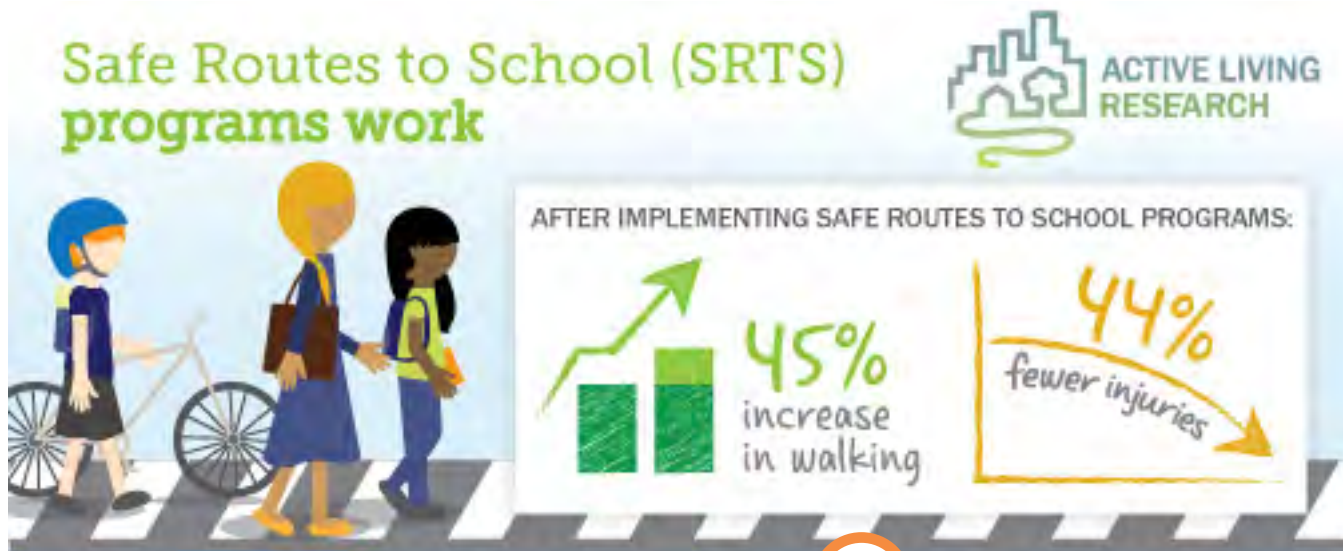
The Safe Routes to Schools (SRTS) Program is a federal transportation funding program administered by the Federal Highway Administration (FHWA), a division of the U.S. Department of Transportation. It was established by Congress in 2005 as a part of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).

The program's stated mission is to increase the number of children walking and bicycling to school, while also improving the safety of these activities. The goals as stated in the enabling legislation are:

- Enable and encourage children, including those with disabilities, to walk and bicycle to school;
- Make bicycling and walking to school safer and more appealing, thereby encouraging a healthy and active lifestyle from an early age;
- Facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution within the area surrounding (approximately 2 miles) primary and middle schools (grades K-8).

Law enforcement agencies often are involved and play a very important role in this program, working with engineers, teachers, health advocates and parents to improve student safety and encourage more physical activity.

According to a FHWA report, in 1969 about half of all students in the U.S. walked or bicycled to school. Today, fewer than 15 percent of all school trips are made by walking or bicycling. Many take a bus, but up to half of all school children go to and from school in a private automobile.



*According to a report by Active Living Research for SRTS, of the recommended 60 minutes of daily activity, on average 16 minutes (25%) can be achieved by walking or biking to school.*







The shift of student walking and bicycling trips to auto trips has contributed to many problems that local communities are now struggling to address:

- Increased traffic congestion, especially around schools;
- A perceived decrease in pedestrian safety, especially on routes to school;
- Poor air quality around schools and related health problems for children such as asthma;
- Childhood obesity and related health problems such as type-2 diabetes.

Encouragement activities also play an important role moving the overall Safe Routes program forward because they build interest and enthusiasm which can buoy support for changes that might require more time and resources, such as constructing a new sidewalk.

In brief, encouragement activities:

- Can be quick and easy to start.
- Can be done with little funding.
- Can be organized by parents, students, teachers or community volunteers.
- Involve all children, including children with disabilities.
- Focus on fun and enjoyment.
- Jump-start a community's interest in walking and bicycling.
- Show quick success and generate enthusiasm for other strategies that may require a greater investment of time and resources.
- Can foster safe walking, bicycling and physical activity behaviors that will be useful throughout children's lives.
- Offer teachable moments to reinforce safe walking and bicycling behaviors.

In schools, these can be Walk to School events, mileage

clubs and contests (where classes or grades compete to see who counted the most steps over a period of time, using small affordable pedometers), park-and-walk routines, a "walking school bus" or bicycle train, and on-campus walking or biking activities (including a targeted bicycling safety curriculum).

Children and schools play a key role in creating a safe, pedestrian-friendly culture, improving overall safety and reducing congestion near schools. Safe Routes to School and related programs not only make children more aware while walking to and from school, but also help them to become better future drivers and to positively influence their parents' driving by reminding them to slow down, avoid distractions, and watch for pedestrians and bicyclists.



### Active Routes to School

Active Routes to School is a North Carolina Safe Routes to School Program that bridges neighborhood transportation elements with community health, focusing on children.

For Franklin, the Region 1 (Cherokee, Clay, Graham, Haywood, Jackson, Macon, Swain, and Transylvania counties) Active Routes to School Project Coordinator is Jackie Moore. She has spearheaded an ever-growing list of elementary school events to help students start their day with affirmation and exercise in a safe and fun environment. She has in-depth knowledge of these programs and recogniz-

es the importance of harnessing support from parents, municipal agencies, and in-school champions. Partnering with Active Routes to School can leverage regional successes and identify needed community sit improvements and overall policy changes.

### “20 is Plenty”

These campaigns aim to educate neighbors about the dangers of speeding in residential neighborhoods and busy downtown city centers. The goal is to remind people to be conscious of their speed, acknowledge that high speeds may affect pedestrians, and ask drivers to voluntarily slow down to 20 mph where the posted speed limit is 25 mph. Some advocates hope to convince lawmakers to actually lower the speed limit – since most drivers already go faster than what is posted.



### Themed & Fundraising Rides

The concept of organizing themed rides can be a fun experience and add to the comfort factor of riding bicycles. Options for Black Mountain and the area include organizing some type of bicycle-based history or culinary tour. This could be organized in cooperation with restaurants throughout the area who offer bite size samples of their food in exchange for a small promotional fee.

Similar rides to coffee shops or other popular destinations could be incorporated into the ride. Holding group rides where participants dress in costumes or that is held to celebrate special days such as St. Patrick’s Day or Halloween

can develop group camaraderie and encourage riders to enjoy the spirit of riding. Given the history of the area, a special ride devoted to touring and learning about places of historical significance would be another option.

### “Kidical Mass” Rides

The concept of a Kidical Mass ride arose in Oregon in 2008 as a way to provide a legal and safe experience for kids to have fun while riding their bicycles in their community and promoting the idea that “kids are traffic, too!” These family-oriented rides are intended to be a short ride from a common community space such as a school or park to a fun destination such as an ice cream shop, pool or a special event.

The most notable Kidical Mass effort in North Carolina is in Carrboro (pop. 20,000) where they’ve had more than 300 participants in rides the past several years. The ride starts at the Elementary School and in 2014 the local bike coalition gave away kids bicycles as part of an event raffle.



### Bike Fairies

Another innovation practiced in Carrboro is a bike fairies program that focuses on alleviating the degree of negativity between motorists and bicyclists. Local bike coalition members look out for motorists and bicyclists doing the right thing while in traffic and reward them with gift cards from local businesses.







Other communities integrate the bike fairies theme into encouragement programs at schools to reward kids who frequently bike or ride scooters to school. Raffle tickets are placed on the bikes and scooters and there are drawings for helmets, locks, tune-ups and gift certificates to local fun places for kids (e.g. skating rink, bowling alley).

### Ciclovía or Open Streets

Franklin seems ripe for a Ciclovía or Open Street event. Ciclovía translates to “bike path” in Spanish and the events by this name involve the temporary closure of streets to automobile to provide safe space for walking, bicycling and other social events. According to Project for Public Spaces, there are 46 Ciclovía events throughout the United States – Marion, NC, might serve as an example for Franklin.

Communities use them to celebrate active transportation or provide a very visible demonstration for projects or concepts that are planned. For example, “pop-up bike lanes” or “pop-up cycle tracks” are a common feature at these events. Using temporary materials such as spray chalk, hay bales and cones, towns can show citizens and businesses what the facilities look like. Franklin could close a side street downtown on a weekend to have this type of festival and showcase potential improvements for walking and bicycling.



### Healthy Living Initiative

One of the major characteristics of a bicycle-friendly and walkable community is to have a body of citizens,

municipal staff, and elected leaders who are engaged in and educated about the economic, health, and general quality of life benefits of a multimodal community.

Additionally, educational activities (like presentations on pedestrian- and bicycle-friendliness) could be held downtown at one of the public squares to learn about the projects, programs, and policies that can encourage a more bicycle- and pedestrian-friendly city. Several organizations, such as the National Center for Bicycling and Walking ([www.bikewalk.org](http://www.bikewalk.org)), Walkable Communities, Inc., and the Complete the Streets initiative ([www.completestreets.org](http://www.completestreets.org)), provide resources such as speakers, handouts, guides, and publications, which can be used for the education and encouragement component of the event. Local businesses might be asked to encourage employee participation in workplace walking clubs and events, along with the promotion of a local walking route.

This program could also be promoted in local schools, health centers and at City/County events. A “Fitness Challenge” event and/or regular senior cycling/walking program could also be incorporated.

### Bike-to-Work Day

Bike month is each May and National Bike to Work Day is usually held the 3rd Friday of May. The League of American Bicyclists has a packet to assist in starting a bike to work event in your town.



Encouragement programs can build locally separate from the national events. Some local contests in North Carolina provide awards like the Golden Sneaker (for walkers), Golden Spoke (for bicyclists) and Golden Wheel (for carpools and bus riders) who choose non-single occupancy vehicle rides. Programming usually includes breakfast stations with free coffee and treats on the specific day and education classes to give people more confidence to try a new travel mode that day. Some communities have awards for the most creative commute and most decorated bicycle.

## Walk & Bike to School

October is International Walk & Bike to School Month. The premise of this program is to encourage children to walk and bike to school as a way to increase physical activity, help children develop an understanding of their environment and to become more healthy and independent. When it is safe to walk and bike to school this is an encouragement program; when it is not already safe it is important to hold a safety workshop and audit with a variety of community leaders, school officials and parents to develop an understanding of the needs, concerns, challenges and opportunities to make it safe. Bike to School Day is in May of each year and Walk to School Day is in October.



## Bike Corrals



Valet parking through bike corrals at community festivals is a way to develop secure parking, education about your programs, and provide a way to get feedback from the general public. It also adds a fun element to the festival. Besides providing the service, this provides an opportunity to educate the public about your programs and collect email addresses. Make colorful posters and have them laminated for durability. It is also important to document how many bikes are parking each time this service is provided and how many volunteers have worked, including their hours.

## Bike Rodeos

A rodeo is a bicycle skills event which provides an opportunity for bicyclists to practice and develop skills that will help them to become better bicyclists and avoid typical crashes. Some rodeos are designed as large, municipal events with skills activities, exhibits and games, while others are much smaller in format, requiring a smaller number of volunteers. An evaluator provides immediate feedback to the participant in a positive manner (satisfactory; needs improvement). If the child has difficulty with a particular lesson, he or she has the chance to keep practicing. The goal of any bicycle rodeo is to provide an opportunity for the participants to learn, practice, and demonstrate their bicycle handling skills in a fun, noncompetitive atmosphere.



## Wayfinding Systems & Maps

More and more communities are using pedestrian and bicycle wayfinding systems to provide visitors and residents with directional and distance information to







major landmarks, parks and other local attractions. Given Franklin's attractions, cultural destinations and parks, a similar system would be very useful.

Depending on the distances between attractions, it is advisable to combine bicycle and pedestrian wayfinding systems, recognizing that some bicycle-based destinations may only be accessed from on-street routes and may then have to be combined with auto-oriented wayfinding.



Bicycle and pedestrian wayfinding signs should be at a height of at least 7 feet, with a font and orientation appropriate for viewing by those traveling at the speed of a pedestrian or bicyclist. Distance information should be provided in blocks or miles and

kiosks with a map can be useful for visitors. Such a system could incorporate local themes, allowing area artists an opportunity to design sign templates. Opportunities for private-public partnerships exist, such as working with area retailers or B&B's along the route to sponsor signage and/or complementary brochures in exchange for a mention in the guide.

### Context Sensitivity

In safety education campaigns, it is important to recognize that the majority of existing outreach materials were created in and for major metropolitan areas where pedestrian crashes make up the highest percentage of traffic fatalities and pedestrian traffic is relatively high. Some of their messages, like "always use crosswalks" may not be applicable or practical in less dense areas where roads do not have

frequent intersections. The focus of a safety campaign should be on locally observed problems and responsive to local conditions, so messages such as walking facing traffic or watching for pedestrians on the shoulder while driving on roads without sidewalks are more relevant in areas with fewer sidewalks and more rural roads.



### Reaching a Broad Audience

Messages in an education campaign should be clear and have a broad appeal, but also target those groups most likely to be at risk or to pose a risk to others. Since men and boys constitute a substantial majority of pedestrians hit by cars and also a majority of motorists who kill pedestrians safety-related advertising may be targeted towards sporting events or other programming with an audience that skews male. Women and girls are more likely to be restricted from active transportation due to safety concerns from spouses and parents. Media outlets and events that reach minority and low income communities should be particularly targeted for pedestrian-focused messages, whereas messages aimed at making drivers more aware and respectful of pedestrians may be relevant in suburban or higher-income areas.

Materials should be provided in any foreign languages spoken within the community, particularly Spanish, and

cultural differences should be considered. For example, recent immigrants from Latin America may work long hours, traveling to and from work on farms or construction sites when it is dark outside, and may walk or bike longer distances than the typical US-born resident will tolerate. They may also walk with traffic, bicycle against traffic, be accustomed to drivers being more aware of their presence because they came from a place with higher walking levels, and be completely unaware of US “jaywalking” laws, as in many countries around the world, pedestrians are permitted to cross the street wherever they need to.



### League Cycling Instructors (LCI)

The cycling community in Franklin and Macon County should consider development of a bicycle education program for children and adults that is similar to programs already in place in places like Buncombe County, NC. For example, there are 10 individuals in Buncombe County certified by the League to teach bicycle training courses. Having individuals with this certification gives a community many advantages, the first being a first-rate curriculum from the League of

American Bicyclists that has been tested across the United States and provides materials that are age appropriate.

### Encouragement

Pedestrian outreach always needs to balance safety messages with reminders that walking is a healthy, beneficial activity. People should not be scared away from it because the built environment isn't ideal and crashes with vehicles do happen.

Providing wayfinding signs to comfortable walking routes including greenways, main street shopping districts, and low-traffic neighborhood streets with optimal sidewalks is an important part of building pedestrian traffic in a community so that broad support can be built for improving the less walkable areas.

Encouragement should be available multiple ways — through public signs, brochures, and web sites, and promoted through community newsletters and other similar forums. Information on physical and mental health benefits of walking and the economic impact of walkability and foot traffic on local businesses are particularly useful. Environmental messages about reducing short car trips are a powerful motivating factor for some, but seen as a threat by others. Some individuals may need reassurance about the safety of walking, particularly senior citizens, parents of young children, residents of higher crime neighborhoods, people with disabilities, and women who may have experienced street harassment or even assault.

Attention should be paid to making sure messages are inclusive and do not reach only the groups of people who are most likely to walk anyway (“preaching to the choir”). While a health fair is a good place to start spreading a pro-walking message, efforts are also needed to reach people who may not be as aware or concerned about fitness. Messages and activities should be positive, fun, and accessible — focusing on the benefits of even a small







amount of walking and the possibility of incremental change. Outreach to the business community and civic organizations can also build synergy toward raising the profile of walking in the community as multiple influences relay related messages about the many benefits of walking to the community and take small steps to improve the pedestrian environment.

## Giveaways!

Education and encouragement programs frequently feature prizes such as t-shirts, bags, reflective items like zipper pulls or even small blinking lights. Low-cost pedometers can also be particularly useful for encouragement programs. Healthcare organizations are often sponsors of these items, and local businesses that benefit from foot traffic may also be interested in promotional opportunities. Local artists or students can be involved in developing creative materials to add interest to the campaign. Reflective items can be particularly useful since people frequently need to walk home after dark from a destination where they can't wear reflective clothing, such as a job with a dark uniform, and



Easy to attach anywhere!

for many people who need to walk in dark locations the most due to economic circumstances, buying reflective clothing could be a hardship. Small lights or reflective gear can be kept in a purse or work bag and provide both a means of visibility and a reminder of the campaign's message.



Some towns (often larger municipalities with Bicycle and Pedestrian Advisory Committees) offer bike helmet giveaways with fittings in order to ensure that no one in the community has an excuse not to be safe. Each piece of education, enforcement, and encouragement campaigns should work together to make walking easier and biking safer and to support the engineering improvements being considered as part of BikeWalk Franklin.

## Recreation/Health and Wellness

In addition to holding some of the existing community events, there are other ways to encourage the use of greenways for recreation and health:

- Host events such as veterans' celebrations and senior citizens' gatherings on greenways;
- Host or support other organization's efforts to promote walks, running, bicycle, canoe and kayak trips, fishing, yoga, and other activities;
- Partner with healthcare facilities in the region to hold public health programs and promotions, such as and Bike-to-Work and Walk-to-Work Days.
- Encourage support groups such as cancer, diabetes, rehabilitation groups, and others to do activities on the greenway;
- Host events for charity or awareness such as March of Dimes Walk, Crop Walk, National Trails Day;
- Provide residents access to equipment such as bikes, roller skates, canoes, and kayaks through rentals, bike share programs, or donations of new or recycled equipment;
- Support bicycling by providing bicycle storage and bicycle maintenance clinics;
- Organize dog-related activities and create dog parks near the greenways.

## Cultural Resources

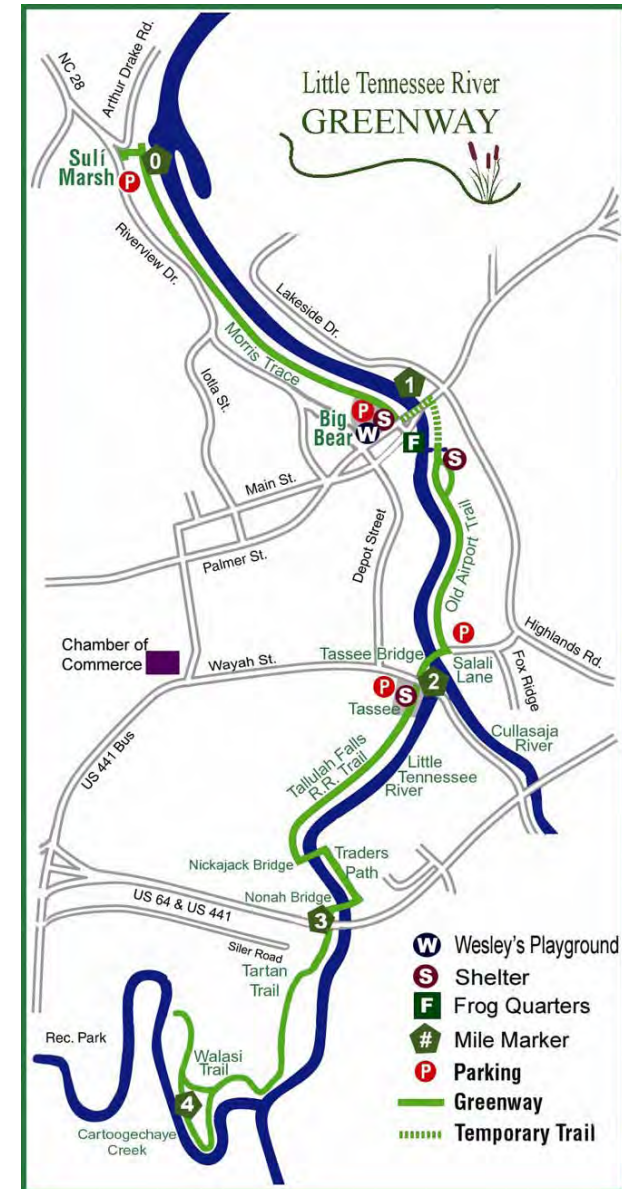
Incorporating cultural features along greenways, bike trails, and sidewalks can provide opportunities for citizens to learn about their community heritage and strengthen community bonds. Using local history and community identity through sequential art and stories conveyed through sculpture, signs, murals, site furniture, paving patterns, and other design elements can be integrated with programs – hosting cultural events such as story-telling, music, drama, dance, and art classes.

## Environmental Education & Stewardship

Bicycling and walking inherently get people outdoors and greenways in particular provide an easy way to connect people with the natural environment. The proximity of BikeWalk Franklin's network to the Little Tennessee River, other streams, and natural wooded areas provide numerous opportunities for environmental education.

Providing outdoor classrooms with educational programs about the flora, fauna, geology, and hydrology is one popular program in many communities. The towns could develop partnerships with schools, such as Franklin High School, Macon Early College, or Union Academy, particularly with

environmental studies classes and programs, to assist with water quality sampling, stream monitoring, and other activities. Hosting Earth Day and other environmental events on the greenways is also a common activity.







# Chapter 8

## Health Impacts of Walking & Biking





# Chapter Eight: Health Impacts of Walking & Biking

## Walking, Bicycling and Health

### Context

In order to encourage healthy living through bicycling and walking, a community must create an environment where people feel safe enjoying those modes for recreation and transportation. People will choose whether or not to take a trip by bike based on the worst ride segment they have to overcome. An uncomfortable section as short as a few hundred yards can be a deterrent to the interested but concerned riders that are the primary emphasis for promoting increased bicycling.

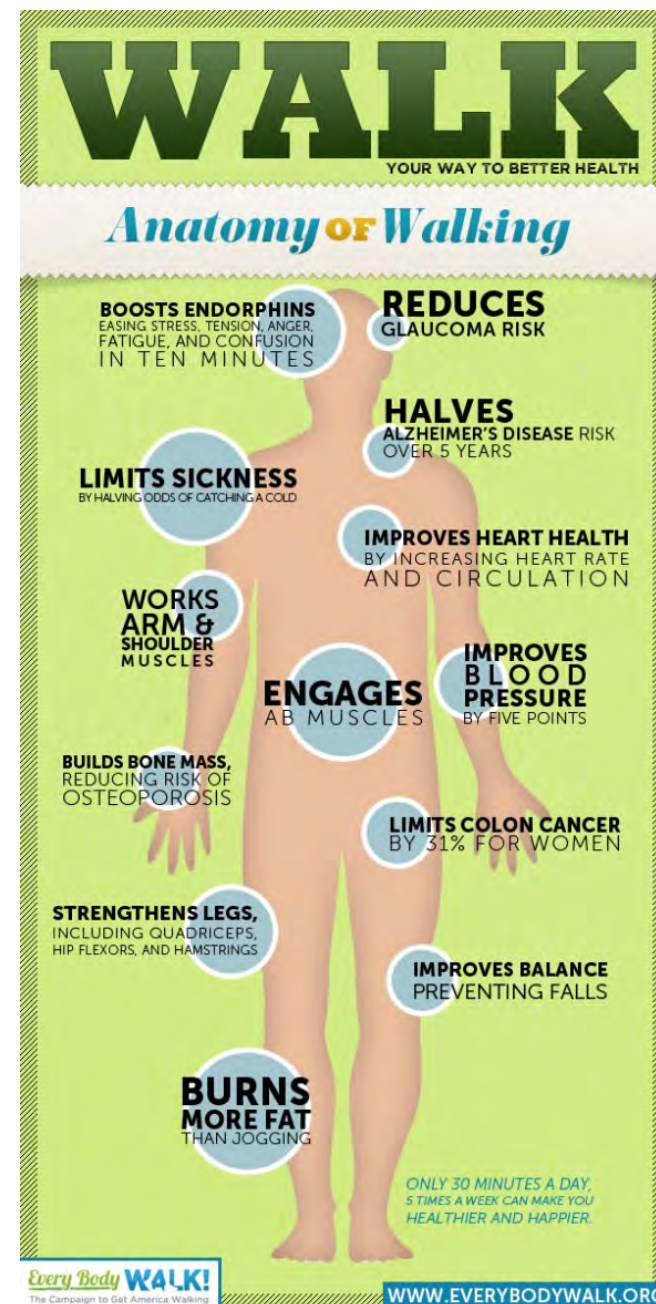
Motorist also have a major influence. Drivers are not always accustomed to driving through areas with significant bicyclist and pedestrian traffic in combination with more vehicular turning movements and other distractions. Drivers passing through Franklin or its neighborhoods may see the presence of bicyclist and/or pedestrian traffic as an inconvenience.

### A Call to Action

According to the Centers for Disease Control and Prevention (CDC), a lack of physical activity is a major contributor to obesity, diabetes, heart disease, stroke, and other chronic health conditions in the United States. The CDC recommends expanding multimodal transportation infrastructure as one strategy for increasing physical activity.

A study published in the American Journal of Public Health found a link between walkable and bikable physical environments and lower obesity rates. Researchers analyzed city- and state-level data from the United States and international data from 15 countries to study the relationship between “active travel” — bicycling or walking rather than driving — and physical activity, obesity, and diabetes. Comparing all 50 states and 47 of the 50 largest American cities, the researchers found that states with higher rates of walking and cycling were home to a higher percentage of adults who achieved recommended levels of physical

Exhibit 8-1: Walking Benefits







activity, a lower percentage of adults who were obese, and a lower percentage of adults with diabetes.

The FHWA’s Non-motorized Transportation Pilot Program also estimated the economic savings resulting from reduced mortality as a result of increased bicycling in the pilot communities from 2007 to 2013. This study found that the additional bicycling trips taken in the pilot communities in 2013 reduced the economic cost of mortality by an average of \$46.3 million, plus or minus \$6.7 million, in just

**Exhibit 8-2: Health Factors vs. Spending**

**What Makes Us Healthy**



**What We Spend On Being Healthy**



a single year. These are conservative estimates for the health benefits, because they only calculate reduced mortality due to increased physical activity, and do not factor in the health benefits of improved air quality.

In a 2015 call to action, the U.S. Surgeon General stated:

“Americans need to walk regularly to combat heart disease and diabetes, while at the same time recognizing that the way neighborhoods are designed often are unsafe or aren’t conducive to walking.”

Walking and bicycling have known health benefits.

**Physical health:** It has long been proven that walking, bicycling, and other forms of activity can improve our bodies’ state of health by varying degrees in many different ways, such as aerobic capacity, cardiovascular fitness, muscle strength and balance; decreased obesity, diabetes, heart disease, high blood pressure, asthma, and even some forms of cancer.

**Mental and emotional health:** Research findings currently indicate that walking and riding bikes can relieve symptoms of depression and anxiety, while alleviating loneliness and social isolation. Links have also been shown that demonstrate improved work performance, on the job and at school (that’s where kids work), after brief breaks to take walks or perform other physical activities.

These health benefits lead to decreased medical costs for individuals, insurers, and the organizations that provide employee health programs. The cost of a mile of sidewalk is cheap compared to emergency room visits, operations, hospital stays, rehab, and permanent disability.

While the typically recommended daily dose is a minimum of 10,000 steps, or about 30 minutes, benefits can be seen well below this limit. Studies have found that moderate amounts of walking lead to a significant reduction in heart disease, cancer, lung disease, diabetes and pain from arthritis. It reduces stress, anxiety and depression, while

improving sleep, creativity, memory and cognitive performance for children as well as older adults.

The problem is that we just don't do it enough anymore. Over 80 per cent of Americans today commute to work by car, compared to three per cent who walk, and under one per cent who bike. In 1969, 48 per cent of children walked or biked to school, compared to 13 per cent in 2009, a decline that has contributed to more than a ten per cent increase in obesity rates amongst youth.

The built environment can have a significant effect on this. Many studies have shown that the more walkable a community is, the more people will walk.

### Promoting Healthy Living

By building greenways, bike lanes, and sidewalks, communities make it easier for people to incorporate active living into their everyday life. A 2004 study concluded that for every dollar spent on public trails nearly \$3 of public health benefits is produced.

Greenways can provide safe places for kids to play, which is vital for physical health as well as brain development in children and can help with Attention Deficit Hyperactivity Disorder (ADHD). In addition to physical health, numerous studies point to how contact with the natural world improves psychological health, and relieves feelings of anxiety and depression. Trails offer a safe place to engage with the community, increas-

## Exhibit 8-3: Surgeon General Call to Action







ing social cohesion. Greenways also provide safe routes for pedestrians and cyclists, reducing the number of collisions with vehicles. And, as an added bonus, by making it easier for people to drive less, air quality will improve due to lower carbon dioxide levels resulting in fewer respiratory illnesses.

For information about NCDOT’s efforts to contribute to public health by providing active living environments with safe, connected, accessible facilities along with programs that encourage walking and bicycling, visit

[www.walkbikenc.com/pillars-of-plan/health](http://www.walkbikenc.com/pillars-of-plan/health)

### The 7 Dimensions of Health & Wellness

When we think about health, whether individual or public, we often limit our associations with the term to general topics such as healthcare, physical activity, and nutrition. We think about the common mantras from our peers and healthcare professionals – Don’t forget your annual checkup. Run this many miles per day. Eat this, not that. We often forget, or perhaps never even realize, that true and complete health is about so much more.

According to the World Health Organization, health is “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.” Meaning that achieving complete health entails much more than merely reaching optimal physical health.

In other words, health is holistic. It is made up of many interconnected components that must all be achieved individually in order to obtain overall health. These components can be easily organized into what is known as The Seven Dimensions of Health: physical; social; economic and occupational; environmental; spiritual; emotional; and intellectual. These dimensions are interrelated and each has the ability to strongly influence the others. Further, walking and bicycling have impacts that extend beyond the

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A 2004 study concluded that for every dollar spent on public trails, nearly \$3 are produced in public health benefits.

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physical dimension of health, as illustrated in this section.

The implementation of active transportation methods, specifically walking and biking, has been proven to help both individuals and communities thrive in each of these seven dimensions and ultimately achieve total health:

**Physical:** The ability to maintain a healthy quality of life that allows us to get through our daily activities without undue fatigue or physical stress. The ability to recognize that our behaviors have a significant impact on our wellness and adopting healthful habits (routine check ups, a balanced diet, exercise, etc.) while avoiding destructive habits (tobacco, drugs, alcohol, etc.) will lead to optimal physical health and wellness.

- Low-impact and easy way to improve physical health that can be enjoyed by people of all ages.
- Gives your heart, blood vessels and lungs a good workout, as well as increased cardiovascular fitness; increased strength and flexibility; improved joint mobility; improved posture and coordination; and decreased body fat.
- One of the best ways to reduce the risk of health problems such as stroke, heart disease, some cancers, diabetes and arthritis.
- 30 minutes of moderate walking per day five days a week can help ensure a longer, healthier and happier life.
- One hour of walking may increase your life expectancy by two hours.

**Social:** The ability to relate to and connect with other people in our world. Our ability to establish and maintain positive relationships with family, friends and co-workers contributes to our Social Health and Wellness.

- Creates shared sense of community by making an activity that is also transportation a social event.
- Provides mobility to members of a community who may not have access to a private vehicle.
- People who live in walkable areas with less traffic statistically have more friends than those who live in areas with heavy traffic.

- Every few members of a community are excluded from its benefits.

**Occupational:** The ability to get fulfillment from our jobs or career fields while still maintaining balance in our lives. Our desire to contribute in our careers to make a positive impact on the organizations we work in and to society as a whole.

- Physically active people save an average of \$500 per year on healthcare costs.
- Walkable and bikable communities are becoming more valuable and stimulating economies through increased property values, job creation, local spending, and tourist spending.
- Improves an employee’s attitude and work ethic and increases motivation and productivity.
- People who walk or bike regularly are overall mentally and physically healthier, and therefore enjoy their jobs more and work more efficiently, contributing to an overall increase in occupational health.

**Environmental:** The ability to recognize our own responsibility for the quality of the air, the water and the land that surrounds us. The ability to make a positive impact on the quality of our environment, be it our homes, our communities or our planet.

- Pollution-free modes of transportation with reduction of carbon emissions, noise pollution and water pollution.
- Walking and bicycling facilities are an efficient use of space. Over 20 times as many people can travel in the same space when walking as compared to in a car.
- Significantly reduces an individuals’ ecological footprint.
- Leads to greater appreciation for being in contact with nature and recognizing personal effects on the quality of the environment.

**Spiritual:** The ability to establish peace and harmony in our lives. The ability to develop congruency between values and actions and to realize a common purpose that binds creation together.

- Relaxing recreational activities are linked to spiritual wellness.
- Natural environments have a great spiritual meaning and represent a strong sense of place, typically associated with memories of special times spent outdoors.
- Can strengthen a person’s identity and help them define who they are by allowing them to be themselves and express their personality — a very important aspect of spiritual health.

**Emotional:** The ability to understand ourselves and cope with the challenges life can bring. The ability to acknowledge and share feelings of anger, fear, sadness or stress; hope, love, joy and happiness in a productive manner.

- Physical activity has also been proven to benefit the emotional and mental well-being of individuals. Americans identify “relaxation and peace” (stress reduction) as the 2nd most prevalent benefit they experience from physical exercise.
- Walking specifically has been shown to reduce the decline of cognitive performance among the elderly.
- Promotes a good night’s sleep — an essential element of maintaining good emotional health — more effectively than many other popular physical activities.

**Intellectual:** The ability to open our minds to new ideas and experiences that can be applied to personal decisions, group interaction and community betterment. The desire to learn new concepts, improve skills and seek challenges in pursuit of lifelong learning.

- Associated with better cognitive performance by children in school.
- Gives people a chance to slow down and step away from their stress, their to-do lists, and their TVs and clear their mind so they can think about other things in life.
- Linked to improving the cognitive functions of adults, and decreasing the rate of cognitive decline among the elderly.
- Improves intellectual health simply through the challenge of making it a part of their regular daily activity.







## Beyond Physical Activity

### Non-Motorized Transportation

The American Automobile Association's (AAA) annual study "Your Driving Costs" showed in 2013 that owning and operating a motor vehicle in the United States continues to become more expensive. Based on driving 15,000 miles per year, depending on vehicle type, owning and operating a vehicle can cost an average of 60.8 cents per mile or \$9,722 per year.

Safe non-motorized transportation options, combined with access to public transportation, are critical components of a transportation network that connects people— especially low-income households—with jobs, education, and essential services, providing "ladders of opportunity."

### Economic Impacts of Biking & Walking

Greenways attract new business, increase tourism, enhance property values, and help promote a strong local economy. Many studies show increased property value and faster home sales near greenways. For example, homes near the Carolina Thread Trail were estimated to increase approximately 4% in value due to proximity to the trail.

A study of Greenville County's Swamp Rabbit Trail shows that the trail has generated \$6.7 million for area businesses in 2013 - an excellent example of the positive influence greenways can have on a community's economy. Travelers Rest, SC, attracted more than a half million walkers, joggers and bicyclists in 2013. Additionally, the number of businesses in their three-block business district increased from four to 60 after the trail was constructed.

Nearby Asheville, NC, was able to provide incentives for a large California brewery to build their eastern factory, distribution center, and taproom in the city. The brewery chose its location partly because it was adjacent to the French Broad River and an anticipated greenway connec-

tor. In exchange for NCDOT Complete Streets improvements and city concessions, the company designed and built the greenway segment during facility construction. Now, trail users can easily walk right up to the taproom after exercising and the city has valuable new tax revenue.

For information about NCDOT's goal of maximizing economic competitiveness, return on investment, and employment opportunities by creating walkable and bikable communities, visit

<http://www.walkbikenc.com/pillars-of-plan/economy>



*Bicycle and pedestrian infrastructure helps lure tourists to towns and their destinations, and similarly attracts new businesses, whether directly relational like a bike shop on a greenway, or tangential, like a brewery on an accessible downtown street.*



*New Belgium Brewery site design, featuring greenway improvements, stream restoration, Complete Streets improvements, low impact parking, and multimodal accommodations on the street and facility.*

### Health Impacts of Priority Projects

Stronger communities are created by offering recreation, exercise, and non-motorized transportation opportunities for all citizens. Greenways, bike lanes, and other pedestrian infrastructure provide a safe place for people to enjoy nature and experience a sense of community and create stronger social and familial ties.

Bicycle and pedestrian networks can reinforce the identity of a community by incorporating public art and highlighting local history into the design.







# Chapter 9 Implementation & Evaluation





## Chapter Nine: Implementation & Evaluation

Adoption of BikeWalk Franklin is only one step in creating a bicycle- and pedestrian-friendly community. The implementation of the Plan will require a coordinated effort amongst Town officials, leaders, and citizen volunteers as well as follow-up plans and studies on more specific improvements as has been done in the past on various greenways. This chapter provides a series of actions steps for moving forward with the recommendations of the Plan, as well as potential funding sources and partners for proposed projects.

A major emphasis of BikeWalk Franklin is aligning recommendations with the prevailing understanding of how bicyclists view themselves: strong and fearless, enthused and confident, interested but concerned, and no way/no how and how comfortable pedestrians are in their environment: footloose and fancy free, confident and able, walking out of necessity, or even mobility challenged.

The theme of inclusive planning – designing our transportation network for all people with all modes of travel in mind – is addressed to some degree within BikeWalk Franklin. This can help stakeholders articulate to local, regional and state leaders that the implementation of this Plan is aimed at optimizing investments in bicycling and walking for the largest number of potential users.

BikeWalk Franklin’s implementation strategies are closely aligned with the Bicycle and Pedestrian Safety Strategies in North Carolina’s statewide *WalkBikeNC* plan that were developed through a series of statewide summits. The major action initiatives identified through those summits to help guide NCDOT and other state agencies through the next decade were:

- Fully implement Complete Streets;
- Address multi-modal funding;
- Retrofit existing facilities;

- Require more from all road users;
- Increase public awareness through education;
- Connect transportation and land use; and
- Improve law and strengthen enforcement.

### Action Steps for Implementation

Completing the action steps listed below helps guide development of the proposed bicycling and pedestrian network and creates a supportive program and policy environment for a more bicycle-friendly and walkable Franklin. These steps will be crucial in moving forward with the overall recommendations of BikeWalk Franklin.

#### 1. Adopt the Plan

This is the first stage of implementation. The Plan should be forwarded to regional and state decision-makers, such as the COG and NCDOT Division office, for inclusion in other regional planning and development processes. The towns of Sylva, Bryson City, and Cashiers, as well as Macon County, should also receive a copy for consideration when their local plans are updated.

•Partners: *Town of Franklin, NCDOT, Southwestern Commission Council-of-Government (COG)*

•Time frame: *Immediately*

#### 2. Identify Resurfacing Projects for Potential Shoulder Widening

NCDOT’s maintenance programs are in flux as the state determines how to best invest in resurfacing projects. These projects offer an opportunity to add bike-able shoulders to corridors identified in the plan. Franklin should communicate regularly with NCDOT Division staff to determine when routes will be subject to resurfacing. For instance, Georgia Road (US 441 Business), if widened from Maple Street to Golf View Drive, could have bicycle lanes







added that could then connect to restriped lanes to the south, with NCDOT approval.

- *Partners: Town of Franklin, NCDOT, Southwestern Commission COG*
- *Time frame: Varies based on scheduling of resurfacing, but annual review of NCDOT's three-year resurfacing plan.*

### 3. Begin Work on "Quick Win" Construction

This Plan features several recommended "Quick Win" projects, selected for a variety of reasons including a combination of their overall feasibility, visibility, high priority, affordability, and/or broad appeal. The Town should look to these first as projects that could help raise awareness of the Plan and bolster support for additional future bicycle and pedestrian improvements. All the recommended projects scored highly, but the Quick Wins might cost less, attract more attention, and/or be easier to implement; they should be reviewed for feasibility first.

- *Partners: Town of Franklin, NCDOT, Chamber of Commerce, Smoky Mountain Bicycles, and other Local Businesses.*
- *Time frame: Immediate.*

### 4. Develop a Complete Streets Strategy

Now that Franklin has a bicycle and pedestrian plan to go along with its Main Street Master Plan and Principles of Growth, the community can work in a more focused manner on implementing a Complete Streets Policy for the town. The emerging trend of bicycle tourism and opportunities to grow businesses in Franklin add



another dimension to Complete Streets but help make a more compelling case for their necessity to local and state decision makers.

- *Partners: Town of Franklin, NCDOT, Smoky Mountain Bicycles, and other Local Businesses.*
- *Time frame: Ongoing.*

### 5. Establish a Sidewalk Capital Improvement Plan

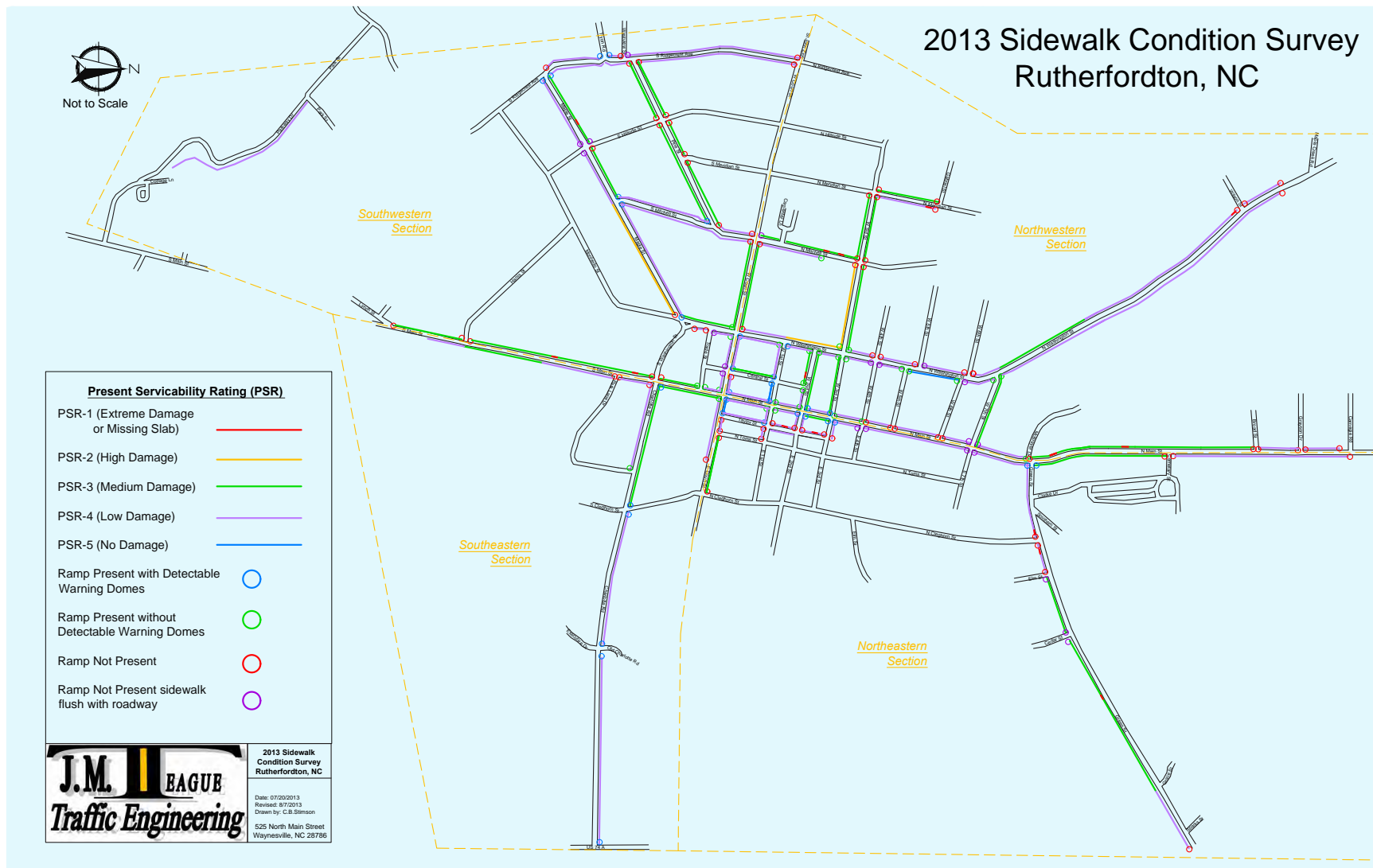
Franklin should allocate annual amounts for sidewalk improvements and construction in its budget and create a sidewalk CIP to help make determinations for the town's spending on its sidewalks. Developing a map of existing sidewalks and conducting a condition survey to assess damage, lack of ADA compliance, and missed opportunities will establish a guideline for future projects (*see Exhibit 9-1: Sidewalk Condition Survey Map*). A CIP will enable strategic funding prioritization and scheduling, while encouraging performance measurement and providing residents with the opportunity to contribute to pedestrian infrastructure planning – it is recommended that the Town website feature a "current sidewalk projects" page and a forum for participation and suggestions for site-specific recommendations.

- *Partners: Town of Franklin, Macon County Health Department, residents, volunteers.*
- *Time frame: Ongoing.*

### 6. Develop a Supportive Education and Enforcement Program

Bicycle and pedestrian facilities alone will not lead to a bicycle- and pedestrian-friendly community. A variety of program recommendations are highlighted in this plan to promote a bicycling culture. Ideally, programs and policy priorities should be implemented alongside infrastructure improvements, but the community should recognize that programs such as installing signage or wayfinding can

## Exhibit 9-1: Sidewalk Condition Survey Map (Rutherfordton, NC, 2013)



J.M. Teague Engineering & Planning conducted a sidewalk condition survey for the town of Rutherfordton, NC. The condition maps can indicate clearly where the need is highest for improvements, allowing town staff to streamline prioritization and scheduling. Specialized surveying equipment called a Sidewalk Surface Tester (SST) can be used to inventory and collect sidewalk attributes (material, width, condition, and location), or city staff, consultants, and volunteers can take first-hand measurements.







occur several years before major infrastructure improvements are made. Applying for state resources, like NC-DOT’s Watch for Me NC program, is a good place to start. The town can embrace Active Routes to School’s template for Walk or Bike to School programs, incorporate Let’s Go NC curricula, and consider testing an Open Streets initiative in the downtown core.

- *Partners: Town of Franklin, Macon County, Macon County Health Department, Local Schools, Smoky Mountain Bicycles, NCDOT.*
- *Time frame: One to three years.*

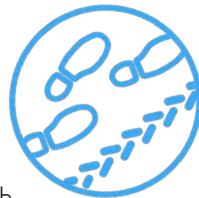
### 7. Consider Budget Allocations for Neighborhood Multiuse Trails and Sidepaths

With preliminary support in place and several neighborhood multiuse trail (or sidepath) locations identified, the Town can consider dedicating funds (and considering community partnerships and encroachment agreements) toward implementation of at least one linkage project recommendation – sections of the Southwest Loop Trail, the Crawford Branch Greenway, the Downtown to SW Loop Connector, and the Old Airport Trail Greenway Extension.

- *Partners: Town of Franklin, NCDOT, Smoky Mountain Bicycles.*
- *Time frame: Fiscal Year 2017–2018.*

### 8. Create a Bicycle/Pedestrian Advisory Committee

The Town of Franklin Board of Aldermen should appoint a Bicycle & Pedestrian Advisory Committee (or separate committees for each transportation mode), responsible for providing input to decision makers on projects, programs, and policies – focusing on action. The Committee should make sure to receive and respond to citizen ideas and concerns, holding regular monthly meetings to advise the Town on all



issues related to bicycling and pedestrians including major projects (e.g. bridges, street repaving, comprehensive plan). Bicycle & Pedestrian Advisory Committees can help spur innovation by providing a community forum to work through complicated issues such as on-street bike parking or stronger school-siting policies. The agendas, meeting minutes, memos and other records can be used to track progress over time and revisit old ideas.

- *Partners: Town of Franklin, Local Schools, Friends of the Greenway, Smoky Mountain Bicycles, Silver Striders walking group, Downtown Business Leaders, Health Advocates.*
- *Time frame: 2017, Ongoing.*

### 9. Measure Performance

This chapter identifies methods by which Franklin, the Southwestern Commission COG, Smoky Mountain Bicycles, and others can track the performance in implementation of the Plan, which can help justify funding pursuits and strengthen the ability of the community to gain funding from various sources. These efforts include regular surveys, counting users along popular bicycling routes and the Little Tennessee River Greenway, and participation in Safe Routes to School events.

- *Partners: Town of Franklin, Local Schools, Macon County Health Department, Smoky Mountain Bicycles.*
- *Time frame: Ongoing.*

### 10. Complete the Bicycle Friendly Community Application

In the year following adoption of the Plan, the community should complete and submit a Bicycle Friendly Community application to the League of American Bicyclists. The application requires input from a variety of data sources, many of which are included in this



Plan. Even if the community does not receive official designation on its first attempt, the feedback from the League and potential for Honorable Mention status can inspire local leaders to implement other Plan recommendations. The League will reach out to local members to provide input and local bicycle clubs could help the community complete the application. The Southwestern Commission COG has assisted other area communities in compiling bicycle route and demographics data for the application.

- *Partners: Town of Franklin, Southwestern Commission COG, local bicycle clubs.*

- *Time frame: 2018.*

### 11. Revise Franklin’s UDO

Revise the Town of Franklin Unified Development Ordinance (UDO) Section 152.098(1)(5) to increase the minimum sidewalk width from 4 feet to at least 5 feet. Wider sidewalks should be required in the downtown area and other developing commercial areas. Develop illustrations to better communicate the street design concepts in UDO Section 153.098 – Streets and Sidewalks. Revise the UDO’s Open Space Standards to require an easement for greenway development during the land subdivision/development process (when appropriate based on greenway plan recommendations).

- *Partners: Town of Franklin, planning consultant firm, Friends of the Greenway.*

- *Time frame: 2018.*

### Evaluation

Transportation-based projects, programs and policies are some of the most measurable aspects of the built environment because an organization or municipality can track the progress of investments and policy changes. Given the economic uncertainty in many communities, non-profits, towns, COGs and DOTs, these organizations are finding

value in tracking the performance of a variety of actions. For communities like Franklin, methods of tracking the performance of projects, programs and policies can not only lead to easy material to include in a Bicycle Friendly Community application, but communities that show measurable progress in the implementation of their plans can also find themselves in a more strategic position to receive funding from grants or other pursuits.

### Exhibit 9-2: Performance Measures & Frequency

Performance Measure	Frequency (Every 1 or 2 years)
Percentage of Bicycle Facilities Addressed from Plan	2 years
Miles of Designated Routes, Shoulders/Lanes, Greenways	2 years
Number of Bicycle Racks	2 years
Signs Added Along Bike Routes	2 years
Participants in Bike to School and Walk to School Programs	Yearly
Participants in Themed Community Bike Rides	Yearly
Number of Bicycle Route Maps Distributed	Yearly
Number of Automobile Crashes (with Pedestrians and Bicyclists)	Yearly
User Counts on Greenways	Yearly
Funding Amount Allocated for Bicycle and Pedestrian Projects and Programs	Yearly
Percentage of Crosswalks with Painted Striping	2 years
Percentage of Downtown Sidewalk System That Meets ADA Requirements	2 years
Citizen Self-Reported Physical Activity	2 years







Performance should not be confused with prioritization. Performance is measured as a change over a period of time, not a ranking of strategies. Performance for bicycling and related endeavors can fall into many categories, each of which is in turn measured by some criterion.

Exhibit 9-2 depicts several performance areas that Franklin and its partners could consider to measure and document performance of itself, NCDOT's investments in the town, and outreach efforts.

### Funding

Facilities for people who walk and bike are constructed — and therefore funded — through a number of avenues and there are even more funding sources to pursue for programmatic implementation measures. Funding is generally divided into five categories of sources: local, state, federal, non-profit and private funding. The following sections describe some of the more prominent sources in each category that Franklin could tap for implementation of this plan. As shown in the Exhibit 9-3, there is a strong economic/job creation argument to be made.

### Local Funding

Franklin can establish an annual budget line item specifically for bicycling and walking improvements. A specific budget item is the most direct way to ensure that funding for such facilities is available, but sometimes a municipality's budget may be too limited to finance this work. Bicycling and pedestrian facilities can also be built as an "incidental" with any new projects or improvements, such as parks and recreation facilities, libraries, schools, and new roads. Sidewalks can be developed as an element of other funded projects and incorporated into planning for different types of infrastructure investments. In addition, future private development should be reviewed for adequate bicycling access, pedestrian connections, and parking.

Municipalities often plan for the funding of bicycling and

greenway facilities or pedestrian improvements through development of Capital Improvement Programs (CIP). Typical capital funding mechanisms include the following: capital reserve fund, capital protection ordinances, municipal service districts, tax increment financing, taxes, fees, and bonds.

This section highlights common sources of funding, however, these are in a constant state of flux due to transportation funding discussions occurring at the state and federal levels. The Southwestern Commission COG and NCDOT are able to provide the latest information on these funding options.

### State & Federal Funding

NCDOT is restricted from expending state funds on standalone bicycling or pedestrian projects, even when those projects or upgrades are essential along state-managed roads. This limitation makes it difficult for implementation of North Carolina's Complete Streets policy to occur without local contributions. Multimodal upgrades may occur along state-maintained roads when major investments are made, such as highway or intersection widening.

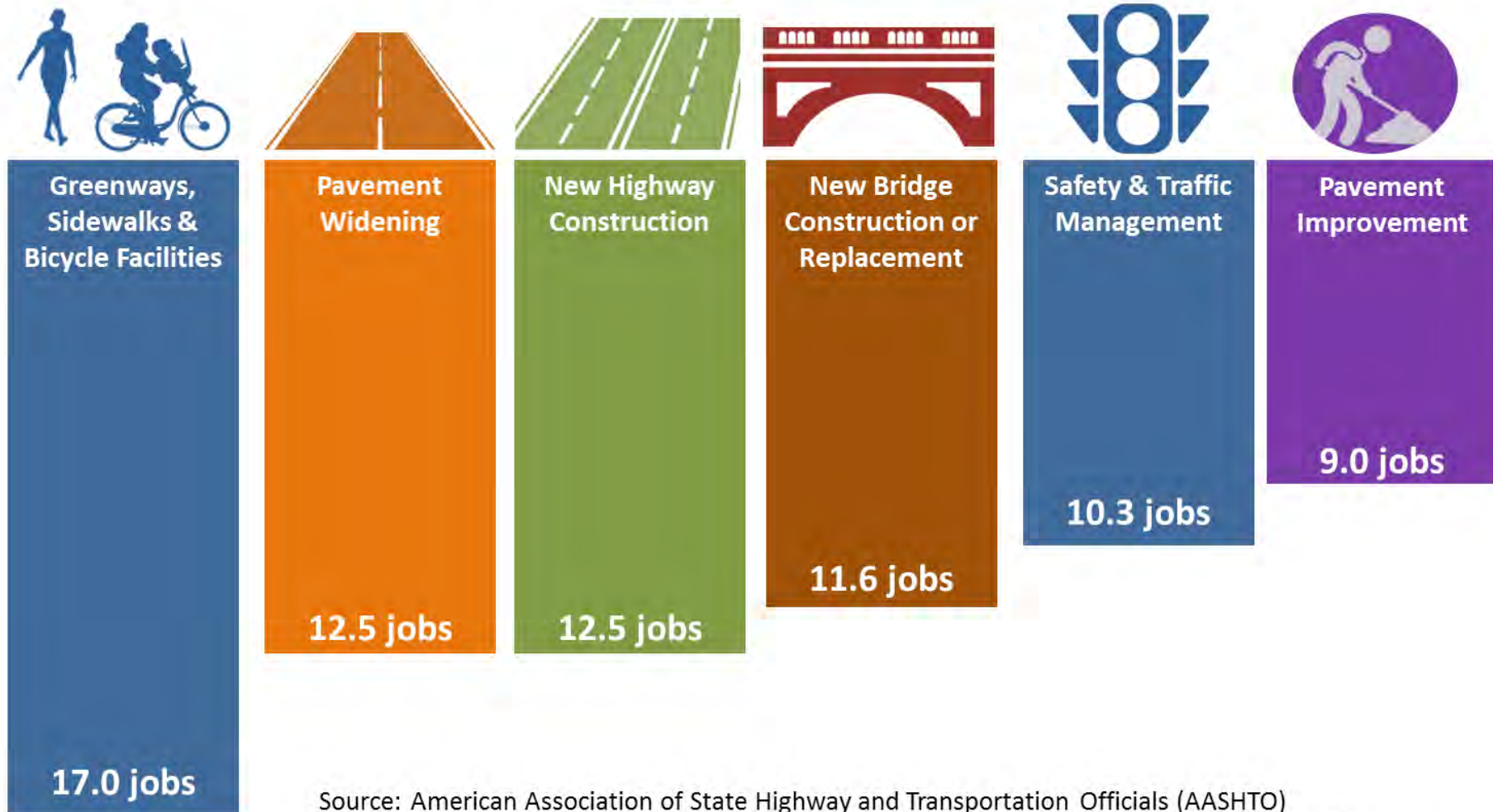
It is important to track changes or adjustments in these programs through the COG as funding allocations and programs are in flux on a regular basis and partially driven by the status of the Federal government's transportation funding acts that are intended to be updated on a semi-regular basis.

**Transportation Alternative Program (TAP):** North Carolina receives an annual allocation of TAP funds from the federal government. Bicycling and greenway improvements are eligible expenses under this program. Due to state restrictions, the full 20% match required on these funds must be borne by the municipality. Franklin should work through the RPO and with other regional municipalities to develop strategies to help the state utilize these funds.

For additional information, please visit [www.ncdot.gov/strategictransportationinvestments](http://www.ncdot.gov/strategictransportationinvestments)

# Job Creation: Making a Case for Healthy Transportation Investments

## Jobs Created Per Million Dollars Spent



Source: American Association of State Highway and Transportation Officials (AASHTO) Average Direct Jobs by Project Type (2012); Job in terms of full-time equivalents (FTE)







**Powell Bill Funds:** In addition to local funding sources, municipalities receive some financial assistance from the State to help pay for the construction, maintenance and repair of municipal streets. North Carolina levies motor fuel taxes pursuant to a formula that increases taxes when the wholesale price of motor fuels increases. G.S. 136-41.1 appropriates a certain percentage of this revenue, plus an additional percentage of the net proceeds of the North Carolina Highway Trust Fund, to eligible municipalities across the state. The total FY 2010 allocation to municipalities was \$134,299,711.21. (Note that counties do not receive this assistance because their authority to construct or maintain streets is significantly more limited.) The legislation that first established this distribution is known as the Powell Bill (after its principal sponsor in the North Carolina Senate), and the moneys distributed to the municipalities are referred to as Powell Bill funds. Annually, state street-aid (Powell Bill) allocations are also available for planning, construction, and maintenance of bikeways or sidewalks along public streets and highways. New sidewalks or replacement of existing sidewalks are an eligible expense for these funds.

Street maintenance includes street cleaning and snow removal. Permitted construction expenditures include all phases of construction: right-of-way acquisitions; legal and engineering expenses; salaries, wages, and fringe benefits; materials for construction; payments to contractors, and so forth. Municipalities also may use gasoline tax money for traffic control devices and signs, and debt service on street bonds. They may not use it for street lighting, on- or off-street parking, traffic police, or thoroughfare planning.

**Recreational Trails Program:** The Recreational Trails Program (RTP) is a grant program funded by Congress with money from the federal gas taxes paid on fuel used by off-highway vehicles. This program's intent is to meet the trail and trail-related recreational needs identified by the Statewide Comprehensive Outdoor Recreation Plan.

**North Carolina Parks and Recreation Trust Fund (PARTF):**

The fund was established in 1994 by the North Carolina General Assembly and is administered by the Parks and Recreation Authority. Through this program, several million dollars each year are available to local governments to fund the acquisition, development and renovation of recreational areas. PARTF funds are allocated through the North Carolina Trails Program to help fund beach accesses, state trail systems, and local trail construction efforts. The projects in this plan that create connections to parks are a good match for PARTF funds.

### Non-Profit & Private Funding

Another method of funding sidewalks and greenways is to partner with public agencies, private companies, the hospital or hospital foundation, and/or not-for-profit organizations. Most private funding sources offer limited grants and public-private partnerships engender a spirit of cooperation, civic pride and community participation.

The key to the involvement of non-profit and private partners is to make a compelling argument for their participation. Major employers and developers could be identified and provided with a "Benefits of Walking, Bicycling and Greenways" handout for themselves and their employees. Very specific routes that make critical connections to places of business would be targeted for private partners' monetary support following a successful master planning effort.

Potential partners include major employers that are located along or accessible to sidewalks, bicycle routes, or greenways. For instance, Drake Enterprises' Education Center is located on the Crawford Branch (a possible greenway location) and have shown forward thinking by including pedestrian connections both on their site plan and along the street. Angel Medical Center, too, is near the Little Tennessee River Greenway, so having Depot Street improvements and greenway connectors nearby might spur health initiatives.

Name recognition for corporate partnerships could be accomplished through trailhead signage or interpretive branding along greenway systems - the new Currahee Brewing Company may be open to sponsorship of events along the river or future gre-

enway connectors or a pedestrian bridge. Additionally, the Smoky Mountain Center for the Performing Arts might see the benefit of bringing the Little Tennessee River Greenway right up to their backyard via the Macon County Recreation Park, and might be willing to sponsor that extension or host fundraising opportunities. Often, banks and credit unions are interested in community partnerships – First Citizens Bank might be open to sponsoring the leg of multiuse trail that will pass in front of its office on Westgate Plaza.

The Quigley Family Foundation and the Macon County Community Foundation, an affiliate of the North Carolina Community Foundation, are potential sources for grant funding.

Utilities (like Duke Power) often make good partners and many trails now share corridors with them. Money raised from providing an easement to utilities can help defray the costs of maintenance. It is important to have legal counsel review the agreement and verify ownership of the subsurface, surface or air rights in order to enter into an agreement.

### Volunteer Work

It is expected that many citizens will be excited about the continued development of Franklin’s bicycling and greenway system and this is already evident in the energy level of those involved with this Plan. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, walking/hiking groups, bicycling clubs, scout troops and environmental groups to work on route and greenway development on special community work days. Volunteers can also be used for fundraising, maintenance, and programming needs.

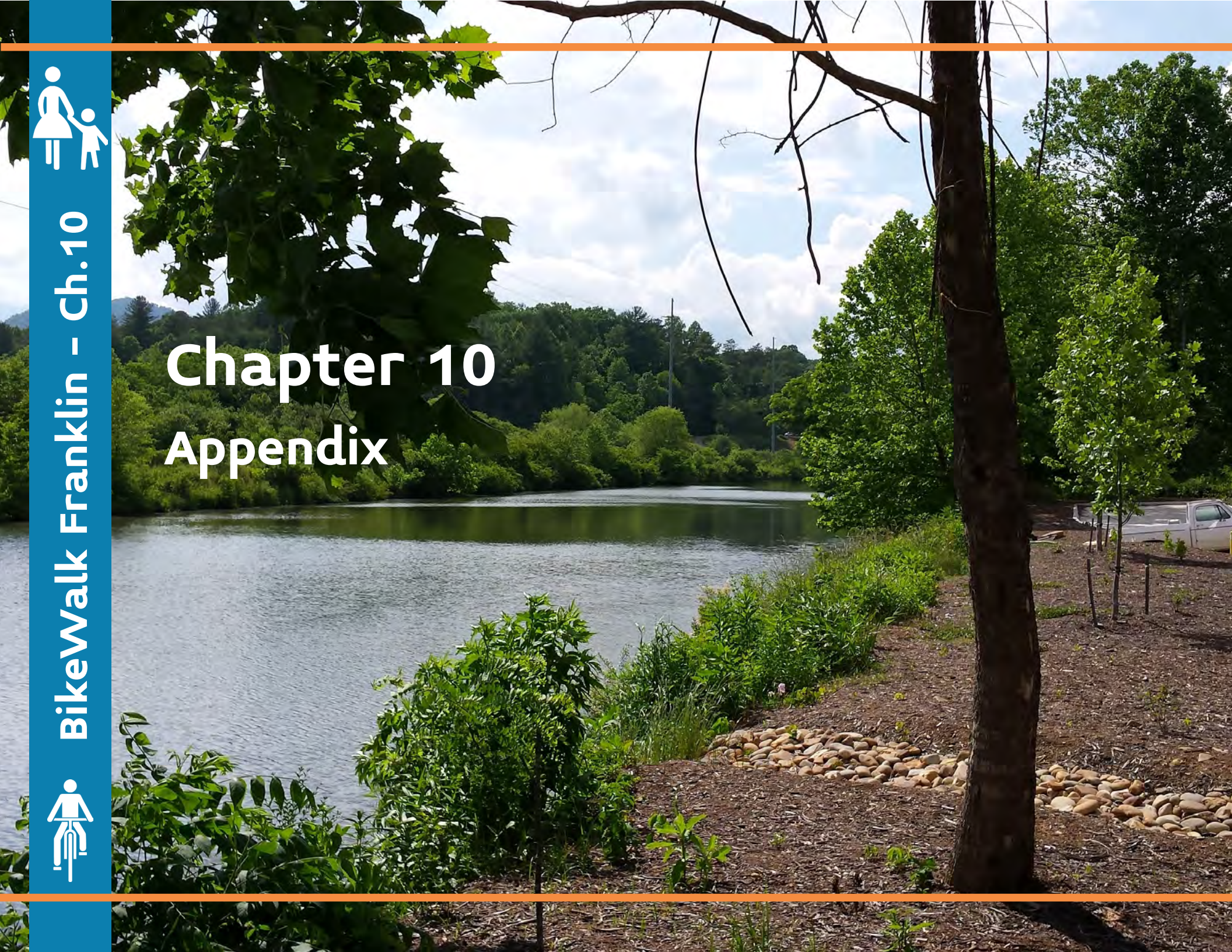






# Chapter 10

## Appendix





**Exhibit 10-1: Project Ranking**

Project Ranking / Project Number	Project Description	Pedestrian	Bicyclist	Total Points	Proximity to Parks / Natural Areas (20)	Proximity to Downtown and/or Jobs (20)	Proximity to Schools / Churches (15)	Fills Gap in the System (15)	Access to Food (10)	Safety (10)
1/1	SPOT ID B141214 — Build a sidewalk loop or multiuse trail/greenway/sidepath or on-road bike lane along West Palmer, Sloan Rd, Carolina Dr, Roller Mill Rd, Franklin Plaza and Georgia Road back to West Palmer.	X	X	83	20	20	15	9	10	9
2/2	Intersection West Palmer @ Porter Street — extend sidewalk to close gaps both sides all directions, upgrade signal to include pedestrian signals	X		77	16	20	15	15	5	6
3/3	Highlands Road — build new sidewalk from northern intersection with Crane Circle to Macon Plaza (Bi-Lo S/C) along west side of road.	X		77	20	20	9	12	10	6
4/4	Highlands Road — Build new sidewalk connecting two sections of existing sidewalk along the east side of the road from the north intersection of Crane Circle to 1st Avenue.	X		77	20	20	15	15	1	6
5/5	Georgia Road — Build new sidewalk on west side of road from Zaxby's to Maple Street	X		76	20	20	15	12	3	6





# BikeWalk Franklin – Ch.10



Project Ranking / Project Number	Project Description	Pedestrian	Bicyclist	Total Points	Proximity to Parks / Natural Areas (20)	Proximity to Downtown and/or Jobs (20)	Proximity to Schools / Churches (15)	Fills Gap in the System (15)	Access to Food (10)	Safety (10)
6/6	East Main Street from East Rogers Street to bridge over LTR. Sidewalk-fill in gaps, close open frontage, s/w behind parking	x		73	20	20	9	15	3	6
7/7	East Main Street — Along the south side from Highlands Road to Old Cat Creek Road; and along the south side of Old Cat Creek Road from East Main Street to 1st Avenue; and along the west side of 1st Avenue from Old Cat Creek Road to the existing sidewalk — Construct new sidewalk	X		73	20	20	15	12	0	6
8/8	Georgia Road from Golf View Drive to Maple Street — Widen pavement for bicycle lanes		X	67	20	12	15	9	5	6
9	Georgia Road — Build new sidewalk on east side of road from Macon County Recreation Park to north of Golf View Road.	X		67	20	20	6	12	3	6



Project Ranking / Project Number	Project Description	Pedestrian	Bicyclist	Total Points	Proximity to Parks / Natural Areas (20)	Proximity to Downtown and/or Jobs (20)	Proximity to Schools / Churches (15)	Fills Gap in the System (15)	Access to Food (10)	Safety (10)
10/9	Crawford Branch Greenway — Varying facility type as achievable from Little Tennessee River to Memorial Park. Could be elevated Boardwalk, multi-use trail, sidewalk + shared lanes, continuous route	X	X	66	20	20	15	0	5	6
11/10	SPOT ID B141180 — Build a multiuse trail or on-road bike lane along West Palmer St from Maple St to Porter St, then along Porter St from West Palmer to West Main, then along West Main from Porter St to Harrison Avenue	X	X	65	16	20	15	0	5	9
12/11	Existing Bike Routes — Review all routes for missing bike route signs and have them replaced. Install “Share the Road” and “Bikes May Use Full Lane” signs and Sharrow Pavement Markings where appropriate		X	63	20	20	15	0	5	3
13/12	Wayah Street — Build new sidewalk connecting existing sidewalk from Maple street to east of Porter Street	X		61	8	12	15	15	5	6





# BikeWalk Franklin – Ch.10



Project Ranking / Project Number	Project Description	Pedestrian	Bicyclist	Total Points	Proximity to Parks / Natural Areas (20)	Proximity to Downtown and/or Jobs (20)	Proximity to Schools / Churches (15)	Fills Gap in the System (15)	Access to Food (10)	Safety (10)
14/13	West Palmer Street – From Maple Street to Porter Street on south side of street – Build New Sidewalk	X		61	16	16	9	9	5	6
15/14	LTRG-Old Airport Trail extension — Build multiuse trail from current end behind East Franklin Shopping Center north to the East Main street bridge over the Little Tennessee River.	X	X	58	12	12	9	15	0	10
16/15	LTRG — Morris Trace extension — Build multiuse trail from East Main Street bridge over the Little Tennessee River north to existing paved trail at Big Bear Park	X	X	58	12	12	9	15	0	10
17/16	Phillips Street — Construct replacement sidewalk along west side from Panther Drive to Palmer Street	X		57	12	16	12	6	5	6
18	STIP Project EB-5756 — Depot Street. Construct sidewalk along west side of street and east side of street. Note: Project is programmed for construction by NCDOT in 2023; subject to reprioritization.			57	16	16	9	9	1	6

Project Ranking / Project Number	Project Description	Pedestrian	Bicyclist	Total Points	Proximity to Parks / Natural Areas (20)	Proximity to Downtown and/or Jobs (20)	Proximity to Schools / Churches (15)	Fills Gap in the System (15)	Access to Food (10)	Safety (10)
19/17	Intersection West Palmer @ Maple Street — extend sidewalk to close gaps both sides all directions, upgrade signal to include pedestrian signals, improve ramps	X		57	16	12	9	9	5	6
20	Siler Road — from Georgia Road to Dowdle Mountain Road — bike lanes		X	55	16	16	12	0	5	6
21	Siler Road — from Georgia Road to Siler Farm Road — construct new sidewalk	X		55	16	16	12	0	5	6
22/8	Georgia Road from Belden Circle/Wide Horizon Dr to Golf View Drive — Restripe for protected and regular bicycle lanes		X	50	4	20	6	9	5	6
23/18	Intersection Iotla Street / Riverview St @NC 28 Depot Street Extension - Multi-use / greenway trail connector to LTRG with high visibility crossing	X	X	49	20	8	3	9	0	9
24/19	Extend Little Tennessee River Greenway to the Macon County Recreation Park	X	X	48	12	12	9	15	0	0
25/20	Cullasaja River Greenway — from LTRG to Mountain View Intermediate and Macon Middle Schools (MVI & MMS)	X	X	48	12	12	9	0	5	10







# BikeWalk Franklin – Ch.10



Project Ranking / Project Number	Project Description	Pedestrian	Bicyclist	Total Points	Proximity to Parks / Natural Areas (20)	Proximity to Downtown and/or Jobs (20)	Proximity to Schools / Churches (15)	Fills Gap in the System (15)	Access to Food (10)	Safety (10)
26/21	Iotla Street — From Doraul Street to Market Street — Continue sidewalk to a safe place to cross the street to the existing sidewalk.	X		47	16	12	3	9	1	6
27	Old Siler Road — New multiuse path from Library, SCC, MCEC to LTRG along all or part of existing dirt road	X	X	43	12	12	9	0	0	10
28/22	Wells Grove Road Bridge over Little Tennessee River — need curb or delineated buffer between traffic and pedestrians	X		42	16	16	6	0	1	3
29	Old Murphy Road — From Roller Mill Road to Baird Cove Road	X		42	12	12	3	6	3	6
30	Connect existing LTRG trailhead behind East Franklin S/C to Highlands Road with an official public multiuse sidepath	X	X	42	12	12	9	0	0	9
31	Depot Street — Due to narrow road, traffic is uncomfortably close to pedestrians. Create buffer between sidewalk and traffic.	X		42	16	16	6	0	1	3
32	Fox Ridge Road at Salali Lane — Repair Flood Damage	X	X	42	16	12	0	0	5	9

Project Ranking / Project Number	Project Description	Pedestrian	Bicyclist	Total Points	Proximity to Parks / Natural Areas (20)	Proximity to Downtown and/or Jobs (20)	Proximity to Schools / Churches (15)	Fills Gap in the System (15)	Access to Food (10)	Safety (10)
33	Wilkie Street — From Old Murphy Road to Meadowbrook Drive—Construct Side-path multiuse trail	X	X	41	12	12	3	0	5	9
34	Franklin Plaza — From Orchard View Drive to Georgia Road Protected Bike Lanes		X	41	8	16	3	0	5	9
35	Fox Ridge Road — From Cullasaja Park to Highlands Road — construct new sidewalk	X		39	16	12	0	0	5	6
36	Womack Street — From Old Murphy Road to Georgia Road — Construct new sidewalk.	X		38	8	12	9	0	3	6
37	Green Street & Trimont Trail — From Wild Mint Trail to Harrison Avenue — Construct new sidewalk	X		38	12	8	3	6	3	6
38	Baird Cove Road — From Old Murphy Road to Palmer Drive — Construct new sidewalk	X		36	12	12	3	0	3	6
39	Palmer Drive — From Old Murphy Road to Baird Cove Road — Construct New Sidewalk	X		25	8	8	0	0	3	6
40	Old Murphy Rd — west of Womack St to crest of hill by Macon County Schools —Bicycle climbing lane for westbound bicyclists.		X	23	8	8	0	0	1	6





Exhibit 10-2: Facility Characteristics Table

Road Section	Traveled Way Width	Paved Shoulder Width (nominal)	Edge Treatment	# of Travel Lanes	AADT	Speed Limit (MPH)	Known Constraints & Barriers	Opportunities
Georgia Road [US 23-441] from South City Limits to Allman Drive (SR 1687)	60'	none	2'6" curb & gutter	5	23,000	45	No pedestrian crossings	STIP project R-5734 CONST 2020 should include pedestrian and bicycling considerations. Has ROW, berm for sidewalk; could narrow lane width to add bike lanes
Georgia Road [US 23-441] from Allman Drive to US 64	varies 60'-68'	none	2'6" curb & gutter	4	23,000	45	No pedestrian crossings; existing bridge over US 64	STIP project R-5734 CONST 2020 should include pedestrian and bicycling considerations. Has ROW, berm for sidewalk; could narrow lane width to add bike lanes
Georgia Road [US 441 Business] from US 64 to Golf View Drive (SR 1157)	varies 50'-60'	2' northbound, 4' southbound	paved shoulder	transition 4 to 2	15,000	45 to 35	Existing bridge over US 64	Easily widen and grade shoulders for bike lanes
Georgia Road [US 441 Business] from Golf View Drive (SR 1157) to Maple Street (Town)	24'	none	mostly 2'6" curb & gutter northbound, mostly no shoulder southbound	2	15,000	35		STIP project U-5604 CONST 2019 should include pedestrian and bicycling considerations
Wayah Street [US 441 Business] from Maple Street (Town) to Porter Street (US 441 Business)	24'	none	some curb & gutter northbound; mostly no shoulder	2	14,000	35		STIP project U-5604 CONST 2019 should include pedestrian and bicycling considerations; missing link of sidewalk between Maple St. and Porter St. on north side





# BikeWalk Franklin



Road Section	Traveled Way Width	Paved Shoulder Width (nominal)	Edge Treatment	# of Travel Lanes	AADT	Speed Limit (MPH)	Known Constraints & Barriers	Opportunities
Wayah Street [SR 1695] from Porter Street (US 441 Business) to Depot Street	18'	none	rock curb with no gutter	2	5,700	25	Narrow road, buildings close to road, no room to close existing gaps in sidewalk	
Porter Street [US 441 Business] from Wayah Street to West Palmer Street (SR 1442)	24'	none	2'6" curb & gutter southbound, no curb & gutter northbound, some 2' unpaved; d/w's on both sides	2	7,600	35		
Porter Street [US 441 Business Southbound] from West Palmer Street (SR 1442) to West Main Street (Town)	34'	none	2'6" curb & gutter	2	5,000-10,000	20	Striped for 3 lanes at south intersection	Wide street; curb extensions possible
West Main Street from West Palmer Street (SR 1442) to Porter Street (US 441 Business)	32'	none	rock curb with no gutter	2	not given	35	Frequent speeding traffic observed	Wide street; bike lanes possible
West Main Street [US 441 Business Southbound] from Porter Street (US 441 Business) to Harrison Avenue	45' (includes parking)	none	rock curb with no gutter	3 (2 westbound)	8,900	20		Road diet, add bike lanes and/or increase parking



# BikeWalk Franklin



Road Section	Traveled Way Width	Paved Shoulder Width (nominal)	Edge Treatment	# of Travel Lanes	AADT	Speed Limit (MPH)	Known Constraints & Barriers	Opportunities
Main Street [US 441 Business Southbound] <i>from Harrison Avenue to Riverview Street (SR 1323)</i>	46' mostly, tapering to 34' at Riverview Street	none	mostly rock curb with no gutter; some 2'6" curb & gutter towards Riverview Street	2 (one-way, both southbound)	5,900-13,200	20	Resistance to modifying inefficient parking; frequent speeding traffic observed	Enact 2014 Pedestrian Safety Plan to reduce speeds, increase parking protect pedestrians
East Main Street [US 441 Business Northbound] <i>from Riverview Street (SR 1323) to Highlands Road (NC 28)</i>	varies 22'-38'	none	variety of rock curb with no gutter, 2'6" curb & gutter, and paved frontage	2 (one-way, both northbound)	11,000	35	Existing grandfathered development close to road (frontage parking), lack of ROW, may hurt bike lane and sidewalk opportunities	Curbing project would delineate areas for cyclists and pedestrians; NCDOT project B-5125 underway, will upgrade road in proximity to river
East Main Street [US 441 Business] <i>from Highlands Road (NC 28) to Sylva Road (US 23-441)</i>	60'	none	2'6" curb & gutter	5	13,000	35 to 45	Infrequent opportunity for safe pedestrian crossing	Possibly narrow travel lane width for bike lanes
Northeast Main Street [US 441 Business Southbound] <i>from Riverview Street (SR 1323) to Highlands Road (NC 28)</i>	varies 22'-32'	none	2'6" curb & gutter	2 (one-way, both southbound)	11,000	35	Not all intersections have pedestrian crossings; curb lines are built for 11' travel lanes	

Road Section	Traveled Way Width	Paved Shoulder Width (nominal)	Edge Treatment	# of Travel Lanes	AADT	Speed Limit (MPH)	Known Constraints & Barriers	Opportunities
East Palmer Street [US 441 Business Northbound] from Porter Street (US 441 Business) to Riverview Street (SR 1323)	varies 30'-38'	none	variety of rock curb with no gutter, 2'6" curb & gutter, and paved frontage	2 (one-way, both northbound)	5,300-8,000		Lack of ROW, grandfathered land use styles constrain improvements	Formalize curb extensions bike lanes to reduce speeds, increase parking, and protect pedestrians
Highlands Road [NC 28] from Interchange with US 23-64-441 to East Main Street (US 441 Business)	mostly 36'; more at turn lanes	mostly none; some 1-2'	variety of grass shoulder, narrow paved shoulder paved frontage, and 2'6" curb & gutter	3 (center 2-way left turn lane)	9,000-11,000	35	Some existing sidewalk on each side, but has gaps and no good crossings at present; development and curb lines may constrain	Recorded ROW likely, grading for sidewalk comparatively easy
Depot Street [NC 28] from East Main Street/Northeast Main Street to Riverview Street (SR 1489)	24'	4'	paved shoulder	2	8,300	35	No pedestrian crossings, only one parking lot access to Greenway; no pedestrian access from Town	Paved shoulders could be marked as bicycle lanes
Depot Street [SR 1729] from Wells Grove Road (SR 1667) to East Main Street (US 441 Business)	24'	none	mostly 2'6" curb & gutter, some grass shoulder, lots of open frontage, some monolithic island channelization	2	6,600-10,000	35	Development and curb lines	STIP project EB-5756 CONST 2023 for new and fill in gaps sidewalk



# BikeWalk Franklin







# BikeWalk Franklin



Road Section	Traveled Way Width	Paved Shoulder Width (nominal)	Edge Treatment	# of Travel Lanes	AADT	Speed Limit (MPH)	Known Constraints & Barriers	Opportunities
Riverview Street [NC 28] from Riverview Street (SR 1489) to Bryson City Road	24'	4'	paved shoulder	2	6,000	35	No pedestrian crossings; only one parking lot access to Greenway; no pedestrian access from Town	Paved shoulder could be marked as bicycle lanes
US Highway 64 from Car-toogechaye to Georgia Road (US 23-441)	48'	4'	paved shoulder	4 (divided)	11,000	55	Part of the "Franklin Bypass", this highway limits connections south and east of Franklin; Interchange with US 23-441 limits connection possibilities	Relatively low volume west of US 23-442; gentler grades, paved shoulders, and safer sight distance makes segment preferable for part of Bike Route #2
Sylva Road [US 23-64-441] from Georgia Road (US 23-441) to Highlands Road (NC 28)	48'	4'	paved shoulder	4 (divided)	23,000	55	Part of the "Franklin Bypass", this highway limits connections south and east of Franklin; high volume and high speed motor traffic; Interchange with US 64/NC 28 limits connection possibilities	Paved shoulders could be marked as bicycle lanes

Road Section	Traveled Way Width	Paved Shoulder Width (nominal)	Edge Treatment	# of Travel Lanes	AADT	Speed Limit (MPH)	Known Constraints & Barriers	Opportunities
Sylva Road [US 23-441] from Highlands Road (US 64/NC 28) to Sylva	48'	4'	paved shoulder	4 (divided)	18,000	55	Park of the "Franklin Bypass", this highway limits connections south and east of Franklin; high volume and high speed motor traffic	Paved shoulders could be marked as bicycle lanes
Old Murphy Road/ West Palmer Street [SR 1442] from US Highway 64 to Porter Street (US 441 Business)	20'	none	grass shoulder, ditch; some curb, narrow sidewalk, and paved frontage in town	2	1,300-6,000	45	Existing Bike Route #2; blind vertical curves; high speed motor traffic; relatively high traffic volume due to elementary school	
Siler Road [SR 1660] from Georgia Road (US 23-441) to Dowdle Mountain Road (SR 1659)	20' west of SCC; 24' east of SCC	4' east of SCC only	grass shoulder, ditch west of SCC; 4' paved shoulder east of SCC	2	not given	35	Complaints of dangerous walking and biking from SCC westward	
Wells Grove Road [SR 1667] from Depot Street (SR 1729) to Clarks Chapel Road (SR 1653)	24' in city limits; 24'-20' outside	none	inside city limits: 2'6" curb & gutter with sidewalk; outside: grass shoulder	2	3,100-3,700	35		Popular section of State Bike Route #2



# BikeWalk Franklin





### Exhibit 10-3: Stakeholder Interviews

#### Summary of Comments from Interviewees:

- The greatest priority should be to connect the Little Tennessee River Greenway to the Macon County Recreation Park. The connection would provide destination access from residential areas to the SCC/Library complex, local businesses, and the rec park. It would provide a safe way for families, especially children, to reach the rec park.
- Duke has a vested interest in aiding in the maintenance of the walking trail because it provides access to the power line right of way that runs through Franklin; may be able to provide support where the plan overlaps with Duke's needs and priorities. For example, Duke might do path maintenance that coincides with its need to maintain access to right of way.
- Work is underway on a Blueways Map for the Little Tennessee, Tuckaseegee, and Hiwassee Rivers. The blueway should be accessible by foot and bike within the town of Franklin.
- From a connectivity standpoint, would like to see a focus on the Crawford Branch greenway spur, the area around the Nikwasi Mound, and the existing greenway.
- Due to current and future redevelopment efforts under partnerships between the Eastern Band of the Cherokee (EBCI), Mainspring, and federal funding and regulatory agencies, there will be increased pedestrian and bike traffic in the area around Nikwasi - The Nikwasi area could become a gateway to downtown, so it's important to secure funding for bike and pedestrian facilities in the Nikwasi area.
- Work should be done including streambank restoration, design, and technical work to build a greenway spur at Crawford Branch.
- Work on property purchases for new greenway connections to complete long-term connectivity goals.
- The greenway is unique in that it provides free fitness and recreation opportunities for everyone.
- It offers a very high return on public investment.
- Maintenance is an issue because there is only one county maintenance person for six miles of trail and multiple facilities.
- Maintenance and repair of existing facilities should be prioritized before starting new projects.
- Because it is an asset to the Town of Franklin, the town should partner with Macon County, the property owner, to increase maintenance, upkeep, repair, and on new investments in the greenway.
- Greater emphasis should be placed on the greenway's relationship to the river. Employ the concept of a river walk.
- Increase the bike and ped connectivity to the greenway.
- See the greenway not only as a recreation facility, but, with better connectivity, as a commuter facility as well.
- For new projects, connectivity to the rec park, the Crawford Branch spur, and a sidewalk loop around Lakeside Drive should be priorities.
- Connectivity and safety increases the area's value as a destination and makes it more attractive to investors.
- Safety is a common concern. Cyclist safety should be addressed and improved.
- There needs to be more connections to the greenway for walkers and cyclists.
- many pedestrian destinations lack sidewalk connections.
- Franklin could be seen as a bicycle, pedestrian, and fitness destination.





- There is a growing trend that visitors are interested in what to see and do in downtown.
- Having good, accessible bicycle and pedestrian connectivity in a town sets the tone about that town's values and how much it cares about its people.
- If you don't have adequate bike/walk facilities, you limit what people can do and therefore limit business development.
- In a destination town like Franklin, it just makes sense to develop walking and biking facilities.
- Good facilities make the whole area more attractive to visitors and businesses and also give residents a reason to stay.
- People want to park and visit multiple businesses.
- Particular issues are the use of wide lanes that could be converted to parking, lack of traffic calming measures, handicapped access to sidewalks, and traffic flow.
- The town has focused too much on vehicle and truck access. That strategy has made it easier for traffic to flow through town as opposed to accommodating those who want to stop and spend money. The focus should be on how do we accommodate the people who want to park, walk, and shop in our town. They need to feel safe and we need to have adequate facilities for them.
- There should be less focus on parking because, as you can see in other successful towns such as Asheville or Waynesville, if there is something worth seeing, people will find a place to park. They will walk to a worthwhile destination.
- With good bike/walk infrastructure in place, business will follow.

- We see that more and more people want to live and work in or close to town because of the ease of movement.
- Walkability and bike access is a big factor in businesses locating in our area. People recognize it as a business asset.
- We hear from many people who want to be able to park and moved easily between destinations — for example, between retail stores, a restaurant, and breweries. Ease of movement creates a momentum between small businesses such as we see in places like Asheville.
- We shouldn't just develop walking and bike facilities, we should make sure that they go somewhere, point "a" to "b", destinations.
- Anything that makes the town more attractive and more livable makes it easier for us to attract and develop small businesses. Livability, including ease of movement, recreation, and fitness ranks high among things a potential business is looking for when they choose a location.
- We've looked at a lot of communities that have been successful in terms of building and attracting businesses and they all have one thing in common — good bike and walk facilities that contribute to ease of movement.
- Planning for walking and bicycling is a jobs issue.
- Running clubs are springing up all over the region. Runners are more motivated when they have a support group. The club runs four times a week and ranges in numbers from five to 20.
- Franklin has narrow, hilly streets, so safety is an issue. It is safer to run on sidewalks than on the streets.
- The town has many sidewalks but has areas with large gaps. Cracks and other maintenance issues are a big concern for runners.



- The availability of sidewalks plays a big role in determining the running club's routes.
- Businesses in town are selected based on the ease of pedestrian access (whether people can walk to them or not).

### **Suggested actions:**

1. *Improve connections and close gaps such as Wayah Street to the Chamber of Commerce and the Depot Street Extension to Arthur Drake Road.*
2. *Prioritize connections between business destinations.*
3. *Don't be afraid to revisit tough subjects such as traffic patterns, two-way traffic on Main and "Back" streets, parallel parking, calming measures, and sacrificing vehicle lane width for bike lanes.*
4. *Work with the Chamber of Commerce and others to plan bicycle and pedestrian safety events.*
5. *Encourage a greenway partnership between the Town of Franklin and Macon County.*
6. *Prioritize completing the greenway connection to the recreation park, emphasizing a partnership between the Town of Franklin, Macon County, Mainspring, and funding agencies.*
7. *Review Duke's franchise agreement with the Town of Franklin to determine who is responsible for the cost of moving power poles that impede sidewalk travel.*





