

City of Monroe Parks and Recreation Department

Greenway Master Plan

June 2015



TABLE OF CONTENTS

Page 5	Acknowledgements
Page 6	Executive Summary
Page 9	Chapter 1: Introduction
Page 10	Definition of a Greenway
Page 10	Types of Greenway Facilities
Page 12	Chapter 2: Greenway Benefits
Page 13	Connecting Communities
Page 14	Health Benefits
Page 15	Economic Impact
Page 17	Environmental Benefits
Page 19	Chapter 3: Existing Conditions
Page 20	Geography of the Study Area
Page 20	History
Page 21	Population
Page 21	Carolina Thread Trail
Page 21	Existing Greenway Facilities
Page 26	Chapter 4: Proposed Greenway System
Page 27	Public Involvement
Page 28	Site Familiarization and Feasibility
Page 30	Proposed Greenway Corridors
Page 30	Central Monroe
Page 32	Northwest Monroe/Airport Area
Page 33	North Monroe
Page 33	East Monroe
Page 34	South Monroe
Page 34	Greenway Route Breakdown
Page 39	Priority Projects

TABLE OF CONTENTS (cont.)

Page 53	Chapter 5: Action Plan
Page 54	Greenway Planning and Implementation Process
Page 54	Criteria for Prioritizing Land Acquisition
Page 55	Criteria for Prioritizing Greenway Development
Page 56	Implementation Strategy
Page 61	Funding Strategies
Page 63	Land Acquisition Strategy
Page 65	Phasing/Priority Project Recommendations
Page 67	Budget Estimates
Page 67	Maintenance Costs
Page 68	Chapter 6: Policy Plan
Page 69	Zoning Text Amendment Recommendations
Page 69	Land Development Plan
Page 70	Unified Development Ordinance (UDO)
Page 72	Standard Specifications and Detail Manual
Page 73	Lake and Stream Vegetation Buffers Policy
	Appendices
Page 74	Appendix I: Design Guidelines
Page 94	Appendix II: Historic Downtown Monroe Greenway Map Brochure
Page 97	Appendix III: Community Engagement Summary
Page 130	Appendix IV: Potential Funding Sources
Page 143	Appendix V: CRTPO's Bicycle/Pedestrian Project Ranking Methodology
Page 149	Appendix VI: CRTPO's CMAQ Project Ranking Process and Application
Page 160	Appendix VII: Example Easement Agreements
Page 182	Appendix VIII: NCDOT Pedestrian Policy and the Bicycle & Bikeway Act of 1974
Page 203	References

FIGURES

Page 43	01 Overall Greenway Master Plan
Page 44	02 Central Monroe
Page 45	03 Northwest Monroe / Airport Area
Page 46	04 North Monroe
Page 47	05 East Monroe
Page 48	06 South Monroe
Page 49	07 Bearskin Creek Greenway, Phase II
Page 50	08 Aquatics Center to Parks Williams
Page 51	09 Don Griffin to Creft Park (Bearskin Phase III)
Page 52	10 Winchester Center to Don Griffic Park

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EXECUTIVE SUMMARY

The Monroe Greenway Master Plan (2015) serves as an update to the city's Greenway/Bikeway Master Plan completed in April 2005. The purpose of this Greenway Master Plan is to evaluate, assess, and make recommendations regarding greenway needs for the City of Monroe for 2015-2020. The goal of this plan is to put in place a clear, logical, and precise guideline that can be used for future development and growth of the Monroe Greenway System.

The Greenway Master Plan includes 11.76 miles along existing sidewalks, 21 miles along proposed sidewalks, 1.92 miles along existing trails, and 26.39 miles along proposed trails, for a total of 61.07 miles that will make up the Monroe Greenway System.

The development of the Monroe Greenway System will occur over time. Trail segments will more than likely be developed one at a time, focusing first on priority projects that have been identified in this Master Plan. As development continues within the city of Monroe and land uses evolve, greenway locations and priorities may need to take better advantage of site conditions and connection opportunities. The following steps are recommended to begin the process of transforming planned greenway segments into real trails.

Adopt Master Plan

The Greenway Master Plan should be adopted by the Monroe City Council. Once adopted, it is recommended that the city revisit existing zoning and land development ordinances to consider recommended text amendments to enhance existing policies for the successful implementation of the Monroe Greenway System. Floodplain development restrictions and regulations, land development regulations, zoning ordinance requirements, and open space dedication requirements should be amended or created for the protection of the city's environmental resources and the development of the proposed greenways.

Build Public Support

The Monroe Greenway Master Plan is a product of the stakeholders and residents of Monroe. Public involvement is critical to any successful planning process. For this Greenway Master Plan, public involvement occurred concurrently with input for the update to the City of Monroe's Comprehensive Parks, Recreation, and Open Space Master Plan. Not only is public input

crucial during the planning of the Monroe Greenway System, but the next step of the greenway development process involves continued public involvement and support for the Monroe Greenway System.

It is the recommendation of this master plan that the city's Parks and Recreation Commission promote and support the implementation of the Greenway Master Plan through;

- The education of citizens on the objectives of the Master Plan and multiple greenway needs of the City
- The coordination with other entities, programs, and departments to prioritize greenway development and acquisition
- The identification and solicitation of resources to accelerate land acquisition and greenway construction
- The development of a regional greenway system by working with surrounding communities and counties to establish linkages to their recreational and natural resources

Plan and Develop Priority Greenway Segments

It is unrealistic to expect the city of Monroe to develop the entire Monroe Greenway System within a short period of time. A phased implementation plan for land acquisition, funding, design, construction, and maintenance of trails is necessary. Initial greenway development efforts should focus on priority greenway projects. The following priority projects have been identified as part of this Greenway Master Plan:

- Bearskin Creek Greenway, PH II (EB-5011) – 1.6 miles
- Monroe Aquatics and Fitness Center to Parks Williams Athletic Complex – 0.3 miles
- Bearskin Creek Greenway, PH III – 0.4 miles
- Winchester Center to Bearskin Creek Greenway – 0.9 miles

Identify Funding and Financing

The City of Monroe should pursue a variety of funding sources for the development of the Monroe Greenway System, including funding for land acquisition, design, construction, and maintenance. Many government entities are unable to fully fund the development of every mile of trail within a network using in-house funds. It is recommended that the City of Monroe develop a multi-tiered approach for funding trail development using a variety of financing options, including public funding (federal, state, and local), as well as funding from private sources. A summary of potential funding sources is provided in Appendix IV.

Evaluate Land or Right-of-Way Acquisition Options

The acquisition of land for trail development is an important and necessary step of the greenway development process. Land acquisition provides the land resources necessary for development of greenways, protects sensitive environmental and natural resources, and preserves historic and cultural treasures. The City of Monroe should utilize a variety of land acquisition methods, which may include purchase, donations, zoning and development regulations and/or developer contributions. Detailed descriptions of these methods can be found on pages 63-65 of this document.

Design, Construct, and Maintain Trails

As the City of Monroe selects a segment(s) of the Monroe Greenway System and acquires necessary land and/or easements for the greenway, the design and construction of the greenway can begin. The city and its trail partners will need to determine the desired use or uses for each trail segment. The trail width and trail surface material will be determined by the desired use(s), existing site conditions, cost of construction, and required level of maintenance. Typical trail surface materials include natural surface, crushed stone, asphalt, and concrete. Appendix I of this Greenway Master Plan provides further description and trail design guidelines for the development of the Monroe Greenway System.

Conclusion

The Monroe Greenway Master Plan represents a collaborative planning process for the development of the Monroe Greenway System. Now that the master planning process is complete, the next steps are for the stakeholders, citizens, and staff of the City of Monroe to transform this plan from proposed greenways on a map to trails on the ground. The Monroe Greenway System will provide an important historical connection for Monroe, linking residents to the history and places that make the city unique.

INTRODUCTION

01



Definition of a Greenway
Types of Greenway Facilities

The City of Monroe adopted a Greenway/Bikeway Master Plan in April 2005. This master plan served to guide the planning and implementation of a greenway/bikeway system for ten years, through 2015. Being the ten year horizon, it is time to update the master plan. The purpose of this Greenway Master Plan (2015) is to evaluate, assess, and make recommendations regarding greenway needs for the City of Monroe for 2015 – 2020. The goal of this plan is to put in place a clear, logical, and precise guideline that can be used for future development and growth of the Monroe Greenway System.

Definition of a Greenway

Before identifying the different types of greenways, it is beneficial to clarify what a greenway really is. Since there is no single definition of a greenway, the following combinations of descriptions serve as a comprehensive definition. A greenway can exist in almost every environment and can be used for multiple purposes. For most, a greenway is a recreational asset; a linear park with multiple access points, a trail system with open space, a connector between neighborhoods, parks, schools and other uses. In other locations, it can be a path through the woods that provides an alternative transportation route for pedestrians and bicyclists, separating them from the dangers of automobile traffic. A greenway can also serve as an important ecological tool for the protection of the natural environment. In downtown districts or places where off road trails are difficult to obtain, a greenway can be a network of sidewalks. Greenways can serve as educational assets like a linear corridor of land left in a natural, undeveloped state that provides public access to unique, scenic and native lands and waters.

Additionally, a greenway can be an amenity in urban areas that fosters the kind of community spirit, activism and bonding between local citizens that is presently being lost as metropolitan areas grow larger and larger. For municipalities, it can be a land use planning tool that helps to reduce the impact of flood damage by providing an alternative type of development within the floodplain, an economic asset that increases the real estate value of adjacent properties, thereby increasing municipal tax revenues.

Types of Greenway Facilities

There are multiple types of greenway facilities that can be developed in various corridors throughout the proposed greenway system. A single corridor can be comprised of multiple types of facilities. The following types of greenway facilities represent different scenarios that the city may encounter as they develop the Monroe Greenway System. Detailed analysis and design will have to be completed for each segment of the plan in order to determine the best solution. To have a comprehensive understanding of greenways, details and cross-sections of the various facility types can be found in Appendix I: Design Guidelines. Appendix I also includes design guidelines for trail structures and amenities, including signage.

Natural Surface Trails - Most users will associate natural surface trails with hiking trails often found in natural park settings. These types of trails

typically serve hikers more so than cyclists. Minimal site preparation or construction is needed.

Multi-Use Trails (Paved) - Multi-use trails are the most common type of greenways within municipal park systems and trail networks. These trails can be used by hikers, walkers, joggers, cyclists, users in wheelchairs, and parents with strollers, accommodating all levels and abilities of users.

Multi-Use Trails (Unpaved) - Unpaved multi-use trails are often found in upland areas. With proper compaction, these trails can also be used by hikers, walkers, cyclists, users in wheelchairs, and parents with strollers, accommodating all levels and abilities of users. Unpaved trails are often less expensive to construct, but can cost more to maintain depending on trail location, soil compaction, topography, and weather patterns. Joggers, runners, and some cyclists prefer unpaved trails.

Sidewalks - This greenway master plan makes use of existing sidewalks in many areas of the city. Sidewalks often become overland connectors between trails. In some instances, greenway master plans have encouraged the completion of sidewalk systems to help finish trail corridor connections. Sidewalks typically serve pedestrians, but do not always accommodate cyclists.

Sidepaths - When the primary trail is street based and has limited driveway/ intersection crossings, a sidepath is recommended along one side of the roadway. This might occur along some of the more rural two lane roads.

Equestrian Trails - Equestrians prefer separate trails for their use, not only for the types of rides they do, but for safety concerns of the riders and their horses. Horses can be easily startled by hikers and cyclists. Equestrians can use a wide area of space depending on whether they ride individually or in groups.

Multi-use Trails with Equestrian Use - There are many multi-use trails across the country that also include equestrian use. It is important to install appropriate signage indicating trail protocol, especially noting that hikers and cyclists yield to equestrians at all times.

GREENWAY BENEFITS

02



Connecting Communities
Health Benefits
Economic Impact
Environmental Benefits

Any good investment provides a beneficial return. Trails provide a great return on the investment required if properly planned, built, and maintained. The benefits of trails are multifaceted and the subject of numerous studies and reports. The following overview of the many benefits provided by trails is divided into four categories:

- Connecting Communities
- Health Benefits
- Economic Impacts
- Environmental Benefits

Connecting Communities

The primary function of transportation facilities, be it urban streets, rural roads, or interstate highways, is to connect one place to another. Trails serve the same purpose. Well planned trails provide useful connections between homes, schools, businesses, parks, and other nearby destinations.

Provide neighborhood connections

Connections to trail facilities allow residents to choose the form of transportation they would like to use on a daily basis. The absence of such facilities dictates that all trips, no matter how short, are made via automobile. A recently completed study by the U.S. Department of Transportation, the Federal Highway Administration, and the Bicycle and Pedestrian Information Center indicates that when bicycle, pedestrian, and other trail-type facilities are available, people will use those facilities. Their study indicates that the number of trips taken by residents from their homes to nearby destinations using non-vehicular modes of transportation increased by 25% between 2001 and 2010. During this same time period, funding for the development of bicycle, pedestrian, and other trail-type facilities has increased. The provision of dedicated bicycle and pedestrian facilities, like trails, provides alternative choices in transportation.

Facilities for all to use and enjoy

Where most transportation facilities are exclusively designed for vehicles, trails are designed to be inclusive of most non-motorized modes of travel. Trails are designed to accommodate a broad range of users, different age groups, skill levels, and ability levels. The trails designed to be part of the Monroe Greenway System will be easy to access. Some trails will be located along local streams and creeks, while others may be located within the rights-of-way of roads, but separated from roadway travel lanes for safety. Trails are made to accommodate a variety of non-vehicular uses including walking, jogging, cycling, skating or rollerblading, and in some instances, horseback riding. For this reason, trails are designed to be wide enough to support all potential uses. Trails are primarily built with materials that provide stable and consistent surfaces that meet the requirements of the Americans with Disabilities Act. Trails are designed to minimize steep slopes to allow the trail to be utilized and experienced by people of all skill levels and abilities.

Connects communities to nature

Much has been written about peoples' need to interact with nature. Last

Child in the Woods, by Richard Louv, explores the reduced connection between children and nature, its effects on children, and how that connection can be made again. A recent article in Psychology Today shares that “walking through green spaces can put the brain into a meditative state, allowing you to pay attention to the world around you, while creating the calmness needed for reflection. It’s in this calm, quiet reflective state where our creativity can flourish.” Trails provide physical connections to nature in any environment, whether it is through a wooded floodplain within an urban context, or a conservation easement or nature preserve.

Health Benefits

Many people understand that exercise is healthy and it is something that most people agree they need to do more often. However, many people lose sight of just how important exercising is and how it can positively affect day to day life. Experts continue to draw links between exercise and its positive effects on our health.

The American Heart Association states that research has shown that the benefits of walking and moderate physical activity for at least 30 minutes a day can help you reduce the risk of coronary heart disease, improve blood pressure and blood sugar levels, improve blood lipid profile, maintain body weight and lower the risk of obesity, enhance mental well-being, reduce the risk of osteoporosis, reduce the risk of breast and colon cancer, and reduce the risk of non-insulin dependent (type 2) diabetes .

Parks and recreation facilities that offer a safe location for exercise, like trails, can provide residents with easily accessible options for a healthier lifestyle.

Encourages physical activity

Trails can be constructed in a variety of environments. Traditional parks often require certain types of land for development, provide amenities that support a single activity, and can be much more costly to develop. Furthermore, traditional parks tend to function as a destination point where physical activity takes place. Often the users drive to the park, take sports equipment and refreshments with them and plan to spend several hours enjoying the park. The adaptable nature of trails provides an advantage when compared to traditional parks. Trails serve as convenient and accessible venues that support a variety of recreational activities, such as walking, cycling, running, canoeing or kayaking (on blueways), and horseback riding. By design, trails function as linear corridors, purposefully located to create linkages between neighborhoods, providing direct access to a recreation resource. Trails can help make the choice to exercise easier.

Relieves stress and improves psychological health

Many studies have been conducted to measure the benefits that regular exercise offers our physical health. Researchers also recognize the effects that exercise can have on mental health. A Duke University study tracked subjects suffering from depression. The study results indicated that depression was successfully treated for 60% of test subjects who

exercised just 30 minutes a day for three days a week without the use of medication. Interestingly enough, the study also found that depression was successfully treated for the same percentage of test subjects who only used antidepressant medication. Many people are turning to trail activities as their main source of exercise and resulting mental health benefits.

Health care professionals have been slow to encourage exercise as part of a treatment plan for anxiety, opting first for medication. Some within the research community are trying to change this. Two researchers (Jasper Smits of Southern Methodist University and Michael Otto of Boston University) have written a book for mental health professionals and are currently developing literature for general physicians and the public, encouraging the prescription of exercise. Such prescriptions would include recommended amounts, or doses, of exercise. Helpful tips for beginning and continuing an exercise program will be included within each prescription. The direct link between regular exercise and the reduction of anxiety are unknown. Major questions linger as to which types of exercise work best, how much exercise is enough, and how exactly exercise helps with anxiety. Theories of the exercise/anxiety relationships include the brain's chemical response to activity, the effect that exercise has on improving sleep, and the sense of accomplishment given to participants of regular exercise. Despite the insufficient scientific data on the subject, many agree that the benefits stretch beyond physical health.

It is important to provide easily accessible parks and recreation facilities for residents to use for exercise and recreation. Upon the completion of the City of Monroe Greenway Master Plan and the development of the trail system, residents will have a multi-use facility that connects their neighborhood and extends the current recreational infrastructure within the city, providing additional places for residents to exercise.

Economic Impact

The positive impacts that trails have on communities are far-reaching. Economic data from communities where trails have been developed provide real world numbers on the direct and indirect positive economic impacts that trails provide. These numbers help justify the expenditure of public dollars to develop recreational facilities that provide both an improved quality of life and positive long term economic impacts on nearby businesses, municipalities, and homeowners.

Increases property values

Trails are one of the most desired amenities that homeowners look for when purchasing a house. A study by the National Association of Realtors shows that over 50% of Americans agree that homes and businesses should be located within walking distance of stores and shops to reduce the use of automobiles for every shopping trip. Armed with this information, many developers provide trails as amenities within new residential communities. One study in North Carolina indicated that a developer put a premium on homes located near trails. Despite this higher price, the homes nearest to the trails sold first. Homeowners are willing to pay more for homes located

near trails. The convenience of living within a short distance from trails provides added value to nearby properties.

Attracts tourism

Many communities that have invested in their local and regional trail networks have found that these networks of trails attract visitors. These visitors provide a much needed boost to local economies when trails are properly marketed. The communities along the KATY Trail, a 185-mile trail in Missouri, partnered together to market toward outdoor enthusiasts interested in two-to-four day excursions. This combined marketing effort allows local towns to benefit from marketing exposure they would not be able to afford otherwise.

Economic benefits associated with trails are not just limited to large regional trail networks. These benefits can also be experienced in small, rural towns. Abingdon and Damascus, Virginia are two small towns connected by the Virginia Creeper Trail. A survey of trail users conducted as part of a study by the Virginia Department of Conservation in 2004 estimates that trail users pump \$2.5 million into the local economy. Over half of those surveyed were not locals, but visitors who came to the area to ride on the Virginia Creeper Trail. This popular trail has provided southwest Virginia with jobs and income that would have otherwise been spent elsewhere.

Ability to attract new business and retain nearby businesses

Businesses are located along highly traveled roadways to attract potential customers. A business located along a high volume highway increases the exposure that business has to the traveling public. Increased exposure results in increased revenue. Restaurants, hotels, gas stations, and other industries that cater to the motoring public seek locations that give them the best chance of attracting customers.

As the popularity and use of trails continues to grow, business owners have taken notice in a similar fashion. Business owners in New Orleans located, and in some cases moved, their businesses to be closer to the Lafitte Greenway. Business owners along the Great Allegheny Passage Trail and the C&O Canal Trail have experienced increases in revenue since the completion of those trail networks. According to the Year 3 Findings Report for the Greenville Health System Swamp Rabbit Trail, two bike shops along the trail reported an average of 75% of their customers purchased bikes to use the Swamp Rabbit Trail in Year 3, and reported a revenue range from \$300,000 to \$400,000 from trail users. The majority of the businesses surveyed for the Year 3 Findings Report reported increases in sales/revenue ranging from 10% to as high as 85%, with annual revenue from trail users from non-bike shops being as high as \$400,000 according to the managers and owners who were surveyed. Several owners report repeat customers from one year to the next, a trend that contributes to staying in business. Bicycle shops, bed and breakfasts, campgrounds, restaurants, and other similar businesses have found success by locating near trails.

Some government agencies have found it helpful to produce literature and guidelines to help local communities take full economic advantage of trails. The Iowa Department of Transportation developed a handbook

entitled Implementing Trail-Based Economic Development Programs. The handbook provides a list of guiding principles that helps communities determine the types of businesses that will be most likely frequented by trail users and identify the best locations for those businesses. Case studies from similar communities, lessons learned by communities located along existing trails, and a step-by-step, how-to guide for the development of a plan for capitalizing on trail recreation are also provided.

Environmental Benefits

Most people understand that trails provide many benefits, however, many do not realize the environmental benefits that trails can provide. These benefits are very important given the ever expanding development of previously undeveloped lands. Monroe's population grew by 25% between 2000 and 2010 according to 2010 Census data. However, the development associated with any growth can negatively impact our natural resources. Trails help preserve natural amenities, protect agricultural lands, improve water and air quality, and provide habitats for native wildlife.

Preserve natural and agricultural land uses

Trails possess the unique ability to provide transportation facilities and connections between communities while protecting and preserving existing land uses. Most roadways impact wide swaths of land, require extensive site disturbance, and invite development. Trails, by contrast, work within narrow corridors, respond to existing land features, and help preserve existing natural features and land uses. Conservation easements or fee simple purchases of land for trails helps ensure that protected natural open space is preserved. These conservation efforts may also protect rural and agrarian land uses through agricultural conservation easements which restrict development, but allow for agricultural operations to continue in perpetuity.

Improve water quality

The protection and preservation of natural areas along streams provides many very important benefits. Riparian buffers, or protected, undeveloped, and forested lands along either side of streams, act as filters for runoff into streams. These buffers have been shown to remove pollutants, such as sediment, phosphorus, and nitrates from runoff. The trees within riparian buffers help to shade existing streams, keeping temperatures down and sustaining native fish populations. The roots of vegetation within riparian buffers help to stabilize soils within floodplains, thereby reducing the risk of stream bank erosion.

The linear nature of trails mimics the natural alignment of streams and water courses. The similar nature of the two provides added benefit in the protection of personal property within floodplains. The National Flood Insurance Program states that the average annual costs of losses, due to floods over the last 10 years within the U.S., equals \$2.7 billion. The cost of damage to homes and structures can be dramatically reduced by protecting floodplains through the implementation of development restrictions and the acquisition of lands for trails.

Improve air quality

Trails can help improve air quality in two distinct ways. First, trails provide alternative transportation routes. An EPA study in 2006 revealed that pollution from automobiles causes over half of the carbon monoxide, over a third of the nitrogen oxides, and almost a quarter of the hydrocarbons in our atmosphere. When properly planned, trails can be used by cyclists and pedestrians to commute to and from work, visit a park, or run errands. The reduced use of automobiles for such trips decreases the amount of pollution being delivered into the atmosphere.

The second way trails improve air quality is through the trees they preserve and protect. Trees can help reduce air pollutants such as carbon monoxide, nitrogen dioxide, ozone particulates, and sulfur dioxide through gas intake in leaves. Tree surfaces can intercept pollution particulates in the air. Preserving trees along trails within urban areas can have a significant impact on reducing the amount of localized air pollution.

Provide wildlife habitats and wildlife corridors

Natural, undeveloped lands provide habitats for numerous varieties of flora and fauna. Trails help to preserve these natural areas, protecting habitats for birds, mammals, and plants. Trails also provide connectivity between fragmented natural areas within urban environments. Signage can be added to trails to educate trail users on the types of local plants and animals that benefit from the preservation of land on which these facilities exist.

EXISTING CONDITIONS 03



Geography of the Study Area
History
Population
Carolina Thread Trail
Existing Greenway Facilities

Geography of the Study Area

The City of Monroe is centrally located in Union County, approximately seven miles southeast of Charlotte, NC. It is surrounded by smaller communities like Indian Trail, Weddington, Unionville, and Wingate. Due to its unique geographic location, it has the advantage of being part of one of the fastest growing metropolitan areas in the nation, but still maintains the charm of a smaller southern community. Monroe occupies an area of approximately 25 square miles, serves as the county seat, and is one of 14 municipalities located in Union County. It is surrounded by five universities, several liberal arts colleges and is served by two community colleges. Several major roadways bisect the City of Monroe: US 74, US 601, NC 200, NC 84, NC 207 and NC 75. Interstate 485 is located approximately six miles to the northwest. These major routes provide great access to many resources in and around the City of Monroe.

Several streams and tributaries flow into and through Monroe, including: Dry Fork, Bearskin Creek, Stewart's Creek, Richardson Creek, Little Richardson Creek, and Camp Branch. Other water related resources in and around Monroe include Lake Monroe, Lake Twitty, and Lake Lee. These major water resources provide recreation opportunities while remaining valuable water supply reservoirs.

History

The Town of Monroe (now City of Monroe) was incorporated in December 1844, two years after the formation of Union County. Monroe, named in honor of President James Monroe, became the county seat simultaneously with its incorporation. With the completion of the Carolina Central Railway (now CSX) thirty years later, Monroe became a major railroad hub between Wilmington and Charlotte.

The original city limits were less than one-half square mile. Over the next century, the town grew to just under four square miles, somewhat centered around the original downtown area. Since the 1940's, the growth has been predominantly to the northwest towards Charlotte along US 74 and Old Charlotte Highway. While some growth has occurred to the east towards Wingate and to the south-west, the trend continues to expand towards Mecklenburg County.

Many of the early buildings in Historic Downtown Monroe remain standing today, and the City prides itself on the collection of historic structures that the city has been able to retain and restore in the downtown area. These structures serve as a setting to understanding local history and folklore. This Greenway Master Plan identifies multiple greenway corridors that access the historic downtown area, including the Historic Downtown Monroe Greenway, enabling the community to have direct access to this rich history.

Population

Monroe has seen a steady increase in its population over the past 15 years. In 2000, the population was 26,228, by 2010 it had increased 25 percent to 32,797, and 2013 estimates show the population as 33,975. Most of that growth has been focused in the northwest area of Monroe along the US 74 Corridor.

Monroe's population will continue to increase and so will the need for recreational facilities. Greenways are an important element in the overall recreation plan for the city. This master plan identifies greenway corridors that are instrumental for the development of a comprehensive system. Providing greenways for the community will be an essential part of the future transportation network, economic foundation, and recreational activity of Monroe. By developing these facilities, the city will attract new residents to the area, which will increase property values, tax revenues and increase health awareness.

Monroe is a great place to live, work and raise a family. A comprehensive greenway system will make it an even better place to live.

Carolina Thread Trail

The Carolina Thread Trail Master Plan for Union County Communities was adopted by the City of Monroe in late 2011 and outlines the steps necessary to preserve natural amenities, conserve historic sites, and provide public recreation facilities through greenway and trail development. The Carolina Thread Trail is a regional network of greenway, trails, and conserved lands that will reach approximately 2.3 million citizens throughout 15 counties in North and South Carolina. Approximately 14.8 miles of adopted Carolina Thread Trail is within the city limits of Monroe, and is highlighted as part of this Greenway Master Plan.

Existing Greenway Facilities

Bearskin Creek Greenway

The Bearskin Creek Greenway is an existing 0.3 mile paved trail that runs through Don Griffin Park from Allen Street, heading north along Skyway Drive, following along the backside of the baseball field to Miller Street



Bearskin Creek Greenway at Don Griffin Park

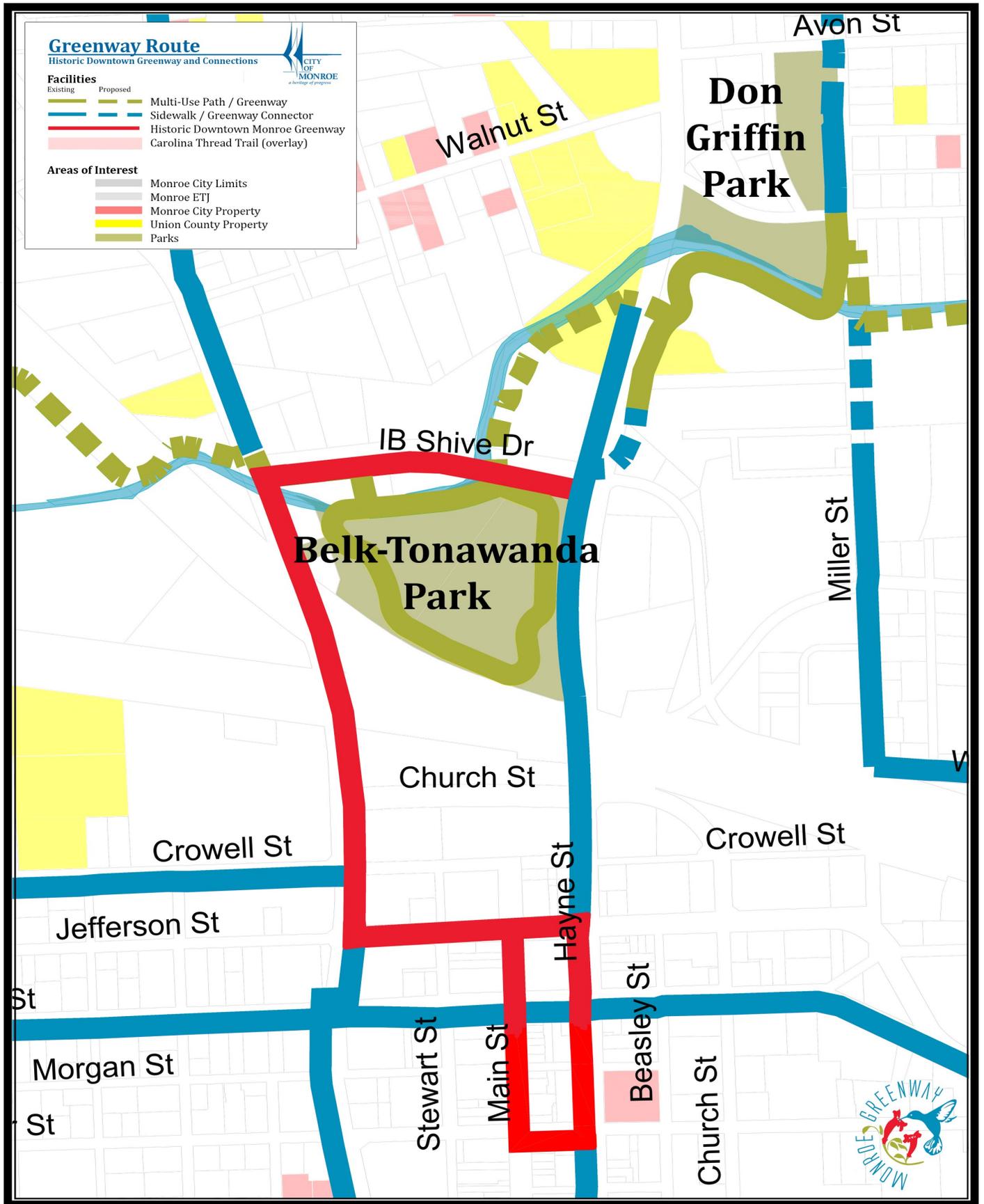
and then north to where it terminates at Cedar Street. Phase II of Bearskin Creek Greenway is currently being designed and once constructed will be an additional 1.6 miles of paved trail from Icemorlee Street to Skyway Drive, generally following the creek. When complete, the greenway will connect residential neighborhoods at each end with three City-owned parks (Don Griffin, Belk Tonawanda, and Dickerson) as well as the Union County Farmers Market.

Belk-Tonawanda Park Trail

A 0.4 mile trail follows along the perimeter of Belk-Tonawanda Park, with a portion along Bearskin Creek. This will be incorporated into the Bearskin Creek Greenway once Phase II is constructed.

Historic Downtown Monroe Greenway Loop

The Historic Downtown Monroe Greenway provides educational opportunities for the citizens of Monroe as well as visitors as you discover the rich history of Historic Downtown Monroe. The historic downtown loop is approximately 1.5 miles in length, utilizing existing sidewalks, and extends from IB Shive Drive, north of Belk Tonawanda Park, then heads south along Charlotte Avenue, east along Jefferson Street, south along Hayne Street, west along Windsor Street, and then heads north along Main Street to connect back up to Jefferson Street to loop back up to the starting point at Belk Tonawanda Park. Banners and markers along the sidewalks guide you on this greenway loop. For additional information on the Historic Downtown Monroe Greenway, including a map with details of significant sites along the route, see Appendix II.



Existing Greenway Facilities

Monroe Country Club Nature Trail Loop



The Monroe Country Club Nature Trail Loop winds around the golf course utilizing existing paved and natural surface trails. Enjoy this peaceful setting while getting beautiful views of the golf course and Richardson Creek.

Monroe Aquatics and Fitness Center Walking Course



An outdoor walking course has been painted within the parking lot of the Monroe Aquatics and Fitness Center, highlighting a 0.5 mile loop if you follow along the blue and yellow marked course.

Parks Williams Athletic Complex Trail



Parks Williams Athletic Complex has paved trail meandering all through the park around the multiple ball fields.

PROPOSED GREENWAY SYSTEM

04



Public Involvement
Site Familiarization and Feasibility
Proposed Greenway Corridors
Central Monroe
Northwest Monroe/Airport Area
North Monroe
East Monroe
South Monroe
Greenway Route Breakdown
Priority Projects

Public Involvement

Public involvement is critical to any successful public planning process. For this Greenway Master Plan, public involvement occurred concurrently with input for the update to the City of Monroe's Comprehensive Parks, Recreation, and Open Space Master Plan. During the fall/winter of 2014, five community engagement sessions were held in various locations around the city. Each session was designed to educate and gather input from City residents, with the input received being used to directly influence the development of the Greenway Master Plan and the Comprehensive Parks, Recreation, and Open Space Master Plan for the City of Monroe.

A total of 124 individuals participated in the community engagement sessions. The location and attendance for each session is included below and a summary of the sessions can be found in Appendix III.

Session #1

Wednesday, November 19, 2014
Ellen Fitzgerald Senior Center
327 South Hayne Street
Monroe, NC 28112
10am - 12pm
Attendance: 40 approx.

Session #2

Saturday, November 22, 2014
Sutton Park Community Center
2303 Brooks Street
Monroe, NC 28110
2pm - 4pm
Attendance: 42 approx.

Session #3

Saturday, November 22, 2014
Parks Williams Athletic Complex
2011 Ashton Avenue
Monroe, NC 28110
5pm - 6pm
Attendance: 12 approx.

Session #4

Monday, December 8, 2014
Monroe Aquatics & Fitness Center
2325 Hanover Drive
Monroe, NC 28110
6pm - 8pm
Attendance: 24

Session #5

Thursday, December 11, 2014
Monroe City Hall
300 West Crowell Street
Monroe, NC 28112
6pm - 8pm
Attendance: 6

In addition to the community engagement sessions, ETC/Leisure Vision conducted a City of Monroe Community Interest and Opinion Survey during the fall of 2014. The survey was designed to obtain statistically valid results from households throughout the city. The survey was administered by mail, web and phone.

ETC/Leisure Vision worked extensively with the City of Monroe in the development of the survey questionnaire. A copy of the survey can be found in Appendix III. This work allowed the survey to be tailored to issues of strategic importance to help plan the future greenway system.

A seven-page survey was mailed to a random sample of 3,000 households throughout the city. Approximately three days after the surveys were mailed, each household that received a survey also received an automated voice message encouraging them to complete the survey. In addition, about two weeks after the surveys were mailed, ETC/Leisure Vision began contacting households by phone. Those who had indicated that they had not returned the survey were given the option of completing it by phone.

The goal was to obtain a total of at least 600 completed surveys. ETC/Leisure Vision met that goal with a total of 603 surveys completed. The results of the random sample of 603 households have a 95% level of confidence with a precision rate of at least +/-3.9%.

Major survey findings include:

- Fifty-four percent (54%) or 17,538 households, have a need for walking and biking trails
- Based on the sum of respondent households top four choices, 35% indicated walking and biking trails was the most important recreation facility to their household
- Based on the sum of respondent households top three choices, 46% indicated the improvement of physical health and fitness was the most important benefit to their household
- Based on the percentage of respondents who indicated either “very important” or “somewhat important” when asked the level of importance placed on greenways to provide additional services, 86% indicated that environmental protection was important and only 7% indicated it was not important. Based on similar levels of importance, 84% of respondents households indicated a network of walking, biking and nature trails was important compared to only 8% who indicated that it was not important
- Based on the percentage of respondent households who are either “very supportive” or “somewhat supportive” of the City of Monroe taking actions to improve the greenway system, 79% support the development of new walking/biking trails and connection of existing trails, and 76% support the use of greenways to develop trails and recreation facilities

Site Familiarization and Feasibility

During the site familiarization and feasibility phase, several elements were reviewed and researched. These elements included:

- Following and analyzing conceptual trail alignments, as identified in the 2005 Greenway/Bikeway Master Plan, with respect to stream corridors, utility easements, road right-of-ways, existing topography, property boundaries and ownership
- Identifying boundaries along potential alignments not owned or controlled by the City of Monroe or Union County

- Determining proposed projects, public and private, scheduled to occur along potential alignments
- Identifying the existing sidewalk network
- Identifying potential routing alternatives
- Identifying the location and use of amenities, parks, and destinations
- Identifying potential connections and linkages to adjacent areas
- Identifying utility corridors for possible routings
- Identifying stream corridors for possible routings
- Identifying railway corridors for possible routings
- Identifying potential streetscapes for widened sidewalks
- Reviewing state and local thoroughfare plans
- Reviewing existing ordinances dealing with open space and land dedications and parks and recreation fees for development
- Identifying existing and potential open space for acquisition and/or dedication for greenway use.



Proposed Greenway Corridors

The Greenway Master Plan for the City of Monroe focuses on developing a system of sidewalks and greenways that will connect amenities and destinations. Destinations include parks, neighborhoods, schools, downtown and commercial areas. In developing a Greenway Master Plan for the City of Monroe, the following factors were taken into consideration:

- Location of amenities
- Existing sidewalks
- Existing and proposed roadways
- Existing greenways
- Proposed greenway/trail corridors through existing planning documents
- Current city and county-owned properties
- Geographic features (streams, overhead power easements, sewer easements, etc.)

These factors guided the design team to develop a greenway system that provides connectivity between Monroe's schools, parks, historic downtown district and commercial areas. The master plan is comprised of multiple greenways that are illustrated within this section. The master plan divides the greenway system into existing sidewalks, proposed sidewalks, existing trails, and proposed trails. In order to gain a better understanding of the greenway system, the master plan has been divided into simple geographic areas: Central Monroe, Northwest Monroe/Airport Area, North Monroe, East Monroe and South Monroe. These areas will be referenced throughout this section as the greenway system is described in more detail. The overall system map Figure-1 illustrates the locations of these areas.

Central Monroe

Central Monroe contains most of the city's amenities and destinations. Within this area there are five schools, a career center, a library, the historic downtown area, ten parks and multiple shopping centers. Beginning in downtown, most of the routes utilize the existing sidewalk network. The Historic Downtown Monroe Greenway provides educational opportunities for the citizens of Monroe as well as visitors as you discover the rich history of Historic Downtown Monroe. The historic downtown loop is approximately 1.5 miles in length and extends from IB Shive Drive, north of Belk Tonawanda Park, then heads south along Charlotte Avenue, east along Jefferson Street, south along Hayne Street, west along Windsor Street, and then heads north along Main Street to connect back up to Jefferson Street to loop back up to the starting point at Belk Tonawanda Park. For additional information on the Historic Downtown Monroe Greenway, including a map with details of significant sites along the route, see Appendix II.

From the historic district, the greenway moves along Franklin Street in both directions. Traveling west, the greenway extends to the city limits and to the east it extends to Sunset Drive. South of Franklin Street the greenway system uses Johnson Street, Charlotte Avenue, and Hayne Street. These

routes extend south to Lancaster Avenue/Morrow Avenue, with the route along Hayne Street extending south to Sunset Drive, traversing through the residential historic district and connecting to Sunset Park. Once on Morrow Avenue, the greenway goes west toward Lancaster. The greenway then travels southwest on Lancaster until it intersects with Griffith Road. At Griffith the greenway splits, with one route continuing on Lancaster while the other is along Griffith. The Lancaster route continues southwest accessing Johnson Street, which turns north back toward Franklin and Brewer Drive connecting to the Central Academy of Technology & Arts and the Wolfe School.

The other route that turns south along Griffith Road connects to Walter Bickett School. Just past Walter Bickett School the greenway intersects with Sunset Drive, where it splits again. One route travels east on Sunset Drive connecting Sunset Park, Monroe Middle School and Monroe High School. The other route continues south into the South Monroe area.

Moving north out of the historic downtown, the greenway system travels on Hayne Street and Charlotte Avenue. Traveling along Hayne Street the greenway system crosses the CSX railroad tracks and accesses the existing and proposed Bearskin Creek Greenway. Once complete, the Bearskin Creek Greenway will connect Dickerson Park, the Union County Farmer's Market, Belk Tonawanda Park, Don Griffin Park, Creft Park, and Sutton Park and Community Center.



From Don Griffin Park the greenway system travels north and south along Miller Street. To the south it connects to Winchester. At Winchester the greenway turns east connecting to the Winchester Center. Passing the Center it continues to Morgan Mill Road where it turns south, connecting J. Ray Shute Center and Monroe Middle School before intersecting with Sunset Drive.



Traveling north on Miller Street the greenway continues until it reaches Phifer Street where it turns east. The greenway then continues to Stafford Street Extension. Turning north along Stafford Street the greenway crosses US 74 using an existing crossing signalization system. Once across US 74 the greenway travels along Stafford Street Extension, where it connects with Sutherland Avenue. The greenway continues east/southeast along Sutherland until it intersects with Sunset Drive, crossing over the proposed Bearskin Creek Greenway.

At Dickerson Park the greenway provides access to two different areas of Monroe. The first corridor is located behind the baseball field next to Bearskin Creek, potentially utilizing an existing sewer easement. The sewer easement follows the creek, crosses Goldmine Road and makes its way toward the Charlotte-Monroe Executive Airport. The second greenway corridor connects to Icemorlee Street and travels north on Icemorlee until it intersects with Goldmine Road. It then turns west on Goldmine for approximately 0.38 miles where it then heads north along Martin Luther King Jr. Boulevard. From there the route continues north, turning into Dickerson Boulevard. Traveling along Dickerson, the greenway crosses Commerce Drive and then crosses US 74 where it is proposed to parallel US 74 for a short distance until it reaches Secrest Shortcut Road and then heads east on Euclid Street until it terminates at the Concord Avenue greenway segment.

Traveling north along Charlotte Avenue the greenway crosses the CSX railroad tracks again as it approaches Concord Avenue. At Concord Avenue the greenway corridor travels north until it reaches the intersection with Skyway Drive, where it heads northwest along the proposed Stewarts Creek Greenway. (Figure-2)

Northwest Monroe/Airport Area

There are two routes that access this area of Monroe. The first route follows along Bearskin Creek and Dry Fork Creek, potentially utilizing an existing sewer easement. This route travels northwest adjacent to the CSX railroad.

The benefit of this route is that it provides access to the Northwest Monroe/ Airport Area from Dickerson Park without having to cross the railroad tracks, as it follows along the adopted Carolina Thread Trail route. As it travels along the creek it eventually ties into the proposed airport loop trail. The airport loop is a trail that is comprised of existing and proposed sidewalks. Although this loop follows along existing road rights-of-way, it will be necessary to coordinate with the airport in order to determine the feasibility of this loop. The second route is along Old Charlotte Highway/Charlotte Avenue.

This greenway route follows Charlotte Avenue until it reaches the city's limits. Just before it reaches the city limits and before it crosses the CSX railroad tracks, the greenway route intersects with Rocky River Road. Here the route utilizes additional sewer easements traveling northeast toward US 74. The greenway turns northwest onto US 74, then travels along the southwest side of US 74 up to the intersection of North Rocky River Road, where it utilizes the traffic signal to cross over to the northeast side of US 74. A pedestrian signal will need to be installed in order to allow sufficient time to cross the intersection. Once on the northeast side, the greenway travels southeast along US 74 for approximately 0.5 miles where it intersects with a sewer easement to continue north to connect into the Stewarts Creek greenway corridor. (Figure-3)

North Monroe

This route begins at Martin Luther King Jr. Boulevard and makes a critical connection from the Monroe Aquatics and Fitness Center to the Parks Williams Athletic Complex, and then north to the Rolling Hills Country Club. Currently, some individuals use Rolling Hills Drive as a loop trail for walking and biking. It was voiced throughout this process, as well as past planning processes, that this should be included as part of the greenway system. This greenway corridor also provides a connection to Hunt Club Avenue for a neighborhood access. From the northwest portion of the Rolling Hills Country Club community, the greenway follows along Stewarts Creek for approximately 5.3 miles from Skyway Drive until it terminates at Myers Road. (Figure 4)

East Monroe

This route begins in Sutton Park and runs along Richardson Creek all the way to the Monroe County Club, where the greenway follows along 1.65 miles of existing trail around the golf course, and an additional 0.3 miles of proposed trail along the shoreline of Lake Lee. From Monroe County Club the greenway turns east utilizing a tributary of Richardson Creek. As it continues east it follows the boundary of the city limits until it reaches Old Pageland – Monroe Road. It then turns southeast along Old Pageland – Monroe Road for approximately 0.32 miles until it turns northeast along another tributary. The greenway continues along that tributary and connects to Jesse Helms Park. It is important to note that this route is also part of the Carolina Thread Trail.



Another greenway route within this area is the Quarry Road route, connecting Richardson Creek over to Sutherland Avenue. This route provides a direct link between the East side of Monroe and the Central area of Monroe. (Figure-5)

South Monroe

The greenway network that has been identified in South Monroe provides access to environmental education opportunities that exist along Richardson Creek. The greenway begins at Sunset Drive just south of Monroe High School. It follows Medlin Road down to Richardson Creek. It turns west at the creek and follows the creek all the way to the Richardson Creek Tract. Since this greenway is connected to Sunset Drive, it provides great access to an environmental area that students from Monroe High School and Monroe Middle School do not currently have. The route from Sunset Park south to the Richardson Creek Tract is also part of the adopted Carolina Thread Trail route for Monroe and Union County. (Figure-6)

Greenway Route Breakdown

Central Monroe

- Bearskin Creek Greenway, Phase I 0.27 Miles
(Consists of existing trail from Meadow Street to Cedar Street through Don Griffin Park)

- Bearskin Creek Greenway, Phase II 1.60 Miles
(Consists of proposed trail from Icemorlee Street, through Dickerson Park, crossing N. Johnson Street, to N. Charlotte Avenue, along existing trail at Belk Tonawanda Park, under IB Shive Drive to the Farmer's Market and connecting into Phase I at Don Griffin Park)
- Bearskin Creek Greenway, Phase III 0.39 Mile
(Consists of proposed trail from Don Griffin Park to Creft Park)
- Bearskin Creek Greenway/Richardson Creek Greenway 3.02 Miles
(Consists of proposed trail from Creft Park to Sutton Park and Community Center)
- Sutherland Avenue 1.74 Miles
(Consists of proposed sidewalk from Stafford Street Extension to Quarry Road)
- Stafford Street Extension 0.68 Mile
(Consists of existing sidewalk (0.5 mile) and proposed sidewalk (0.18 mile) from Sutherland Avenue to Phifer Street)
- Phifer Street 0.21 Mile
(Consists of existing sidewalk (0.08 mile) and proposed sidewalk (0.13 mile) from Stafford Street Ext. to Miller Street)
- Miller Street 0.19 Mile
(Consists of proposed sidewalk (0.13 mile) and existing sidewalk (0.06 mile) from Phifer Street to Bearskin Creek Greenway at Don Griffin Park)
- Miller Street 0.30 Mile
(Consists of proposed sidewalk (0.10 mile) and existing sidewalk (0.20 mile) from Bearskin Creek Greenway at Don Griffin Park south to Winchester Avenue)
- Winchester Avenue 0.61 Mile
(Consists of existing sidewalk from Miller Street to Morgan Mill Road and provides a direct connection to the Winchester Center)
- Morgans Mill Road/Charles Street 0.96 Mile
(Consists of existing sidewalk (0.46 mile) and proposed sidewalk (0.50 mile) from Winchester Avenue to Sunset Drive and provides a direct connection to the J. Ray Shute Center)
- Morrow Ave./Maurice Street/Tallyrand Ave. 0.63 Mile
(Consists of proposed sidewalk (0.19 mile) and existing sidewalk (0.44 mile) from Charles Street to Charlotte Avenue)
- Hayne Street 0.45 Mile
(Consists of existing sidewalk from Windsor Street to Sunset Drive, connecting into Historic Downtown Monroe Greenway to Sunset Park)

and providing a direct connection to the Ellen Fitzgerald Citizen Center, while traversing through the residential historic district)

- Hayne Street/Skyway Drive 0.56 Mile
(Consists of existing sidewalk from Windsor Street north to Bearskin Creek Greenway, Phase II, with a portion being along the Historic Downtown Monroe Greenway)
- Concord Avenue 1.94 Miles
(Consists of existing sidewalk (0.61 mile) and proposed sidewalk (1.33 miles) from IB Shive Drive north to Skyway Drive)
- Concord Avenue to Dickerson Park 2.53 Miles
(Consists of proposed sidewalk (2.33 miles) and existing sidewalk (0.20 mile), following along Euclid Street west to Secret Shortcut Road, then west paralleling Andrew Jackson Highway, then southwest along Dickerson Boulevard/Martin Luther King Jr. Boulevard, and east on Goldmine Road until it intersects with Icemorlee Street, connecting directly into Bearskin Creek Greenway, Phase II at Dickerson Park)
- Crowell Street 0.35 Mile
(Consists of existing sidewalk from Charlotte Avenue west to Johnson Street)
- Johnson Street 0.60 Mile
(Consists of existing sidewalk from Crowell Street south to Lancaster Avenue)
- Charlotte Avenue 0.71 Mile
(Consists of existing sidewalk from IB Shive Drive south to Lancaster Avenue/Morrow Avenue, with a portion being along the Historic Downtown Monroe Greenway)
- Jefferson Street 0.16 Mile
(Consists of existing sidewalk from Charlotte Avenue east to Hayne Street, following along the Historic Downtown Monroe Greenway)
- Main Street 0.14 Mile
(Consists of existing sidewalk from Jefferson Street south to Windsor Street, following along the Historic Downtown Monroe Greenway)
- Windsor Street 0.05 Mile
(Consists of existing sidewalk from Main Street east to Hayne Street, following along the Historic Downtown Monroe Greenway)
- Lancaster Avenue 1.08 Miles
(Consists of existing sidewalk (0.48 mile) and proposed sidewalk (0.60 mile) from Charlotte Avenue west to Brewer Drive, providing a direct connection to the Central Academy of Technology & Arts and the Wolfe School)

- Franklin Street 2.77 Miles
(Consists of proposed sidewalk (0.68 mile) and existing sidewalk (2.09 miles) from Dale Street at the city limits, east to Sunset Drive, making a connection to CMC-Union)
- Sunset Drive/Sutherland Avenue 2.49 Miles
(Consists of proposed sidewalk (0.28 mile) and existing sidewalk (2.21 mile) from Griffith Road, connecting to Sunset Park, east to Quarry Road)
- Griffith Road 0.48 Mile
(Consists of existing sidewalk (0.26 mile) and proposed sidewalk (0.22 mile) from Lancaster Avenue south to Victoria Avenue)

Northwest Monroe/Airport Area

- Old Charlotte Highway 3.86 Miles
(Consists of proposed sidewalk from Martin Luther King Jr. Boulevard northwest to Rogers Road at the city limits)
- Old Charlotte Highway to Stewarts Creek Greenway 2.37 Miles
(Consists of proposed trail (1.46 miles) and proposed sidewalk (0.91 miles) to connect Old Charlotte Highway north east to the Stewarts Creek Greenway, with the proposed sidewalk being along and crossing Andrew Jackson Highway, utilizing a signalized intersection with Rocky River Road)
- Bearskin Creek Greenway/Dry Fork Creek Greenway 4.32 Miles
(Consists of proposed trail from Dickerson Park northwest toward the Charlotte-Monroe Executive Airport, following along the proposed Carolina Thread Trail)
- Dry Fork Greenway Neighborhood Connection 0.25 Mile
(Consists proposed trail from the Dry Fork Creek Greenway to Winthrop Lane, providing a connection to Colonial Village)
- Charlotte-Monroe Executive Airport Connection/Loop 3.02 Miles
(Consists of existing sidewalk (0.78 mile) and proposed sidewalk (2.24 miles) along Airport Road to Goldmine Road to Corporate Center Drive and back to Airport Road)

North Monroe

- Monroe Aquatics Cntr./Parks Williams/Rolling Hills Cc 2.07 Miles
(Consists of proposed trail (0.78 mile), proposed sidewalk (1.1 miles) and existing sidewalk (0.19 mile) from Martin Luther King Jr. Boulevard, down Commerce Drive, along Williams Road Extension/Hanover Drive, through the Monroe Aquatics and Fitness Center utilizing a portion of the existing sidewalk, then a proposed trail to connect to the Parks Williams Athletic Complex, through the park utilizing existing trail, and then along Nelda Drive to a proposed trail to connect to Arnold Drive to Carroll Street and then ending at the Rolling Hills Country Club)

- Rolling Hills Country Club Loop 2.37 Miles
(Consists of proposed sidewalk along Rolling Hills Drive within the Rolling Hills Country Club and a small portion along Andrew Jackson Highway to complete the loop)
- Rolling Hills Country Club to Stewarts Creek Greenway 0.64 Mile
(Consists of proposed trail to connect the Rolling Hills Country Club to Stewarts Creek Greenway, and also providing a connection to Hunt Club Avenue)
- Stewarts Creek Greenway 5.30 Miles
(Consists of proposed trail from Concord Avenue/Skyway Drive northwest to Myers Road)

East Monroe

- Quarry Road 0.71 Mile
(Consists of proposed sidewalk from Sutherland Avenue to Richardson Creek)
- Richardson Creek Greenway 1.16 Miles
(Consists of proposed trail from Sutton Park and Community Center south to the Monroe Country Club)
- Monroe Country Club Nature Trail Loop 1.94 Miles
(Consists of existing trail (1.65 miles) and proposed trail (0.29 mile) around the Monroe Country Club golf course, with a portion along Lake Lee)
- Monroe Country Club/Jesse Helms Regional Park 1.99 Miles
(Consists of proposed trail (1.67 miles) and proposed sidewalk (0.32 mile) along Old Pageland Monroe Road to connect the Monroe Country Club Nature Trail to the Jesse Helms Regional Park, following along the adopted Carolina Thread Trail route)

South Monroe

- Parker Haynes Parcel Connector 1.31 Miles
(Consists of proposed sidewalk (0.25 mile) and proposed trail (1.06 miles) from Victoria Avenue east to Crescent Street, along the backside of the Treehouse Vineyard along an unnamed creek, and through the Parker Haynes Parcel to connect to the proposed Richardson Creek Greenway, following along the adopted Carolina Thread Trail route)
- Richardson Creek Greenway 4.43 Miles
(Consists of proposed trail from the Richardson Creek Tract east to Medlin Road, with a portion following along the adopted Carolina Thread Trail route)
- Medlin Road 0.63 Mile
(Consists of proposed sidewalk from the proposed Richardson Creek Greenway to Sunset Drive)

Greenway System Totals

Greenway System Totals	
Existing Sidewalks	12.32 Miles
Proposed Sidewalks	20.68 Miles
Existing Trails	1.92 Miles
Proposed Trails	26.39 Miles
Total Greenway System	61.31 Miles

Priority Projects

Bearskin Creek Greenway, PH II (EB-5011) – 1.6 miles

Land Acquisition and design is currently underway for Phase II of Bearskin Creek Greenway, which will extend the greenway 1.6 miles and connect Dickerson Park to Don Griffin Park. The project is programmed in NCDOT's current State Transportation Improvement Program (STIP), with \$1,420,000 in Bicycle Enhancement funding earmarked for construction of the project in FY 2016. (Figure-7)

- Construction cost estimate - \$1,294,000 (from Kimley-Horn)



Monroe Aquatics & Fitness Center to Parks Williams – 0.3 mile

It is recommended that the city pursue a greenway connection from the Monroe Aquatics and Fitness Center to Parks Williams Athletic Complex within the first five years of implementation of this Greenway Master Plan. Funding for this project could be sought from the Recreational Trails Program, NCDOT through the STIP, the NC Parks and Recreation Trust Fund, and/or private funding sources such as the Union County Community Foundation and American Hiking Society. It is also recommended that the city review local funding options including funding through the city's general fund and debt financing options through loans and/or bonds. (Figure-8)

Cost Estimate:

Design	\$22,876
1,752 LF of Paved Trail	\$227,760
1 Midblock Crossing	\$1,000
TOTAL	\$251,636

*Cost does not include land/easement acquisition.

Parcels Needed (portions):

City of Monroe	9261016A
City of Monroe	9261012A
Union Baptist Association	9265012B
Moore Donald Lee & Jean T	9261005G
East Metro Partners	9261005F
Nelda Jean W. Davis, Inc.	9261005K
City of Monroe	9261005



Bearskin Creek Greenway, PH III – 0.4 miles

Once construction of Phase II of Bearskin Creek Greenway from Dickerson Park to Don Griffin Park begins, the city should focus on the next phase of the project, connecting Don Griffin Park over to Creft Park. Funding for this project could be sought from the Recreational Trails Program, NCDOT through the STIP, the NC Parks and Recreation Trust Fund, Clean Water

Management Trust Fund for land acquisition, and/or private funding sources such as the Union County Community Foundation and American Hiking Society. It is also recommended that the city review local funding options including funding through the city's general fund and debt financing options through loans and/or bonds. (Figure-9)

Cost Estimate:

Design	\$26,932
2,064 LF of Paved Trail	\$268,320
1 Midblock Crossing	\$1,000
TOTAL	\$296,252

*Cost does not include land/easement acquisition.

Parcels Needed (portions):

City of Monroe	9229015B
Bearskin Mill, LLC	9228228
City of Monroe	9228091



Winchester Center to Bearskin Creek Greenway at Don Griffin Park – 0.9 mile

Looking for a project that could be accomplished fairly quickly, at a low cost, and make a substantial positive impact on the community, the city should focus on connecting the Winchester Center to Bearskin Creek Greenway at Don Griffin Park. The project consists of existing sidewalks for the majority of the 0.9 mile connection, with only a gap of roughly 1,035 linear feet. It is proposed that this connection be accomplished with the addition of 760 feet of sidewalk along Miller Street with a crosswalk at Heath Street, and 275 linear feet of new trail within Griffin Park to connect up to the existing Bearskin Creek Greenway. Funding for this project could come from the

city's allocation of Powell Bill Funding, as well as funding through the city's general fund. (Figure-10)

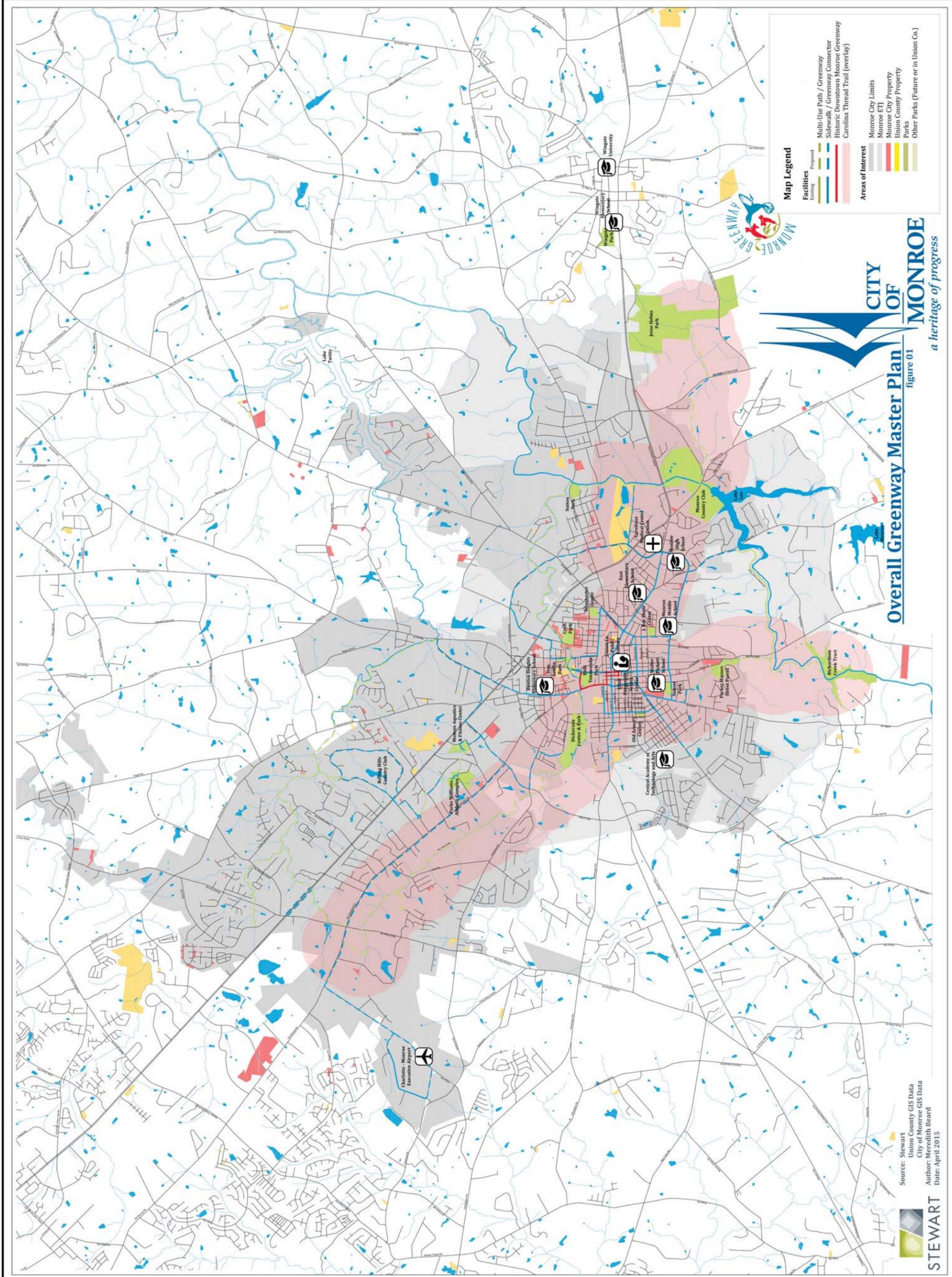
Cost Estimate:

Design	\$4,967
760 LF of Sidewalk	\$12,920
275 LF of Paved Trail	\$35,750
1 Midblock Crossing	\$1,000
TOTAL	\$54,637

*Cost does not include land/easement acquisition.

Parcels Needed (portions):

Nettles Mark A	9229015
City of Monroe	9229015D
City of Monroe	9229015C
City of Monroe	9229015B



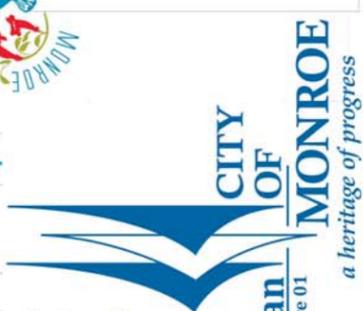
Map Legend

Facilities

- Existing: Multi-Use Path / Greenway
- Proposed: Sidewalk / Greenway Connector
- Historic Downtown Monroe Greenway
- Carolina Thread Trail (overlay)

Areas of Interest

- Monroe City Limits
- Monroe ETJ
- Monroe City Property
- Union County Property
- Parks
- Other Parks (Future or in Union Co.)

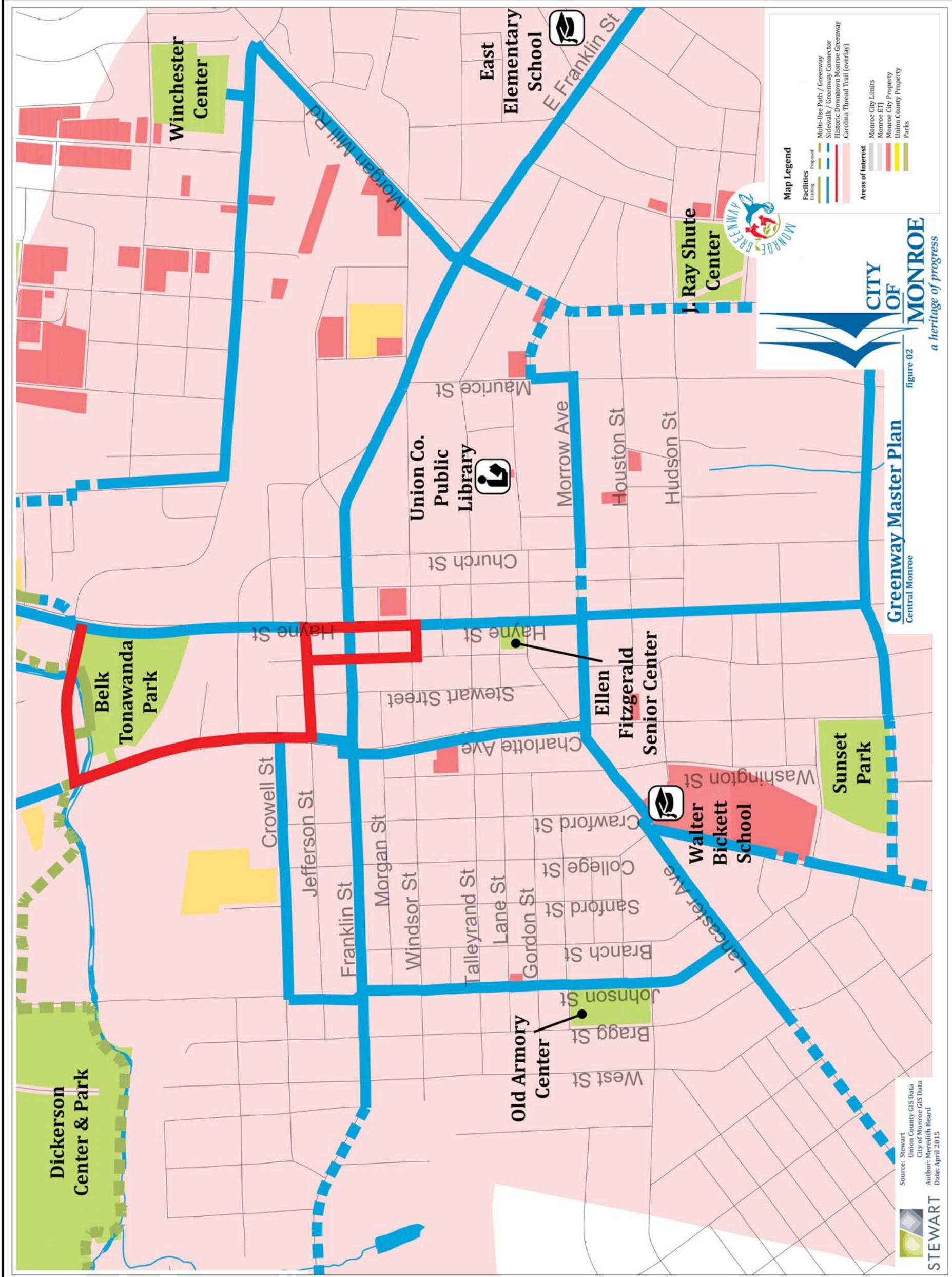


Overall Greenway Master Plan

figure 01

Source: Stewart
 Union County GIS Data
 City of Monroe GIS Data
 Author: Meredith Beard
 Date: April 2015





Map Legend

Facilities

- Proposed: Multi-Use Path / Greenway
- Existing: Sidewalk / Greenway Connector
- Historic Downtown, Monroe Greenway
- Carolina Thread Trail (overlay)

Areas of Interest

- Monroe City Limits
- Monroe ETJ
- Monroe City Property
- Union County Property
- Parks



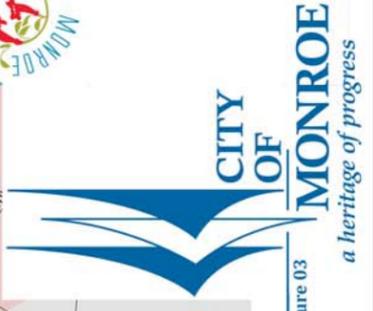
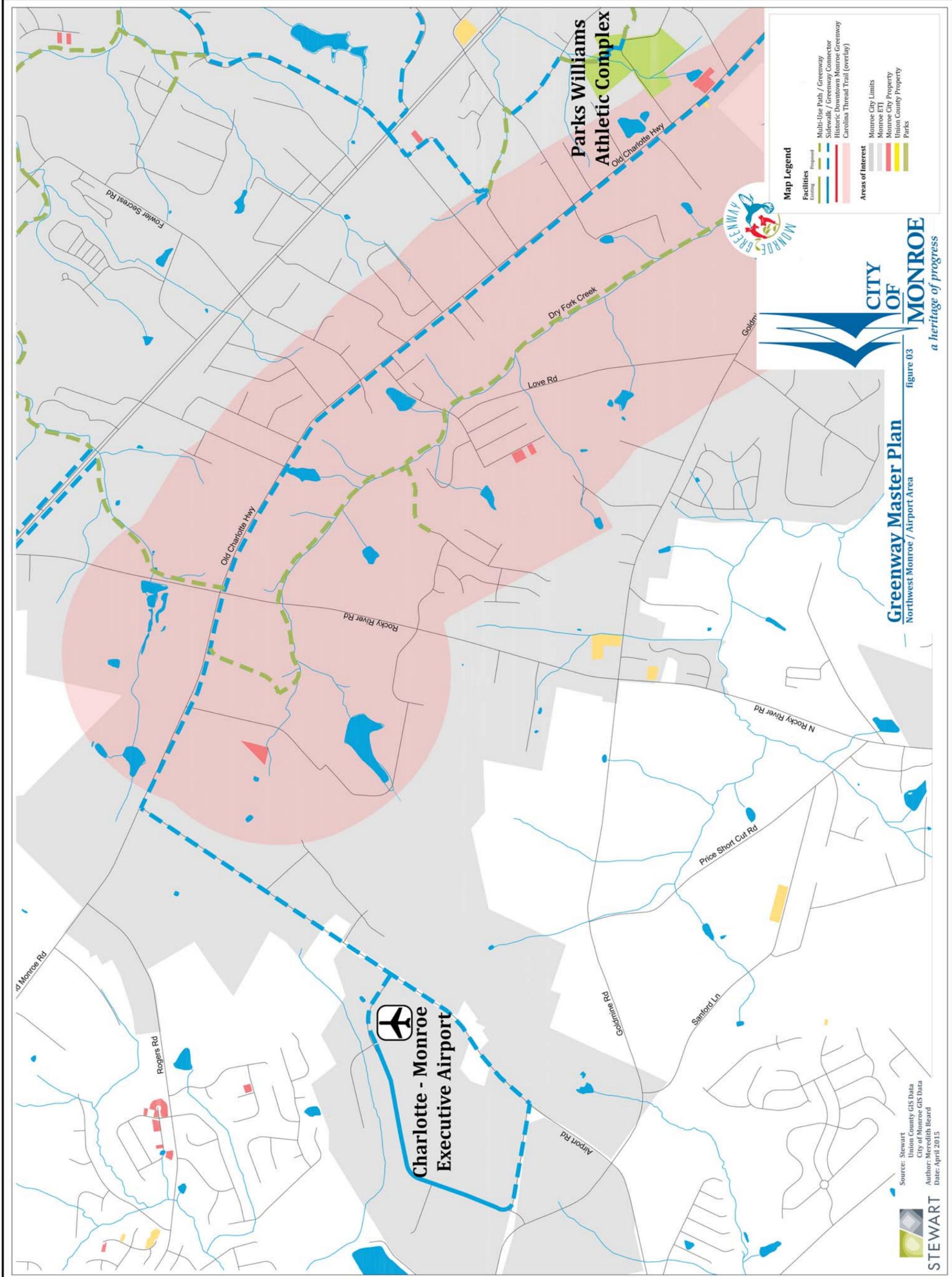
CITY OF MONROE
a heritage of progress

Greenway Master Plan
 Central Monroe

figure 02

Source: Stewart
 Union County GIS Data
 City of Monroe GIS Data
 Author: Meredith Beard
 Date: April 2015





Greenway Master Plan
Northwest Monroe / Airport Area

figure 03

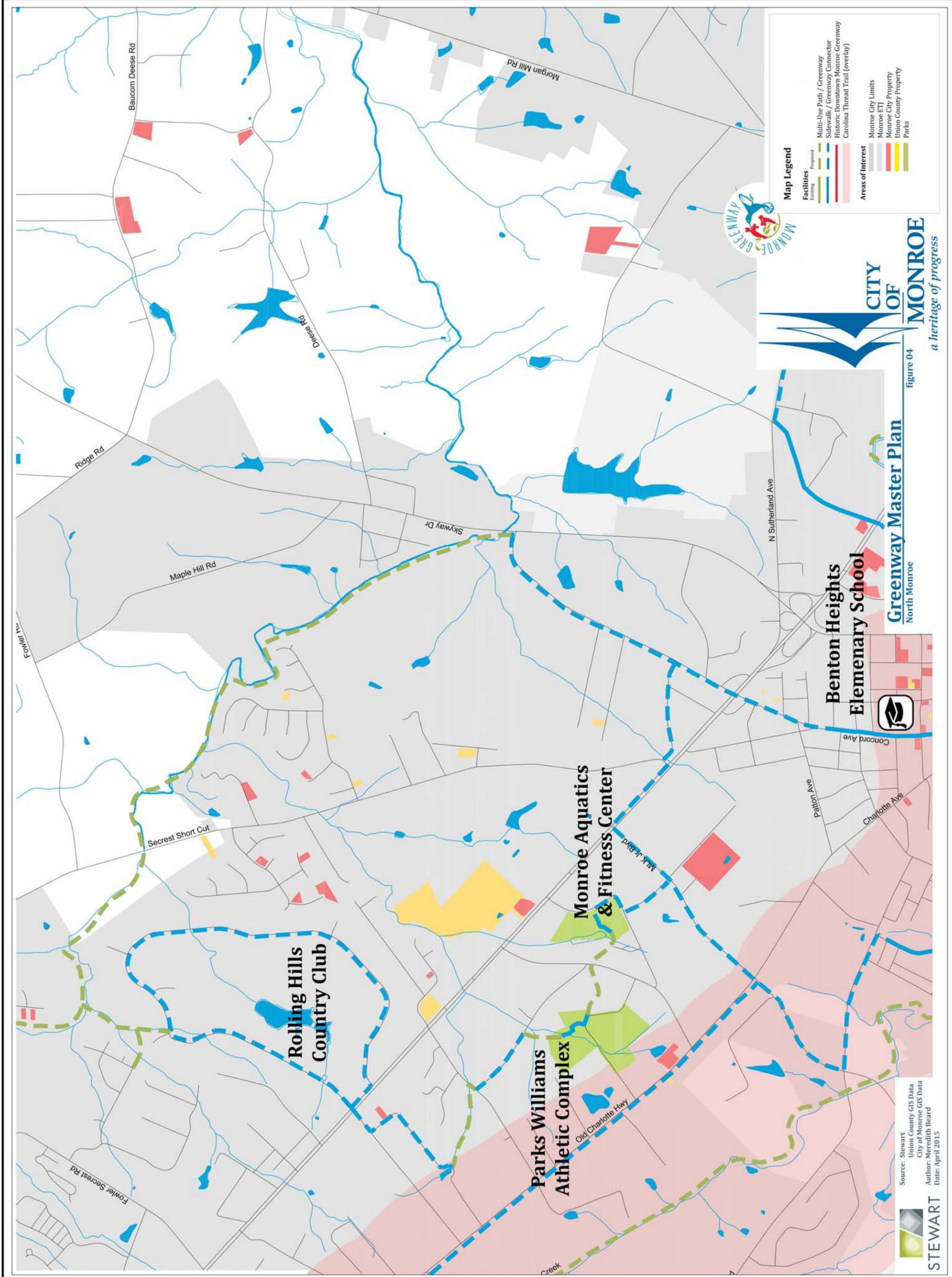
Source: Stewart,
Union County GIS Data
City of Monroe GIS Data
Author: Meredith Beard
Date: April 2015



STEWART

Map Legend

- Facilities**
- Proposed: Multi-Use Path / Greenway
 - Existing: Sidewalk / Greenway Connector
 - Historic Downtown Monroe Greenway
 - Carolina Thread Trail (overlay)
- Areas of Interest**
- Monroe City Limits
 - Monroe ETJ
 - Monroe City Property
 - Union County Property
 - Parks



Greenway Master Plan
 North Monroe

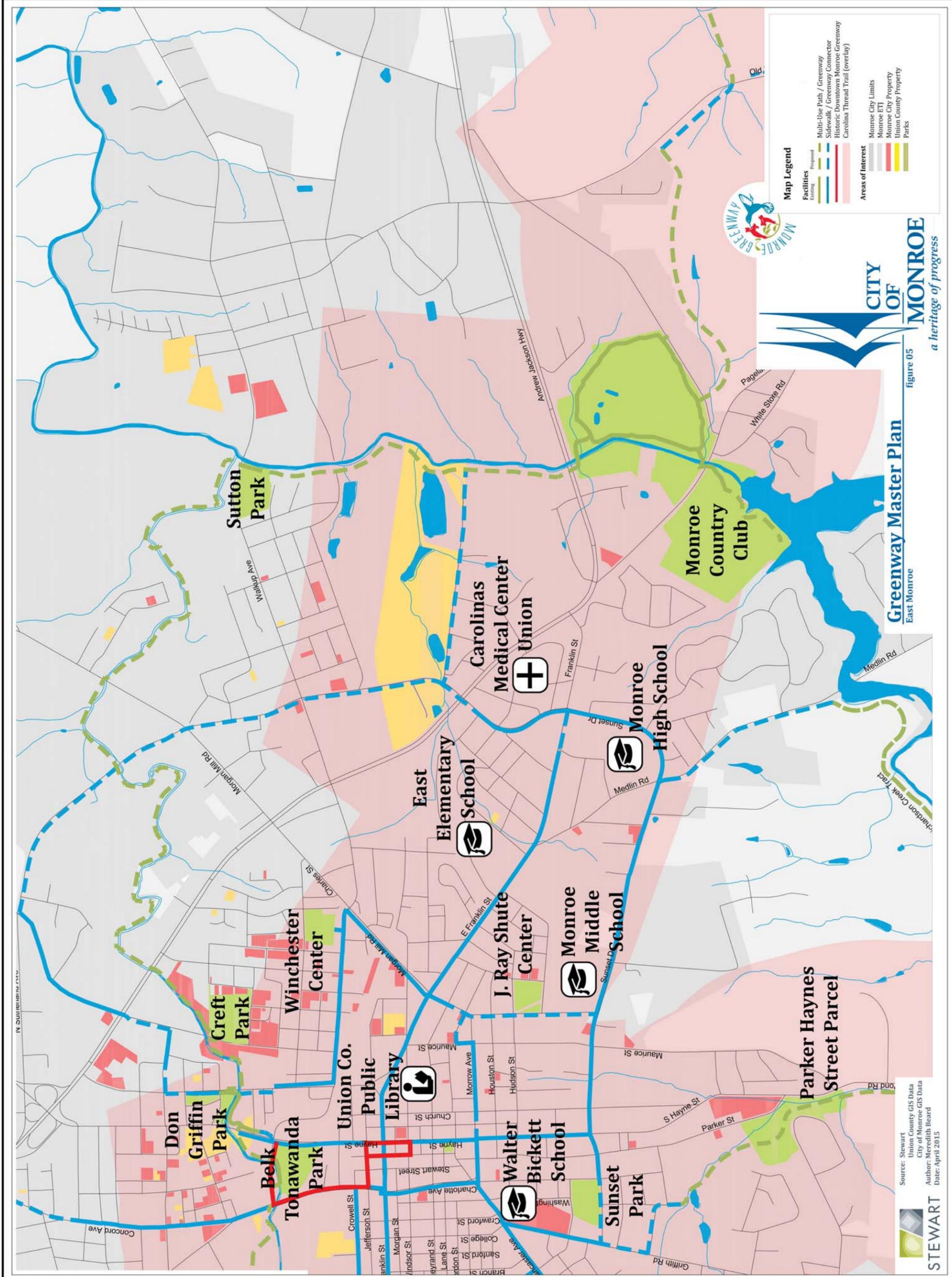
figure 04

Map Legend

- Facilities**
- Proposed: Multi-Use Path / Greenway
 - Existing: Sidewalk / Greenway Connector
 - Historic Downtown Monroe Greenway
 - Carolina Thread Trail (overlay)
- Areas of Interest**
- Monroe City Limits
 - Monroe ETJ
 - Monroe City Property
 - Union County Property
 - Parks

Source: Stewart
 Union County GIS Data
 City of Monroe GIS Data
 Author: Meredith Beard
 Date: April 2015





Greenway Master Plan
 East Monroe

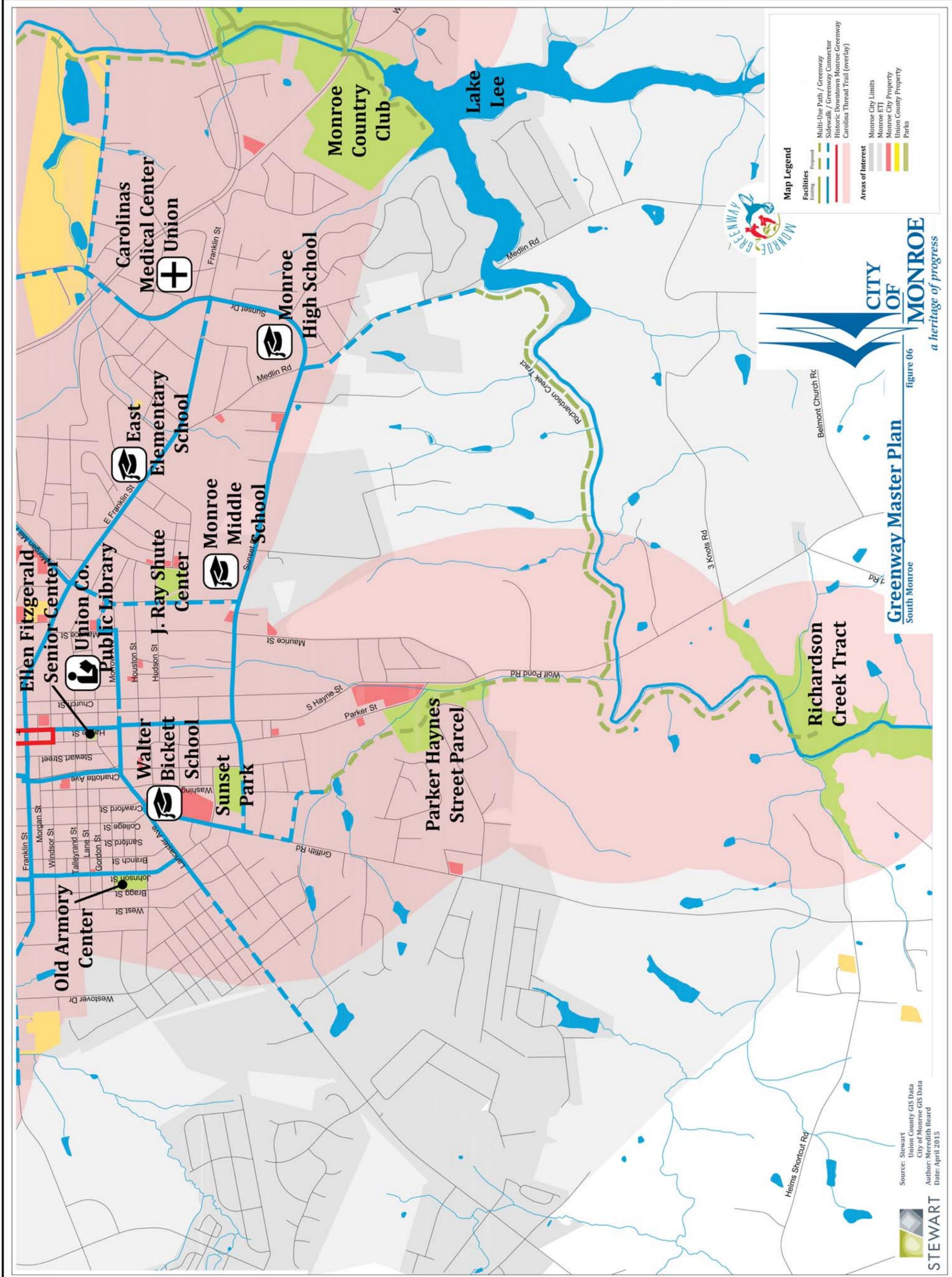
figure 05

Map Legend

Facilities	Areas of Interest
Existing: Solid blue line	Monroe City Limits: Light grey fill
Proposed: Dashed blue line	Monroe ETJ: Red fill
Multi-Use Path / Greenway: Solid yellow line	Monroe City Property: Yellow fill
Sidewalk / Greenway Connector: Dashed yellow line	Union County Property: Light green fill
Historic Downtown Monroe Greenway: Solid red line	Parks: Green fill
Carolina Thread Trail (overlay): Dashed red line	

Source: Stewart
 Union County GIS Data
 City of Monroe GIS Data
 Author: Meredith Beard
 Date: April 2015





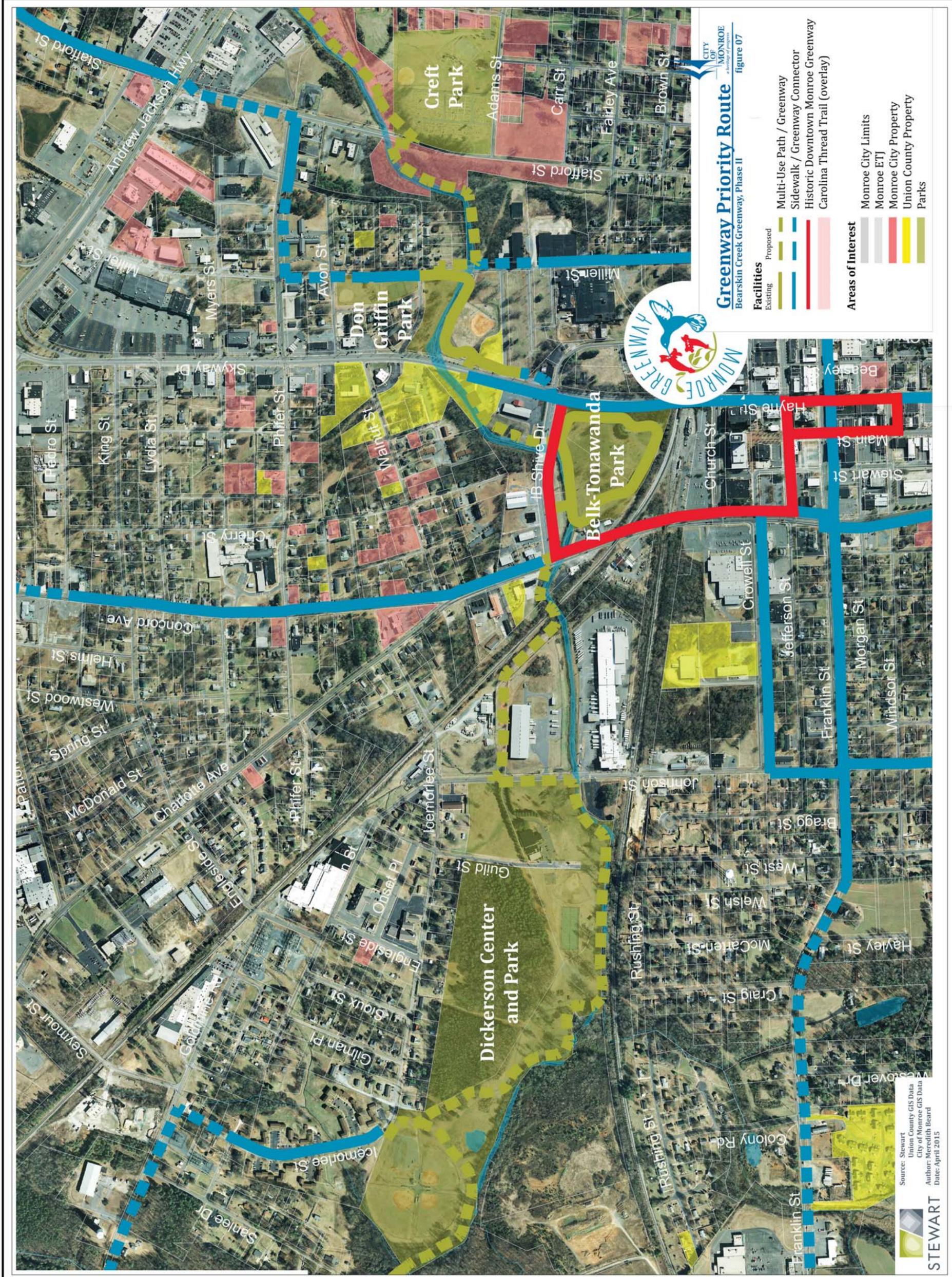
Source: Stewart
 Union County GIS Data
 City of Monroe GIS Data
 Author: Meredith Beard
 Date: April 2015



Map Legend

Facilities	
	Multi-Use Path / Greenway
	Sidewalk / Greenway Connector
	Historic Downtown Monroe Greenway
	Carolina Thread Trail (overlay)

Areas of Interest	
	Monroe City Limits
	Monroe ETJ
	Monroe City Property
	Union County Property
	Parks



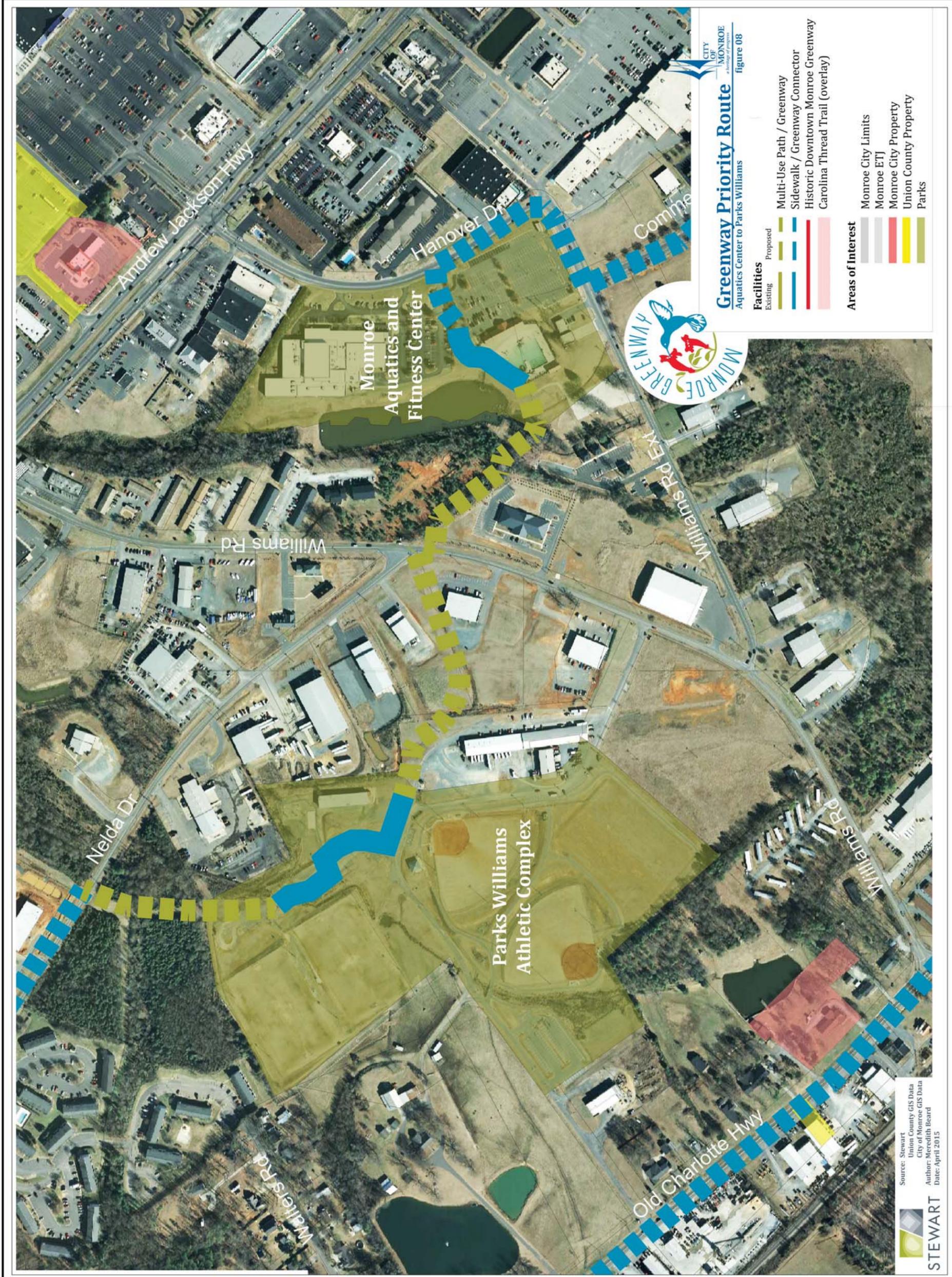
CITY OF MONROE
Greenway Priority Route
 Bearskin Creek Greenway, Phase II
 figure 07

- Facilities**
- Existing: Solid blue line
 - Proposed: Dashed blue line
 - Multi-Use Path / Greenway: Solid green line
 - Sidewalk / Greenway Connector: Dashed green line
 - Historic Downtown Monroe Greenway: Solid red line
 - Carolina Thread Trail (overlay): Solid pink line
- Areas of Interest**
- Monroe City Limits: Light grey shaded area
 - Monroe ETJ: Medium grey shaded area
 - Monroe City Property: Red shaded area
 - Union County Property: Yellow shaded area
 - Parks: Green shaded area



Source: Stewart
 Union County GIS Data
 City of Monroe GIS Data
 Author: Meredith Beard
 Date: April 2015





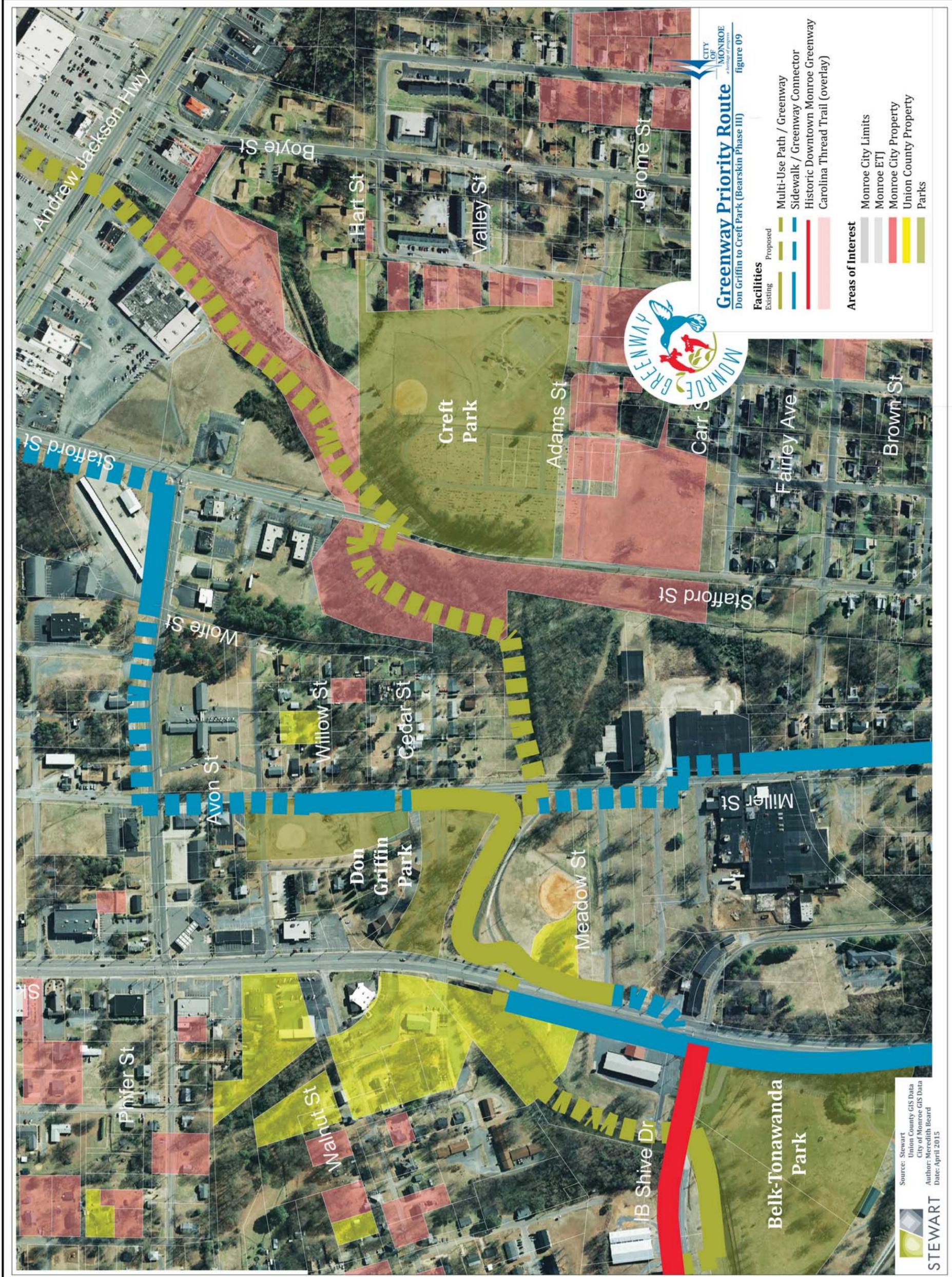
CITY OF MONROE
A Legacy of Progress
Greenway Priority Route
 Aquatics Center to Parks Williams
 figure 08

- Facilities**
- | | | |
|-------------------------------|-----------------------------------|---------------------------------|
| Existing | Proposed | Multi-Use Path / Greenway |
| Sidewalk / Greenway Connector | Historic Downtown Monroe Greenway | Carolina Thread Trail (overlay) |
- Areas of Interest**
- | | | | | |
|--------------------|------------|----------------------|-----------------------|-------|
| Monroe City Limits | Monroe ETJ | Monroe City Property | Union County Property | Parks |
|--------------------|------------|----------------------|-----------------------|-------|



Source: Stewart
 Union County GIS Data
 City of Monroe GIS Data
 Author: Meredith Beard
 Date: April 2015





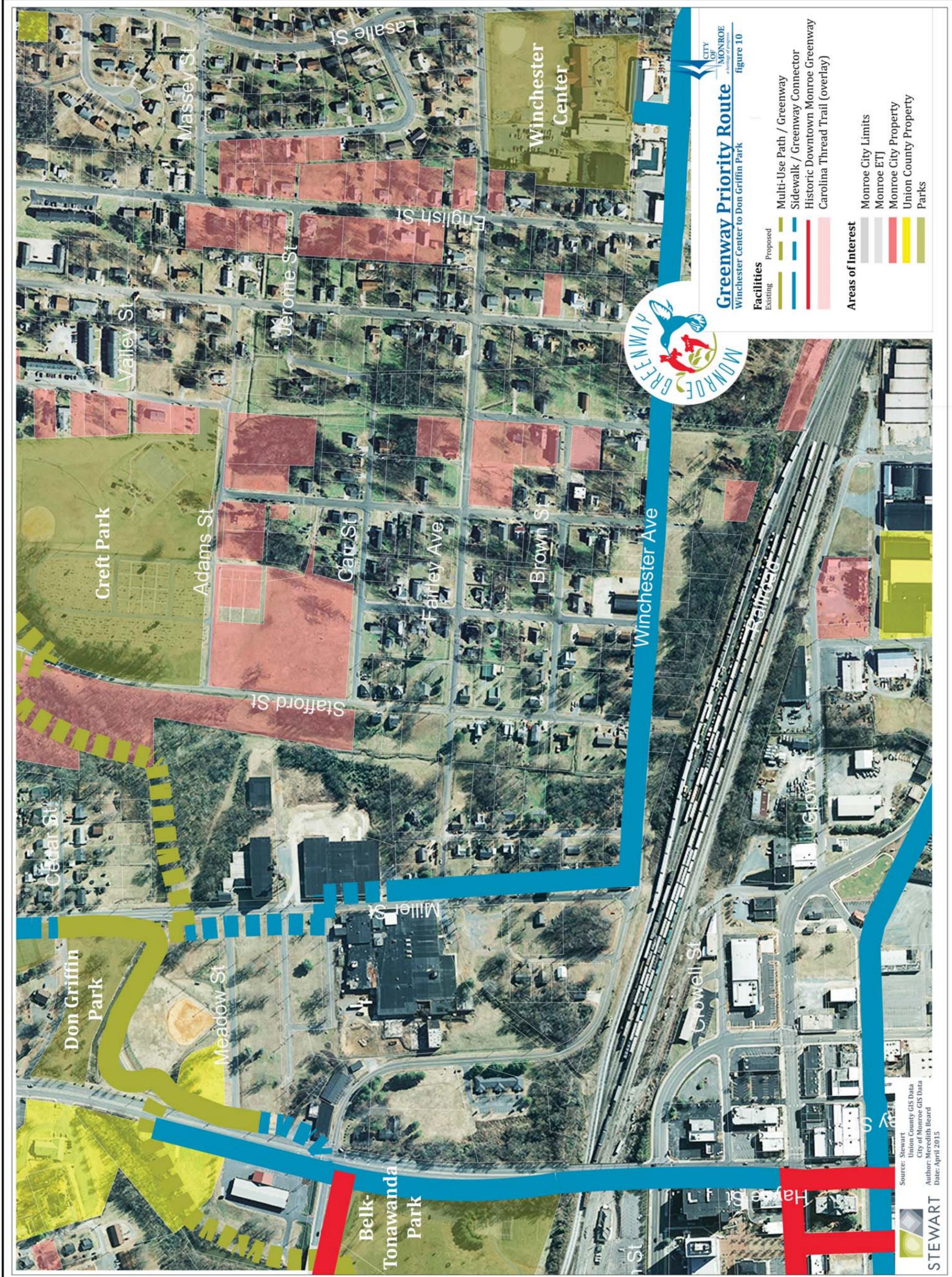
CITY OF MONROE
Greenway Priority Route
 Don Griffin to Cret Park (Bearskin Phase III) figure 09

- Facilities**
- Existing: — Multi-Use Path / Greenway
 - Proposed: — Sidewalk / Greenway Connector
 - Historic Downtown Monroe Greenway
 - Carolina Thread Trail (overlay)

- Areas of Interest**
- Monroe City Limits
 - Monroe ETJ
 - Monroe City Property
 - Union County Property
 - Parks

Source: Stewart
 Union County GIS Data
 City of Monroe GIS Data
 Author: Meredith Beard
 Date: April 2015





CITY OF MONROE
Greenway Priority Route
 Winchester Center to Don Griffin Park
 figure 10

- Facilities**
- Existing: Solid blue line
 - Proposed: Dashed blue line
 - Multi-Use Path / Greenway: Solid green line
 - Sidewalk / Greenway Connector: Dashed green line
 - Historic Downtown Monroe Greenway: Solid red line
 - Carolina Thread Trail (overlay): Solid pink line
- Areas of Interest**
- Monroe City Limits: Light grey shaded area
 - Monroe ETJ: Medium grey shaded area
 - Monroe City Property: Red shaded area
 - Union County Property: Yellow shaded area
 - Parks: Green shaded area

Source: Stewart
 Union County GIS Data
 City of Monroe GIS Data
 Author: Meredith Beard
 Date: April 2015





Greenway Planning and Implementation Process
Criteria for Prioritizing Land Acquisition
Criteria for Prioritizing Greenway Development
Implementation Strategy
Funding Strategies
Land Acquisition Strategy
Phasing/Priority Project Recommendations
Budget Estimates
Maintenance Costs

Greenway Planning and Implementation Process

The Monroe Greenway Master Plan identifies a system of trail corridors throughout the city which fulfill multiple objectives. To realize the vision laid forth in the plan, the following steps will need to be completed for each trail corridor.

Step One – Land Acquisition

Before detailed master planning of an individual corridor occurs, it is necessary for the city to have an ownership interest in the land that is included in this greenway system. A variety of land acquisition techniques are included on pages 63 - 65 to guide both public and private interests. Criteria for prioritizing land acquisition are contained within the next section.

Step Two – Corridor Master Planning

Site specific master planning for individual greenway corridors will determine the feasibility and the appropriate level of use for a corridor and its routing. Each master plan for a greenway corridor or segment of a corridor should involve residents from surrounding neighborhoods, as well as adjacent property owners and businesses. Criteria for prioritizing greenway development are contained within the next section.

Step Three – Detailed Design and Construction Documentation

After master planning has been completed and a specific corridor plan has been defined, detailed construction documents will then be produced for the project as well as a detailed cost estimation and assignment of responsibilities.

Step Four – Construction and Facility Development

Depending on the level of use that is appropriate for a greenway corridor, actual construction of the greenway facilities, such as trails and/or sidewalks, habitat restoration, and stream-bank restoration will take place. Construction and development operations can be phased as necessary to meet budget and time constraints.

Step Five – Maintenance and Management

Once the greenway facilities have been completed, maintenance and management should begin immediately. The Monroe Parks and Recreation Department should be the lead management agency and should work in partnership with other city and county agencies, as well as private sector groups, to effectively manage and maintain the greenway system.

Criteria for Prioritizing Land Acquisition

The following criteria shall be used to guide the city in prioritizing parcels of land to be acquired for the greenway system. Criteria are not provided in order of significance. The criteria are listed in alphabetical order; the ordering does not represent either priority or hierarchy.

Cost of Acquisition – a determination that it is financially feasible to acquire the property.

Cultural Significance – the property contains a unique artifact of history, or is a historically significant parcel of land.

Environmental Significance – the property is an important parcel of land and contains a significant environmental feature(s) that makes it worthy of acquisition (i.e. water quality, plant or animal habitat, floodplain management).

Geographical Equity – the property is located in an area of the city that if acquired will provide a balance to future greenway system development. The property adjacent to or near a recreation facility will encourage connectivity between neighborhoods and the facility.

Maintenance of Property – it has been determined that the property can be maintained in a manner that is consistent with Monroe Parks and Recreation Department policies.

Opportunity for Donation – a donor has come forward and has agreed to give the land to the city.

Opportunity for Greenway Development – the property is ideally suited for greenway development. Issues of accessibility have been addressed and satisfied.

Population Served – the property is located in an area of the city that is densely populated.

Source of Funding – funds have been identified and are available to purchase the property.

Type of Trail Development – the property can accommodate an appropriate level of greenway facility development.

Threat of Loss – the parcel of land is in demand and may not be available for public ownership unless quick action is taken.

Criteria for Prioritizing Greenway Development

The following criteria are provided in this master plan to guide the city in determining greenway development. The criteria are listed in alphabetical order; the ordering does not represent either priority or hierarchy.

Cost of Greenway Facility Development – an estimate for the project has been completed and it has been determined that it is financially feasible to build the greenway facility.

Cost of Greenway Facility Maintenance – an evaluation of the project has been completed and it has been determined that the corridor can be maintained in accordance with Monroe Parks and Recreation Department policies. Additionally, Adopt-a-Greenway groups have been identified and have been enlisted to support the future operation of the greenway.

Expansion of Existing System – the proposed greenway facility is an extension of an existing trail or sidewalk.

Geographical Equity – construction of the greenway ensures that there is an equitable balance in trail facility development throughout the city.

Need for Greenway Segment – residents of an area are presently underserved and require the development of the greenway facility. Additionally, the greenway segment has been identified as an element of other adopted master plans or thoroughfare plans.

Ownership of Land – the city has title or rights of public access to use the property.

Opportunity: Origin and Destination – the greenway segment has a logical point of beginning and end.

Population Served – trail development will serve a significant population within a one-mile radius.

Public Support – the surrounding neighborhoods and communities support development of the greenway.

Source of Funding – funds have been committed to the project; other agencies or private sector groups have committed funds in support of the project (i.e. partnerships have been established).

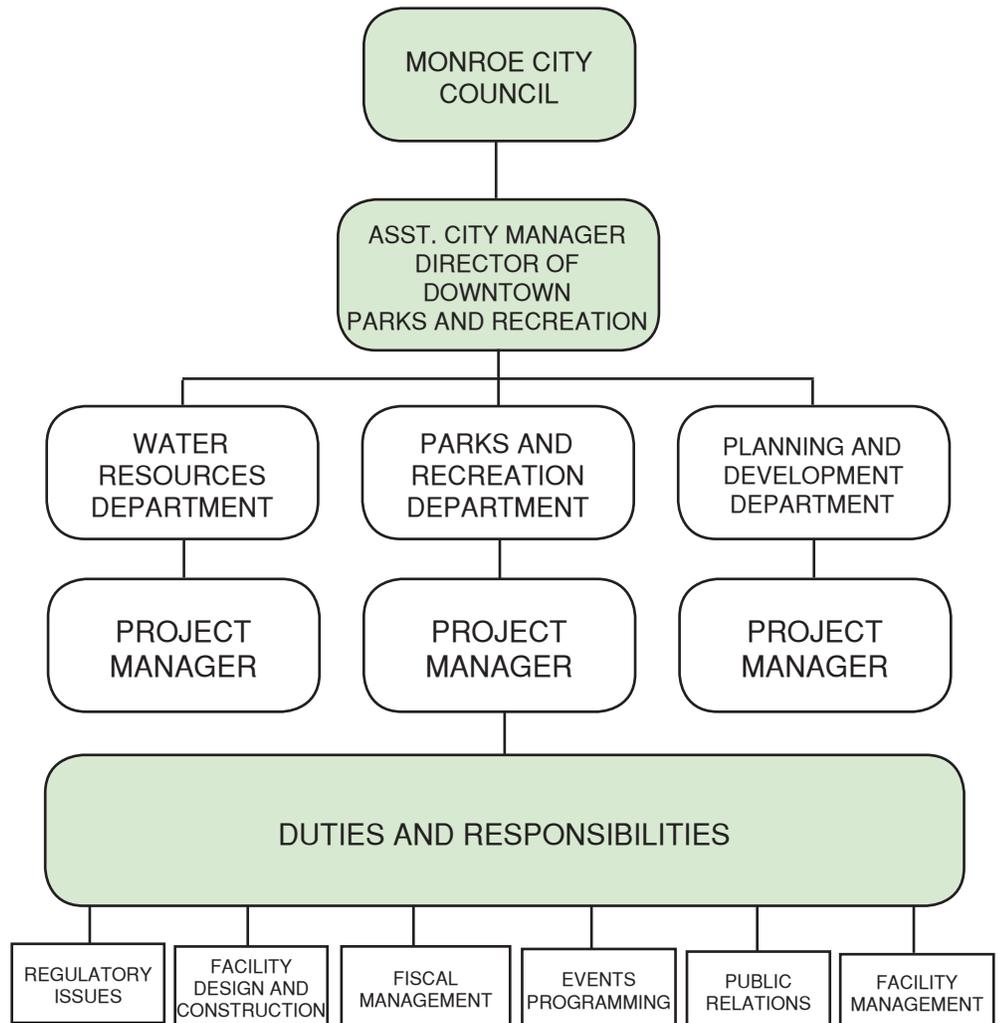
Type of Greenway – the type and surface of the proposed greenway can be accommodated within the environmental setting of the greenway corridor. Additionally, the proposed surface meets the needs of local user groups and will be accessible under appropriate guidelines established by the Monroe Parks and Recreation Department.

Implementation Strategy

Successful implementation of this master plan will require a concerted effort by Monroe in partnership with other governments and private sector organizations that have the ability, influence and authority to guide the community toward acceptable multi-objective greenway solutions. Implementation of the greenway system should not be the sole burden of the city. To be truly successful it must become the collective pursuit of the entire community. This master plan recommends a strategy for implementing and managing greenways.

The chart below illustrates an implementation and management strategy

for a public agency partnership, within Monroe, that should enable various aspects of the greenway system to be more effectively implemented. On the following pages, the roles of city agencies and other public-sector and private-sector organizations are defined.



Role of the City of Monroe

The City of Monroe will be the lead agent, owner, developer and manager of the greenway system throughout the city. It will be necessary for the city to partner with public and private interests throughout the city to build and maintain various segments of the greenway system. Listed below and on the following pages are the key agencies and organizations that will play a role in this implementation.

Role of the City Council

The Monroe City Council will be called upon to adopt and implement the recommendations of this master plan. The city council will need to work with the City Manager and/or Assistant City Manager to determine the most effective implementation strategy for the city-wide greenway system. This may include engaging in unique public-private partnerships, determining an appropriate financing strategy for greenways and defining appropriate coordinated capital improvement projects that will maximize the use of city

resources. The city council will also be viewed as the ultimate “champion” of this master plan and will need to exhibit appropriate leadership of the goals and objectives herein.

Role of the City Manager/Assistant City Manager

The Monroe City Manager/Assistant City Manager is vested with management responsibilities for the community’s public resources. As such, the primary role of the City Manager/Assistant City Manager, with respect to the greenway system, will be to direct the activities of the various departments of the city as necessary to perform required acquisition, development, stewardship and maintenance activities for the greenway. The City Manager/Assistant City Manager will also be called upon to determine an effective coordinated capital improvements program that enables various city departments to share resources in support of greenway development.

Role of the Parks and Recreation Department

The Monroe Parks and Recreation Department will direct acquisition of necessary land and preparation of detailed corridor master plans and construction documents for each greenway segment. The Parks and Recreation Department will become the primary steward for greenway lands and facilities. However, due to the size and scope of this endeavor, it is strongly encouraged that the Parks and Recreation Department create an Adopt-a-Greenway program. This program will enlist the participation and support of the Parks and Recreation Commission and other public and private sector organizations in managing and maintaining greenway lands and facilities.

Role of the Parks and Recreation Commission

The Parks and Recreation Commission will promote and support implementation of the Monroe Greenway Master Plan through;

- The education of citizens on the objectives of the master plan and multiple greenway needs
- The coordination with other entities, programs, and departments (including planning and development, water resources, engineering, Charlotte Regional Transportation Planning Organization (CRTPO), and the North Carolina Department of Transportation (NCDOT)) to prioritize greenway development and acquisition through a point-based system
- The identification and solicitation of resources to accelerate land acquisition and greenway construction
- The development of a regional greenway system by working with surrounding counties to establish linkages to their recreational and natural resources

The Parks and Recreation Commission will establish and utilize a point-based system for prioritizing greenway acquisition and development which will be weighed along with staff recommendations when making funding decisions. The Board will be fully informed on a specific, case-by-case basis of how staff recommendations coincide with Commission priorities regarding acquisition and greenway development.

Role of the Monroe Planning and Development Department

The Monroe Planning and Development Department will support the Greenway Master Plan and will help with implementation by showing potential greenways in land development plans, notifying the Monroe Parks and Recreation Department of proposed developments in a greenway area, utilizing the rezoning process to encourage dedication of lands and access and/or trail easements, and construction of required sidewalks for the greenway system, and planning transportation improvements in coordination with proposed greenways.

Role of the Water Resources Department

The Monroe Water Resources Department shall assist the Parks and Recreation Department with the development of specific greenway segments. Water Resources can accomplish this through the use of funds obtained from federal and state grants and through a coordinated capital improvement approach to project implementation. The city’s system of sanitary sewers offers enormous potential for shared-use with greenway development objectives. For the expansion and development of new sanitary sewer lines, Monroe should use a joint-use easement document during right-of-way negotiations to acquire subsurface and surface rights from willing sellers. During facility development, Water Resources should partner with other departments to build greenway facilities where feasible.

Other responsibilities and roles are further defined in the chart below:

Parks & Recreation Department	Planning & Development Department	Water Resources Department
System-Wide Planning	System-Wide Planning	System-Wide Planning
Land Acquisition	Land Acquisition	Land Acquisition
Facility Planning	Ordinance Amendments	Facility Planning
Facility Construction	Development Requirements	Facility Design
Facility Maintenance		Facility Construction
Adopt-a-Greenway		
Community Programs		
Event Programming		
Public Relations		
Fiscal Management		

Role of Local Businesses and Corporations

Monroe businesses and corporations might choose to sponsor a greenway for development or maintenance. Businesses or corporations can work with the Parks and Recreation Department to give money, materials, products and labor toward the development of a greenway facility. Businesses can also consider installing facilities, such as bike racks, benches, and signage that link their operations to the greenway system through the Adopt-a-Greenway program.

Role of Civic Organizations

Local civic groups and organizations, including the Junior League, Boy

Scouts and Girl Scouts, garden clubs, Civitans, Kiwanis and Rotary clubs, to name a few, can be participants in the Monroe Greenway System. These organizations can play a vital role in building sections of the greenway, maintaining and managing greenway lands and facilities, and co-hosting events that raise money for the greenway system. There are many ways in which civic organizations can participate in the development of the greenway system. The most appropriate involvement can be determined by matching the goals and objectives of each organization to the needs of the greenway program. The involvement of such organizations should be coordinated through the Parks and Recreation Department's Adopt-a-Greenway program.

Role of Individual Citizens

Local residents who are interested in the development of Monroe's Greenway System can participate by agreeing to donate their time, labor and expertise to the Parks and Recreation Department. Residents might choose to partner with a friend or form a local neighborhood group that adopts a section of greenway for maintenance and management purposes through the Adopt-a-Greenway program. Individuals can volunteer to plant trees, shrubs, and flowers along segments of greenways. All volunteer efforts will be recognized by the Parks and Recreation Department through a community-wide program.

Staffing the Greenway Program

Much of this greenway system can be accomplished within the current operating framework that exists within Monroe. It will be necessary, however, to add staff resources to the Monroe Parks and Recreation Department to facilitate, coordinate and implement the activities of this plan.

The greenway program needs two additional staff level positions: Greenway Development Specialist and Greenway Manager. Each position is described below in greater detail.

Greenway Development Specialist

The Greenway Development Specialist will need to work closely with other public and private sector groups to coordinate overall development of the greenway system. There is a significant amount of greenway system that will need to be brought on-line during the first three to five years of plan implementation and it will be the responsibility of this individual to ensure that these development objectives are accomplished. This person should have a background in landscape architecture, planning, or civil engineering with experience in park and recreation development. This person should have experience in project development and construction and will need to work closely with consultants, contractors and other agency staff to accomplish program objectives.

Greenway Manager

The Greenway Manager shall be primarily responsible for coordinating the management activities of the greenway system and in developing and managing trail corridor development. Some maintenance and management may be contracted to private sector companies. It shall be the responsibility of the Greenway Manager to ensure these activities are performed in

accordance with the provisions of this master plan.

Funding Strategies

The City of Monroe should pursue a variety of funding sources for the development of the Monroe Greenway System, including funding for land acquisition, design, construction, and maintenance. Many government entities are unable to fully fund the development of every mile of trail within a network using in-house funds. It is recommended that the City of Monroe develop a multi-tiered approach for funding trail development using a variety of financing options. The following summarizes several trail funding opportunities.

Public Funding

There are several options available to assist the City of Monroe in funding the development of the Greenway System using public funding.

Federal Funding Options

Federal funding programs for trail development are typically provided through two methods. The first federal funding method involves federal appropriations of funds to specific state agencies. These state agencies are charged with distributing, managing, and overseeing the expenditure of the funds. The second federal funding method provides local or county agencies direct funding for trail development. Congressional earmarks have been used in the past to fund certain trail projects, but recent scrutiny of this practice may limit or cease such funding. Appendix IV provides information on specific federal funding programs that may be used for greenway development.

State Funding Options

Most statewide funding that can be used for greenway development comes through NCDOT and the following sources: Land and Water Conservation Fund, North Carolina Parks and Recreation Trust Fund, Clean Water Management Trust Fund, National Heritage Trust Fund, Recreational Trails Program, and North Carolina Division of Water Resources. Most state appropriated funding is limited to specific types of projects and requires matching funds of varying percentages of the grant request. Monroe will need to carefully review all state grant programs and plan appropriately for providing matching funds when required. Appendix IV provides information on specific state funding programs that may be used for greenway development.

Local Funding Options

Traditionally, local governments have utilized the following sources for funding greenway development. Appendix IV provides additional information on the various local funding options that may be used for greenway development.

Discretionary annual spending - typically referred to as a “General Fund”, refers to spending that must be agreed upon on an annual basis. Greenway development funds would need to be appropriated within the city’s annual

budget to a specific department's annual operating budget and would range in value annually. The City of Monroe has established a Greenway Capital Reserve Fund and is contributing \$100,000 annually for a total of six years.

Debt financing - refers to the government agency borrowing funds for the development of greenway facilities through loans or bonds. Such funding sources require repayment of funds over a specified period of time.

Bond referendums - A bond referendum can be placed on a ballot to finance land acquisition and design and construction costs for greenways. In most cases, voters must approve a bond. Because of this fact, it is critical to educate the public on the mission and intent of the bond in order to gain support.

Impact fees - Impact fees are monetary one-time charges levied by a local government on new development. Unlike dedication fees required through development, one-time impact fees can be applied to finance nearby greenways.

Payment in Lieu of Fees - Where land dedication does not occur through the development process, the city can require a payment in lieu of dedication. These fees can be applied to finance acquisition of land or development of nearby greenways.

Taxation - Communities can vote to raise tax money in support of greenway efforts.

Powell Bill Funding - Powell Bill funds, coming from NCDOT, shall be expended only for the purposes of maintaining, repairing, constructing, reconstructing or widening of any street or public thoroughfare within the municipal limits or for planning, construction, and maintenance of bikeways, greenways or sidewalks.

Adopt-a-Greenway Program - Provides opportunities for making contributions of time, materials and funding to keep greenways and open space needs available and enjoyable for the residents of Monroe.

The sources used to fund greenway development in Monroe will be tied to the City's budgetary resources, taxing capacity, political will, and voter preference.

Private Funding

The development of the Monroe Greenway System may be funded by private sources that support the greenway initiative, understand the benefits of greenways, and understand the need for additional transportation and recreation facilities within the City of Monroe. Private funding sources may include individual donors, non-profit organizations, foundations, philanthropic organizations, and businesses. Monroe has many local businesses and regional offices and industries located within the city limits. Monroe should establish a list of business owners through the Chamber of Commerce to seek financial and volunteer support for land acquisition and greenway construction. Appendix IV provides additional information on the various

private funding options that may be used for greenway development.

It is recommended that the City of Monroe develop additional fund raising programs. Funds gathered through donations of personalized bricks to be displayed at greenway trailheads or within prominent trail plazas can fund portions of greenway construction. “Buy a Foot” programs allow local businesses and citizens to provide private funding for the construction of greenway facilities.

The most effective method for funding the Monroe Greenway System will involve a combination of public and private funding sources.

Land Acquisition Strategy

The acquisition of land for greenway development is an important and necessary step of the greenway development process. Land acquisition provides the land resources necessary for development of greenways, protects sensitive environmental and natural resources, and preserves historic and cultural treasures. The City of Monroe should utilize a variety of land acquisition methods for the protection and preservation of land for trail development.

Fee-Simple Purchase

The City of Monroe may choose to acquire land by fee-simple purchase. Such acquisitions are common for government entities and ensure control over the level of development and protection of the land. Land that could serve a dual purpose by accommodating both trail development and other public facilities or services would be ideal. This scenario justifies the purchase of the land by using public funds more effectively. Organizations, such as land trusts, can assist government entities in the purchase of land for less than market value (bargain sale) by offering tax deductions to the selling landowner.

Easements

The acquisition of an easement entitles the city to only those rights granted in the easement agreement. Easements are often acquired at the time of final subdivision plat approval and recordation, but can also be solicited independently. There are a number of easement types that would work for the development of a greenway corridor, including Conservation Easements, Public Access Easements, and Trail Easements. Organizations, such as land trusts, can assist government entities in the purchase of Conservation Easements by offering tax deductions to the selling landowner. Refer to Appendix VII for example easement agreements.

Right of First Refusal

The city can establish an agreement with a property owner to provide the first right of refusal on a parcel of land, scheduled to be put on the market. This means the city would be notified first, prior to the sale to any other agency or person. This type of agreement does not establish a sale price for the property, and the landowner has the right to refuse to sell it for the price offered by the city.

Option to Purchase Agreement

An option is a legal document giving a person or government entity the right to purchase a property. The document outlines the purchase price and applicable period (any duration of time), with a fee (often a small percentage of the total land value). If the property is purchased, the fee is deducted from the purchase price. If the purchase fails to proceed, the fee is nonrefundable. This option may be a good approach if you are interested in buying land but need to raise funds for the purchase.

Donations

Landowners may wish to donate their property to a local government or land trust. Donations of land may occur if the landowner has no more use for the property, no heirs are present to receive the land, or tax and estate deductions are sought by the landowner. Landowners may prefer to donate an easement on the property. Such easements allow for certain agreed upon uses of the property, but the landowner retains ownership of the property.

Zoning and Development Regulations

Government entities across the United States have developed restrictions and regulations along major rivers, streams, and creeks. These regulations have been developed to protect water quality, limit development activity within close proximity to streams, and preserve habitats along water courses. River, stream, and creek regulations often require buffers of varying widths to be located on either side of a water course. Uses within the buffers are often restricted to passive recreation, public boating and utility uses, and in some cases, preservation, conservation, or agriculture. Other zoning and development regulations that have proven helpful in the acquisition of land include setbacks along streams, floodplain development restrictions, and required dedication of open space. More information regarding zoning and development regulation strategies can be found in Chapter 6.

Developer Contributions

Government entities have the option to require, request, and/or incentivize developers to contribute land, build trail facilities, or both as part of their development project. The City of Monroe will be provided GIS information of the proposed greenway corridors, so that this can be referenced upon staff technical reviews of proposed developments within the city. Future developments located along segments of the adopted greenway system should be asked or required to incorporate these into their design plans. A review of the incorporation of the trail segments into design plans should be conducted during the development plan review process. Most developers are open to accommodating trails within their developments for two reasons: most people view trails as a wonderful community amenity and most developers can place a premium on lots or housing units located within close proximity to the trail. Paying a fee in lieu is another option, in which case the money could be utilized for land acquisition and development of the greenway system.

Duel Easements

This Greenway Master Plan has identified multiple sewer easements located within the city limits that are used by the City's Water Resources Department.

They have been included as part of this master plan because they provide opportunities to link destinations, such as schools, parks and neighborhoods. As the city develops the greenway system, it is recommended that development be coordinated with the Water Resources Department, as well as other utility companies through dual easements. There are different types of easements, such as sewer and overhead power lines, which typically are already maintained and cleared, so that maintenance personnel can easily access them. Dual use of existing public property can be pursued as a method of acquiring recreational and conservation land. Water, sewer and electrical easements can be used through negotiation and landowner consent to provide an additional easement for public recreation. Refer to Appendix VII for example easement agreements.

Condemnation

Eminent domain for acquisition of parkland or land for the greenway can be exercised when property cannot be obtained through other means. This method is usually a last resort since it is often exercised when a landowner is not in agreement and can involve court proceedings. If this option is exercised, the landowner shall be compensated for their land at full market value.

Phasing/Priority Project Recommendations

Facilities

Immediate Needs (0-2 years)

- Complete the land acquisition, design and construction of Phase II of Bearskin Creek Greenway from Don Griffin Park (Skyway Drive) to Dickerson Park
- Acquire necessary land/easements for a greenway segment to connect the Monroe Aquatics and Fitness Center to Parks Williams Athletic Complex
- Acquire necessary easements for additional sidewalk along Miller Street to connect the Winchester Center to Bearskin Creek Greenway at Don Griffin Park
- Complete a feasibility study for Phase III of Bearskin Creek Greenway from Don Griffin Park to Creft Park

Near-term Needs (3-5 years)

- Acquire additional land/easements, design, and construct a new greenway facility along Hayne Street to connect the Historic Downtown Greenway to Sunset Park through the residential historic district
- Acquire necessary land/easements for Phase III of Bearskin Creek Greenway from Don Griffin Park to Creft Park
- Design and construct a greenway segment to connect the Monroe Aquatics and Fitness Center to Parks Williams Athletic Complex
- Design and construct additional greenway at Don Griffin Park and new sidewalk along Miller Street to connect the Winchester Center to Bearskin Creek Greenway at Don Griffin Park

Long-term Needs (6-10 years)

- Acquire necessary land/easements, design, and construct new sidewalk to connect Bearskin Creek Greenway at Dickerson Park to the Monroe

- Aquatics and Fitness Center
- Design and construct Phase III of Bearskin Creek Greenway from Don Griffin Park to Creft Park

Programs/Special Events

Immediate Needs (0-2 years)

- Promote the Historic Downtown Greenway as part of the overall Monroe Greenway System
- Hold a greenway opening celebration/event once Phase II of Bearskin Creek Greenway is complete
- Develop and market annual 5k/10k events utilizing existing greenways and sidewalks
- Integrate the newly developed greenway logo into the greenway system along the existing facilities by installing banners, signage, mile marker medallions, etc.

Near-term Needs (3-5 years)

- Establish an Adopt-a-Greenway program and encourage partnerships with local businesses, neighborhoods and homeowner associations for maintenance
- Develop an event geared toward cyclists, since this is the second highest ranked activity that people would enjoy participating in on greenways and existing street corridors

Other Needs

Immediate Needs (0-2 years)

- Include the greenway system on the city's Parks and Recreation website
- Create a greenway system brochure for residents to inform them of Monroe's existing greenway facilities, as well as those planned as part of this Master Plan
- Complete text amendment recommendations from Chapter 6 in order to enhance the language already present in the City's various planning documents and ordinances to assist in the implementation of the greenway system
- Develop maintenance standards for greenways and allocate funds in the annual budget to cover these costs
- Continuously coordinate with the Carolina Thread Trail to designate segments of the Monroe Greenway system as part of the Thread Trail for funding and signage opportunities.
- Continuously coordinate with NCDOT and CRTPO on road widenings, new road facilities, bridge replacements, etc. to advocate for inclusion of the greenway if part of the adopted master plan
- Continuously coordinate with the city's Water Resources Department on dual easements for any new utility corridors that are located along an adopted greenway corridor

Near-term Needs (3-5 years)

- Develop a mobile/social media app to share information about the Monroe Greenway System
- Develop a wayfinding system for users to easily locate greenway facilities from major and minor thoroughfares

Pedestrian Crossings

A priority for the City of Monroe should be to examine the pedestrian

connections and vehicular controls at existing major intersections, intersections that connect major points of interest and proposed roadways. These roadways, along with the planned roadway connectors, have the potential to interrupt pedestrian circulation throughout Monroe. It is imperative that Monroe plan for pedestrian connections at major intersections along these planned greenway routes.

Budget Estimates

- 10' wide asphalt – \$130/L.F.
- 5' sidewalk - \$17/L.F.
- Natural surface trail – \$5/L.F. (basic) - \$12/L.F. (hardened for wet or low areas)

The Monroe Greenway Master Plan projects several different types of corridors and situations throughout Monroe. Based on current local and regional averages, greenway construction costs range from around \$5 a linear foot for natural surface trails to \$130 a linear foot for asphalt paved trails. These costs for paved trail are for a ten-foot wide greenway trail with a two-foot gravel shoulder on each side. The unit costs reflect minimal clearing and grading, paving, and mobilization. Land acquisition costs are not included in these unit costs. Furnishings, signage, bridges, boardwalks, retaining walls, fencing, traffic control, etc. would be on a case by case basis and are not included in these costs. Design and engineering costs typically range from 8-12 percent of the construction costs.

Maintenance Costs

The following maintenance costs, derived from national industry standards, are provided as a guide to establishing a budget for the operation, maintenance and management of a one mile greenway trail segment within a paved greenway system.

Drainage/storm channel maintenance (4 times a year)	\$ 1,500
Sweeping/blowing debris off trail tread (20 times a year)	\$ 2,750
Pick-up and removal of trash (20 times a year)	\$ 2,750
Weed control and vegetation management (10 times a year)	\$ 2,500
Mowing of 3 foot grass safe zone along trail (20 times a year)	\$ 3,500
Minor repairs to trail furniture/safety features	\$ 1,500
Total maintenance costs per mile of paved trail	\$14,500

It may be possible to lower the cost of maintaining one mile of paved greenway trail with savings of at least 50 percent through the establishment of a well-coordinated, well-run Adopt-a-Greenway program. The maintenance of natural surface trails is significantly lower than paved trails if the natural surface trail is properly built to be sustainable. Maintenance costs per mile of natural surface trail can range from \$1,200 to \$1,500 a year. This would include mowing of grassy shoulders along the trail 5 to 10 times a year, spraying the trail tread for weeds 2 times a year and any minor maintenance of the trail tread.



Zoning Text Amendment Recommendations
Land Development Plan (2000-2010)
Unified Development Ordinance (UDO)
Standard Specifications and Detail Manual
Lake and Stream Vegetative Buffers Policy

Zoning Text Amendment Recommendations

Existing planning documents and ordinances for the City of Monroe were reviewed and compared with the processes necessary for the successful implementation of a greenway system. The following text amendment recommendations are proposed to enhance the language already present in the city's various plans and ordinances.

Land Development Plan (2000-2010)

The current version of the city's Land Development Plan was updated and adopted on November 4, 2008. Several objectives and strategies support the development of greenways in improving the quality of life in Monroe.

1. Residential Uses

- A. Smart Growth options encourage open space and greenways

2. Natural Resource and Recreation Areas

- A. Goal:
 - Protect and enhance the city's natural and recreational resources
- B. Objective:
 - Maintain and expand open space areas and recreational resources throughout the city
- C. Strategies:
 - Develop a recreation, greenway and open space plan for the city
 - Explore the feasibility of establishing a thirty acre passive and active recreational park at Lake Twitty
 - Require the dedication of open space and neighborhood recreation areas in future residential subdivisions and other planned developments
 - Encourage the use of greenways as a means of connecting neighborhoods and to preserve open space

3. Central Business District

- A. Objective:
 - Promote a pedestrian-friendly atmosphere in Downtown
- B. Strategies:
 - Examine the feasibility of widening existing sidewalks
 - Repair existing sidewalks and extend them where necessary to provide a comprehensive pedestrian network
 - Continue to maintain public spaces

4. Charlotte Highway Corridor

- A. Strategy:
 - Continue to lobby NCDOT for the funding necessary to improve Charlotte Avenue, including widening and sidewalk construction

5. Traditional Neighborhood Development (TND)

- A. Purpose:
 - The TND is intended to allow for the development of fully integrated mixed-use pedestrian oriented neighborhoods

6. Multi-Family Developments Design Standards

- A. Sidewalk and Pedestrian Crosswalks
 - Public sidewalks shall be located adjacent to all public streets and shall be a minimum of five (5) feet wide
 - Pedestrian walkways shall be located on private property and shall be located at all building entrances
 - All pedestrian walkways shall be a minimum of five (5) feet wide
 - All public sidewalks and pedestrian walkways shall be continuous where possible and shall connect to other pedestrian areas through painted crosswalks
 - All major intersections shall have well-defined pedestrian crossing signs

7. Rocky River Road Land Use Corridor

- A. Purpose:
 - Promote parks and greenways to be developed in floodplain areas
- B. Strategies:
 - Encourage the development of parks, plazas, greenways and open space in floodplain areas

Unified Development Ordinance (UDO) (adopted Dec. 16, 2003, City currently requesting RFQs for update)

Title XV: Land Usage

Chapter 156: Zoning Code

Basic Definitions and Interpretations

156.14 – Definitions of Basic Terms

- Current: RECREATION, OUTDOOR. Generally commercial uses, varying in size, providing daily or regularly scheduled recreation oriented activities. Such activities may take place wholly outdoors or within a number of outdoor structures. OUTDOOR RECREATION includes the following uses:
 - Drive-in theater;
 - Camp, campground, travel trailer park, recreational vehicle park;
 - Extreme sports facility such as paintball, BMX, or skateboarding;
 - Golf course;
 - Batting cage, golf driving range, mini-amusement park, miniature golf facility, water park;
 - Riding stable;
 - Outdoor shooting range;
 - Racetrack;
 - Stadium, arena, commercial amphitheater.
 - Recommended: Add Greenways/Trails as an outdoor recreation

activity in the definition

Permissible Uses

156.110 – Table of Permissible Uses

- Recommended: Allow Greenways/Trails in all zoning and overlay districts

Recreational Facilities and Open Space

The construction and implementation of a greenway system will require the acquisition of additional open space. The land dedicated for open space must be usable and a meaningful component of the greenway master plan.

156.148 – Usable Open Space

- Current: Open space land dedication is a requirement for residential development in conditional districts only
 - **Recommended:** Open space land dedication is a requirement for all zoning and overlay districts
- Current: Developers must dedicate usable open space
 - **Recommended:** Developers must dedicate usable open space or provide a payment in lieu of to the City of Monroe
- Define usable open space
 - **Recommend as follows:**
 - Unity of a parcel(s)
 - Shape
 - Location so as to reasonably serve the greenway and open space needs
 - Public Access provided by street frontage or public easement (30 foot minimum)
 - Topography not to exceed 5 percent slope for more than a fourth of gross land to be dedicated
 - Usability of dedicated land for greenway. No more than 25 percent of the dedication can be located within the floodplain or floodway

156.150 – Dedication of Open Space

- Current: If any portion of the lot proposed for residential development lies within an area designated on the officially adopted recreation master plan as a neighborhood park or part of the greenway system or bikeway system, the area so designated (not exceeding 5% of the total lot area) shall be included as part of the area set aside to satisfy the requirement of Section 198. This area shall be dedicated to public use.
 - **Recommend:** 5 percent maximum of the total lot area to be set aside if the lot or portion of lot is in an area designated on the officially adopted Recreation Master Plan and/or Greenway Master Plan as part of the greenway system
 - **Recommend:** In addition to the open space being dedicated to public use, it should be added that public open spaces shall be dedicated to a local government or non-profit land trust or conservancy organization for ownership and maintenance, and that public open spaces shall maintain free and public access
- Current: city has the right to attempt more acquisition, if more than 5 percent lies within designated area

- Current: addresses residential development only
 - **Recommend:** include all other types of development

156.172 – (Currently Reserved – Recommended Addition) - Permissible Uses within Floodways

- **Recommend:** add specific listing of greenways and trails as a permissible use within the floodway

156.152 – (Currently Reserved – Recommended Addition) – Payment in Lieu of Open Space Dedication

- **Recommend:** Where a fee is paid in lieu of dedication, the amount of such payment shall be the product of the number of acres to be dedicated and the average fair market value of the land being developed at the time of submission of the preliminary subdivision plat or preliminary site plan. Fair market value shall be determined by the City Council, based upon current appraisal(s) and being acceptable to the developer
- **Recommend:** Fees collected shall be held in a special fund for the purposes of acquiring and developing recreation, greenways, and open space based on the officially adopted Parks and Recreation Master Plan and/or Greenway Master Plan, not for maintenance or replacement of existing park facilities or equipment

Parking

Bicycle parking should be considered as a part of this section to require the addition of long term and short term bicycle parking facilities for non-residential uses. Encouragement of the use of bicycles and greenways can be enhanced through the accommodation of bicycle parking facilities throughout the City of Monroe. Specific text recommendations are not provided within this report, however, it is recommended that a committee be formed to study and recommend a proposed text amendment for the inclusion of bicycle parking facilities.

Chapter 159: Stormwater Management Ordinance

Currently, paths (pervious and impervious) are an allowed use within floodplain areas. It is recommended that this language be strengthened to state greenways and trails, pervious and impervious.

Standard Specifications and Detail Manual

It is recommended that a section be added to the manual regarding greenway design and construction with a statement that when a greenway is part of a development, all greenways should be constructed in accordance with the design and construction standards in the manual (insert cross-sections from Greenway Master Plan), and the City of Monroe Greenway Master Plan and shall be maintained for public access whether by easement or by public dedication.

Lake and Stream Vegetative Buffers Policy

Following the recommendation for added language to the Stormwater Management Ordinance, the Lake and Stream Vegetative Buffers Policy should be updated to reflect this added language as well upon adoption, allowing for greenways and trails to be located within the setback of all perennial and intermittent surface waters. It is also recommended that the description under VI. View Corridor be updated to approve greenways and trails to be located within the view corridor, as VIII. Lake Access Through Buffer Areas states that “walking access to streams and City Lakes is allowed throughout the buffer zone”.

APPENDIX



Design Guidelines
Types of Greenways/Trails
Trail Environments
Accessible Trail Design
Trail Structures
Trail Amenities

Design Guidelines

The following design guidelines have been established to assist municipalities and other stakeholders in constructing trails and amenities that will provide safe and sustainable greenway corridors for Monroe. These guidelines allow trail construction and character to be developed uniformly throughout the city. The design guidelines are to be used as a toolkit with the understanding that actual site conditions may dictate adjustments in final trail design. These design guidelines have been organized into the following sections:

Types of Greenways/Trails

Greenways can mean many different trail facility types. The trail types that may be constructed in Monroe may include natural surface trails, paved or unpaved multi-use trails, sidewalks, sidepaths, equestrian trails, or multi-use trails with equestrian use.

Trail Environments

The greenway corridors designated in Monroe occur in many different environments, each providing a unique experience. When constructing trails, it is important to be mindful of the environment for that specific trail corridor, so that those environments are not damaged during construction or as a result of future trail use. Likewise, the long term sustainability of trails should be considered based on the environments in which they are being constructed. Trail environments to be discussed include creekside trails, trails within floodways or floodplains, underpasses, utility easements, rail crossings, and rails with trails.

Accessible Trail Design

It is important to consider accessibility when designing trails, not only relating to alternate transportation, but from a recreation standpoint as well. Standards for accessibility have been established by the U.S. Department of Justice through the Americans with Disabilities Act, U.S. Department of Transportation, Federal Highway Administration, AASHTO, and the U.S. Access Board with Accessibility Guidelines for Outdoor Developed Areas. This section will address trail design to meet the needs of users with varied mobility requirements.

Trail Structures

Development of trails within certain environments will create the need for additional facilities or structures including boardwalks, pedestrian/bicycle bridges, railings, and drainage and erosion control measures. These structural elements support trail use, help provide a safe trail experience, reduce a trail's impact on the environment, and reduce trail maintenance when designed and maintained properly.

Trail Amenities

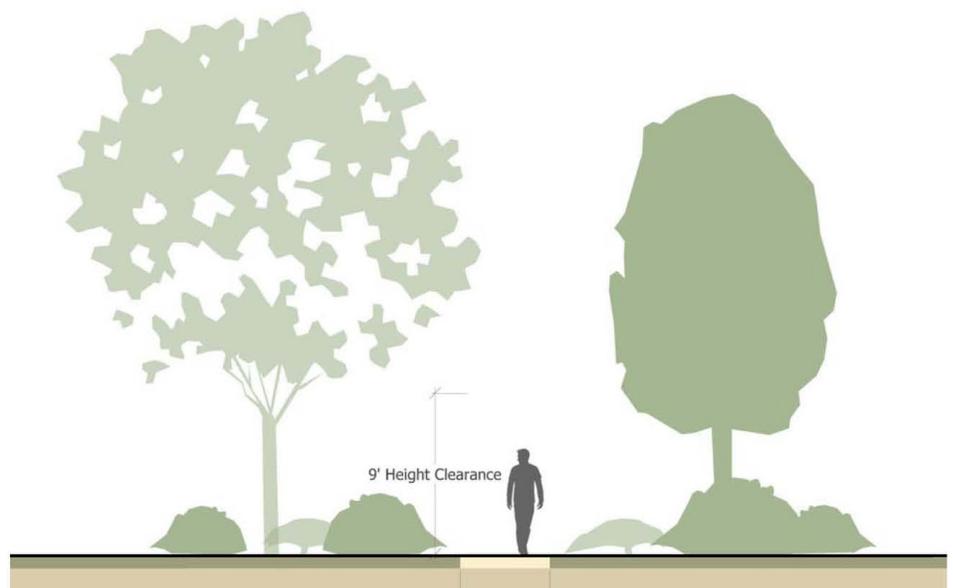
Greenway users will need accommodations or support facilities along the greenway corridors. Inclusion of these support facilities will provide points of access to trails, encourage continued trail use, and create local character for trails. Typical amenities within a trail environment include trailheads and parking, seating, overlooks, signage/wayfinding, tables, trash receptacles, pet waste stations, opportunities for public art, and in some areas, restroom facilities.

Types of Greenways/Trails

Natural Surface Trails

Most users will associate natural surface trails with hiking trails often found in natural park settings. These types of trails typically serve hikers more so than cyclists. Minimal site preparation or construction is needed. Recommended guidelines include:

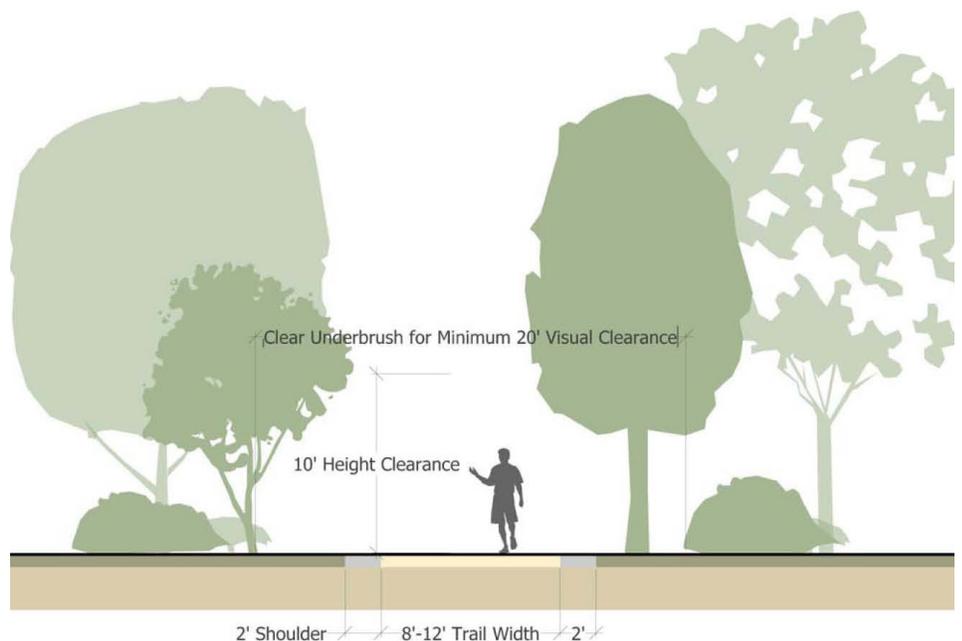
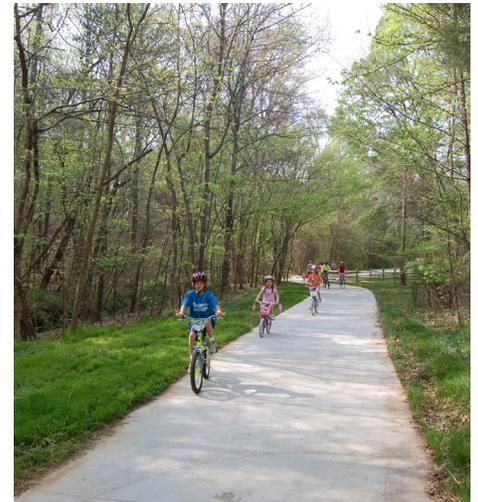
- Maintain a trail width of 2 to 5 feet
- Maintain a vertical clearance of at least 9 feet
- Trail surface is typically native materials such as dirt, rock, soil, forest litter, or mulch
- Be mindful of grade change; trail should follow contours to avoid steeper slopes
- Route trail around trees and other site features wherever possible
- Provide positive drainage for trail surface, but minimize extensive removal of existing vegetation or adjacent surfaces



Multi-Use Trails – Paved

Multi-use trails are the most common type of greenways within municipal park systems and trail networks. These trails can be used by hikers, walkers, joggers, cyclists, users in wheelchairs, and parents with strollers, accommodating all levels and abilities of users. Recommended guidelines include:

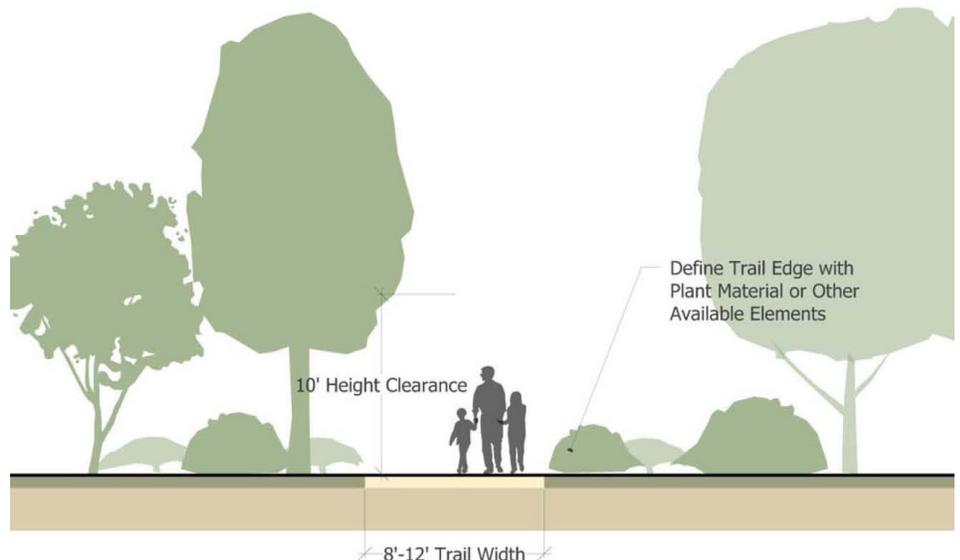
- Maintain a paved trail width of 8 to 12 feet; 10 feet is the most common
- Maintain a vertical clearance of at least 10 feet
- Provide a 2 foot graded (gravel) shoulder on each side of the trail
- Use asphalt or concrete pavement
- Consider pervious pavement in less clay-like soils
- Provide an aggregate base course (ABC) under the asphalt
- Consider using geotextile fabric under the ABC in softer soil conditions
- Specify concrete for use in highly floodprone areas
- Provide centerline stripes on trails with high volumes of users and around curves



Multi-Use Trails – Unpaved

Unpaved multi-use trails are often found in upland areas. With proper compaction, these trails can also be used by hikers, walkers, cyclists, users in wheelchairs, and parents with strollers, accommodating all levels and abilities of users. Unpaved trails are often less expensive to construct, but can cost more to maintain depending on trail location, soil compaction, topography, and weather patterns. Joggers, runners, and some cyclists prefer unpaved trails. Recommended guidelines include:

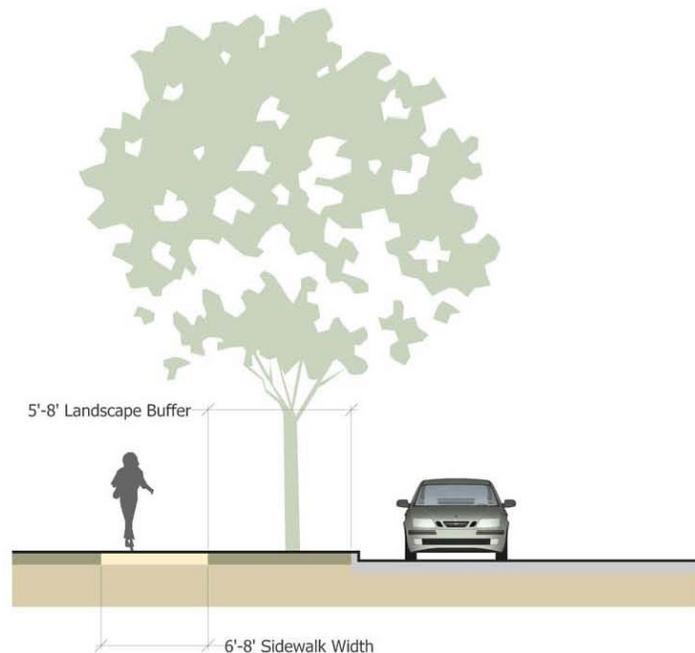
- Maintain a paved trail width of 8 to 12 feet; 10 feet is the most common
- Maintain a vertical clearance of at least 10 feet
- Soft surface trail materials may include graded aggregate stone (crusher run, decomposed granite, soil cement)
- Provide an aggregate base course (ABC) under the surface course
- Consider using geotextile fabric under the ABC in softer soil conditions
- Consider providing edging along both sides of the trail to maintain trail surface materials
- Monitor trail surfacing after rain events to minimize ruts and drainage channels



Sidewalks

This greenway master plan makes use of existing sidewalks in many areas of the city. Sidewalks often become overland connectors between trails. In some instances, greenway master plans have encouraged the completion of sidewalk systems to help finish trail corridor connections. Sidewalks typically serve pedestrians, but do not always accommodate cyclists. For new sidewalks, recommended guidelines include:

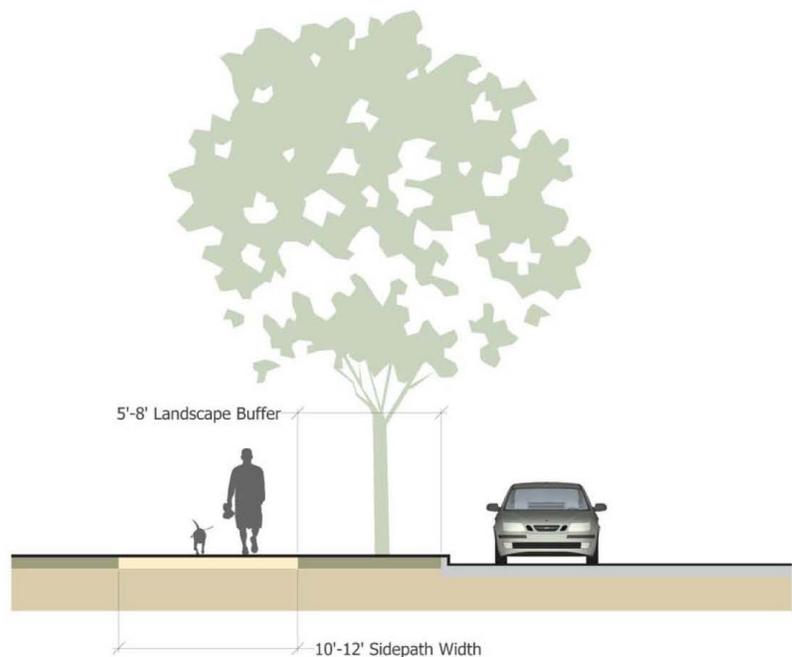
- Minimum sidewalk width of 6 feet; 8 to 10 feet preferred, especially if an extension is allowed
- Provide a 5 to 8 foot landscaped buffer between the roadway and the sidewalk if room is available
- Use a light broom finish perpendicular to the direction of travel
- Provide accessible ramps and crosswalks at all intersections or street crossings
- Install pedestrian signaling at intersections, especially those with heavy traffic volumes and/or rapid traffic speeds



Sidepaths

When the primary trail is street based and has limited driveway/intersection crossings, a sidepath is recommended along one side of the roadway. This might occur along some of the more rural two lane roads. Recommended guidelines for sidepaths include:

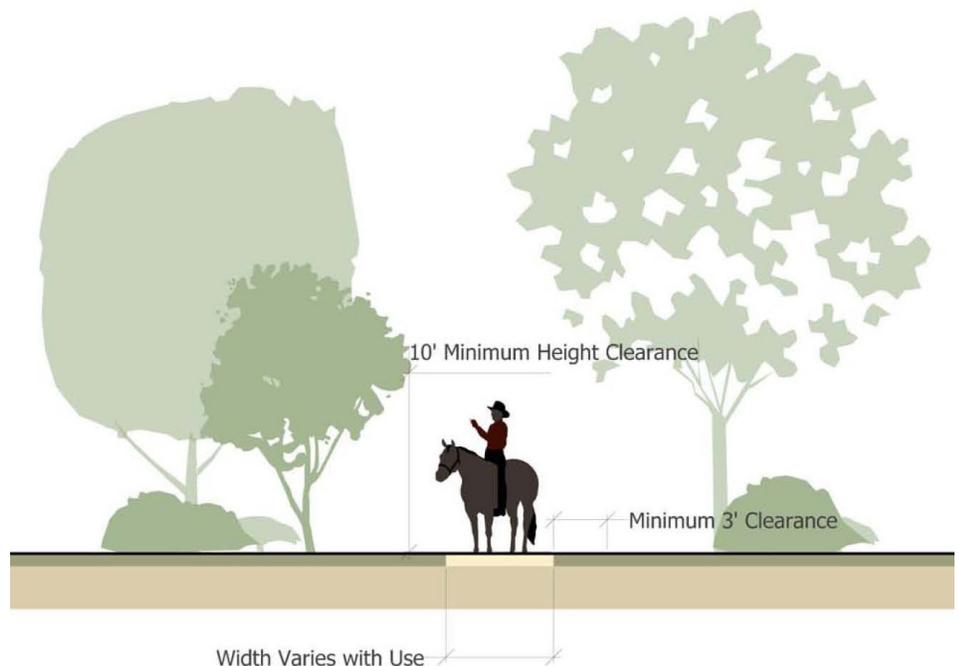
- Sidepaths should be 10 to 12 feet wide
- Sidepaths should be set back at least 5 feet from the edge of the roadway with a vegetated buffer wherever possible
- Provide concrete or asphalt surfacing
- Provide accessible ramps from sidepaths to roadway
- Install bollards at intersections/roadways to prevent vehicles on the sidepath



Equestrian Trails

Equestrians prefer separate trails for their use not only for the types of rides they do, but for safety concerns of the riders and their horses. Horses can be easily startled by hikers and cyclists. Equestrians can use a wide area of space depending on whether they ride individually or in groups. Horses can be hard on trails, making trails more difficult to use for hikers and cyclists after rain events or during continued wet conditions. Equestrian facilities need to provide enough space for horses and their riders to feel at ease, allow horses to ride away from trail edges, offer good visibility, avoid natural hazards, and provide safe interaction with other trail users. Dirt or stabilized dirt is the preferred trail surface, though crushed stone like granite screenings is also acceptable. Water crossings are preferred over bridge or boardwalk crossings which would require hoof mats on the treads. Based on USDA/FHWA guidelines there are suggested widths and clearance tolerances for standard single and double track (side by side riding/passing) equestrian trails as follows:

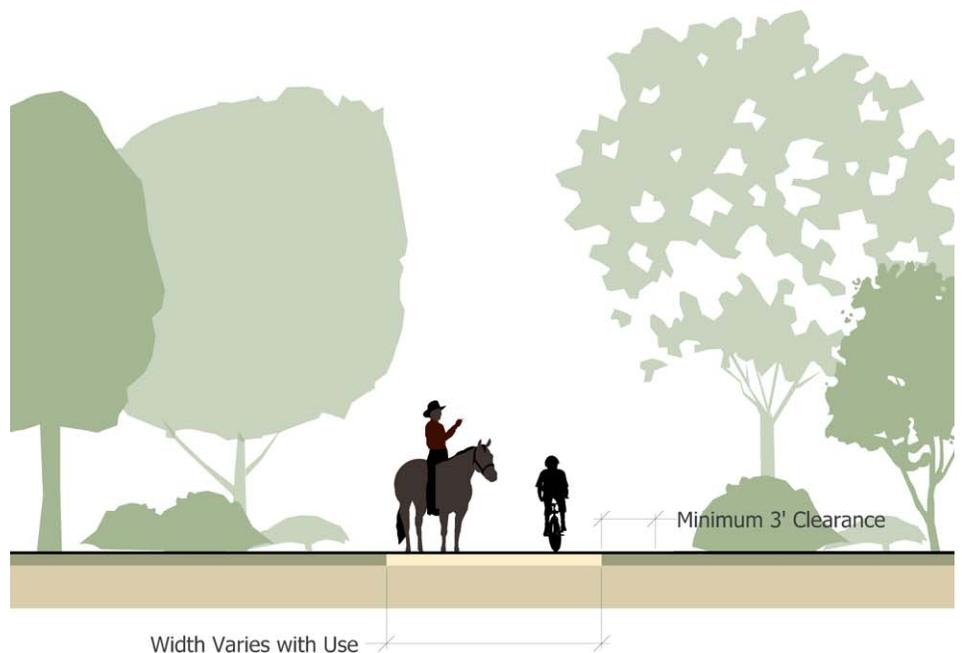
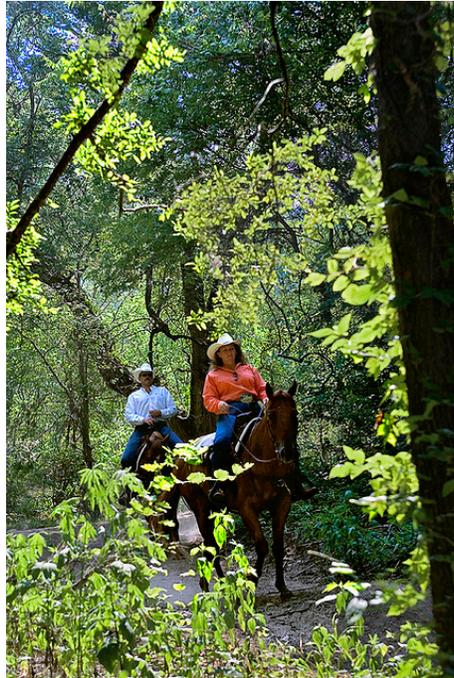
- Trail width for single track ranges from 1.5 to 2 feet for low development; 3 to 6 feet for moderate development; 8 to 12 feet for high development
- Horizontal clearing width which is equal to the trail width, plus 3 feet each side ranges from 5.5 to 8 feet for low development; 9 to 12 feet for moderate development; 14 to 18 feet for high development
- Trail width for double track ranges from 5 to 6 feet for low development; 8 to 12 feet for moderate and high development
- Horizontal clearing width, which is equal to the trail width, plus 3 feet each, side ranges from 10 to 12 feet for low development; 14 to 18 feet



- for moderate and high development
- Vertical clearance should be 10 to 12 feet

Multi-use Trails with Equestrian Use

There are many multi-use trails across the country that also include equestrian use. It is important to install appropriate signage indicating trail protocol, especially noting that hikers and cyclists yield to equestrians at all times. Trail sub-base and sub-grade need to be firm and prepared properly. Maintenance of shared trails should be a priority due to the multiple uses during wet conditions and the need for more constant manure removal.

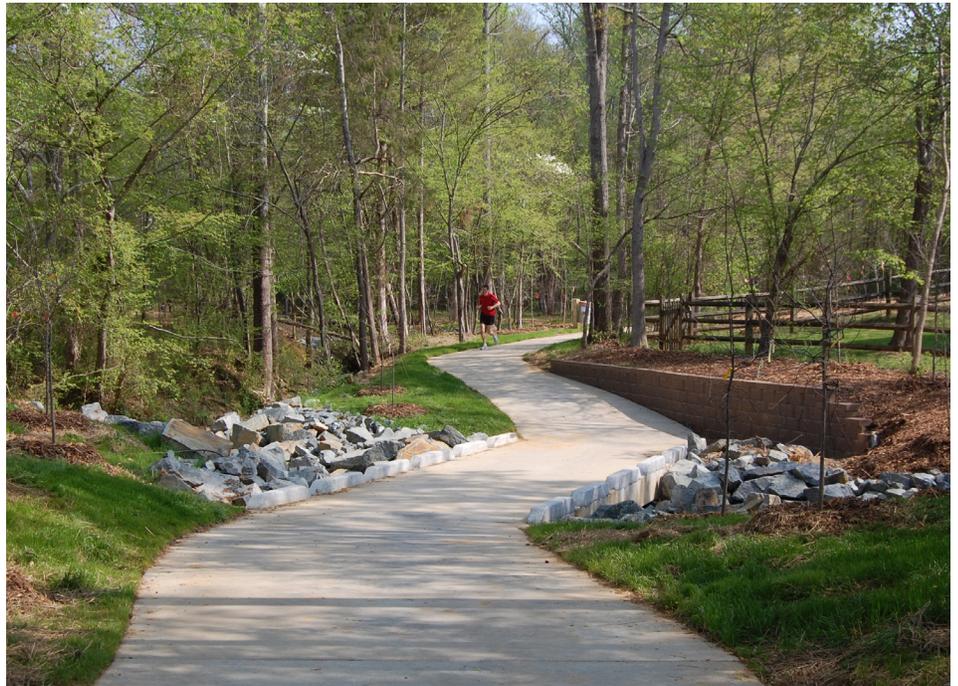


Trail Environments

Creekside Trails

Creekside trails occur more often in more populated or developed areas. Road ROWs and density may warrant a shift in trail development to the rear of lots if stream channels are present and can provide a connectivity link. Trails are located immediately adjacent to the stream channel, thus flooding frequency needs to be considered. Retaining walls and gabion walls may be required due to the potential tightness of this type of trail corridor. Walls also help to protect the trail from erosion and flooding. Recommended guidelines for creekside trails include:

- Minimum trail width should be 10 feet with no shoulders
- Provide concrete surfacing to withstand prolonged flooding and high-velocity stream flow
- Trail amenities should be minimized along creekside trails; retaining walls could also serve as seatwalls



Trails within Floodways

These trails are similar to creekside trails, but the trail is not located immediately adjacent to the stream channel. A vegetative buffer or streamside zone is established between the stream channel and trail. Potential flooding is infrequent and more periodic. Recommended guidelines for trails within floodways include:

- Minimum trail width should be 10 feet with no shoulders
- Provide asphalt or concrete surfacing to withstand flooding and stream flow dependant on frequency of flooding
- Provide a proper sub-base to increase longevity and sustainability of trail

Trails within Floodplains

This type of trail is located outside of the floodways. A vegetative buffer between the stream channel and trail is left intact. Occasional flooding may occur during major rain events. Recommended guidelines for trails within floodplains include:

- Minimum trail width should be 10 feet with 2 foot graded shoulders on each side
- Provide asphalt surfacing; aggregate stone surface can be used in upland situations
- Provide a proper sub-base to increase longevity and sustainability of trail; a geotextile fabric may need to be installed in softer soils



Underpasses

Opportunities may arise when trail corridors can be routed under existing bridges or through culverts to avoid on road or at-grade crossings. This will typically occur when the trail follows a stream channel or river. Recommended guidelines for underpasses include:

- Underpass width should be at least 12 feet
- Vertical clearance of the underpass should be at least 8 feet; 10 feet preferred
- Ensure proper drainage is designed to avoid pooling of water
- Lighting is recommended for safety within the underpass



Utility Easements

Utility easements can often be used for trail construction as long as dual easements are created with the utility company and property owner(s). Most common use of easements involves sewer and electric utilities where trails can be developed along edges of the ROWs. Gas easements are more stringent and typically only allow trail crossings within their ROWs. Utility companies should be notified early in the planning and design process, so that easements and agreements can be completed in a timely manner and all parties are well informed. All utility ROW guidelines and restrictions should be reviewed and adhered to. Recommended guidelines for utility easements include:

- Trails within utility easements shall meander as necessary to accommodate elevation change and provide positive drainage
- For electric transmission ROWs, the trail width shall not exceed 5 feet in width, not including graded shoulders; trail surfacing shall be soft surface
- Trails should be located at least 25 feet away for transmission tower pads
- In most sewer ROWs, the trail can parallel the ROW as long as the trail is not located over the actual sewer line (except for trails that cross the ROW)



Road ROWs

While it is generally preferable to select trail alignments in independent rights-of-way, there are situations where existing roads provide the only corridors available. Both sidewalks and sidepaths can be located within road ROWs. The North Carolina Department of Transportation (NCDOT) has an adopted Pedestrian Policy with guidelines as to how sidewalks can be located within NCDOT ROWs. In addition to this, the Bicycle & Bikeway Act of 1974 directs the NCDOT to assist local governments with the development of bicycle programs and the construction of bicycle facilities. More information on this can be found in Appendix VIII.

Rail Crossings

Where trails may have to cross rail lines at-grade, efforts should be made to ensure visibility and safety for all users. Ideally, at-grade rail crossings should occur in conjunction with existing sidewalk or vehicular crossings, but this is not always the case. It is imperative to notify the railroad company/owner early in the planning and design process. Recommended guidelines for rail crossings include:

- Trails should cross rail lines as close to a 90 degree angle as possible
- Proper rail warning signage and pavement markings shall be installed along the trail on both sides of the rail crossing
- Crossing materials should be skid resistant; concrete and rubber crossing materials should be used to provide longevity and less maintenance
- If trail crossing is not in conjunction with an existing vehicular crossing additional vegetative clearing should occur to increase visibility for both the trail user and the rail line

Rails with Trails

Some railroads will allow trails to be constructed within their ROWs or within an easement within the ROWs. Railroads should be included in planning and design discussions early in the trail process which in turn could help reduce time needed for approvals from railroads. Most railroads or regulators such as Public Utility Commissions or the Federal Railroad Administration have guidelines and policies that trail designs must adhere to before approvals can be gained. Recommended guidelines for rails with trails* include:

- Trail width should be at least 12 feet with a 2 foot graded shoulder each side
- Setbacks will vary with train type, speed, frequency and separation technique; edge of trail should be no closer than 15 feet from centerline of nearest rail line for rails that see minimal use or commuter use; trails should be set back a minimum of 25 feet or more from the centerline of the nearest rail on more active lines
- Fencing at 5-6 feet high should be installed between the trail and the rail at least 3 feet off the trail shoulder
- The trail should be graded to drain away from the rail line
- *More information can be found at: www.railswithtrails.com and www.railstotrails.org



Accessible Trail Design

All attempts should be made to design trails for accessibility for all users. Guidelines have been created in response to the Americans with Disabilities Act (ADA) for trail accessibility. However, meeting ADA guidelines may be difficult in some outdoor situations. Meeting ADA guidelines might cause conflict with trail sites having significant cultural or natural resources such as tree canopies or stream channels causing a significant grade change in the intended purpose of the trail or steep topography/terrain characteristics may prevent compliance. The following standards are to be used in accessible trail design:

- Surface materials should be firm and stable through the use of asphalt, concrete, wood, or compacted gravel
- Trail gradient should be less than 5% without landings; trail gradient can be less than 8.33% with landings
- Trail cross slope should be 2% maximum to provide positive drainage
- Trail width should be 8 feet minimum to allow the variety of users and the passage of 2 wheelchairs
- Resting areas or widened areas should be provided about every 300 feet
- Detectable pavement changes should be placed at curb ramps and top of ramp locations before entering roadways
- Concrete pads should be provided adjacent to one side of each bench location for wheelchairs



Trail Structures

Boardwalks

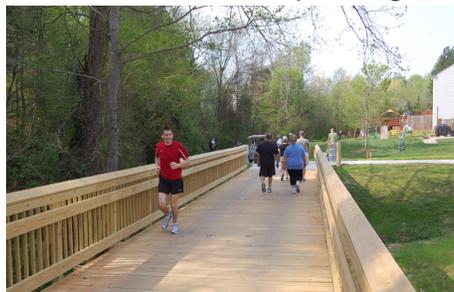
In general, trail routing should avoid wetlands if at all possible. If unavoidable, boardwalks should be used where trails need to be constructed through wetlands, areas where grading must be minimized or fill soil is not an option (floodplain), or other environmentally sensitive areas. Recommended guidelines for boardwalks include:

- Clear width of boardwalks should be 10 feet minimum on main trails
- If the height of the boardwalk exceeds 30 inches, railings are required; toe rails should be used where rails are not required
- Pressure treated wood posts, concrete footers or auger piers should be used for foundation materials
- Decking should be pressure treated (non-toxic) wood or recycled plastic
- Thickness of deck planking should be 2 inches minimum
- Boardwalks with a length more than 300 feet should have a seating/resting area every 150 feet

Pedestrian/Bicycle Bridges

Bridges should be used where trails cross streams or rivers, steeper drainage channels or roadways. There are many good options available for prefabricated wood or steel bridges that can be manufactured off site, delivered to the site, and easily installed with a crane. There may be opportunities to re-use abandoned railroad bridges that are either existing on site or can be relocated to the trail crossing location. The structural integrity should be assessed before reusing these types of bridges. A trail bridge should support a minimum H-5 loading (10,000 Lbs./5 tons). Other recommended guidelines for pedestrian/bicycle bridges include:

- Clear width of bridges should be 10 feet minimum
- Provide a reinforced concrete abutment on each side of the bridge
- Top of bridge rail should be 54 inches with a rub rail set at 36 inches maximum
- Decking should be pressure treated (non-toxic) wood
- Thickness of deck planking should be 2 inches minimum



Railings

As mentioned in both the boardwalks and bridges sections, railings are needed when the deck height is over 30 inches from finished grade of trail to existing grade below. Local, state, and/or federal regulations and codes should be consulted for final rail design, but in general recommendations for railings include:

- Railings should consist of a horizontal top, bottom, and middle rail
- The top rail should be 54 inches from the bridge or boardwalk deck
- The middle rail should be set between 33 and 36 inches and serve as a rub rail for cyclists
- Pickets should be placed no further than 4 inches on center



Drainage and Erosion Control Measures

Erosion control measures need to be incorporated into drainage design along greenway corridors to reduce erosion problems, minimize maintenance (and costs), and extend the longevity of the trail. Overall, trails should be designed with rolling grades using a series of dips, crests, climbs, and drainage crossings to respond to the existing terrain. In flatter situations, grade reversals may need to be constructed to create drainage flow. Both design methods lead to a more sustainable trail. In addition, recommended guidelines for drainage and erosion control measures include:

- Provide a maximum 2% cross slope on paved trail surfaces and graded shoulders
- Provide a drainage pipe under the trail where uphill water is collected in swales and/or directed to inlets/basins, so concentrated flow is directed under trail through a properly sized culvert
- Trail treads on natural surface or soft surface trails should be sloped away from high side of trail, so water sheets across the trail, not down the trail
- Refer to local and state sedimentation and erosion control regulations and practices when designing trails

Trail Amenities

Trailheads and Parking

Access points for the trails can occur in a variety of locations. Major trailheads should be developed where trails can be accessed from prominent heavily used nodes such as commercial developments, transportation nodes, or regional parks. Minor trailheads or neighborhood access points should be developed within parks and residential developments. Recommended amenities to be located at trailheads include:

Minor Trailhead

- Information kiosk/signage
- Benches
- Trash receptacles
- Pet waste stations
- Parking area for a minimum of 5 vehicles

Major Trailhead, all of the above, plus

- Picnic facilities
- Bicycle racks
- Shelters
- Restrooms with drinking fountain
- Landscape improvements
- Public art
- Informal gathering space
- Parking area for 25-35 vehicles

Seating

Benches/seating comes in a wide variety of styles and materials. Bench selection should be based on design theme and cost. Seating opportunities should be created at regular intervals along the trail ensuring there are places to rest. Ideally, these seating areas should be located in shade. Recommended guidelines for seating include:

- Benches should be 16-20 inches high; seating depth should be 18-20 inches
- Benches should have backrests
- Locate benches every quarter mile along the trail, at trail intersections, at trailheads, and at overlook opportunities
- Length of bench should not exceed 5 feet
- Provide wheelchair access (30 x 48 inch area) adjacent to benches
- When locating more than one bench in a seating area allow a minimum 4 feet separation between benches



Tables

As with seating, tables can vary from a standard wooden picnic table to a concrete or recycled plastic table. Tables should be located primarily at trailheads, but there may be opportunities to place tables in shaded settings along a trail, especially in areas that afford nice views. Tables should be located within view of a trail and be easily accessible for trail users or picnickers.



Trash Receptacles

Trash receptacles should be located in close proximity to seating and table areas both at the trailheads and along the trail. Receptacle materials should be durable and be able to withstand the exterior conditions and constant use. It is important that the receptacles are secured or contained in such a manner that trash does not spill easily. All receptacles should have tight fitting lids to keep rain out. Lids with latching mechanisms are good in keeping wildlife out of the receptacles. Some communities have started installing recycling receptacles next to trash receptacles for cans and bottles. Trash receptacles are to be used for trash only. Pet waste should be disposed of at pet waste stations (see next section).

Pet Waste Stations

To keep pet waste out of trash receptacles it is recommended that separate pet waste stations be installed at trailheads and regular intervals along a trail. The best type of station should have 3 components installed on one steel post. Identification signage should be located at the top of the post. A bag dispenser should be located below the sign. A ventilated mesh aluminum can should be located at the bottom of the post. The can should be 10 gallon and have a secure lid. Green is a uniformly recognized color.

Overlooks

There may be opportunities along a trail for users to enjoy a distant view or vista. These locations become favorable for the creation of an overlook. Overlooks can be designed as resting areas along a trail or as a destination point. Overlooks should contain the following elements:

- Benches

- Picnic table (at destination points only)
- Trash receptacles
- Railings, if significant elevation change occurs at the overlook area
- Informational signage
- Bike racks

Signage/Wayfinding

A signage system is important for users for the safe and appropriate use of all facilities. Additional signage along the system may provide reference mileage, directional information or interpretive information. The greenway system signage should be consistent with Monroe's Parks and Recreation design criteria. NCDOT approved regulatory signage should be installed at all pedestrian crossings. Likewise, warning signage should be installed at the proper vehicular distances on both sides of a greenway crossing. For the Monroe Greenway System, signage can be grouped as follows:

Trailhead/Vehicular Identification Signage

The trailhead/vehicular identification signage is designed to mark all major trailheads/access points or trail crossings. These signs are designed for easy recognition from a distance to aid trail users who drive to a major trailhead area. The signs are to be placed within the immediate vicinity of each major trailhead, preferably at the driveway or access road for the trailhead parking lot. These signs have a low, wide stance to the ground allowing easy identification with as little obtrusiveness as possible.

Secondary Entrance/Secondary Trail Identification Signage

Secondary Entrance/Secondary Trail Identification Signage serves to mark entrances from non-trailhead areas and other area trails. The signage is similar to trailhead/vehicular identification signage, but smaller in scale.

Trail Information/Directional/Trail Rules Signage

Trail information/directional and trail rules signs will be frequently located at trailheads and along trail corridors. This particular signage serves three distinct purposes. First, the signage provides users with the rules and regulations of the trail. Second, the signage serves to provide trail users with any helpful information related to the trail. Lastly, this signage provides directional guidance. Directional signage can be placed at many roadway and trail intersections and will serve to direct trail users to areas and destinations away from the immediate trail corridor. These signs should stand tall for ease of visibility, but be thin in order to reduce intrusion of the surroundings.

Informational Kiosks

Kiosks will be located primarily at trailheads and/or parking areas to provide trail maps, mileage and other important information to trail users.

Interpretive Signage

Interpretive signage serves to locate specific sites or areas along the trail that warrant attention from a historic aspect. The signs may also describe environmental education features. Signage should stand tall and clearly mark a trail user's arrival to the specified destination.

Mileage/Boundary Markers

Mileage and boundary markers should be provided throughout the greenway system to aid the trail user in identifying destination points and allow users to track their mileage. These markers should be located a minimum of every mile along the trail. Quarter mile markers can be identified as a painted designation directly on the trail surface. Boundary markers enable trail users to remain on the trail and reduces the risk of a trail user getting lost or wandering onto private property. Due to the frequency of mileage and boundary markers, they should be visible while blending in with the surroundings.

Regulatory/Warning Signage

Regulatory or warning signage may be warranted along some areas where trails are in close proximity to roadways or populated areas. These types of signs may warn trail users of upcoming roadway crossings, changes in trail direction (if the trail is using a sidewalk system), speed limits, underpasses, or rail crossings. NCDOT, MUTCD, FHA, and AASHTO can provide more information on guidelines and standards for regulatory and warning signage.

Opportunities for Public Art

Trails and trailheads provide good opportunities to add interest and character to the trail corridor through public art. Art can help to depict local history or unique events. Art can be functional or aesthetic. Public art can occur along the trail in the form of seating or other furnishings.

Restroom Facilities

Restrooms are nice amenities to provide if feasible. There are many types of facilities that can be constructed from pre-fabricated units that can be delivered to a site and connected to public utilities to small pump and haul or vault toilet systems. There are also a variety of composting toilet systems available. Restroom facilities should be located at major trailheads. This allows for easy maintenance and service of the restrooms. All restrooms should be visible from parking and access points, easily accessible and ADA compliant with a drinking fountain(s) or water bottle filler.

APPENDIX



Monroe Greenway

STROLL THROUGH



HISTORY

Whether you begin and end at Belk Tonawanda Park or somewhere else along the greenway, you will enjoy a scenic walk or run winding through Historic Downtown Monroe. Banners and markers along the sidewalks guide visitors on this one and a half mile loop.

Discover the rich history of our Downtown as you follow along this map which identifies and briefly details significant sites. You'll also pass

merchants to explore and restaurants to dine in. Whether you are seeking solitude and serenity or a friendly place to meet up with friends, the Historic Downtown Monroe Greenway has something for everyone.



For more about Historic Downtown Monroe, North Carolina, go to historicdowntownmonroe.org.

The Monroe Parks and Recreation Department is committed to providing the best possible recreational facilities and programs for the citizens and visitors to the City of Monroe. Learn more about what the Monroe Parks and Recreation has to offer at MonroeNC.org.



Take a leisurely stroll
along the Historic
Downtown Monroe
Greenway



Historic Downtown Monroe Greenway and Significant Sites Along the Way

- 1 US Post Office Building (1913)** 407 N Main St. This building was the main post office until 1986 and is an example of Neo-Classical federal architecture. Designed by Oscar Wendroth, this substantial, sophisticated facility indicates Monroe's growing importance as a trading, industrial, and railroad center in 1913.
- 2 Old City Hall (1847, renovated late 1970's)** 100 W Jefferson St. The oldest public building in Union County began as the public jail. It housed the Monroe government offices from 1892-1972, and was nominated for the National Register of Historic Places in 1971.
- 3 Union County Courthouse (1886, renovated 1926 & 1986)** Thomas J. Holt combined elements from a variety of popular styles to create the *most sophisticated and impressive building in the county*. The restoration and reuse of this building is the most important preservation project undertaken in Union County and it remains the single most significant property representing the history and development of Union County and Monroe.
- 4 Monroe Hardware (1887, rebuilt 1927)** Monroe Hardware started in 1887 as the Heath Hardware Company. The store's slogan, "We handle everything under the sun, from a pin hook to a Gatlin gun", was painted on the front of the building. This block was rebuilt in 1927 after being completely lost to fire.

- 5 Monroe Hardware Warehouse (1924)** 101 N Hayne St. Monroe Hardware used this magnificent 3-story building as a warehouse until 1962. After the 1927 burning of nearby retail store, Monroe Hardware Warehouse expanded. There is a *ghost mark* on the second floor walls where a bridge connected the building across Morgan Street.
- 6 Stewart House (1875, rebuilt 1920's)** 100-108 N Main St. Also known as the Central Hotel, it was originally 3-stories tall with shops on the first floor and boarding on the upper levels. After fire destruction it was rebuilt with only 2 floors. As a young boy, William Henry Belk (founder of Belk's Department Stores) was paid 25 cents a day to haul these hand-molded bricks to the masons.
- 7 Monroe Bank & Trust Building (1919)** 120 N Main St. Monroe Bank & Trust Company was organized in 1903 as The Savings, Loan and Trust Company. Morgan Street entrance originally led to a farmer's room where farmers could meet with tenants to transact business.
- 8 Belk Building (1888, rebuilt 1901)** 201 N Main St. Housed William Henry Belk's first retail store named New York Racquet. Renamed Belk Brothers in 1891 when brother Dr. John M. Belk joined the business. Belk Brothers was unusual because prices were clearly marked, no haggling, and customers could return items for a refund.
- 9 Belk-Bundy Building (1911)** 200-204 N Main St. Constructed on two adjacent lots owned by the Belk brothers and S.B. Bundy. The Italian Renaissance Revival Style design conveys Monroe's prosperity in the early twentieth century.
- 10 English Drug Building (1876, renovated 1900 & 2000)** 115 W Franklin St. Originally erected as rental property, this building housed the English Drug Company from 1883 to the late 1920's.
- 11 People's Bank Building (1875, renovated 1900)** 313 N Main St. The first bank in Monroe, People's was organized in 1874. First national Bank acquired People's Bank in 1905 and occupied the building until 1919.

P Parking Free public parking.

APPENDIX



Community Engagement Summary

Community Engagement Summary

Public involvement is critical to any successful public planning process. For this Greenway Master Plan, public involvement occurred concurrently with input for the update to the City of Monroe's Comprehensive Parks, Recreation, and Open Space Master Plan. During the fall/winter of 2014, five community engagement sessions were held in various locations around the city. Each session was designed to educate and gather input from City residents, with the input received being used to directly influence the development of the Greenway Master Plan and the Comprehensive Parks, Recreation, and Open Space Master Plan for the City of Monroe. A total of 124 individuals participated in the community engagement sessions. The location and attendance for each session is included below.

Session #1

Wednesday, November 19, 2014
Ellen Fitzgerald Senior Center
327 South Hayne Street
Monroe, NC 28112
10am - 12pm
Attendance: 40 approx.

Session #4

Monday, December 8, 2014
Monroe Aquatics & Fitness Center
2325 Hanover Drive
Monroe, NC 28110
6pm - 8pm
Attendance: 24

Session #2

Saturday, November 22, 2014
Sutton Park Community Center
2303 Brooks Street
Monroe, NC 28110
2pm - 4pm
Attendance: 42 approx.

Session #5

Thursday, December 11, 2014
Monroe City Hall
300 West Crowell Street
Monroe, NC 28112
6pm - 8pm
Attendance: 6

Session #3

Saturday, November 22, 2014
Parks Williams Athletic Complex
2011 Ashton Avenue
Monroe, NC 28110
5pm - 6pm
Attendance: 12 approx.

During each community engagement session, participants were asked to visit various boards and respond to questions posed within each. The questions pertaining to the greenway system and/or existing trail facilities and the results are below:

Board 1

Participants were educated about the numerous facilities that the City provides to its residents and asked to identify which ones they frequent most often.

Session	#1	#2	#3	#4	#5
1. Dickerson Ctr.	0	12	3	6	1
2. Sutton Park	3	10	0	1	0
3. J. Ray Shute Ctr.	0	2	0	0	0
4. Winchester Ctr.	0	4	0	1	0
5. Ellen Fitzgerald Ctr.	21	0	0	2	0
6. Monroe Aquatics & Fitness Ctr.	2	2	0	25	2
7. Belk-Tonawanda Park	1	0	3	7	1
8. Creft Park	0	1	0	1	0
9. Don Griffin Park	1	0	0	0	0
10. Sunset Park	2	8	1	3	0
11. Monroe Country Club	0	2	0	4	1
12. Bearskin Creek Greenway	0	0	0	0	1
13. Parks Williams Athletic Complex	0	6	12	2	0
14. Old Armory Community Ctr.	3	0	0	1	0

Additional Notes / Comments:

- Belk-Tonawanda Park: One participant during session #4 often walks from downtown to this park.

Board 3

Participants were asked about their interest in expanding the City's greenway system, what they enjoy doing on greenways, and where they would like City greenways to connect to.

What activities would you most likely participate in while on the trail system?

Session	#1	#2	#3	#4	#5	TOTALS
Walking	6	3	n/a	14	1	15
Cycling	4	4	n/a	13	1	14
Running / Jogging	0	6	n/a	10	1	11
Hiking	0	5	n/a	10	1	11
Mountain Biking	0	2	n/a	6	0	6
Rollerblading	0	2	n/a	1	0	1
Skateboarding	0	20	n/a	1	0	1
Other: Outdoor Yoga	n/a	n/a	n/a	1	0	1

Additional Notes / Comments:

- This board was not presented at Session #3.

What important places or destinations should be part of a trail system or connected by trails within the City of Monroe?	
Sutton Park and Community Center	10
Belk-Tonawanda Park	9
Restaurant Areas	8
Ellen Fitzgerald Senior Center	8
Downtown Monroe (Franklin / Old Charlotte Hwy)	8
Parks Williams Athletic Complex	7
Monroe Aquatics and Fitness Center	7
Shopping Areas	6
Winchester Center	5
Union County Public Library	5
Monroe Country Club	5
Lake Twitty	5
Elementary, Middle, and High Schools	5
Sunset Park	4
Rolling Hills Country Club	3
Lake Lee	3
Carolinas Medical Center – Union	3
S. Piedmont Community College	2
Other: Sun Valley High & Middle School	2
Other: Alongside New bypass*	2
Other: Alongside Bearskin Creek	2
J. Ray Shute Center	2
Dickerson Center and Park	2
Richardson Creek Track (Undeveloped)	1
Parker / Haynes Streets Parcel (Undeveloped)	1
Other: River greenways**	1
Other: Indian Trail	1
Other: Creeks and Lakes	1
Old Armory Community Center	1
Don Griffin Park	1
Creft Park	1

* Look at the 74 bypass corridor as a potential site for parallel greenway corridor supported by parking that could serve commuter parking during the week.

** It is unclear what this write-in answer is referring to. It could be pertaining to Rocky River Park.

Additional Notes / Comments:

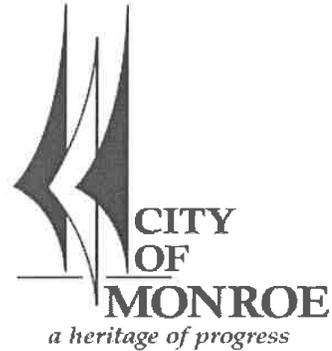
- Participants discussed a need for a park like Francis Beatty Park in Matthews. This 265 acre facility offers a conference center, restrooms, walking trails, mountain bike paths, picnic sites, playground areas, softball and soccer fields, basketball courts and tennis courts. It is heavily wooded with a large pond in the center, offering kayaking, fishing and canoeing.
- There was interest from residents to connect the greenway to other existing trail networks and existing sidewalks in the area to create a unified system.
- Several individuals were interested in the development of long trails, roughly 10 to 15 miles within a natural setting. This could potentially be done within the Richardson Creek Tract which is currently undeveloped.
- A few individuals discussed walking their dog when getting exercise, so adding a connecting dog park and/or integrating doggie pick-up stations should be evaluated.
- One individual mentioned that she goes walking with others at Lakeland Memorial Park (Cemetery) off of Lancaster Avenue, because it is quiet, safe and the walking surface is level.

GENERAL NOTES

- Many individuals expressed the need for more maps and / or more information about City parks and facilities. Several learned about Monroe parks for the first time.
- There is a strong need for better marketing of activities at City-operated facilities, and consistent signage at those facilities.
 - Seniors: flyers at the Ellen Fitzgerald Senior Center and local libraries, as well as printed seasonally in the local paper.
 - Teens: flyers distributed at school would be beneficial, as well as keeping the parks and recreation website up-to-date with information.
 - Hispanics: Spanish-translated flyer listing City facilities and programs at each park needs to be delivered to families via ESL or Spanish-speaking specialist at schools and posted on bulletin boards at local parks.
 - Additional special events that the City should plan for its residents include:
 - PassPort Event: This event is geared to get residents to experience and explore what the City of Monroe has to offer, as well as provide the City an opportunity to market its facilities. The event creator develops a list of facilities and/or activities they would like more people to experience / be aware of. Then, transportation is provided from one item on the list to the next.
 - 5K / 10K Walk and Run Event: Participants sign up in advance to walk/run an established route through the City. This provides the City the opportunity to market itself by highlighting major destinations along the way.

- One facility outside of the City of Monroe that people enjoy visiting is Lake Norman State Park, due to its trails and natural outdoor recreation opportunities.

In addition to the community engagement sessions, ETC/Leisure Vision conducted a City of Monroe Community Interest and Opinion Survey during the fall of 2014. The survey was designed to obtain statistically valid results from households throughout the city. The survey was administered by mail, web and phone.



*A Few Minutes of Your Time Will Help Make the City of Monroe
a
Better Place to Live, Work and Play!*

Dear City of Monroe Resident:

Your response to the enclosed survey is extremely important...

The City of Monroe is conducting a Citizen Survey to gain public input regarding updating the community's Comprehensive Parks, Recreation, Greenways, and Open Space Master Plan. Your household was one of a limited number selected at random to receive this survey, therefore, it is very important that you participate.

We appreciate your time...

We realize that this survey will take approximately 10 minutes to complete, but each question is important. The time you invest in completing this survey will aid the City of Monroe in taking a resident-driven approach to making decisions that will enrich the future of our community and positively affect the lives of its residents.

Please complete and return your survey within the next two weeks...

We have selected Leisure Vision/ETC Institute, an independent consulting company, as our partner to administer this survey. They will compile the data received and present the results to the City. **Your responses will remain confidential.** Please return your completed survey in the enclosed postage-paid envelope addressed to ETC Institute, 725 W. Frontier Circle, Olathe, KS 66061. If you would prefer to complete the survey on-line the address is www.cityofmonroeparkssurvey.org

If you have any questions, please feel free to contact Tonya Edwards in the City of Monroe Parks and Recreation Department at tedwards@monroenc.org. The Community Attitude and Interest Survey is a tool that will benefit all City of Monroe residents. Please take this opportunity to let your voice be heard!

Sincerely,

Bobby Kilgore, Mayor

City of Monroe • PO Box 69 • Monroe, NC 28111-0069

Tel: (704) 282-4500 • Fax: (704) 283-9098

www.monroenc.org

Community Interest and Opinion Survey: *Let your voice be heard today!*

The City of Monroe Parks and Recreation Department would like your input to help determine park and recreation priorities for our community. This survey will take 10-15 minutes to complete. When you are finished, please return your survey in the enclosed postage-paid, return-reply envelope. We greatly appreciate your time.

1. Counting yourself, how many people live in your household? _____

2. From the following listing of City of Monroe parks and recreation facilities, please check ALL the PARKS and FACILITIES you and members of your household have used during the past year.

- | | |
|---|--|
| ____(01) Monroe Country Club | ____(09) Rosa Bell Ceramics |
| ____(02) Monroe Aquatics & Fitness Center | ____(10) Bearskin Creek Greenway |
| ____(03) Dickerson Center | ____(11) Belk-Tonawanda Park |
| ____(04) Sutton Park | ____(12) Don Griffin Park |
| ____(05) Ellen Fitzgerald Senior Center | ____(13) Sunset Park |
| ____(06) Old Armory Community Center | ____(14) Creft Park |
| ____(07) J. Ray Shute Center | ____(15) Parks Williams Athletic Complex |
| ____(08) Winchester/Bazemore Center | ____(16) None |

3. Which THREE of the PARKS and FACILITIES from the list in Question #2, have you or members of your household used the most during the past year? [Using the numbers in Question #2 above, please write in the numbers for the parks you use most.]

1st: _____ 2nd: _____ 3rd: _____

4. Overall, how would you rate the physical condition of ALL the City of Monroe parks and facilities you have visited?

- | | |
|-------------------|--------------|
| ____(1) Excellent | ____(3) Fair |
| ____(2) Good | ____(4) Poor |

5. Have you or other members of your household participated in any recreation or sports programs offered by the City of Monroe Parks and Recreation Department during the past 12 months?

- ____(1) Yes [Please answer Questions #5a & #5b.]
____(2) No [Please go to Question #6.]

5a. Approximately how many different recreation or sports programs offered by the City of Monroe Parks and Recreation Department have you or members of your household participated in over the past 12 months?

- | | | |
|-------------------------|--------------------------|-----------------------------|
| ____(1) 1 program | ____(3) 4 to 6 programs | ____(5) 11 or more programs |
| ____(2) 2 to 3 programs | ____(4) 7 to 10 programs | |

5b. How would you rate the overall quality of the recreation or sports programs that you and members of your household have participated in?

- ____(1) Excellent
____(2) Good
____(3) Fair
____(4) Poor

6. Please check ALL the ways you learn about City of Monroe Parks and Recreation Department programs and activities.

- | | |
|---|--|
| <input type="checkbox"/> (01) Parks and Recreation program guide | <input type="checkbox"/> (06) From friends and neighbors |
| <input type="checkbox"/> (02) City of Monroe Web site | <input type="checkbox"/> (07) Flyers distributed at school |
| <input type="checkbox"/> (03) Newspaper articles | <input type="checkbox"/> (08) Conversations with Parks/Rec staff |
| <input type="checkbox"/> (04) Radio | <input type="checkbox"/> (09) Newspaper advertisements |
| <input type="checkbox"/> (05) Flyers/posters at Parks/Rec. facilities | <input type="checkbox"/> (10) Facebook or Twitter |

7. From the following list, please check ALL the organizations that you or members of your household have used for indoor and outdoor recreation and sports activities during the last 12 months.

- | | |
|---|--|
| <input type="checkbox"/> (01) School facilities | <input type="checkbox"/> (07) Boys and Girls Club |
| <input type="checkbox"/> (02) Churches | <input type="checkbox"/> (08) Monroe Parks & Recreation Facilities |
| <input type="checkbox"/> (03) Travel sports teams/clubs | <input type="checkbox"/> (09) Homeowners assoc./apt. com |
| <input type="checkbox"/> (04) Monroe Aquatics and Fitness Center | <input type="checkbox"/> (10) Wingate University recreation facilities |
| <input type="checkbox"/> (05) Union County parks | <input type="checkbox"/> (11) Other: _____ |
| <input type="checkbox"/> (06) Private clubs (fitness, tennis, etc.) | <input type="checkbox"/> (12) None. Do not use any organizations |

8. For each of the age groups shown below, please indicate which TWO organizations listed in Question #7 you and your household USE THE MOST for sports and recreation programs and services. [Use the number by each organization in Question #7. If there is no-one in your household ages 0 to 17, write the word NONE in the space provided below for ages 0 to 17.]

	<u>Agency Use Most</u>	<u>Agency Use 2nd Most</u>
Ages 0 to 17 years	_____	_____
Ages 18 years and older	_____	_____

9. Please CHECK ALL the reasons that prevent you or other members of your household from using parks, recreation and sports facilities or programs of the City of Monroe Parks and Recreation Department more often.

- | | |
|---|---|
| <input type="checkbox"/> (01) Facilities are not well maintained | <input type="checkbox"/> (11) Poor customer service by staff |
| <input type="checkbox"/> (02) Program or facility not offered | <input type="checkbox"/> (12) I do not know locations of facilities |
| <input type="checkbox"/> (03) Facilities lack the right equipment | <input type="checkbox"/> (13) Use services of other agencies |
| <input type="checkbox"/> (04) Security is insufficient | <input type="checkbox"/> (14) Not accessible for people with disabilities |
| <input type="checkbox"/> (05) Lack of quality programs | <input type="checkbox"/> (15) I do not know what is being offered |
| <input type="checkbox"/> (06) Too far from our residence | <input type="checkbox"/> (16) Facility operating hours not convenient |
| <input type="checkbox"/> (07) Class full | <input type="checkbox"/> (17) Registration for programs is difficult |
| <input type="checkbox"/> (08) Program times are not convenient | <input type="checkbox"/> (18) Lack of parking by facilities and parks |
| <input type="checkbox"/> (09) Use facilities in other cities | <input type="checkbox"/> (19) Other: _____ |
| <input type="checkbox"/> (10) Fees are too high | <input type="checkbox"/> (20) None |

10. Please indicate if **YOU or any member of your HOUSEHOLD** has a need for each of the parks and recreation facilities listed below by circling the YES or NO next to the park/facility.

If YES, please rate ALL the following parks and recreation FACILITIES of this type in Monroe on a scale of 5 to 1, where 5 means “100% Meets Needs” and 1 means “Does Not Meet Needs” of your household.

Type of Facility	Do You Have a Need for this Facility?		If YES You Have a Need, How Well Are Your Needs Being Met?				
	Yes	No	100% Met	75% Met	50% Met	25% Met	0% Met
A. Youth soccer fields	Yes	No	5	4	3	2	1
B. Youth baseball and softball fields	Yes	No	5	4	3	2	1
C. Youth football fields	Yes	No	5	4	3	2	1
D. Outdoor tennis courts	Yes	No	5	4	3	2	1
E. Adult softball fields	Yes	No	5	4	3	2	1
F. Off-leash dog park	Yes	No	5	4	3	2	1
G. Water parks	Yes	No	5	4	3	2	1
H. Playground equipment	Yes	No	5	4	3	2	1
I. Outdoor basketball courts	Yes	No	5	4	3	2	1
J. Disc golf	Yes	No	5	4	3	2	1
K. Skateboarding park	Yes	No	5	4	3	2	1
L. Walking and biking trails	Yes	No	5	4	3	2	1
M. Splash pads	Yes	No	5	4	3	2	1
N. Outdoor Swimming Pools	Yes	No	5	4	3	2	1
O. Community Gardens	Yes	No	5	4	3	2	1
P. Indoor fitness and exercise facilities	Yes	No	5	4	3	2	1
Q. Indoor running/walking track	Yes	No	5	4	3	2	1
R. Golf course	Yes	No	5	4	3	2	1
S. Small neighborhood parks	Yes	No	5	4	3	2	1
T. Large community parks	Yes	No	5	4	3	2	1
U. Indoor basketball/volleyball courts	Yes	No	5	4	3	2	1
V. Greenspace and natural areas	Yes	No	5	4	3	2	1
W. Picnic areas/shelters	Yes	No	5	4	3	2	1
X. Indoor swimming pool/leisure pool	Yes	No	5	4	3	2	1
Y. Other: _____	Yes	No	5	4	3	2	1

11. Which **FOUR** of the facilities from the list in Question #10 are **most important** to your household? [Using the letters in the left hand column of Question #10 above, please write in the letters below for your 1st, 2nd, 3rd, and 4th choices, or circle 'NONE'.]

1st: _____ 2nd: _____ 3rd: _____ 4th: _____ NONE

12. Please indicate if **YOU or any member of your HOUSEHOLD** has a need for each of the sports and recreation programs listed below by circling the YES or NO next to the recreation program.

If YES, please rate the following recreation PROGRAMS and activities on a scale of 5 to 1, where 5 means “100% Meets Needs” and 1 means “Does Not Meet Needs” of your household.

Type of Program	Do You Have a Need for this Program?		If YES You Have a Need, How Well Are Your Needs Being Met?				
	Yes	No	100% Met	75% Met	50% Met	25% Met	0% Met
A. Youth Learn to Swim programs	Yes	No	5	4	3	2	1
B. Preschool programs	Yes	No	5	4	3	2	1
C. Youth summer day camp programs	Yes	No	5	4	3	2	1
D. Youth sports leagues/programs	Yes	No	5	4	3	2	1
E. Youth health and wellness programs	Yes	No	5	4	3	2	1
F. Programs for teens	Yes	No	5	4	3	2	1
G. Adult fitness, health and wellness programs	Yes	No	5	4	3	2	1
H. Water fitness programs	Yes	No	5	4	3	2	1
I. Tennis lessons and leagues	Yes	No	5	4	3	2	1
J. Adult sports leagues/programs	Yes	No	5	4	3	2	1
K. Adult programs for 50 years and older	Yes	No	5	4	3	2	1
L. Programs for people with disabilities	Yes	No	5	4	3	2	1
M. Programs with your pets	Yes	No	5	4	3	2	1
N. Adult continuing education programs	Yes	No	5	4	3	2	1
O. Golf lessons and leagues	Yes	No	5	4	3	2	1
P. Community events, concerts, movies, etc.	Yes	No	5	4	3	2	1
Q. Nature programs/environmental education	Yes	No	5	4	3	2	1
R. Gardening programs	Yes	No	5	4	3	2	1
S. Other: _____	Yes	No	5	4	3	2	1

13. Which **FOUR** of the programs from the list in Question #12 are **most important** to your household? [Using the letters in Question #12 above, please write in the letters below for your 1st, 2nd, 3rd, and 4th choices, or circle 'NONE'.]

1st: _____ 2nd: _____ 3rd: _____ 4th: _____ NONE

14. Which **FOUR** of the programs from the list in Question #12 do you **currently participate in MOST OFTEN** at City of Monroe Parks and Recreation Department facilities? [Using the letters in Question #12 above, please write in the letters below for your 1st, 2nd, 3rd, and 4th choices, or circle 'NONE'.]

1st: _____ 2nd: _____ 3rd: _____ 4th: _____ NONE

15. The following are some of the benefits that you and your household may receive from parks, trails, recreation facilities, programs and services. For each potential benefit, please indicate your level of agreement with the benefits being provided by parks, trails, and recreation facilities by circling the corresponding number.

Benefits	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Don't Know
A. Improve physical health and fitness	1	2	3	4	5	9
B. Help reduce crime	1	2	3	4	5	9
C. Make Monroe a more desirable place to live	1	2	3	4	5	9
D. Preserve open space and the environment	1	2	3	4	5	9
E. Increase property values in surrounding area	1	2	3	4	5	9
F. Improve mental health and reduce stress	1	2	3	4	5	9
G. Increase opportunities for people of different cultures to interact	1	2	3	4	5	9
H. Help attract new residents and businesses	1	2	3	4	5	9
I. Protect historical attributes of the City	1	2	3	4	5	9
J. Promote tourism to the City	1	2	3	4	5	9
K. Improve diet and nutrition	1	2	3	4	5	9
L. Other: _____	1	2	3	4	5	9

16. Which THREE of the BENEFITS from the list in Question #15 are most important to you and members of your household? [Using the letters in Question #15 above, please write in the letters below for your 1st, 2nd, and 3rd choices, or circle 'NONE.']

1st: _____ 2nd: _____ 3rd: _____ NONE

17. The City is currently working to develop a greenway system. Please indicate how important you think it would be to use the Greenway to also provide the following:

	Very Important	Somewhat Important	Not Important	Not Sure
(A) A major connected network of walking, biking and nature trails	4	3	2	1
(B) Environmental protection, i.e. stormwater management and water quality	4	3	2	1

21. If a bond referendum was held to fund the acquisition, improvement, and development of the types of parks, trails, green space, and recreation facilities that are most important to you and members of your household, how would you vote in the election?

- (1) Vote in Favor
- (2) Might Vote in Favor
- (3) Not Sure
- (4) Vote Against

22. Please rate your satisfaction on a scale of 1 to 5, where 5 means "Very Satisfied" and 1 means "Very Dissatisfied", with the overall value your household receives from the City of Monroe Parks and Recreation Department.

- (5) Very Satisfied
- (4) Somewhat Satisfied
- (3) Neutral
- (2) Somewhat Dissatisfied
- (1) Very Dissatisfied
- (9) Don't Know

Demographics

23. Approximately how many years have you lived in the City of Monroe?

- (1) Less than 5 years
- (2) 5-10 years
- (3) 11-20 years
- (4) More than 20 years

24. Counting yourself, how many people in your household are:

- | | | | |
|--------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Under age 5 <input type="checkbox"/> | Ages 15-19 <input type="checkbox"/> | Ages 35-44 <input type="checkbox"/> | Ages 65-74 <input type="checkbox"/> |
| Ages 5-9 <input type="checkbox"/> | Ages 20-24 <input type="checkbox"/> | Ages 45-54 <input type="checkbox"/> | Ages 75+ <input type="checkbox"/> |
| Ages 10-14 <input type="checkbox"/> | Ages 25-34 <input type="checkbox"/> | Ages 55-64 <input type="checkbox"/> | |

25. What is your age? _____

26. What is your household income?

- (1) Under \$25,000
- (2) \$25,000-\$49,999
- (3) \$50,000-\$74,999
- (4) \$75,000-\$99,999
- (5) \$100,000 or more

27. Are you or members of your household of Hispanic or Latin ancestry?

- (1) Yes
- (2) No

28. Check ALL of the following that describes your race/ethnicity? (Check all that apply)

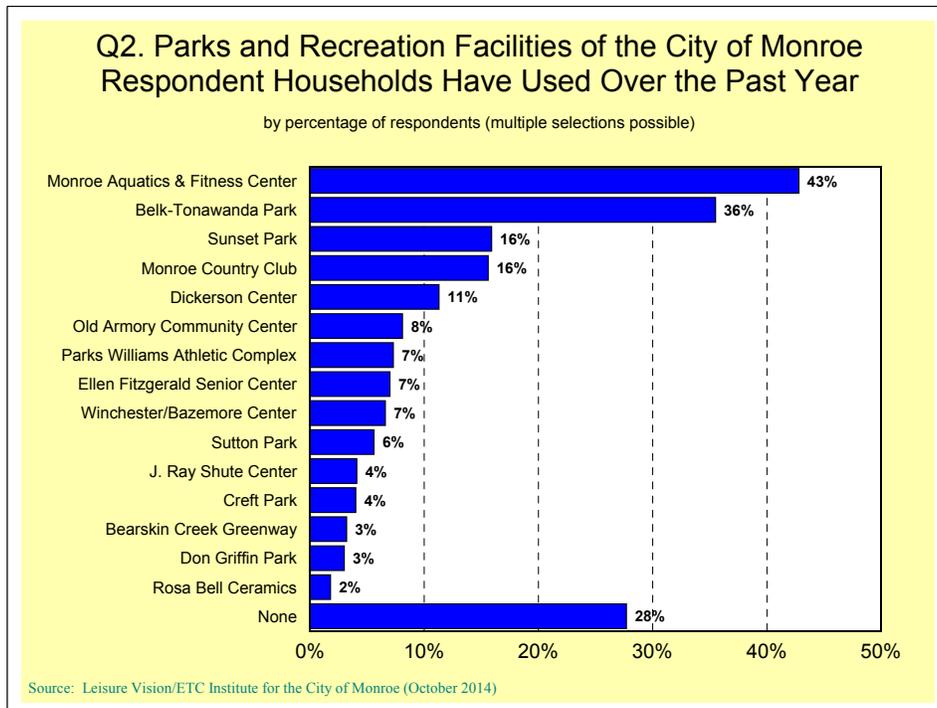
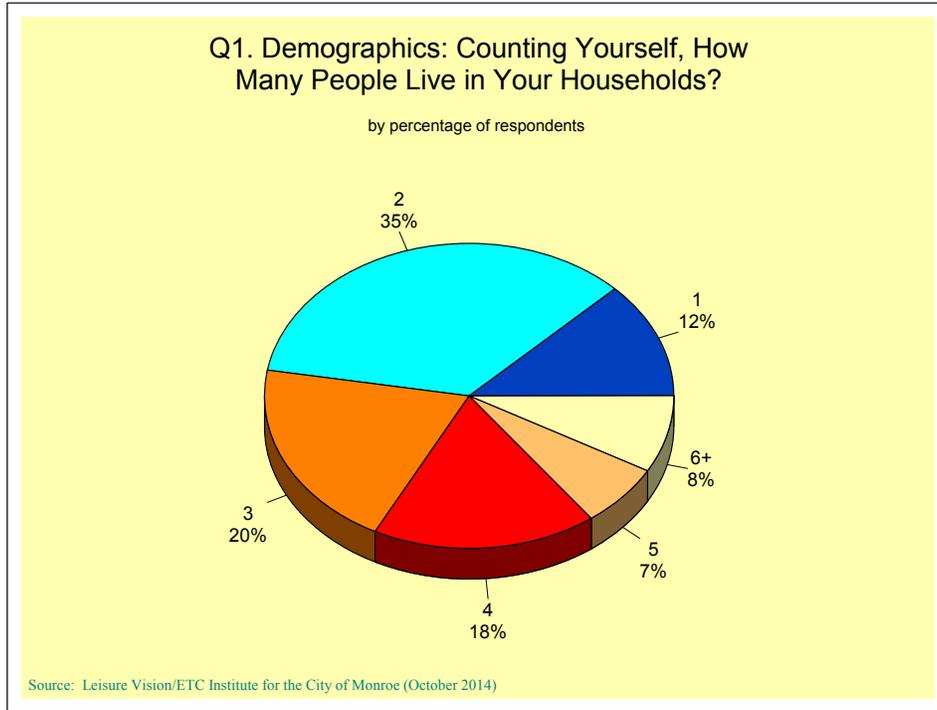
- (1) African American/Black
- (2) Asian/Indian
- (3) White Caucasian
- (4) Native American
- (5) Asian/Pacific Islander
- (6) Other: _____

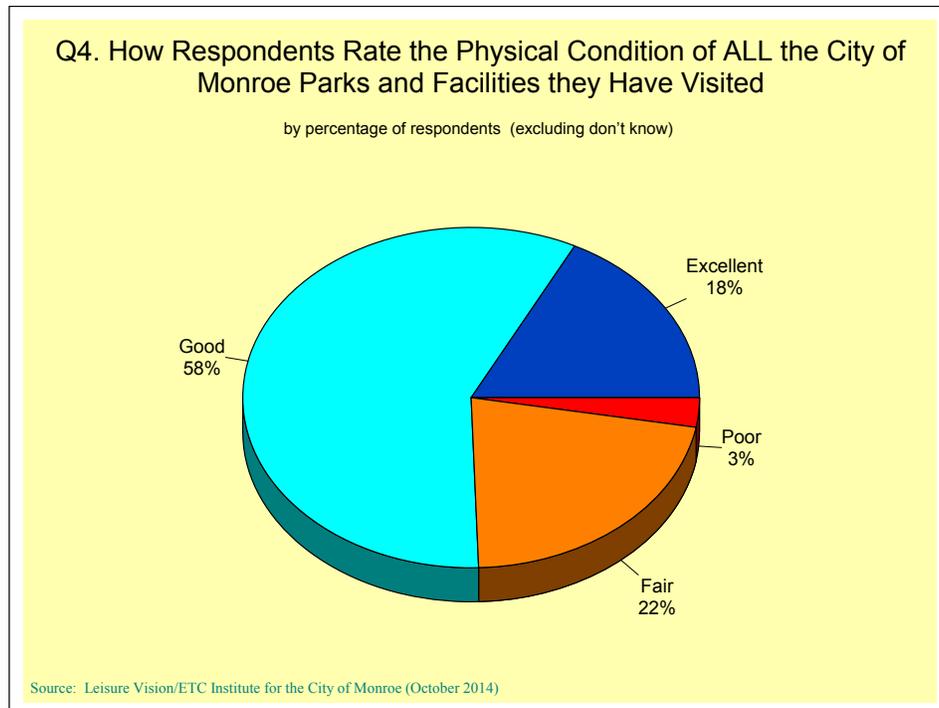
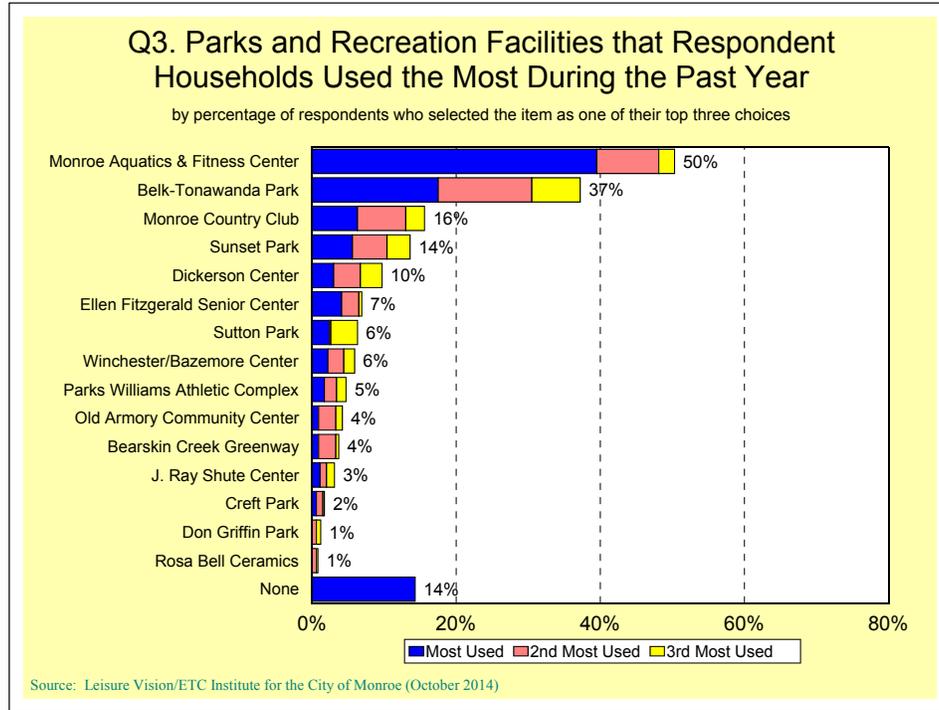
29. Your gender: (1) Male (2) Female

This concludes the survey. Thank you for your time.

Please Return Your Completed Survey in the Enclosed Return-Reply Envelope Addressed to:
ETC Institute, 725 W. Frontier Circle, Olathe, KS 66061

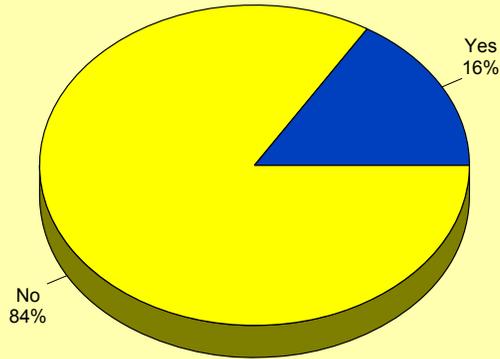
Your response will remain completely confidential. The address information on the right will ONLY be used to help identify areas with different needs for programs and services.





Q5. Whether or Not Respondent Households Participated in Recreation or Sports Programs Offered by the City of Monroe Parks and Recreation Department During the Past 12 Months

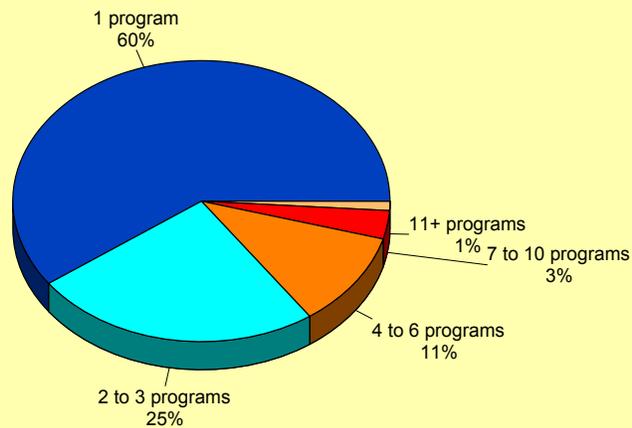
by percentage of respondents (excluding not provided)



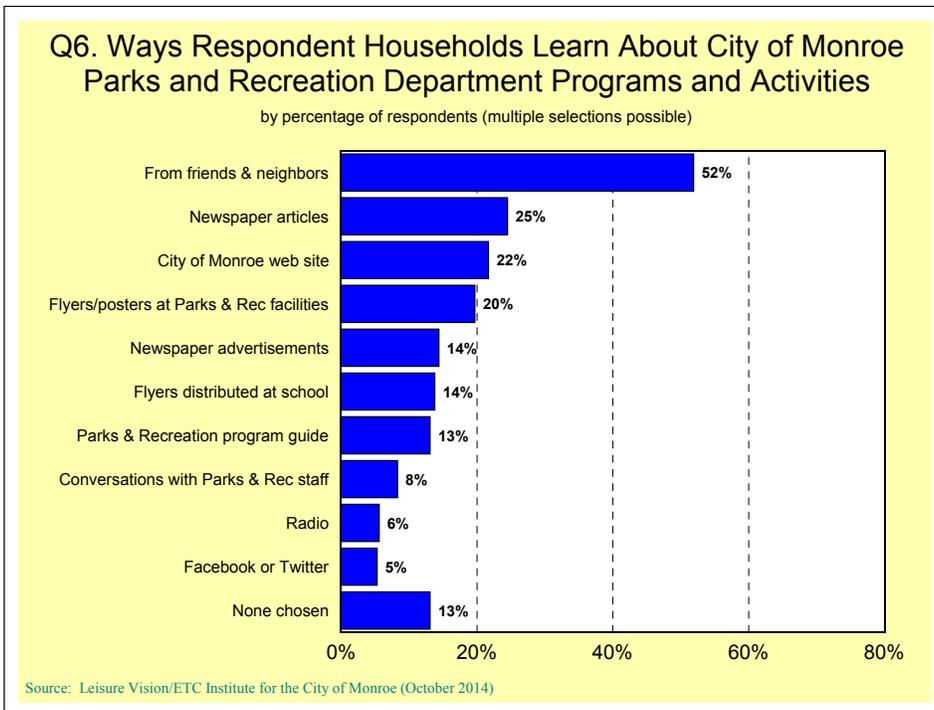
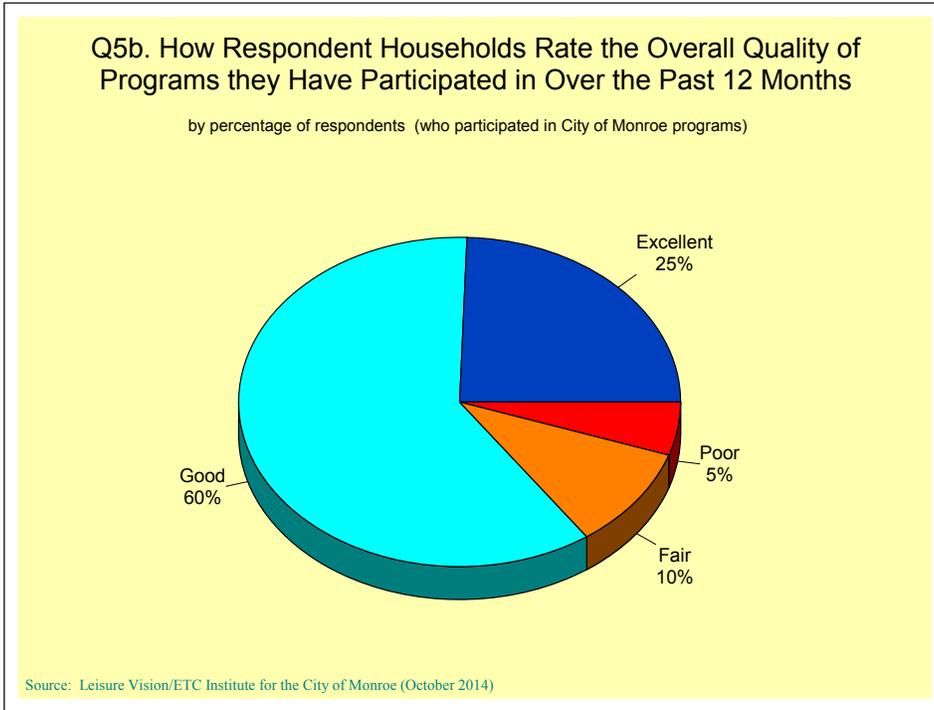
Source: Leisure Vision/ETC Institute for the City of Monroe (October 2014)

Q5a. Amount of Recreation or Sports Programs Respondent Households Have Participated in Over the Past 12 Months

by percentage of respondents (who participated in City of Monroe programs, excluding don't know)

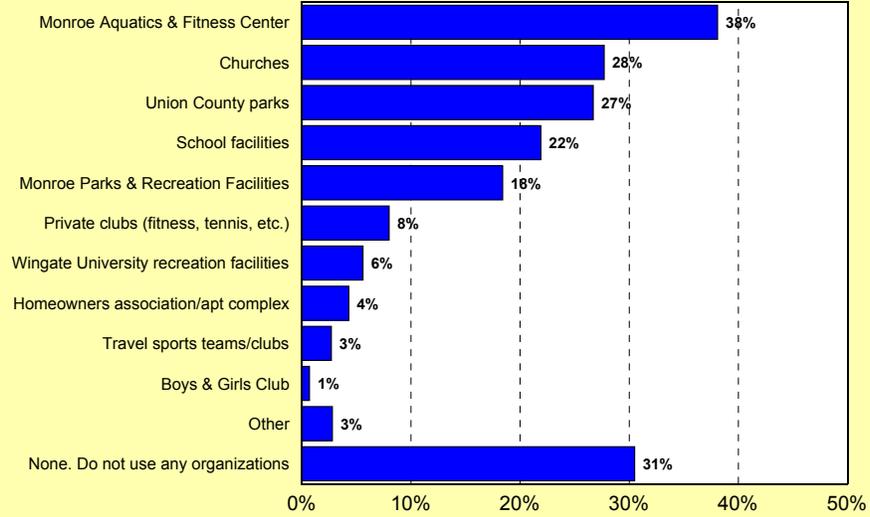


Source: Leisure Vision/ETC Institute for the City of Monroe (October 2014)



Q7. Organizations that Respondent Households Have Used for Indoor and Outdoor Recreation and Sports Activities During the Last 12 Months

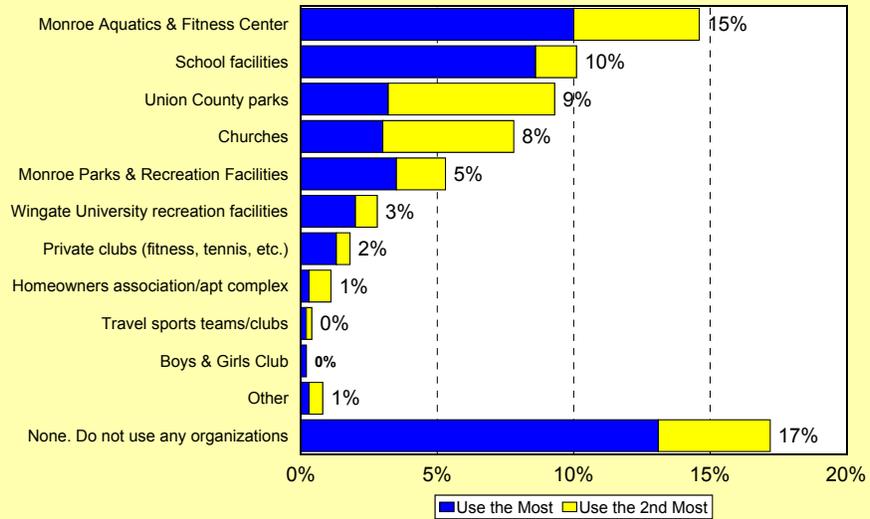
by percentage of respondents (multiple selections possible)



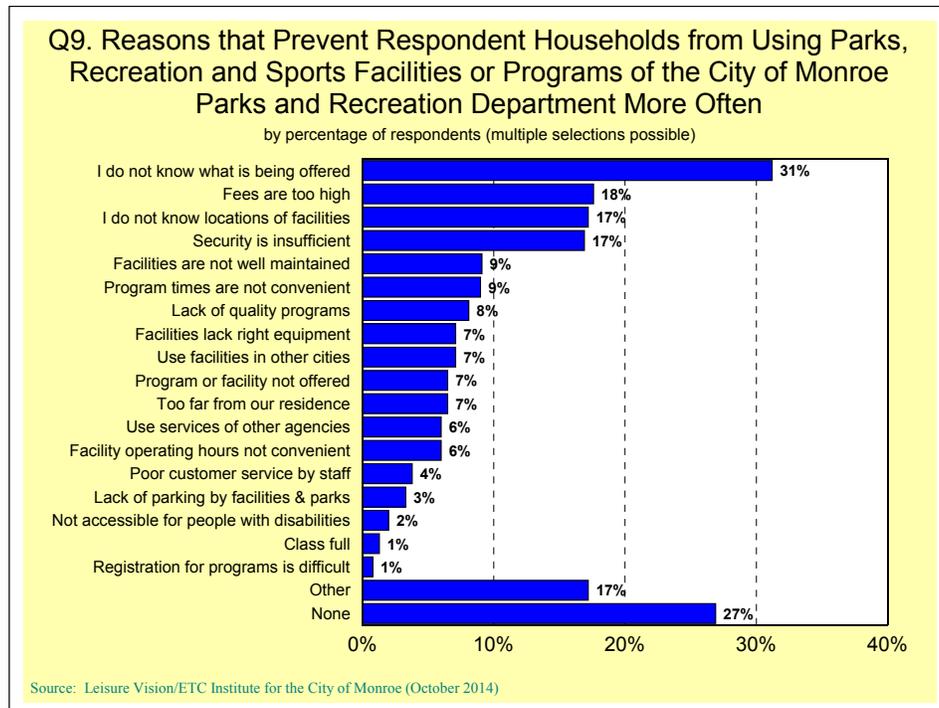
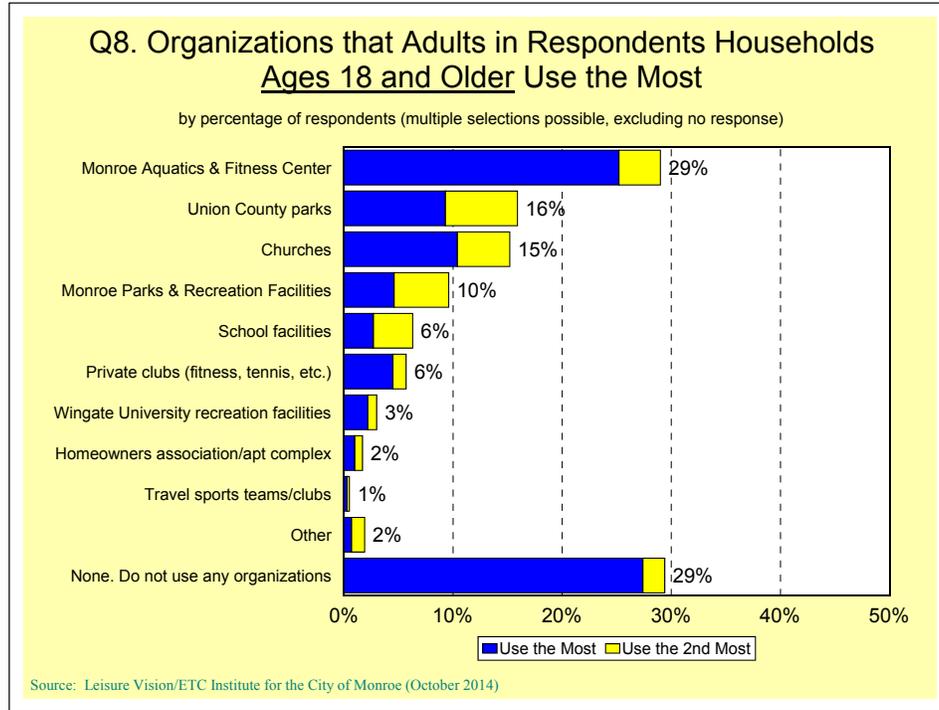
Source: Leisure Vision/ETC Institute for the City of Monroe (October 2014)

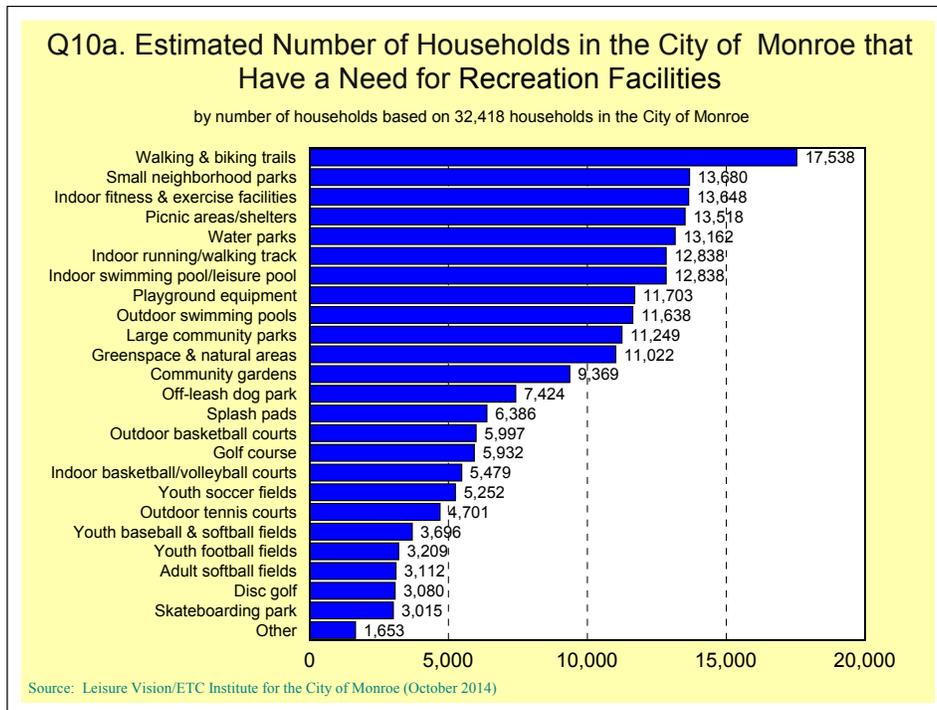
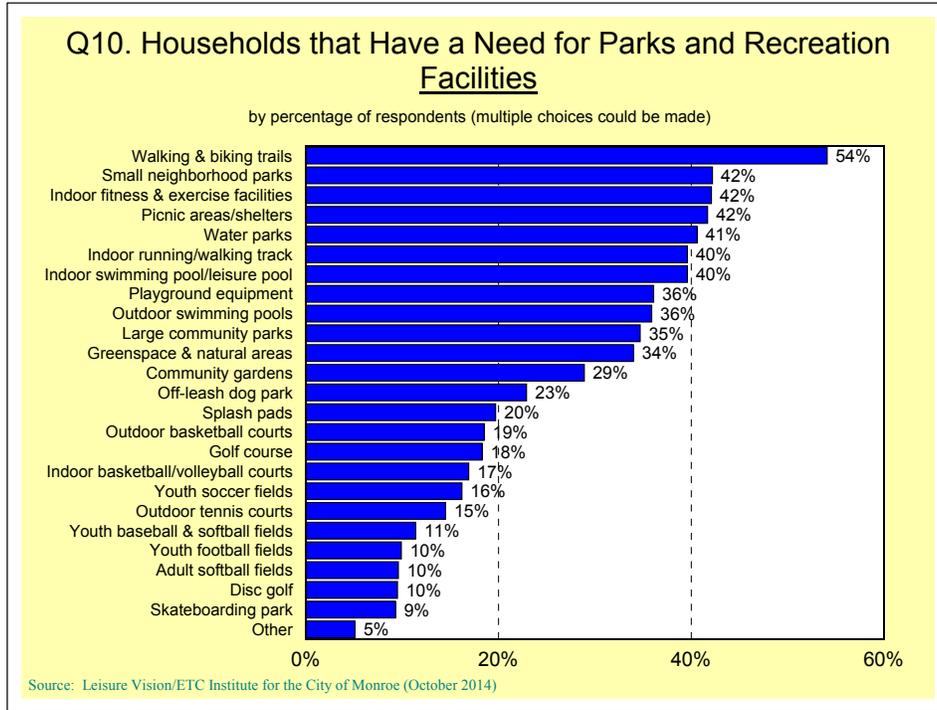
Q8. Organizations that Children in Respondent Households Ages 0-17 Use the Most

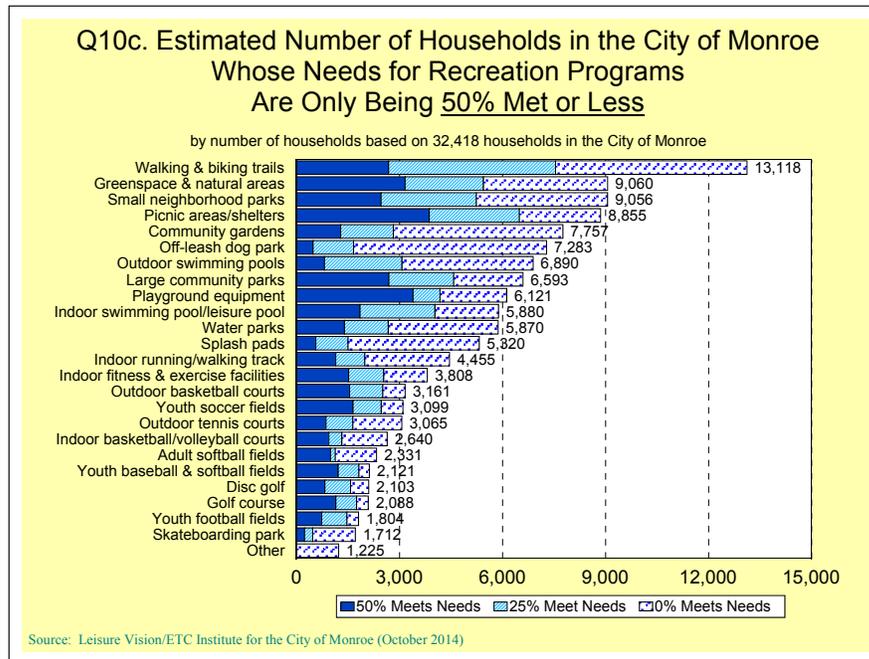
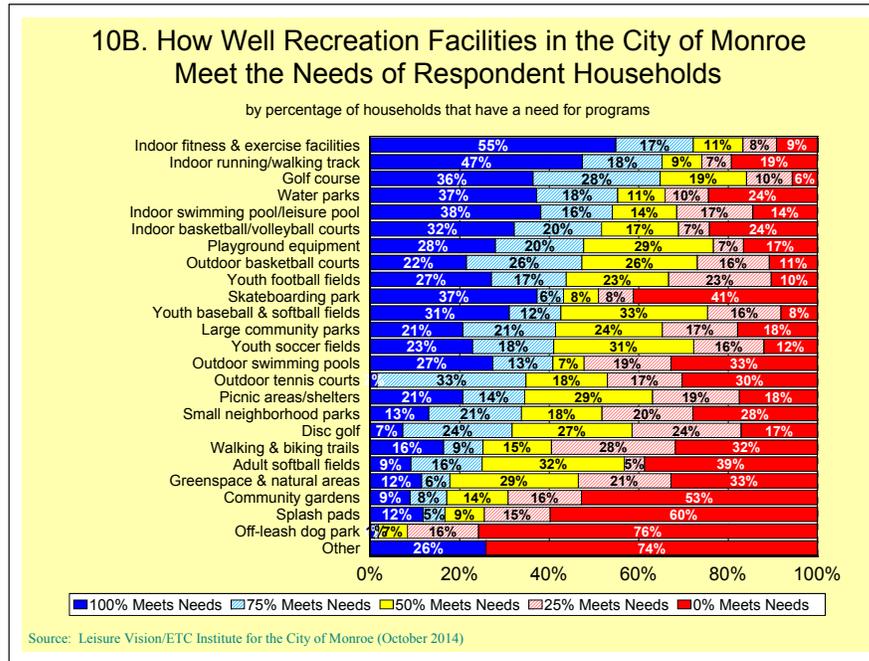
by percentage of respondents (multiple selections possible, excluding no response)

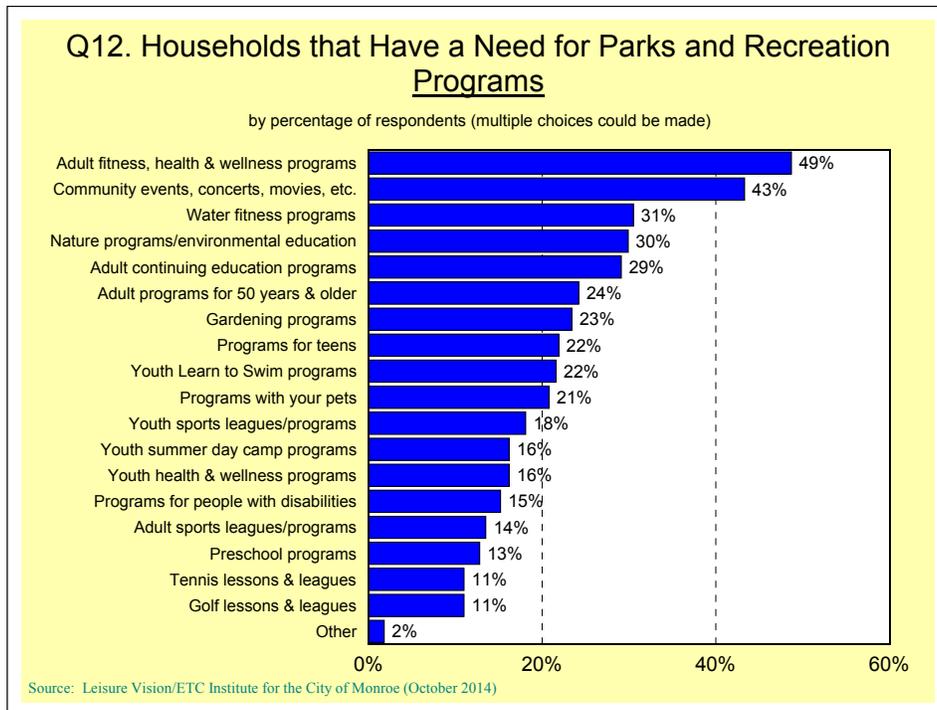
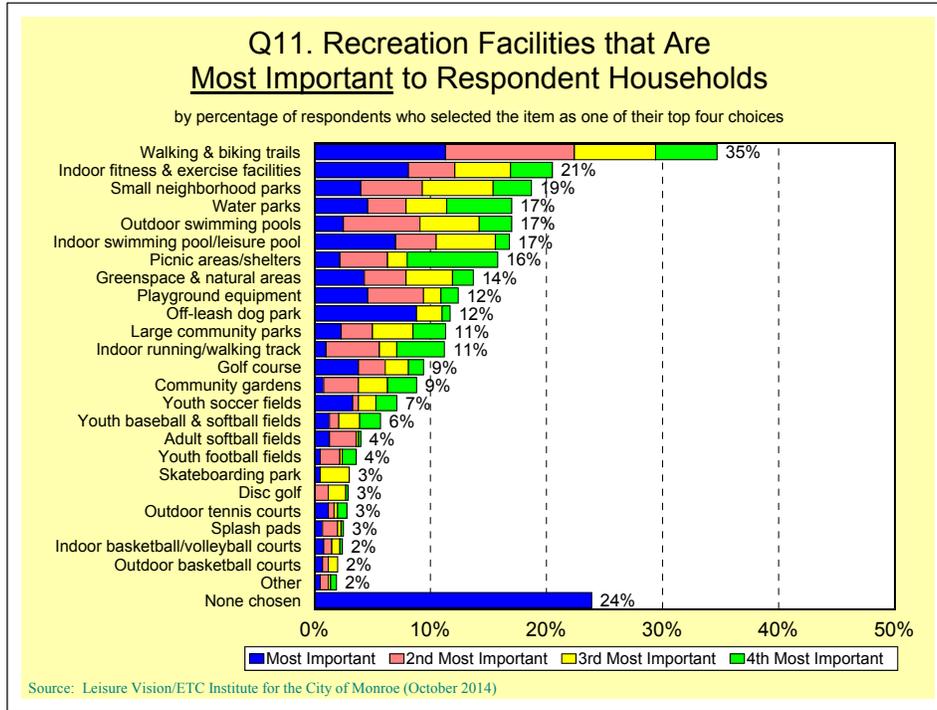


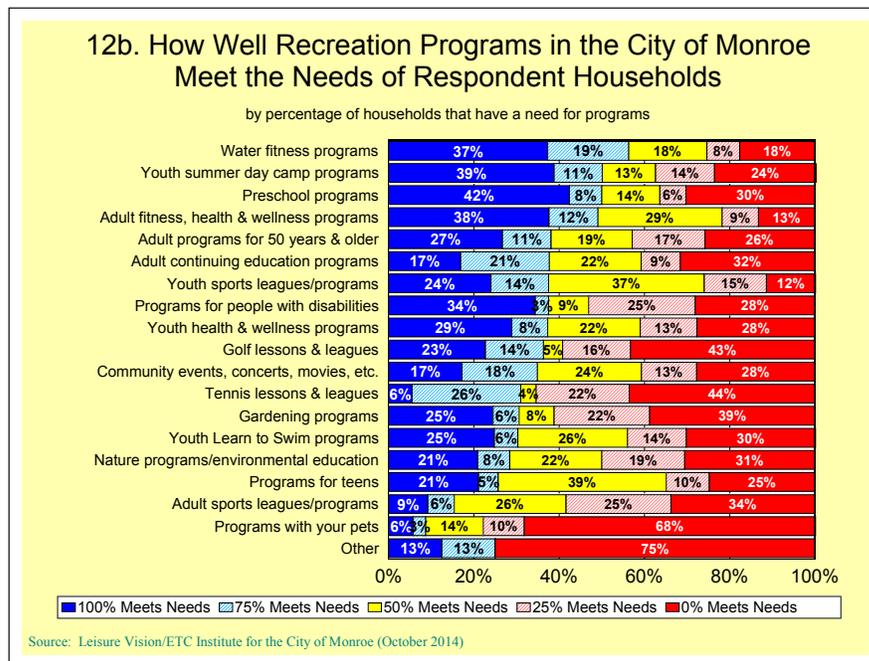
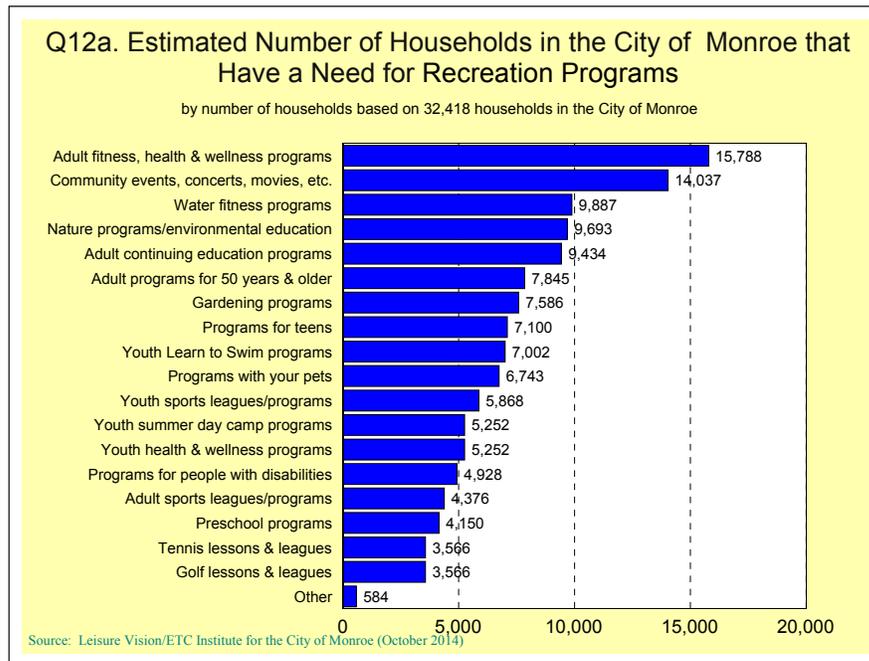
Source: Leisure Vision/ETC Institute for the City of Monroe (October 2014)

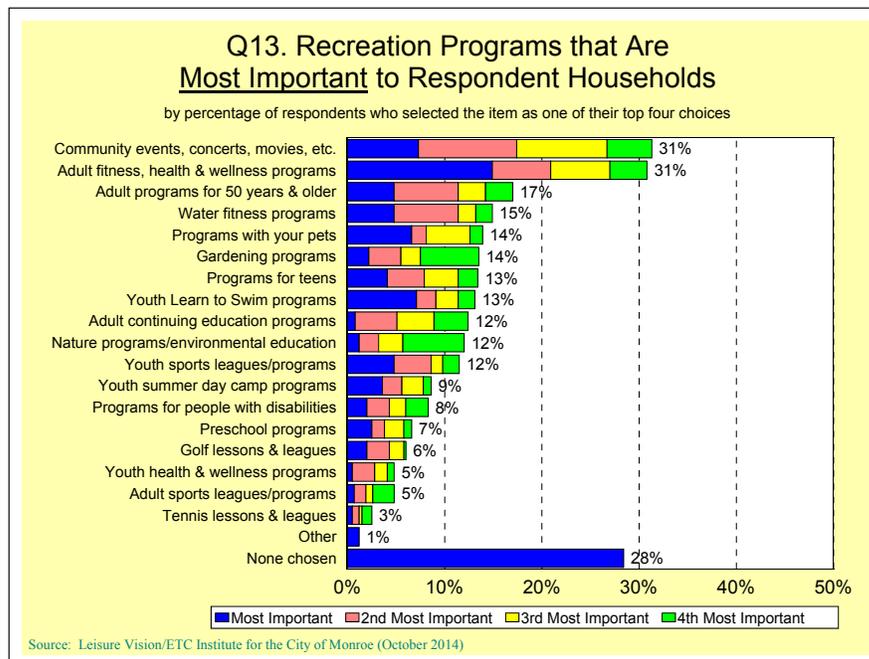
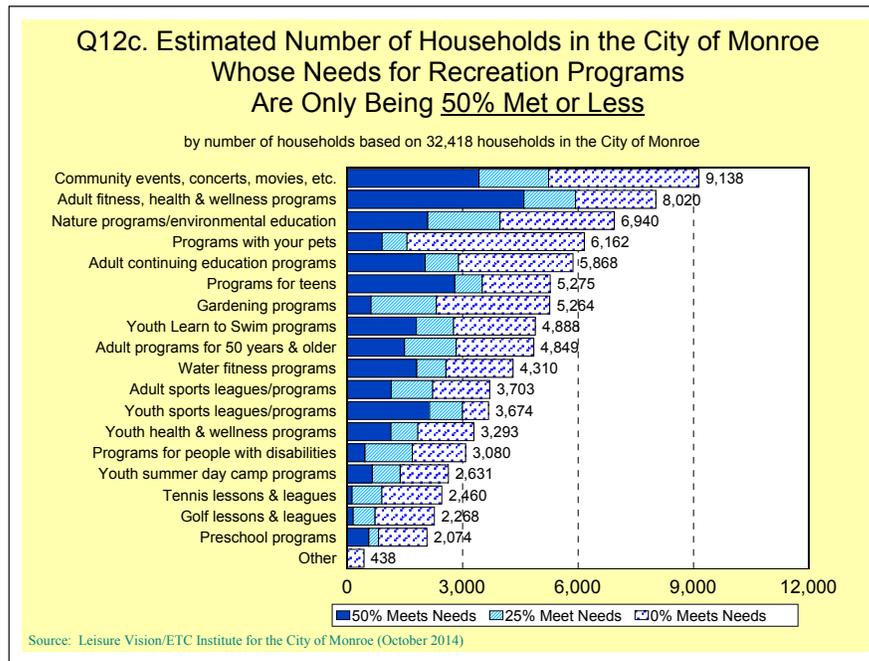


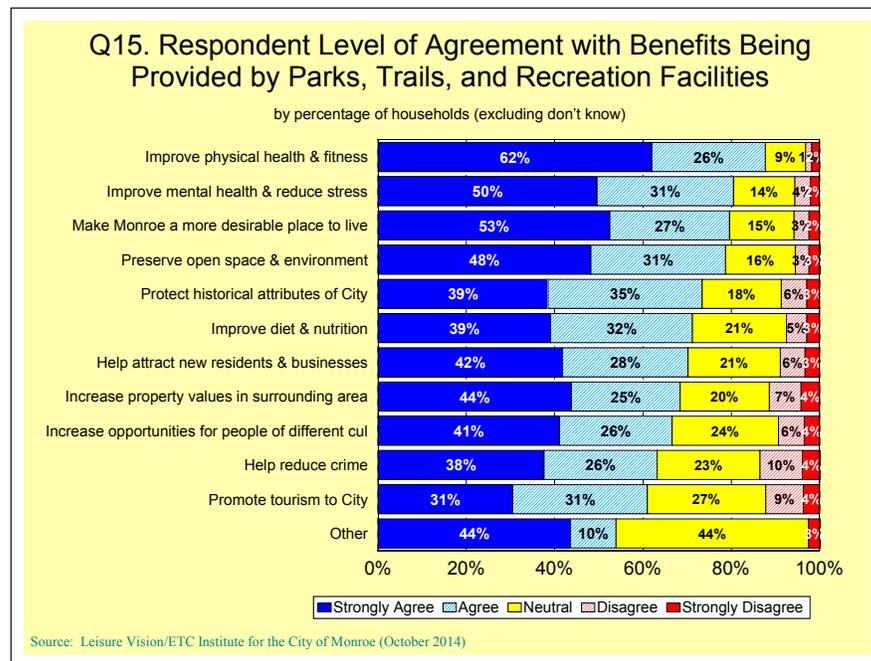
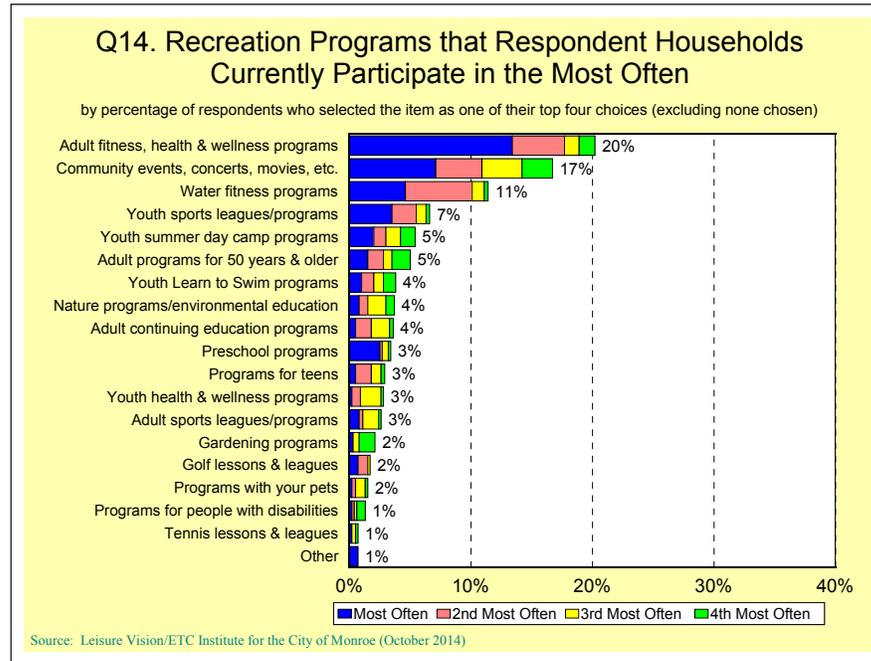


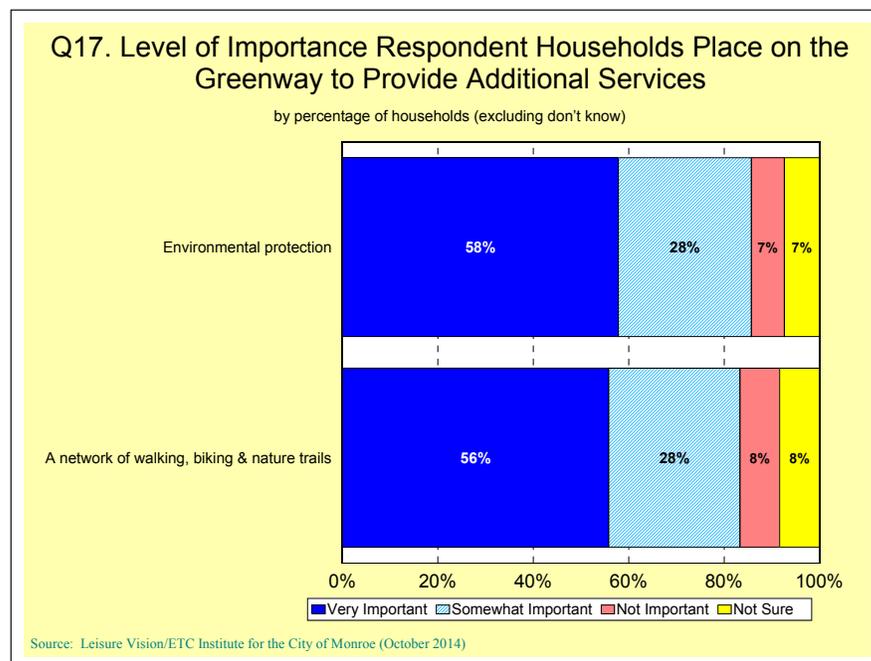
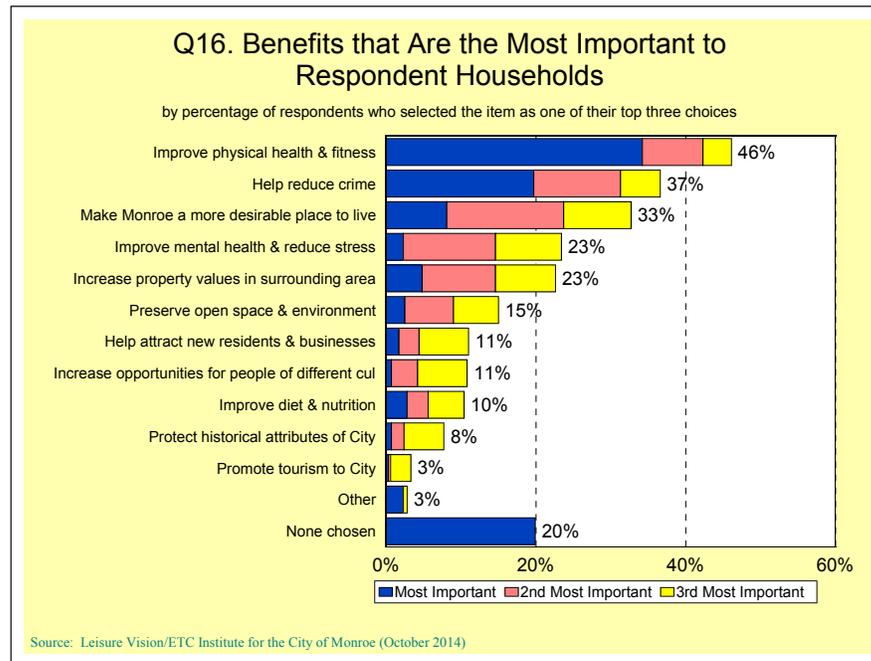






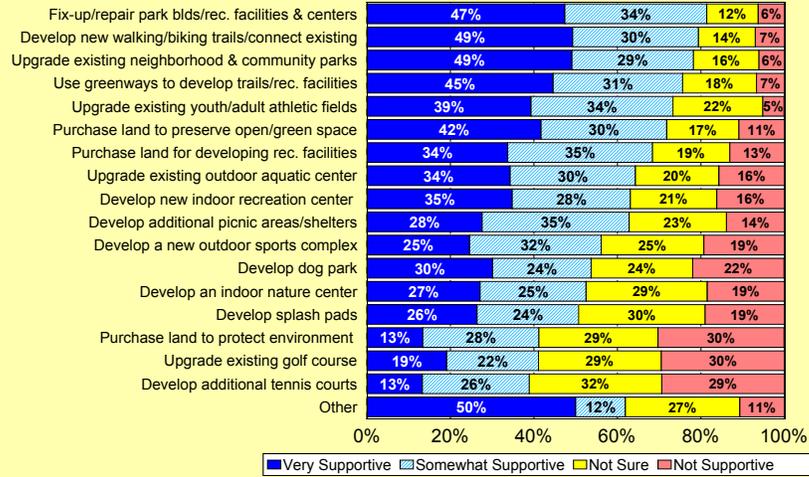






Q18. Level of Support for Potential Actions the City of Monroe Could Take to Improve the Parks, Recreation and Greenway System

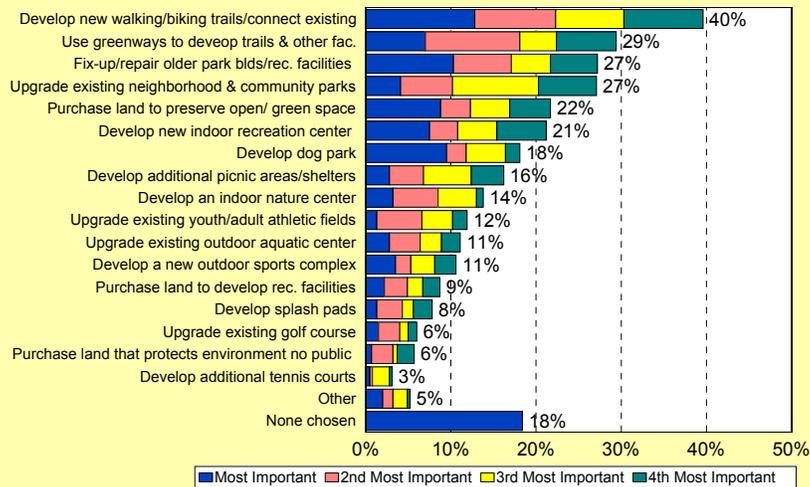
by percentage of households (excluding not provided)



Source: Leisure Vision/ETC Institute for the City of Monroe (October 2014)

Q19. Actions Most Important to Respondent Households

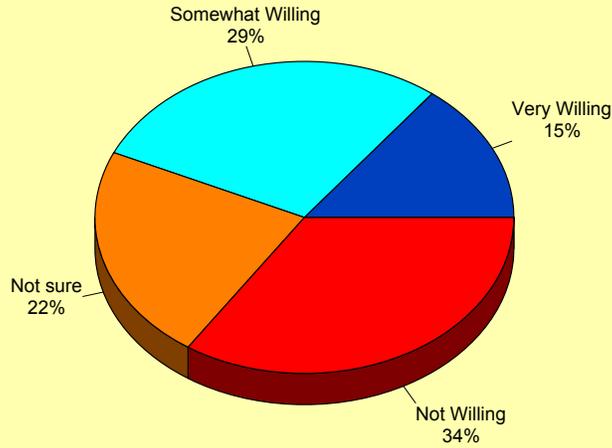
by percentage of respondents who selected the item as one of their top four choices



Source: Leisure Vision/ETC Institute for the City of Monroe (October 2014)

Q20. Respondent Willingness to Pay an Increase in Taxes to Fund the Types of Facilities that are Most Important to their Household

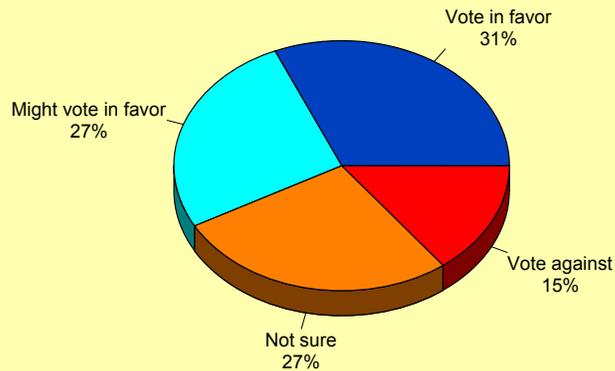
by percentage of respondents (excluding not provided)



Source: Leisure Vision/ETC Institute for the City of Monroe (October 2014)

Q21. How Respondents Would Vote If a Bond Referendum was Held to Fund the Acquisition, Improvement, and Development of the Types of Facilities that are Most Important to their Household

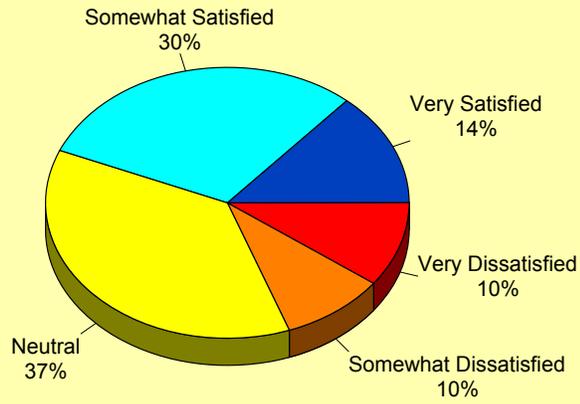
by percentage of respondents (excluding not provided)



Source: Leisure Vision/ETC Institute for the City of Monroe (October 2014)

Q22. Respondent Overall Level of Satisfaction their Household Receives from the City of Monroe Parks and Recreation Department

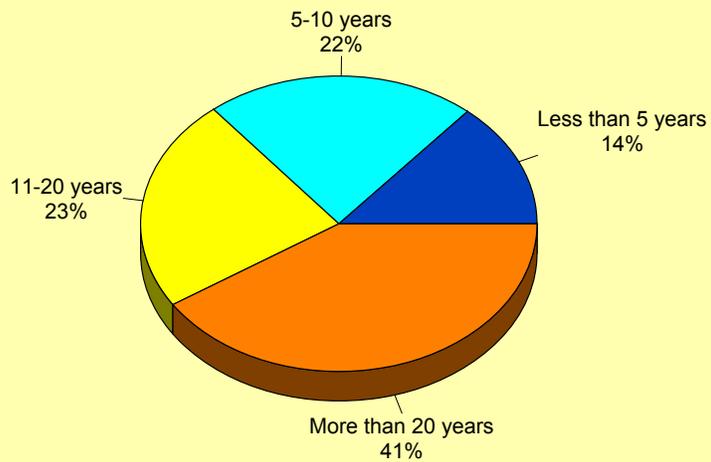
by percentage of respondents (excluding not provided)



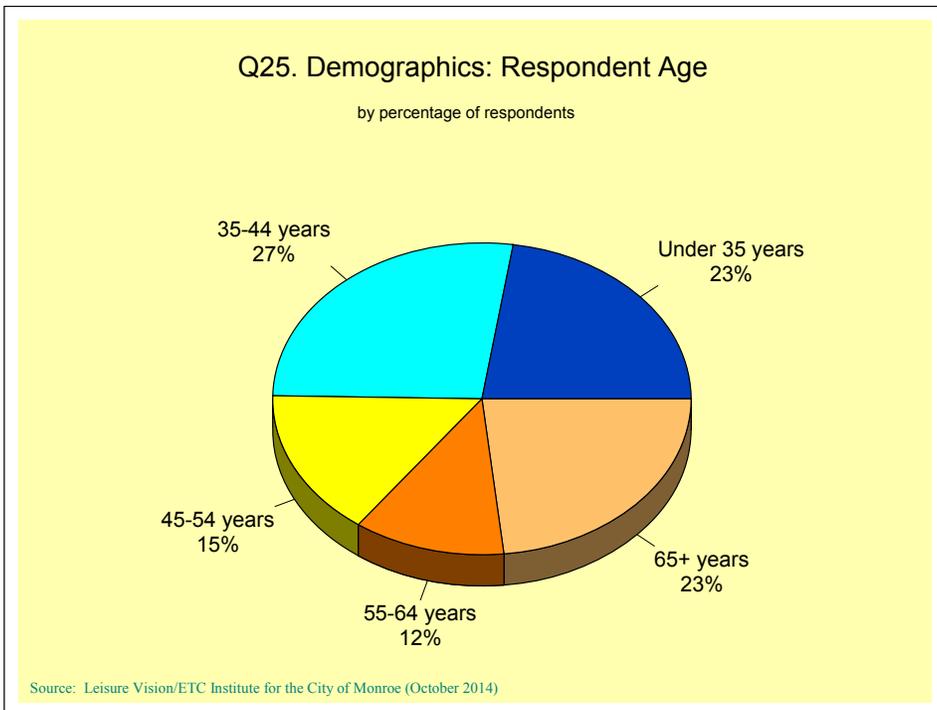
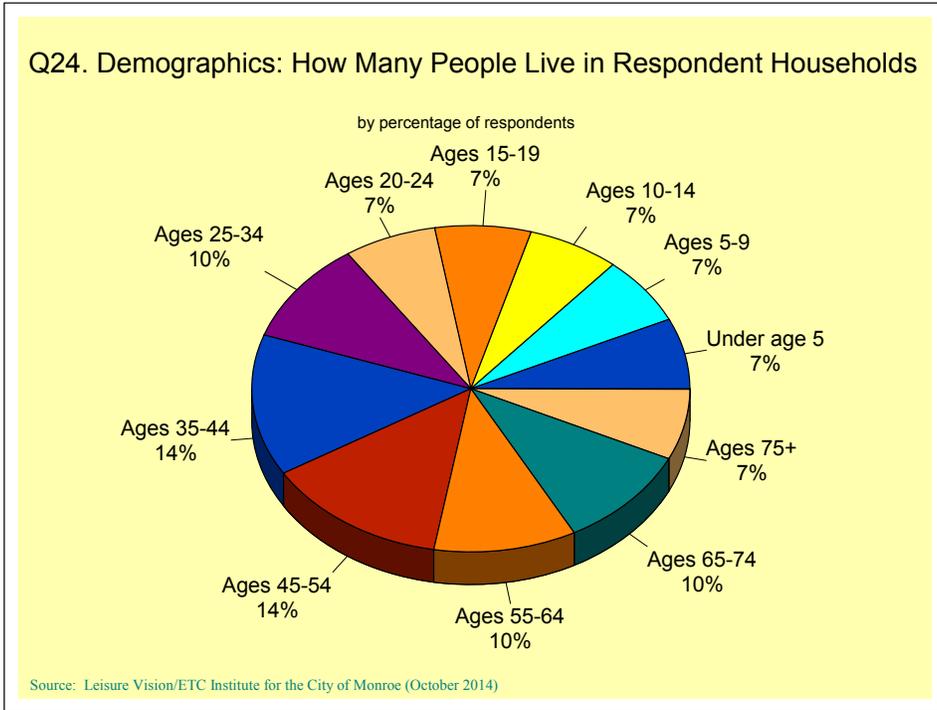
Source: Leisure Vision/ETC Institute for the City of Monroe (October 2014)

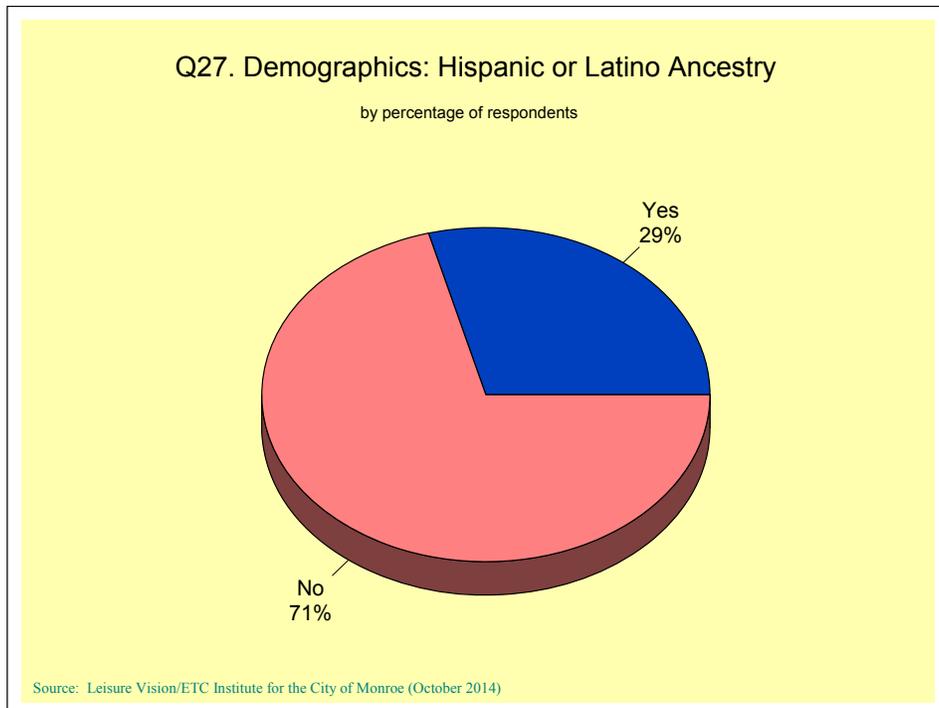
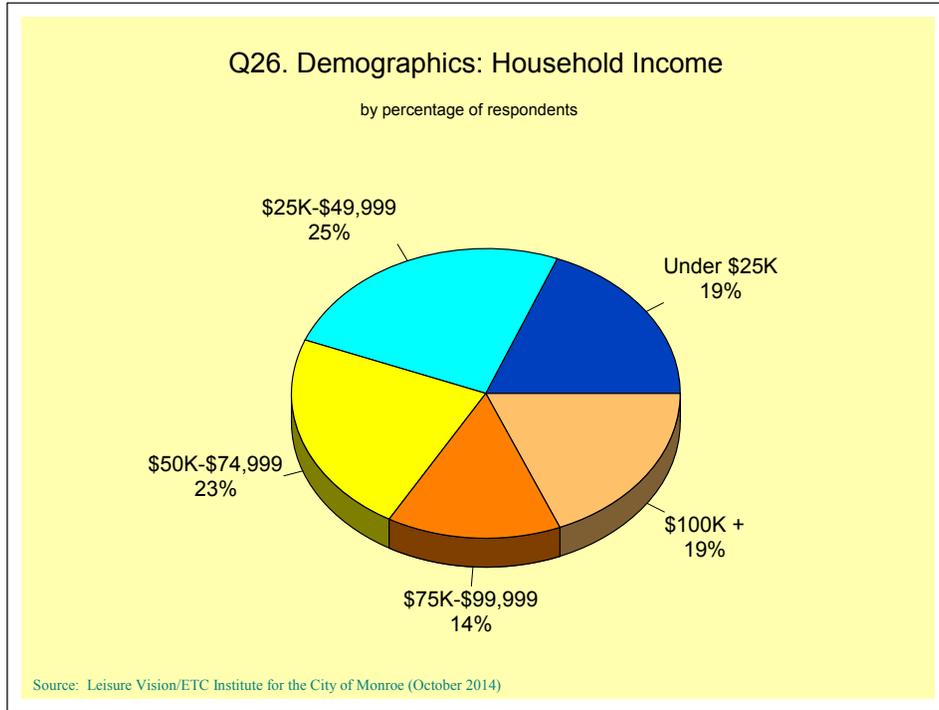
Q23. Demographics: How Many Years Respondents Have Lived in the City of Monroe

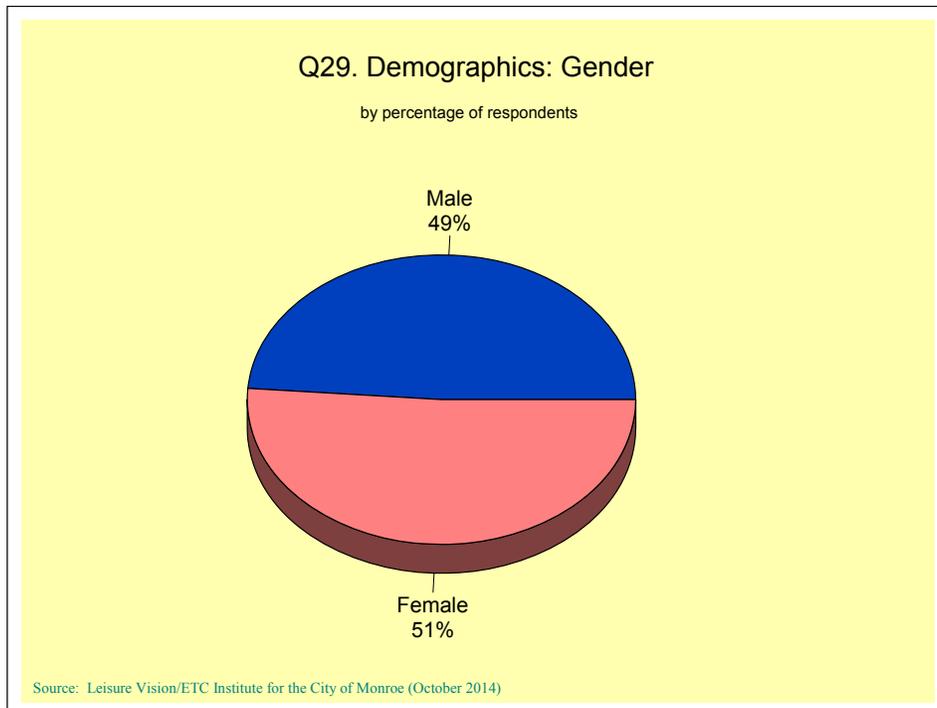
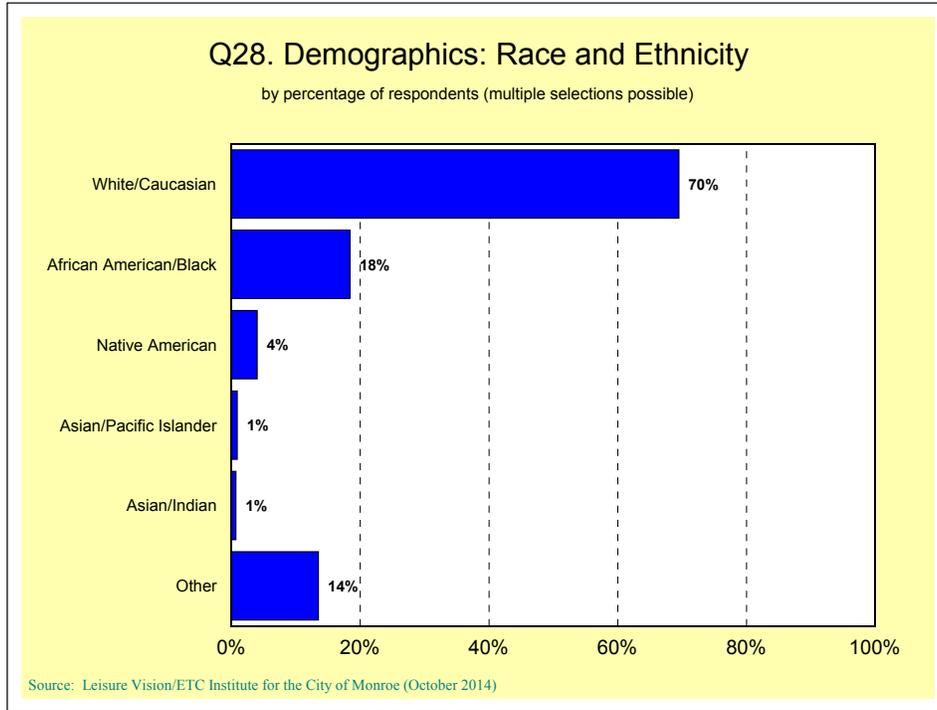
by percentage of respondents (excluding not provided)



Source: Leisure Vision/ETC Institute for the City of Monroe (October 2014)









Federal Funding Sources
State Funding Sources
Private Funding Sources
Local Funding Options

Federal Funding Sources

State Transportation Improvement Program (STIP)

The North Carolina Department of Transportation has established a multi-year schedule for all its transportation projects – including bicycle and pedestrian related projects – called the STIP. Once projects have been adopted by the Division of Bicycle and Pedestrian Transportation (DBPT) and the North Carolina Board of Transportation, they are incorporated into the STIP. In its efforts to increase the safety of bicyclists and pedestrians in North Carolina, the department has undertaken many types of bicycle and pedestrian projects including:

- Construction of shared-use facilities and on-road highway improvements
- Safety and education programs
- Bicycle route designation and signing
- Other projects to facilitate bicycle and pedestrian transportation

According to the NCDOT website, DBPT utilizes a project prioritization methodology to rank all projects. Projects are evaluated based on local prioritization, estimated cost, right-of-way availability, connectivity, inclusion in a bike/pedestrian plan, population of region served, and statewide equality. Bicycle and pedestrian projects are divided into two categories, which determine the types of funds that may be available.

- Independent Projects are those which are not related to a scheduled highway project.
- Incidental Projects are those related to a scheduled highway project.

It will be important for the City of Monroe to work with the Charlotte Regional Transportation Planning Organization (CRTPO) to submit bicycle and pedestrian projects to be ranked and added to the CRTPO's Transportation Improvement Program, which will in turn be prioritized by the state. Information about CRTPO's Bicycle/Pedestrian Program and the process to submit projects can be found by visiting <http://www.crtpo.org/transportation-projects/bicycle-pedestrian>. Appendix V also includes CRTPO's Bicycle/Pedestrian Project Ranking Methodology.

Congestion Mitigation and Air Quality Program (CMAQ)

CMAQ is a federal program begun in 1991 under the Intermodal Surface Transportation Efficiency Act (ISTEA) and continued under the current transportation funding legislation. The program's purpose is to fund projects that help achieve compliance with the national air quality standards established under the Clean Air Act. CRTPO's planning area was designated as "nonattainment" for ozone by the Environmental Protection Agency in June 2005. Any project proposed for CMAQ funding must be able to demonstrate that its implementation will contribute to a reduction in harmful emissions. Information about CRTPO's CMAQ Program and the process to submit projects can be found by visiting <http://www.crtpo.org/plans-programs/congestion-mitigation-air-quality>. Appendix VI also includes CRTPO's CMAQ Project ranking process, as well as a copy of the application.

Recreational Trails Program (RTP)

The RTP is a federal grant program authorized by Congress in 2012 as Moving Ahead for Progress in the 21st Century (MAP-21). The intent of the

RTP is to help fund trails and trail-related recreational needs at the State level. Funding for the RTP comes from federal gas taxes paid on non-highway fuel used in off-highway vehicles, and the program is administered at the Federal level by the Federal Highway Administration. Since this funding is awarded at the state level, more information is provided in the next section.

State Funding Sources

NC Clean Water Management Trust Fund (CWMTF)

To carry out the mandate set by legislation, CWMTF provides grant funds for the following purposes: (1) enhance or restore degraded waters, (2) protect unpolluted waters, (3) contribute toward a network of riparian buffers and greenways for environmental, educational, and recreational benefits, (4) provide buffers around military bases, (5) acquire land that represents the ecological diversity of North Carolina, and (6) acquire land that contributes to the development of a balanced State program of historic properties. This funding agency provides the following grants that can be utilized for greenways:

Funding Type	Max Funding Level	Funding Match Requirements	Funding Cycle	Approved Uses
Acquisition Grant	None	None	Yearly	Acquisition of land for riparian buffers for the purposes of providing environmental protection for surface waters and urban drinking water supplies and establishing a network of riparian greenways for environmental, educational, and recreational uses.
Restoration Grant	None	None	Yearly	Restoration projects, including: Stream Restoration, Enhancement, or Stabilization, Wetland Restoration, Creation, or Enhancement, and/or other projects that would promote the quality of receiving surface waters.
Donation MiniGrant	\$25,000	None	Accepted on a rolling basis	Transaction costs associated with the donation of land for conservation or preservation purposes.

More information can be found at:

<http://www.cwmtf.net/#appmain.htm>

217 W. Jones Street

Raleigh, NC 27603

Tel: 919-707-9120

NC Parks and Recreation Trust Fund Grant

The North Carolina Parks and Recreation Trust Fund Grant (PARTF) is the primary source of funding to build and renovate facilities in the state parks as well as to buy land for new and existing parks. The PARTF program also provides dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the public. Recipients use the grants to acquire land and/or to develop parks and recreational projects that serve the general public.

Funding Type	Max Funding Level	Funding Match Requirements	Funding Cycle	Approved Uses
Land acquisition, design, and/or construction	\$500,000	50% dollar-for-dollar local match; this can be cash or appraised value of donated land	Yearly	Purchase of land for recreational projects or to protect natural and scenic resources. Construction or renovation of recreational and support facilities.

More information can be found at:

http://www.ncparks.gov/About/grants/partf_main.php

217 W. Jones Street

Raleigh, NC 27603

Tel: 919-707-9300

NC Department of Parks and Recreation Grants

The North Carolina Department of Parks and Recreation was established to conserve and protect representative examples of the natural beauty, ecological features and recreational resources of statewide significance; to provide outdoor recreational opportunities in a safe and healthy environment; and to provide environmental education opportunities that promote stewardship of the state's natural heritage. This funding agency provides the following grants for greenways through the federal Recreational Trails Program (RTP):

Funding Type	Max Funding Level	Funding Match Requirements	Funding Cycle	Approved Uses
RTP Trail Project Grant (Pending Federal Re-Authorization)	\$10,000 to \$100,000	25%	Yearly	Development of urban trail linkages, maintenance of existing trails, restoration of areas damaged by usage of recreational trails, development of trailhead facilities, development of canoe/kayak access facilities, and construction of new trails.
RTP Educational Grant (Reimbursement Grant Program)	\$5,000	25%	Accepted on a rolling basis.	Payment of speaker/educator fees, rental of space to provide training or conference opportunities, transportation to off-site training locations, electronic copying and/or printing of training materials, travel expenses for approved speakers, and lodging/food for speakers.

More information can be found at:

http://www.ncparks.gov/About/trails_grants.php

121 W. Jones Street

Raleigh, NC 27603

Tel: 919-707-9325

Email: jan.trask@ncparks.gov

NC Division of Water Resources

The Water Resources Development Project Grant is run through NCDENR’s Division of Water Resources and is designed to provide cost-share grants and technical assistance to local governments throughout the State. Applications for grants are accepted for seven purposes: General Navigation, Recreational Navigation, Water Management, Stream Restoration, Beach Protection, Land Acquisition and Facility Development for Water-Based Recreation, and Aquatic Weed Control. There are two grant cycles per year; the application deadlines are January 1st and July 1st.

Funding Type	Max Funding Level	Funding Match Requirements	Funding Cycle	Approved Uses
Water Resources Development Project Grant	None	50%	2x per year (January 1 and July 1)	General Navigation, Recreational Navigation, Water Management, Stream Restoration, Beach Protection, Land Acquisition and Facility Development for Water-Based Recreation, and Aquatic Weed Control

More information can be found at:
<http://www.ncwater.org/?page=7/>
 1611 Mail Service Center
 Raleigh, NC 27699-1611
 Tel: 919-707-9000

NCDOT Grants

The North Carolina General Assembly authorized NCDOT to spend available federal, state, local and/or private funding designated for the promotion and facilitation of the safe and efficient use of bicycles. It also states that facilities for the purpose of bicycle use are a “bona fide highway purpose, subject to the same rights and responsibilities, and eligible for the same considerations” as other highways. In North Carolina, all bicycle and pedestrian projects are prioritized and scheduled into the State Transportation Improvement Program (see information regarding federal funding through the STIP on page 131 of this appendix.

Funding Type	Max Funding Level	Funding Match Requirements	Funding Cycle	Approved Uses
Bicycle and Pedestrian Planning Grant (NC-DOT Division of Bicycle & Pedestrian Transportation)	Funding levels are dependent upon the type of plan & the size of the municipal population	20% to 50% match requirement, dependent on the size of the municipal population	Yearly	Development of comprehensive local plans for bicycle and pedestrian transportation.

More information can be found at:

<https://connect.ncdot.gov/municipalities/PlanningGrant/Pages/default.aspx>

1 South Wilmington Street
Raleigh, NC 27601
Tel: 919-707-2600

Land and Water Conservation Fund (LWCF)

In North Carolina, the Land and Water Conservation Fund is administered by the Department of Environment and Natural Resources. States receive individual allocations of LWCF grant funds based on a national formula, with state population being the most influential factor. To be eligible for LWCF assistance, every state must prepare and regularly update a statewide comprehensive outdoor recreation plan (SCORP).

Funding Type	Max Funding Level	Funding Match Requirements	Funding Cycle	Approved Uses
Land Acquisition or Facility Development for Public Outdoor Recreation	\$250,000	50%	Yearly	Can be used for acquisition or development of land for public outdoor recreational uses purposes.

More information can be found at:

http://www.ncparks.gov/About/grants/lwcf_grant.php

1615 Mail Service Center
Raleigh, NC 27699-1615
Tel: 919-515-7118

Private Funding Sources

Union County Community Foundation

The mission of the Union County Community Foundation is to inspire philanthropy and strengthen the community by supporting initiatives that address local needs and providing quality services to donors and constituents. The Foundation is an investor in the community and is interested in creating the highest possible levels of community gain, focused on improving the lives of Union County citizens.

More information can be found at:

<http://www.ffc.org/page.aspx?pid=1381>

C/O Foundation For The Carolinas

220 N. Tryon Street

Charlotte, NC 28202

Tel: 704-973-4500

Email: kcoppadge@ffc.org

American Hiking Society National Trails Fund

The American Hiking Society National Trails Fund, created in 1998, is the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America.

The National Trails Fund grants (ranging from \$500 - \$5,000) help give local organizations (must be registered as a 501(c)3) the resources they need to secure access, volunteers, tools, and materials to protect America's cherished hiking trails.

More information can be found at:

<http://www.americanhiking.org/national-trails-fund/>

American Hiking Society

1422 Fenwick Lane

Silver Spring, MD 20910

Tel: 1-800-972-8608

Fax: 301-565-6714

Email: info@AmericanHiking.org

PeopleForBikes

Launched in 1999 as Bikes Belong, PeopleForBikes includes both an industry coalition of bicycling suppliers and retailers, as well as a charitable foundation. Our foundation is where we house our major programs and engage individual members, affiliate organizations, and corporate sponsors. The PeopleForBikes Community Grant Program provides funding for important and influential projects that leverage federal funding and build momentum for bicycling in communities across the U.S. These projects include bike paths and rail trails, as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives. Grant applications are accepted on-line, two times per year (April and October) for up to \$10,000 to assist local non-profit organizations in bicycle facility development. A letter of interested is required prior to a full application submittal.

More information can be found at:

www.peopleforbikes.org

People for Bikes

P.O. Box 2359

Boulder, CO 80306

Tel: 303-449-4893

Email: grants@peopleforbikes.org

Carolina Thread Trail

Carolina Thread Trail offers implementation grants for segments of the Carolina Thread Trail on system-wide Carolina Thread Trail master plans that have been adopted. There are three types of implementation grants awarded on a quarterly cycle with deadlines in January, April, August, and October.

- Corridor Design Grants: up to \$20,000 towards identification of trail alignment(s) on a specific parcel(s) along the Carolina Thread Trail.
- Land Acquisition Grants: up to \$150,000 towards land or easement acquisition for trail segments and open space for viewsheds, riparian buffers, wildlife habitats or recreation along the trail segments of the Carolina Thread Trail.
- Construction Grants: up to \$150,000 towards completion of construction design and building of trail segments of the Carolina Thread Trail.
-

More information can be found at:

www.carolinathreadtrail.org/resources/funding-sources/

Carolina Thread Trail

4530 Park Rd, Suite 420

Charlotte, NC 28209

Tel: 704-376-2556

Fax: 704-342-3340

Conservation Alliance

The Conservation Alliance is a group of outdoor businesses that supports efforts to protect specific wild lands and waterways for their habitat and recreation values. Applicants (must be registered as a 501(c)3) must be nominated by a member of the Alliance. There are two funding cycles annually in the summer and winter with a maximum grant request of \$35,000.

More information can be found at:

www.conservationalliance.com/grants

The Conservation Alliance

PO Box 1275

Bend, OR 97709

Tel: 541-389-2424

Email: info@conservationalliance.com

Kodak American Greenways Awards Program

Eastman Kodak Company, The Conservation Fund and the National Geographic Society team up each year to present the Kodak American Greenways Awards Program. One major element of the Program involves “seed” grant awards to organizations (must registered as a 501(c)3s get

preference)that are growing the nation’s network of greenways, blueways, trails and natural areas that demonstrate the convergence of economic prosperity and the environment. Eligible projects can include elements such as greenway, blueway or trail mapping, ecological assessments, surveying, conferences, and design; developing brochures, interpretative displays, audio-visual productions or public opinion surveys; building a foot bridge, signage or other physical improvement or addition to a greenway, blueway; planning a bike path; and many other creative projects. In general, grants can be used for any appropriate expense needed to complete, expand or improve a greenway including planning, technical assistance, legal and other costs. Grant applications are accepted on-line, annually in June for up to \$2,500.

More information can be found at:

www.conservationfund.org/kodak_awards
The Conservation Fund National Office
1655 N. Fort Myer Drive, Suite 1300
Arlington, VA 22209-3199
Tel: 703-525-6300
Fax: 703-525-4610
Email: kodakawards@conservationfund.org

Duke Energy Foundation

The Duke Energy Foundation is the core of Duke Energy’s support and development of sustainable communities and actively works to improve the quality of life in its communities, lending expertise in the form of leadership and financial support through grants to charitable organizations. At the core of The Duke Energy Foundation is its commitment to the community, with a focus in four areas:

Environment:

- Programs that support conservation, training and research around environmental initiatives
- Initiatives that support the efficient use of energy, but that also do not create a conflict with the programs approved in the regulated jurisdictions (reducing cost of utility service)

Economic Development:

- Initiatives that support the company’s economic development strategies (may vary by region)
- Skills and workforce development

Education:

- Pre K-12 education focused on science, technology, engineering and math (STEM)
- Higher education, focused on (STEM) and environment related programs

Community Vitality:

- Human services, arts, cultural, and community safety
- Community leadership development

More information can be found at:

<http://www.duke-energy.com/community/foundation/online-grant-application.asp>

Duke Energy Foundation
526 South Church Street
Charlotte, NC 28202

Duke Energy Water Resources Fund

Duke Energy is committed to protecting, improving and restoring waterways in the Carolinas and promoting environmental education and conservation. Duke Energy is dedicated to being good stewards of the environment and good neighbors to the communities they serve and is investing \$10 million in a fund for projects benefiting waterways in the Carolinas and waterways downstream from its Carolinas operations that flow into Virginia, Tennessee and Georgia. Grants are reviewed twice a year (May and November) and awards will range from \$10,000 to \$100,000.

Eligibility:

- 501(c)(3) nonprofit organizations or local governmental organizations that:
- Demonstrate collaboration on environmental issues with state and local governments and industry stakeholders
- Serve the Duke Energy service area in the Carolinas or immediately downstream of our operational facilities in Virginia, Tennessee and Georgia

Priority Programs and Projects:

- Efforts to address water quality and quantity issues in streams or watersheds that are identified as priorities in state or local watershed action plans
- Encourage education and awareness of water quality, quantity and conservation issues preferably focused on helping individuals understand how their actions impact the overall health of a river basin
- Research focused on improving water quality, quantity and conservation issues
- River management plans
- Watershed studies
- Purchase of conservation easements
- Public use and access to waterways

More information can be found at:

<http://www.duke-energy.com/community/foundation/water-resources-fund.asp>

The NC Community Foundation
4601 Six Forks Road, Suite 524
Raleigh, NC 27609
Tel: 919-828-4387
F: 919-828-5495
Email: lajackson@nccommunityfoundation.org

New Belgium Brewery

The purpose of New Belgium’s Environmental Stewardship Grants Program is to serve and connect with the communities where New Belgium beer is sold. The goal of the grants program is to improve the health of the planet and inspire others to joyously embrace sustainable choices. New Belgium’s grants program includes a category of Sensible Transportation and Bicycle Advocacy and supports projects that:

- Strengthen and or create infrastructure with all users in mind- including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities
- Break down barriers and fosters support for young cyclists
- Integrates land use planning with transportation planning and promotes energy efficiency

More information can be found at:

<http://www.newbelgium.com/sustainability/Community/Philanthropy.aspx>

New Belgium Brewing Company

500 Linden

Fort Collins, Colorado 80524

Tel: 1-888-622-4044

Email: kfletcher@newbelgium.com

Local Funding Options

Discretionary annual spending

Typically referred to as a “General Fund”, refers to spending that must be agreed upon on an annual basis. Greenway development funds would need to be appropriated within the City of Monroe’s annual budget to a specific department’s annual operating budget and would range in value annually. The City of Monroe has established a Greenway Capital Reserve Fund and is contributing \$100,000 annually for a total of six years.

Debt Financing

Debt Financing refers to the government agency borrowing funds for the development of greenway facilities through loans or bonds. Such funding sources require repayment of funds over a specified period of time.

Bond Referendums

A bond referendum can be placed on a county or municipal ballot to finance land acquisition and site development costs for greenways and trails. Bonds come in many forms such as revenue bonds, general obligation bonds, and special assessment bonds. Since voters must approve bonds, it is critical to educate the public on the mission and intent of the bond in order to gain support and approval.

Impact Fees

Impact fees are one-time charges levied by a local government on new development. Unlike dedication fees that might be required through the development process, one time impact fees can be applied to finance nearby public services such as parks, recreation facilities, and greenways/trails made necessary by the introduction of new residents in an area.

Payment in Lieu of Fees

Where land dedication does not occur through the development process, Monroe could require a payment in lieu of dedication. These fees can be applied to finance acquisition of land or development of nearby greenways and trails. Text adding payment in lieu of fees needs to be incorporated into a zoning ordinance before it can be implemented.

Taxation

Communities can vote to raise tax money in support of greenway efforts.

Powell Bill Funding

Annually, State Street-Aid (Powell Bill) allocations are made to incorporated municipalities which establish their eligibility and qualify as provided by G.S. 136-41.1 through 136-41.4. Powell Bill funds shall be expended only for the purposes of maintaining, repairing, constructing, reconstructing or widening of any street or public thoroughfare within the municipal limits or for planning, construction, and maintenance of bikeways, greenways or sidewalks.

Foundations and Friends Groups

Foundations and/or Friends Groups serve a useful purpose as these support groups fill a void that cannot be filled by government entities. Due to the nature of government, many potential donors who may be supportive of greenways and trails are more likely to donate to a non-governmental entity rather than the government itself. Therefore, interested citizens often recognize this void and organize themselves as either a Friends Group or a Foundation. Some Friends Groups or Foundations will even seek a 501(c)3 status allowing for further grant opportunities. Examples of successful trails Friends Groups can be viewed at:

Kings Mtn Gateway Trails, Inc.: www.kmgatewaytrails.org/
Little Tennessee River Greenway: www.littletennessee.org/
Mecklenburg County, NC: www.partnersforparks.org/
Friends of the High Line: www.thehighline.org/

Sponsorships

“Adopt-A” Series: The City of Monroe can promote greenways and trails while generating interest by developing a local Adopt- A-Greenway program that identifies the organization for providing walk through clean up, litter removal and environmental awareness programs, two to four times a year. This helps offset maintenance costs in municipal budgets. Organizations are recognized with markers or signs.

APPENDIX

V



CRTPO's Bike/Ped Project Ranking Methodology



Charlotte Regional Transportation Planning Organization (CRTPO) Bicycle/Pedestrian Project Ranking Methodology

APPROVED BY THE MPO: January 16, 2013

BACKGROUND: The MPO assigned a Bike/Pedestrian subcommittee in May 2010 with the task of developing criteria to recommend projects to the CRTPO based on a comprehensive and technically-oriented project ranking process. Since the total value of proposed projects often significantly exceeds available funds, an objective evaluation of proposals is necessary to determine the best use of Bike/Pedestrian funds.

The following project ranking criteria process is the result of research and discussions by transportation professionals from the CRTPO region. The committee considered specific quantitative criteria for each of the categories, although this did not always prove to be feasible. The overarching goal was to create a thorough assessment that did not place undue burdens upon the applicant. When a quantitative measure of the absolute effectiveness of the project was not possible or reasonable, criteria based on a yes/no answer was created.

The scoring list below contains work discussed over the course of four subcommittee meetings in July 2010, January 2011, February 2011 and March 2011. The criterion was originally approved by the MPO on May 18, 2011, and has since been revised.

FINAL PRODUCT: The CRTPO will have a process available that allows a wide variety of eligible projects to be evaluated for funding, without creating undue burdens on applicants.

PROJECT RANKING CRITERIA

Minimum Requirement

Project application and statement of justification: Provide a CRTPO bicycle and pedestrian project application, to include a **transportation purpose** statement for the project, appropriate map exhibits and photographs that describe the proposed facility, destinations, and surrounding land uses, as well as project scores for each category.

(The application can be found on the CRTPO website)

- 1. Connectivity and Access (45 points possible):** Points will be awarded based on described strengths in design, location and function of facility based on the attributes below. The following definitions shall be used for reference in this section:

Origin – refers to the beginning of the proposed bicycle or pedestrian facility.

Destination – refers to the end point of the trip at an existing location of interest.

- a. Length to destination:** For this category determine if your project’s greater need is bicycle or pedestrian. If the project serves both modes of travel, then the applicant may choose either category (i.e. greenways and multi-modal paths). If the specific project is not directly adjacent to the noted destination, the project must be part of a greater bicycle or pedestrian system which connects to the destination, then the applicant may count that already built portion of the length to destination. Distance should be measured from the shortest distance of the un-built facility to the described destination.

Only use one category from the table below – pedestrian or bicycle:

Pedestrian (miles to destination)	Bicycle (miles to destination)	Points
0.0-.25	0.0-1.0	10
0.26-0.5	1.01-3.0	8
0.51-1.0	3.01-5.0	6
1.01-3.0	5.01-7.5	4
3.01-5.0	7.51-10.0	2
5.01>	10.01>	0

- b. Directness of facility:** Is the path of the facility the most direct feasible route from origin to destination (i.e.-shortest distance from origin to destination)?
- i. Yes = 5 points
 - ii. No = 0 points
- c. Quality and perceived interest in getting to existing destination:** A maximum of **20 points** can be earned for this section. This total is accumulated by adding each item of interest that is a destination for the project. A destination that provides more than one use may only be awarded points for the use of highest interest (e.g. a school with a ball park would receive 5 points for the school use, but would not receive additional points for the ball park).

The following table outlines possible uses and the points associated with each:

High Interest (5 points)	Moderate Interest (3 points)	Low Interest (1 point)
Town Center (proportional to town size)	Multi-Family Residential Development	Low-Density/Single Family Residential Development
Mixed Use Development Center	Park-n-Ride Lot	Privately Accessible Property
Major Employment Center	Light Rail Stop	Bus Stop
Transit Station	Park	
School	Greenway	
	Bus Stop (higher trips and activity)*	

*Higher trips and activity is defined as 50+ trips and 25+ boardings/alightings (see application for more information).

Uses not specifically listed in the table, but considered relevant, will be evaluated by the committee tasked with reviewing projects, and may be allocated points if deemed appropriate.

- d. Regional nature of facility and destinations:** Has the proposed project been identified through a previous planning effort or policy?
- i.** Identified in current adopted plan = 5 points
 - Transportation (MTP, TIP, CTP, Bicycle Plan, Pedestrian Plan or other locally adopted transportation plan or list for community)
 - Land Use or Comprehensive Plan
 - Recreation Plan
 - Economic Development Plan
 - ii.** Not identified in current adopted plan = 0 points
- e. Shown path:** A shown path illustrates a known need. This can be an actual shown path on the side of the road, a high volume of observed cyclists along a roadway, etc.
- i.** Yes = 5 points
 - ii.** No = 0 points

2. Feasibility and Cost of Implementation (30 points possible): Points will be awarded based on described cost/benefit balance and progress made to date on the part of applicant based on the attributes below. The following definitions shall be used for reference for this section:

Right-of-Way or easement acquired or dedicated – refers to r/w or an easement that has been acquired or dedicated through the appropriate process, specifically for use by the proposed project.

Financial Commitment – refers to funding that has been authorized by the decision making body of the jurisdiction proposing the project.

Partial – refers to a minimum of 30% work complete.

a. Right of Way or easement acquired or dedicated:

- i. 76%-100% = 15 points
- ii. 51%-75% = 10 points
- iii. 21%-50% = 5 points
- iv. 20% or less = 0 points

b. Preliminary construction plans in hand: Has design work taken place for the proposed project?

- i. Completed = 5 points
- ii. Partial = 3 points
- iii. No Work = 0 points

c. Limited environmental impacts: To what extent does the proposed project impact the environment?

- i. CE Type I & II = 5 points
- ii. EA = 2 points
- iii. EIS = 0 points

d. Applicant Financial Commitment: Does the applicant have a significant financial stake in the project? Are they contributing a significant amount of their own resources towards the total project cost? If so, then they will receive more points than those who may only contribute the minimum amount necessary. The range of percent match of total project cost, and corresponding points, are as follows:

- i. 50% or more = 5 points
- ii. 21-49% = 2 points
- iii. 0-20% = 0 points

3. Safety (25 points possible): Project must demonstrate a safer condition for bicyclists and/or pedestrians traveling between origins and destinations in the same general corridor or planning area. Qualities of a project improving bicycle/pedestrian safety including the following attributes:

a. Existing conditions: Conditions must demonstrate a safety hazard to cyclists and/or pedestrians as currently designed. Examples of demonstrated safety hazards may include recorded crash data or a posted speed limit over 30 miles per hour.

- i. Yes = 10 points
- ii. No = 0 points

b. Vehicular speed: Proposed project design encourages a reduction in vehicular speeds (i.e. - traffic calming devices, narrowed travel lanes, or lower speed limits).

- i. Yes = 5 points
- ii. No = 0 points

c. Reduced exposure: Proposed project reduces the exposure between the motor vehicles, bicyclists and/or pedestrians. Examples of a physical barrier may include an off-road greenway, pedestrian refuge island, or a bike boulevard separated by a vertical structure. Examples of a defined space include striped bike lanes, sidewalks adjacent to the curb, crosswalks, and signed bike routes. The applicant should recognize any new safety risks introduced by the project design, such as placing a multi-modal side-path separate from the roadway but crossing multiple driveways or conflict points.

- i. Physical barrier = 10 points
- ii. Defined space = 5 points
- iii. No reduced exposure = 0 points

APPENDIX

VI



CRTPO's CMAQ Ranking Process & Application



Mecklenburg-Union Metropolitan Planning Organization (MUMPO) Congestion Mitigation and Air Quality (CMAQ) Project Ranking Process

APPROVED BY THE MPO: November 19, 2008

AMENDED BY THE MPO: May 18, 2011

BACKGROUND: The MUMPO assigned a CMAQ subcommittee in July 2008 with the task of developing criteria to recommend projects to the MUMPO based on a comprehensive and technically-oriented project ranking process. Since the total value of proposed projects often significantly exceeds available funds, so an objective evaluation of proposals is necessary to determine the best use of CMAQ funds.

The following project ranking criteria process is the result of research and discussions by air quality and transportation professionals from the MUMPO region. The committee considered specific quantitative criteria for each of the categories, although this did not always prove to be feasible. The overarching goal was to create a thorough assessment that did not place undue burdens upon the applicant. When a quantitative measure of the absolute effectiveness of the project was not possible or reasonable, criteria based on a yes/no answer was created.

The scoring list below contains work discussed over the course of four subcommittee meetings in July and August of 2008. The TCC unanimously recommended this process to the MUMPO at their September 4, 2008 meeting.

FINAL PRODUCT: The MUMPO will have a process available that allows a wide variety of eligible projects to be evaluated for funding, without creating undue burdens on applicants.

PROJECT RANKING CRITERIA

1. Pollutant Reduction (25 points possible): This is the most important consideration for a project. How many kilograms of the four main pollutants: Oxides of Nitrogen (NO_x), Particulate Matter 2.5 microns in diameter (PM 2.5), Volatile Organic Compounds (VOC), and Carbon Monoxide (CO), will the project reduce over the lifetime of the project? NO_x, due to its role in Ozone formation, is the most important pollutant in the region, with PM the second most important. VOCs and CO are currently not found in high enough concentrations to significantly affect air quality, so emission reductions are not considered as a part of the pollutant reduction in this process. The applicant is responsible for all emissions calculations, with review by a MUMPO project ranking committee.

Pollutant reductions are calculated by taking the calculated yearly NO_x reductions and 25 percent of the PM 2.5 reductions, and then summing the two numbers. This yearly number is then multiplied by the number of years in the project lifetime. The result is the lifetime pollutant reduction.

EXAMPLE: A project will annually reduce NOx by 1,000 kilograms per year and PM2.5 by 1,000 kilograms per year. The applicant would take all of the NOx benefits and 250 kilograms (25 percent) of the PM2.5 reductions, and sum them. The net pollutant reduction would then be 1,250 kilograms.

The generalized project lifetimes are as follows:

- a. Bus Purchase- see Federal Transit Administration schedule for lifetime
- b. Transit Operations Improvements- length of program funding
- c. Park and Ride Lots- 20 years
- d. Intersection Improvements- 10 years
- e. Signal Improvements- 5 years
- f. HOV/ HOT Lanes- 20 years
- g. Telecommuting Center- 10 years
- h. Advocacy and Education- length of program funding
- i. TMO and TMAs- length of program funding
- j. Sidewalks, Bike Lanes, and Greenways- 20 years
- k. ITS Capital Improvements- 10 years
- l. ITS Operations Improvements- 3 years
- m. Truck Stop Electrification- 10 years
- n. Retrofit Technology- 5 years
- o. Other Project- see MUMPO staff

The lifetime pollutant reduction point breakdown is as follows:

- a. 100,000 or more kilograms removed = 25 points
- b. 75,000-99,999 kilograms removed= 20 points
- c. 50,000-74,999 kilograms removed= 15 points
- d. 10,000-49,999 kilograms removed= 10 points
- e. Less than 10,000 kilograms removed= 5 points

2. Project Cost Effectiveness (20 points possible): What is the CMAQ cost per kilogram of pollutant removed over the life of the project, with kilograms removed defined by the weighting process from Criteria #1? Projects that fall in the more-cost effective categories will receive additional points. The category breakdowns are as follows:

- a. \$24.99 or less per kilogram removed= 20 points
- b. \$25.00-\$49.99 per kilogram removed=15 points
- c. \$50.00-\$99.99 per kilogram removed= 10 points
- d. \$100.00-\$199.99 per kilogram removed= 5 points
- e. \$200.00 or more per kilogram removed= 0 points

3. Transportation Impact (15 points possible): The proposed project will improve the transportation system. Examples: Will it improve freight movement or non-single occupant vehicle (SOV) travel? Will the project address an **identified** non-vehicular safety issue? If it reduced vehicular congestion, just how much congestion does it eliminate in terms of hours of delay per day?

- a. Promotes multi-modal options, including freight movement (Yes= 5 points, no= 0 points)
- b. Improves vehicular, pedestrian, or bicyclist safety; explain why (Yes= 2 points, no= 0 points)

- c. Reduces congestion (0 points for non-traffic project, 2 points for projects that do reduce congestion, but did not perform calculation). The following scores are for those applicants who performed a before and after analysis of congestion:
 - 1) Less than 10 seconds of delay per vehicle reduced= 4 points
 - 2) 10-20 seconds of delay per vehicle reduced= 6 points
 - 3) Greater than 20 seconds per vehicle reduced= 8 points

4. Policy and Information Sharing (5 points possible): Does the project intend to educate the public or community decision makers on how to improve air quality? Does the applicant attempt to make institutional change in organizations to reduce pollution? (Yes= 5 points, no= 0 points)

- a. Distributes best practices to public and decision makers
- b. Involves institutional changes to agency regarding air quality and transportation

5. Applicant Financial Commitment (5 points possible): Does the applicant have a significant financial stake in the project? Are they contributing a significant amount of their own resources towards the total project cost? If so, then they will receive more points than those who may only contribute the minimum amount necessary. The ranges of percent match of total project cost, and corresponding points, are as follows:

- a. 0-20%=0 points
- b. 21-49%= 2 points
- c. 50% or more= 5 points

6. Project Readiness (10 points possible): Does the project require environmental review? Has the applicant implemented projects in the past that are of similar complexity? Has the applicant implemented previous CMAQ projects, or projects similar in complexity?

- a. Environmental considerations
 - 1) Environmental study not prepared= 0 points
 - 2) Environmental document already received, categorical exclusion, or no environmental review required= 5 points
- b. Sponsor’s ability to implement: does the applicant have a proven record implementing projects of similar type or difficulty?
 - 1) Yes= 5 points
 - 2) no= 0 points

7. Project Maintenance and Management (10 points possible): Has the applicant anticipated the ongoing maintenance and management obligations of the project? Does the applicant have a plan, and capability, for maintenance and supervision of completed project?

- a. Plan and resources in place= 10 points
- b. No committed or identified plan and resources= 0 points

8. Concurrency with Existing Plans (10 points possible): Has the proposed project been identified through a previous planning effort? Does the project help address an issue identified in one of the following types of plans?

- a. Identified in current adopted plan (10 points)
 - o Transportation (LRTP, TP, CTP, Bicycle Plan, Pedestrian Plan, or other locally adopted transportation plan or list for community)
 - o Land Use or Comprehensive Plan
 - o Recreation Plan

- Economic Development Plan
- b. Not identified in current adopted plan (0 points)

Mecklenburg-Union Metropolitan Planning Organization

Congestion Mitigation & Air Quality (CMAQ) Application Form

Please use this form to submit your request for CMAQ funding.

All applications must be submitted by 5:00 PM, Friday, April 27, 2012.

Project Sponsor Information	
Agency:	
Contact Name :	
Address:	
Telephone :	
E-Mail:	
Project Information	
Title:	
Description:	
Project Type <i>(check all that apply)</i>	
<input type="checkbox"/> Transportation Control Measures (see below)	<input type="checkbox"/> Transportation Management Associations
<input type="checkbox"/> Extreme Low-Temperature Cold Start Programs	<input type="checkbox"/> Carpooling & Vanpooling
<input type="checkbox"/> Alternative Fuels	<input type="checkbox"/> Freight/Intermodal
<input type="checkbox"/> Congestion Relief & Traffic Flow Improvements	<input type="checkbox"/> Diesel Engine Retrofits
<input type="checkbox"/> Transit Improvements (see below)	<input type="checkbox"/> Idle Reduction
<input type="checkbox"/> Bicycle/Pedestrian Facilities & Programs	<input type="checkbox"/> Training
<input type="checkbox"/> Travel Demand Management	<input type="checkbox"/> I/M Programs
<input type="checkbox"/> Public Education & Outreach Activities	<input type="checkbox"/> Experimental Pilot Projects

Mecklenburg-Union Metropolitan Planning Organization

In the following section, please provide information on how the project addresses the eight categories in MUMPO's adopted project ranking criteria.

1. Pollutant Reduction (25 points possible)

Pollutant reductions are calculated by taking the calculated yearly NOx reductions and 25 percent of the PM 2.5 reductions, and then summing the two numbers. This yearly number is then multiplied by the number of years in the project lifetime. The result is the lifetime pollutant reduction. Please review the ranking criteria for more details.

2. Project Cost Effectiveness (20 points possible)

What is the CMAQ cost per kilogram of pollutant removed over the life of the project, with kilograms removed defined by the weighting process from Criteria #1? Projects that fall in the more-cost effective categories will receive additional points. Please review the ranking criteria for more details.

Mecklenburg-Union Metropolitan Planning Organization

3. Transportation Impact (15 points)

Will the proposed project improve the transportation system? Will it improve freight movement or non-single occupant vehicle (SOV) travel? Will the project address an identified non-vehicular safety issue? If it reduced vehicular congestion, just how much congestion does it eliminate in terms of hours of delay per day? Please review the ranking criteria for more details.

4. Policy & Information Sharing (5 points possible)

Does the project intend to educate the public or community decision makers on how to improve air quality? Does the applicant attempt to make institutional change in organizations to reduce pollution? Please review the ranking criteria for more details.

Mecklenburg-Union Metropolitan Planning Organization

5. Applicant Financial Commitment (5 points possible)

Does the applicant have a significant financial stake in the project? Are they contributing a significant amount of their own resources towards the total project cost? If so, then they will receive more points than those who may only contribute the minimum amount necessary. Please review the ranking criteria for more details.

6. Project Readiness (10 points possible)

Does the project require environmental review? Has the applicant implemented projects in the past that are of similar complexity? Has the applicant implemented previous CMAQ projects, or projects similar in complexity? Please review the ranking criteria for more details.

Mecklenburg-Union Metropolitan Planning Organization

7. Project Maintenance & Management (10 points possible)

Has the applicant anticipated the ongoing maintenance and management obligations of the project? Does the applicant have a plan, and capability, for maintenance and supervision of completed project? Please review the ranking criteria for more details.

8. Concurrency with Existing Plans (10 points possible)

Has the proposed project been identified through a previous planning effort? Does the project help address an issue identified in those plans? Please review the ranking criteria for more details.



Example Easement Agreements

EXAMPLE EASEMENT AGREEMENT

STATE OF NORTH CAROLINA

COUNTY

Tax Parcel(s):

Drawn by and mail to: Catawba Lands Conservancy, 105 W. Morehead Street
Charlotte, NC 28210

TRAIL AND PARKING EASEMENT AGREEMENT

THIS TRAIL AND PARKING EASEMENT AGREEMENT (“**Agreement**”) dated as of _____ (the “**Agreement Date**”) is by and between _____ (the “**Grantor**”) and **CATAWBA LANDS CONSERVANCY**, a North Carolina nonprofit corporation (“**CLC**”).

ARTICLE I Background

1.01 Property.

- (a) Grantor is the sole owner in fee simple of that certain parcel of land containing approximately _____ acres located _____ in _____ County, North Carolina as described in Deed ___ at Page ___ in the _____ County Public Registry (the “**Property**”).
- (b) Grantor desires to allow a trail pursuant to the provisions of this Agreement on a portion of the _____ Property, said location being more particularly described in **Exhibit A** attached hereto and by reference incorporated herein (the “**Trail Property**”) and depicted on the survey or plat dated _____, 20__ prepared by _____ a copy of which is attached as **Exhibit B** hereto and by reference incorporated herein (the “**Survey**”).
- (c) Grantor desires to allow a parking lot for trail users on the portion of _____ Property described in **Exhibit C** attached hereto and by reference incorporated herein (the “**Parking Property**”) and also depicted on the Survey.
- (d) The Trail Property and the Parking Property are collectively referred to as the “**Property**.”

1.02 Purposes. The purposes of this Agreement are to set forth the terms under which the Trail Facilities and Parking Facilities described in Article II can be established and maintained for activities and uses by the general public described in Article III.

1.03 Consideration. The Grantor acknowledges receipt of the sum of \$1.00 in consideration of the grant of easements to CLC under this Agreement and other good and valuable consideration, including the promises of CLC set forth herein.

ARTICLE II Grant of Easement for Trail Facilities and Parking Facilities

EXAMPLE EASEMENT AGREEMENT

2.01 Grant of Trail Facilities Easement. The Grantor, intending to be legally bound, grants, bargains, sells and conveys to CLC a perpetual non-exclusive easement (“**Trail Facilities Easement**”) to (i) create the Trail (hereinafter defined) on the Trail Property, and (ii) enter the Trail Property at any time to construct, install, maintain and repair any one or more of the items (collectively, with the Trail, the “**Trail Facilities**”) described in paragraph (a) of this Section 2.01. The Trail Facilities Easement is granted subject to conditions, covenants, restrictions, easements and other matters of record, other than (i) mortgage liens, which Grantor agrees to cause to be subordinated to this Agreement, and (ii) the lien of Ad Valorem taxes which Grantor agrees to pay prior to delinquency, and subject to any matters that would appear on a current and accurate survey of the Trail Property and to all subdivision ordinances, zoning ordinances, land use regulations and other laws, regulations or ordinances applicable to the Trail Property. Grantor and CLC shall work together in good faith to develop mutually acceptable rules and regulations for the Trail Property and Parking Property.

(a) Trail Facilities

- (1) A paved or unpaved trail of varying width not to exceed _____ feet in width, together with steps, railings, and other surface structures which, as to wet areas, may include bridges, boardwalks and culverts (collectively, the “**Trail**”).
- (2) Signs to mark the Trail, to provide information related to the Trail and for interpretive purposes.
- (3) Fencing, gates, and barriers to control access to the Trail Facilities, provided that (i) Grantor shall be given a mechanism for unlocking any fencing, gates or barriers, (ii) Grantee shall submit the location of the same to Grantor for Grantor’s prior written consent, not to be unreasonably withheld, conditioned or delayed, and (iii) Grantor shall have the right to require the relocation of the same, at Grantor’s cost and expense (if approved by Grantor) or at CLC’s costs and expense (if not approved by Grantor), if any such fencing, gates or barriers impairs Grantor’s use of the Trail Property or Grantor’s adjacent property.
- (4) Facilities incidental to and for the convenience of users of the Trail, such as observation platforms, benches, picnic tables, wastebaskets, kiosks and bicycle racks.

(b) No Obligation to Construct or Connect

CLC shall have no obligation to construct the Trail or any particular Trail Facilities within any particular time, if ever, or to connect the Trail with other trails.

2.02 Grant of Parking Facilities Easement. The Grantor, intending to be legally bound, grants and conveys to CLC a perpetual non-exclusive easement (“**Parking Facilities Easement**”) to (i) create the Parking Lot (defined below) on the Parking Property, and (ii) enter the Parking Property at any time to construct, install, maintain and repair any one or more of the items described in paragraph (a) of this **Section 2.02** (collectively, “**Parking Facilities**”). The

EXAMPLE EASEMENT AGREEMENT

Parking Facilities Easement is granted subject to all conditions, covenants, restrictions, easements and other matters of record, to any matters that would appear on a current and accurate survey of the Parking Property and to all subdivision ordinances, zoning ordinances, land use regulations and other laws, regulations or ordinances applicable to the Parking Property.

(a) **Parking Facilities**

- (1) A paved or unpaved parking lot (the “**Parking Lot**”).
- (2) Signs to mark the Parking Lot and to provide information related to the Parking Lot.
- (3) Fencing, gates, and barriers to control access to the Parking Lot, provided that (i) Grantor shall be given a mechanism for unlocking any fencing, gates or barriers, (ii) CLC shall submit the location of the same to Grantor for Grantor’s prior written consent, not to be unreasonably withheld, conditioned or delayed, and (iii) Grantor shall have the right to require the relocation of the same, at Grantor’s cost and expense (if approved by Grantor) or at CLC’s cost and expense (if the original location was not approved by Grantor), if any such fencing, gates or barriers materially impairs Grantor’s use of the Parking Property or Grantor’s adjacent property.
- (4) Facilities incidental to and for the convenience of users of the Parking Lot, such as benches, picnic tables, wastebaskets, kiosks and bicycle racks.

(b) **No Obligation to Construct**

- (1) CLC shall have no obligation to construct the Parking Facilities or any particular component of the Parking Facilities within a particular time, if ever.

2.03 Exercise of Rights.

- (a) Creation of the Trail and Parking Lot and other construction, installation, maintenance and repair of the Trail Facilities and Parking Facilities includes all activities necessary for the proper construction, installation, maintenance and repair of the Trail Facilities and Parking Facilities, and may include, without limitation, installation of signage; mowing, cutting or removal of soil, rock, trees or vegetation; application of gravel, crushed stone, wood chips or paving; or other means of creating the Trail and Parking Lot surface (if any) and/or identifying the Trail’s path. These activities may include vehicular use.
- (b) CLC, its employees, contractors or agents shall (i) perform all construction, maintenance, repair and replacement of the Trail Facilities and Parking Facilities in a good and workmanlike manner, in accordance with all applicable federal, state and local laws and regulations and in accordance with any standards which may apply to the performance thereof, including any professional engineering standards; (ii) obtain all necessary governmental permits and approvals for the

EXAMPLE EASEMENT AGREEMENT

performance of all construction, maintenance, repair and replacement of the Trail Facilities and Parking Facilities; and (iii) be responsible for all costs of performing all construction, maintenance, repair and replacement of the Trail Facilities and Parking Facilities, including permitting costs. Grantor shall cooperate with CLC to obtain any such permits if reasonably requested at no cost to Grantor.

ARTICLE III Grant of Easement for Public Access

3.01 Grant of Public Access Trail Easement. The Grantor, intending to be legally bound, grants to CLC the right to make available to the public a perpetual non-exclusive easement and right-of-way over the Trail and the right to use Trail Facilities for the purposes (“**Permitted Trail Uses**”) described in paragraph (a) of this **Section 3.01** (“**Public Access Trail Easement**”). The Public Access Trail Easement is granted subject to conditions, covenants, restrictions, easements and other matters of record other than (i) mortgage liens, which Grantor agrees to cause to be subordinated to this Agreement, (ii) the lien of Ad Valorem taxes, which Grantor agrees to pay prior to delinquency, and to any matters that would appear on a current and accurate survey of the Trail Property and to all subdivision ordinances, zoning ordinances, land use regulations and other laws, regulations or ordinances applicable to the Trail Property.

- (a) **Permitted Trail Uses.** The Trail Facilities shall be used solely:
- (1) As a right-of-way for (i) walking, hiking, jogging, bicycling, horseback riding, bird watching, or nature study; (ii) events such as “runs” or competitive races; (iii) programmatic use by schools, clubs or other groups; (iv) picnicking or other similar stationary activities reasonably related to the activities permitted under items (i), (ii) and (iii) above, (v) wheelchair use by persons who need to use wheelchairs; (vi) maintenance vehicles used in the construction, management, maintenance or stewardship purposes of the Trail Facilities; (vii) by CLC and CLC’s contractors for events; and (viii) emergency vehicles in the case of emergency within the Trail Property.
 - (2) For resource management, including the right (but not obligation) to mow, cut or remove trees, vegetation, or plant vegetation, within the Trail Property.

3.02 Grant of Public Access Parking Easement. The Grantor, intending to be legally bound, grants to CLC the right to make available to the public a perpetual non-exclusive easement and right-of-way over the Parking Lot and the right to use Parking Facilities for the purposes (“**Permitted Parking Uses**”) described in this **Section 3.02** (“**Public Access Parking Easement**”). The Public Access Parking Easement is granted subject to all conditions, covenants, restrictions, easements and other matters of record, to any matters that would appear on a current and accurate survey of the Parking Property and to all subdivision ordinances, zoning ordinances, land use regulations and other laws, regulations or ordinances applicable to the Parking Property. The Parking Facilities shall be used solely for the purposes of parking vehicles and bicycles in connection with the use of Trail Facilities.

EXAMPLE EASEMENT AGREEMENT

ARTICLE IV Rights of Grantor

4.01 Grantor Improvements, Uses and Activities. Grantor has the rights accorded to the general public to use the Trail Facilities located on the Trail Property and the Parking Facilities located on the Parking Property, as well as exercise any one or more of the following rights:

- (a) **Other Rights.** Grantor may exercise all rights accruing from ownership of the Property, including, the right to engage in, or permit or invite others to engage in, all uses of the Property, that are not expressly prohibited by this Agreement or inconsistent with the easement rights granted hereby and do not interfere with same.
- (b) **Enforcement Rights.** Grantor may remove or exclude from the Property any Persons (as defined in **Section 6.04**) other than CLC, CLC's contractors or agents, who are (i) in locations other than the Trail or other Trail Facilities located on the Trail Property or the Parking Facilities, or (ii) not engaged in Permitted Trail Uses.

4.02 Location of Parking Property. The location of the Parking Property described in **Exhibit ___** has been surveyed. Such location will be utilized in a driveway permit application and will be subject to the approval of by the Department of Transportation (“**DOT**”). Accordingly, CLC shall, at its expense, apply for a driveway permit and other permits or approvals necessary for the Parking Lot. In the event the surveyed location is not approved by DOT, CLC and Grantor shall exercise commercially reasonable, good faith efforts to agree upon a revised location. Upon the determination of the revised location of the Parking Property, Grantor and CLC shall execute and deliver to each other an amendment to this Agreement indicating the revised location of the Parking Property and releasing any easement rights under this Agreement in any property lying outside of the revised location of the Parking Property.

ARTICLE V Enforcement; Liability Issues

5.01 Enforcement. Each party may, in addition to other remedies available at law or in equity, compel the other party to make the Property available for the purposes set forth in this Agreement by exercising any one or more of the following remedies:

- (a) **Injunctive Relief.** Seek injunctive relief to specifically enforce the terms of this Agreement; to restrain present or future violations of this Agreement; and/or to compel restoration of Trail Facilities or Parking Facilities or other resources destroyed or altered as a result of the violation of this Agreement.
- (b) **Self Help.** Enter the Property to remove any barrier to the access provided under this Agreement and do such other things as are reasonably necessary to protect and preserve the party's rights under this Agreement.

EXAMPLE EASEMENT AGREEMENT

5.02 Representations and Warranties. The Grantor warrants to CLC that to the best knowledge of Grantor, without investigation:

- (a) There are no unrecorded agreements, or unrecorded encumbrances, to which Grantor is a party that would nullify or materially impair the rights or obligations of the parties under this Agreement.
- (b) The Property is not encumbered by (i) lien of any mortgage or deed of trust (a “Mortgage Lien”), (ii) or any mechanics or materialman’s liens (a “Mechanics & Materialman’s Lien”), or if there is either a Mortgage Lien or Mechanics & Materialman’s Lien on the Property, Grantor will cause it to be removed or subordinated to this Agreement on the same date that this Agreement is recorded in the public registry for _____ County.
- (c) Except as previously disclosed to CLC, (i) no substance defined, listed, or otherwise classified pursuant to any federal, state, or local law, regulation, or requirement as hazardous, toxic, or as a pollutant or contaminant (collectively, “**Hazardous Materials**”) exists or has been released, generated, treated, stored, used, disposed of, deposited, abandoned, or transported to or from the _____ Property in violation of applicable federal, state, and local laws, regulation and requirements (collectively, “**Applicable Law**”), (ii) there are no underground storage tanks located on the _____ Property, (ii) no Hazardous Materials or underground storage tanks have been removed from the _____ Property in a manner not in compliance with Applicable Law
- (d) Except as previously disclosed to CLC, Grantor has received no written notice that the _____ Property is in violation of any Applicable Law;
- (e) There is no pending or threatened litigation against or by Grantor in any way affecting, involving or relating to the Property;
- (f) No civil or criminal proceedings or investigations have been instigated against or by Grantor which are now pending against or by Grantor, and no written notices of claims, demands, or orders have been received by Grantor, arising out of any violation or alleged violations of, or failure to comply with, any federal, state, or local law, regulation, or requirement applicable to the Property or its uses.
- (g) Neither the Property, nor any portion thereof, is or shall be used to satisfy mitigation requirements under 33 U.S.C. §1344 or N.C. Gen. Stat. §143-214.11.

5.03 Immunity under Applicable Law. Nothing in this Agreement limits the ability of Grantor and CLC to avail themselves of the protections offered by any applicable law affording immunity to Grantor and CLC including, to the extent applicable, the recreational use statute, N.C. Gen. Stat. § 38A-1 et seq. (“**Recreational Use Statute**”) (as may be amended from time to time).

5.04 Public Enters at Own Risk. Use of any portion of the Property by members of the general public is at their own risk. Notwithstanding any provision herein to the contrary, neither CLC nor Grantor by entering into this Agreement assume any duty to or for the benefit of the

EXAMPLE EASEMENT AGREEMENT

general public for defects in the location, design, installation, maintenance or repair of the Trail Facilities or Parking Facilities; for any unsafe conditions within the Property; or for the failure to inspect for or warn against possibly unsafe conditions; or to close the Trail Facilities or Parking Facilities to public access when unsafe conditions may be present. CLC will endeavor to repair damaged Trail Facilities and Parking Facilities but has no duty to do so unless and until CLC receives actual notice given in accordance with Article VI of this Agreement of the need to repair an unreasonably dangerous condition.

5.05 Costs and Expenses. CLC will maintain the Trail Facilities and Parking Facilities at its expense except to the extent such repair or maintenance results from the negligence or intentional misconduct of Grantor or Grantor's agents, employees, contractors, representatives or invitees. In such event, Grantor will promptly reimburse CLC for such expenses or costs within ten (10) business days after CLC shall submit an invoice for such work expense.

5.06 Covenant Against Liens. CLC shall promptly pay and discharge on or before the due date any claim or obligation for labor or materials furnished at the direction of CLC which, if not paid or discharged, would result in a lien on the Property. This **Section 5.06** shall survive the termination of this Agreement.

5.07 Insurance. CLC shall maintain Commercial General Liability Insurance against claims for personal injury or death and property damage occasioned by any occurrence on the Property or arising out of the exercise of CLC's rights under this Agreement in an amount of not less than \$1,000,000 per occurrence and aggregate limits of not less than \$3,000,000, commercial auto liability insurance and such workers' compensation/employer's liability insurance as required by law. All liability policies required by this **Section 5.07** shall: (a) be issued by insurers that are authorized to issue the applicable insurance in the state where the Property is located and are reasonably acceptable to Grantor; (b) name Grantor as an additional insured; (c) contain a provision by which the insurer will give Grantor at least 30 days prior written notice before making any material change in the nature or extent of the coverage provided under such policies and/or canceling or terminating such policies; and (d) contain a provision by which CLC's policies are primary to and non-contributory with any coverage that Grantor may have in effect. Prior to exercising any rights under this Agreement, CLC shall provide Grantor with evidence satisfactory to Grantor of the policies required by this **Section 5.07**. Grantor may review such insurance limits every three years and increase as reasonably necessary the minimum limits of the coverages required under this **Section 5.07** so as to provide, at all times, coverage comparable to that for similar facilities located in _____ County, North Carolina. The aforesaid insurance obligations shall not apply to an assignee of CLC in the event CLC assigns its interest hereunder to a governmental entity that elects to self-insure in lieu of carrying liability insurance. In the event CLC assigns its interest hereunder to a governmental entity that does not self-insure, the aforesaid insurance obligations shall apply to such assignee but only to the extent they are not in conflict with the terms and provisions of the assignee's blanket liability policy or if they are not, only to the extent that such terms and provisions can be readily amended at no additional expense to the assignee.

ARTICLE VI Miscellaneous

6.01 Beneficiaries and Agents. The rights of CLC under this Agreement may be exercised by CLC and any of the contractors, agents and employees acting at the direction of CLC. This

EXAMPLE EASEMENT AGREEMENT

Agreement may be assigned by CLC to a governmental entity or agency or another non-profit corporation whose mission includes creation and/or operation of trails or greenways without the prior consent of Grantor. If CLC assigns this Agreement to a governmental entity or agency, Grantor will cooperate to make any changes hereto reasonably required by the assignee. Upon any assignment hereto by CLC, all references herein to CLC shall thereafter mean the assignee.

6.02 Binding Agreement. This Agreement is a servitude running with the land binding upon the Grantor and, upon recordation in the Public Records, any subsequent owner of the Property or any portion of the Property is bound by its terms whether or not the owner had actual notice of this Agreement and whether or not the deed of transfer specifically referred to the transfer being under and subject to this Agreement. Subject to such limitations (if any) on CLC’s right to assign as may be set forth in this Agreement, this Agreement binds and benefits Grantor and CLC and their respective personal representatives, successors and assigns.

6.03 Governing Law. The interpretation and performance of this Agreement shall be governed by the laws of the State of North Carolina.

6.04 Definition and Interpretation of Capitalized and Other Terms. The following terms, whenever used in this Agreement, are to be interpreted as follows:

- (a) “**Grantor**” means each owner of all or any portion of the Property for so long as that owner owns all or any portion of the Property.
- (b) “**Person**” means an individual, organization, trust, or other entity.
- (c) “**Public Records**” means the public records of the Office of The Register of Deeds of _____ County, North Carolina.
- (d) “**Including**” means “including, without limitation”.
- (e) “**May**” is permissive and implies no obligation; “must” or “shall” are obligatory.

6.05 Incorporation by Reference. Each exhibit or schedule referred to in this Agreement is incorporated into this Agreement by this reference.

6.06 Amendments; Waivers. No amendment or waiver of any provision of this Agreement or consent to any departure by a party from the terms of this Agreement is effective unless the amendment, waiver or consent is in writing and signed by an authorized signatory for the other party. A waiver or consent is effective only in the specific instance and for the specific purpose given. An amendment must be recorded in the Public Records.

6.07 Severability. If any provision of this Agreement is determined to be invalid, illegal or unenforceable, the remaining provisions of this Agreement remain valid, binding, and enforceable. To the extent permitted by applicable law, the parties waive any provision of applicable law that renders any provision of this Agreement invalid, illegal, or unenforceable in any respect.

6.08 Recordation. CLC shall record this instrument in the Public Records, and may re-record it at any time as may be required to preserve its rights in this Agreement.

EXAMPLE EASEMENT AGREEMENT

6.09 Successors. Subject to the terms of **Section 6.01**, the covenants, terms, conditions and restrictions of this Agreement shall be binding upon, and inure to the benefit of, the parties hereto and their respective personal representatives, heirs, successors and assigns and shall continue as a servitude running in perpetuity with the Property.

6.10 Counterparts. This Agreement may be signed in multiple counterparts, each of which constitutes an original, and all of which, collectively, constitute only one agreement.

6.11 Entire Agreement. This is the entire agreement of Grantor and CLC pertaining to the subject matter of this Agreement. The terms of this Agreement supersede in full all statements and writings between Grantor, CLC, and others pertaining to the transaction set forth in this Agreement.

6.12 Notices. Any notice contemplated by this Agreement must be in writing, addressed as set forth below and shall be either (a) sent by United States Mail, postage prepaid, registered or certified mail, return receipt requested, in which case the notice will be deemed delivered two (2) business days after being deposited in the United States mail; (b) sent by overnight delivery using a nationally recognized overnight courier, in which case the notice shall be deemed delivered one (1) business day after deposit with such courier; (c) sent by facsimile or e-mail in which case the notice shall be deemed delivered upon confirmed transmission of such notice; provided that no later than the next business day after the facsimile or e-mail is sent, a hard copy of the facsimile or e-mail transmission is also sent in the manner set forth in (a), (b) or (d) of this Section; or (d) sent by personal delivery, in which case the notice will be deemed delivered on the date of delivery. Either party may change its address by giving the other party five (5) days advance written notice of such change.

If to Grantor, to:

With a copy to:

If to CLC, to: Catawba Lands Conservancy
 105 W. Morehead Street
 Charlotte, NC 28202
 Attn: Executive Director

TO HAVE AND TO HOLD the aforesaid easements, with all the rights, privileges and appurtenances thereunto appertaining unto CLC, its successors and assigns forever, subject to the terms of this Agreement, and the said Grantor for itself and its successors and assigns, does covenant with CLC, its successors and assigns that it is the sole owner of the Property and has good right and title to convey the easements in the manner aforesaid, that the Property is free from encumbrances except easements, conditions and restrictions of record and the lien of

EXAMPLE EASEMENT AGREEMENT

Cabarrus County Ad Valorem taxes for 2014 and subsequent years not yet due and payable and that Grantor will warrant and defend the title against the lawful claims of all persons.

IN WITNESS WHEREOF, Grantor and CLC by their respective duly authorized representatives, have caused this Agreement to be executed as of the day and year first above written.

By: _____

STATE OF NORTH CAROLINA

COUNTY OF _____

I, _____, a Notary Public for the County and State aforesaid, certify that _____ personally came before me this day and acknowledged that he/she is _____ of _____ and that he/she, as _____, being authorized to do so, executed the foregoing on behalf of the corporation and the said _____ acknowledged the said writing to be the act and deed of said corporation.

WITNESS my hand and notarial seal this _____ day of _____, 2014.

Notary Public

My commission expires:

CLC:

**CATAWBA LANDS CONSERVANCY, a
North Carolina nonprofit corporation**

By: _____
_____, **President**

STATE OF NORTH CAROLINA

COUNTY OF _____

I, _____, a Notary Public of the County and State aforesaid, certify that _____ personally came before me this day and acknowledged that he is President of **CATAWBA LANDS CONSERVANCY**, a North Carolina nonprofit corporation, and that he, as President, being authorized to do so, executed the foregoing on behalf of the corporation. And the said President acknowledged the said writing to be the act and deed of said corporation.

Witness my hand and official stamp or seal, this the _____ day of _____, 2014.

Notary Public

My Commission Expires:

[NOTARY SEAL]

EXHIBIT A

Legal Description of Trail Property

EXHIBIT B

Plat showing Trail Property and Parking Property

EXHIBIT C

Legal Description of Parking Property

Instrument Prepared By: _____
Brief Description for Index: _____
Parcel Identifier: _____
Mail After Recording to: _____

STATE OF NORTH CAROLINA
COUNTY OF _____

**GENERAL WARRANTY DEED
EASEMENT FOR GREENWAY PURPOSES
WITH STREET PROVISION**

THIS DEED OF EASEMENT, made this _____ day of _____, 20__, by and between _____ hereinafter referred to as the Grantor, and the City of _____, a municipal corporation of the State of North Carolina, hereinafter referred to as the “City”;

WITNESSETH:

WHEREAS, the Grantor is the owner in fee simple of certain real property hereinafter described, situated in _____, North Carolina;

WHEREAS, the property has scenic and aesthetic values in its present state as a natural area which has not been subject to development or exploitation;

WHEREAS, the Grantor and the City recognize the scenic and aesthetic value of the property in its present state, and have, by the conveyance of a Greenway Easement to the City, the common purpose of the preserving the natural values and character of the property, and preventing the use or development of the property in any manner which would conflict with the maintenance of the property in its scenic and natural condition;

WHEREAS, the Grantor is willing to grant a Greenway Easement over the property, thereby restricting and limiting the use of the land and contiguous water areas, on the terms and conditions and for the purposes hereinafter set forth, and the City is willing to accept such Easement;

NOW, THEREFORE, in consideration of the sum of One Dollar (\$1.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, and in further consideration of the mutual covenants, terms, conditions, and the restrictions hereinafter set forth, the Grantor hereby grants and conveys to the City and its successors in perpetuity an interest and Greenway Easement of the nature to the extent hereinafter set forth, in an over the lands of the Grantor described as follows:

Property Description Approved: _____
(Assistant) Chief City Engineer

The terms, conditions and restrictions of this Greenway Easement are as follows:

- (1) No buildings, sign, fence, or other structure shall be erected on the property;

provided, trail markers, litter receptacles, gates, boat launch trails, trail bridges, shelters, and other convenience facilities may be placed upon the property by the City of _____, consistent with the City's Master Greenway Plan.

- (2) There shall be no dumping of ashes, garbage, waste, or other unsightly or offensive material on the property.
- (3) There shall be no excavation, dredging, removal of loam, rock, sand, gravel or other material, or other change in the natural topography of the property, excepting for the construction and maintenance of trails, boat launches, fire lanes, or other accesses by the City of _____.
- (4) There shall be no removal, destruction or cutting of trees, shrubs, or other vegetation from the property except as may be performed by the City of _____: (a) for the maintenance of trails, fire lanes and other accesses; (b) for the prevention or treatment of disease; or (c) for other good husbandry practices.
- (5) Members of the general public shall have free access to and use of the property, subject to the laws and ordinances of the City of _____, and for the purposes allowed under the Greenway Master Plan of the City including, but not limited to the following: walking, nature studies, hiking, bike riding, jogging and picnicking; provided, there shall be no access by the City of _____ or the public at large granted by this easement to any property of the Grantor other than that described and conveyed herein.
- (6) The City of _____ shall have the right and duty to maintain this Greenway Easement in a clean, natural and undisturbed state, consistent with the City's Greenway Master Plan.
- (7) The Grantor shall be considered the fee owner of the property for purposes of determining development density standards under applicable zoning and land use regulations and shall be responsible for the payment of taxes on the property.
- (8) The City agrees to hold the Grantor harmless from liability for personal injury or property damage arising out of the use of the property for Greenway purposes; provided the Grantor shall not be held harmless from liability causes by the active conduct or instrumentalities of the Grantor, its agents, invitees, or contractors; or by acts of the Grantor, its agents, invitees or contractors which violate the terms and conditions of this Deed of Easement.
- (9) EXCEPTED from the above-stated terms, conditions, and restrictions are activities incidental to the construction of a public sanitary sewer collector, outfall, or interceptor, it being the intention of the parties that a public sewer line (together with customary, related uses of public sewer easement such as pump stations) may in the future be constructed over all, or a portion of, the area subject to the herein conveyed greenway easement.

The City does not waive or forfeit the right to take action to insure compliance with the terms, conditions and purposes of this Greenway Easement by a prior failure to act.

The City reserves the right to enter the property at reasonable times in order to monitor compliance with the terms, conditions, restrictions, and purposes of this Greenway Easement.

The Grantor expressly reserves the right to continue the use of the property for all purposes not inconsistent with this Greenway Easement.

The Grantor agrees that the terms, conditions and restrictions of this Greenway Easement will be inserted by it in any subsequent deed or other legal instrument by which it divests itself of either the fee simple title to, or of its possessory interest in, the subject property.

TO HAVE AND TO HOLD the said right, privileges and easement herein granted to the City of _____, its successors and assigns forever. The covenants agreed to and the terms, conditions and restrictions imposed herein shall be binding upon the Grantor and its agents, personal representatives, heirs and assigns, and all other successors to it in interest and shall continue as a servitude running in perpetuity with the above described land.

AND the Grantor covenants that he is vested of the premises in fee and have the right to convey the same in fee simple; that the same area free from encumbrances except as hereinafter stated, and that the Grantor will warrant and defend title to the same against the claims of all persons whomsoever.

IN WITNESS WHEREOF, THE Grantor has caused this instrument to be signed in its corporate name by its president, its corporate seal affixed, and attested by its secretary, by order of its Board of Directors, the day and year first above written.

GRANTOR

(Name of Corporation)

ATTEST:

Corporate Secretary

BY: _____
President

(SEAL)

STATE OF NORTH CAROLINA

COUNTY OF _____

Approved as to Form:

(Associate) City Attorney

This is to certify that on the _____ day of _____, 20__, before me personally came _____, with whom I am personally acquainted, who, being my duly sworn, says that ___he is the Secretary, and _____ is the President of _____, the corporation described in, and which executed, the foregoing instrument; that ___he knows the common seal of the corporation; that such seal was affixed to the instrument, and that the Secretary and President subscribed their names thereto, all

by order of the Board of Directors of the corporation, and that the said instrument is the act and deed of the corporation.

WITNESS my hand and official seal this the _____ day of _____, 200__.

Notary Public

(SEAL)

My Commission Expires: _____

allowed there shall be no other removal, destruction or cutting of trees, shrubs or other vegetation from the easement interest herein described and conveyed by any person or entity.

2. Nothing herein shall be construed to grant to the City of _____ or the general public any right of access through or over any property of the Grantors except that lying within the easement interest herein described and conveyed.

3. Following the installation of a sanitary sewer main and appurtenant facilities within the permanent easement hereinabove referenced and described, any and all temporary construction easement interest conveyed herein to the City shall terminate; and further, the City shall regrade, mulch, and reseed all damaged lands lying with the permanent and temporary easements, to the end that the same shall be restored to a conditions as good as or better than that before construction.

4. Except as herein authorized, no building, fence, sign, or other structure nor any vehicular surface area shall be erected within the easement interest herein described and conveyed.

5. There shall be no dumping of ashes, garbage, waste or other unsightly or offensive material on the easement interest herein described and conveyed.

6. There shall be no excavation, dredging, removal of loam, rock, sand, gravel or other material, nor any building of roads or other change in the natural topography of the easement interest herein described and conveyed, excepting for the construction and maintenance of the greenway and the sanitary sewer system undertaken by the City of _____ or its agents.

7. The City of _____ shall have the right and duty to maintain this Greenway Easement in a clean, natural, and undisturbed state, consistent with the City's Greenway Master Plan.

8. The City agrees to hold Grantors harmless from liability for personal injury or property damage arising out of the use of the easement for greenway purposes; provided Grantors shall not be held harmless from liability caused by the active conduct or instrumentalities of the Grantors, their agents, invitees or contractors; or by acts of Grantors, their agents, invitees or contractors which violate the terms and conditions of this Deed of Easement.

The City does not waive or forfeit the right to take action to insure compliance with the terms, conditions and purposes of this easement by a prior failure to act.

The City reserves the right to enter the subject property at reasonable times in order to monitor compliance with the terms, conditions, restrictions, and purposes of this easement.

The Grantors expressly reserve the right to continue the use of the property for all purposes not inconsistent with this easement.

The Grantors agree that the terms, conditions and restrictions of this easement will be inserted by them in any subsequent deed or other legal instrument by which they divest themselves of either the fee simple title to, or of their possessory interest in, the subject property.

TO HAVE AND TO HOLD the said right, privileges and easement herein granted to the City of _____, its successors and assigns forever. The covenants agreed to and the

terms, conditions and restrictions imposed herein shall be binding upon the said Grantors and its agents, personal representatives, heirs and assigns, and all other successors to it in interest and shall continue as a servitude running in perpetuity with the above described land.

AND the said Grantors covenant that they are vested of the premises in fee and have the right to convey the same in fee simple; that the same are free from encumbrances except as hereinafter stated; and that they will warrant and defend title to the same against the claims of all persons whomsoever, subject only to the following exceptions:

IN WITNESS WHEREOF, the said Grantors have hereunto set their hand and seals the day and year first above written.

WITNESS:

_____ (SEAL)

Approved as to Form: _____ (SEAL)

(Deputy) City Attorney _____ (SEAL)

STATE OF NORTH CAROLINA

COUNTY OF _____

This is to certify that on the _____ day of _____, 20__, before me personally came _____, with whom I am personally acquainted, who, being my duly sworn, says that __he is the Secretary, and _____ is the President of _____, the corporation described in, and which executed, the foregoing instrument; that __he knows the common seal of the corporation; that such seal was affixed to the instrument, and that the Secretary and President subscribed their names thereto, all by order of the Board of Directors of the corporation, and that the said instrument is the act and deed of the corporation.

WITNESS my hand and official seal this the _____ day of _____, 200__.

Notary Public

(SEAL)

My Commission Expires: _____

APPENDIX

VIII



NCDOT Pedestrian Policy
Bicycle & Bikeway Act of 1974

CHAPTER TWENTY-EIGHT

SIDEWALKS

PEDESTRIAN POLICY GUIDELINES

SIDEWALK LOCATIONS

ROADWAY POLICY ONE

POLICY STATEMENT:

"It is the policy of the Department of Transportation to replace existing sidewalks disturbed as a result of a highway improvement. In addition, the Department of Transportation is authorized to construct new sidewalks adjacent to State highway improvement projects at the request of the municipality provided the municipality agrees to reimburse the Department of Transportation for the actual construction cost of the sidewalks. Maintenance of sidewalks will be the responsibility of the municipality."

BACKGROUND:

General Update, 3/19/99.

Pedestrian Policy Guidelines, dated October 1, 2000.

General update, 4/16/01

PURPOSE:

To provide statewide uniformity in the construction of sidewalks on roadway projects.

RESPONSIBILITY AND PROCEDURES:**EXECUTIVE SUMMARY**

These guidelines provide an updated procedure for implementing the Pedestrian Policy adopted by the Board of Transportation in August 1993 and the Board of Transportation Resolution September 8, 2000. The resolution reaffirms the Department's commitment to improving conditions for bicycling and walking, and recognizes non-motorized modes of transportation as critical elements of the local, regional, and national transportation system. The resolution encourages North Carolina cities and towns to make bicycling and pedestrian improvements an integral part of their transportation planning and programming.

EFF. DATE 12/1/76
REV. DATE 4/16/01

1

The Pedestrian Policy addresses TIP projects and makes an important distinction between “considering the needs of pedestrians to avoid creating hazards to pedestrian movements” and the concept of “facilitating pedestrian movements for other reasons.”

HAZARDS

A hazard in this context is defined as a situation when pedestrian movements are physically blocked in a manner which forces pedestrians to use another mode of transportation or walk in an automobile traffic lane (parallel with the automobile traffic) to pass a barrier. The concept of “not creating a hazard” is intended to allow municipalities to have the flexibility to add pedestrian facilities as a part of the project, or in the future after the TIP project is complete. Our current standard cross sections generally do not create barriers for pedestrian movements.

PREVENTING HAZARDS

If there is evidence that a TIP project would create a hazard to existing pedestrian movements, the DOT will take the initiative to not create the hazard. However, if there is not evidence that a TIP project would create a hazard to existing pedestrian movements, the municipality will need to prove there will be pedestrian movements which will be affected within five years by the hazard created by the TIP project.

QUALIFYING THE NEED FOR PEDESTRIAN FACILITIES

Planning studies should evaluate the need for pedestrian facilities based on the degree to which the following criteria are met.

1. Local Pedestrian Policy
2. Local Government Commitment
3. Continuity and Integration
4. Location
5. Generators
6. Safety
7. Existing or Projected Pedestrian Traffic

REQUIREMENTS FOR DOT FUNDING:

REPLACING EXISTING SIDEWALKS

The DOT will pay 100% of the cost to replace an existing sidewalk which is removed to facilitate the widening of a road.

TIP INCIDENTAL PROJECTS

DEFINED: Incidental pedestrian projects are defined as TIP projects where pedestrian facilities are included as part of the roadway project.

REQUIREMENTS:

The municipality and/or county notifies the Department in writing of its desire for the Department to incorporate pedestrian facilities into project planning and design. Notification states the party's commitment to participate in the cost of the facility as well as being responsible for all maintenance and liability. Responsibilities are defined by agreement. Execution is required prior to contract let.

The municipality is responsible for evaluating the need for the facility (ie: generators, safety, continuity, integration, existing or projected traffic) and public involvement.

Written notification must be received by the **Project Final Field Inspection (FFI) date**. Notification should be sent to the Deputy Highway Administrator–Preconstruction with a copy to the Project Engineer and the Agreements Section of the Program Development Branch. Requests received after the project FFI date will be incorporated into the TIP project, if feasible, and only if the requesting party commits by agreement to pay 100% of the cost of the facility.

Due to the technical difficulty of describing justification for pedestrian facilities, the committee chose a cost sharing approach to provide cost containment for the pedestrian facilities. The DOT may share the incremental cost of constructing the pedestrian facilities if the “intent of the criteria” are met. Only improvements that have a sidewalk adjacent to it will be included in the total project construction cost. Additionally, the cost of bridges will be funded entirely by the DOT. This total project construction cost does not include the construction cost of any incidental pedestrian facilities. A cost sharing approach is used to demonstrate the Department's and the municipality's/county's commitment to pedestrian transportation (sidewalks, multi-use trails and greenways). The matching share is a sliding scale based on population as follows:

MUNICIPAL POPULATION	PARTICIPATION	
	DOT	LOCAL
> 100,000	50%	50%
50,000 to 100,000	60%	40%
10,000 to 50,000	70%	30%
< 10,000	80%	20%

Note: The cost of bridges will not be included in the shared cost of the pedestrian installation if the Department is funding the installation under provision 6 – pedestrian facilities on bridges.

FUNDING CAPS

Funding caps are no longer applicable.

INDEPENDENT PROJECTS

DEFINED: The DOT has a separate category of funds for all independent pedestrian facility projects in North Carolina where installation is unrelated to a TIP roadway project. An independent pedestrian facility project will be administered in accordance with Enhancement Program Guidelines.

RIGHT-OF-WAY

The Department will review the feasibility of including the facility in our project and will try to accommodate all requests where the Department has acquired appropriate right of way on curb and gutter sections and the facility can be installed in the current project berm width. The standard project section is a 10-ft. (3.0-meter) that accommodates a 5-ft sidewalk. In accordance with AASHTO standards, the Department will construct 5-ft sidewalks with wheelchair ramps. Betterment cost (ie: decorative pavers) will be a Municipal responsibility.

If the facility is not contained within the project berm width, the Municipality is responsible for providing the right of way and/or construction easements as well as utility relocations, at no cost to the Department. This provision is applicable to all pedestrian facilities including multi-use trails and greenways.

MAINTENANCE

Local governments will be responsible for maintaining all pedestrian facilities.

EFF. DATE 12/1/76
REV. DATE 4/16/01

INTRODUCTION

These guidelines provide a procedure for implementing the Pedestrian Policy adopted by the Board of Transportation in August 1993 and the Board of Transportation Resolution September 8, 2000. The Pedestrian Policy addresses TIP projects and makes an important distinction between “considering the needs of pedestrians to avoid creating hazards to pedestrian movements” and the concept of “facilitating pedestrian movements for other reasons.” Consequently, these guidelines are divided into three main sections:

- 1) Considering the needs of pedestrians to avoid creating hazards.
- 2) Quantifying the need for pedestrian facilities.
- 3) Requirements for DOT funding.

CONSIDERING THE NEEDS OF PEDESTRIANS TO AVOID CREATING HAZARDS

Section “d” of the Pedestrian Policy states: *“In the planning, design and construction of TIP transportation projects, the DOT shall consider the needs of pedestrians and will not create hazards to pedestrian movements.”* This means that during each phase of a project, a DOT employee should consider how the project will affect pedestrian movements. If the project will create a hazard to pedestrian movement, the DOT should use engineering judgment and find a way to remove the hazard. A hazard in this context is defined as a situation when pedestrian movements are physically blocked in a manner which forces pedestrians to use another mode of transportation, or walk in an automobile traffic lane (parallel with the automobile traffic) to pass as a barrier.

This does not mean that the DOT should build pedestrian facilities on all TIP projects. However, it does mean that the DOT should consider how projects will affect pedestrians and how projects can be designed to accommodate vehicular demands without creating barriers to pedestrians. Hazards can be divided into two categories, lateral barriers and perpendicular barriers. Lateral barriers prevent pedestrians from traveling parallel to the roadway. Perpendicular barriers prevent pedestrians from crossing a roadway.

The concept of “not creating a hazard” is intended to allow municipalities to have the flexibility to add pedestrian facilities as part of the project or in the future after the TIP

project is complete. Because bridges are so expensive and because they often have useful lives over fifty years, bridges should be given special consideration when pedestrian travel is anticipated.

EFF. DATE 12/1/76
REV. DATE 4/16/01

BRIDGES

Current standard cross sections generally do not create barriers for pedestrian movements. For bridges on streets with shoulder approaches, a minimum shoulder may be sufficient to “not create a hazard for pedestrian movements” over or under the bridge. For bridges on streets with curb and gutter approaches, the Department will fund and construct sidewalks on both sides of the bridge facility if the bridge is less than 200 feet in length. If the bridge is greater than 200 feet in length, the Department will fund and construct a sidewalk on one side of the bridge structure. The bridge will also be studied to determine the costs and benefits of constructing sidewalks on both sides of the structure. If in the judgement of the Department, sidewalks on both sides are justified, then they will be funded and constructed. For dual bridges less than 200 feet in length with a curb and gutter approach, sidewalks will be constructed on the outside of each bridge structure. If the dual bridges are greater than 200 feet in length, then a sidewalk on the outside of one bridge will automatically be funded and constructed. The bridges will also be studied to determine the costs and benefits of constructing sidewalks on the outside of both bridges and if the judgements of the Department, sidewalks on both bridges are justified, then they will be funded and constructed.

SHOULDER CROSS SECTIONS

Currently, there is no typical cross section for a rural road with a shoulder, and a pedestrian facility which is outside the ditch. However, when a rural road with a shoulder section has a pedestrian facility outside of the ditch, the ditch will not be considered a perpendicular barrier. Similarly, as long as there is some space where pedestrians can walk which is not in an automobile travel lane, the ditch will not be considered a lateral barrier either.

WIDENING PROJECTS

If a TIP project widens a road from 2 lanes to 5 lanes, the new 5-lane road is not considered a perpendicular barrier. Similarly, as long as there is some space where pedestrian can walk which is not in an automobile travel lane, the new 5-lane road is not considered a lateral barrier either.

RELOCATING PEDESTRIAN MOVEMENTS

This policy is not intended to require a pedestrian bridge or tunnel at interchanges where sidewalks and crosswalks are not practical. In these cases, the DOT may consider relocating the pedestrian movement to avoid creating unsafe situations or making

EFF. DATE 12/1/76
REV. DATE 4/16/01

unpracticed design modifications. Typically, relocated pedestrian movements should be no more than 800 meters (0.5 miles) away from the original path of the pedestrians. The 800 meter distance is a one way distance, not a round trip distance.

CONSTRUCTION PROCESS

During the construction phase of a project, there may be times when it is not possible to maintain all pedestrian movements through the entire construction process. When necessary, there may be temporary barriers to pedestrian movements in the work zone.

EXAMPLE

For example, the “XYZ” Expressway is a new controlled-access freeway through an established urban area. A major thoroughfare with sidewalks which will have a new interchange with the Expressway, connects a neighborhood on the north side of the Expressway with a hospital on the south side of the Expressway. Because the proposed interchange for the major thoroughfare is a Single-Point-Diamond design with free-flowing ramps in all four quadrants, there is no safe way for a pedestrian to cross the Expressway without conflicting with free-flowing traffic. Although there is a nearby railroad bridge over the Expressway, pedestrians are prohibited from that bridge because it was not designed to accommodate both trains and pedestrians. Consequently, residents who live in a neighborhood a few blocks from the hospital will now need to drive to the hospital or walk through a free-flowing traffic lane.

In this example the design engineer should make every reasonable effort to design this interchange to accommodate the automobile traffic, and not create a barrier for pedestrian movements. If the interchange design requires free-flow ramps as this Single-Point-Diamond design does, the engineer should determine if it is possible for pedestrians to cross the free-flow traffic lanes. If the peak hour traffic flow has acceptable gaps to allow pedestrians to cross safely, the ramps will not be considered a barrier. However, if traffic volumes or pedestrian volumes are too great, an alternative pedestrian facility should be considered. If accommodating pedestrians at the interchange will compromise safety or good engineering judgment, the engineer should consider if shifting the pedestrian movement away from the interchange is a feasible alternative.

QUANTIFYING THE NEED FOR PEDESTRIAN FACILITIES

Section “e” of the Pedestrian Policy states: “*The Department recognizes there are certain situations in which pedestrian facilities provide significant benefits in the movement of pedestrian traffic...*”. If a municipality would like the DOT to consider a project for “significant benefits,” the municipality is responsible for collecting any necessary information and submitting a written request prior to the initiation of a planning study. The

DOT will review the request and, if necessary, verify the data from the municipality. If pedestrian facilities are not incorporated into a project during the planning phase, and if there are significant factors which change during the time between the project planning study and the project design phase, municipalities may resubmit a request for pedestrian facilities prior to or at the post hearing meeting for the Design Public Hearing or Combined Hearing (whichever is applicable). The costs of sidewalks added to a project after the post hearing meeting for the Design Public Hearing or Combined Hearing will be the responsibility of the municipality. The Manager of the Programming and TIP Branch may allow DOT participation and sidewalk construction cost after the post hearing meeting if there is sufficient justification.

Planning studies should evaluate the need for pedestrian facilities based on the degree which allow the following seven criteria to be met. Municipalities should address each of these criteria when submitting requests for pedestrian facilities. Subsequently, the DOT will make the final determination for pedestrian facility eligibility.

1. **Local Pedestrian Policy.** There is evidence that local policies on urban development are encouraging urban densities and residential developments to occur in a manner to facilitate pedestrian travel by reducing walking distances, and requiring sidewalk construction in development ordinances.

- Is a pedestrian plan included in local thoroughfare plan?
- Do subdivision ordinances require pedestrian facility construction?
- Do local zoning ordinances facilitate pedestrian travel?
(For example, do the zoning ordinances encourage mixed-use developments which are accessible to pedestrians or do the zoning ordinances encourage highway strip development which is not accessible to pedestrians?)

2. **Local Government or Local Sponsor Commitment.** There is a local government/sponsor plan and commitment to provide an integrated system of pedestrian facilities which will connect with pedestrian facilities provided by the project.

- Does the local Capital Improvement Program include local funds for providing pedestrian facilities which will connect with pedestrian facilities provided by the NC TIP project?
- How many pedestrian facilities currently connect with the pedestrian facilities provided by the project?
- How many subdivisions have provided pedestrian facilities which are or will be connected with pedestrian facilities provided by the project?
- Has a responsible local government agency agreed in writing to maintain the

pedestrian facility?

3. **Continuity and Integration.** The project provides a connection to an existing or a proposed pedestrian network and will provide a critical link in the network.

- Is the project a critical link in an existing network?
(For example, will this project provide a missing link in an existing network where there are pedestrian facilities extending beyond the length of this project?)
- Is the project a critical link in a proposed network?
(For example, will this project provide any link in a proposed network where there will be pedestrian facilities extending beyond the length of this project?)

4. **Location.** The project is located within a Census defined urban area or growth area where development is anticipated in the immediate future; a majority of the properties within walking distance of the project are developed, or projected to be developed within 5 years at urban type residential densities. This five year period will begin at the completion of the appropriate environmental document.

- Is the project located in a Census defined urban area?
- Is the project located in a growth area (Urbanized Area Boundary) where development is anticipated in the immediate future, but is not in a Census defined urban area?
- Are a majority of the properties within walking distance of the project developed, or projected to be developed within 5 years at urban type residential densities (a minimum of 1 dwelling unit per acre)?

5. **Generators.** The project serves as a primary access from one or more of the following to another:

- -day care, elementary or secondary school
- -college or university
- -community facility (such as a library or park)
- -public transportation
- -commercial, office, industry, or business centers
- -residential areas
- -Will any of these land-uses within two kilometers (1.2 miles) of the project use this project as a primary access?

6. **Safety.** The project provides demonstrable safety benefits for pedestrians.

- Will the pedestrian facility separate pedestrians from automobile traffic with a posted speed greater than 80 kilometers per hour (50 miles per hour)?
- Will the pedestrian facility be used by children (0-14), elderly (65+), handicapped, or low-income people?
- Will the pedestrian facility reduce potential pedestrian-vehicle conflicts?
- Will the pedestrian facility reduce potential identified safety needs of the area?

7. **Existing or Projected Traffic.** Continued, sustained pedestrian travel can be shown by any of the following:

- Evidence of existing usage such as well worn paths.
- Projected usage based on previous experience with similar facilities.
- Minimum of 150 pedestrians per 24 hour period along a corridor planned for the project.

REQUIREMENTS FOR DOT FUNDING

REPLACING EXISTING SIDEWALKS

Section “b” of the Pedestrian Policy states: *“When a highway construction project having to do with the widening of an existing street requires that an existing sidewalk be torn up to make room for the widening, it is the policy of the Department of Transportation to replace the sidewalk.”* This statement says the DOT will pay 100% of the cost to replace an existing sidewalk which is removed to make room for a widening project. There is no monetary cap for this category of funding pedestrian facilities.

PREVENTING HAZARDS

Section “d” of the Pedestrian Policy states: *“In the planning, design, and construction of TIP transportation projects, the DOT shall consider the needs of pedestrians and will not create hazards to pedestrian movements.”* If there is evidence that a TIP project would create a hazard to existing pedestrian movements, the DOT will take the initiative to not create the hazard. However, if there is evidence that a TIP project would create a hazard to existing pedestrian movements, the municipality will need to prove there will be pedestrian movements which will be affected within five years by the hazard created by the TIP project. The five year period will begin at the completion of the appropriate environmental document (Categorical Exclusion, Finding of No Significant Impact, or Environmental Impact Statement).

CERTAIN SITUATIONS

Section “e” of the Pedestrian Policy states: “*The Department recognizes there are certain situations in which pedestrian facilities provide significant benefits in the movement of pedestrian traffic. The Department of Transportation may participate in the provision of these facilities on a full or shared-cost basis.*” This statement says the DOT may participate in funding incidental projects, and independent projects as described below.

INCIDENTAL PROJECTS

Incidental pedestrian projects are defined as TIP projects where pedestrian facilities are included as part of the project. The DOT may share the incremental cost of constructing the pedestrian facilities if the “intent of the criteria” are met, and the request for DOT participation is made prior to or at the post hearing meeting for the Design Public Hearing. Only improvements that have a sidewalk adjacent to it will be included in the total project construction cost. Additionally, the cost of bridges will not be included in the total project construction cost since the provision of pedestrian facilities on bridges will be funded entirely by the DOT. This total project construction cost does not include the construction cost of any incidental pedestrian facilities. The matching share is a sliding scale based on population as follows:

MUNICIPAL POPULATION	PARTICIPATION	
	DOT	LOCAL
> 100,000	50%	50%
50,000 to 100,000	60%	40%
10,000 to 50,000	70%	30%
< 10,000	80%	20%

The local government share of the pedestrian facility construction funding may not be Federal or State money for the purposed of these guidelines. In addition, the right-of-way municipalities provided for pedestrian projects may not be counted toward the required local contribution.

EXAMPLE

A 10 mile project proposes to widen an existing two lane road to a five lane curb and gutter roadway. Four miles of the project is within the city limits and there are no existing sidewalks. The city requests that sidewalk be included on one side on 2 miles of the project that falls within the city boundaries. The DOT concurs that the sidewalk is warranted and it added to the project. The city population is 75,000.

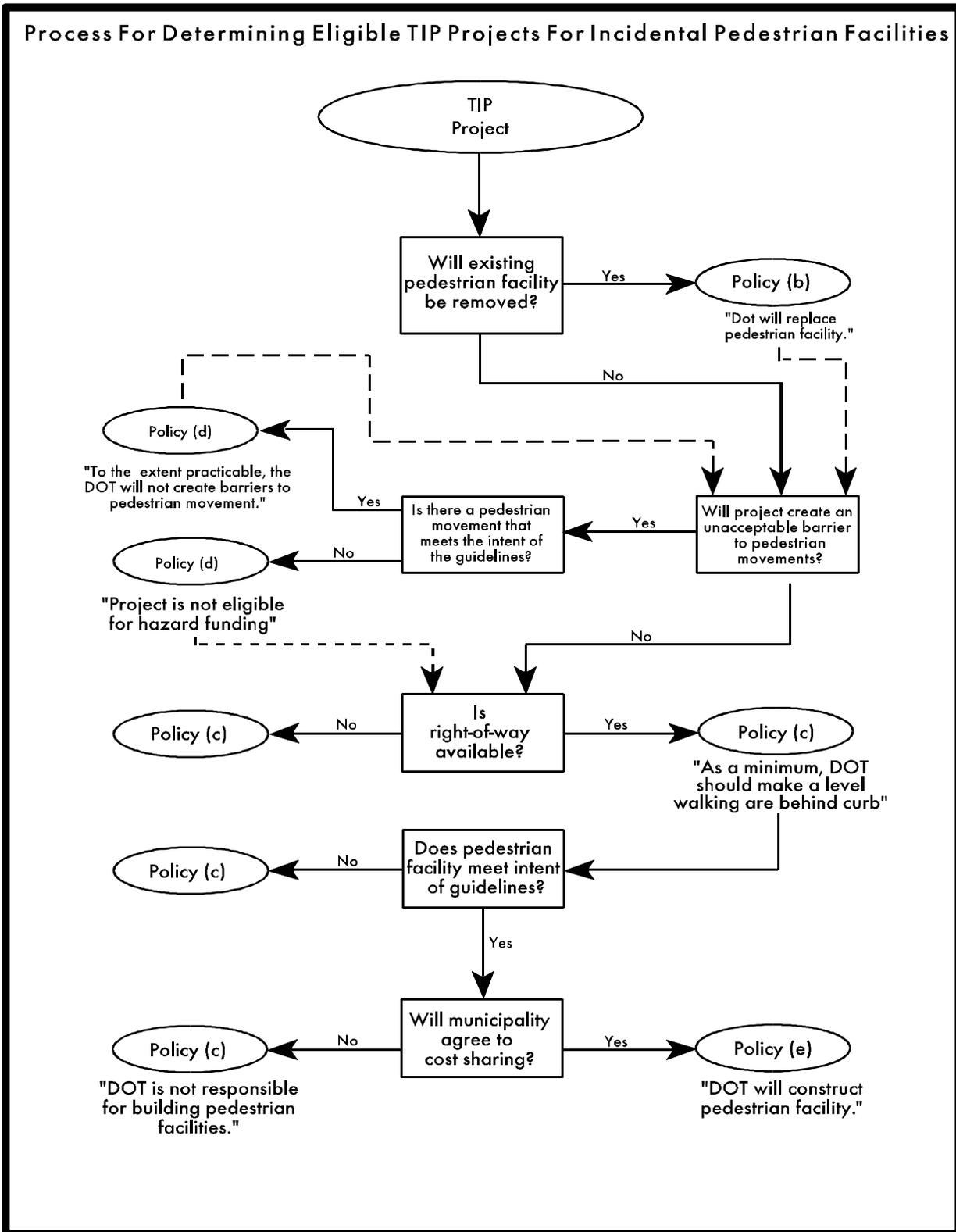
To determine the contribution by the DOT and by the city, the “total project construction cost”, for purposes of determining participation, must be calculated. Costs are included only if the construction occurs within municipal boundaries and a requested sidewalk is adjacent to the roadway. Additionally, the cost of bridges is excluded from the cost. Therefore, the “total project construction cost” will be the cost of improvements for 2 miles of the project. DOT estimates that it will cost \$5 million to construct the 2 miles of improvements, not including the cost of the sidewalks or bridges. It is estimated that the sidewalk will cost \$170,000 to construct. DOT’s share would be 60% of \$170,000 or \$102,000. The city’s share would be \$68,000.

INDEPENDENT PROJECTS

Independent pedestrian projects are defined as projects where pedestrian facilities are the entire project. The DOT will have a separate category of money for all independent pedestrian facility projects in North Carolina. The independent pedestrian facility funds will be administered similar to the Bicycle Program. Municipalities will prioritize their requests under the enhancements section of the local request list, and the DOT will fund as many projects as funding will allow.

GENERAL INFORMATION

The attached flow chart illustrates the decision process for a project engineer. In addition, the funding caps, right-of-way and maintenance requirements described below must also be met.



EFF. DATE 12/1/76
REV. DATE 4/16/01

FUNDING CAPS

Funding caps are no longer applicable.

RIGHT-OF-WAY

In general, municipalities are responsible for providing any right-of-way needed to construct pedestrian facilities. The DOT will allow pedestrian facilities on DOT right-of-way only if the pedestrian facility will not compromise the safety of vehicles or pedestrians. For preventing hazards, the DOT may buy the necessary right-of-way. For incidental and independent projects the DOT shall not pay extra right-of-way cost for pedestrian facilities.

Since the DOT's typical curb and gutter cross-section generally has a 3.0 meter (10 foot) berm, a 1.5 meter (5 foot) pedestrian facility may fit within this standard right-of-way.

Applicable AASHTO standards for right-of-way and design must be met. The DOT will not narrow automobile travel lanes to accommodate incidental pedestrian facilities. For example, if a project specifies five 3.6 meter (12 foot) lanes on a section of road, the DOT will not reduce the width of the travel lanes to 3.0 meters (10 feet) to create room for pedestrian facilities. In addition, if right-of-way is restricted, and there is insufficient room for pedestrian facilities and a utility strip, the utility strip will take precedence.

Applicable Federal and State regulations must also be met. For example, if right-of-way for a particular project is restricted by historic property, federal regulations on historic preservation may prohibit the DOT from using additional right-of-way for pedestrian facilities.

MAINTENANCE

Local governments are responsible for maintaining all pedestrian facilities. The Municipal Agreement will formally specify that the DOT is not responsible for maintaining pedestrian facilities.

APPENDIX

POLICY ADOPTED BY THE NC BOARD OF TRANSPORTATION

**.0406 CONSTRUCTION AND MAINTENANCE OF SIDEWALKS AND OTHER
PEDESTRIAN FACILITIES**

- a) It is the policy of the Board of Transportation that highway funds are for the purpose of constructing and improving streets and highways for the movement of people and goods. Generally, within municipalities, the construction of a sidewalk on a state highway system street is considered a municipal responsibility.
- b) When a highway construction project having to do with the widening of an existing street requires that an existing sidewalk be torn up to make room for the widening, it is the policy of the Department of Transportation to replace the sidewalk.
- c) For construction and widening projects where sidewalks do not already exist, it is the policy of the Department of Transportation that it will not participate in the construction of sidewalks except as in subsections (d) and (e). If adequate right of way is available, the Department of Transportation will grade out a level walking area back of the curb in the utility strip. The municipality may, at its own discretion, construct sidewalks. If the municipality desires sidewalks as a part of the construction project, they will be constructed and the city will reimburse the Department of Transportation for the cost of the sidewalks by appropriate municipal agreement.
- d) In the planning, design, and construction of TIP transportation projects, the Department of Transportation shall consider the needs of pedestrians and will not create hazards to pedestrian movements.
- e) The Department recognizes there are certain situations in which pedestrian facilities provide significant benefits in the movement of pedestrian traffic. The Department of Transportation may participate in the provision of these facilities on a full or shared cost basis.

Bicycle & Bikeway Act of 1974

With the passage of comprehensive Bicycle and Bikeway Act of 1974, North Carolina established the first state bicycle program in the nation, which quickly became a national model. The legislation granted authority for the North Carolina Bicycle Program (now the Division of Bicycle and Pedestrian Transportation) to undertake comprehensive bicycle planning and programming.

This far-reaching legislation established these provisions:

- supports the legal definition that a bicycle is a vehicle
- defines bicycle facilities as a bona fide highway purpose
- designates the North Carolina Department of Transportation to carry out the provisions of the article
- assigns specific duties
- allows for designation of bicycle facilities along and upon the state's public roadways
- authorizes the department to spend budgeted funds and other funds from federal, state, local, and private sources
- establishes the North Carolina Bicycle Committee.

The Act directs the NCDOT to perform the following duties:

- assist local governments with the development of bicycle programs and the construction of bicycle facilities
- develop policies, procedures, and standards for planning, designing, constructing, maintaining, marking, and operating bicycle facilities and provide for the safety of bicyclists and motorists
- develop demonstration projects and safety training programs
- develop and construct a state bikeway system. * Note: The term "bikeway" was used in 1973, when this legislation was written, to denote all types of facilities for bicycles. Since that time more specific terminology has replaced the term "bikeway" in general use.

G.S. 136-71.6. How Article Cited

This article may be cited as the North Carolina Bicycle and Bikeway Act of 1974 (1973, c. 1447, s.1)

G.S. 136-71.7. Definitions

As used in this Article, except where the context clearly requires otherwise, the words and expressions defined in this section shall be held to have the meanings here given to them:

1. Bicycle: A non-motorized vehicle with two or three wheels tandem, a steering handle, one or two saddle seats, and pedals by which the vehicle is propelled.

2. Bikeway: A thoroughfare suitable for bicycles, and which may either exist within the right-of-way of other modes of transportation, such as highways, or along a separate, independent corridor.

3. Department: North Carolina Department of Transportation.

4. Program: North Carolina Bicycle and Bikeway Program.

5. Secretary: The Secretary of the North Carolina Department of Transportation (1973, c. 1447, s.2; 1975, c. 716, s.7; 1977, c.1021, s.1)

G.S. 136-71.8. Findings

The General Assembly, hereby finds that it is in the public interest, health, safety, and welfare for the state to encourage and provide for the efficient and safe use of the bicycle; and that to coordinate plans for bikeways most effectively with those of the state and local government as they affect roads, streets, schools, parks and other publicly owned lands, abandoned roadbeds and conservation areas, while maximizing the benefits from the use of tax dollars, a single state agency, eligible to receive federal matching funds, should be designated to establish and maintain a state bikeways programs. The General Assembly also finds that bikeways are a bona fide highway purpose, subject to the same rights and responsibilities, and eligible for the same considerations as other highway purposes and functions. (1973, c. 1447, s.3; 1977, c. 1021, s.1)

G.S. 136-71.9. Program development

The Department is designated as such state agency responsible for developing and coordinating the program. (1973, c. 1447, s.4)

G.S. 136-71.10. Duties

The Department will:

1. Assist and cooperate with local government and other agencies in the development and construction of local and regional bikeway projects.
2. Develop and publish policies, procedures, and standards for planning, designing, maintaining, marking, and operating bikeways in the State; for the registration and security of bicycles; and for the safety of bicyclists, motorists and the public.
3. Develop bikeway demonstration projects and safety training programs.
4. Develop and construct a state bikeway system. (1973, c.1447, s.5)

G.S. 136-71.11. Designation of bikeways

Bikeways may be designated along and upon the public roads. (1973, c. 1447, s.5)

G.S. 136-71.12. Funds

The General Assembly hereby authorizes the Department to include needed funds for the program in its annual budgets for fiscal years after June 30, 1975, subject to the approval of the General Assembly. The Department is authorized to spend any federal, state, local or private funds available to the Department and designated for the accomplishments of this Article. Cities and towns may use any funds available. (1972, c. 1447, s.6.)

G.S. SESSION LAWS 2011-266:**NORTH CAROLINA BICYCLE COMMITTEE, Section 1.27. G.S. 146.71.13 is repealed.****G.S. 136-71.13. North Carolina Bicycle Committee; composition, meetings, and duties.**

a. Transportation. The Bicycle Committee shall consist of seven members appointed by the Secretary. Members of the Committee shall receive per diem and necessary travel and subsistence expense in accordance with the provisions of G.S. 138.5. Initially, three members shall be appointed for two years, and four members for four years; thereafter each appointment shall be for four years. Upon the resignation of a member in mid-term, the replacement shall be appointed for the remainder of the unexpired term. The Secretary shall make appointments to the Committee with a view to providing representation to each of the state's geographical regions and to the various types of bicycle users and interests.

b. The Bicycle Committee shall meet in various sections of the state, not less than once in every three months, and at such other times as may be necessary to fulfill its duties. A majority of the members of the Committee shall constitute a quorum for the transaction of business. The staff of the Bicycle and Bikeway Program shall serve the Committee, maintain the minutes of the Committee meetings, research questions of bicycle transportation importance, and undertake other such activities for the Committee as may be consistent with the program's role in the Department.

c. The Bicycle Committee shall have the following duties:

1. To represent the interests of bicyclists in advising the Secretary on all matters directly or indirectly pertaining to bicycle and bikeways, their use, extent, location, and other objectives and purposes of this Article.
2. To adopt bylaws for guiding its operation, as well as an outline for pursuing a safer environment for bicycling in North Carolina.



3. To assist the Bicycle and Bikeway Program in the exercise of its duties within the Department.

4. To promote the best interest of the bicycling public, within the context of the total transportation system, to governing officials and the citizenry at large.

d. The Secretary, with the advice of the Bicycle Committee, shall coordinate bicycle activities among the divisions of the Department, as well as between the Department of Transportation and the other departments. Further, he shall study bicycle and bikeway needs and potentials and report the findings of said studies, with the Committee's recommendations to the appropriate policy and legislative bodies. The Secretary shall submit an annual report to the Governor and General Assembly on bicycle and bikeway activities within the Department, including a progress report on the implementation of this Article. (1977, c. 11021, s.1)

Last Update: 11/13/09

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<http://www.ncc-ccn.gc.ca>

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